ACURA

TL

Service Manual 2004

A Few Words About Safety

Service Information

[illegible]

[illegible]

[illegible]

FOR YOUR CUSTOMER'S SAFETY

[illegible]

⚠ WARNING

[illegible]

FOR YOUR SAFETY

[illegible]

⚠ WARNING

[illegible]

[illegible]

IMPORTANT SAFETY PRECAUTIONS

- [illegible]
- [illegible]
- [illegible]

INTRODUCTION

How to Use This Manual

Safety Messages

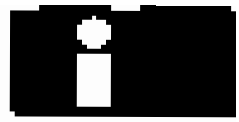
DANGER

WARNING

CAUTION

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

- [illegible]



General Information

Chassis and Paint Codes

Vehicle Identification Number

a b c d e f g h

a Manufacturer, Make and Type of Vehicle
b Line, Body and Engine Type
c Body Type and Restraint System Type
d Vehicle Check Symbol
e Model Year
f Plant Code
g Serial Number

Engine Number

a b

a Engine Type
b Serial Number

Transmission Number

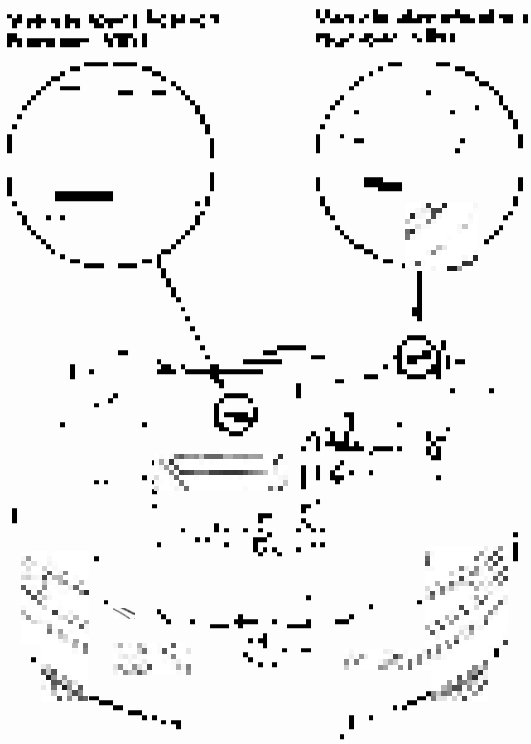
a b

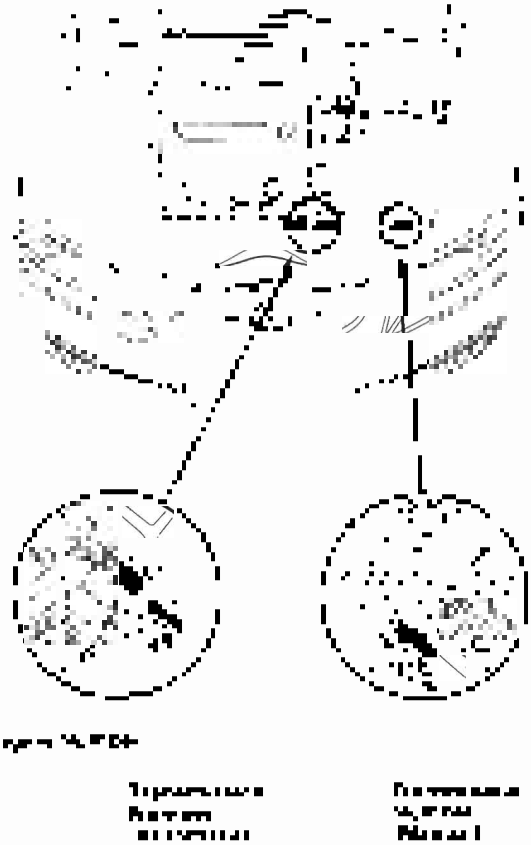
a Transmission Type
b Serial Number

Paint Code

Code	Color	Year
NH 624P	Vortex Blue Pearl	
NH 624M	Solar Silver Metallic	
NH 624P	Autumn Red Pearl	
B-539P	Sapphire Blue Pearl	
B-539M	Aegean Blue Pearl	
R-513P	Tango Orange Pearl	
R-522P	Passion Red Pearl	
NH 578M	Dark Gray Metallic	

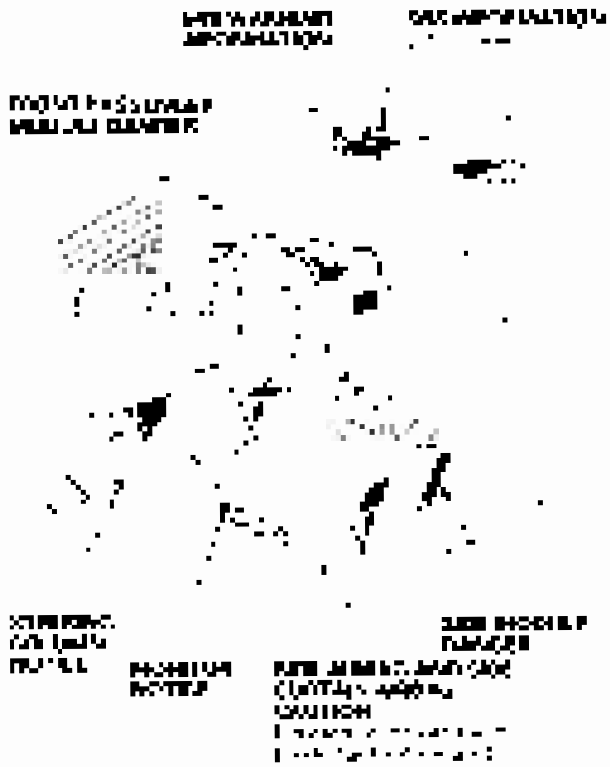
Identification Number Location



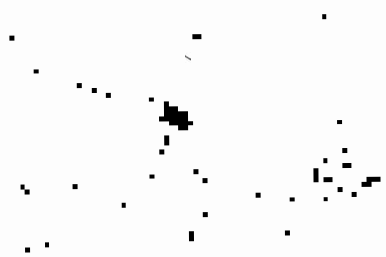


Warning/Caution Label Locations

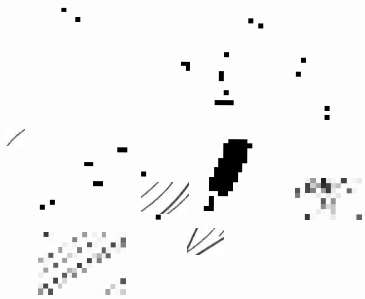
From Passenger's Compartment



Near Passenger's Compartment



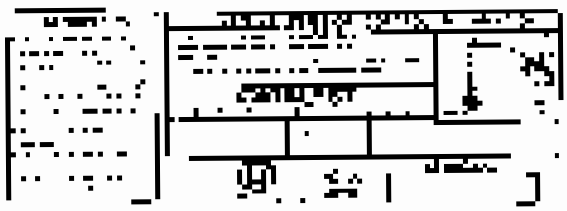
Steering Wheel



Under-hood Emission Control Label

Emission Group Identification

Example:



THIS VEHICLE CONFORMS TO U.S. EPA REGULATIONS APPLICABLE TO 2004 MODEL YEAR NEW PASSENGER CARS AND LIGHT TRUCKS. CALIFORNIA REGULATIONS APPLICABLE TO 2004 MODEL YEAR NEW LEV II PASSENGER CARS

Engine and Evaporative Families

Engine Family

4 HNXV [illegible]

a b c d e

a Model Year
= 2004
b Manufacturer Sub-code
HNX, HONDA
c Family Type
= HCV
d Displacement
e Sequence Characters

Evaporative Family

4 HNXR [illegible]

a b c d e

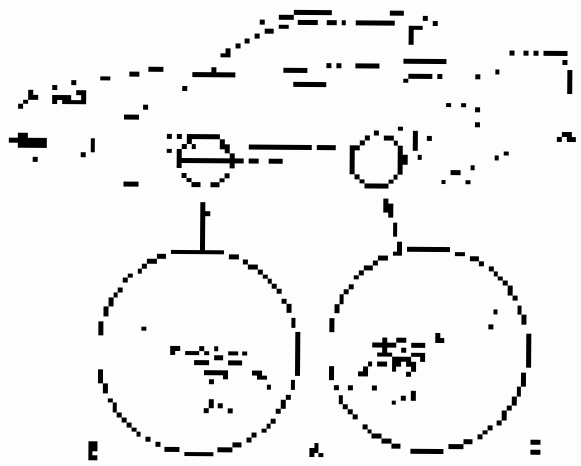
a Model Year
= 2004
b Manufacturer Sub-code
HNX, HONDA
c Family Type
= Evaporative
d Canister Work Capacity
e Sequence Characters

Lift and Support Points

[illegible]

Frame Hoist

1. [illegible]



2. [illegible]

3. [illegible]

Safety Stands

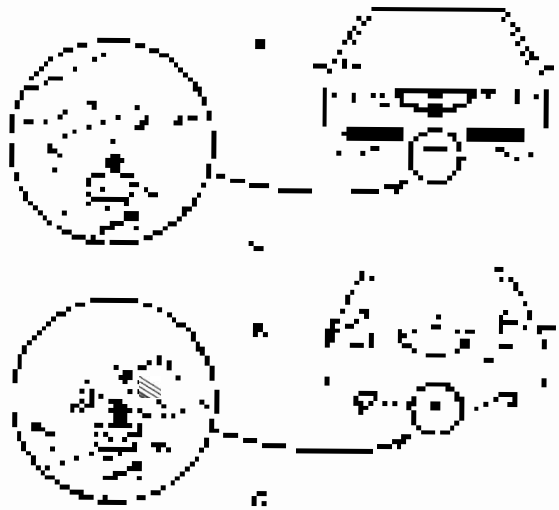
To support the vehicle on safety stands, place the stands under [illegible]

Floor Jack

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

5. [illegible]

Towing

[illegible]

Emergency Towing
[illegible]

Flat-bed Equipment [illegible]

[illegible]

[illegible]

NOTE: [illegible]

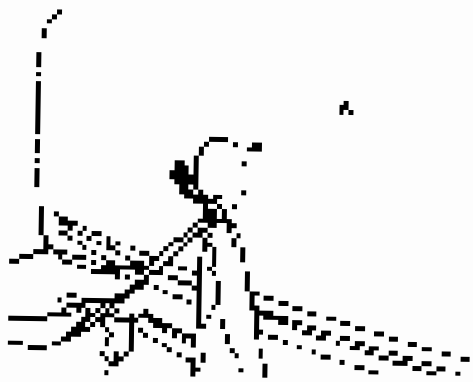
Front Towing Hook Installation

[illegible]

NOTICE

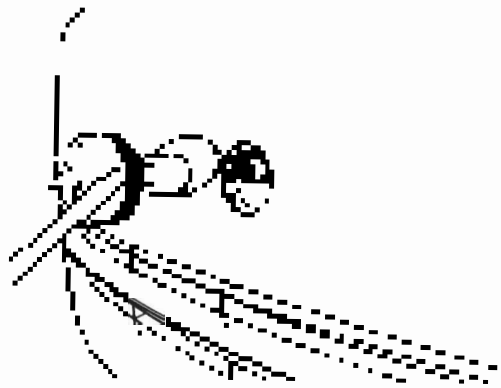
- [illegible]

- [illegible]



3. [illegible]

4. [illegible]



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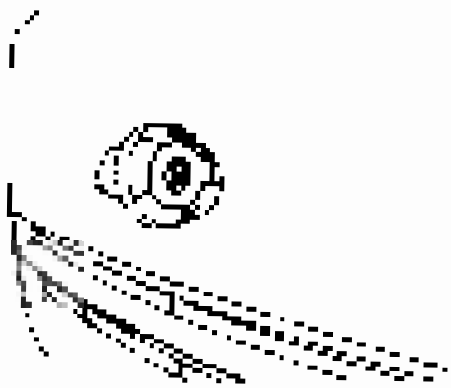


Towing (cont'd)

Wheel Lift Equipment —

Sling Type Equipment —

Manual Transmission
- [illegible]
- [illegible]

Automatic Transmission
- [illegible]
- [illegible]
- [illegible]
- [illegible]

NOTICE
- [illegible]
- [illegible]

Parts Marking

[illegible]

Specifications

Standards and Service Limits

Design Specifications

Body Specifications

Standards and Service Limits

Engine Electrical

Item	Measurement	Condition	Standard or Limit	Remarks
[illegible]	[illegible]		[illegible]	
	[illegible]		[illegible]	
[illegible]	[illegible]		[illegible]	
			[illegible]	
	[illegible]		[illegible]	
[illegible]		[illegible]	[illegible]	
		[illegible]	[illegible]	
[illegible]	[illegible]		[illegible]	
[illegible]				
[illegible]	[illegible]		[illegible]	
	[illegible]			
	[illegible]	[illegible]	[illegible]	
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	
[illegible]	[illegible]		[illegible]	
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	

Engine Assembly

Item	Measurement	Condition	Standard or Limit	Remarks
[illegible]	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]		

Cylinder Head

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]			[illegible]
	[illegible]		[illegible]	
[illegible]	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	
		[illegible]	[illegible]	
		[illegible]	[illegible]	
		[illegible]		
		[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
		[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	
		[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	
		[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]

Standards and Service Limits

Engine Block

Item	Measurement	Condition	Standard or New	Service Limit
[illegible]	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]			[illegible]
	[illegible]			[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
	[illegible]			
	[illegible]		[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]	[illegible]
	[illegible]		[illegible]	
	[illegible]		[illegible]	[illegible]
	[illegible]	[illegible]		
[illegible]	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]

Engine Lubrication

Item	Measurement	Classification	Standard or New	Service Limit
[illegible]	[illegible]	[illegible]	[illegible]	
		[illegible]	[illegible]	
		[illegible]		
		[illegible]	[illegible]	
[illegible]	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]			
	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	

Cooling

Item	Measurement	Classification	Standard or New
[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]		[illegible]
		[illegible]	[illegible]
			[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]
	[illegible]		[illegible]

Standards and Service Limits

Fuel and Emissions

Item	Measurement	Condition	Standard or New
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Clutch

Item	Measurement	Condition	Standard or New	Service Limit
[illegible]	[illegible]		[illegible]	
	[illegible]		[illegible]	
	[illegible]		[illegible]	
	[illegible]		[illegible]	
[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	[illegible]
	[illegible]		[illegible]	
	[illegible]			

Manual Transmission and M/T Differential

Standards and Service Limits

Manual Transmission and M/T Differential (cont'd)

[illegible]

Standards and Service Limits

Automatic Transmission and A/T Differential

[illegible]

Standards and Service Limits

Automatic Transmission and A/T Differential (cont'd)

[illegible]

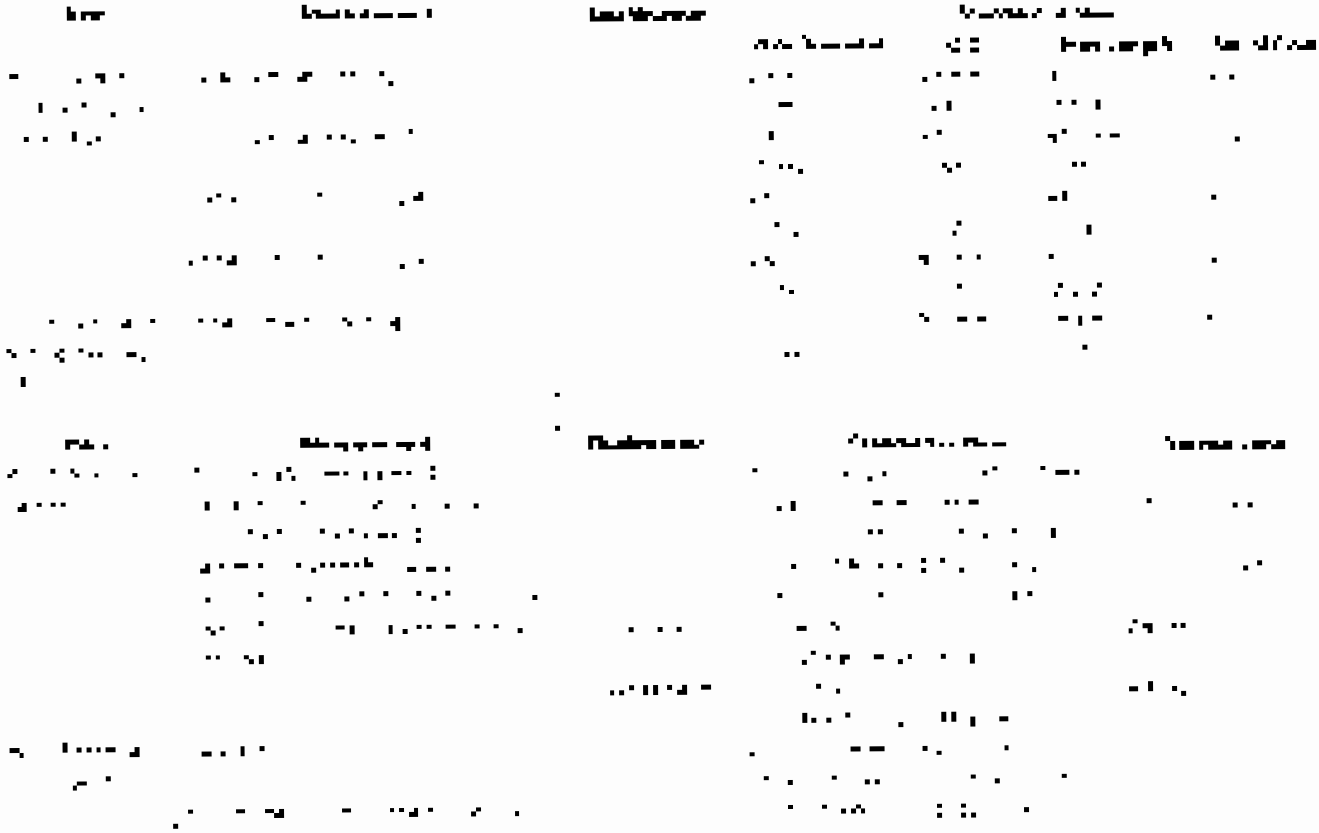
Standards and Service Limits

Automatic Transmission and A/T Differential (cont'd)

[illegible]

[illegible]

Automatic Transmission and A/T Differential (cont'd):



Steering

[illegible]

Suspension

[illegible]

Standards and Service Limits

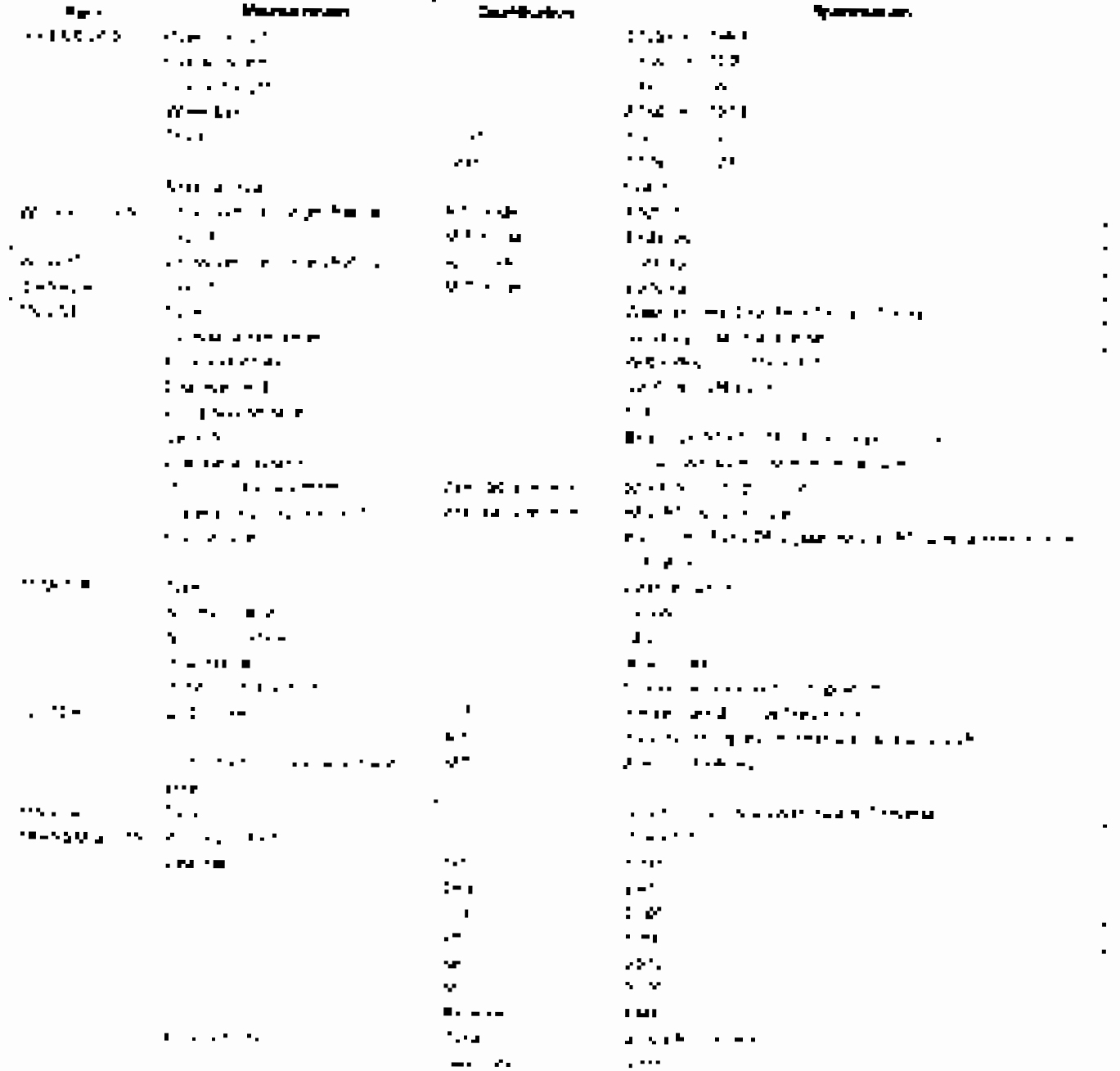
Brakes

[illegible]

Air Conditioning

[illegible]

Design Specifications



Design Specifications

(cont'd)

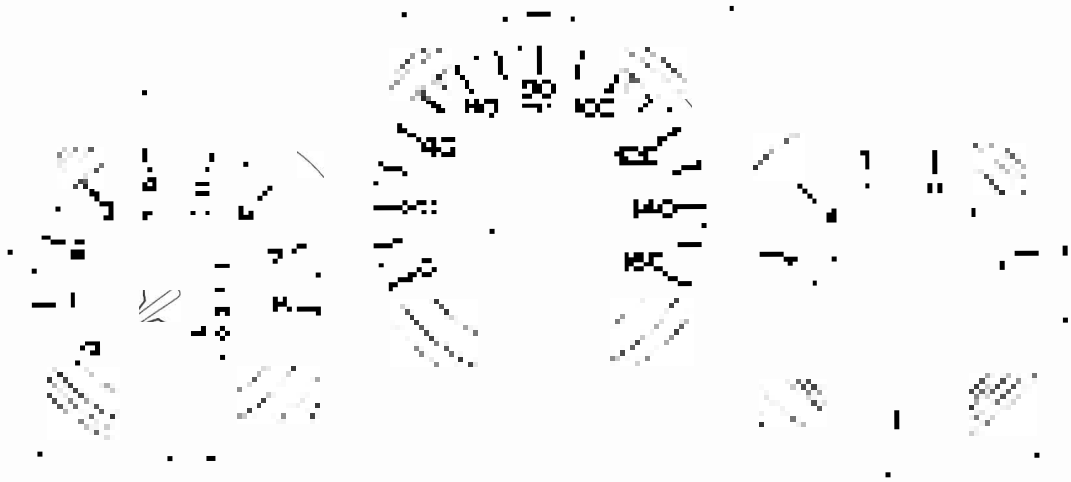
[illegible]

[illegible]

Maintenance

	Lubrication Points	Lubricant
A	Engine	
B	Manual Transmission	
	Automatic Transmission	
C	Brake Master Cylinder	
D	Clutch	
E	Wheel Bearings	
F	Shift Linkage	
G	Cables	
H	Throttle Valve	
I	Door Hinges	
J	Parking Pawl	
K	Seat Adjuster Rails and Pivots	
L	Door Striker	
M	Fuel Filler Door	
N	Fuel Tank Straps	
O	Hood Hinges and Latch	
P	Steering Linkage Ball Studs	
Q	Front Wheel Drive Axle Splines	
R	Engine Coolant	
S	Windshield Washer Solvent	
T	Air Conditioning Compressor	

Multi-Information Display



Service Information

1. [illegible]

2. [illegible]

3. [illegible]

Resetting the Multi-information Display

- Turn the ignition switch to the ON (II) position.

2. Press the SELECT/RESET button repeatedly until the maintenance code you want to reset appears in the multi-information display. (Refer to the maintenance code table on page 3-5.)

   NOTE: If you do not want to reset the display, wait for the display to return to the normal mode (about 10 seconds) or turn the ignition switch to LOCK (0).

3. Press and hold the SELECT/RESET button for 10 seconds. When you see the maintenance message disappear, release the SELECT/RESET button. The maintenance message display should reappear. Press the SELECT/RESET button again to scroll to the next maintenance message.

   To reset the display, press the SELECT/RESET button for 10 seconds. The maintenance message disappears and the display returns to the normal mode.

   - If you do not reset the maintenance display, the display will show the maintenance message each time you turn the ignition switch to ON (II).

NOTE:

- The maintenance minder is designed to remind you when it is time to have certain maintenance performed. It is your responsibility to have all recommended maintenance performed at the proper intervals. This maintenance minder does not replace the owner's manual. Refer to your owner's manual for a complete list of recommended maintenance.
- If the battery is disconnected or goes dead, the maintenance minder may not keep track of the proper maintenance intervals. After the battery is reconnected, check the maintenance minder display to make sure it is working properly.

Maintenance Main Items

If [illegible] DUE NOW does not appear [illegible]

NOTE
- [illegible]
- [illegible]
- [illegible]

Symbol	Maintenance Main Items
A	[illegible]
	[illegible]
B	[illegible]
	[illegible]
	Replace [illegible]
	[illegible]
	Change [illegible]
	• Check [illegible]
	• Check [illegible]
	Check [illegible]
	[illegible]
	Visually inspect the following items:
	• [illegible]
	• [illegible]
	Inspect [illegible]
	• Check [illegible]
	Check [illegible]
	Check [illegible]
	Adjust [illegible]
	• Check [illegible]
	• Check [illegible]
	Inspect [illegible]
	Check [illegible]
	Inspect [illegible]
	Check the [illegible]
	Inspect all [illegible]
	• [illegible]
	• [illegible]
	• [illegible]
	• [illegible]
	• [illegible]
	• [illegible]
	• [illegible]
	Inspect [illegible]
	Check [illegible]
	Inspect [illegible]
	Check for [illegible]

NOTE: [illegible]

Maintenance Sub Items

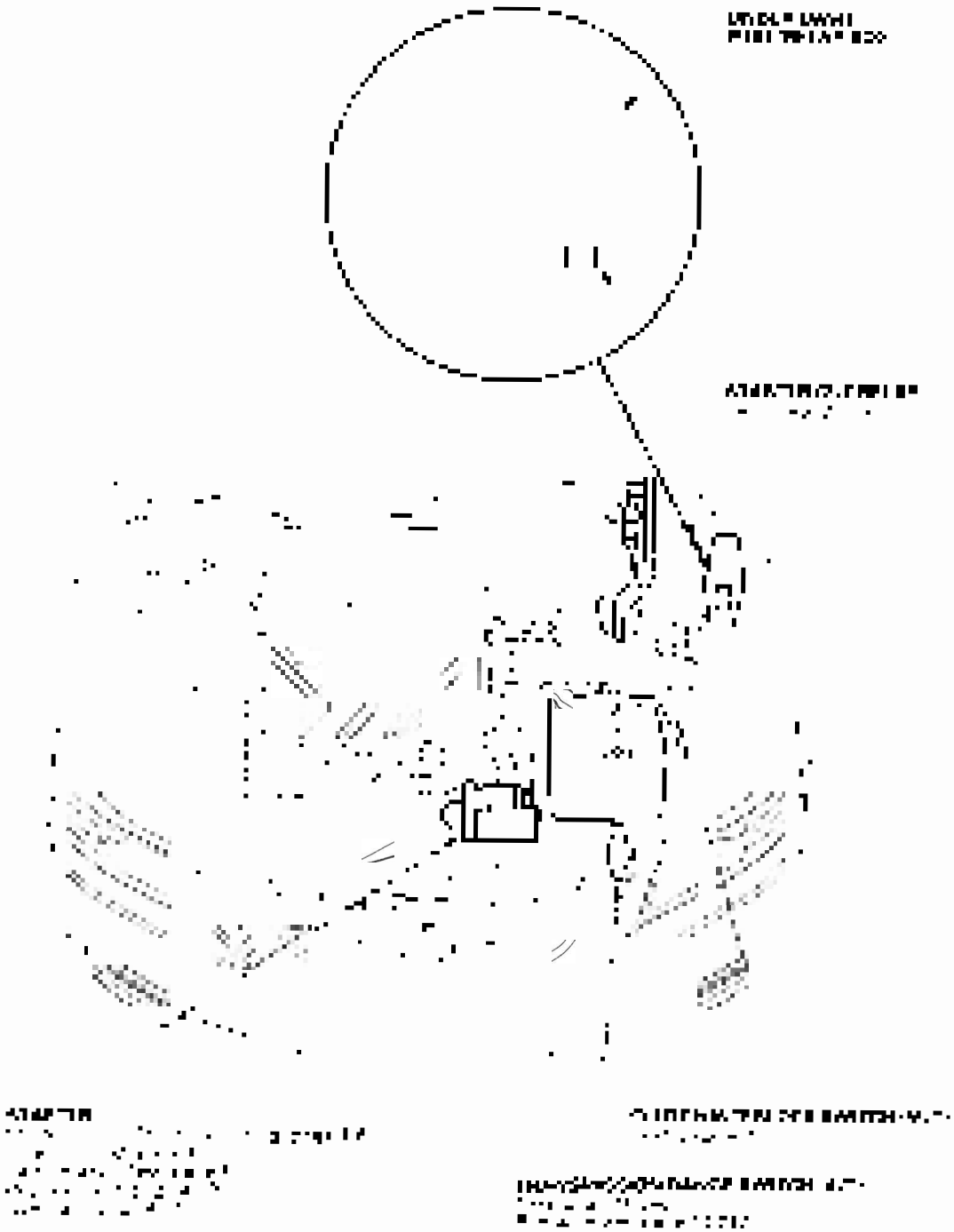
Number	Maintenance sub items
1	[illegible]
2	[illegible]
3	[illegible]
4	[illegible]
5	[illegible]

Engine Electrical

Special Tools

Ref No	Tool Number	Description	Qty
	[illegible]	[illegible]	
	[illegible]	[illegible]	
	[illegible]	[illegible]	

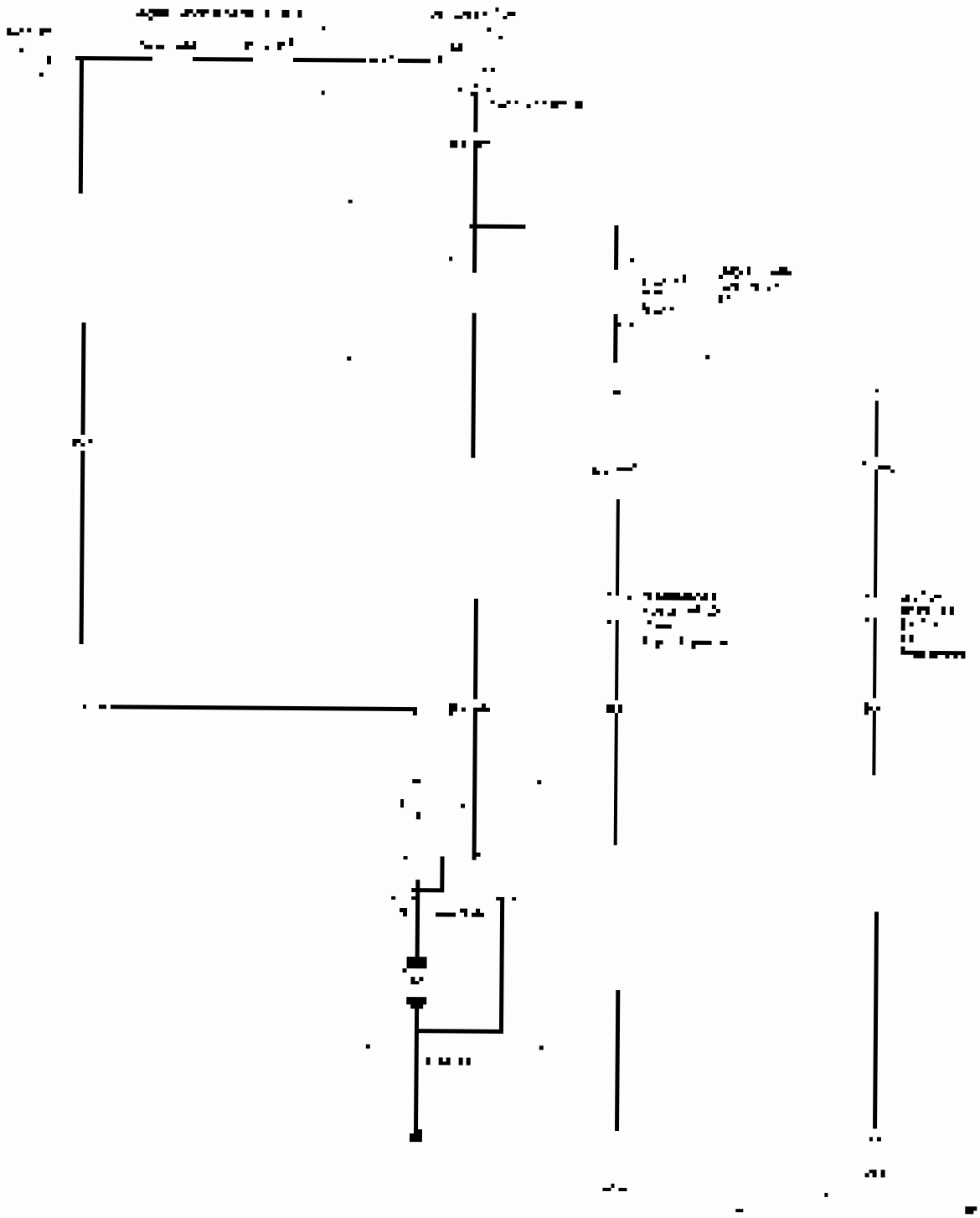
Component Location Index



Symptom Troubleshooting Index

Symptom		Diagnostic procedure	Also check for
[illegible]	[illegible]	[illegible]	[illegible]
	2	[illegible]	
	3	[illegible]	
	4	[illegible]	
	5	[illegible]	
	6	[illegible]	
	7	[illegible]	
[illegible]	[illegible]	[illegible]	
	2	[illegible]	
	3	[illegible]	
	4	[illegible]	
	5	[illegible]	
	6	[illegible]	
	7	[illegible]	
	8	[illegible]	
[illegible]	[illegible]	[illegible]	
	2	[illegible]	
	3	[illegible]	
	4	[illegible]	
	5	[illegible]	

Circuit Diagram



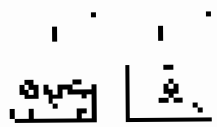
Starter Circuit Troubleshooting

NOTE:
- Use a fully charged battery for accurate test results. If the battery is not fully charged, recharge it before performing this test. (See page 4-2)
- Before performing this test, check the fuses in the PGM-FI main relay box and the under-hood fuse/relay box. (See page 4-2)

Recommended Tools:
- Digital multimeter
- Fused jumper wire

Alternate Procedure

1. Shift the transmission into Neutral (M/T) or Park (A/T).
2. Turn the ignition switch to ON (II).
   - Voltage: 0 - 1.0 V
   - Voltage: 0 - 1.0 V (Automatic transmission)



3. Disconnect the 2P (Gray) connector from the starter solenoid. (See page 4-11)
4. Select "DIODE" on the multimeter and connect the positive (+) test probe to the 2P (Gray) connector terminal and the negative (-) test probe to a good body ground.

   Is there continuity?

   YES - The starter solenoid is bad. (See page 4-11)

   NO - Go to step 5.

5. Check the battery voltage. Check electrical connections and wires between the ignition switch and the starter for loose or poor contact. If wires and connections are OK, check the starter ground cable. If wires and connections are OK, check the starter motor. (See page 4-11)

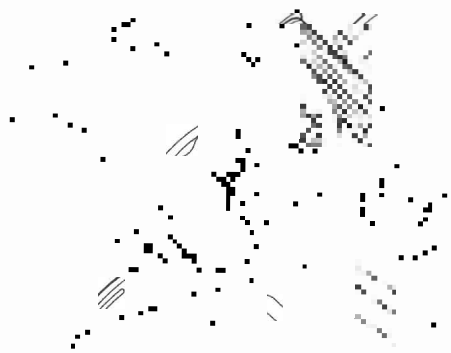
   Is the voltage 10 V or more?

   YES - Repair the starter motor. (See page 4-11)

   NO - Check the battery.

- Refer to page 4-2 for battery testing.
- If the battery is OK, charge it and go to step 1.
- If the battery is discharged, check for a parasitic load or a faulty alternator. Refer to the Alternator Service Information in the Electrical Troubleshooting Manual.

1 Make sure the transmission is in neutral, then start the engine. Is the MIL (malfunction indicator lamp) on the instrument panel flashing at a steady rate?



YES – Go to step 9.

NO – Turn the ignition switch OFF. Go to the next test.

4 Is the DLC (data link connector) [illegible] your vehicle's diagnostic system?

- The DLC (data link connector) is a 16-pin connector that is used to connect a scan tool to the PGM-FI system. It is usually located under the driver's side of the dashboard.
- For more information, see page [illegible].
- For more information, see page [illegible] (for the 2.0 liter VTEC engine) or page [illegible] (for the 2.3 liter VTEC engine).
- For more information, see page [illegible].

5 With the ignition switch ON (II), check the charging voltage at the battery.

Is the voltage greater than [illegible] and less than [illegible]?

YES – Go to step 10.

NO – Check the charging system. See section [illegible]. Then check the following:

- [illegible]
- [illegible]
- [illegible]

10 Check the engine coolant temperature. Is the engine [illegible]?

YES – Go to step [illegible].

NO – Let the engine cool down. Then check the following:

- Open circuit in the coolant temperature sensor circuit (harness)
- Poor connection at the coolant temperature sensor
- Open circuit in the coolant temperature sensor
- Poor connection at the ECM/PCM (engine control module)
- Faulty coolant temperature sensor

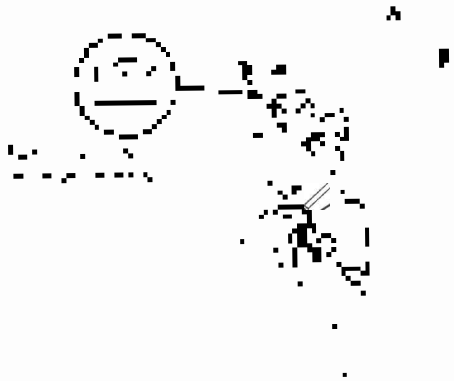
11 Remove the cap from the [illegible]. Is there any [illegible] in the radiator?

12 Select [illegible] on the scan tool. Is the [illegible] at 0.[illegible] V?

13 Refer to the [illegible] page [illegible] for the [illegible].

Clutch Interlock Switch Test

1. [illegible]



2. [illegible]

3. [illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Starter Solenoid Test

1. [illegible]

2. [illegible]

Starter Performance Test

1. Disconnect the cable from the (-) battery post.

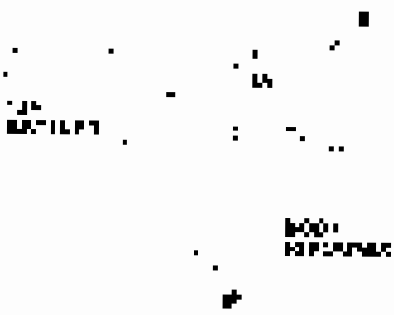
2. Make sure the battery is fully charged. Refer to the charging procedure in this section if necessary. To avoid damaging the starter motor, the battery must be fully charged for this test.

3. Connect the tachometer according to the manufacturer's instructions. Typically, you'll connect the positive lead to the coil wire and the negative lead to ground.

4. Disconnect the ignition coil wire from the distributor cap and ground it to the engine block with a jumper wire.

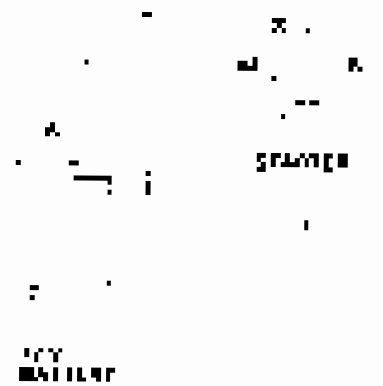
5. Disconnect the fuel injector electrical connector.

6. Connect a remote starter switch in series with a jumper wire between the positive battery terminal and the starter solenoid wire.



7. Disconnect the primary wire from the ignition coil.

8. Crank the engine for no more than 10 seconds and note the tachometer reading.



9. If the engine fails to crank at all or cranks slowly, check the battery, starter motor and solenoid. Refer to Chapter 5 for starter removal and testing procedures.

Specifications
Electric current: 80A or less
Motor speed: 2,500 rpm or more

Starter Replacement

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

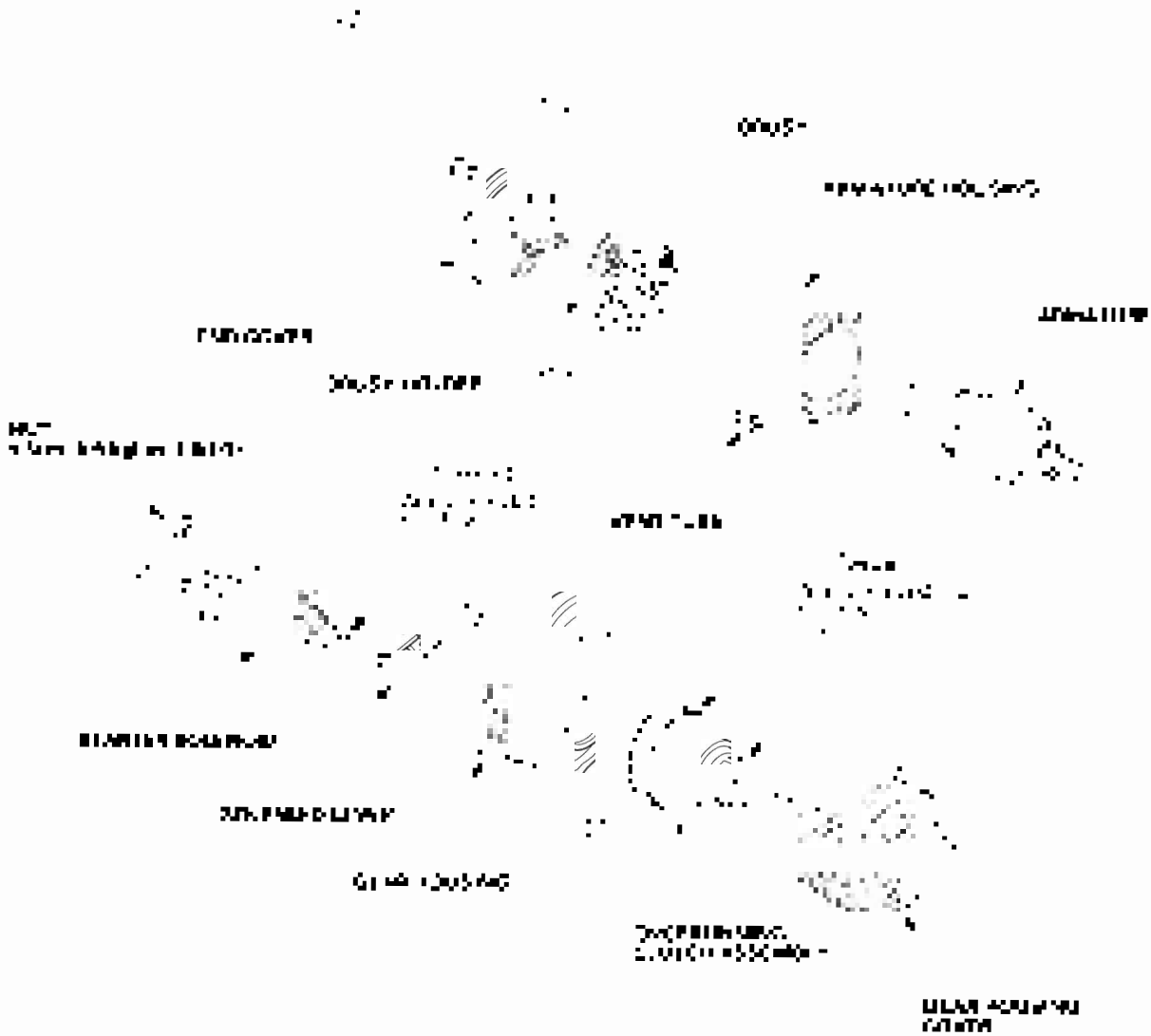
10. [illegible]

11. [illegible]

12. [illegible]

Starter Overhaul

Disassembly/Reassembly



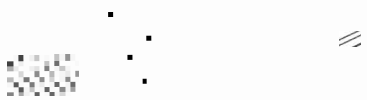
Starter Overhaul (cont'd)

Armature Inspection and Test

Refer to Section 6 (page 6-17)

2. Check the commutator for wear or damage. Replace the armature if necessary.

3. Inspect the armature shaft for wear or damage. Replace the armature if necessary. Check the bearings for wear or damage. Replace if necessary.



4. Check for continuity between the commutator and the armature shaft. There should be no continuity. Check for continuity between the commutator and each commutator segment. There should be continuity.

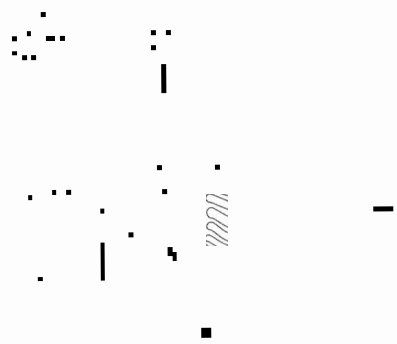
5. Check the commutator diameter. Replace the armature if necessary.

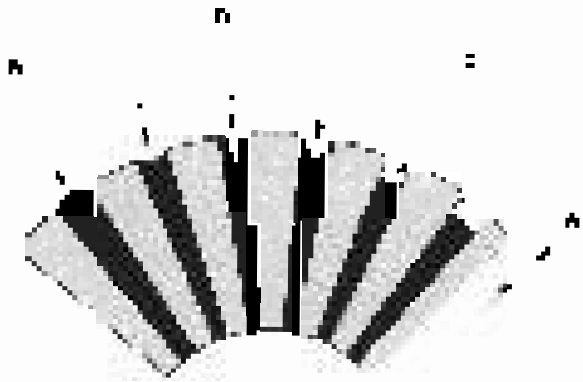
Commutator Diameter
Standard (New): 28.0 - 28.1 mm (1.102 - 1.106 in)
Service Limit: 27.5 mm (1.083 in)

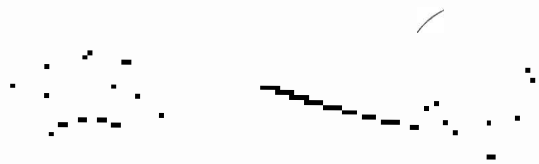
Brush Inspection and Replacement

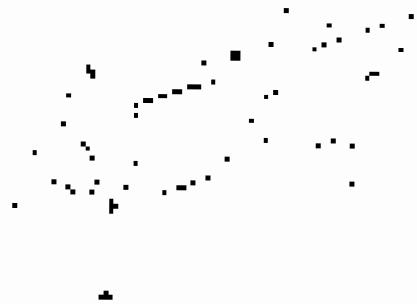
- If the brushes are worn to the wear limit or if they are damaged, replace the brush holder assembly with new brushes.
- Measure the length of each brush. If any brush is worn to the service limit, replace the brush holder assembly.

Commutator Brushes
Standard (New): 13.5 mm (0.53 in)
Service Limit: 8.5 mm (0.33 in)







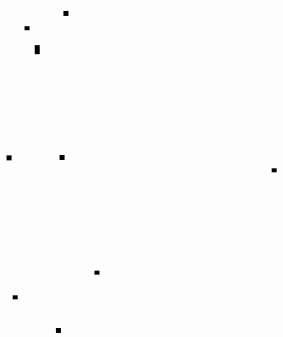


Starter Overhaul (cont'd)

Starter Brush Inspection

1) Measure the brush length.

Brush Length
Standard (New): 12.5 mm (0.49 in)
Service Limit: 7.5 mm (0.30 in)



Starter Brush Holder Test

1) Check for continuity between the positive brush holder and the negative brush holder.

Return Spring Inspection

1) Inspect the return spring for damage or separation. Measure the free length of the return spring. If it is shorter than the service limit, replace the return spring.

Spring Tension
Standard: 1.96 N (200 g, 7.1 oz)

14. [illegible]

15. [illegible]

16. [illegible]

Camshaft Chain Tensioner

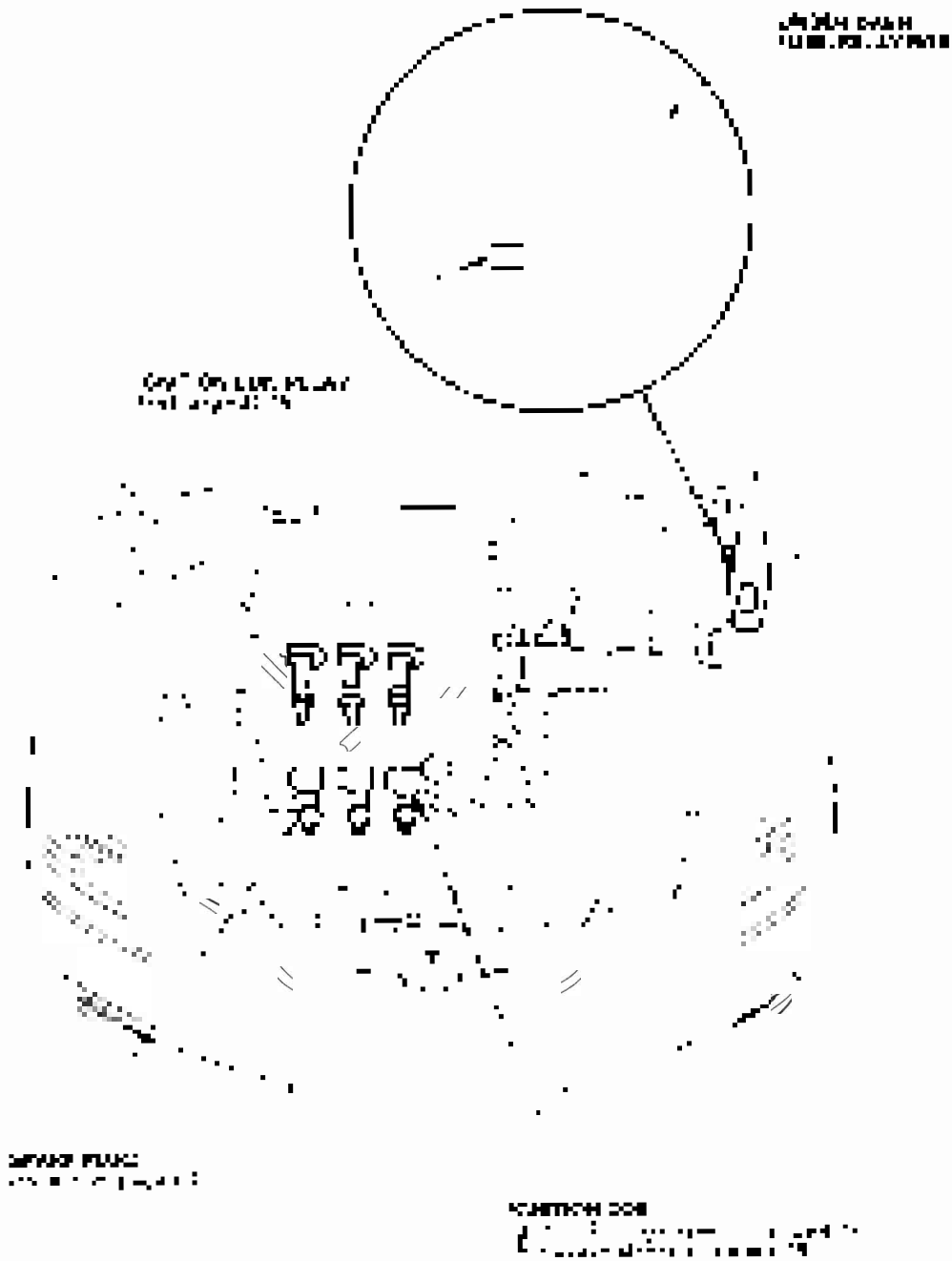
17. [illegible]

18. [illegible]

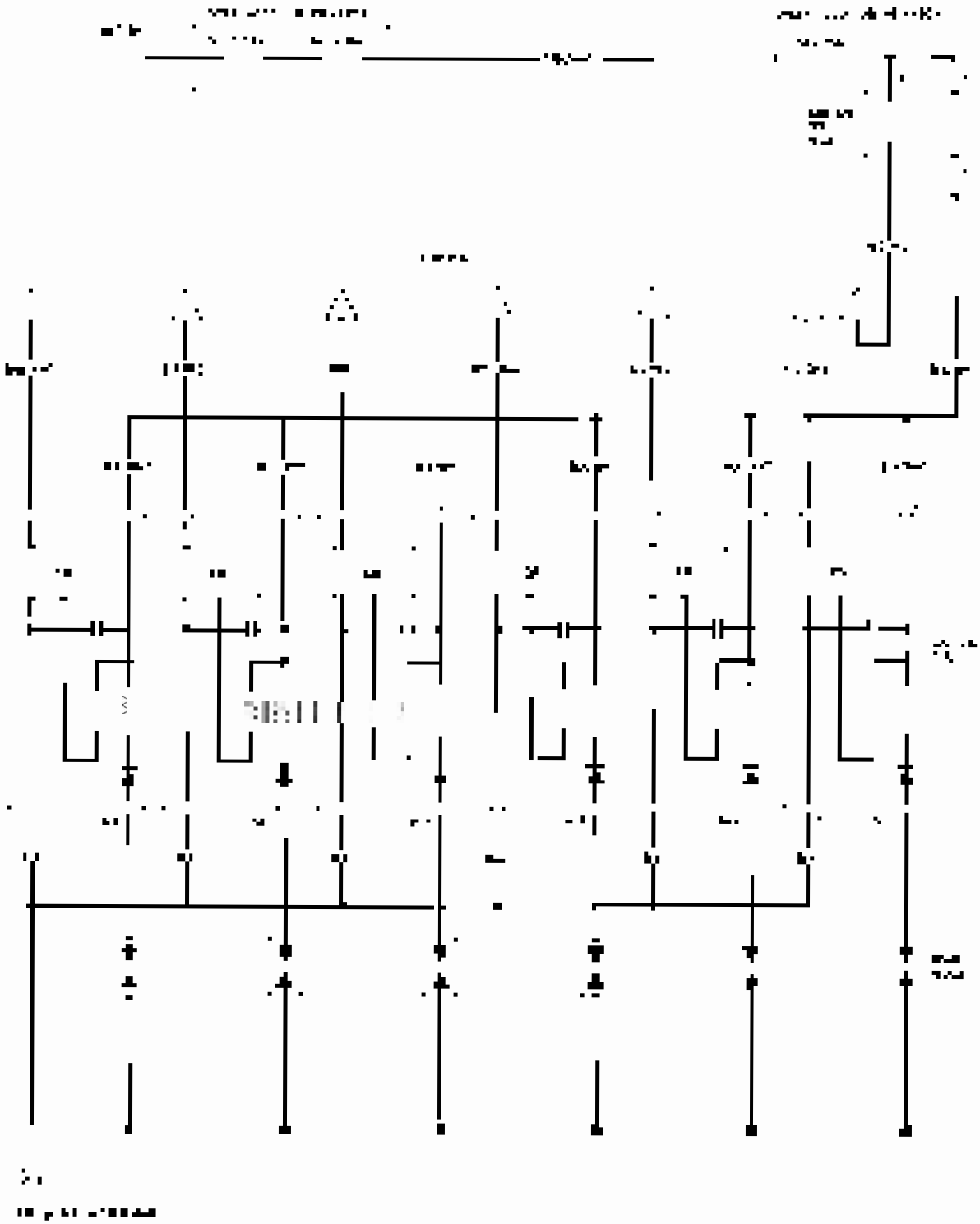
19. [illegible]

20. [illegible]

Component Location Index



Circuit Diagram



Ignition Timing Inspection

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

Ignition Timing
At 1[illegible]
Manual
At 1[illegible]
Park or Neutral

a.

8. [illegible]

9. [illegible]

Ignition Coil Removal/Installation

Ignition Coil Relay Circuit Troubleshooting

[illegible]

[illegible]

YES - Go to step 2.

NO - [illegible]

2. [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

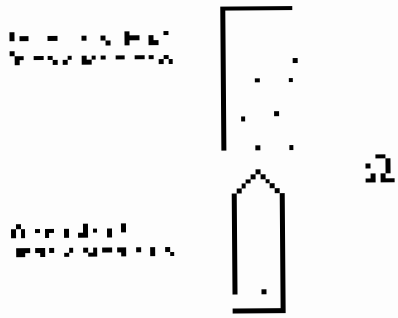
3. [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

4. [illegible]



[illegible]

[illegible]

YES - [illegible]

NO - [illegible]

5. [illegible]

[illegible]

[illegible]

YES - [illegible]

NO - [illegible]

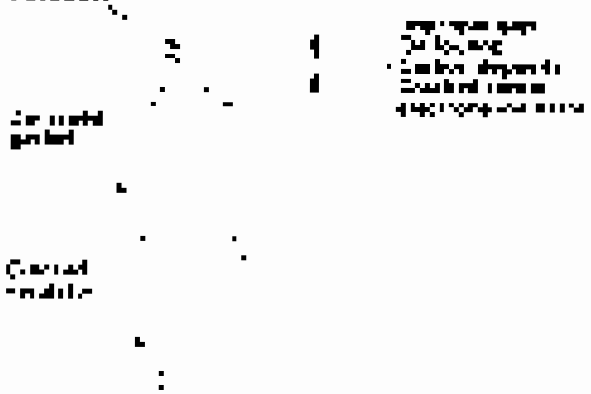
Spark Plug Inspection

1. [illegible]

- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]

- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]

[illegible]

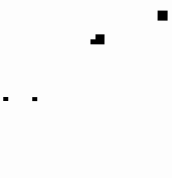


2. [illegible]

   Electrode Gap
   Standard Value: [illegible]

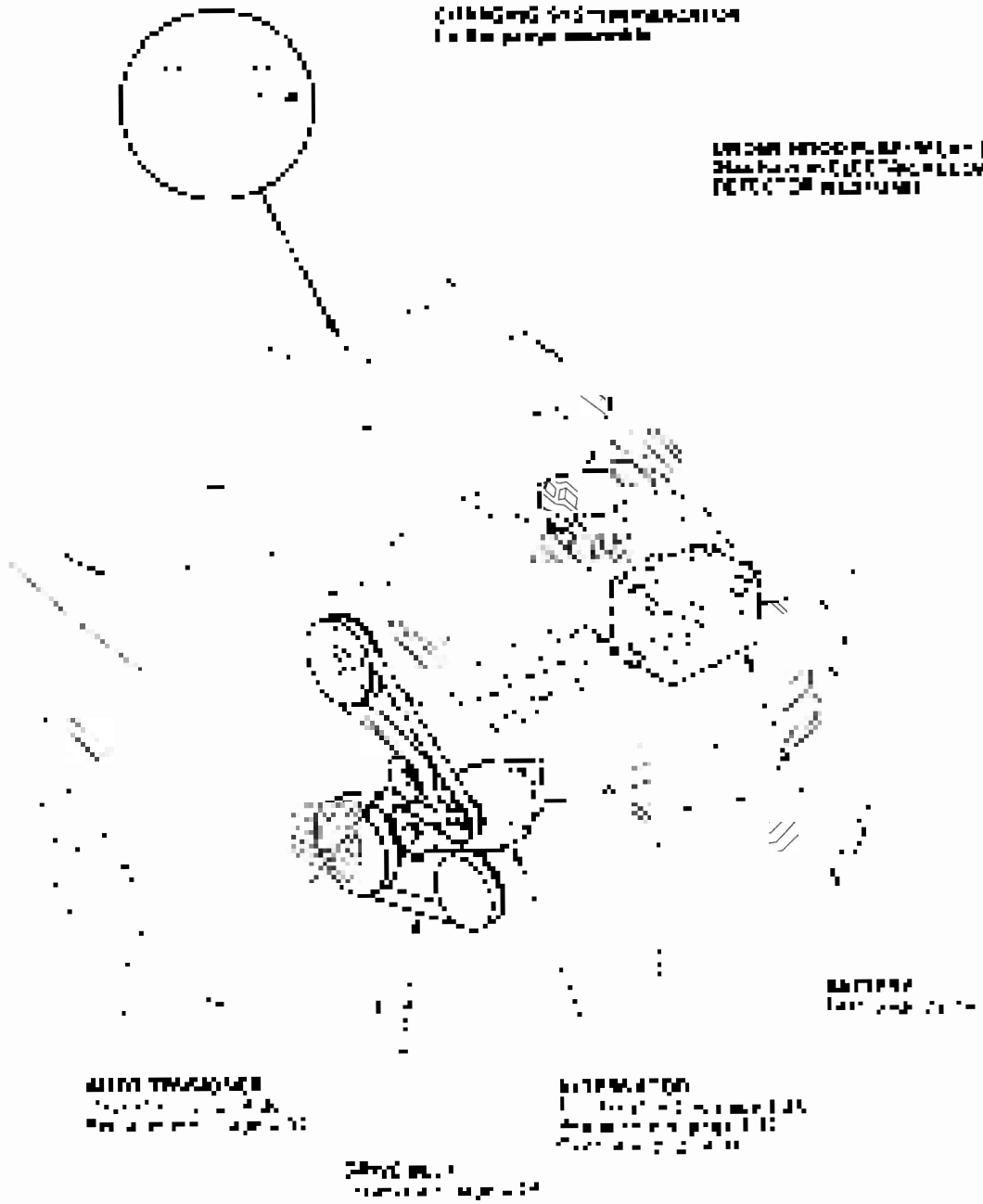
3. [illegible]

   Spark Plugs
   [illegible]



- [illegible]

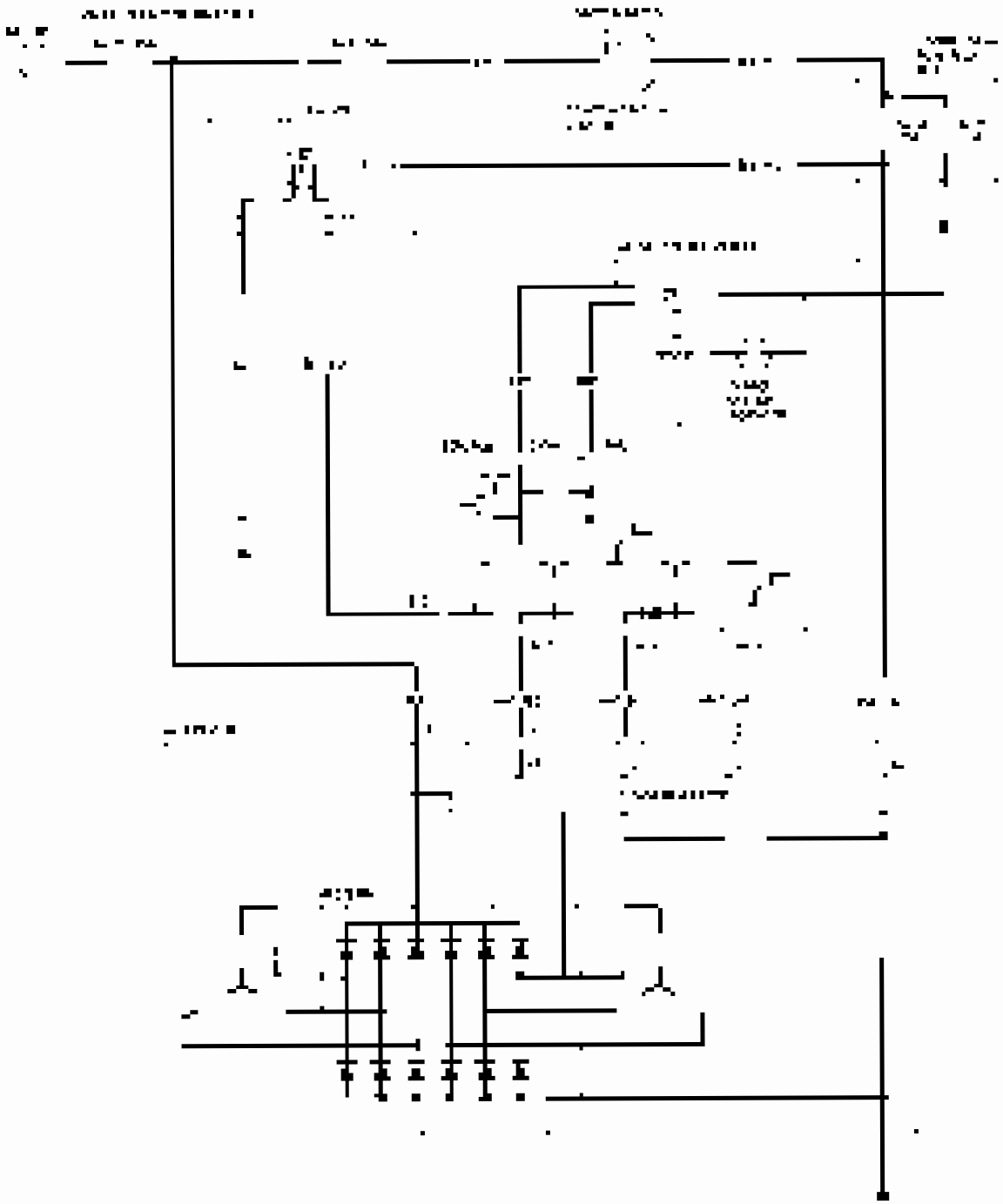
Component Location Index



Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
[illegible]	1 [illegible]	
	2 [illegible]	
	3 [illegible]	
	4 [illegible]	
Battery discharged	1 [illegible]	
	2 [illegible]	
	3 [illegible]	
	4 [illegible]	
	5 [illegible]	
	6 [illegible]	
	7 [illegible]	
	8 [illegible]	
Battery overcharged	1 [illegible]	
	2 [illegible]	
	3 [illegible]	

Circuit Diagram



Charging Circuit Troubleshooting

- Refer to page 22-154
- Charging System Indicator Test
- Alternator Charging Circuit Test
- Alternator Removal/Installation

Charging System Indicator Test

1. Turn the ignition switch ON.

   Does the charging system indicator come on?

   YES - Go to step 2.

   NO - Go to step 3.

2. Start the engine.

   Does the charging system indicator go off?

   YES - Charging system indicator circuit is OK. Go to the Alternator Charging Circuit Test.

   NO - Go to step 3.

3. Disconnect the 3P connector from the alternator. Refer to page 22-154.

   Is there battery voltage at the alternator connector?

   YES - Go to step 4.

   NO - Repair open in the wire between the alternator connector and the battery.

4. Turn the ignition switch ON. Refer to page 22-154.

   Is there battery voltage at the alternator connector?

   YES - Go to step 5.

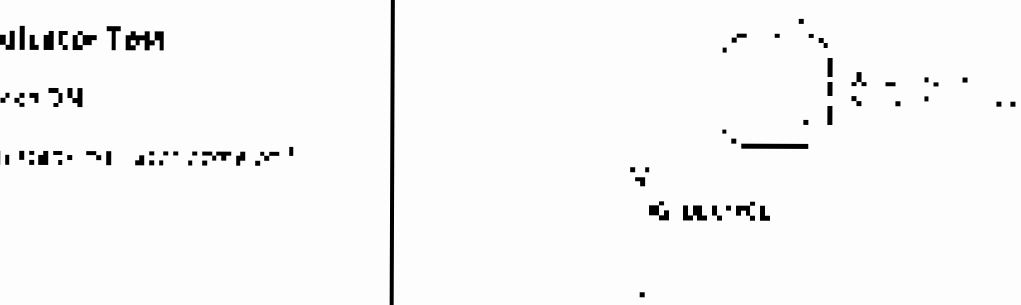
   NO - Repair open in the wire between the alternator connector and the ignition switch.

5. Turn the ignition switch OFF.

6. Disconnect the 3P connector from the ECM.

7. Turn the ignition switch ON.

8. Measure the voltage between the alternator connector terminal and body ground.



   Is there battery voltage?

   YES - Go to step 9.

   NO - Repair open in the wire between the alternator connector and the ECM.

9. Turn the ignition switch OFF. Disconnect the Honda Diagnostic System (HDS) from the data link connector. Check for continuity between the ECM connector terminal and body ground. Do not disconnect the ECM 3P connector.

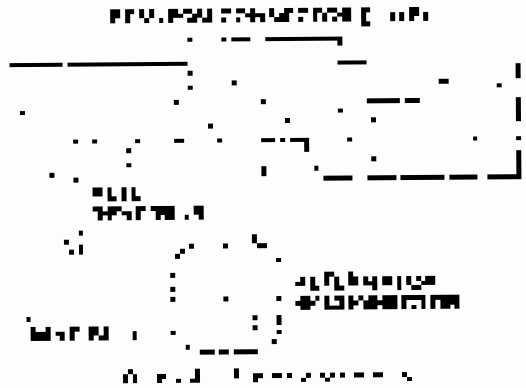
   NOTE: The wire may not be open even if the charging system indicator comes on. Be sure to check the wire for poor connection.

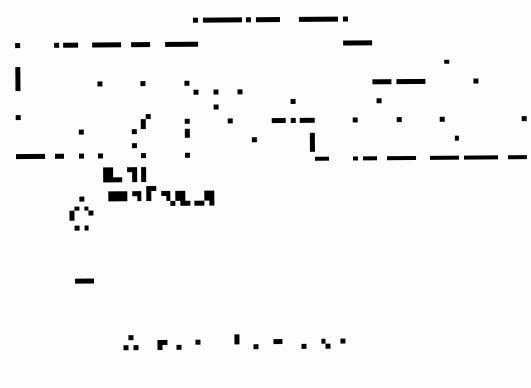
   Is there continuity?

   YES - Go to step 10.

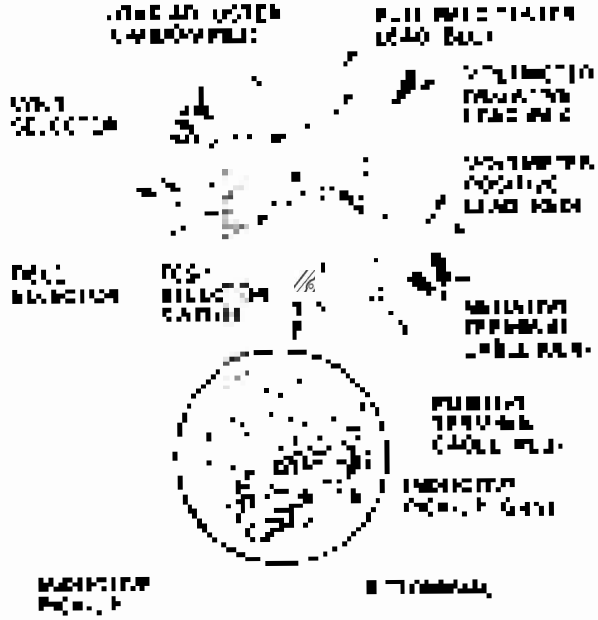
   NO - Repair open in the wire between the ECM connector and body ground.

Charging Circuit Troubleshooting (cont'd)





Alternator and Regulator Circuit Test



5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

9. [illegible]

   [illegible]

   YES - [illegible]

   NOTE: [illegible]

   NO - [illegible]

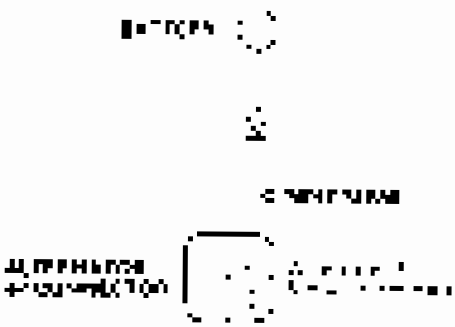
Alternator Control System Test

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]



   [illegible]

   YES - [illegible]

   NO - [illegible]

5. [illegible]

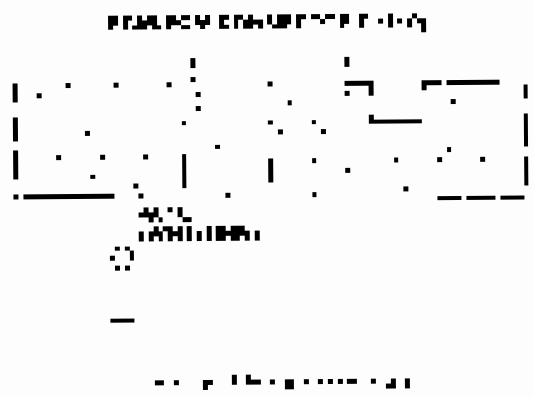
   NOTE: [illegible]

6. [illegible]

cont'd

Charging Circuit Troubleshooting (cont'd)

7.



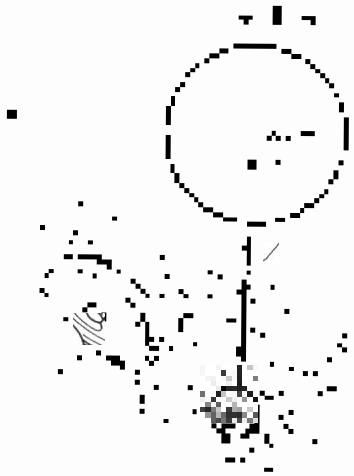
8.

Drive Belt Inspection

1. [illegible]

2. [illegible]

3. [illegible]



Drive Belt Replacement

1. [illegible]

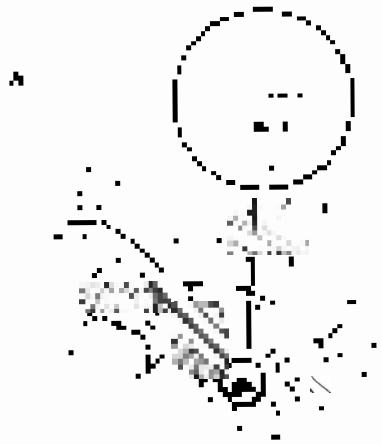
2. [illegible]

3. [illegible]

Drive Belt Auto-tensioner Inspection

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

[illegible]

Drive Belt Auto-tensioner Replacement

1. [illegible]
2. [illegible]
3. [illegible]

[illegible]

4. [illegible]

Tensioner Pulley Replacement

1. [illegible]
2. [illegible]

[illegible]

3. [illegible]

Alternator Replacement

1. [illegible]

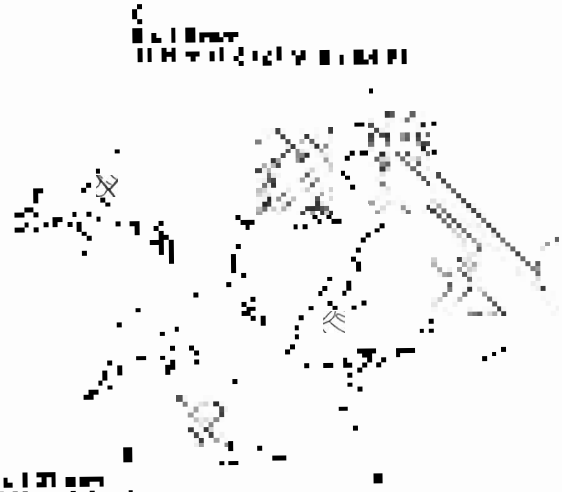
2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

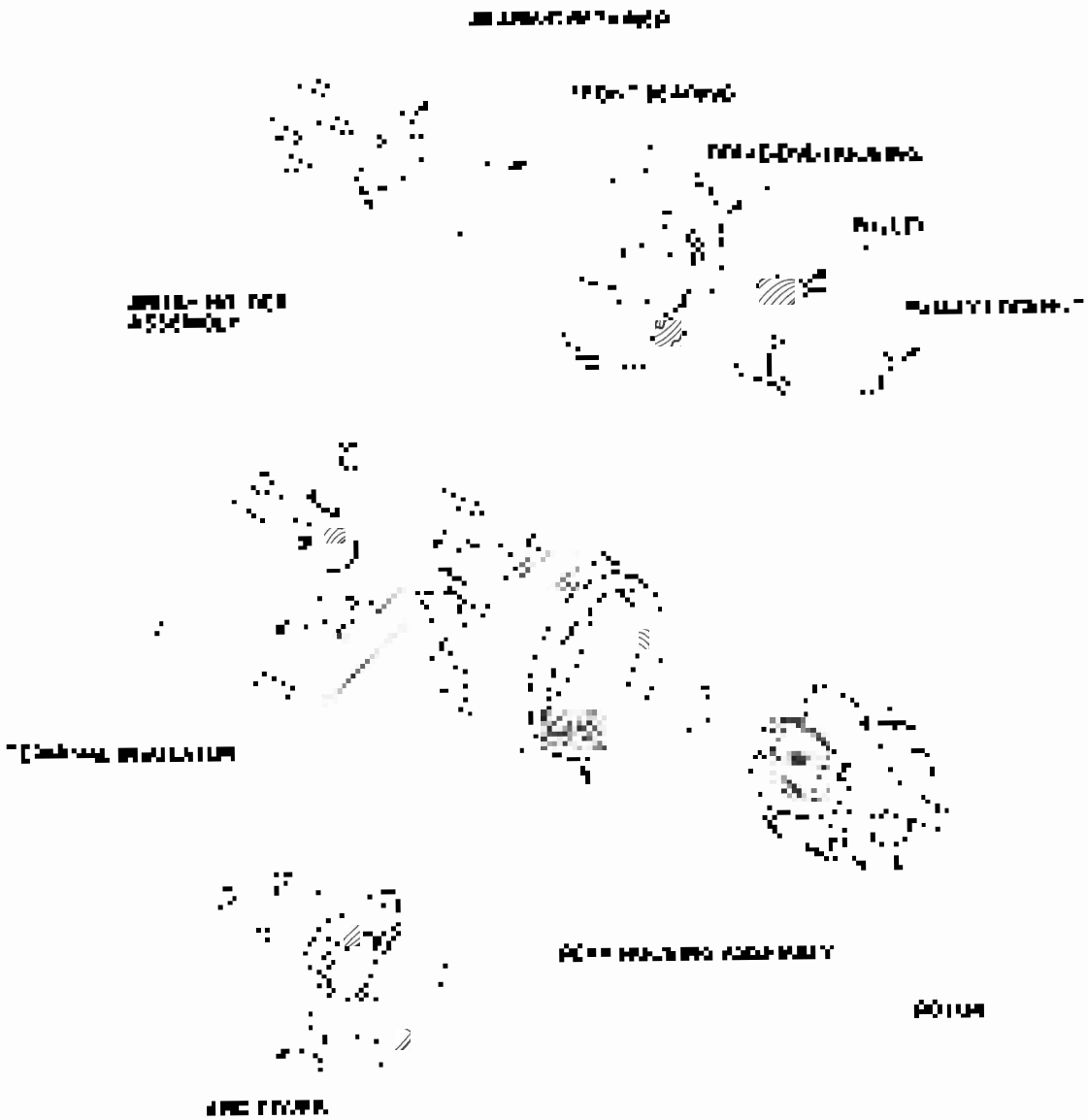
6. [illegible]



7. [illegible]

Alternator Overhaul

Exploded View



Special Tools Required

- [illegible]
- [illegible]

NOTE: [illegible]

1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

Alternator Overhaul (cont'd)

[illegible]

[illegible]

[illegible]

Alternator Stator Inspection

[illegible]

[illegible]

[illegible]

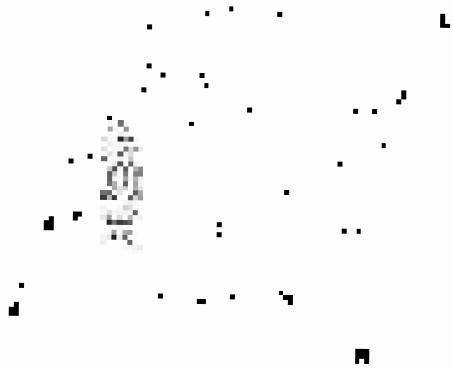
Alternator Stator Coil Resistance
Standard (New): [illegible]
Service Limit: [illegible]

Rotor Slip Ring Test

[illegible]

[illegible]

[illegible]

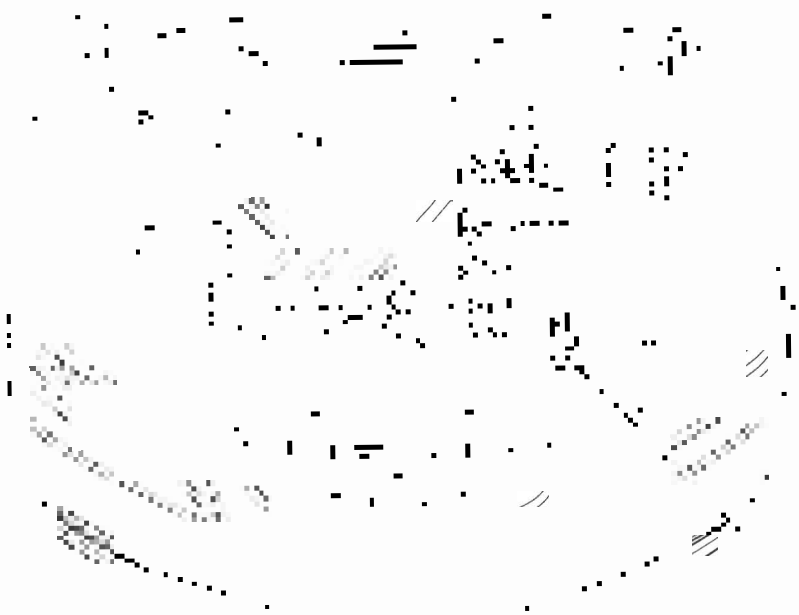


[illegible]

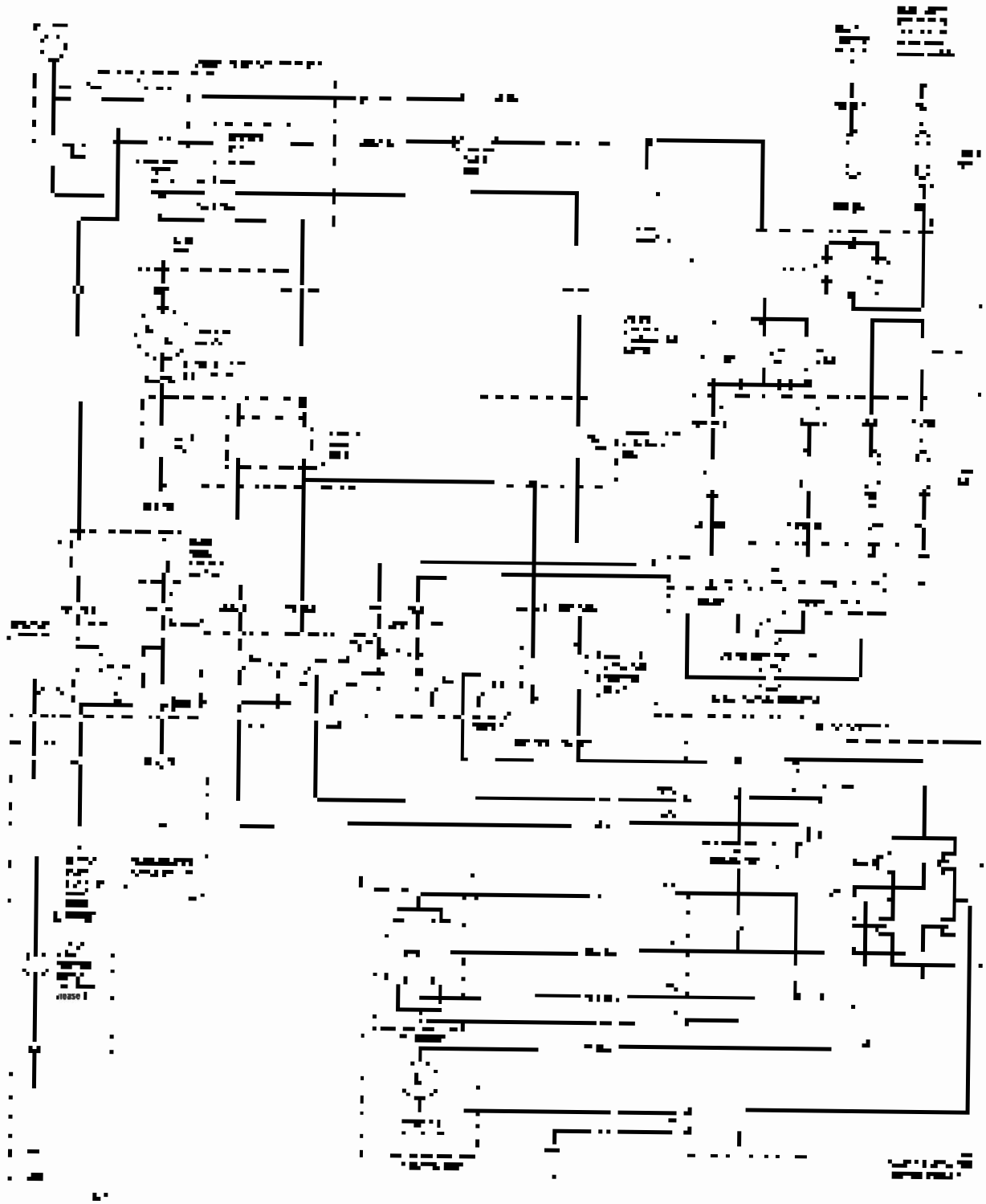
[illegible]

[illegible]

Component Location Index



Circuit Diagram



Symptom Troubleshooting Index

[illegible]
[illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Symptom	Diagnostic procedure	Also may be
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	

Cruise Control Input Test

Connect [illegible] to Assembly Engine DTC Breakout Box and [illegible] DLC.

2. Key On, Engine Off, Cruise Control Switch in OFF position.

3. [illegible]

4. [illegible]

5. Perform the following tests. After each test, record the value displayed on the PCM Data Stream.

Signal to be tested	Instrument	Expected Result	Possible Causes if Result is Incorrect
[illegible]	[illegible]	[illegible]	• [illegible] • [illegible] • [illegible] • [illegible]
[illegible]	[illegible]	[illegible]	• [illegible] • [illegible] • [illegible] • [illegible]
[illegible]	[illegible]	[illegible]	• [illegible] • [illegible] • [illegible] • [illegible]
[illegible]	[illegible]	[illegible]	• [illegible] • [illegible] • [illegible] • [illegible]
[illegible]	[illegible]	[illegible]	• [illegible] • [illegible] • [illegible]

[illegible]

Cruise Control Input Test (cont'd)

Signal Source	Instruction	Process Determined	Possible Faulted Component
[illegible]	[illegible]	[illegible]	• [illegible]
[illegible]	Cancel switch [illegible]	[illegible]	• [illegible]
[illegible]	[illegible]	[illegible]	• [illegible]

Cruise Control Combination Switch Test/Replacement

1. [illegible]
2. [illegible]

3. Check for continuity between the terminals of the combination switch according to the table.
   - If there is no continuity between any of the terminals in any of the switch positions, replace the combination switch.
   - If there is continuity between terminals in any of the switch positions, replace the combination switch.

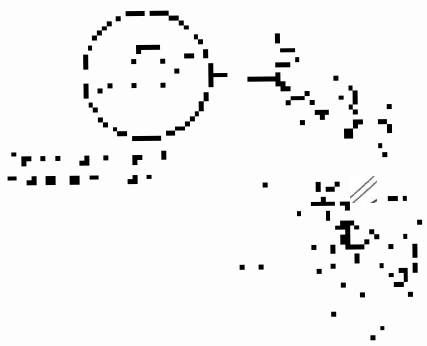
Terminals / Position	1	2	3	4	5
[illegible]					
[illegible]					
[illegible]					
[illegible]					
[illegible]					

Cruise Control Combination Switch Illumination Bulb Replacement

1. [illegible]
2. [illegible]

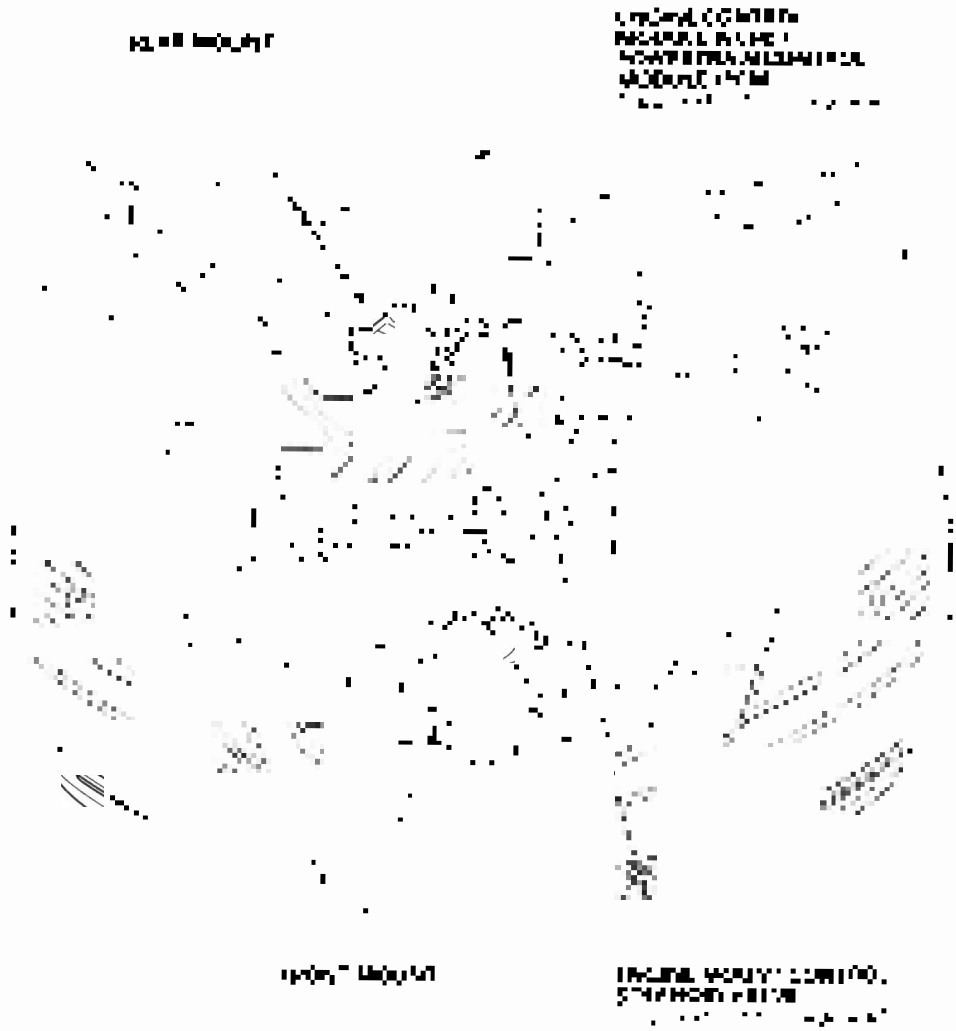
3. [illegible]

Clutch Pedal Position Switch Test

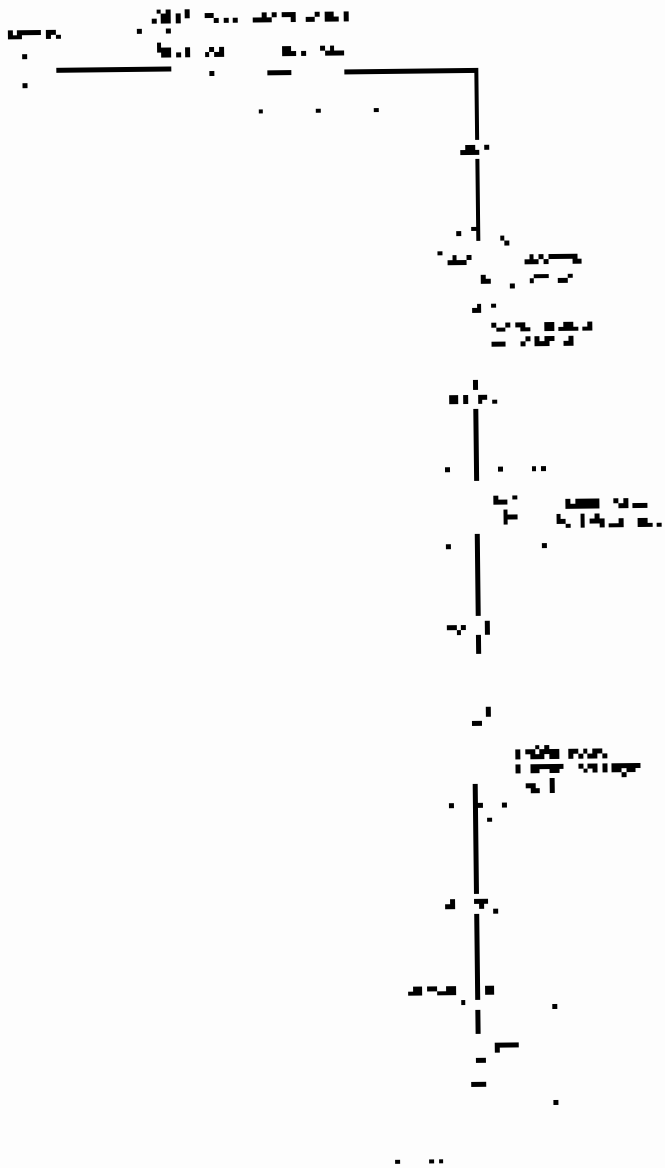


	Terminals		
Clutch Pedal Position Switch	1	2	3
Released			
Depressed			

Component Location Index



Circuit Diagram



[illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

7. [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

Troubleshooting (cont'd)

A. [illegible]

9. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

B. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

11 [illegible]

[illegible]

NO [illegible]

YES [illegible]

12 [illegible]

A

[illegible]

[illegible]

YES [illegible]

NO [illegible]

Engine Mechanical

Engine Removal

Special Tools Required

- [illegible]
- [illegible]

NOTE

- [illegible]

1. [illegible]

2. [illegible]

NOTE [illegible]

4. [illegible]

4. [illegible]

5. Remove the [illegible]

6. Disconnect [illegible] (page [illegible])

7. Disconnect the [illegible] from the battery (Refer to Section [illegible])

8. Remove the [illegible]

9. Remove the [illegible] (page [illegible])

10. Remove the [illegible] (page [illegible])

11. Remove the [illegible]

12. Remove the [illegible] (Refer to Section [illegible])

13. Remove the [illegible] and [illegible] from the [illegible] (Refer to Section [illegible])

14. Remove the [illegible] (Refer to Section [illegible])

[illegible]

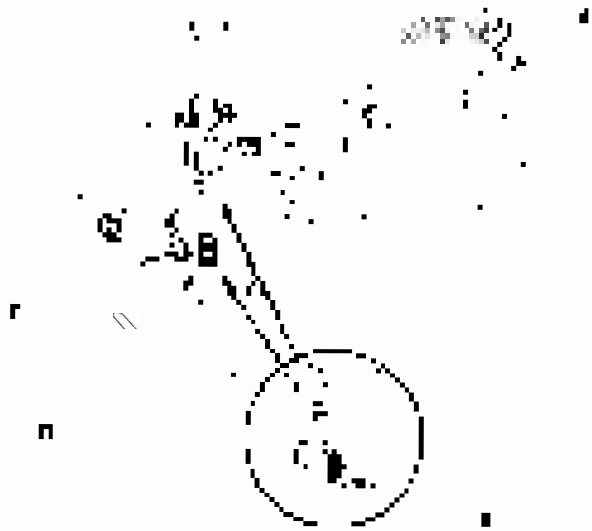
Engine Removal (cont'd)

9. [illegible]

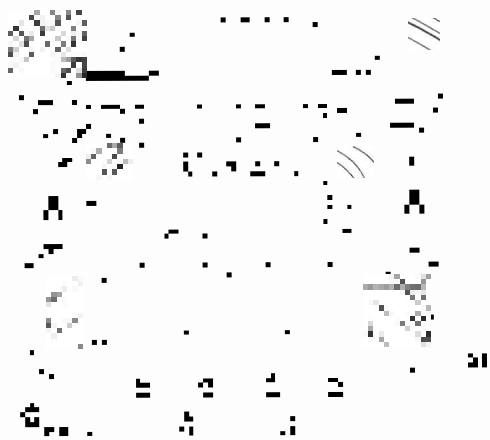
10. [illegible]

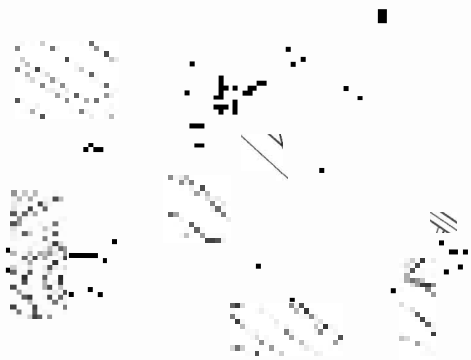
11. [illegible]

12. [illegible]

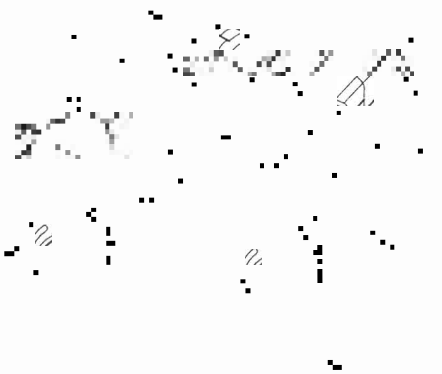


Engine Removal (cont'd)

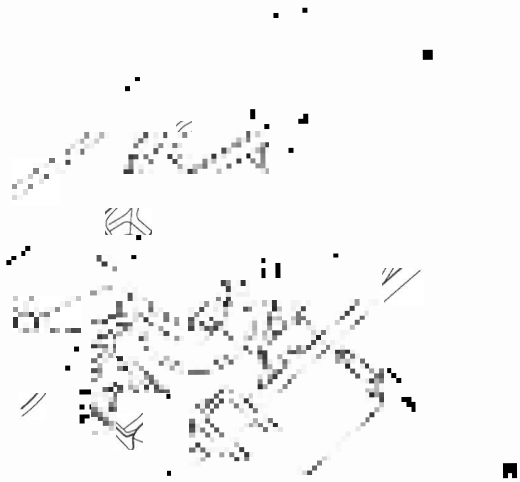




Engine Removal (cont'd)

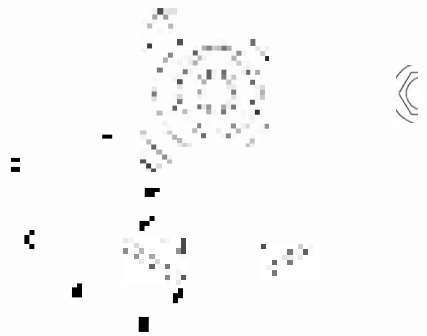


Engine Removal (cont'd)



a. [illegible]

b. [illegible]



c. [illegible]

d. [illegible]

e. [illegible]

f. [illegible]

g. [illegible]

h. [illegible]

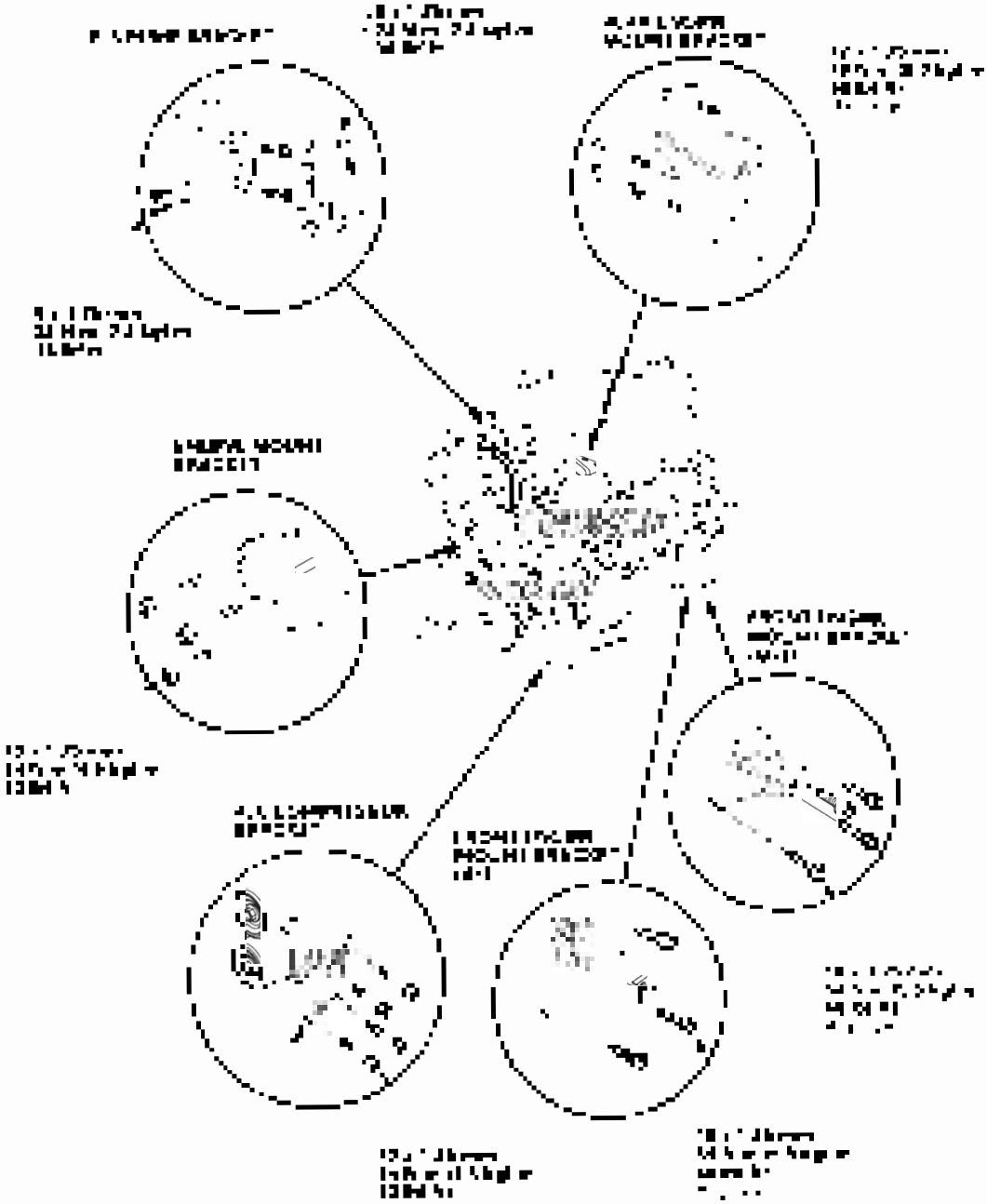
i. [illegible]

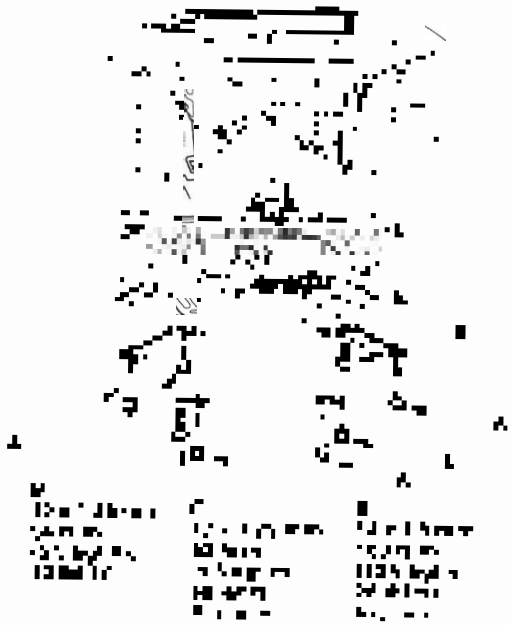
j. [illegible]

k. [illegible]

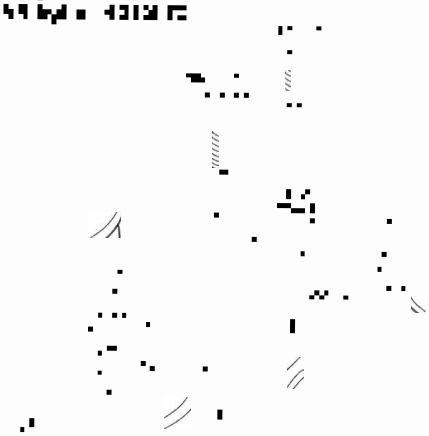
Engine Installation

Special Tools Required





Engine Installation (cont'd)



Engine Installation (cont'd)

11. Install the [illegible] engine mounting bracket bolts, then tighten them to the specified torque in the sequence shown:

MT:

AT:

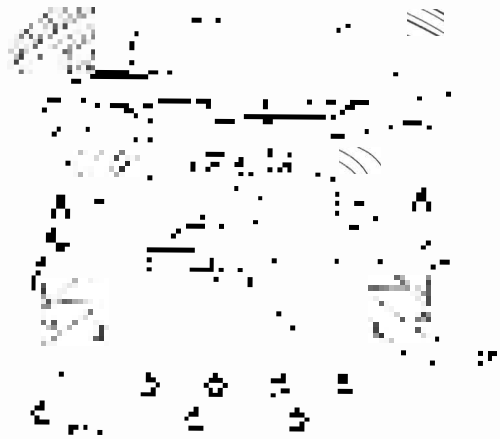
12. Install the engine stiffener (A).

13. Install the engine [illegible]

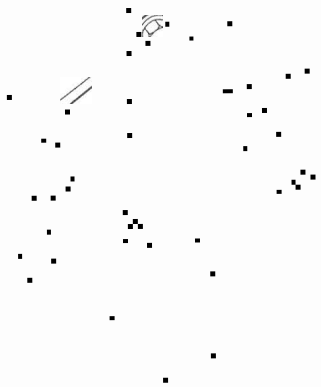
20. Connect the [illegible] to the engine [illegible]

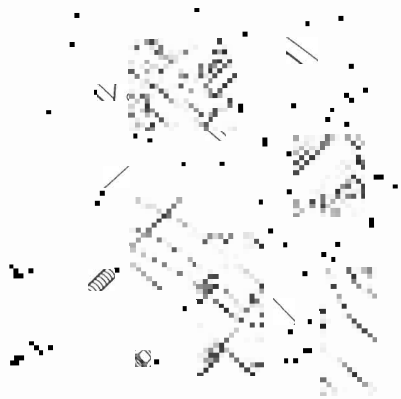
21. Connect the power steering [illegible] to the [illegible]

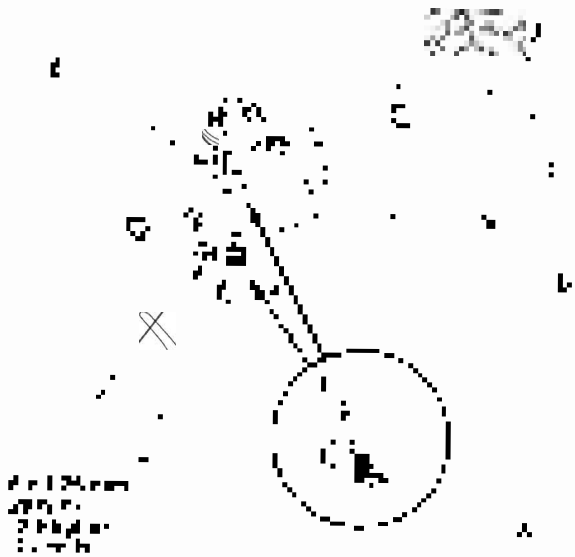
22. Install the [illegible] bracket.

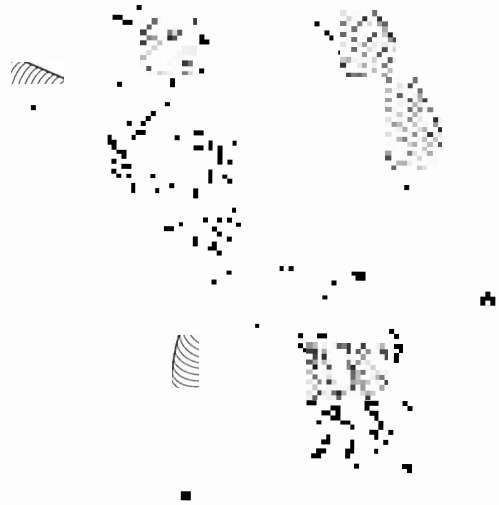


Engine Installation (cont'd)





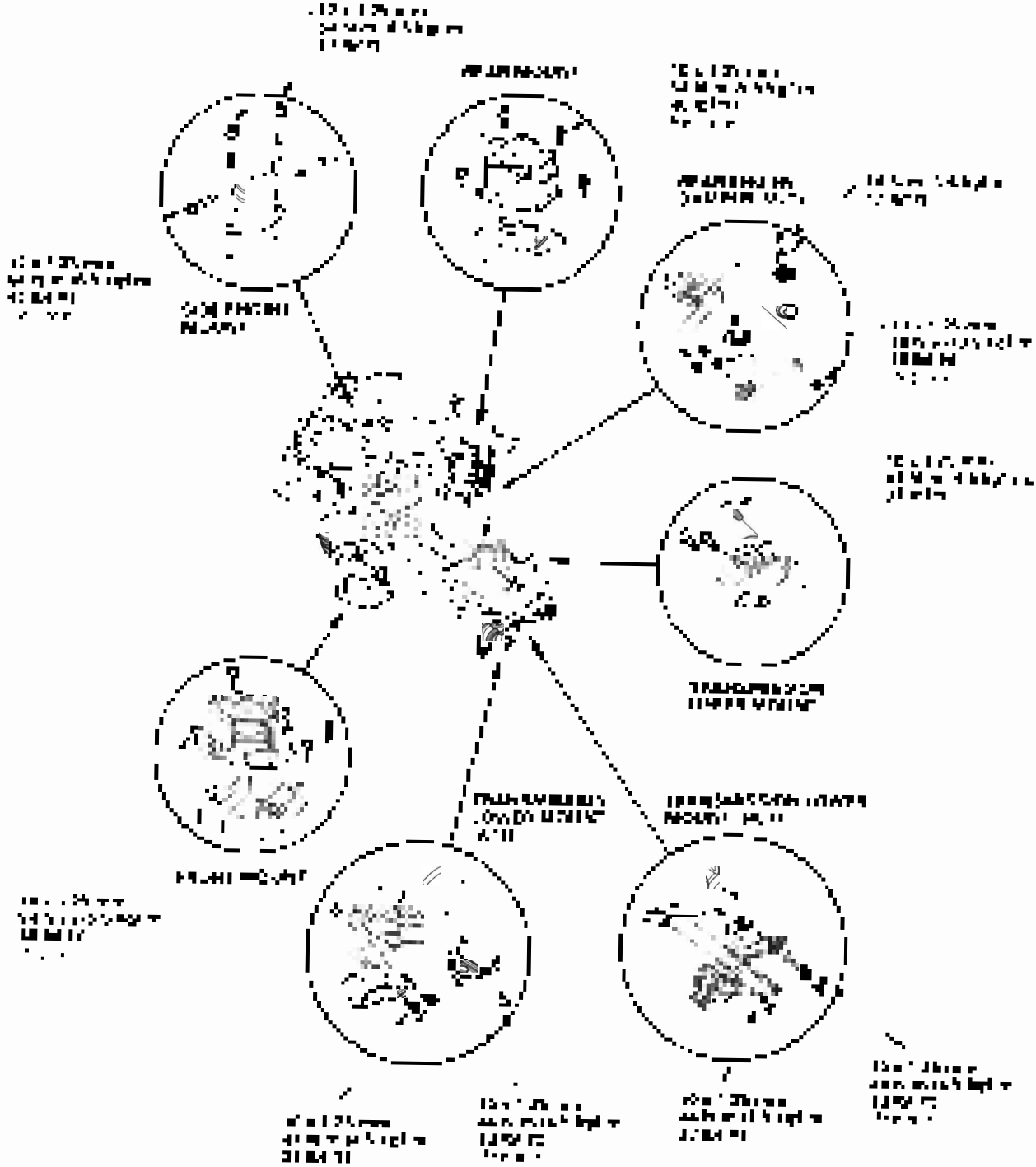




Engine Installation (cont'd)

Engine Installation (cont'd)

Engine Mount Replacement

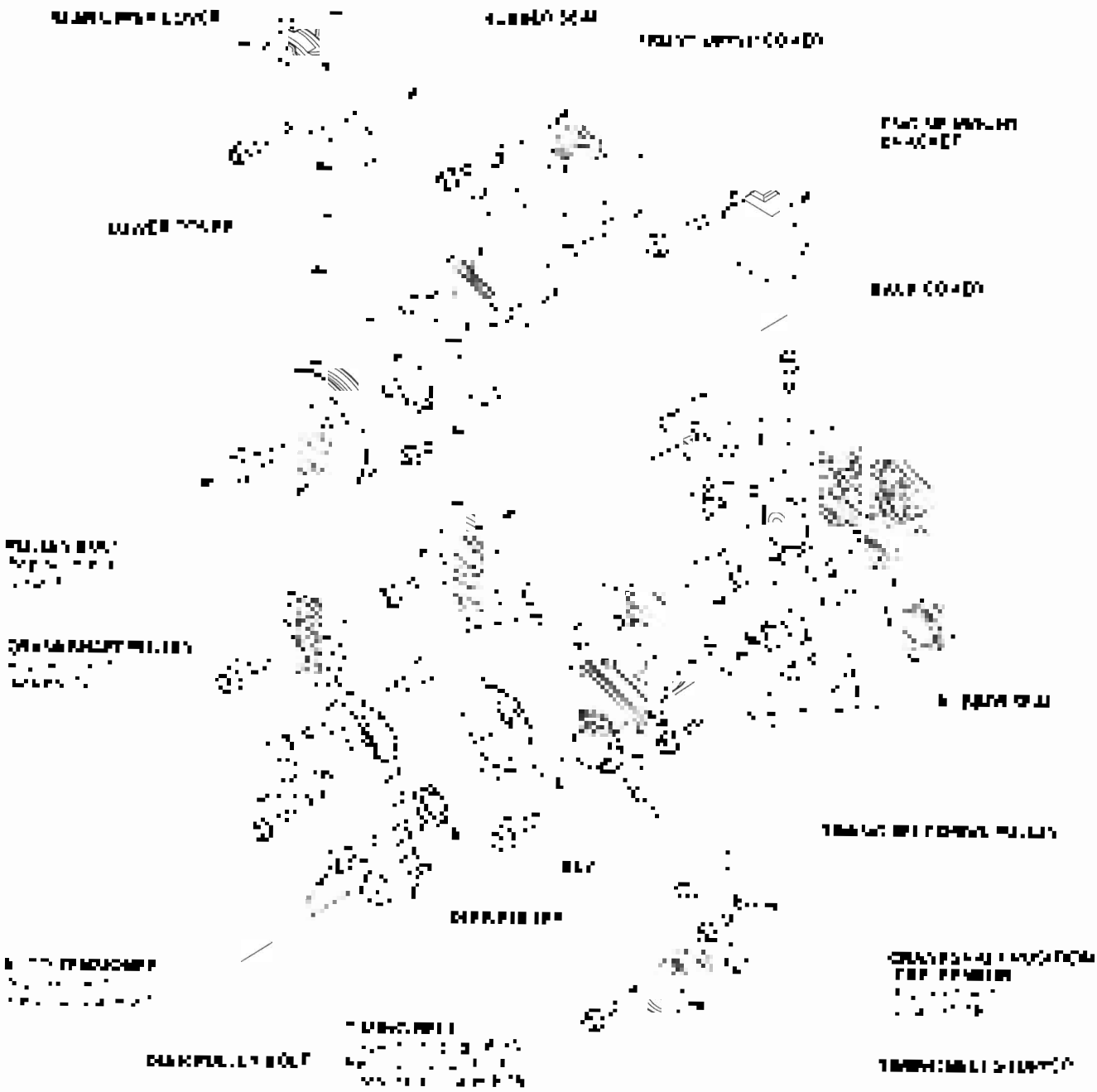


Engine Mechanical

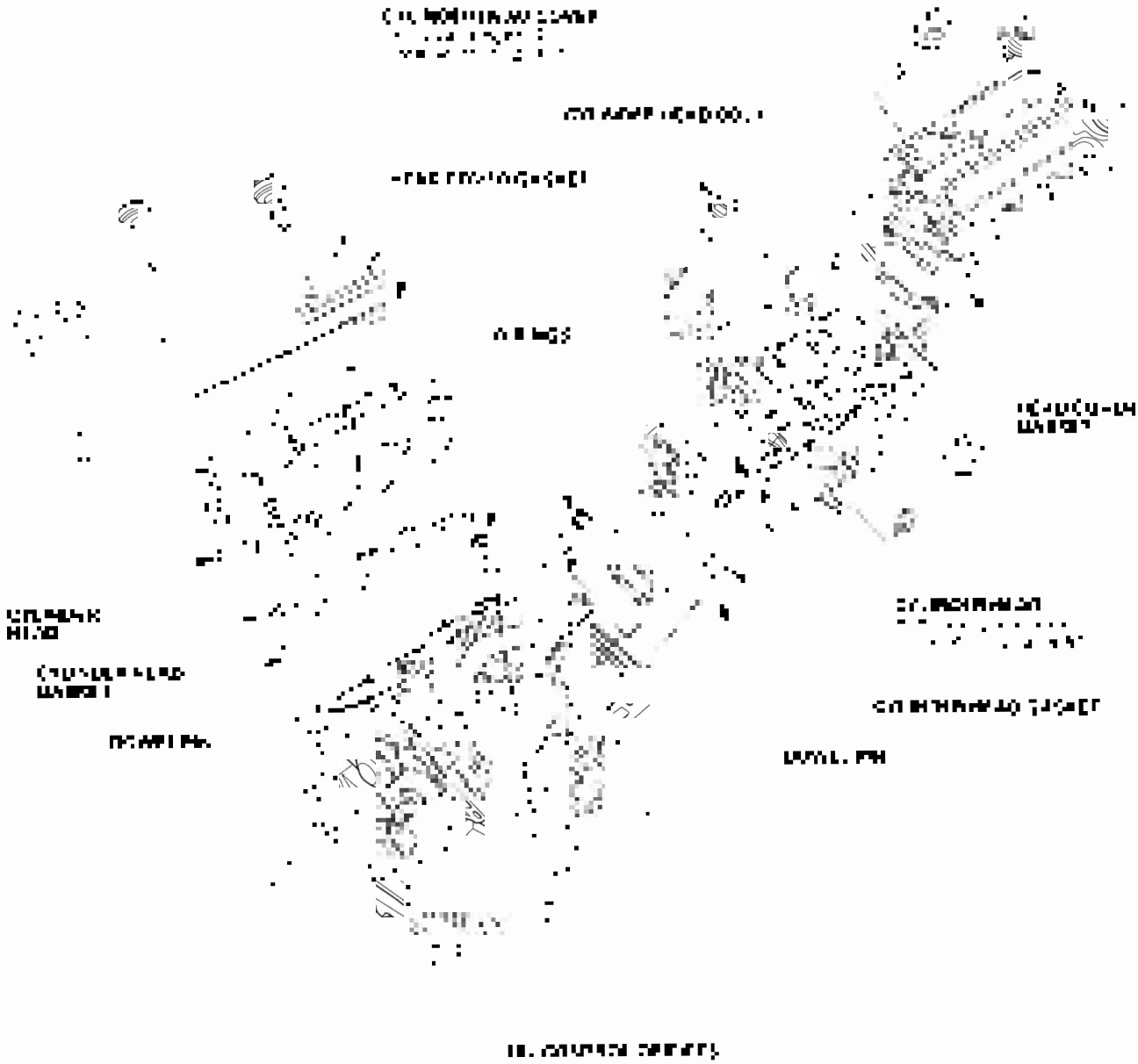
Cylinder Head

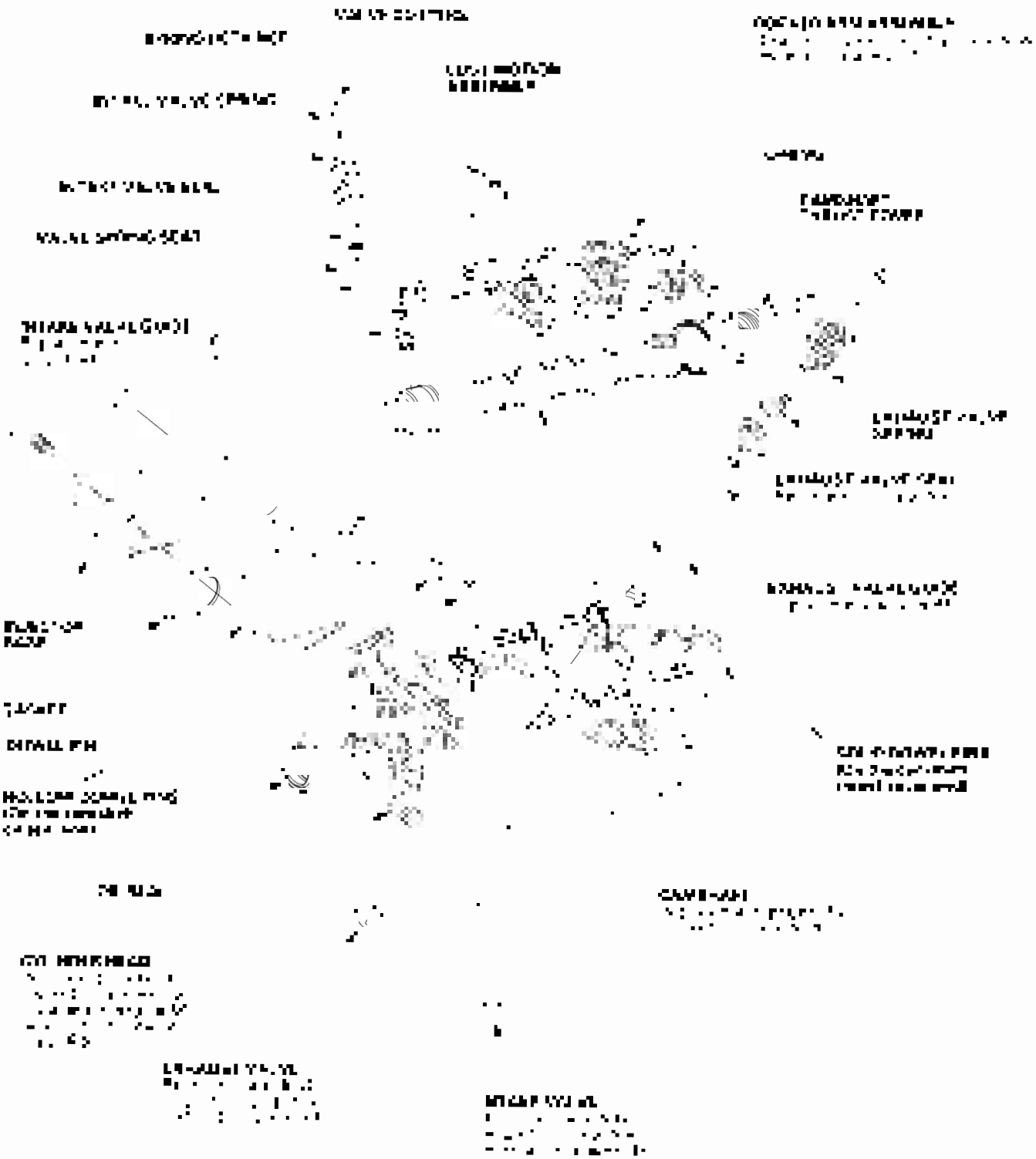
Special Tools

Ref No.	Tool Number	Description	Qty
	[illegible]	[illegible]	
•	[illegible]	[illegible]	
	[illegible]	[illegible]	•
•	[illegible]	[illegible]	•
•	[illegible]	[illegible]	•
•	[illegible]	[illegible]	•
	[illegible]	[illegible]	1
•	[illegible]	[illegible]	1
•	[illegible]	[illegible]	1
	[illegible]	[illegible]	1



Component Location Index (cont'd)





Engine Compression Inspection

NOTE: Abnormal engine oil consumption and poor performance at low speeds may be caused by [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]

8. [illegible]

   Compression Pressure
   [illegible]

9. [illegible]

   Maximum variation
   [illegible]

10. [illegible]
    - [illegible]
    - [illegible]
    - [illegible]
    - [illegible]

11. [illegible]

VTEC Rocker Arm Test

Special Tools Required
- VTEC oil pressure switch wrench, 27 mm
- VTEC oil pressure test gauge, 10 kg/cm²
- Original equipment manufacturer (OEM) equivalent

1. [illegible]

2. Remove the [illegible]

3. [illegible]

4. [illegible]

   - [illegible]
   - [illegible]

A

B

5. [illegible]

6. [illegible]

7. [illegible]

FRONT

REAR

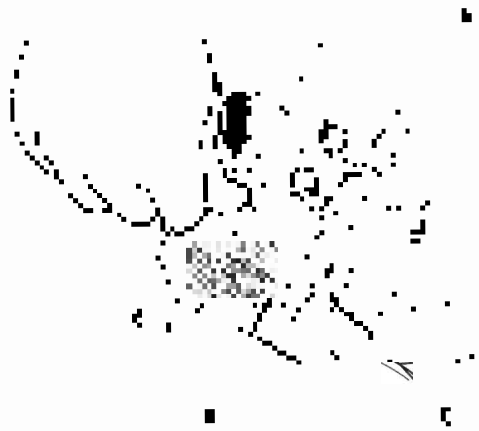
8. [illegible]

Specified Air Pressure
[illegible]

[illegible]

VTEC Rocker Arm Test (cont'd)

5. [illegible]



10. [illegible]

11. [illegible]

12. [illegible]

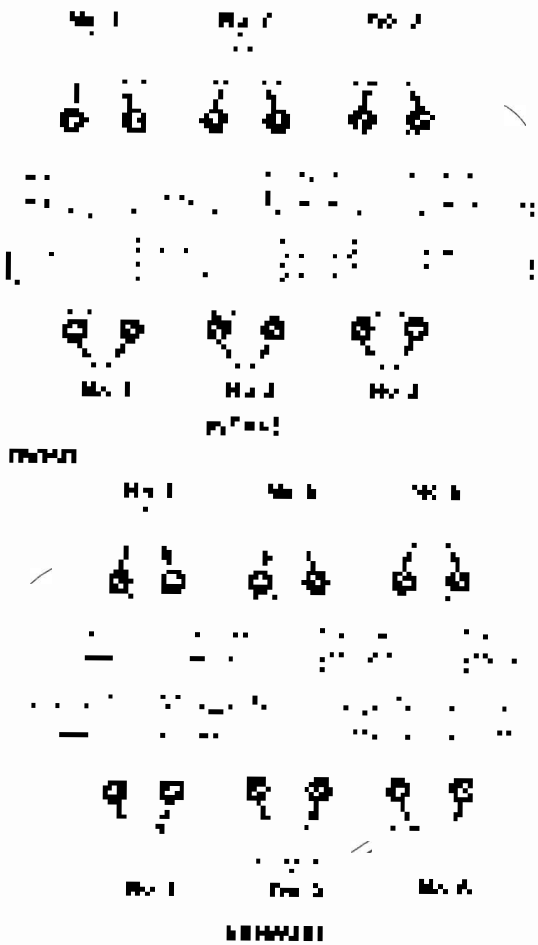
Valve Clearance Adjustment

NOTE: Adjust the valve clearance when the engine is cold [illegible]

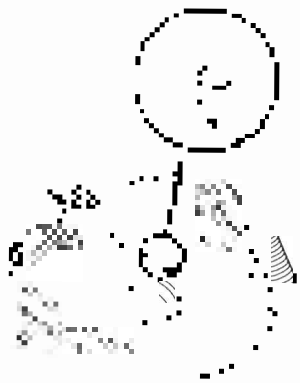
1. [illegible]

2. [illegible]

3. [illegible]



Valve Clearance Adjustment (cont'd)



Crankshaft Pulley Removal and Installation

Special Tools Required

Removal

1. Remove the [illegible]
2. Remove the [illegible]

3. Remove the [illegible] (page 2-9)
4. Hold the pulley with the special tool, and loosen the bolt/nut.

5. Remove the bolt/nut and the pulley. Discard the O-ring.

Installation

1. [illegible]

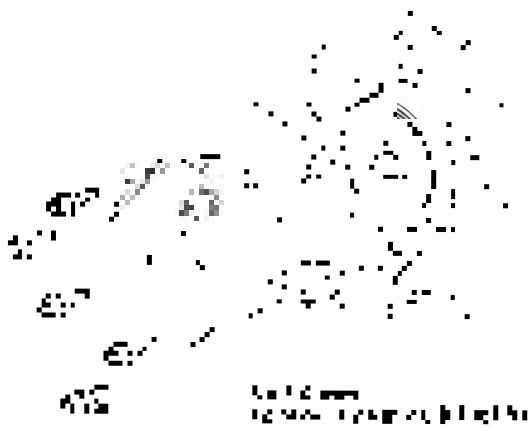
2. Install the [illegible]

3. Install the [illegible] (page 2-9)
4. Install the [illegible]
5. Install the [illegible]

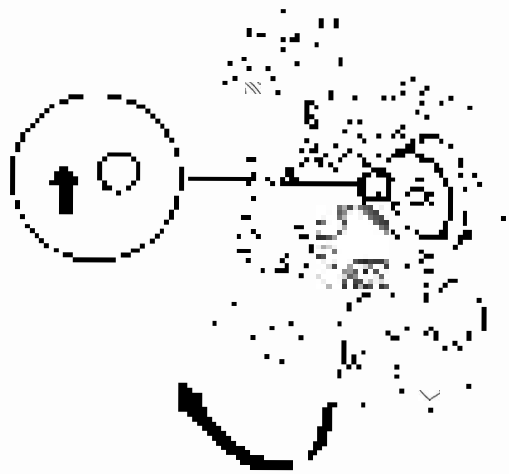
Timing Belt Inspection

1. [illegible]

2. [illegible]



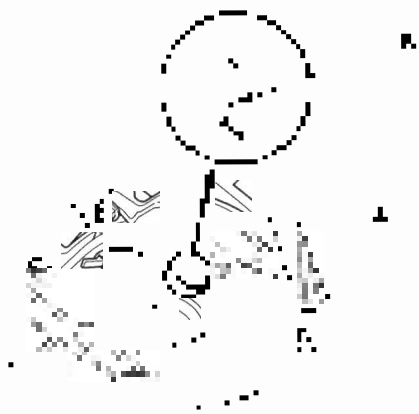
3. Inspect the timing belt for cracks, oil or coolant soaking, fraying, missing teeth, or excessive wear. Replace the timing belt if any of these conditions are found.



Timing Belt Removal

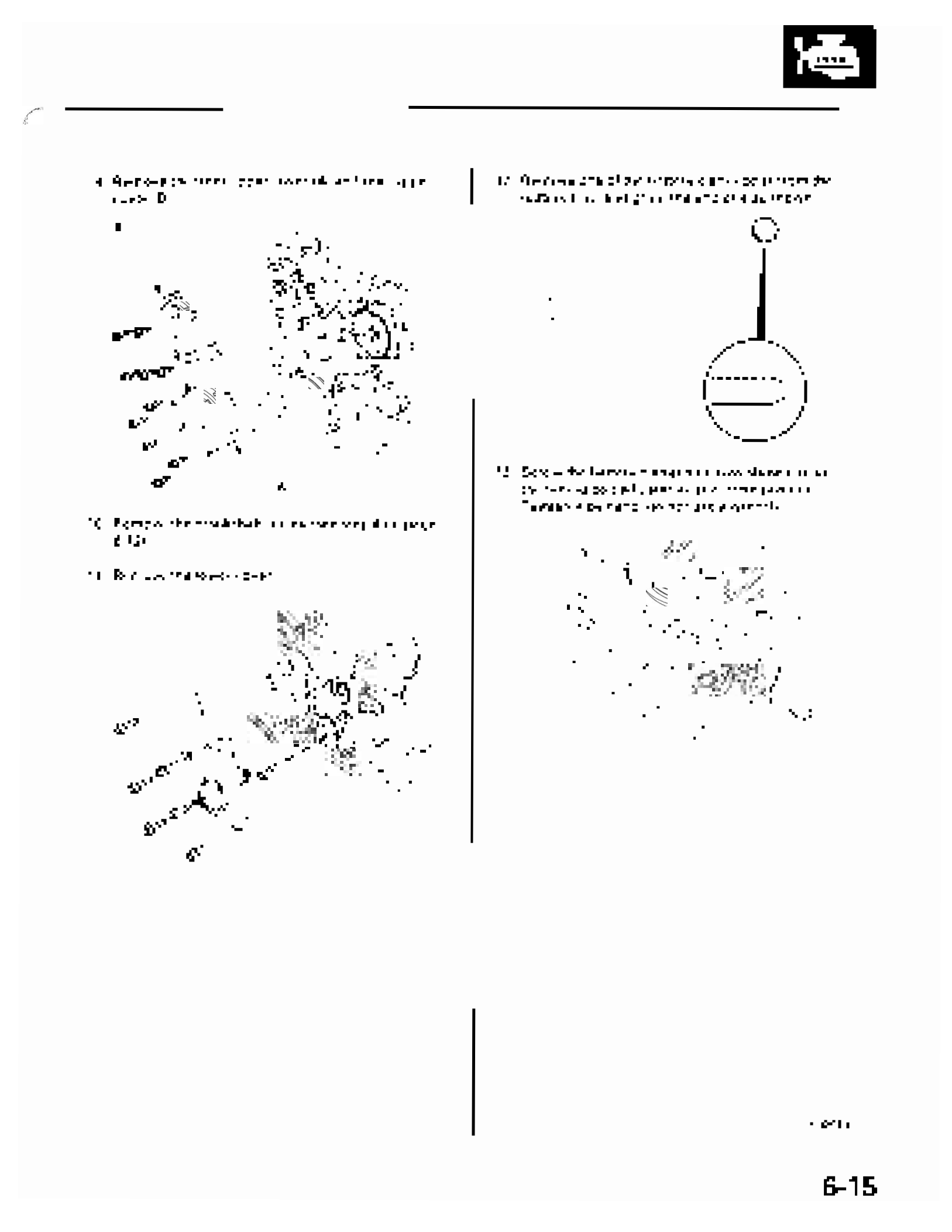
1. [illegible]
2. [illegible]

3. [illegible]



4. [illegible]
5. [illegible]

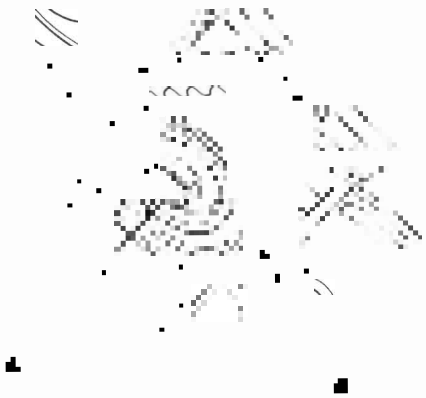
6. [illegible]
7. [illegible]
8. [illegible]



Timing Belt Removal (cont'd)

1. [illegible]

2. [illegible]



Timing Belt Installation

[illegible]

New Belt

1. [illegible]
2. [illegible]

3. [illegible]

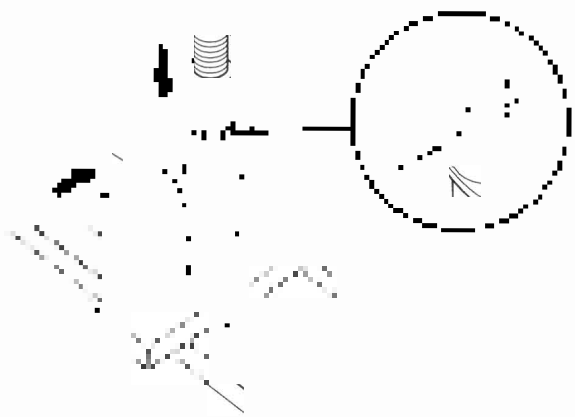
FRONT

REAR

4. [illegible]

5. [illegible]

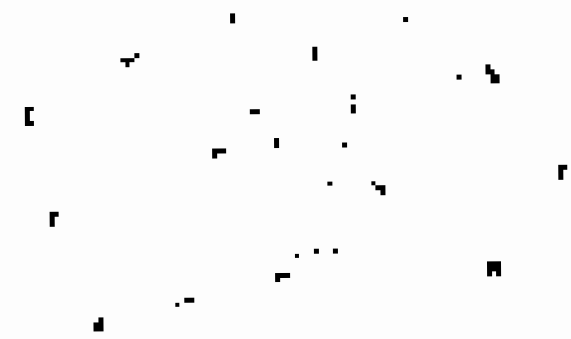
6. [illegible]

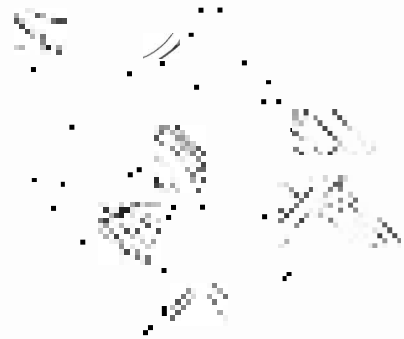


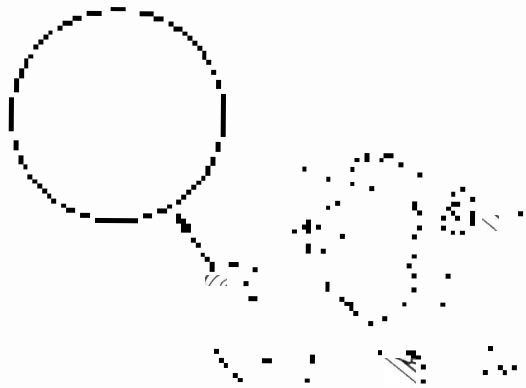
7. [illegible]

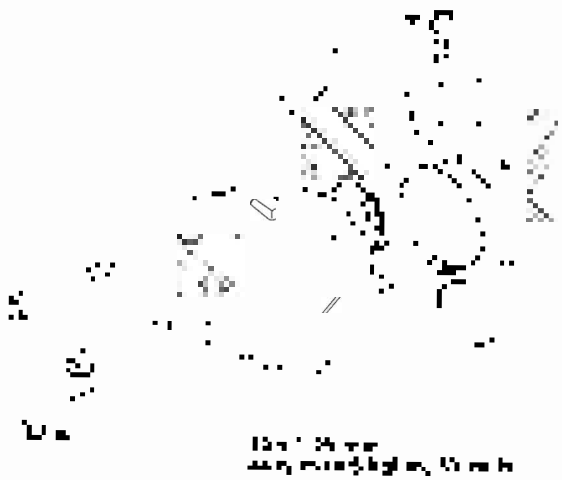
NOTE: [illegible]

Timing Belt Installation (cont'd)

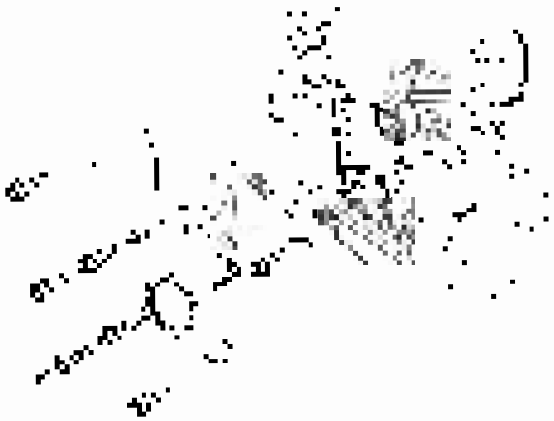


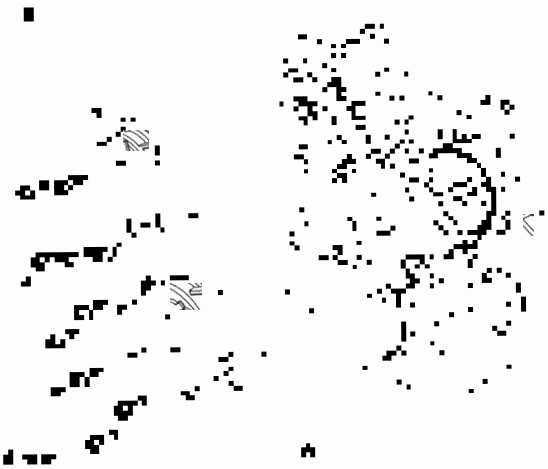






Timing Belt Installation (cont'd)





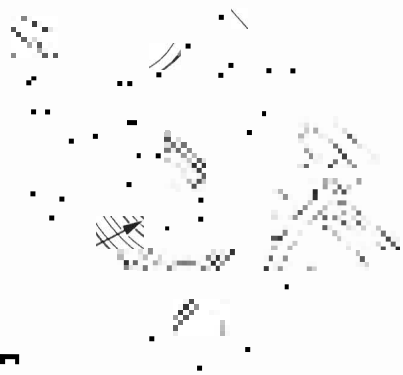
Timing Belt Installation (cont'd)

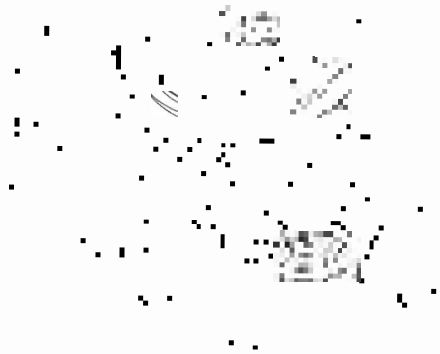
Used Belt

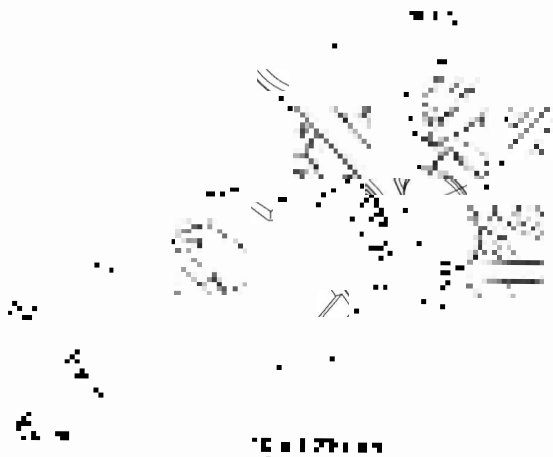
[illegible]

1. [illegible]
2. [illegible]

[illegible]







Timing Belt Installation (cont'd)

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

13. [illegible]

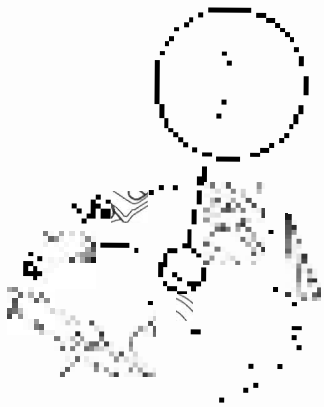
14. [illegible]

15. [illegible]

[illegible]

- [illegible]
- [illegible]

[illegible]



[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

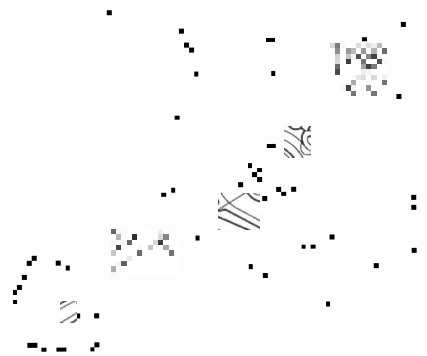
[illegible]

[illegible]

- [illegible]

Timing Belt Drive Pulley Replacement

1. [illegible]
2. [illegible]
3. [illegible]



4. [illegible]
5. [illegible]
6. [illegible]

Timing Belt Adjuster Replacement

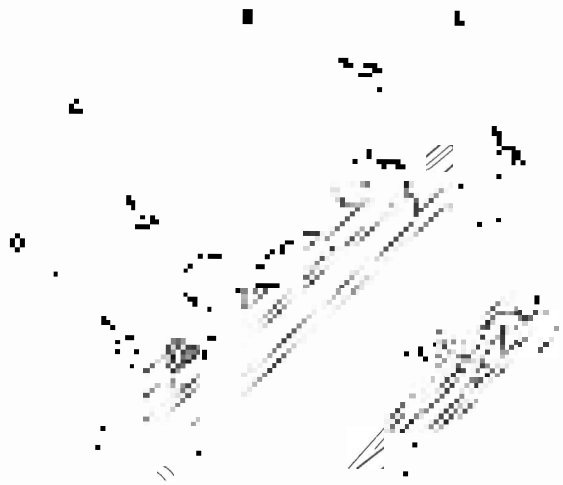
1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]
5. [illegible]

Cylinder Head Cover Removal

1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]



5. [illegible]
6. [illegible]
7. [illegible]

FRONT

REAR

Cylinder Head Cover Installation

1. [illegible]
2. [illegible]

FRONT

REAR

3. [illegible]
4. [illegible]
5. [illegible]

6. [illegible]

7. [illegible]
8. [illegible]

Cylinder Head Removal

3. Typical engine parts that must be removed to gain access to the cylinder heads:

4. Install the engine support bracket (page 6-5).

5. Drain the engine coolant (page 6-6).

NOTE

- Use fender covers to avoid damaging painted surfaces.
- Remove all the engine harness clamps and connectors that will interfere with removal of the cylinder heads.
- Label all hoses before disconnecting them.
- Make sure no engine harness is routed over the cylinder heads.

6. Disconnect the battery ground cable.

7. Remove the air cleaner housing (page 6-8).

8. Remove the throttle body (page 6-10).

9. Remove the upper intake manifold (page 6-11).

10. Remove the lower intake manifold (page 6-12).

11. Remove the exhaust manifold (page 6-13).

12. Remove the power steering pump (page 6-14).

Cylinder Head Removal (cont'd)

A. [illegible]

◆ [illegible]

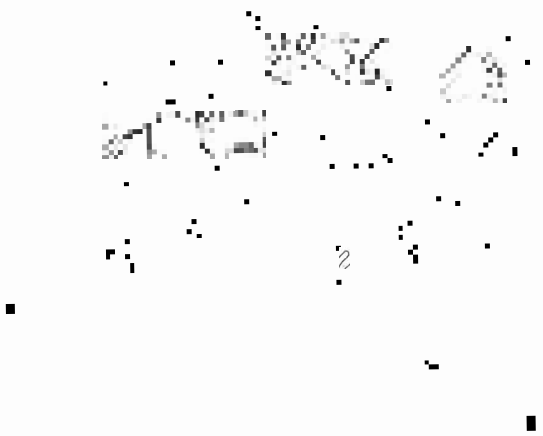
10. [illegible]

11. [illegible]

12. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

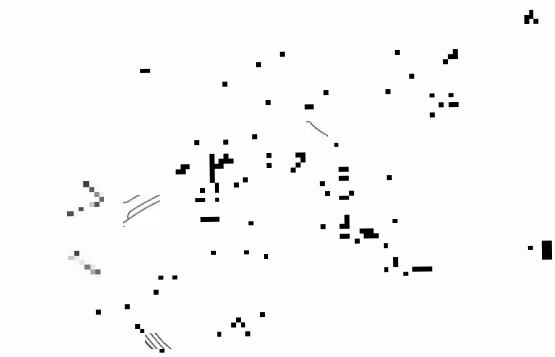
13. [illegible]

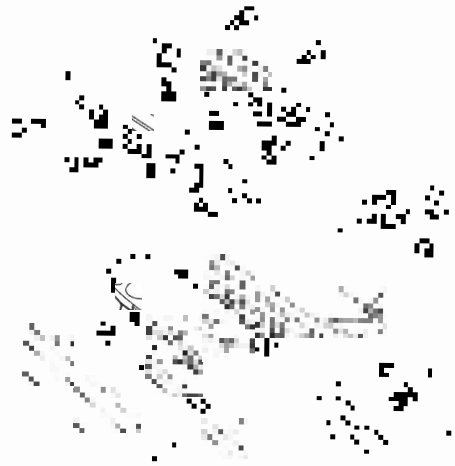


14. [illegible]

M/T

A/T





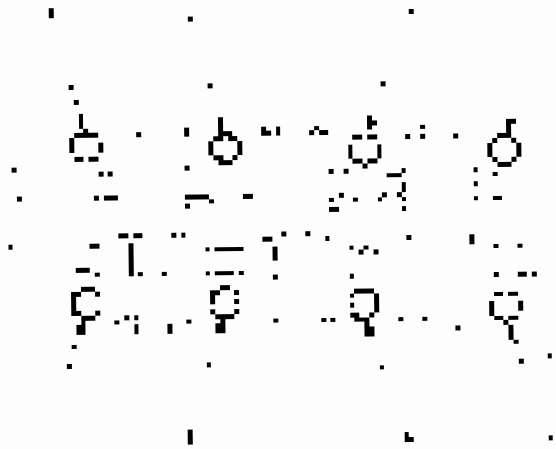
Cylinder Head Removal (cont'd)

32. [illegible]

33. [illegible]

33. [illegible]

33. [illegible]



34. [illegible]

Camshaft Replacement

FRONT

1. [illegible]

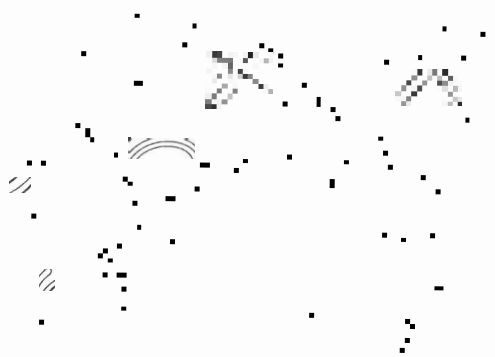
2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]



7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

16. [illegible]

17. [illegible]

18. [illegible]

19. [illegible]

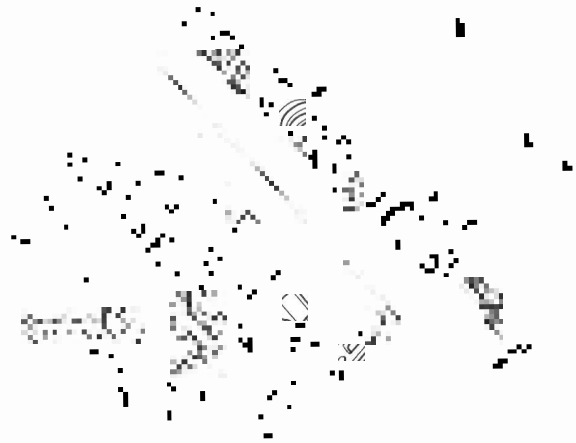
20. [illegible]

Camshaft Replacement (cont'd)

RE4H

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]

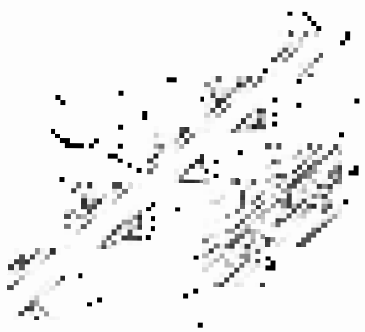


10. [illegible]
11. [illegible]
12. [illegible]
13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]

Cylinder Head Inspection for Warpage

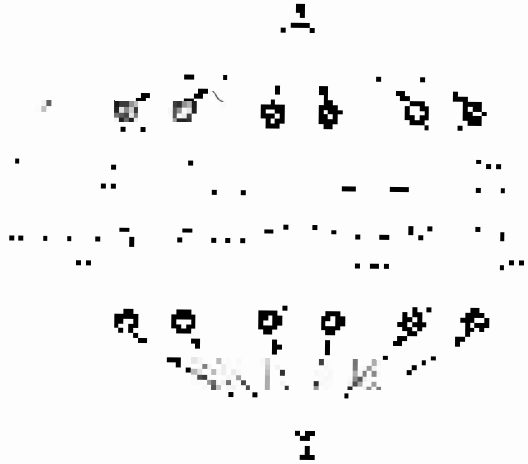
- Remove the cylinder head. (page 6-33)
- Inspect the combustion surface. (page 6-34)
- Use a straightedge and a feeler gauge to measure warpage across the cylinder head at the locations shown in the illustration.
  - If warpage is less than 0.05 mm (0.002 in), cylinder head is serviceable. (page 6-34)
  - If warpage is between 0.05 mm (0.002 in) and 0.15 mm (0.006 in), resurface the cylinder head. (page 6-34)
  - If warpage is more than 0.15 mm (0.006 in), replace the cylinder head. (page 6-34)

Cylinder Head Height
Standard (New): 120.05 - 120.20 mm
(4.726 - 4.732 in)



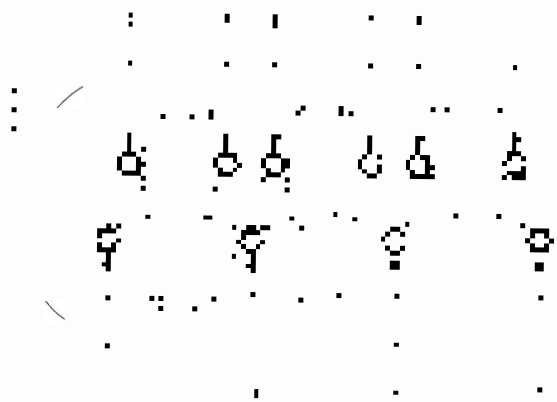
Rocker Arm Assembly Removal

- Remove the valve cover. (page 6-20)
- Remove the camshaft. (page 6-30)



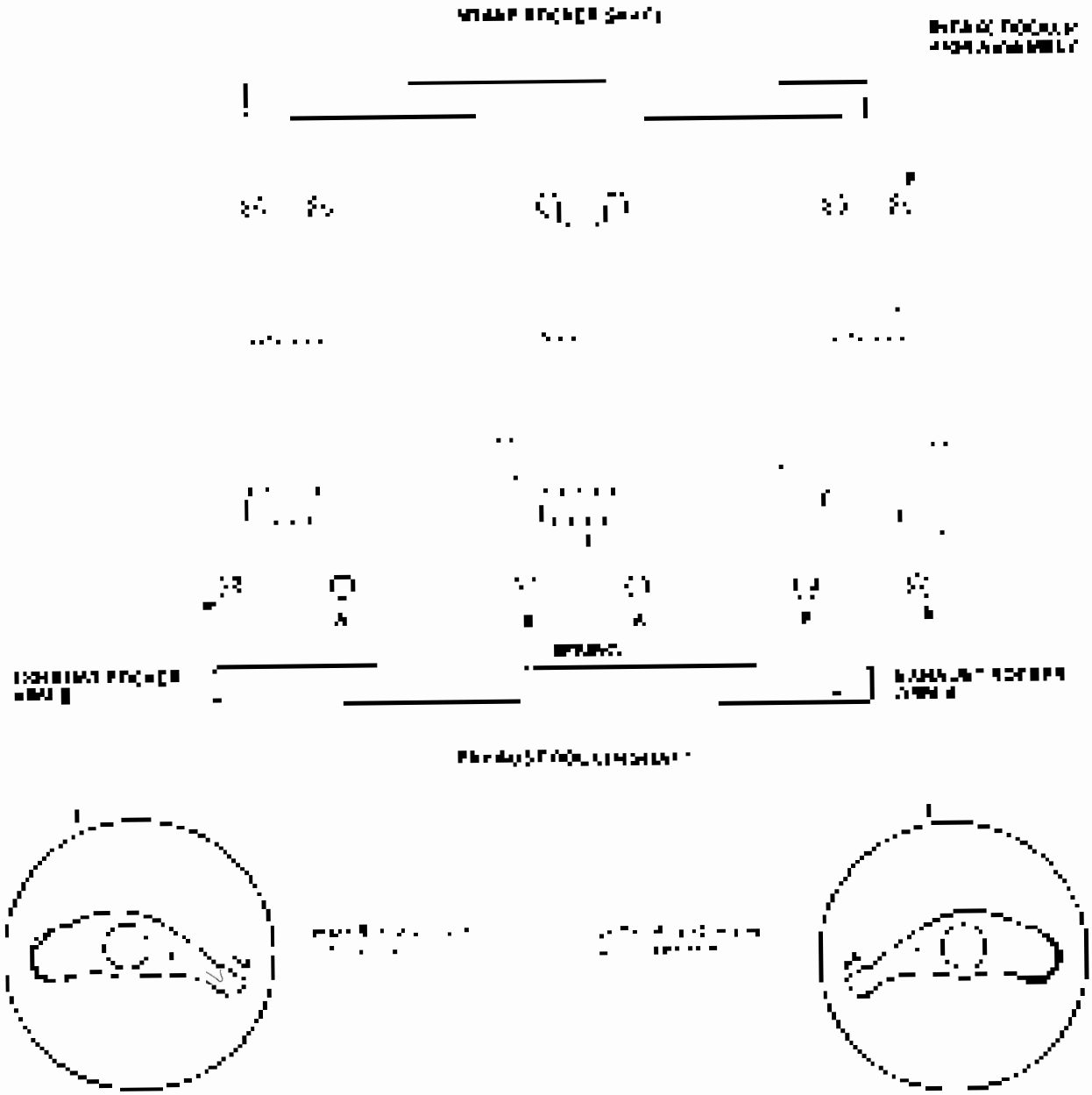
1. Remove the bolt (1), rocker arm shaft (2), and rocker arm assembly (3).
   1. Loosen the bolts in a crisscross pattern in two or three steps, and remove them.
   2. Remove the rocker arm shaft and the rocker arm assembly.

Camshaft Holder Bolt Loosening Sequence



Rocker Arm and Shaft Disassembly/Reassembly

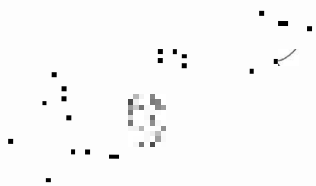
NOTE



Rocker Arm and Shaft Inspection

1. [illegible]

2. [illegible]



3. [illegible]

Rocker Arm-to-Shaft Clearance
Standard (New):
[illegible] 0.020 - 0.061 mm
(0.0010 - 0.0025 in.)
Service Limit: 0.080 mm (0.0025 in.)
Reduced: [illegible] 0.020 - 0.061 mm
(0.0010 - 0.0025 in.)
Service Limit: [illegible] 0.080 mm (0.0025 in.)

4. [illegible]

5. [illegible]

Rocker Arm and Shaft Inspection (cont'd)

[illegible] Rocker Arms

6. [illegible]

NOTE:
- [illegible]
- [illegible]

Camshaft Inspection

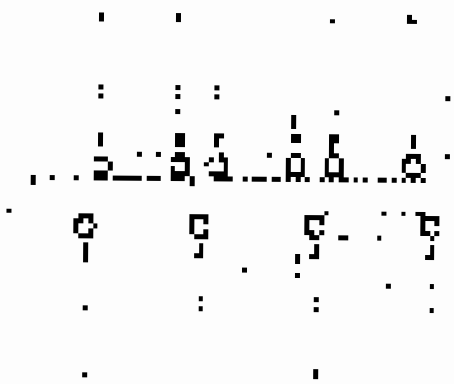
1. [illegible]

2. [illegible]

3. [illegible]

   NOTE: [illegible]

   [illegible]
   [illegible]
   [illegible]



4. [illegible]

5. [illegible]

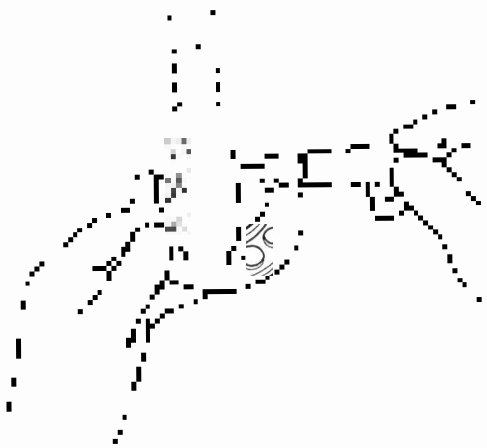
   Camshaft End Play
   Standard (New): [illegible]
   Service Limit: [illegible]

6. [illegible]

Camshaft Inspection (cont'd)

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

- [illegible]
- [illegible]
- [illegible]

Camshaft-to-Holder Oil Clearance

Standard (New)	[illegible]	[illegible] mm ([illegible] in)
Service Limit	[illegible]	[illegible] mm ([illegible] in)

11 Check the engine oil level as described in Section 3.

12 Visually inspect the engine for signs of oil leakage.

13 Start the engine and allow it to reach normal operating temperature. Check the oil pressure warning light in the instrument panel. It should go out after the engine has been running for a few seconds. Switch off the engine and check the oil pressure gauge (if fitted) against the specifications.

Lubrication system
Oil pressure at idle speed
Oil pressure at 3000 rpm

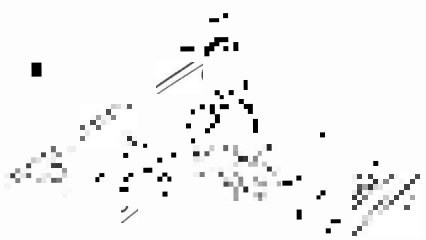
Valve, Spring, and Valve Seal Removal

Special Tools Required

[illegible]

Caution: [illegible]

1. [illegible]
2. [illegible]

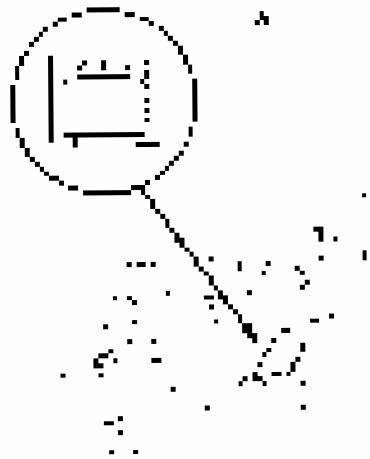


3. [illegible]

[illegible]

4. [illegible]

5. [illegible]



6. [illegible]

Valve Inspection

1. [illegible]
2. [illegible]

Intake Valve Dimensions	
A Standard (New)	34.50 – 35.10 mm (1.378 – 1.382 in.)
B Standard (New)	110.10 – 110.30 mm (4.346 – 4.350 in.)
C Standard (New)	5.465 – 5.485 mm (0.2152 – 0.2160 in.)
C Service Limit	5.435 mm (0.214 in.)
Exhaust Valve Dimensions	
A Standard (New)	29.50 – 30.10 mm (1.161 – 1.185 in.)
B Standard (New)	110.30 – 110.50 mm (4.343 – 4.350 in.)
C Standard (New)	5.440 – 5.460 mm (0.2142 – 0.2150 in.)
C Service Limit	5.410 mm (0.213 in.)

[illegible]

Valve Stem to Guide Clearance Inspection

1. [illegible]
2. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

Intake Valve Stem-to-Guide Clearance	
Standard (New)	0.010 – 0.037 mm (0.0004 – 0.0015 in.)
Service Limit	0.08 mm (0.003 in.)
Exhaust Valve Stem-to-Guide Clearance	
Standard (New)	0.025 – 0.052 mm (0.0010 – 0.0020 in.)
Service Limit	0.10 mm (0.004 in.)

3. [illegible]

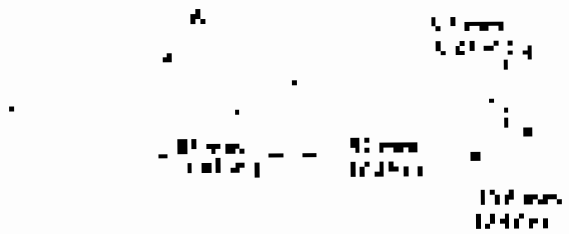
Intake Valve Stem-to-Guide Clearance	
Standard (New)	0.020 – 0.045 mm (0.0008 – 0.0018 in.)
Service Limit	0.08 mm (0.003 in.)
Exhaust Valve Stem-to-Guide Clearance	
Standard (New)	0.045 – 0.070 mm (0.0018 – 0.0028 in.)
Service Limit	0.11 mm (0.004 in.)

Valve Guide Replacement

Special Tool Required

- [illegible]

1. [illegible]
2. [illegible]



3. [illegible]
4. [illegible]

5. [illegible]

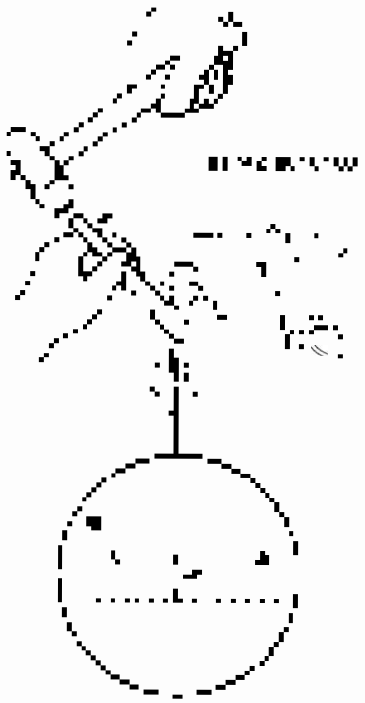
6. [illegible]

NOTE: [illegible]

7. [illegible]

8. Add a small coat of assembly grease to the valve stem of the new valve, and then install the guide from the combustion chamber side of the head. Using the special tool, drive the guide in until the clip on the tool contacts the head. Be careful not to damage the guide as you drive it in. Do not reuse the guide once it has been removed from the head.

Valve Guide Installed Height:
Intake: 21.25 - 21.75 mm (0.837 - 0.856 in)
Exhaust: 20.75 - 21.25 mm (0.817 - 0.837 in)



9. Clean the valve guide and reamer with solvent to remove any cutting oil residue.

10. Coat the reamer and the valve guide with cutting oil.

11. Ream the valve guide to obtain the proper valve guide-to-valve stem clearance.

12. Continue to install the remaining valve guide and seal assembly.

13. Thoroughly clean the guide to remove any metal shavings.

14. Check the valve guide-to-valve stem clearance. Refer to the valve guide reaming procedure.

Valve Seat Reconditioning

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

Valve Seat Width
Standard [illegible]

6. [illegible]

7. [illegible]

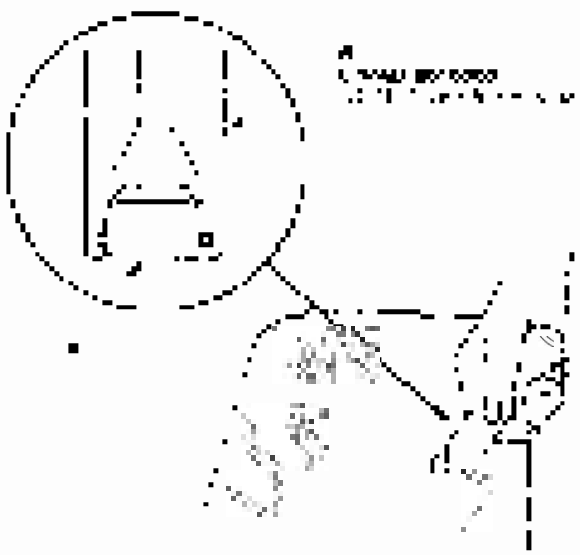
- [illegible]
- [illegible]

NOTE: [illegible]

Valve, Spring, and Valve Seal Installation

Special Tools Required
- Valve spring compressor attachment
- Valve spring compressor (commercially available)
  07757-0010000

1. Coat the valve stem seals with engine oil and install them on the valve guides.
2. Install the valve, inner spring, and outer spring.
3. Install the spring seat and compress the valve springs with the special tools.



4. Install the valve spring compressor.
5. Install the valve cotter halves in the groove in the valve stem.

6. Remove the valve spring compressor.
7. Install the valve spring compressor.

Camshaft, Rocker Arm, Camshaft Seal, and Pulley Installation

1. [illegible]

2. [illegible]

   1. [illegible]

   Engine

   Hand

3. [illegible]

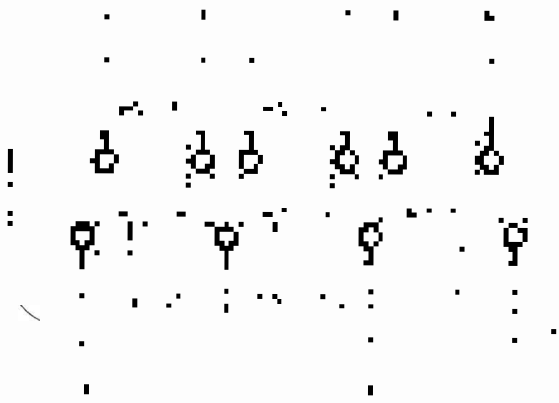
4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

   Specified torque
   [illegible] 35 mm
   [illegible] kgf-m, 17 lbf-ft



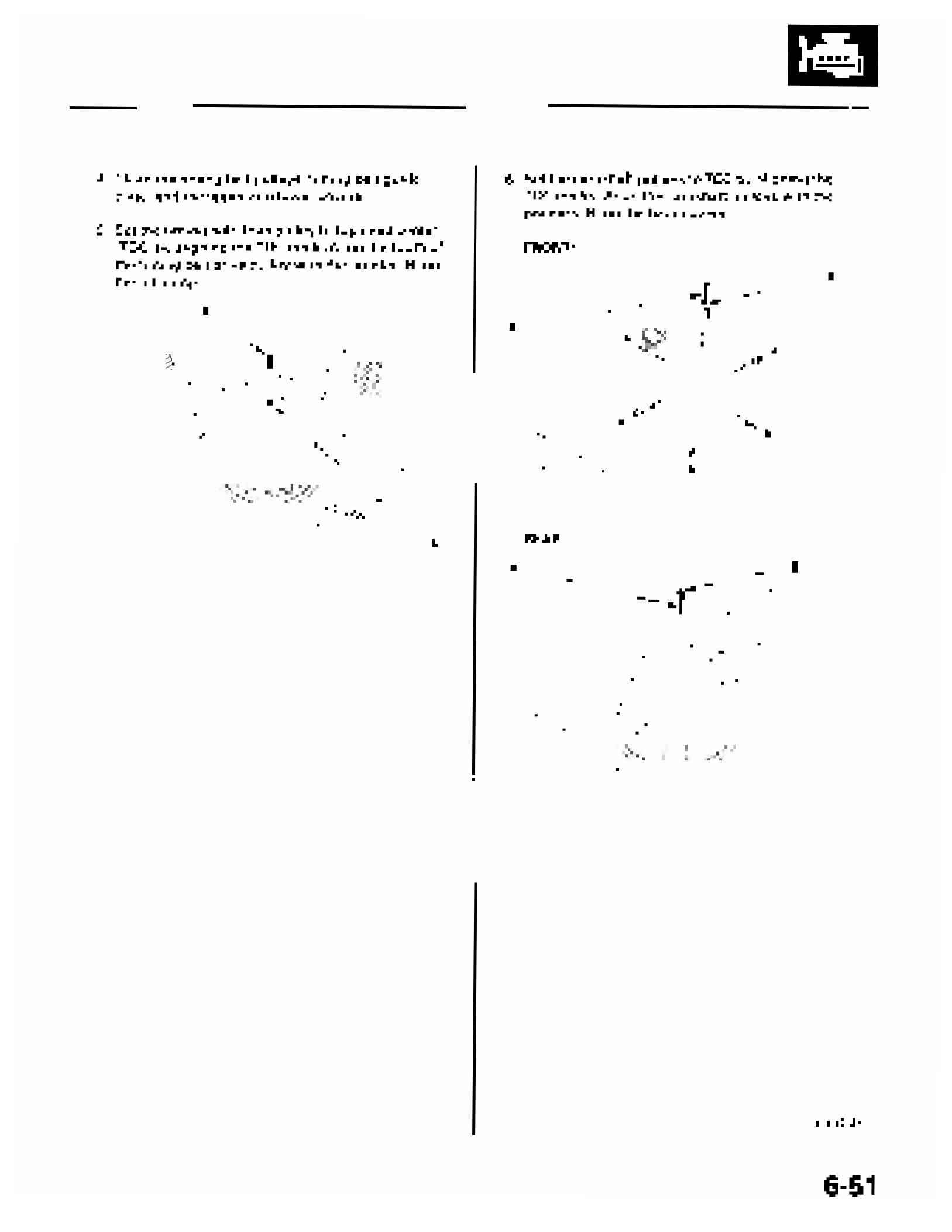
8. [illegible]

   [illegible]
   [illegible]

[illegible]

Camshaft, Rocker Arm, Camshaft Seal, and Pulley Installation (cont'd)

Cylinder Head Installation



Cylinder Head Installation (cont'd)

7. [illegible]

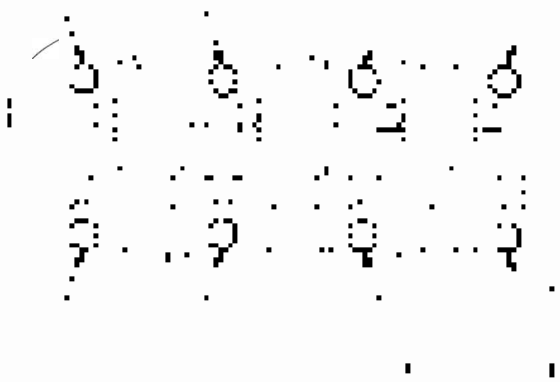
8. [illegible]

[illegible]

[illegible]

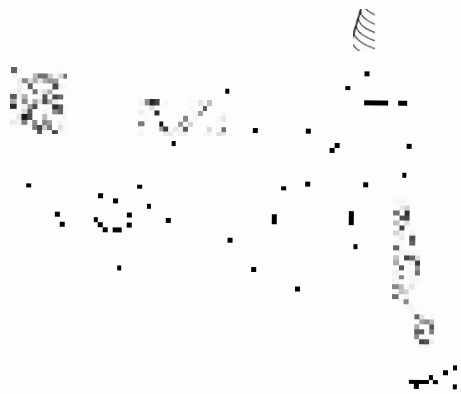
[illegible]

[illegible]



9. [illegible]

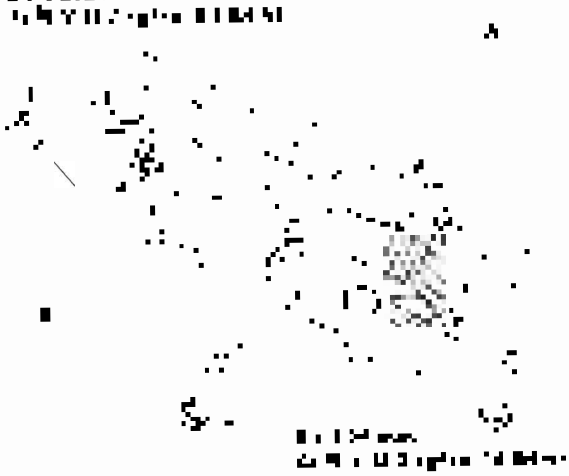
10. [illegible]



Cylinder Head Installation (cont'd)

M/T:

A/T:



Sealing Bolt Installation

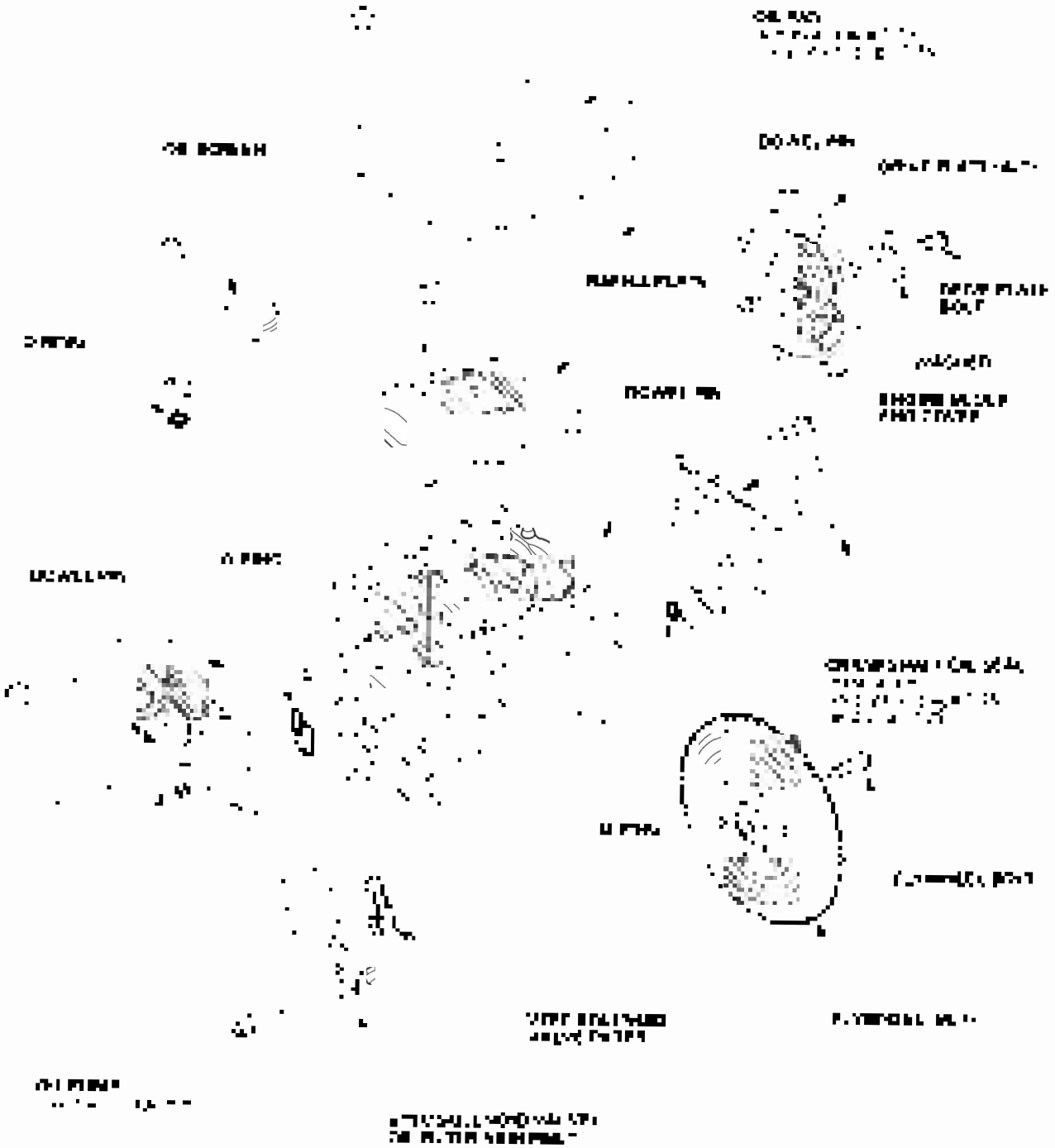
Engine Mechanical

Engine Block

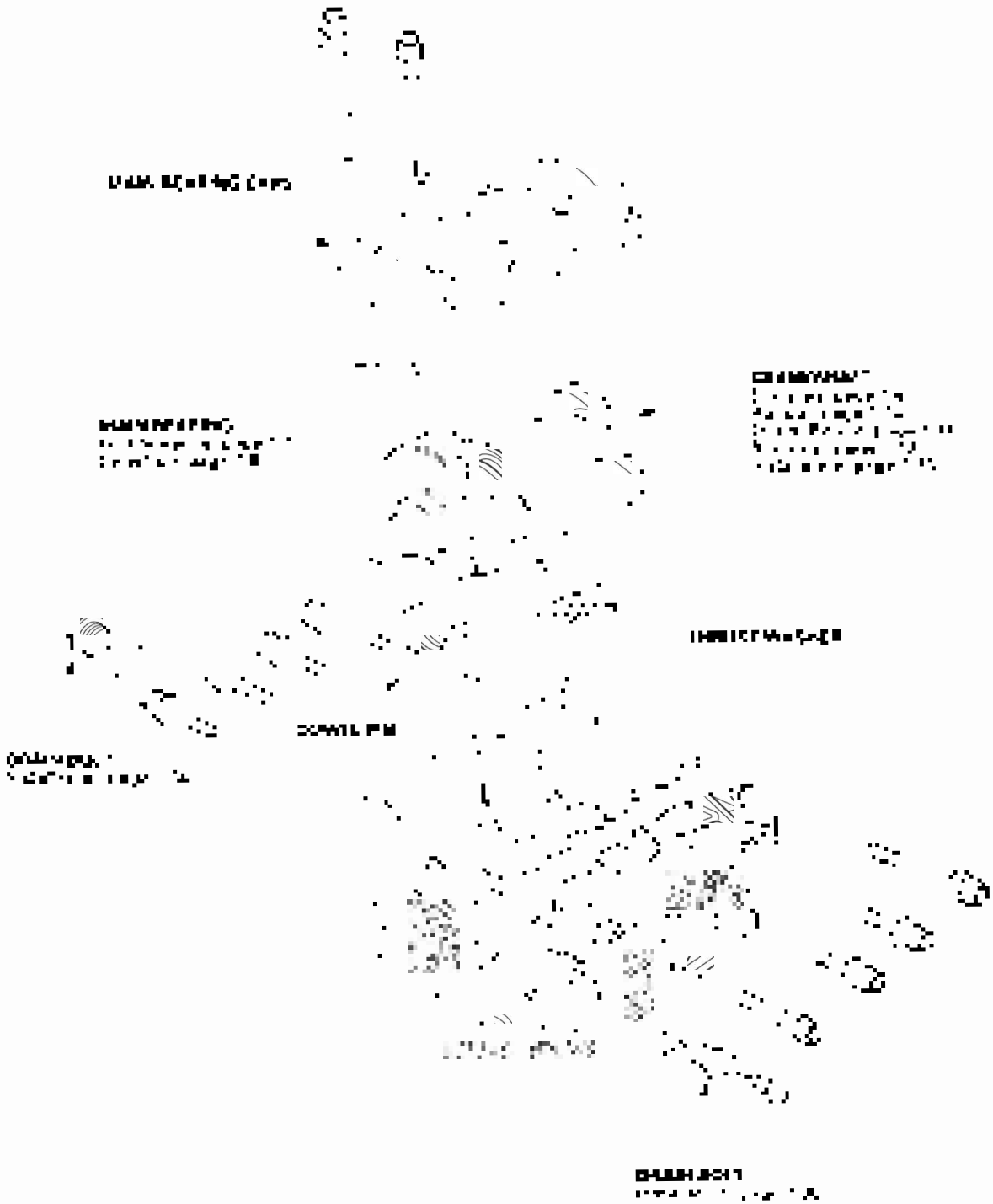
Engine Block

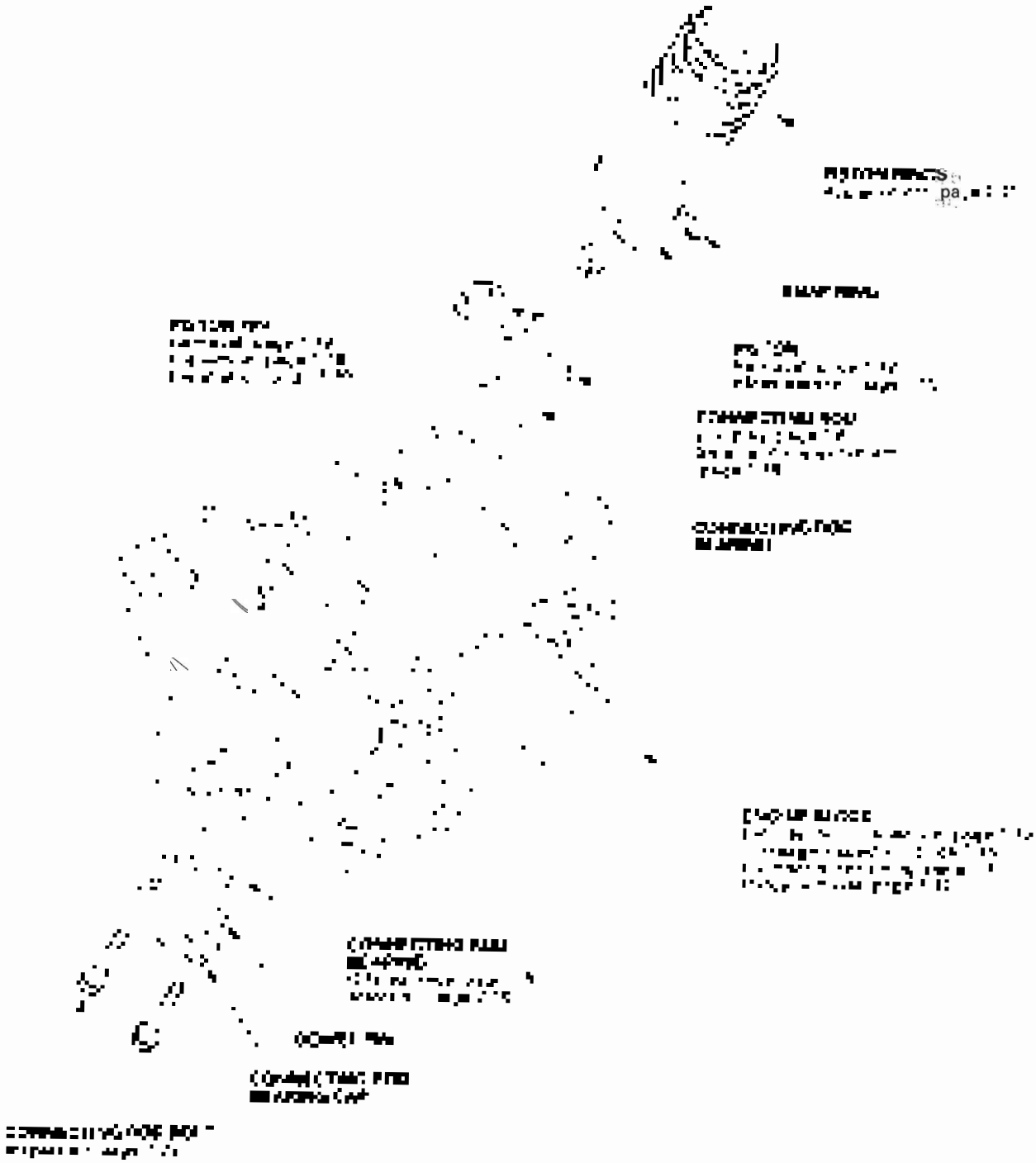
Special Tools

Ref. No.	Tool Number	Description	Use
	[illegible]	[illegible]	1
	[illegible]	[illegible]	1
	[illegible]	[illegible]	1



Component Location Index (cont'd)





Connecting Rod and Crankshaft End Play Inspection

1. Remove the oil pan (see page 8-12).
2. Remove the clutch (see page 10-6).
3. Measure the connecting rod end play. Attach a dial gauge to the connecting rod bolt. Measure the end play by moving the rod back and forth.

Connecting Rod End Play
Standard: New: 0.15 - 0.25 mm (0.006 - 0.010 in.)
Service Limit: 0.40 mm (0.016 in.)

4. If the connecting rod end play exceeds the service limit, replace the connecting rod and recheck the end play. If it still exceeds the service limit, replace the crankshaft (see page 7-12).
5. Check the crankshaft end play. Attach a dial gauge to the end of the crankshaft. Move the crankshaft back and forth and measure the end play.

Crankshaft End Play
Standard: New: 0.10 - 0.35 mm (0.004 - 0.014 in.)
Service Limit: 0.40 mm (0.016 in.)

6. If the end play exceeds the service limit, replace the thrust washers as a set. Then recheck the end play (see page 7-12).

Crankshaft Main Bearing Replacement

Main Bearing Clearance Inspection

1. [illegible]

2. [illegible]

3. [illegible]

   NOTE: [illegible]

4. [illegible]

   NOTE: [illegible]

5. [illegible]

Main Bearing to Journal Oil Clearance	
Standard	[illegible]
Service Limit	[illegible]

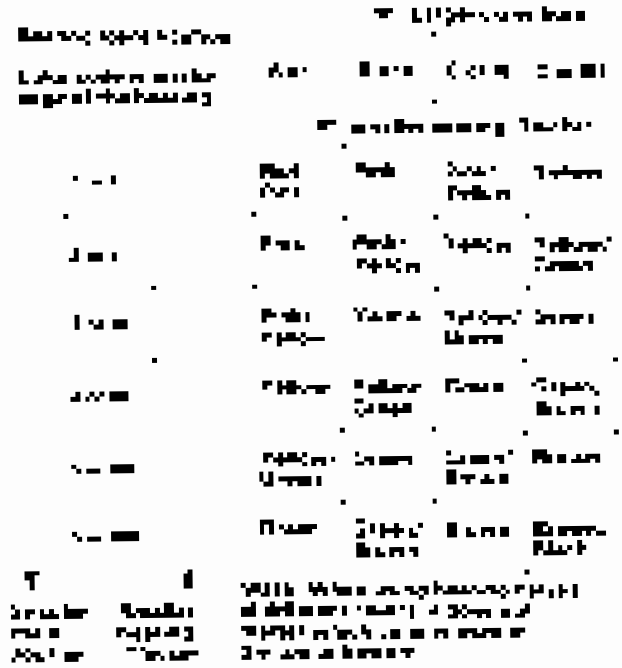
6. [illegible]

7. [illegible]

Crankshaft Main Bearing Replacement (cont'd)

Main Bearing Selection

Crankshaft Bore Code Location



Connecting Rod Bearing Replacement

Rod Bearing Diagonal Inspection

1. [illegible]

2. [illegible]

3. [illegible]

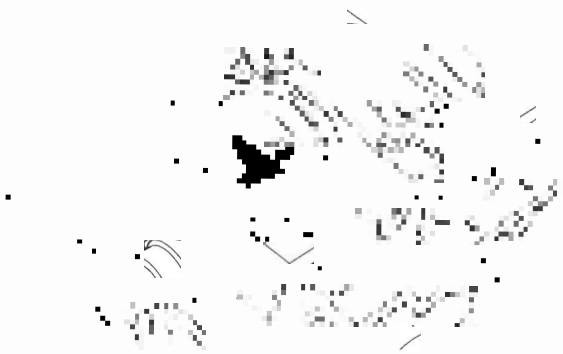
4. [illegible]

   [illegible]

   [illegible]

5. [illegible]

   Connecting Rod Bearing to Journal Oil Clearance
   Standard [illegible]
   [illegible]
   Service Limit [illegible]



6. [illegible]

7. [illegible]

Connecting Rod Bearing Replacement (cont'd)

Rod Bearing Selection

[illegible]

Normal Bore Size: [illegible]

[illegible]

Connecting Rod Journal Code Locations

[illegible]

← Larger big end bore

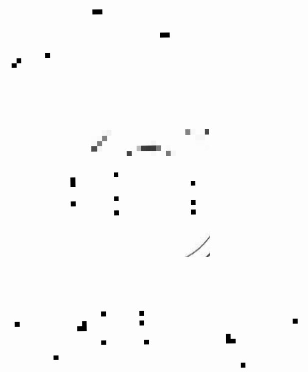
[illegible]	1 or I	2 or II	3 or III	4 or IIII
[illegible]	Pink	Pink/Yellow	Yellow	Yellow/Green
[illegible]	Pink/Yellow	Yellow	Yellow/Green	Green
[illegible]	Yellow	Yellow/Green	Green	Green/Brown
[illegible]	Yellow/Green	Green	Green/Brown	Brown
[illegible]	Green	Green/Brown	Brown	Brown/Black
[illegible]	Green/Brown	Brown	Brown/Black	Black

← Smaller bearing (Thicker)

[illegible]

NOTE: [illegible]

Connecting Rod Journal Code Locations
[illegible]

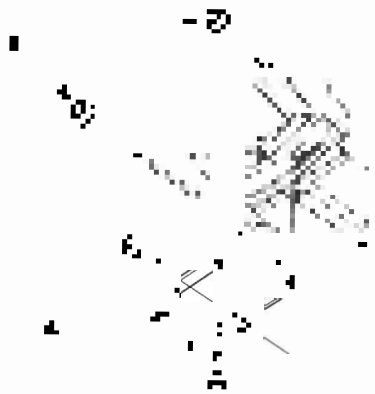


Oil Pan Removal

If the engine is out of the vehicle, go to step 7.

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

5. [illegible]
6. [illegible]

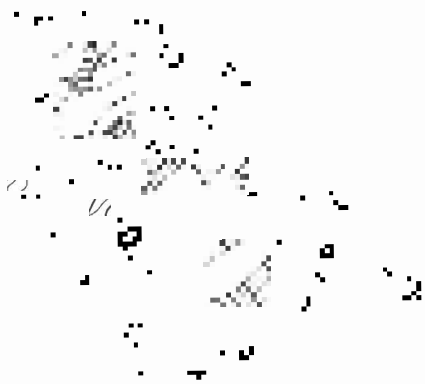


7. [illegible]
8. [illegible]

9. [illegible]

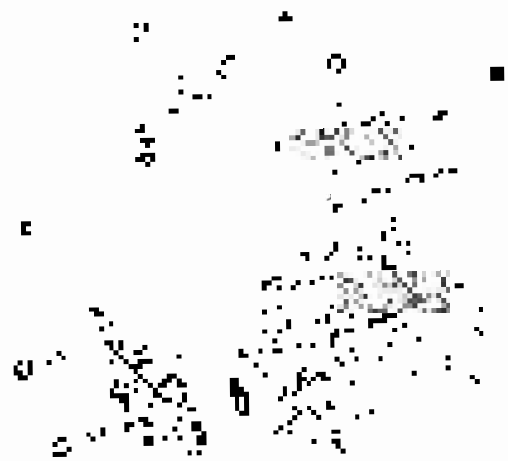
Crankshaft and Piston Removal

1. [illegible]
2. [illegible]
   - [illegible]
   - [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

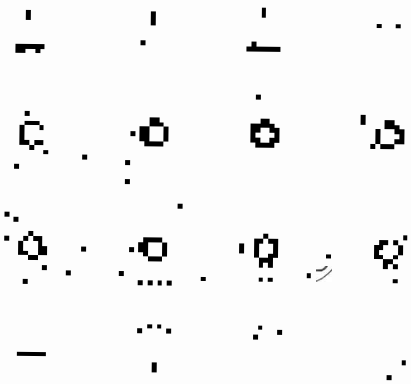


7. [illegible]

8. [illegible]



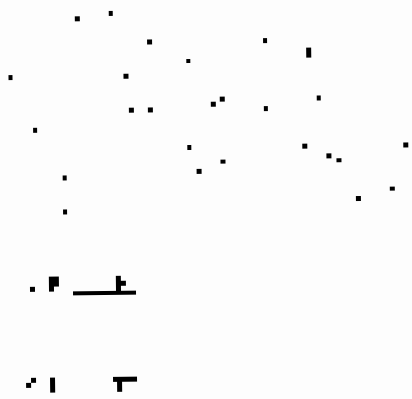
9. [illegible]



Crankshaft and Piston Removal (cont'd)

Crankshaft Inspection

Out-of-Round and Taper



Standard (New):
Service Limit:

Block and Piston Inspection

Crankshaft

5. Place the crankshaft on the V-blocks.

6. Check the runout at the center journal with a dial indicator.

7. Repeat the measurement for the other journals.

8. Measure the runout at the end of the shaft. Replace the crankshaft if the runout exceeds the limit. Turning the crankshaft when it is bent will cause engine vibration and damage the bearings.

Crankshaft Total Runout
Standard: [illegible]
Service Limit: 0.030 mm (0.0012 in.)

1. [illegible]

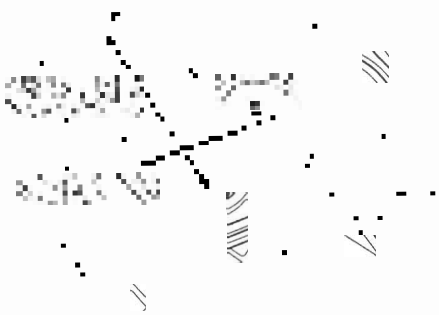
2. [illegible]

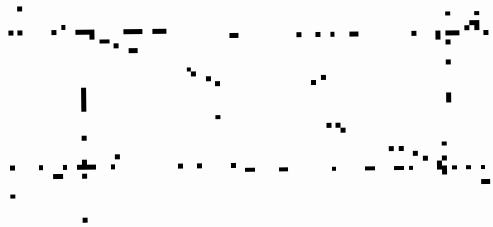
3. [illegible]

Piston Diameter
Standard: [illegible]
Service Limit: [illegible]

Oversize Piston Diameter
0.25: [illegible] 0.50: [illegible]

Block and Piston Inspection (cont'd)





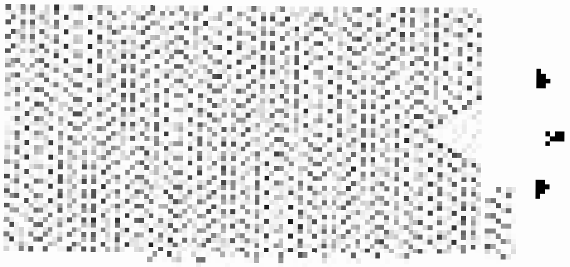
2. [illegible]

[illegible]
Standard (New): [illegible]
[illegible]
Service Limit: [illegible]

1. [illegible]

2. [illegible]

Note: [illegible]



3. [illegible]

4. [illegible]

Piston, Pin, and Connecting Rod Replacement

Disassembly

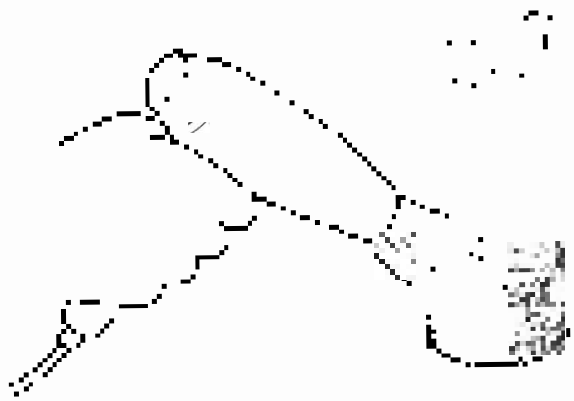
1. [illegible]

2. [illegible]

NOTE: [illegible]

3. [illegible]

4. [illegible]



Inspection

[illegible]

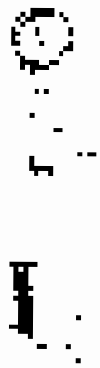
- [illegible]

[illegible]

- [illegible]

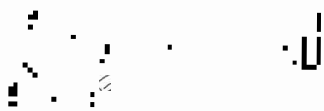
- [illegible]

[illegible]



- [illegible]

[illegible]



[illegible]

Piston, Pin, and Connecting Rod Replacement (cont'd)

Reassembly

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

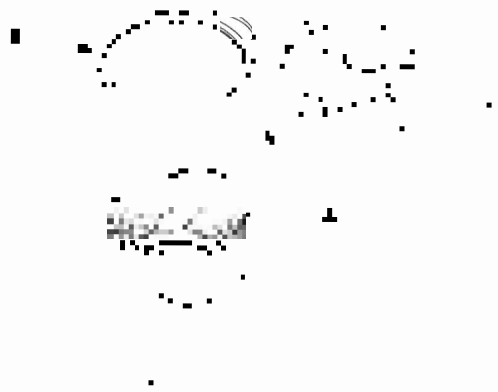
5. [illegible]

6. [illegible]

Piston Ring Replacement

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

5. Measure the piston ring end gap with a feeler gauge.

- If the gap is less than the service limit, check for the proper piston ring for your cylinder.
- If the gap is too large, replace the piston ring. If necessary, replace the cylinder as well if the cylinder bore is worn beyond the service limit.

Piston Ring End Gap

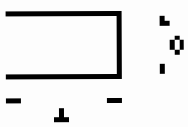
Top Ring
Standard Value: 0.20 – 0.35 mm
(0.008 – 0.014 in)
Service Limit: 0.80 mm (0.031 in)

Second Ring
Standard Value: 0.40 – 0.55 mm
(0.016 – 0.022 in)
Service Limit: 0.70 mm (0.028 in)

Oil Ring
Standard Value: 0.20 – 0.70 mm
(0.008 – 0.028 in)
Service Limit: 0.90 mm (0.035 in)

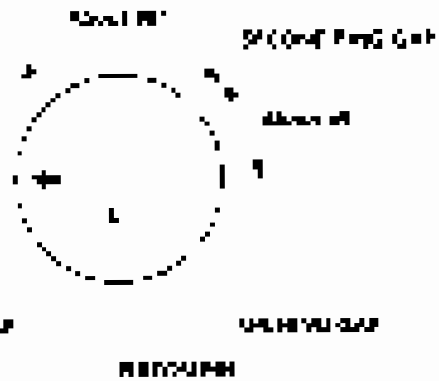
Piston Ring Replacement (cont'd)

Piston Ring Dimensions



Top Ring Standard

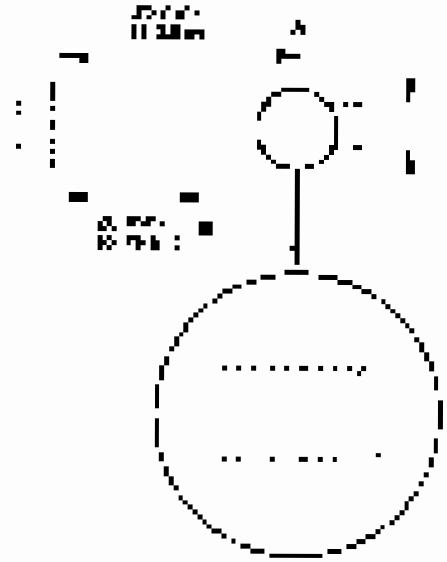
Second Ring Clearance



Crankshaft and Piston Installation

Special Tools Required
- Driver
- Piston Installer Attachment

1. Measure the diameter of each connecting rod bore (Figure 1).



2. Calculate the difference between the two bore diameters and record the result.

Example: Piston to Bore Clearance Determination

Difference in Diameter
Specification (0.07 mm (0.003 in))

3. Wipe each piston pin and connecting rod bore clean and install the piston pins and connecting rod bolts.

4. Check the piston pin to connecting rod bearing clearance with plastigage. See page 7-9.

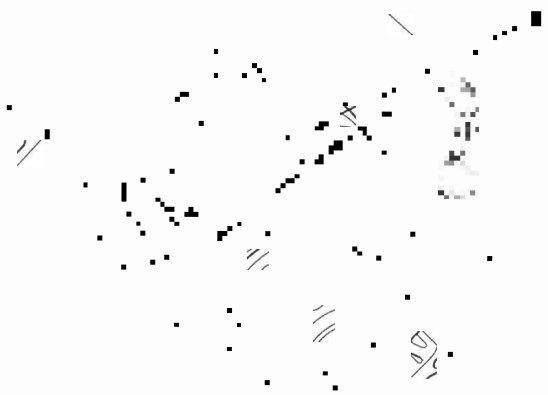
5. Check the piston to bore clearance with plastigage. See page 7-11.

6. Install the crankshaft bearing inserts in the engine block. Refer to Crankshaft Bearing Inserts.

7. Apply engine oil to the crankshaft bearing inserts.

8. Install the crankshaft. Refer to Crankshaft Installation.

9. Apply engine oil to the piston rings, the piston skirts, and the cylinder walls. Compress the piston rings with a ring compressor.



Crankshaft and Piston Installation (cont'd)

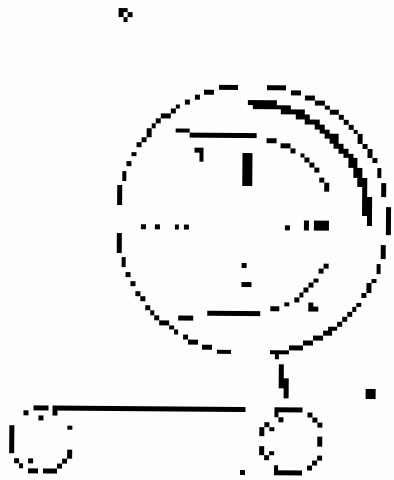
10. [illegible]

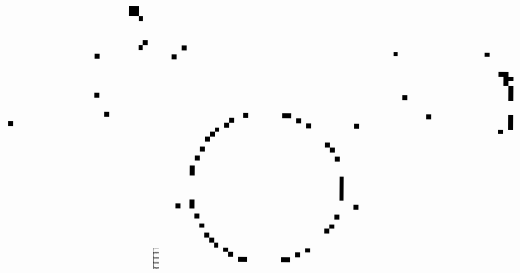
11. [illegible]

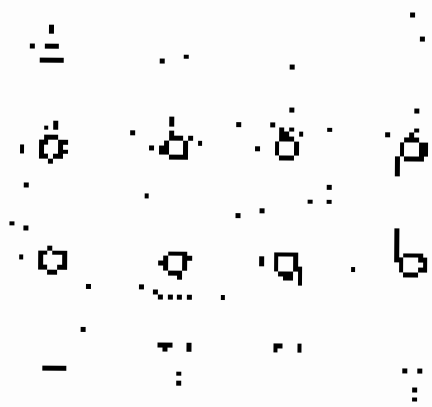
12. [illegible]

13. [illegible]

14. [illegible]







Crankshaft and Piston Installation (cont'd)

22. [illegible]

23. [illegible]

24. [illegible]

25. [illegible]

26. [illegible]

27 Remove any remaining ground wire from the engine or transaxle mounting bracket and discard the bolt.

28 Disconnect the engine ground strap from the transaxle.

29 Install the following:

- Install a new O-ring on the fuel injector rail. See page 5-14.
- Apply a light coat of clean 5W-30 motor oil to the O-ring on the fuel injector rail. Install the fuel injector rail and the two mounting bolts. Tighten the bolts to 8 ft-lbs (11 Nm).

NOTE: Be careful not to damage the pins of the sensor or the electrical connectors when applying the fuel injector rail. Apply only light pressure when installing the fuel injector rail.

- Connect the fuel injector electrical connector to the fuel injector rail. See page 5-14.
- Install the throttle body fuel injector (TBI) unit. See page 5-14.
- Connect the negative battery cable. See page 5-14.

30 Install the PCV valve and O-ring assembly. See page 6-11.

31 Install the air cleaner assembly. See page 5-12.

32 Start the engine and check for fuel leaks.

33 Install the following:

- Install the engine cover. See page 1-22.
- Install the battery tray. See page 1-21.

34 Lower the vehicle. See page 1-12.

NOTE: When you have completed the reassembly of the engine, you must perform the Throttle Valve (TV) Cable Adjustment procedure. See page 5-13.

35 Install the TPS, using the same number of turns you noted during removal. See page 5-14.

36 Install the air cleaner. See page 5-12.

37 Install the battery. See page 1-21.

38 Install the negative battery cable. See page 5-14.

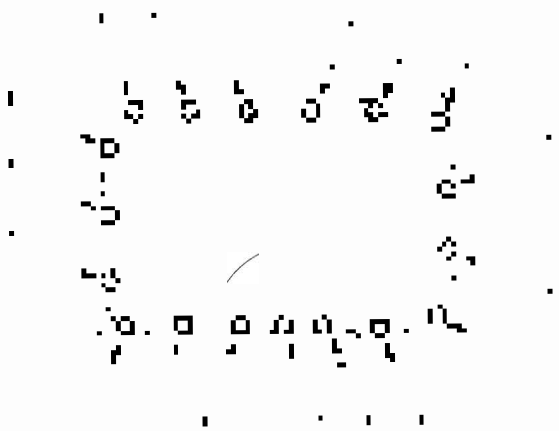
39 Install the following:

- Install the engine cover. See page 1-22.
- Install the battery tray. See page 1-21.

40 Lower the vehicle. See page 1-12.

41 Install the TPS, using the same number of turns you noted during removal. See page 5-14.

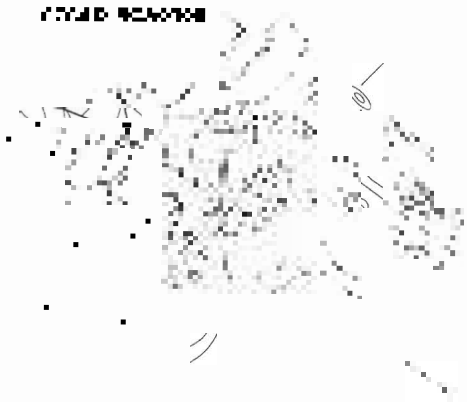
Oil Pan Installation



Pulley End Crankshaft Oil Seal Installation - In Car

Special Tool Required

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]



6. [illegible]

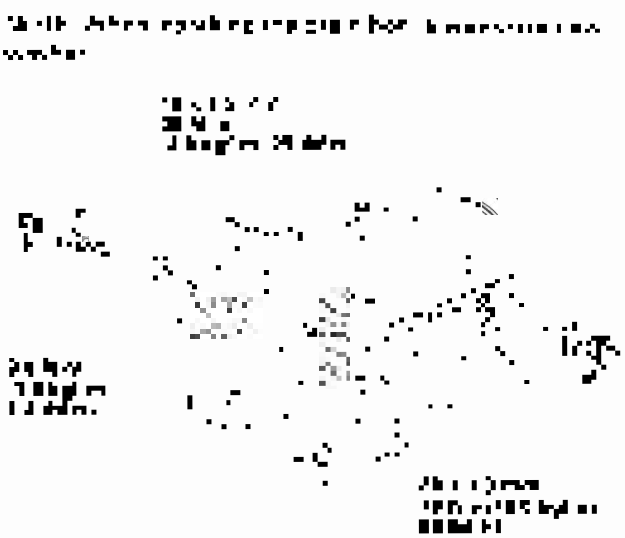
Transmission End Crankshaft Oil Seal Installation - In Car

Special Tools Required

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

6. [illegible]

Drain Bolt Installation



Engine Mechanical

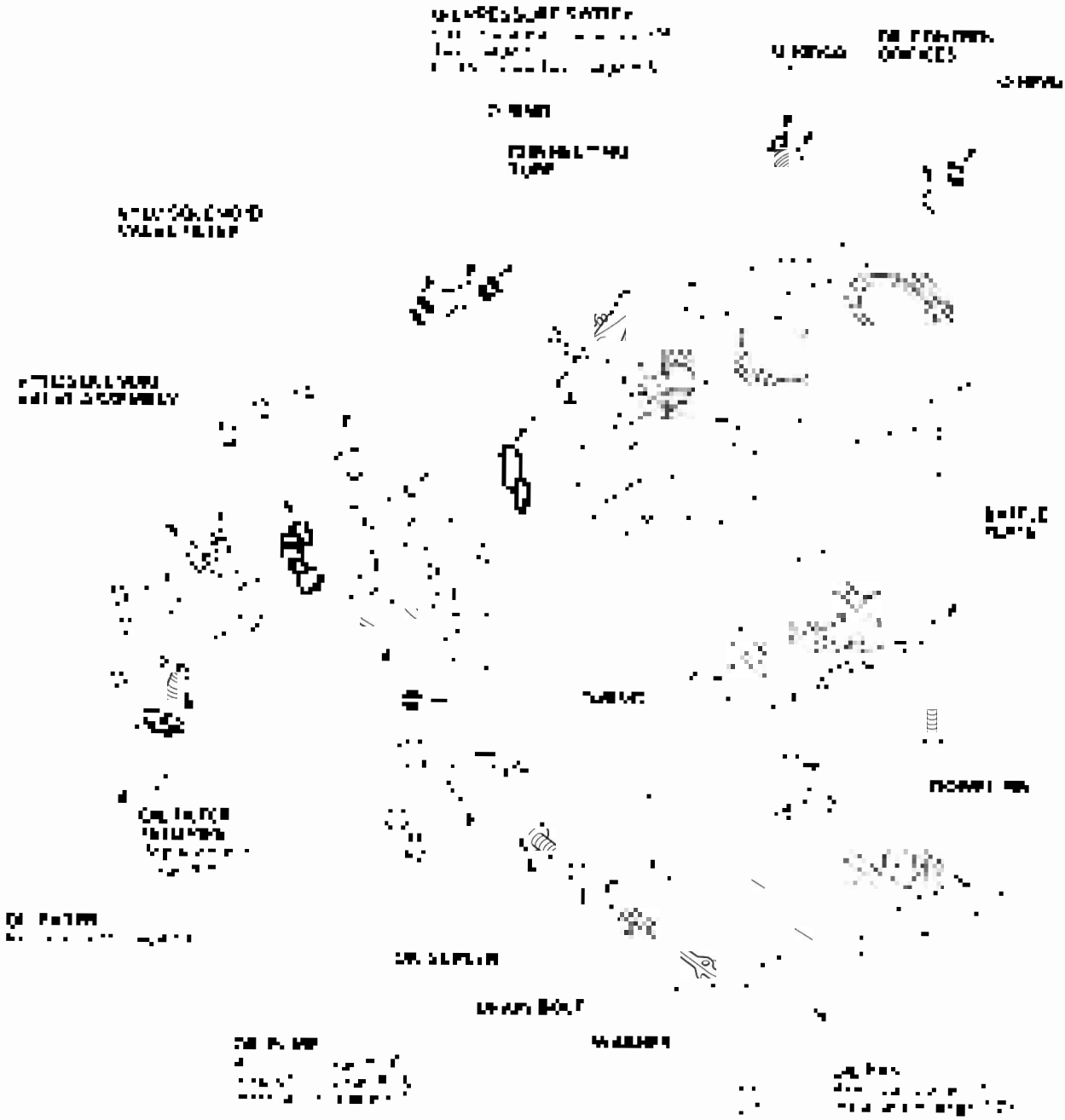
Engine Lubrication

Engine Lubrication

Special Tools

Ref No	Tool Number	Description	Qty
	[illegible]	[illegible]	1
	[illegible]	[illegible]	1

Component Location Index



Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
Excessive engine oil consumption	1 Check for external oil leaks (page 5-4) or internal oil leaks 2 Check for excessive crankcase pressure (page 5-5) 3 Check for excessive blowby (see Engine Block Test, page 7-15) 4 Check for oil foaming 5 Check the operation of the crankcase ventilation system (PCV valve, page 11-15) 6 Check for excessive oil dilution (engine runs rough)	
Low engine oil pressure	1 Check the oil level (page 3-5) 2 Check the oil pressure (page 5-5) 3 Check the oil pump (page 5-6) 4 Check the oil filter 5 Check the oil passages 6 Check the engine for excessive bearing clearance	
High engine oil pressure	Check the oil viscosity	

Oil Pressure Switch Test

1. [illegible]

2. [illegible]

Oil Pressure Test

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

Engine Oil temperature	[illegible]
Engine Oil Pressure	
At Idle	[illegible]
At 3,000 rpm	[illegible]

4. [illegible]

Engine Oil Replacement

1. [illegible]
2. [illegible]

3. [illegible]
4. [illegible]

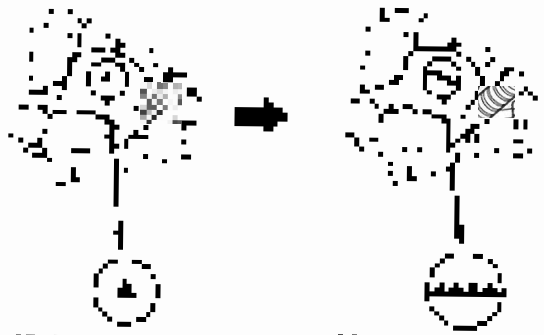
Capacity:
[illegible] qt. oil change
[illegible] qt. oil change and engine oil filter
[illegible] qt. after engine overhaul

5. [illegible]

Engine Oil Filter Replacement

Special Tools Required
[illegible]

1. [illegible]
2. [illegible]
3. [illegible]



Oil Filter Feed Pipe Replacement

1 [illegible]

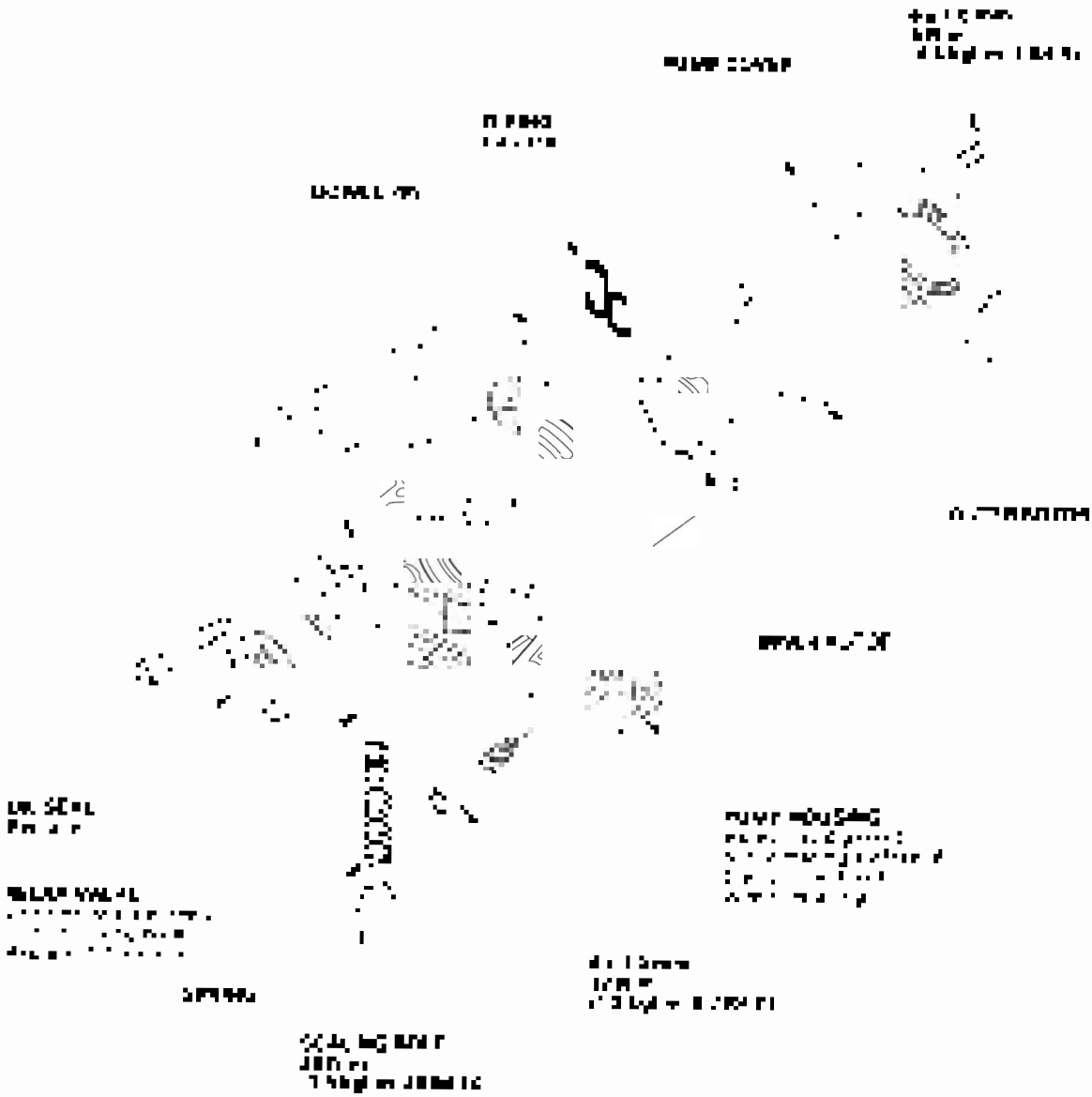
2 [illegible]

3 [illegible]

4 [illegible]

Oil Pump Overhaul

Exploded View



Oil Pump Overhaul (cont'd)

Special Tools Required

- [illegible]
- [illegible]

[illegible]

[illegible]

Removal

1. [illegible]
2. [illegible]
3. [illegible] page [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]

10. [illegible]

Inspection

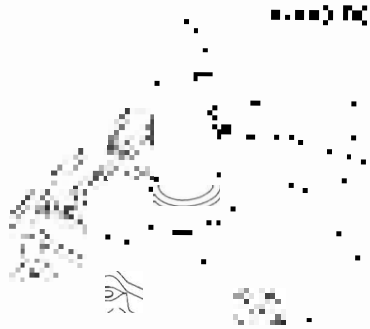
1. [illegible]
2. [illegible]

[illegible]

3. [illegible]

[illegible]

Installation



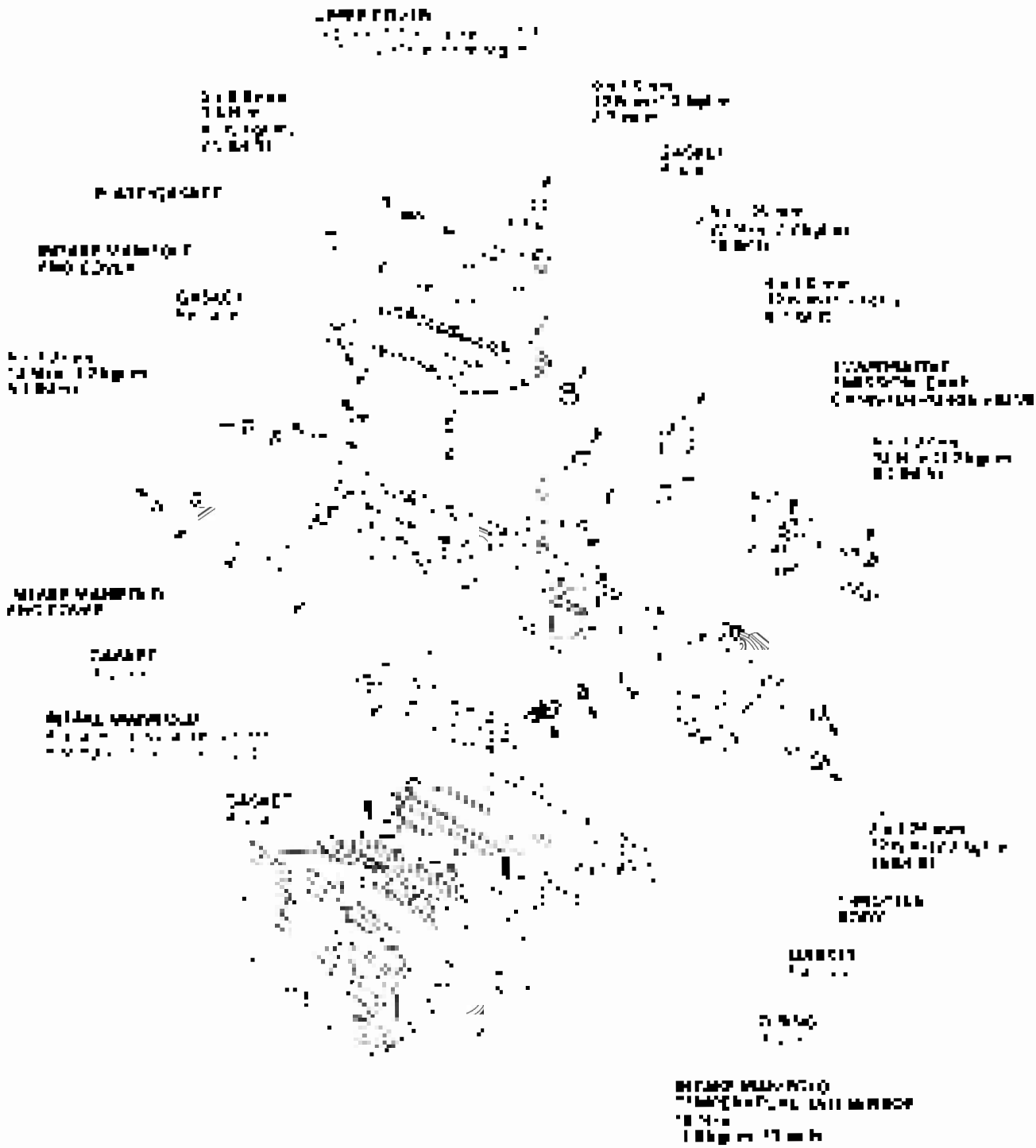
Oil Pump Overhaul (cont'd)

Oil Pressure Switch Replacement

Engine Mechanical

Intake Manifold Removal and Installation

Exploded View



Removal

1. [illegible]

2. [illegible]

3. [illegible]

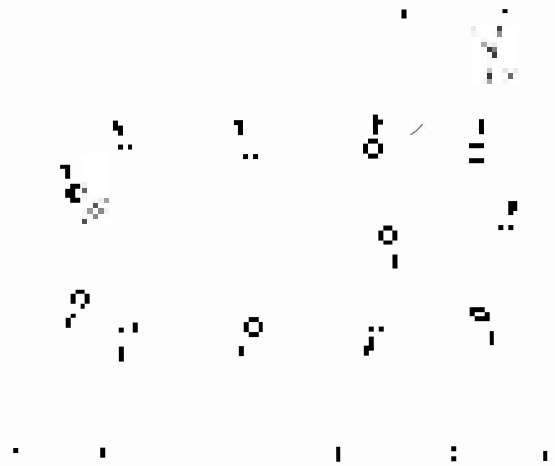
4. [illegible]

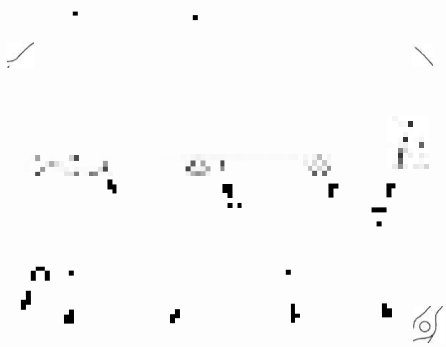
5. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

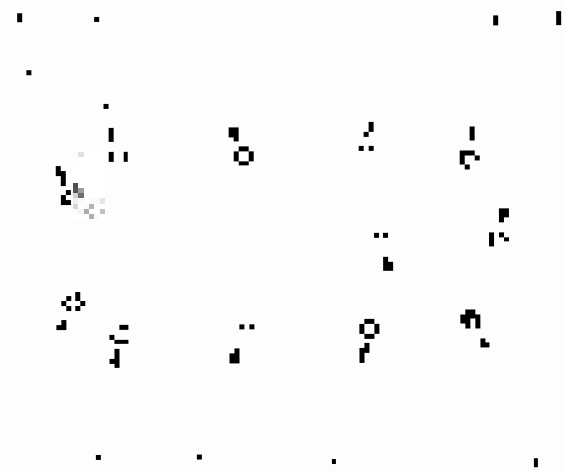
  [illegible]
- [illegible]

Intake Manifold Removal and Installation (cont'd)





Installation



3. [illegible]

4. [illegible]

5. [illegible]

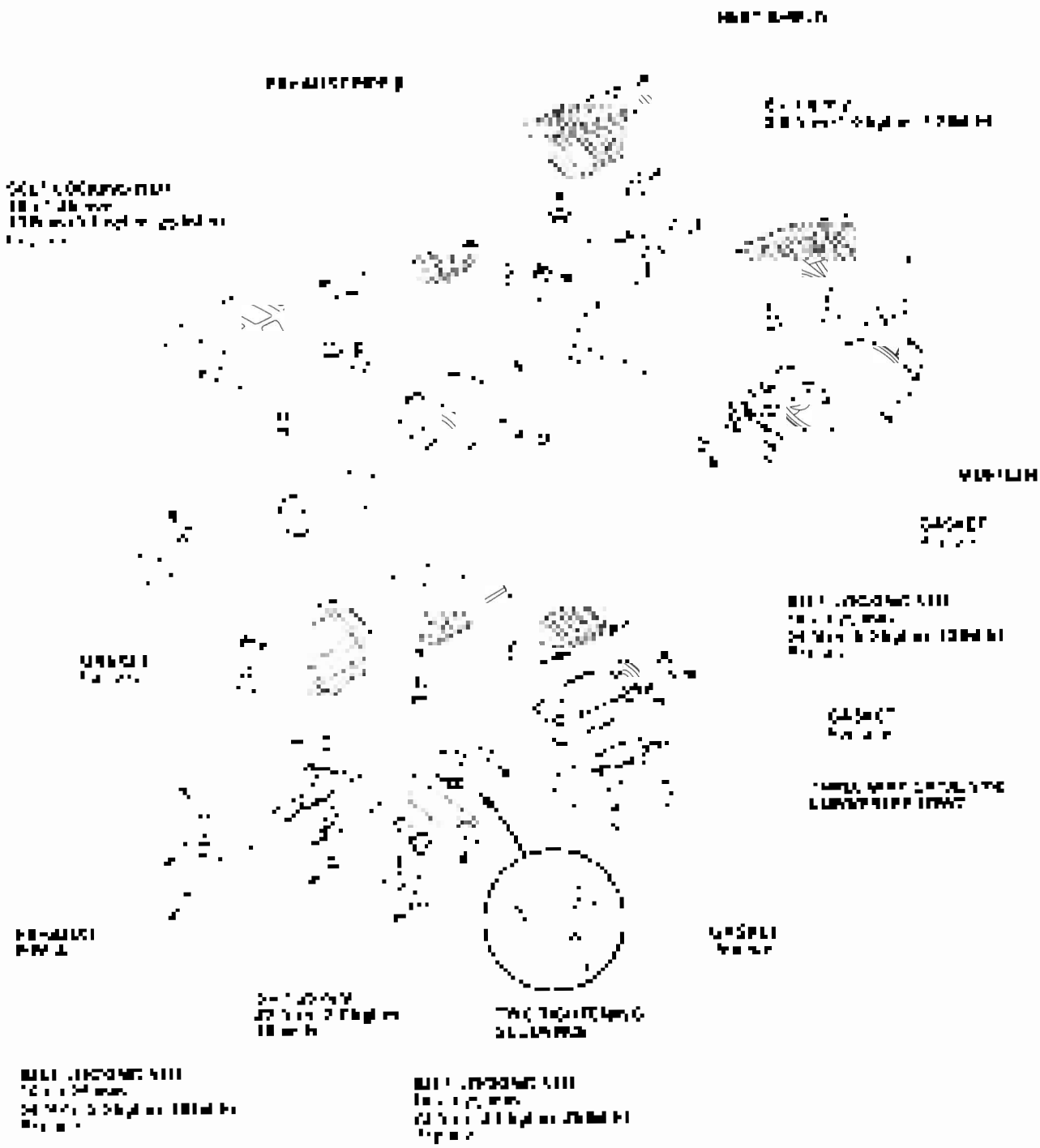
6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

Exhaust Pipe and Muffler Replacement

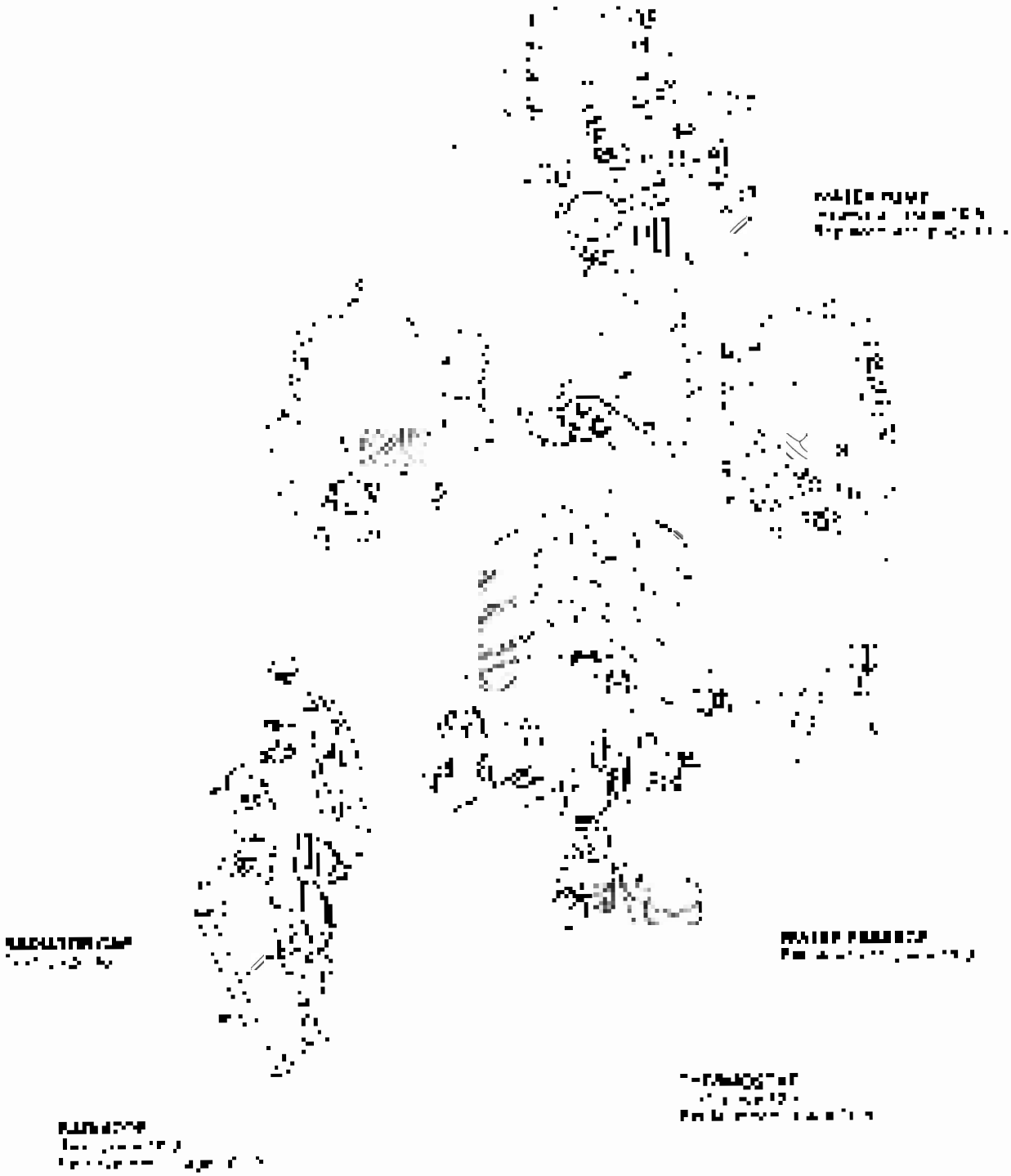


Engine Cooling

Cooling System

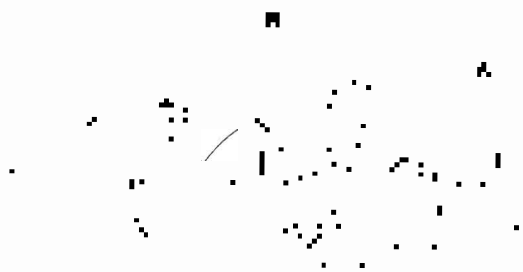
Fan Controls

Component Location Index



Radiator Cap Test

1. [illegible]



2. [illegible]
3. [illegible]
4. [illegible]

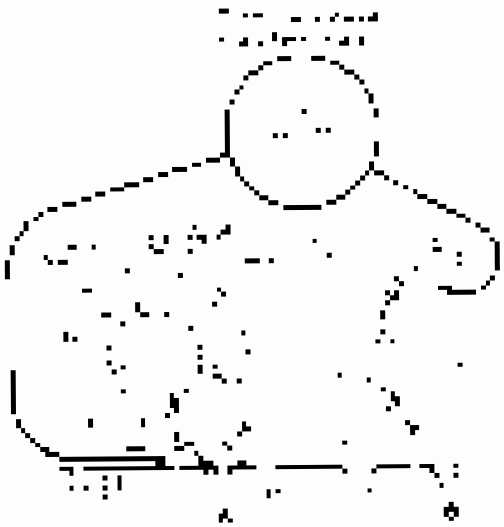
Radiator Test

1. [illegible]
2. [illegible]

3. [illegible]
4. [illegible]

Fan Motor Test

1. [illegible]



2. [illegible]

3. [illegible]

Thermostat Test

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

Standard Thermostat

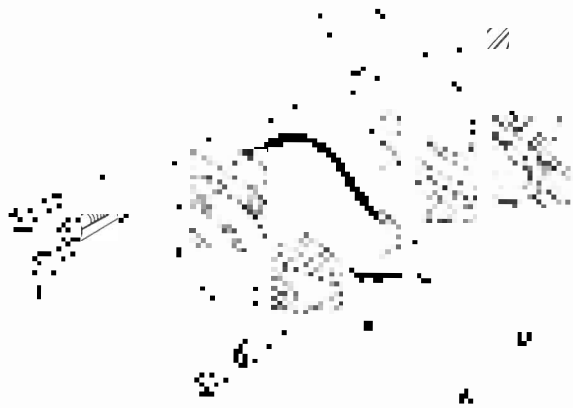
Lift height	[illegible]
Starts opening	[illegible]
Fully open	[illegible]

Water Pump Inspection

1. [illegible]
2. [illegible]
3. [illegible]

Water Pump Replacement

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]



[illegible]

5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]

Coolant Check

1. [illegible]

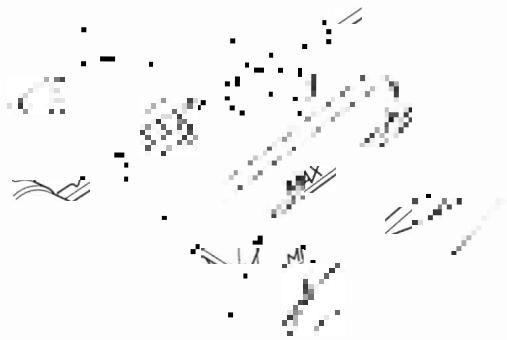
2. [illegible]

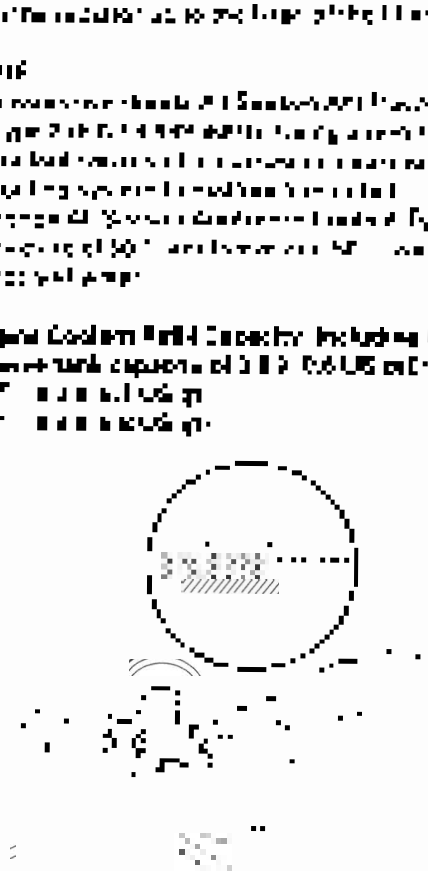
Coolant Replacement

1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]

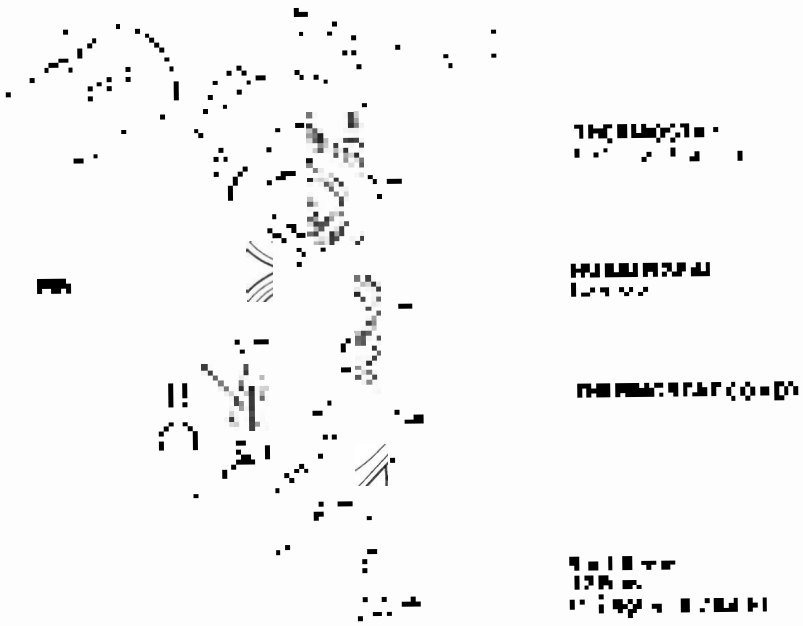
5. [illegible]
6. [illegible]





Thermostat Replacement

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]



6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]

Water Passage Replacement

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

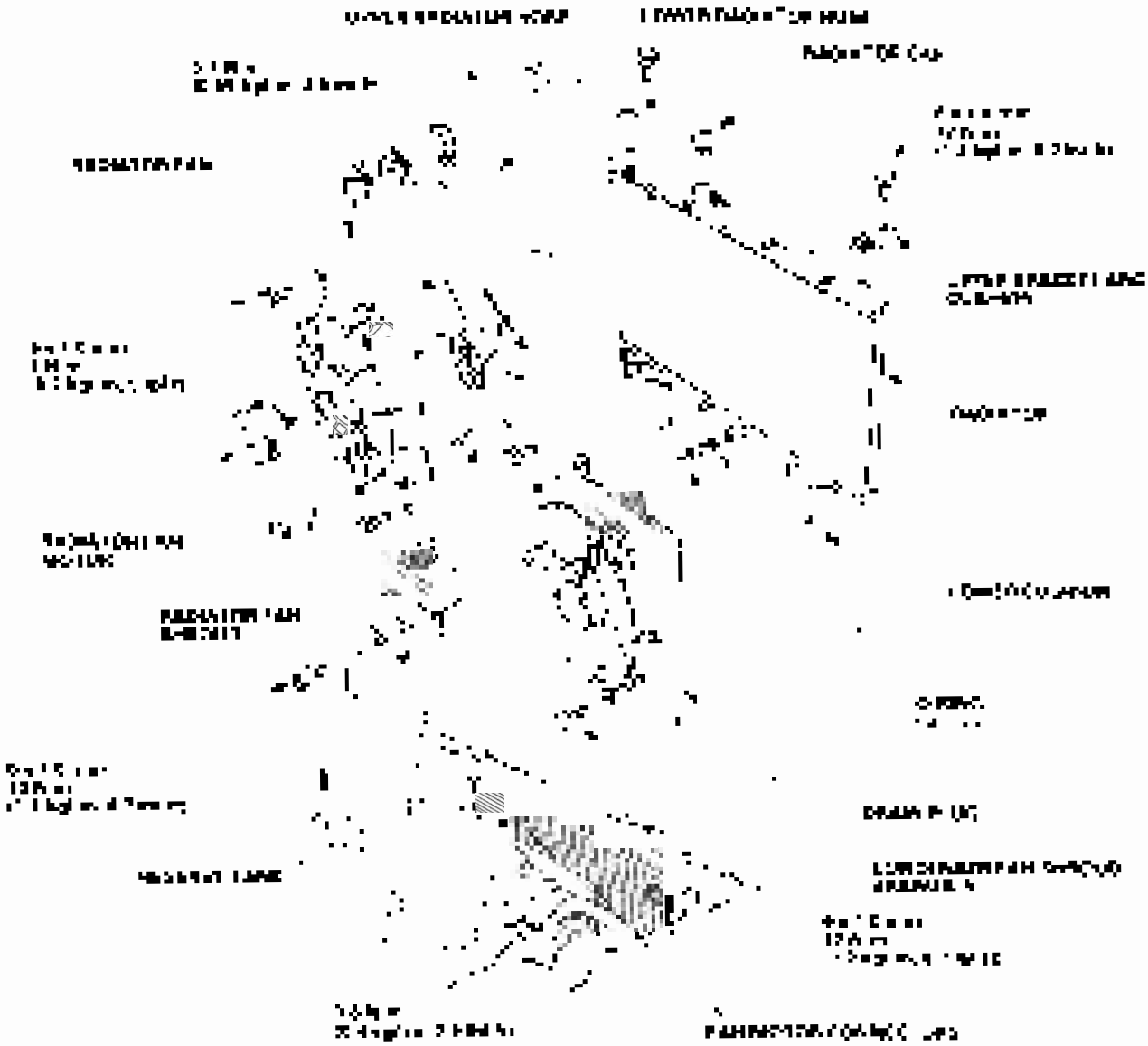
9. [illegible]

10. [illegible]

11. [illegible]

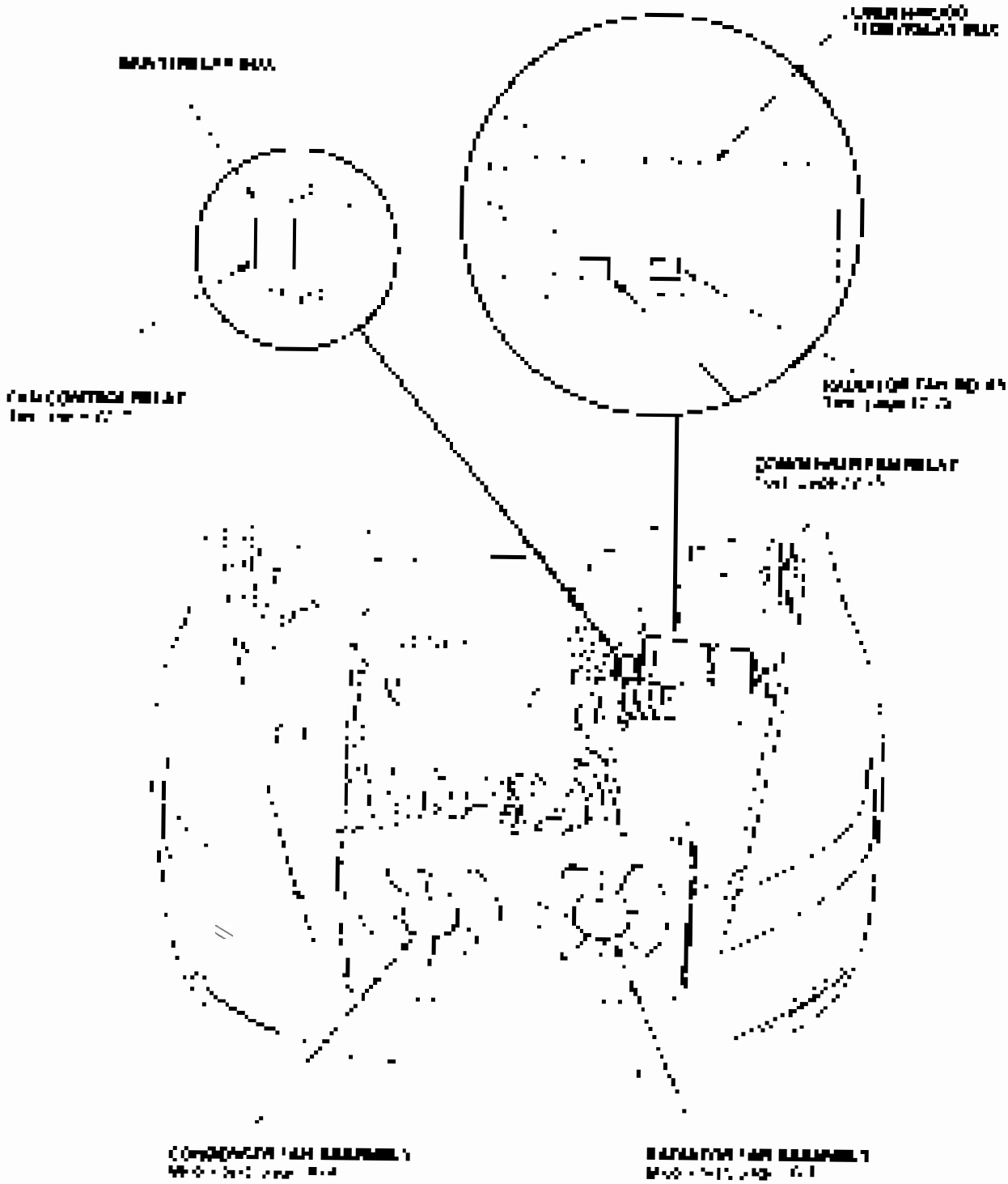
Radiator and Fan Replacement

- [illegible]
- [illegible]
- [illegible]



- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

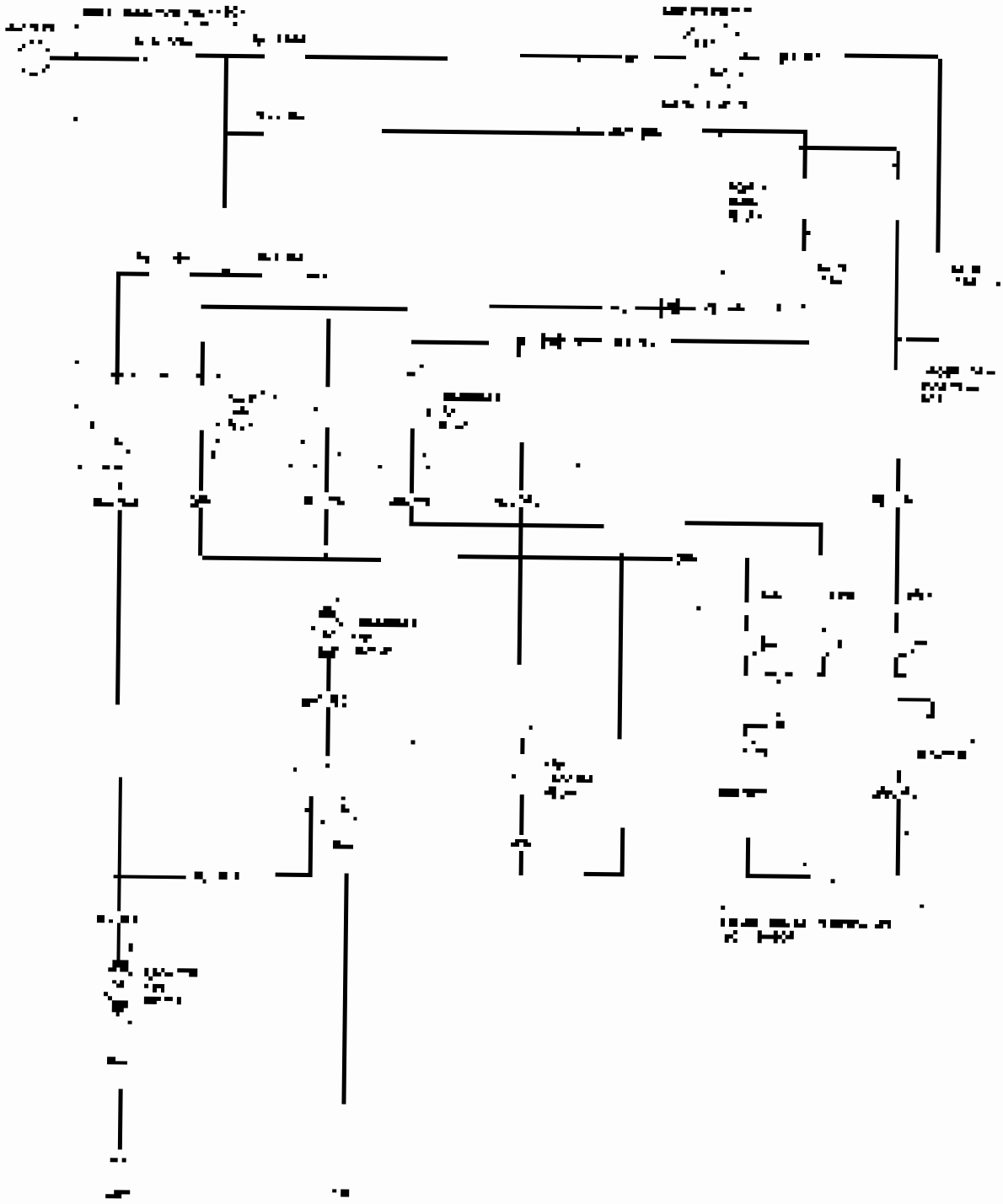
Component Location Index



Symptom Troubleshooting Index

Symptom	Diagnostic Procedure	Also check for
Engine overheats	1 [illegible] 2 [illegible] 3 [illegible] 4 [illegible] 5 [illegible] 6 [illegible] 7 [illegible] 8 [illegible] 9 [illegible] 10 [illegible] 11 [illegible] 12 [illegible]	
Malfunction indicator lamp (check engine light) illuminates with no DTCs stored in the ECM/PCM or engine coolant temperature (ECT) sensor voltage above 2.96 V at 70°C (158°F)	Procedure 1 on page 10-15	
Malfunction indicator lamp (check engine light) illuminates at 206°F (97°C) or above. Engine does not overheat. Fan(s) operate normally. Fan(s) turn off when engine cools down. ECT sensor voltage above 2.96 V at 97°C (206°F). Coolant is not contaminated.	Service the fan(s) as necessary. Verify that: • [illegible] • [illegible] OR coolant is contaminated. Drain and flush the cooling system and refill with fresh coolant. See Cooling System Maintenance in Section 6A.	
Malfunction indicator lamp (check engine light) illuminates with no DTCs stored in the ECM/PCM or engine coolant temperature (ECT) sensor voltage below 2.96 V at 70°C (158°F)	Replace the thermostat. See Thermostat Replacement in Section 6A. Verify that the malfunction indicator lamp (check engine light) turns off.	
Malfunction indicator lamp (check engine light) illuminates with no DTCs stored in the ECM/PCM. Engine does not overheat. Fan(s) operate normally. Fan(s) turn off when engine cools down.	Replace the thermostat. See Thermostat Replacement in Section 6A. Verify that the malfunction indicator lamp (check engine light) turns off.	
Engine overheats. Fan(s) do not operate. Fan(s) operate normally when tested with a scan tool.	Perform the Fan Control Circuit Test on page 10-16.	
Engine overheats. Fan(s) do not operate. Fan(s) operate normally when tested with a scan tool.	Perform the Fan Control Circuit Test on page 10-16.	
Engine overheats. Fan(s) do not operate. Fan(s) operate normally when tested with a scan tool.	Perform the Fan Control Circuit Test on page 10-16.	

Circuit Diagram



Radiator Fan High Speed Circuit Troubleshooting

1. [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

2. [illegible]

3. [illegible]

[illegible]

[illegible]

[illegible]

YES - [illegible]

NO - [illegible]

4. [illegible]

[illegible]

[illegible]

[illegible]

YES - [illegible]

NO - [illegible]

5. [illegible]

[illegible]

[illegible]

[illegible]

YES - [illegible]

NO - [illegible]

Fuel and Emissions

Fuel and Emissions Systems

PGM-FI System

Electronic Throttle Control System

VTEC

Idle Control System

Fuel Supply System

Intake Air System

Catalytic Converter System

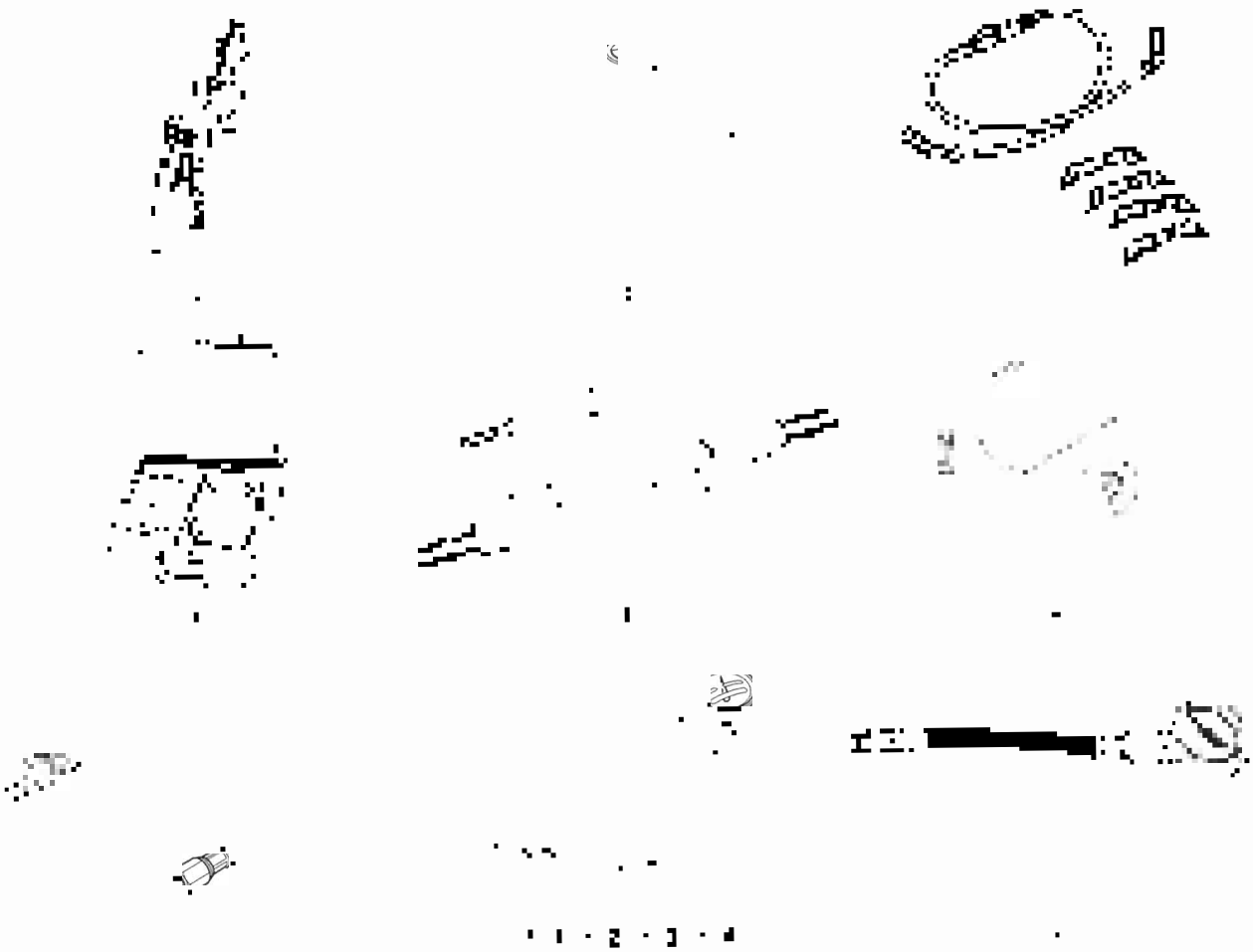
EGR System

PCV System

EVAP System

Special Tools

Ref. No.	Tool Number	Description	Qty
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]



General Troubleshooting Information

Intermittent Failures

[illegible]

Open and Shorts

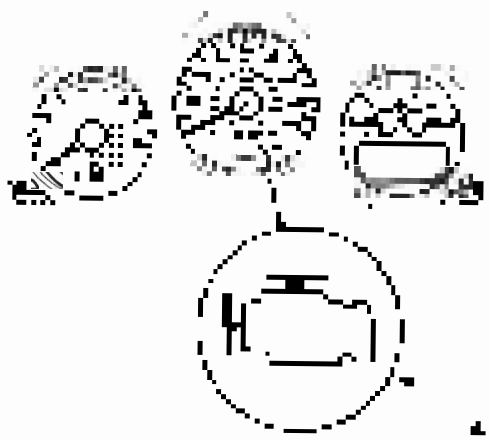
[illegible]

How to Use the HDS (Honda Diagnostic System)

If the MIL (Malfunction Indicator Lamp) does not come on:

1. [illegible]

NOTE: [illegible]



2. [illegible]

3. [illegible]

- [illegible]
- [illegible]
- [illegible]

4. [illegible]

If the MIL does not go off:

[illegible]

If you can't duplicate the DTC:

[illegible]

Continued

General Troubleshooting Information (cont'd)

HDS Clear Command

[illegible]

DTC CLEAR

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

ECM/PCM RESET

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

CKP PATTERN CLEAR/CMP Pattern Learn

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

How to End a Troubleshooting Session (required after any troubleshooting)

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

NOTE: [illegible]

How to Remove the ECM/PCM for Testing

DTC troubleshooting requires voltage or resistance checks at the ECM/PCM connectors. Remove the ECM/PCM as follows:

1. [illegible]
2. [illegible]
3. [illegible]

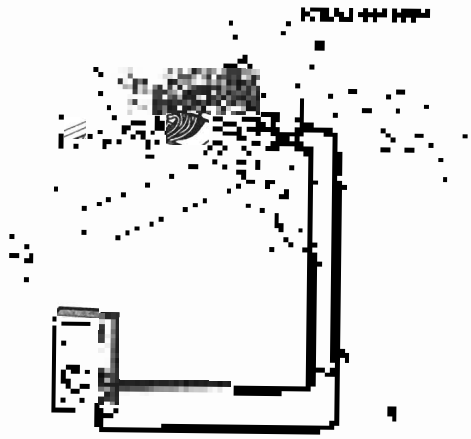
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]

How to Troubleshoot Circuits at the ECM/PCM

Special Tools Required

- [illegible]
- [illegible]

1. [illegible]



2. [illegible]
3. [illegible]

NOTICE

[illegible]

General Troubleshooting Information (cont'd)

ECM/PCM Upgrading and Substitution for Testing

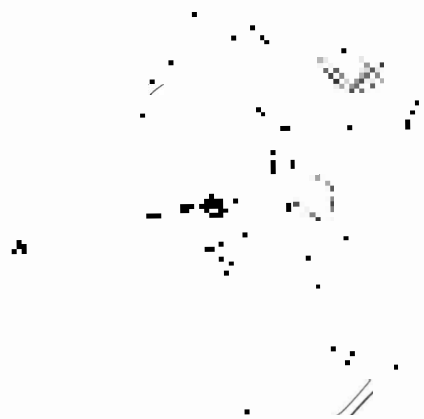
Special Tools Required
Programmable Module Tool (PMT) (Dealer Only)

[illegible]

NOTE: Do not substitute the upgraded ECM/PCM with a standard ECM/PCM. This will cause the MIL to illuminate. Do not substitute the ECM/PCM from a vehicle with a different transmission.

How to Update the ECM/PCM

1. [illegible]
2. Connect the PMT to the Data Link Connector (DLC) located under the driver's side of the dashboard.



3. Follow the PMT screen instructions to update the ECM/PCM.
4. [illegible]
5. [illegible]

How to Substitute the ECM/PCM

1. [illegible]

2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]

8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]

    NOTE: [illegible]
    Mismatched [illegible]
    correctly [illegible]

13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]
17. [illegible]
18. [illegible]

OBD Status

The OBD [illegible]

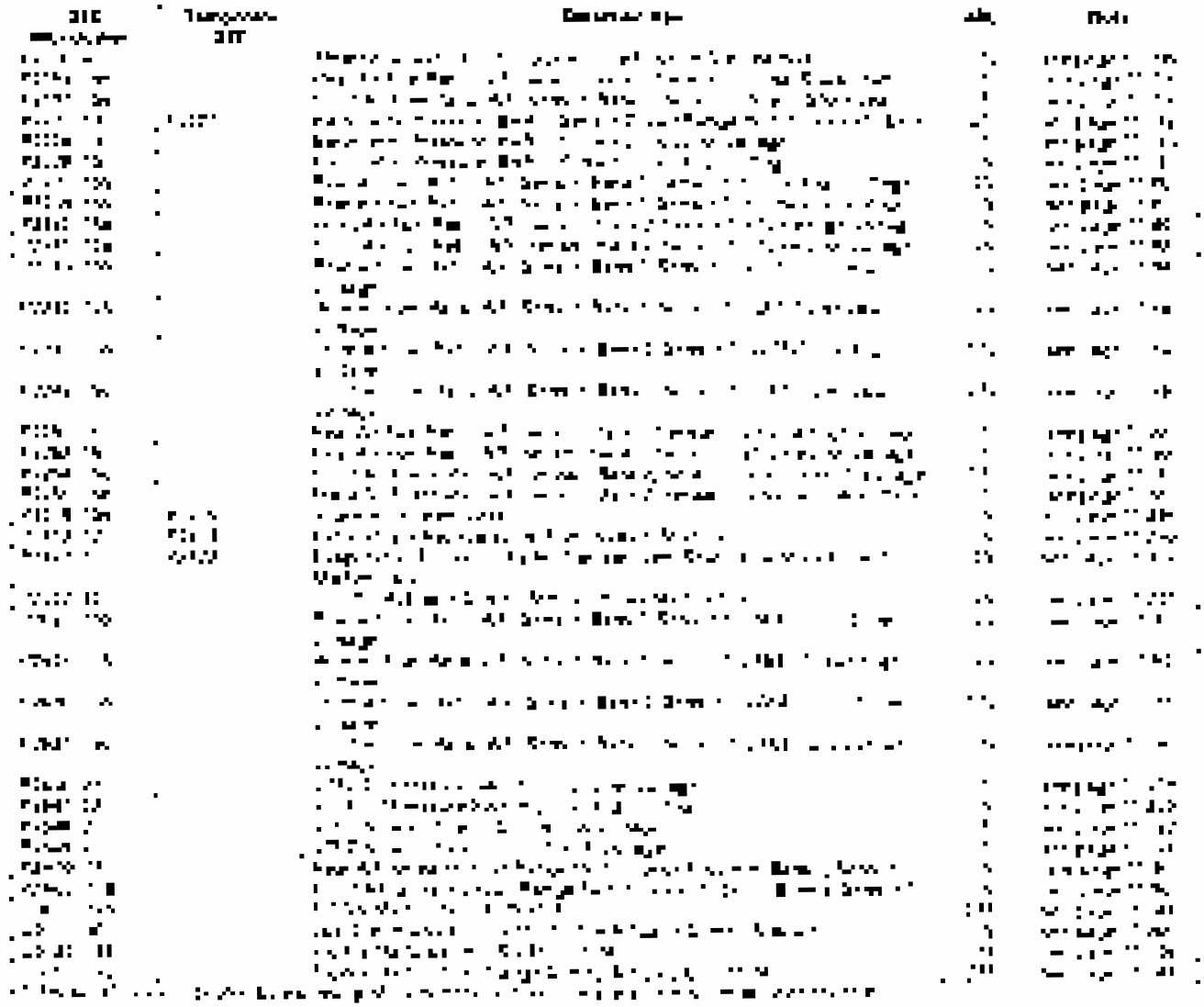
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Fuel and Emissions Systems

DTC Troubleshooting Index

[illegible]

DTC Troubleshooting Index (cont'd)



Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
[illegible]	1 [illegible]	• [illegible]
[illegible]	2 [illegible]	• [illegible]
	3 [illegible]	• [illegible]
	4 [illegible]	• [illegible]
		• [illegible]
		• [illegible]
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	1 [illegible]	• [illegible]
[illegible]	2 [illegible]	• [illegible]
	3 [illegible]	• [illegible]
		• [illegible]
		• [illegible]
[illegible]	1 [illegible]	[illegible]
[illegible]	2 [illegible]	
	3 [illegible]	
	4 [illegible]	
[illegible]	1 [illegible]	
[illegible]	2 [illegible]	
	3 [illegible]	
	4 [illegible]	
[illegible]	1 [illegible]	
	2 [illegible]	
[illegible]	1 [illegible]	
	2 [illegible]	
[illegible]	1 [illegible]	• [illegible]
[illegible]	2 [illegible]	• [illegible]
	3 [illegible]	
	4 [illegible]	

Symptom Troubleshooting Index (cont'd)

Symptom	Diagnostic procedure	Also check for
[illegible]	1. [illegible] 2. [illegible] 3. Replace the [illegible]	[illegible]
[illegible]	Replace the [illegible]	[illegible]

Electronic Control System

[illegible]

Fail-safe Function

[illegible]

Backup Function

[illegible]

Self-diagnosis

[illegible]

Two-Trip Detection Method

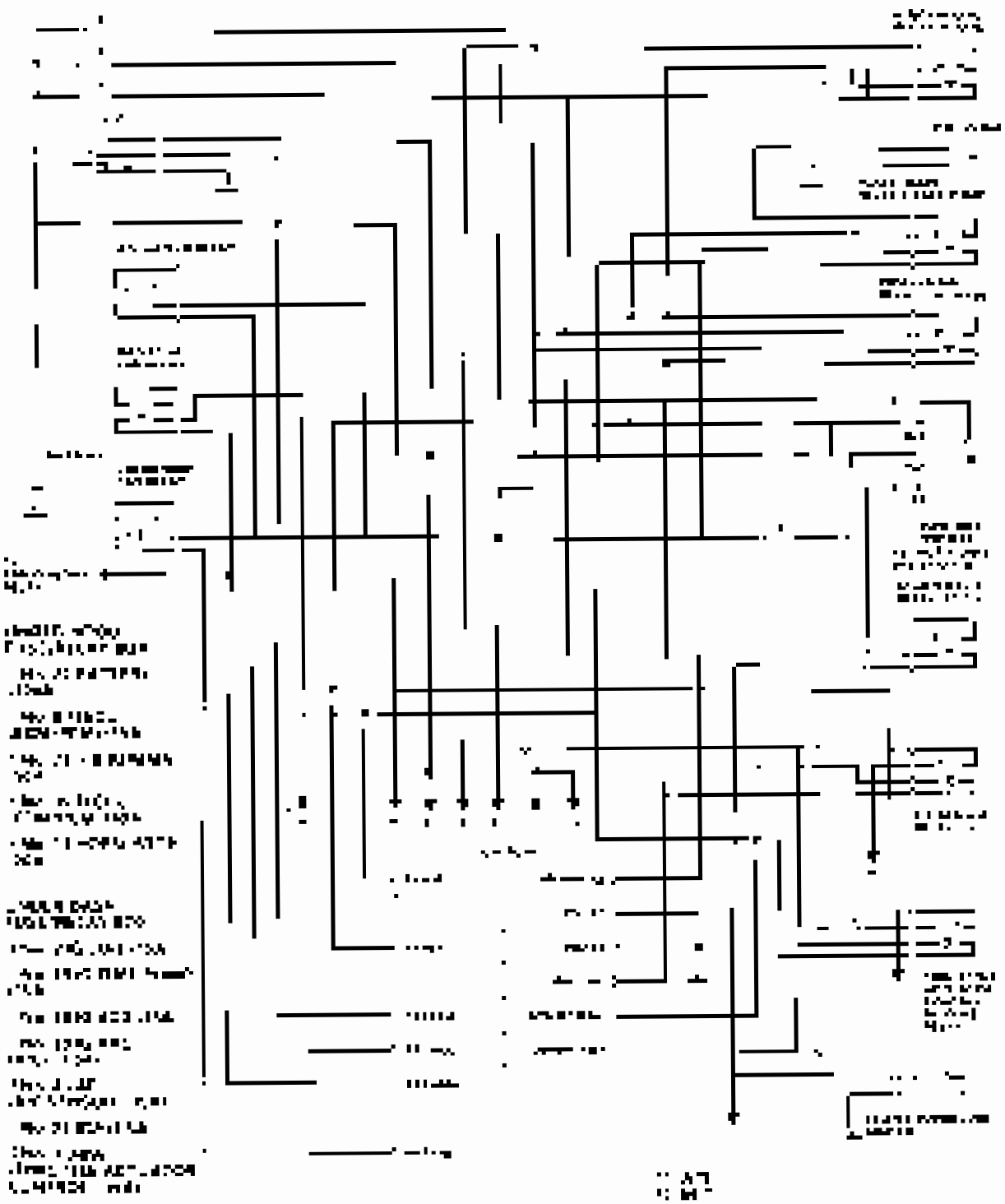
[illegible]

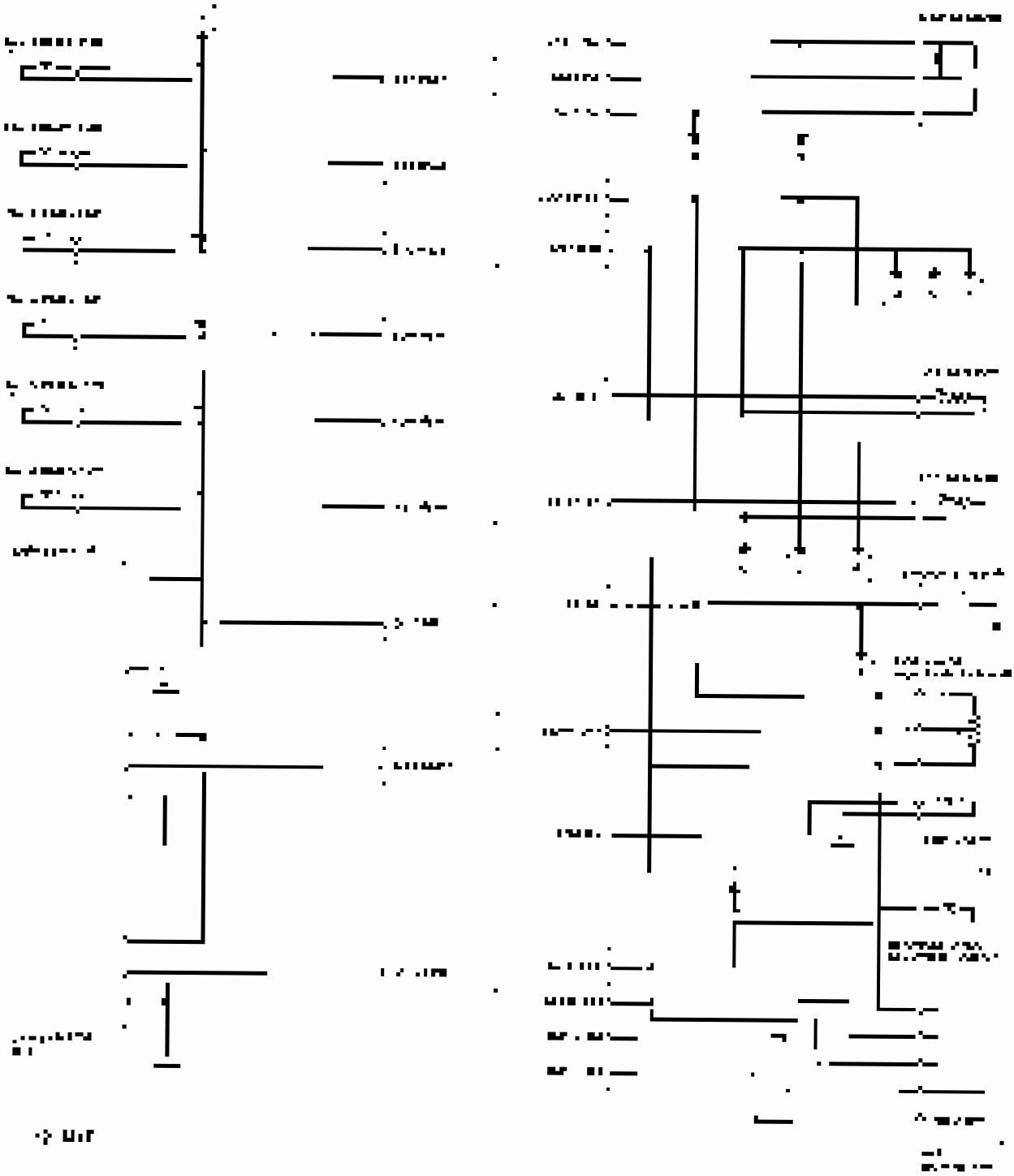
Self-Shut System Monitoring

[illegible]

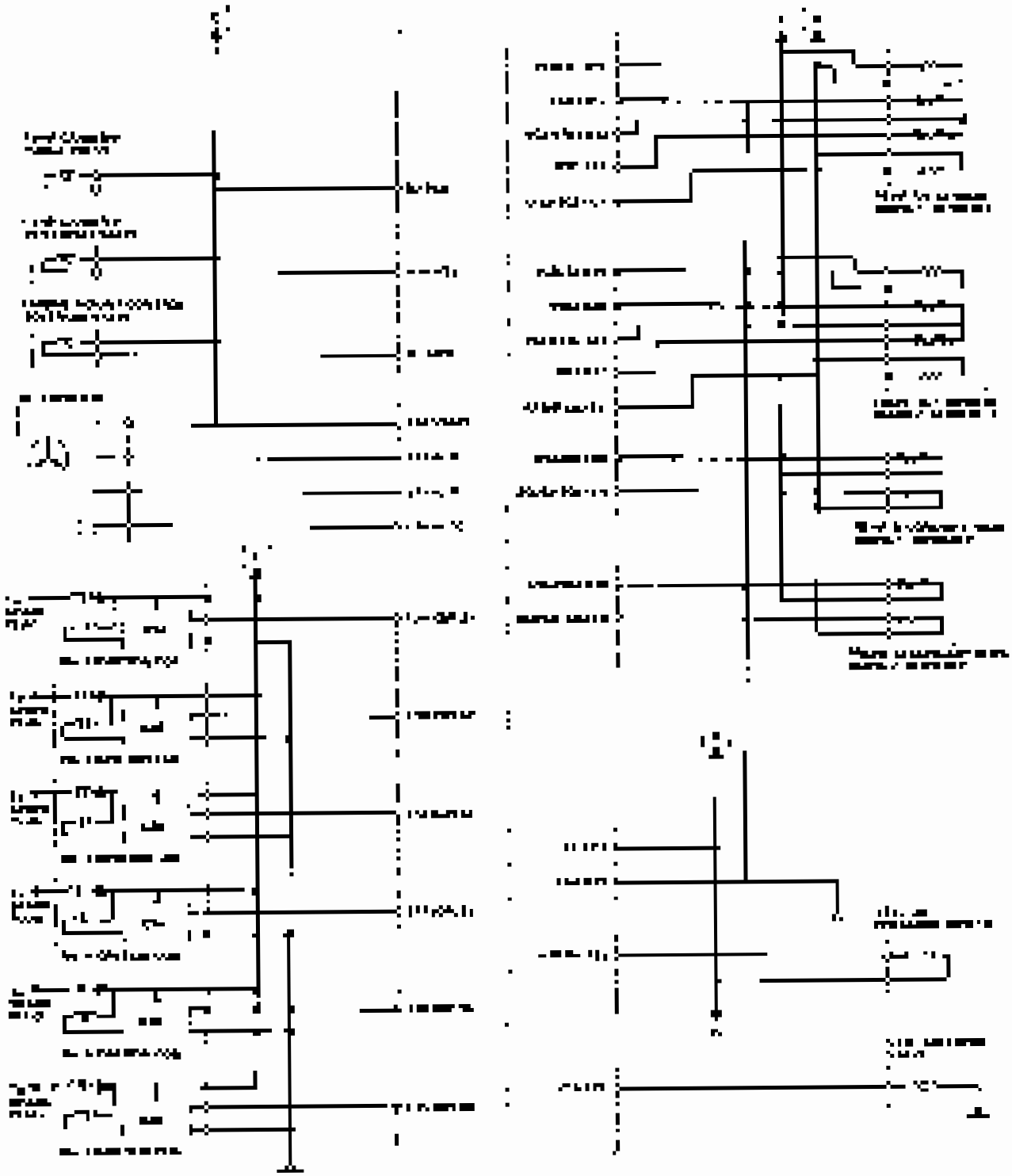
[illegible]

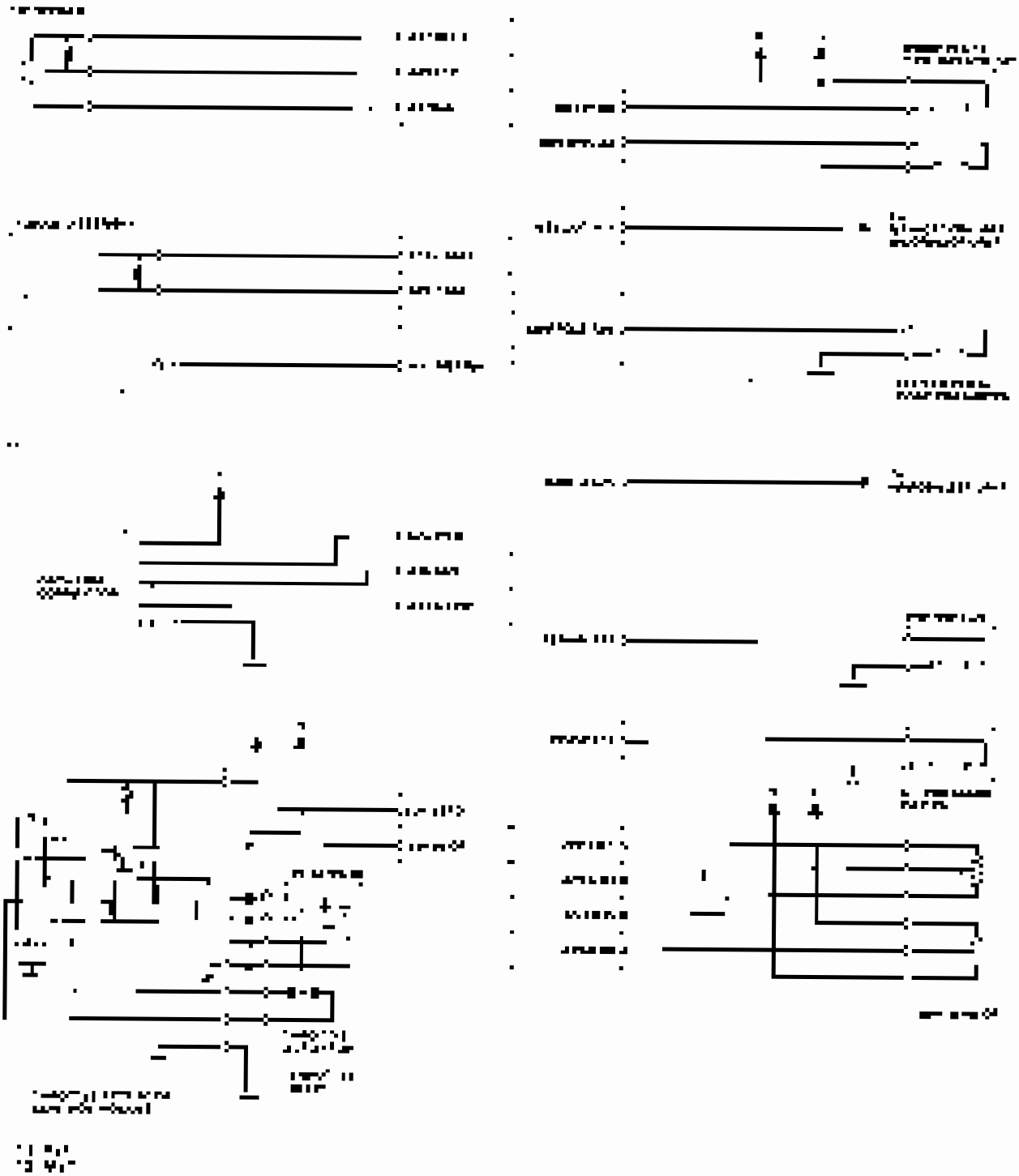
System Description (cont'd)



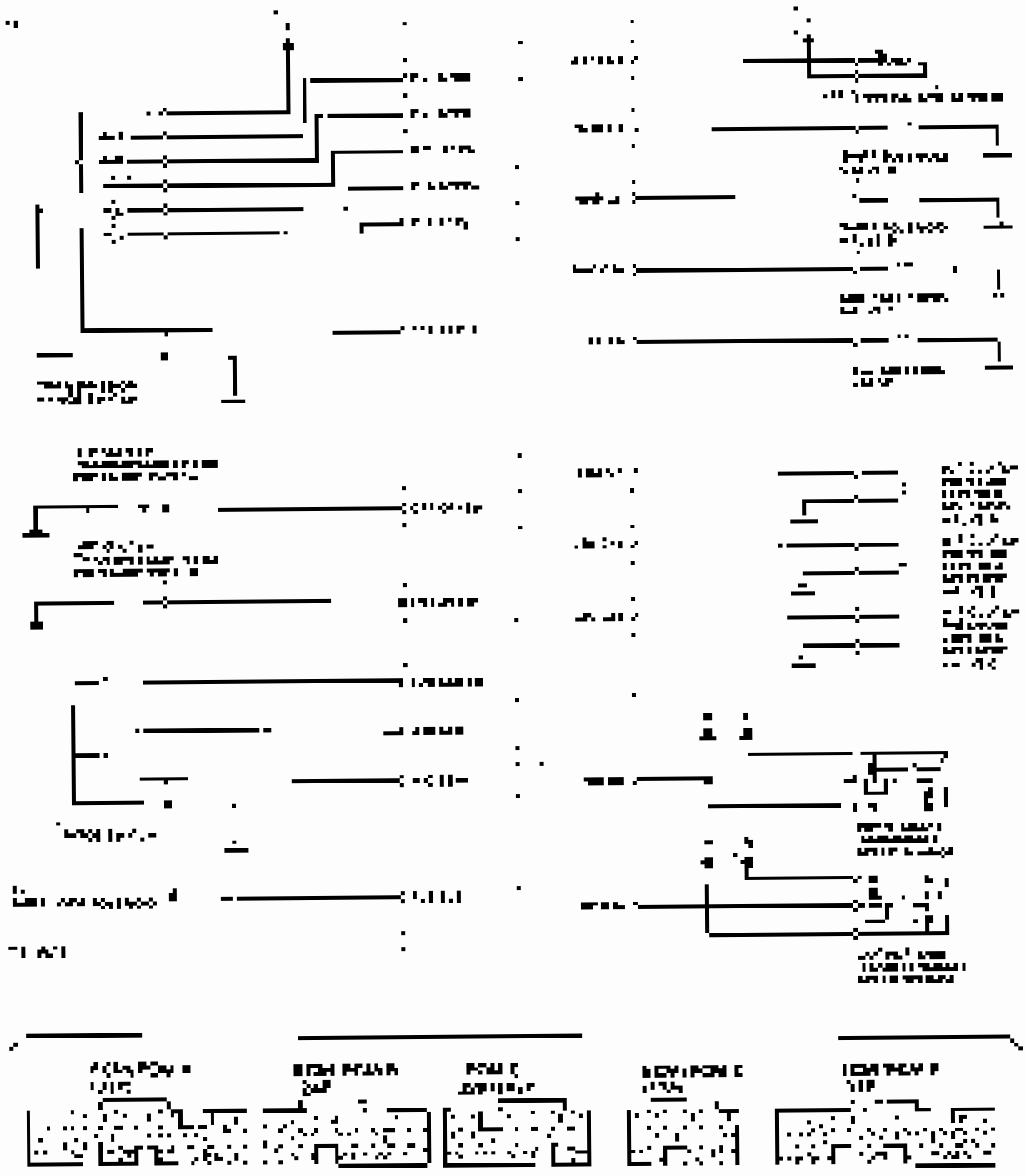


System Description (cont'd)





System Description (cont'd)

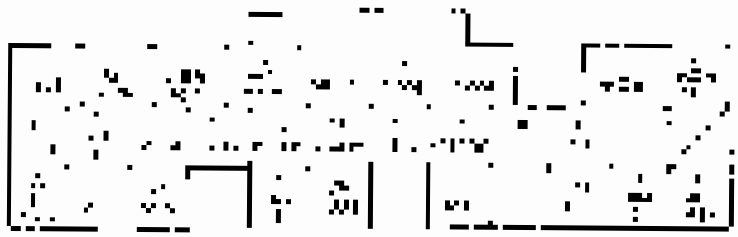


Vacuum Hose Routing

System Description (cont'd)

Vacuum Distribution

ECM/PCM Inputs and Outputs at Connector A (32P)



[illegible]

[illegible]

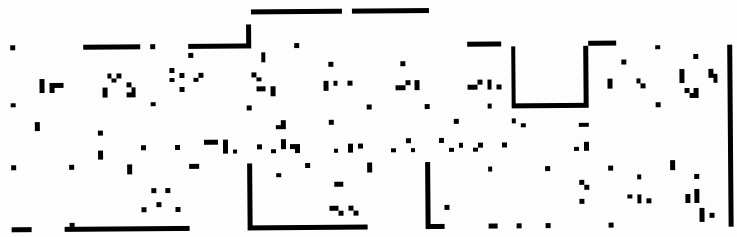
Terminal number	Wire color	Terminal name	Description	Signal
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

System Description (cont'd)

ECM/PCM Inputs and Outputs at Connector A (31P)

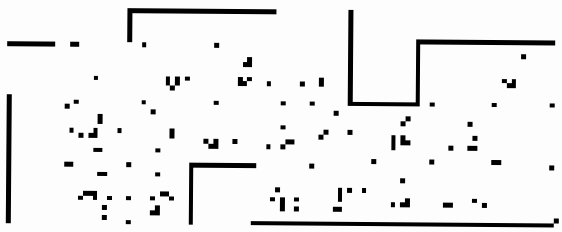


[illegible]

[illegible]

[illegible]

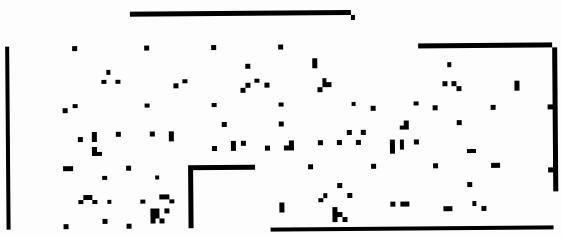
ECM/PCM Inputs and Outputs at Connector B (24P)



Pin No.	Wire Color	Specification	Description	Signal

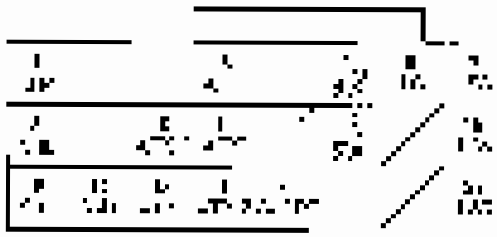
System Description (cont'd)

ECM/PCM Inputs and Outputs on Connector B (21P)



Terminal Number	Wire color	Terminal name	Description	Signal

PCM Inputs and Outputs at Connector E (26P)*



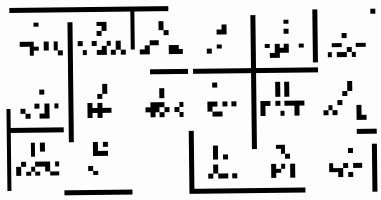
[illegible]

[illegible]

[illegible]

System Description (cont'd)

ECM/PCM Inputs and Outputs at Connector D (17P)



Terminal Number	Wire Color	Terminal Name	Description	Signal
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				

ECM/PCM Inputs and Outputs at Connector E (31P)

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

System Description (cont'd)

ECM/PCM Inputs and Outputs at Connector E (31P)

[illegible]

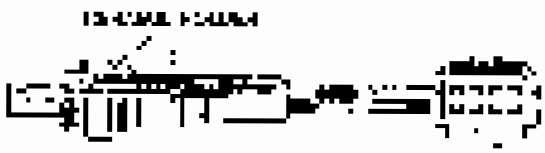
[illegible]

Terminal number	Wire color	Terminal name	Description	Signal
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	

PGM-FI System

Air Conditioning (A/C) Compressor Clutch Relay

Air Flow Meter (AFM) Sensor



Barometric Pressure (BARO) Sensor

Crankshaft Position (CKP) Sensor

Engine Coolant Temperature (ECT) Sensor

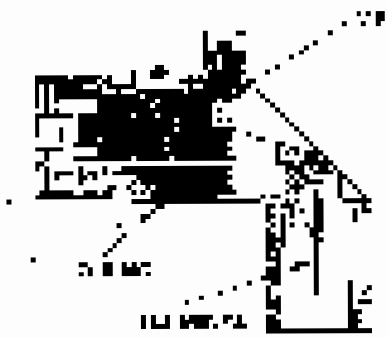
Crankshaft Position (CKP) Sensor

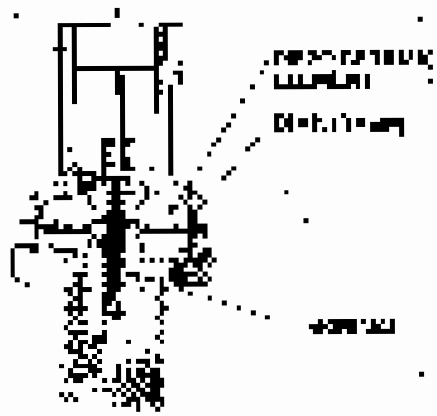
Engine Coolant Temperature (ECT) Sensor

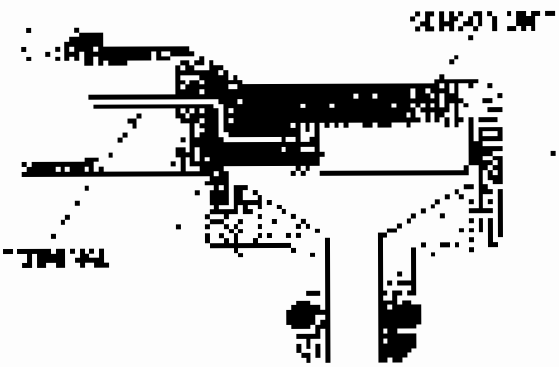
Ignition Timing Control

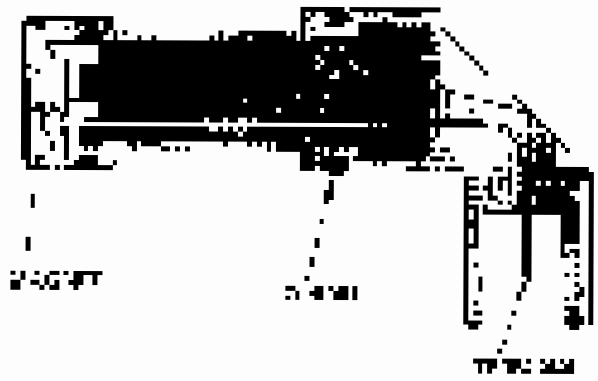
Injector Timing and Duration

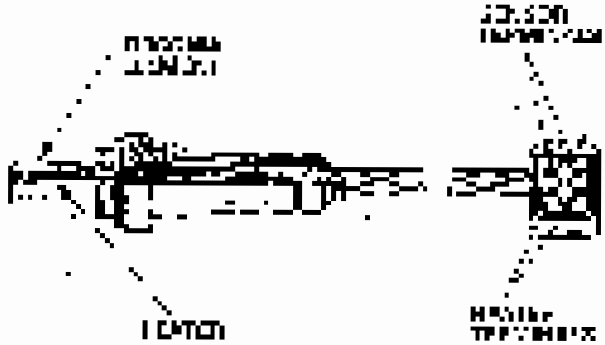
System Description (cont'd)







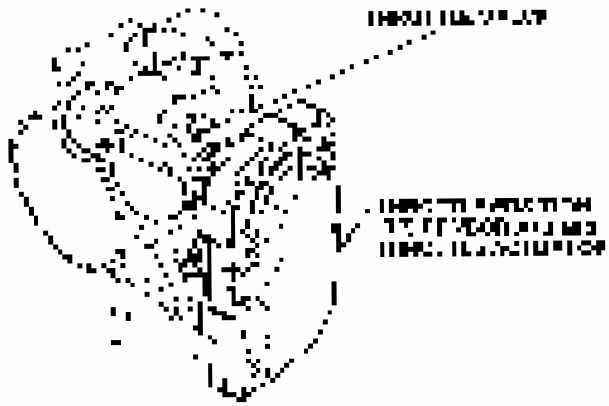




Electronic Throttle Control System

System Description (cont'd)

Throttle Body



Idle Control System

Knock Control Position Switch

Power Steering Pressure (PSP) Switch

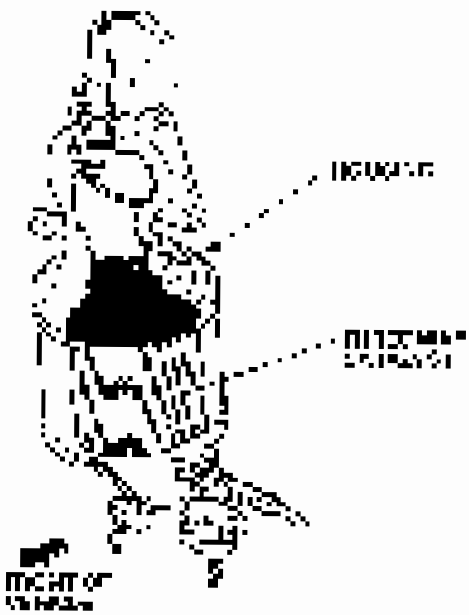
Fuel Supply System

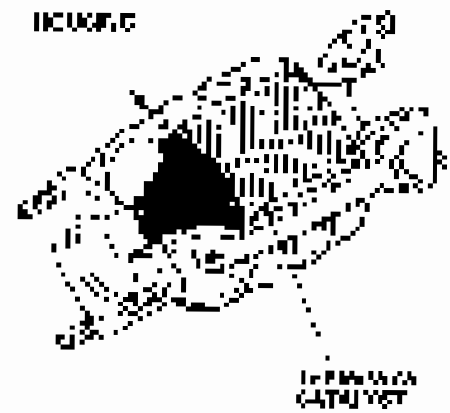
Fuel Cutoff Control

Fuel Pump Control

PGM-FI Main Relay 1 and 2

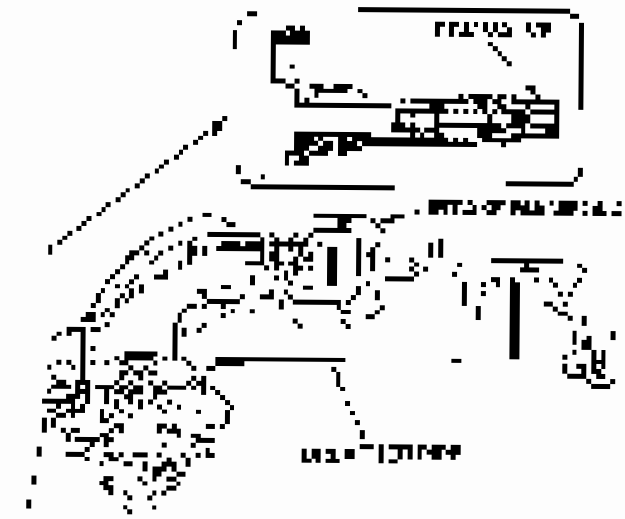
Catalytic Converter System





Exhaust Gas Recirculation (EGR) System

Positive Crankcase Ventilation (PCV) System



System Description (cont'd)

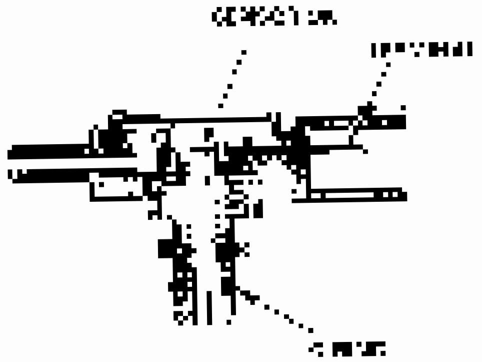
Evaporative Emission (EVAP) Control System

Refer to the [illegible] on page [illegible] for the [illegible] system.

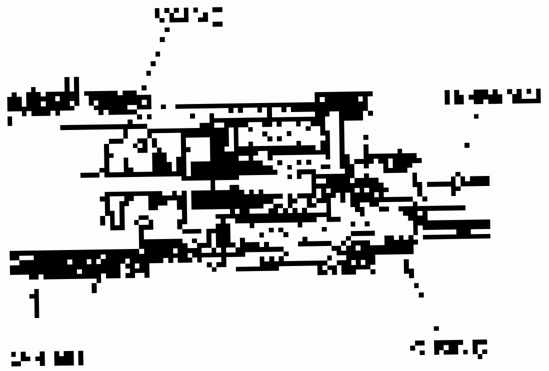
EVAP Canister
The EVAP canister temporarily [illegible] can be purged [illegible] EVAP [illegible] the engine [illegible]

EVAP Canister Purge Valve
When the engine is [illegible] the PCM/ECM [illegible] the EVAP [illegible] purge valve [illegible] EVAP canister.

Fuel Tank Pressure (FTP) Sensor
The FTP [illegible] pressure [illegible] the PCM [illegible] the EVAP [illegible]



EVAP Canister Vent Shut Valve
The EVAP [illegible] canister.
The EVAP [illegible] of the EVAP canister.

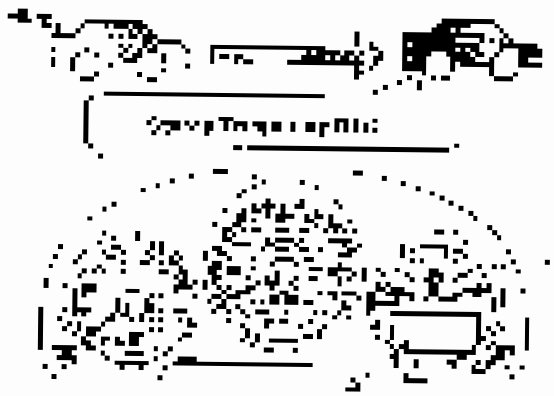


Fuel Cap Control

The EVAP control system is designed to prevent fuel vapor from escaping into the atmosphere. When the fuel tank is filled properly and the fuel cap is tightened correctly, this system will also prevent fuel spillage in case of accidents or rollovers. The fuel cap is designed to release pressure at specified levels to avoid fuel spillage or damage to the fuel system components caused by excessive pressure.

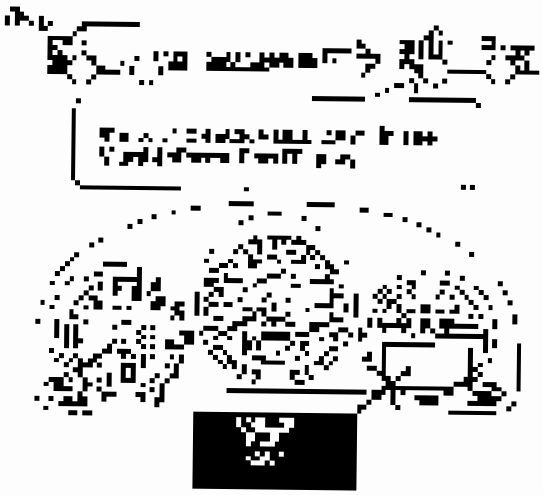
First Driving Cycle

1. Start the engine and drive the vehicle at a speed above 88 km/h (55 mph) for at least 5 minutes.



Second Driving Cycle

1. Start the engine and drive the vehicle at a speed above 88 km/h (55 mph) for at least 5 minutes.



Immediate Repair Required

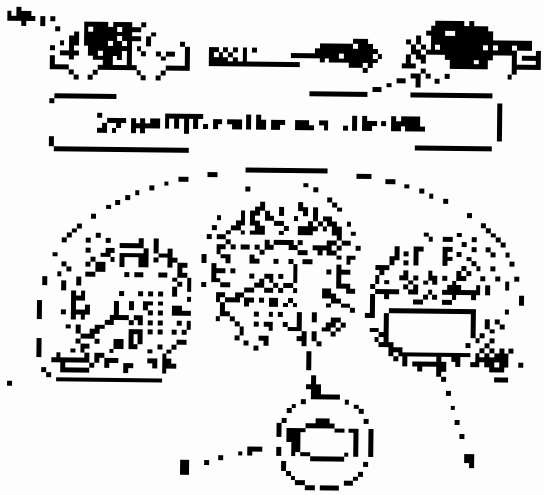
Repair the EVAP control system before proceeding to the Confirmed Driving Cycle if any of the following conditions exist:

- The engine starts but stalls or runs poorly.
- Excessive fuel vapor escaping is detected (fuel odor).
- The fuel tank was overfilled (more than three automatic pump shut-off).

Confirmed Driving Cycle

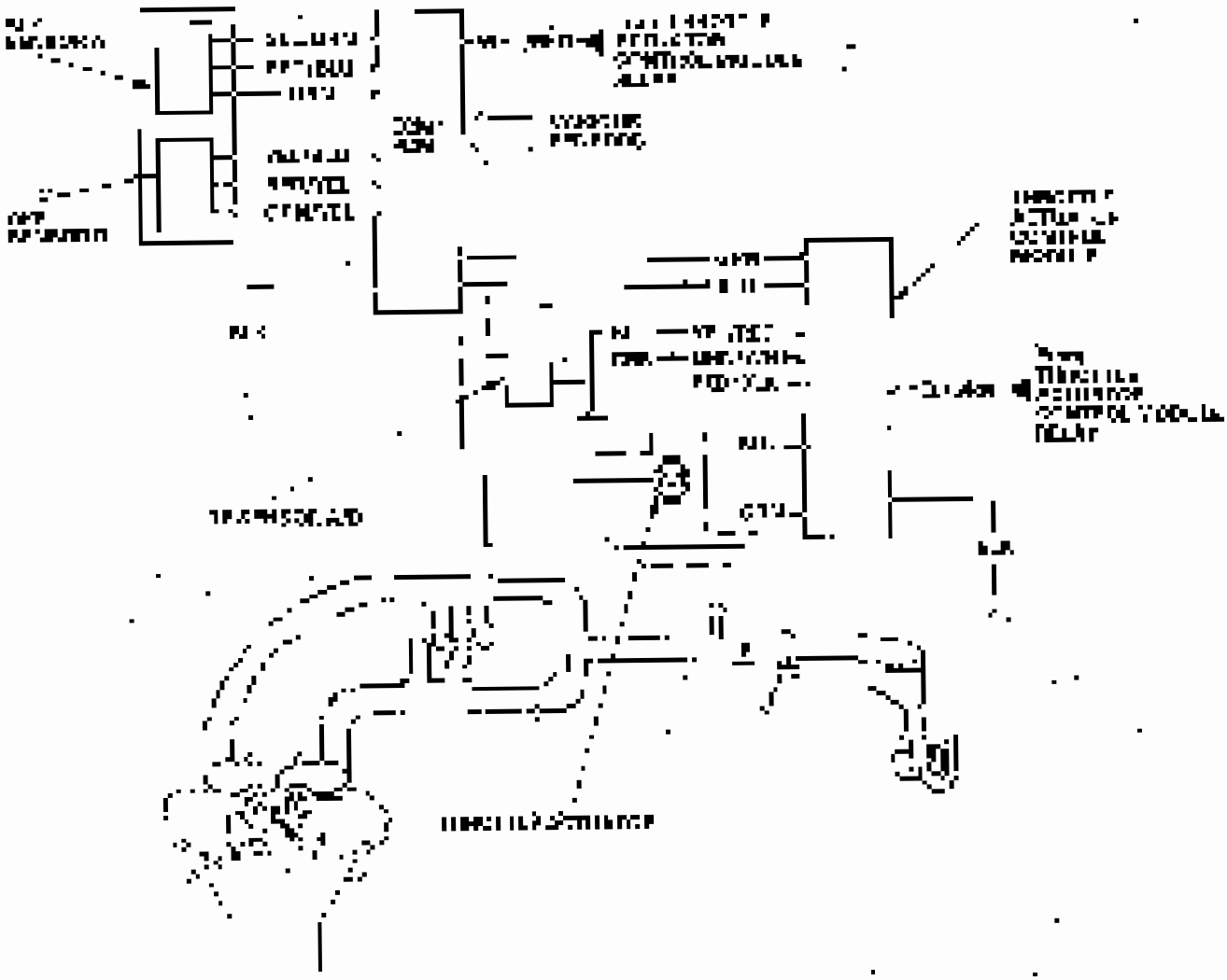
Before performing this driving cycle, the following conditions must be met:

- The battery voltage must be more than 11 volts.
- The vehicle must be driven under conditions of steady throttle, steady speed, and moderate load (not in stop-and-go traffic).
- The EVAP control system must be operating correctly.
- The fuel level must be between 15% and 85% of the tank capacity.
- The ECT sensor must indicate between 4°C and 35°C (40°F and 95°F) before the test begins.
- The vehicle must be driven for a total of at least 150 minutes.

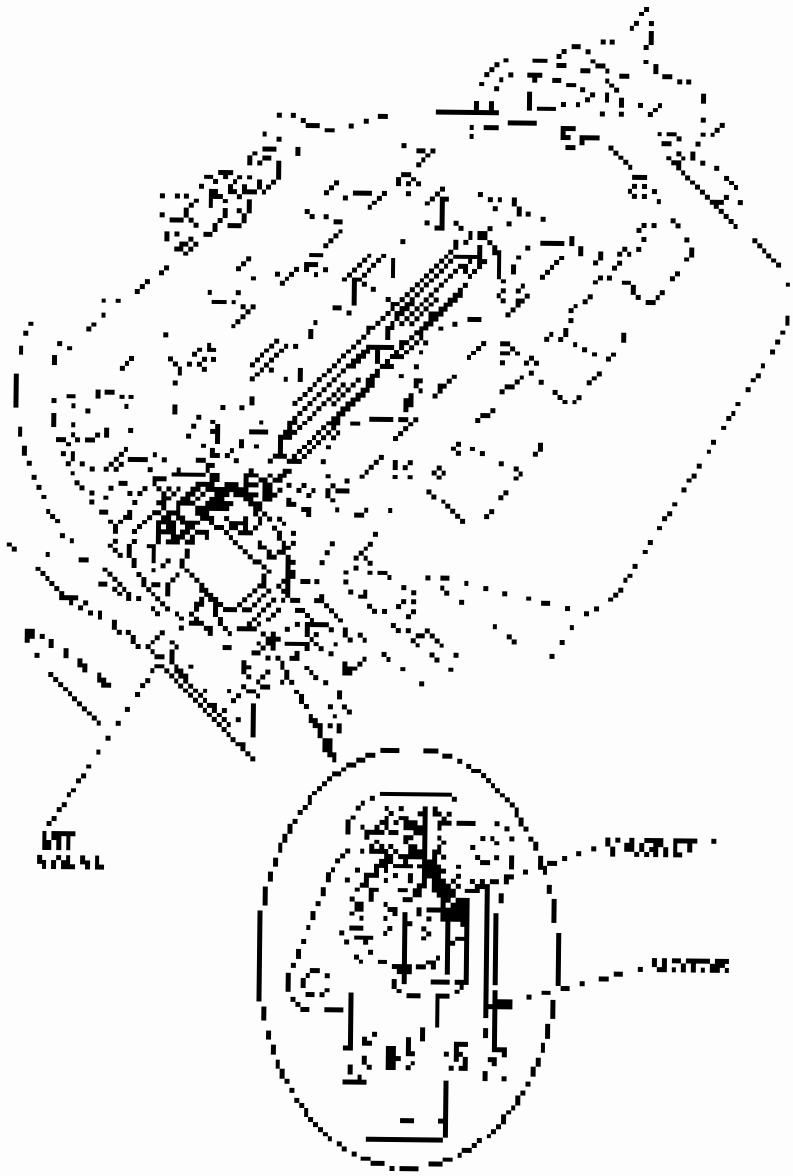


System Description (cont'd)

Electronic Throttle Control System—Diagram

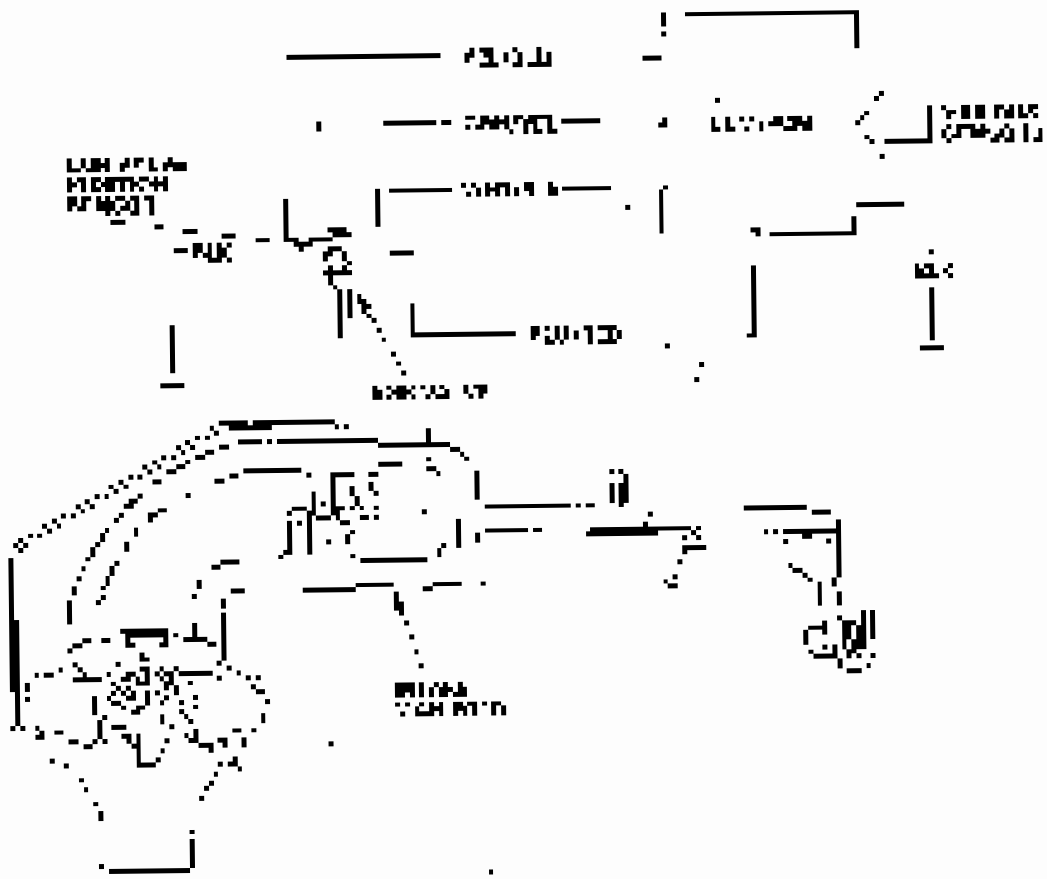


Intake Manifold Tuning (IMT) Valve System

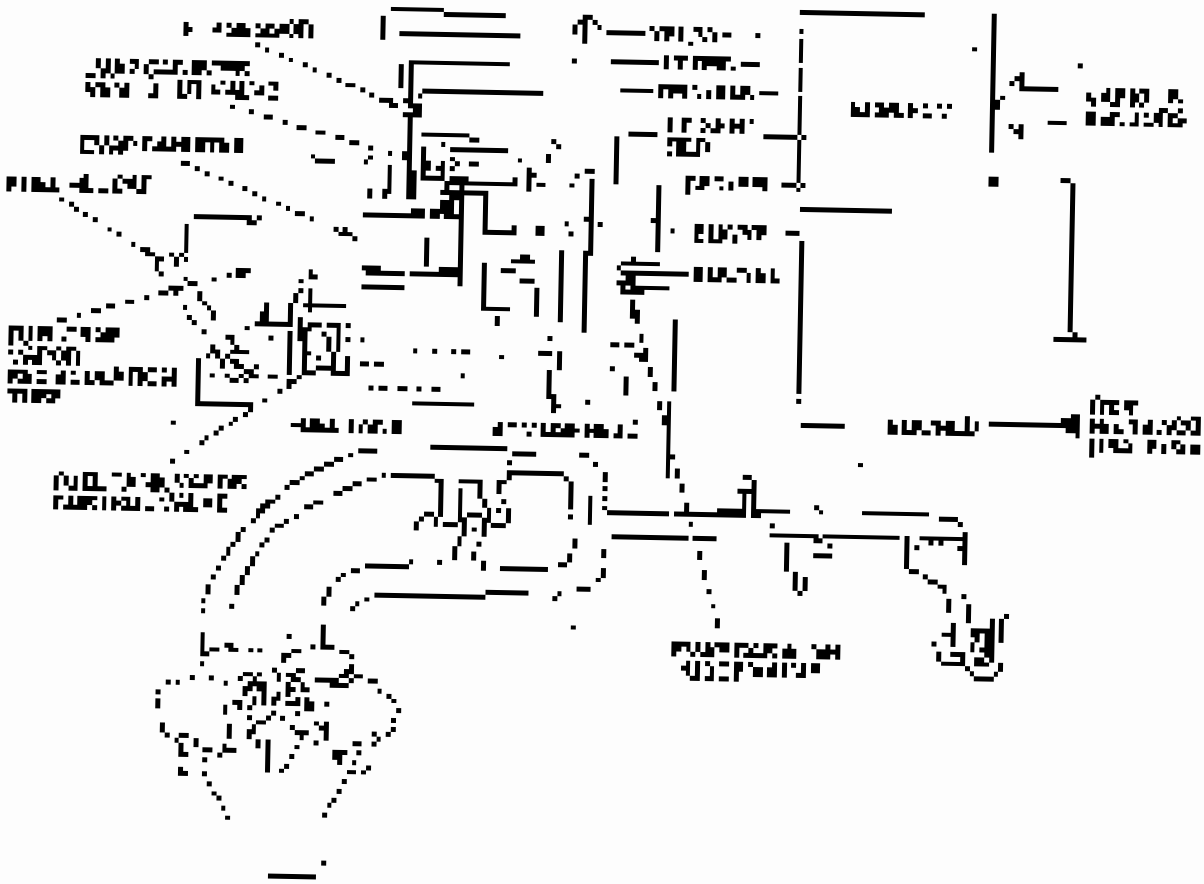


System Description (cont'd)

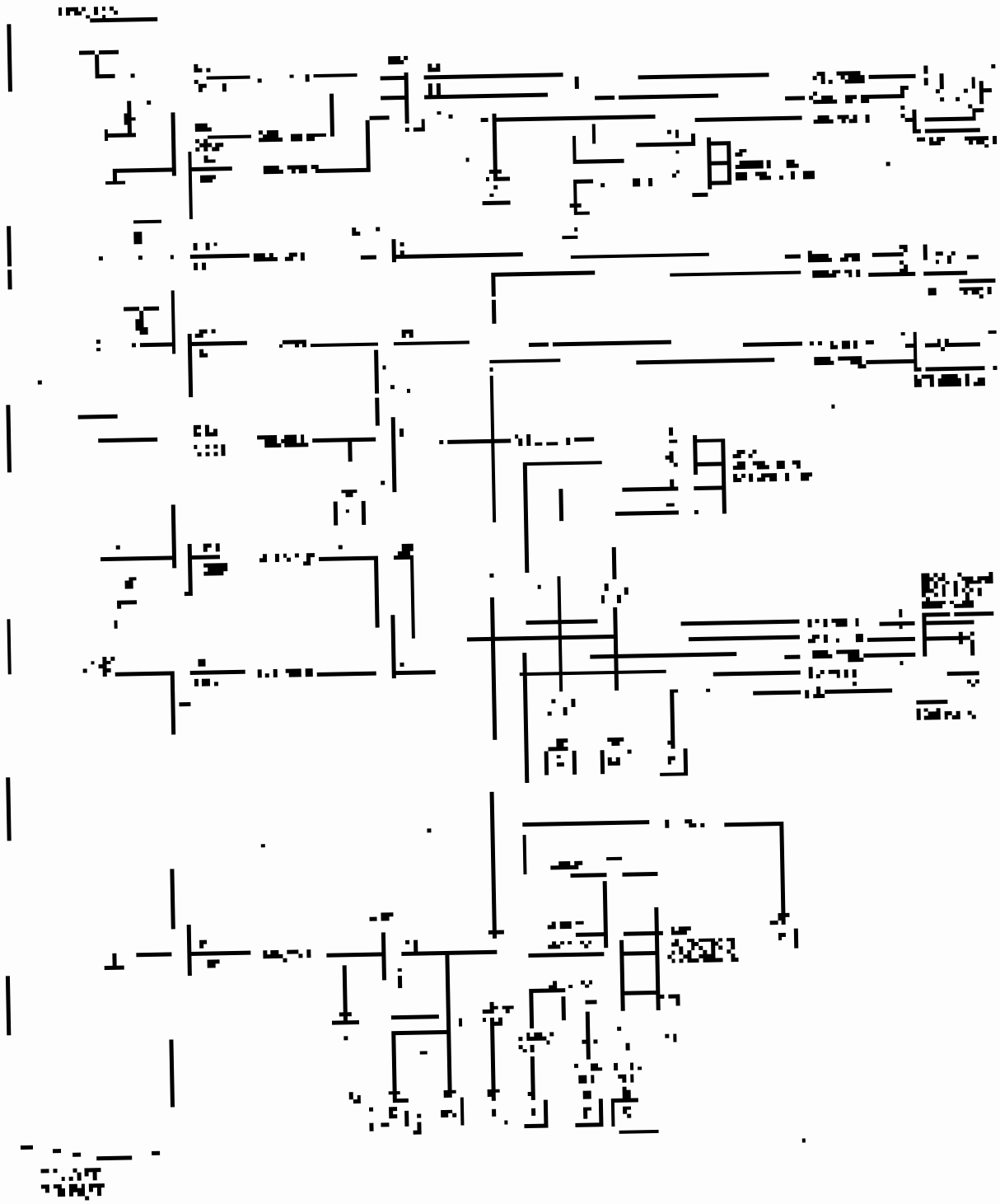
Exhaust Gas Recirculation (EGR) System Diagram

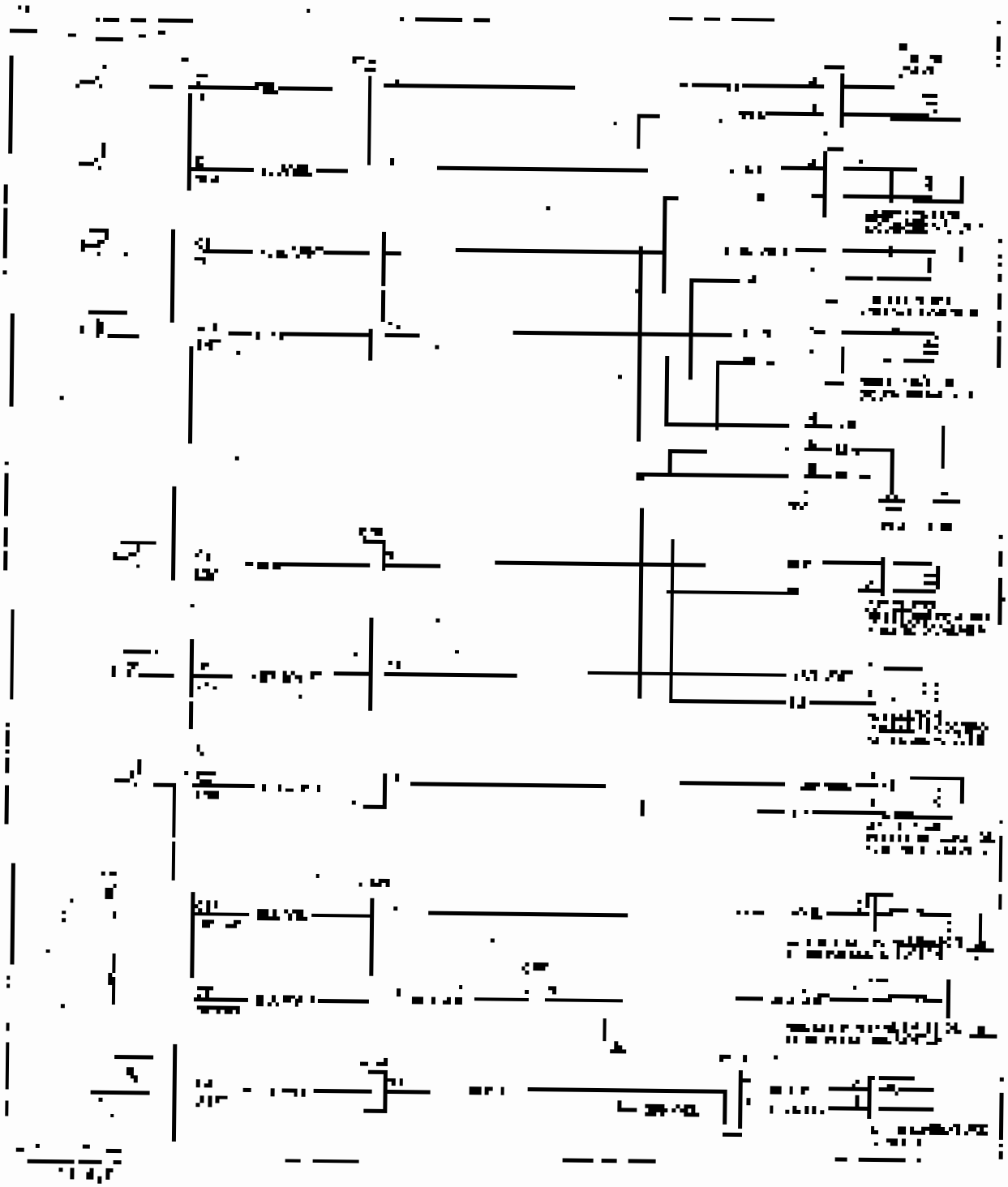


Evaporative Emission (EVAP) Control Diagram

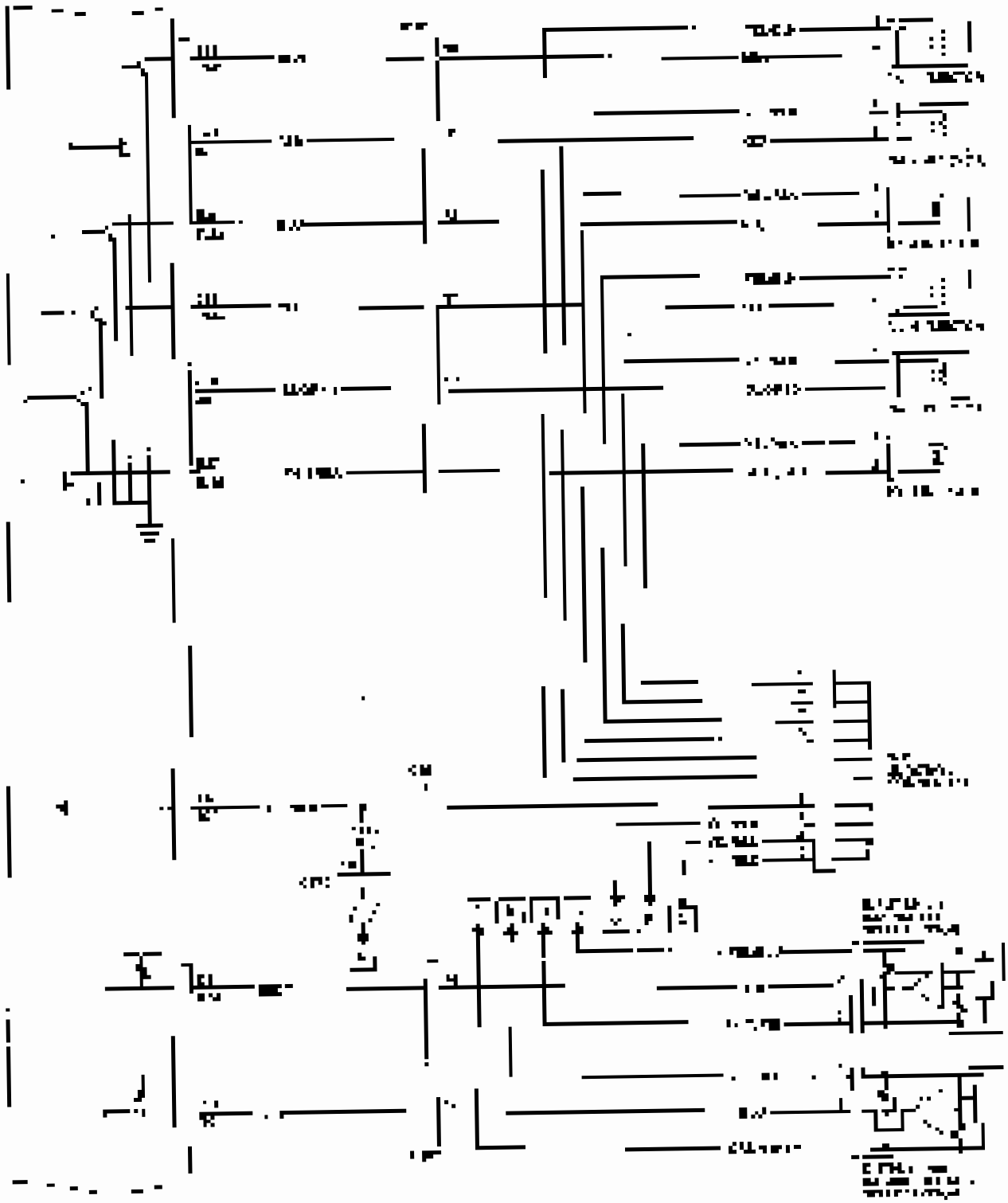


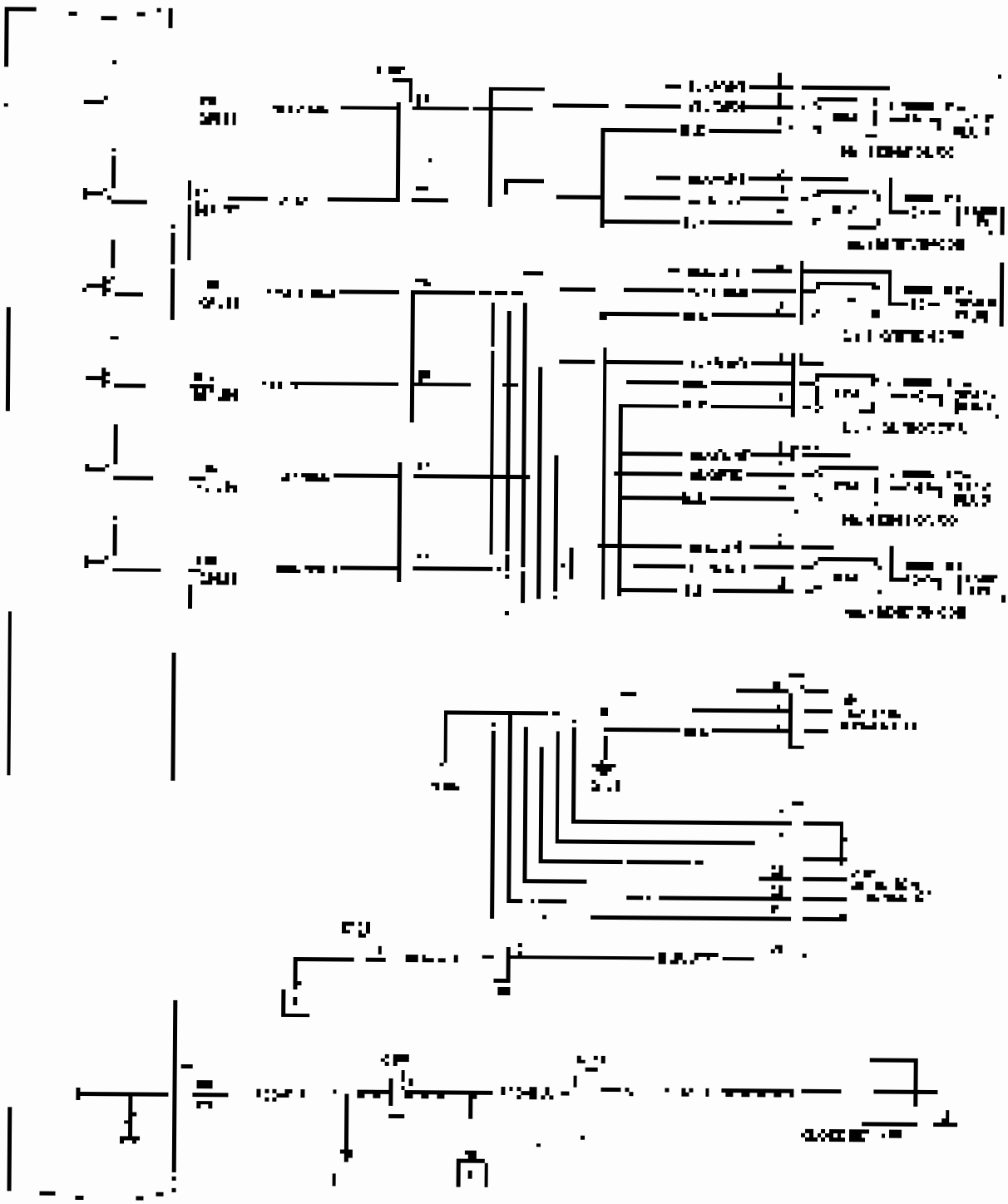
System Description (cont'd)



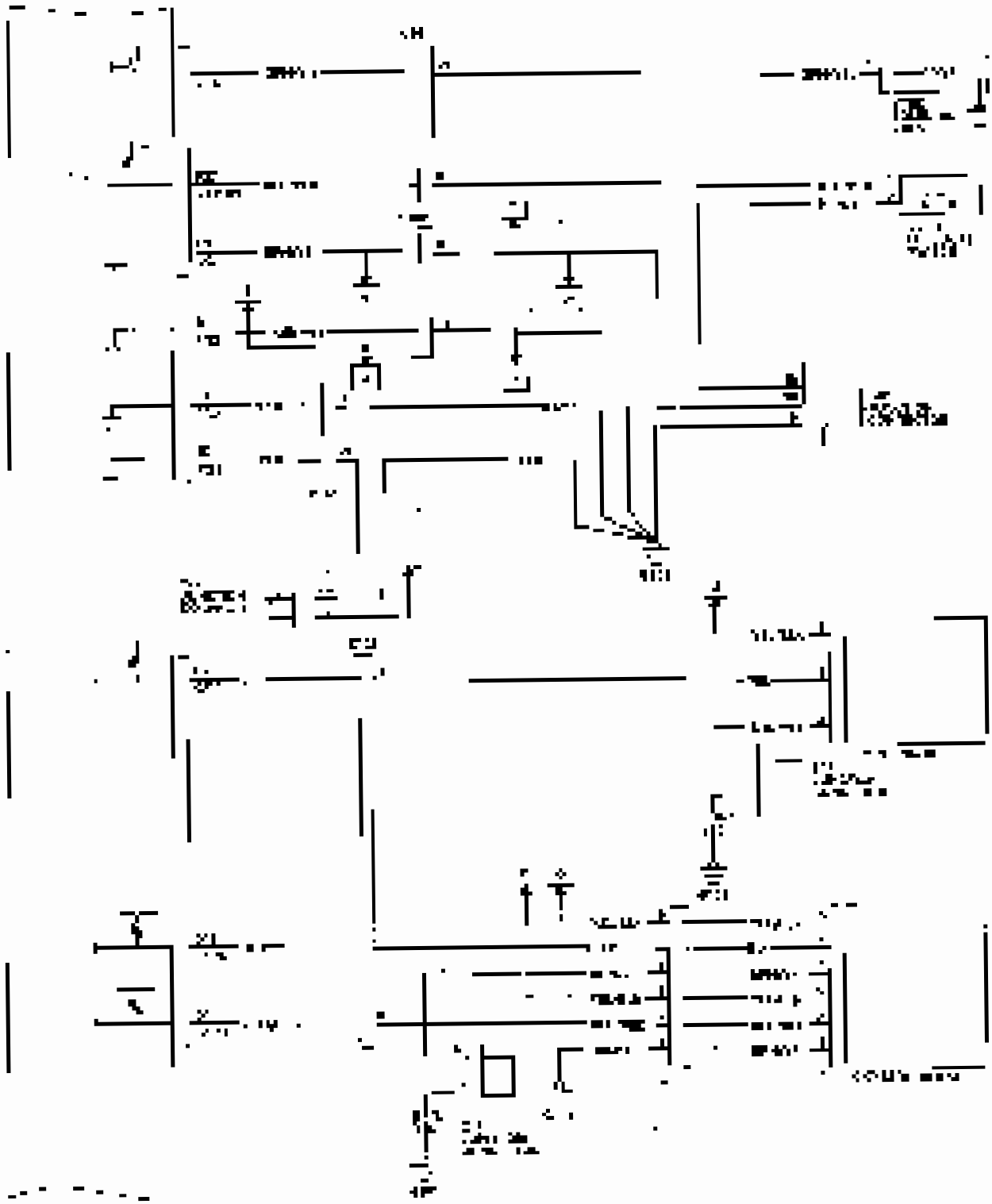


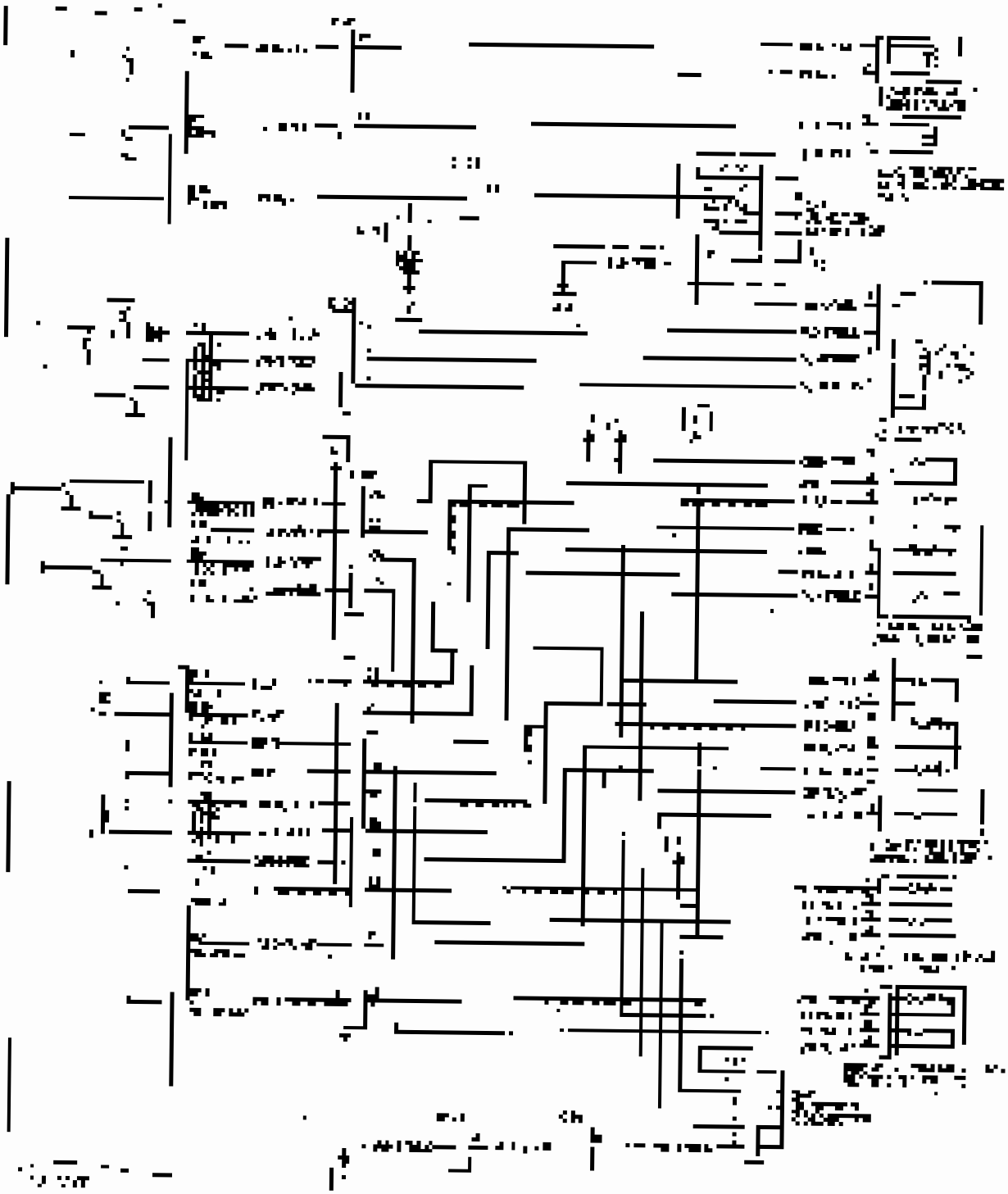
System Description (cont'd)



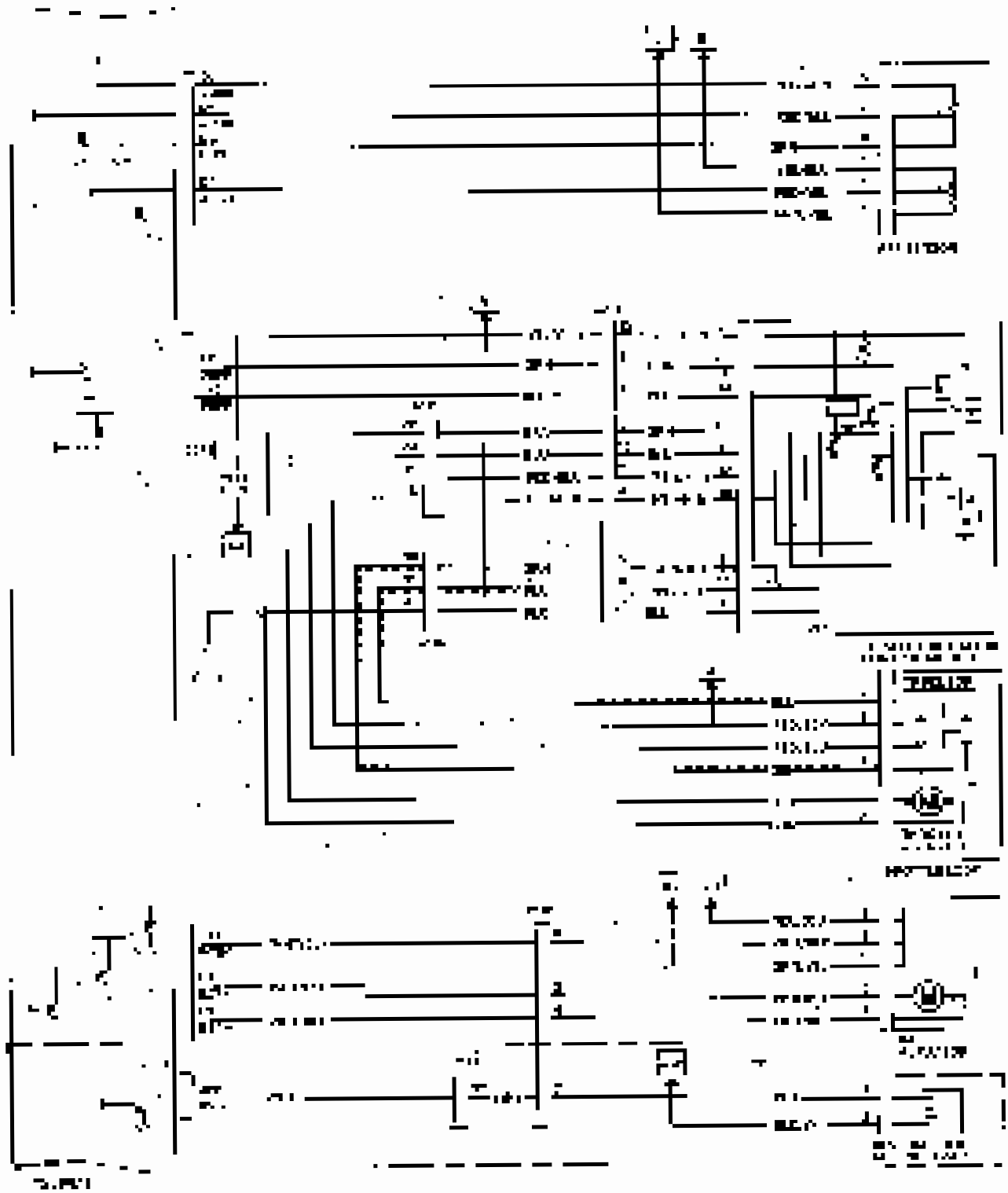


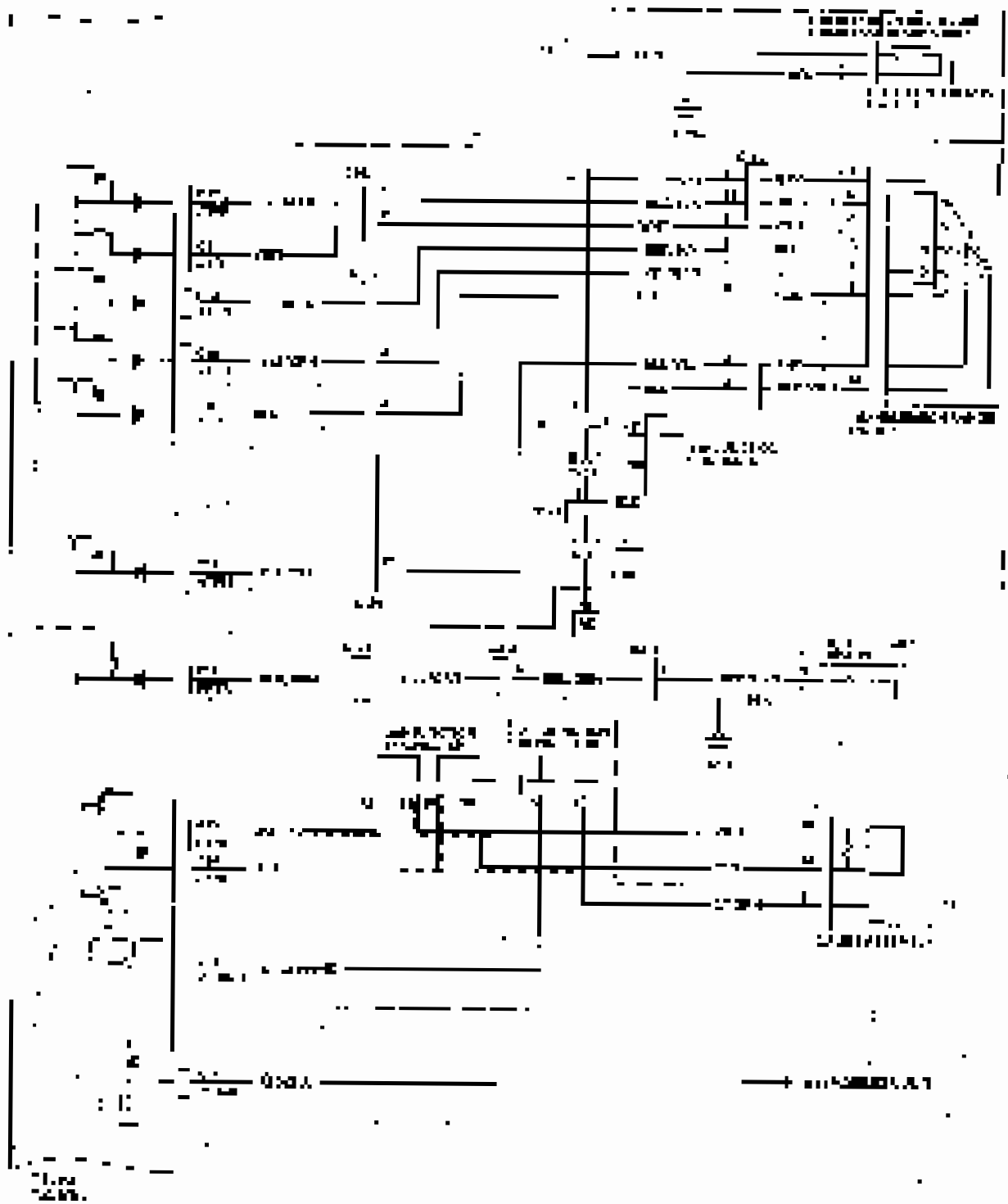
System Description (cont'd)



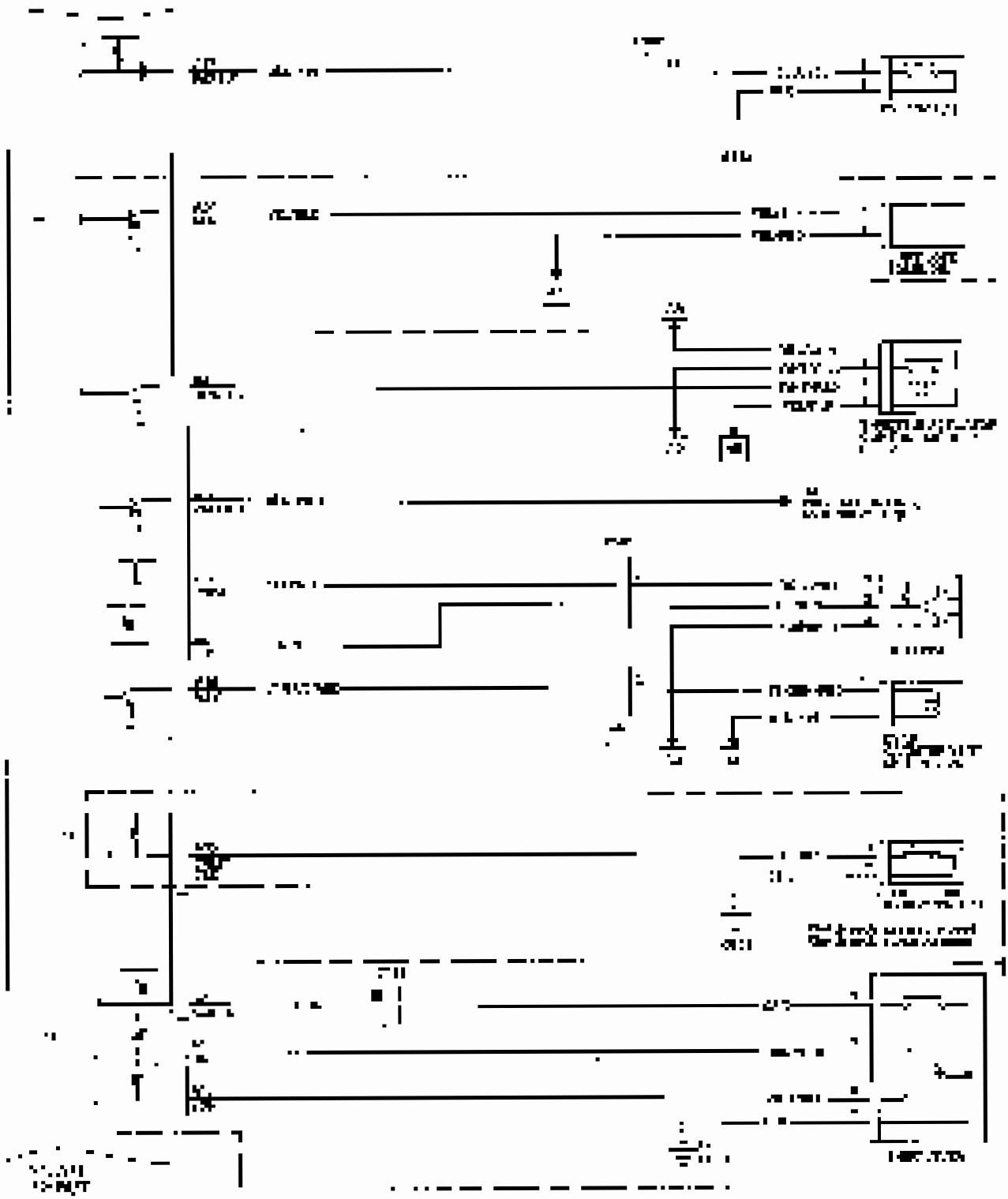


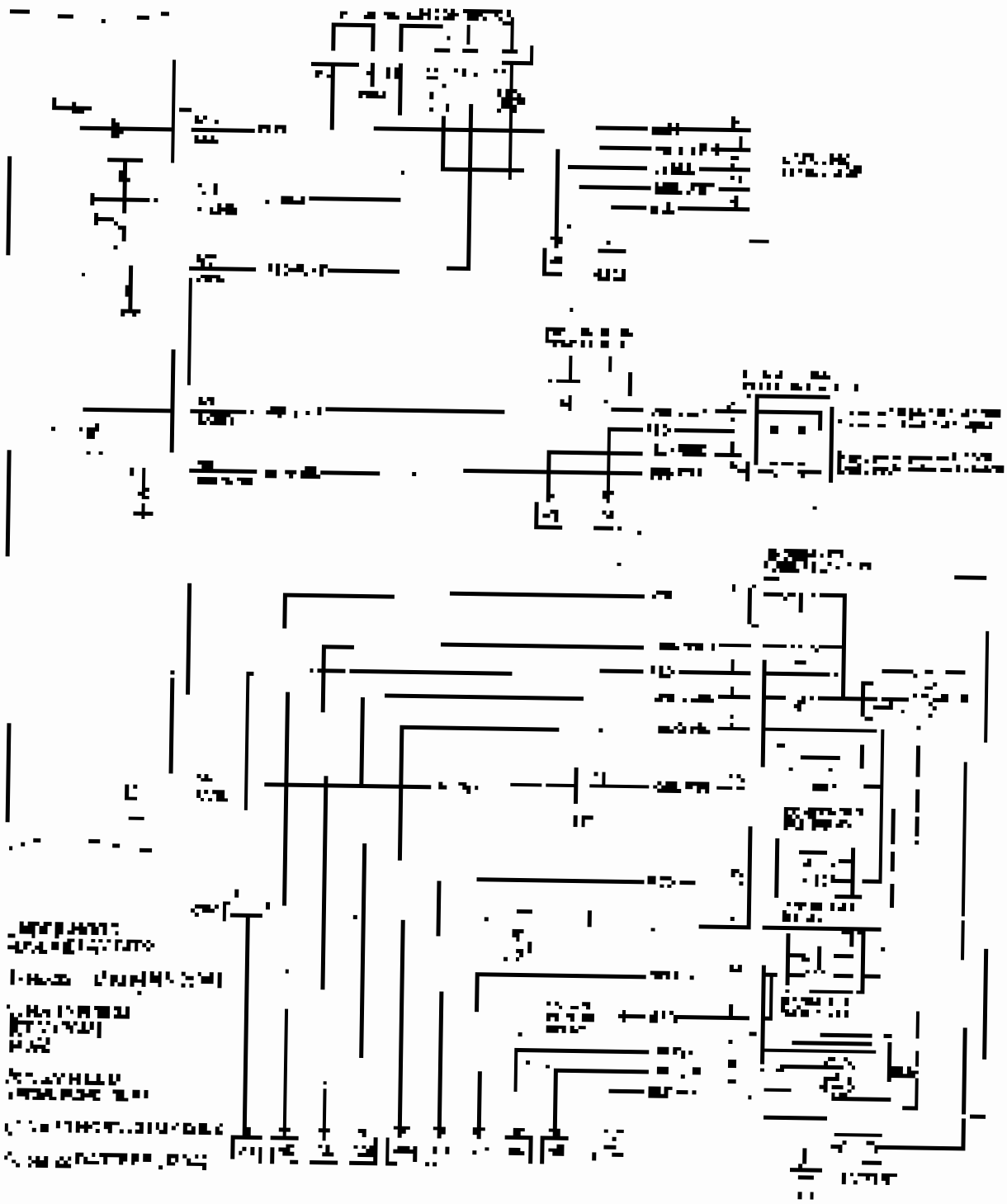
System Description (cont'd)



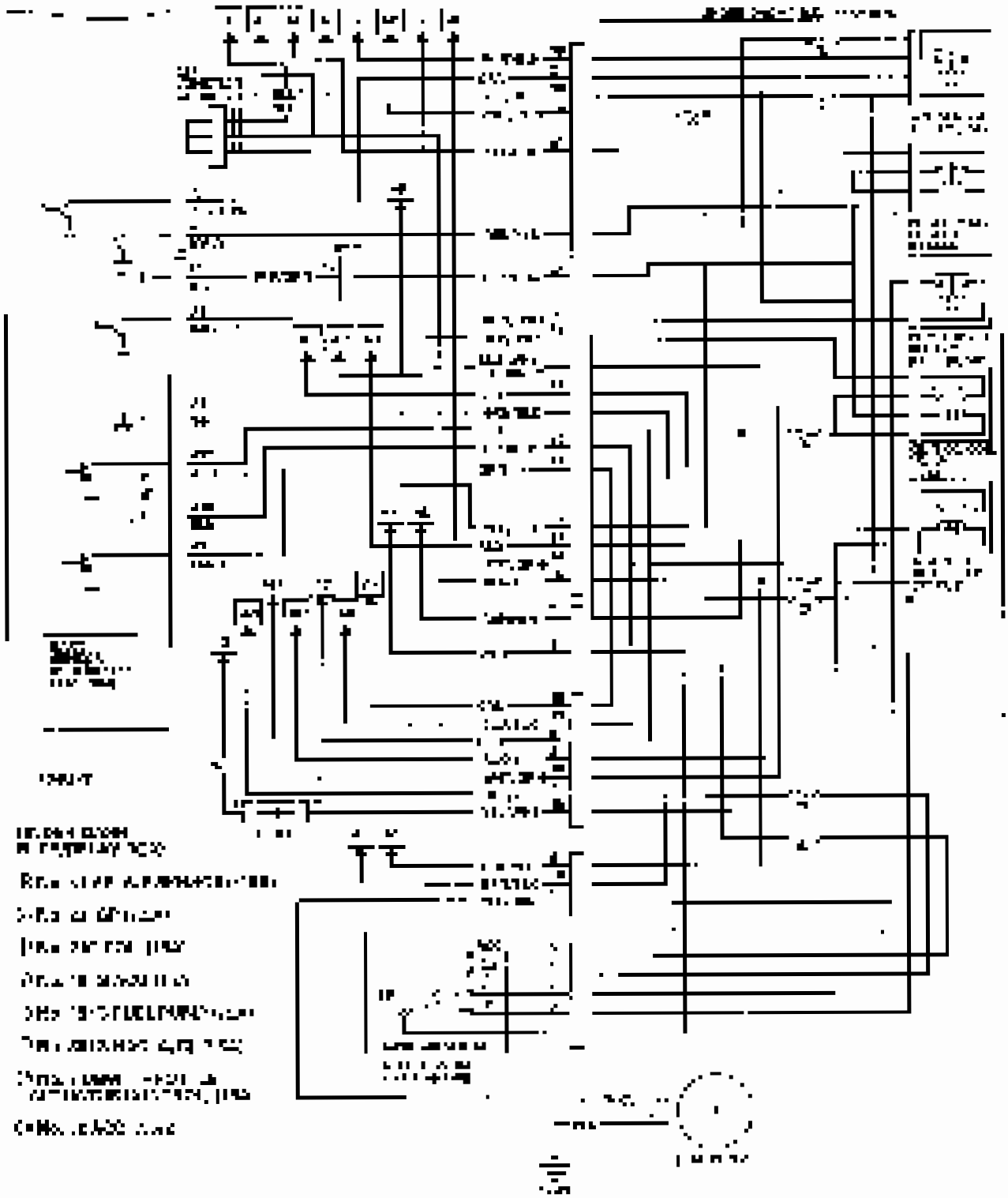


System Description (cont'd)





System Description (cont'd)



Malfunction Indicator Lamp (MIL) Indicative Information as Readiness Codes

[illegible]

[illegible]

To check the readiness codes, perform the following procedure.

To clear the readiness codes, perform the DTC clearing procedure. Refer to page [illegible]. The readiness codes may be cleared when disconnecting the battery, but this is not recommended.

Catalytic Converter Monitor and Readiness Code

NOTE

- Do not clear the readiness codes unless necessary.
- All readiness codes are cleared when the battery is disconnected or when the DTC is cleared with the TCM.
- The readiness codes may not be complete when the vehicle is delivered. Drive the vehicle under the following conditions before checking the readiness codes.
- The readiness codes may not be complete and will not indicate [illegible].
- If a code is not necessary, it does not affect [illegible].

Enable Criteria

- [illegible]
- [illegible]
- [illegible]

Procedure

1. Connect [illegible] to the vehicle data link connector (DLC), and [illegible] the TCM to set DTC [illegible] in the DTC [illegible].
2. Start the engine.
3. [illegible] the vehicle [illegible] operation [illegible] at least [illegible] or more. Refer to the readiness code [illegible].
4. [illegible] the readiness code [illegible] to DTC [illegible] or [illegible] is [illegible] the procedure.

(cont'd)

How to Set Readiness Codes (cont'd)

Evaporative Emission (EVAP) Control System Monitor and Readiness Code

NOTE:

Enable Criteria

Procedure

1.

2. Start the engine.

3.

4.

Air Fuel Ratio (A/F) Sensor Monitor and Readiness Code

NOTE:

Enable Criteria

Procedure

1.

2.

3.

4.

Air Fuel Ratio (A/F) Sensor Heater Monitor Readiness Code

[illegible]

Purpose:

1. [illegible]
2. [illegible]

Misfire Monitor and Readiness Code

- [illegible]
- [illegible]
- [illegible]

Fuel System Monitor and Readiness Code

- [illegible]
- [illegible]
- [illegible]

Comprehensive Component Monitor and Readiness Code

[illegible]

EGR Monitor and Readiness Code

[illegible]

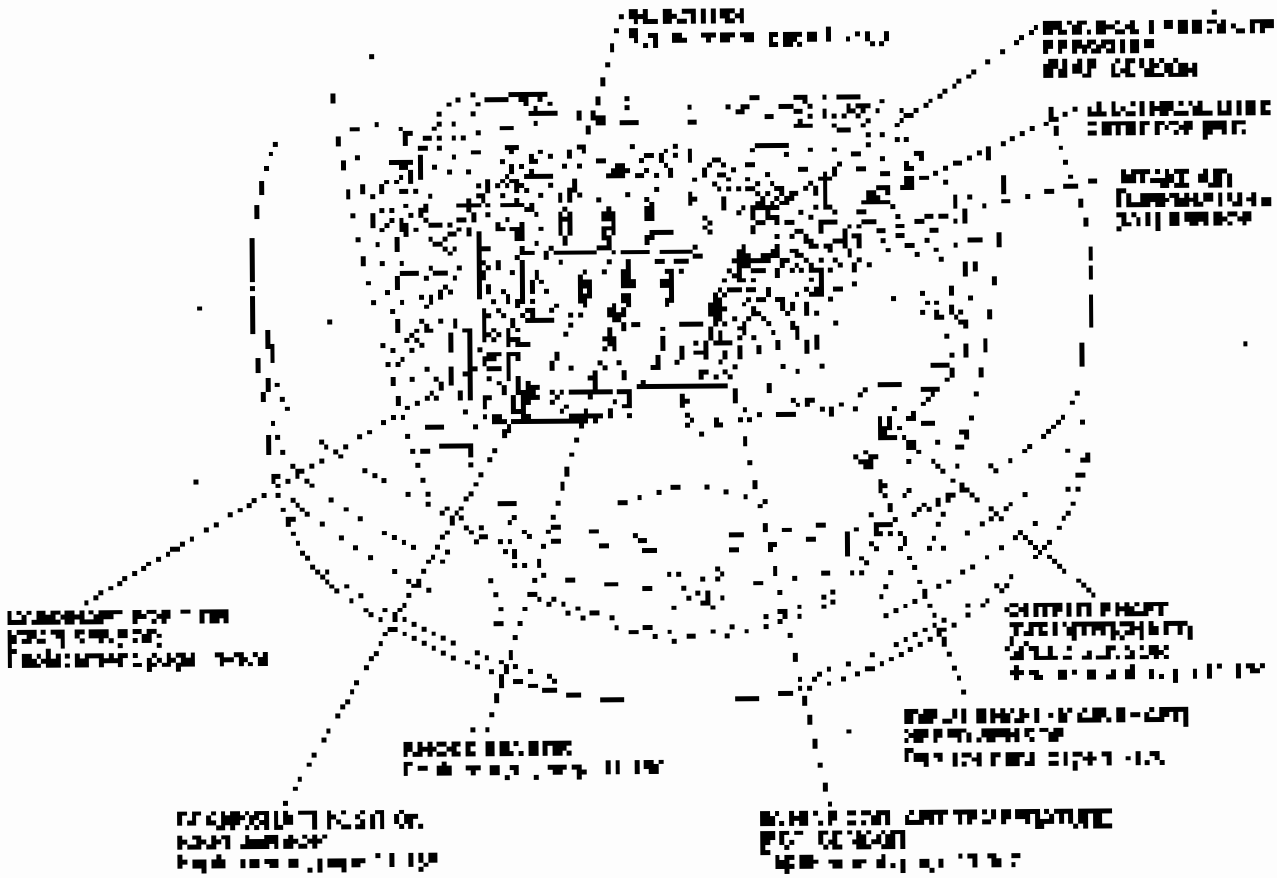
- [illegible]
- [illegible]

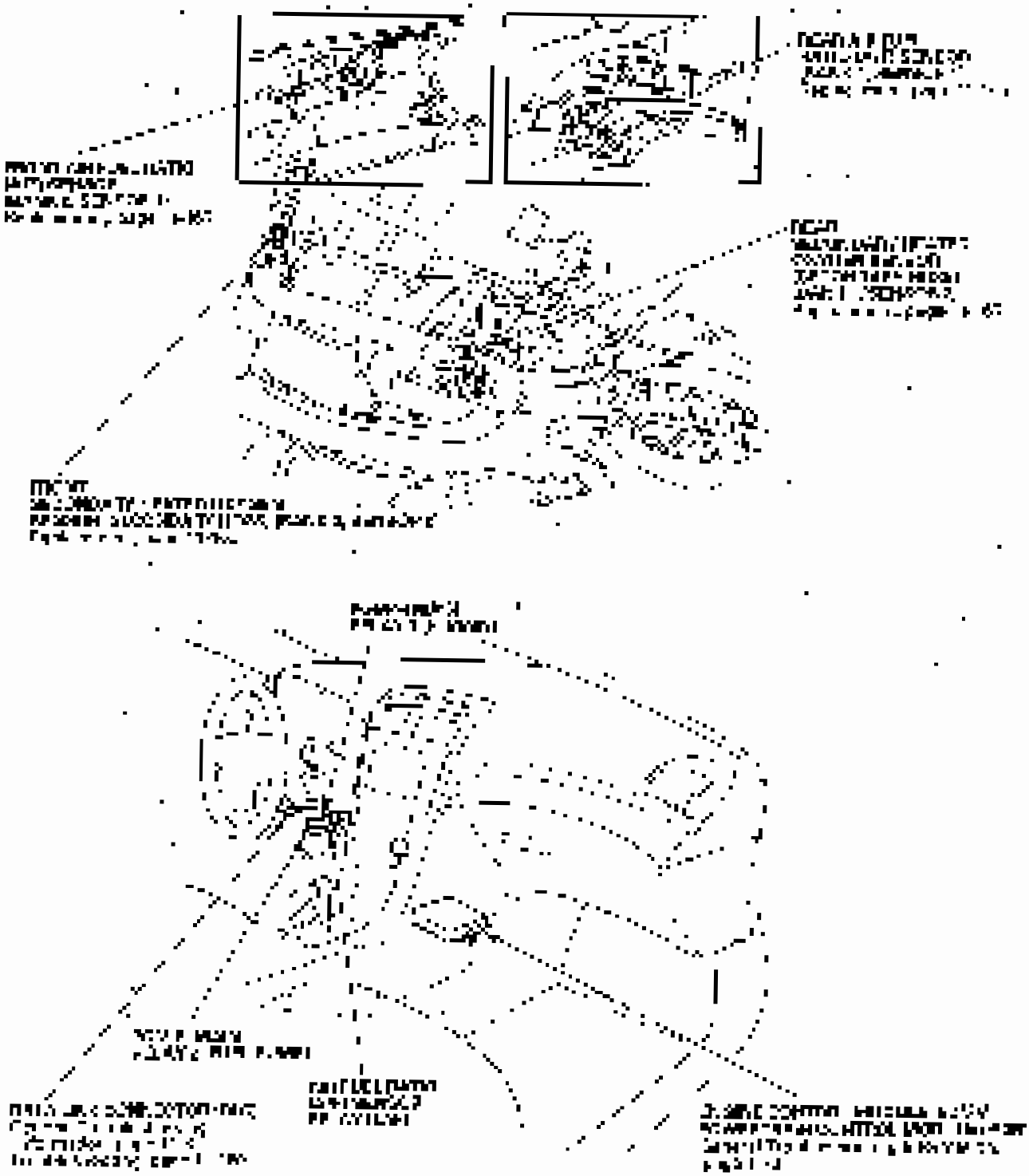
Purpose:

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
   - [illegible]
   - [illegible]

Component Location Index





DTC Troubleshooting

DTC P0107: MAP Sensor Circuit Low Voltage

1. [illegible]

2. [illegible] DATALIST with the [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

3. Turn the ignition switch OFF.

4. Disconnect the MAP sensor 3P connector.

5. Turn the ignition switch ON (II).

6. Observe the MAP sensor reading on the DATALIST with the [illegible].

   [illegible]

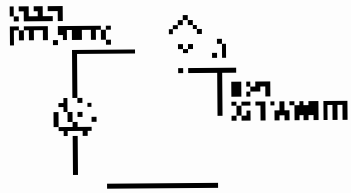
   YES - Go to step 7.

   NO - Go to step 8.

7. [illegible]

   [illegible]

   MAP SENSOR 3P CONNECTOR

   [illegible]

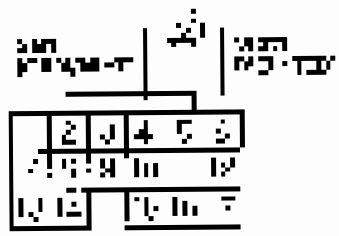
8. Check for OPEN in the wire between [illegible] and MAP sensor 3P connector [illegible].

   [illegible]

9. Check for OPEN in the wire between [illegible] and MAP sensor 3P connector [illegible].

   [illegible]

   ECM/PCM CONNECTOR

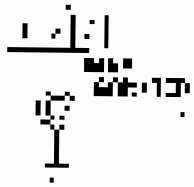
   

   [illegible]

10. Check for short to ground in the wire between [illegible] and MAP sensor 3P connector [illegible].

    YES - [illegible] Go to step 11.

    NO - [illegible]



DTC Troubleshooting (cont'd)

DTC P0108: MAP Sensor Circuit High Voltage

1. [illegible]

2. Check the MAP SENSOR in the DATA LIST with the HDS.

   [illegible]

   [illegible]

   NO: [illegible] Check for poor connection or open circuit in the 5V wire and the ECM/PCM.

3. Turn the ignition switch OFF.

4. [illegible]

5. [illegible] Disconnect the MAP sensor 3P connector. Turn the ignition switch ON (II).

   [illegible]

   [illegible]

6. Turn the ignition switch OFF (LOCK (0)).

7. [illegible] MAP sensor connector and check for poor connection at the ECM/PCM.

   [illegible]

   YES: Go to step 8.

   NO: Go to step 9.

8. Replace the [illegible].

9. Measure voltage between [illegible] and body ground.

   [illegible]

   [illegible]

   [illegible]

   [illegible]

   YES: Go to step 10.

   NO: Repair open in the wire between the [illegible] and the ECM/PCM. If wire and connections are OK, replace [illegible].

10. [illegible]

11. Measure voltage between [illegible] and body ground.

    [illegible]

    [illegible]

    [illegible]

    [illegible]

12. [illegible]

13. [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible] page 11-15

14. [illegible]

15. [illegible]

16. [illegible]

    a. [illegible]

17. [illegible]
    [illegible]

18. [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

19. [illegible] page 11-16

20. [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

21. [illegible]

    [illegible]

    NO - [illegible] page 11-16

DTC Troubleshooting (cont'd)

DTC P1128 (VTEC) MAP Sensor Signal Lower Than Expected

1. Turn the ignition switch OFF.
2. Check for MAP sensor vacuum hose clogged, pinched or disconnected.

   YES - Go to step 3.

   NO - Go to step 4.
3. Clean or replace the vacuum hose.
4. Start the engine and let it idle for 30 seconds.

   Is there any other DTC stored?

   YES - Go to the appropriate DTC troubleshooting.

   NO - Go to step 5.
5. Check the MAP sensor operation:
   - Engine coolant temperature: 176 – 212°F (80 – 100°C)
   - Engine speed: 2,000 rpm
   - A/T in Drive (M/T in Neutral)
   - Vehicle speed: 25 – 30 mph (40 – 50 km/h)

   Is the MAP sensor voltage between 1.0 – 1.4 V?

   YES - Go to step 6.

   NO - Replace the MAP sensor.
6. Check the MAP sensor for poor connection or damaged wire.

   Is the connection or wire OK?

   YES - Go to step 7.

   NO - Repair as necessary.
7. Turn the ignition switch OFF.
8. Disconnect the MAP sensor 3P connector.
9. Turn the ignition switch ON (II).
10. Check for 5 V between the MAP sensor 3P connector terminal No. 3 and body ground.

    Is there 5 V?

    YES - Go to step 11.

    NO - Check for an open in the wire between the MAP sensor and the ECM/PCM.
11. Check for continuity between the MAP sensor 3P connector terminal No. 2 and body ground.

    Is there continuity?

    YES - Go to step 12.

    NO - Check for an open in the wire between the MAP sensor and the ECM/PCM.
12. Check the engine coolant temperature sensor (see page 11-69).

    Is the engine coolant temperature sensor OK?

    YES - Go to step 13.

    NO - Replace the engine coolant temperature sensor.
13. Check for intermittent failure, poor connection or damaged wire in the MAP sensor circuit.

    Is there a problem?

    YES - Repair as necessary.

    NO - Replace the ECM/PCM.

DTC P1128 (MAP Sensor Signal High Voltage Detected)

1. Check for vacuum leaks in the intake system:

- Hoses
- Connections
- Intake manifold gasket
- Vacuum tank
- Intake manifold

Are leaks present?

YES - Go to step 2.

NO - Repair the vacuum leaks as necessary. Test drive the vehicle.

2. Monitor the engine coolant temperature sensor (ECT) value in the Data List. Is the ECT value within the range specified in the Data List?

3. Check the MAP sensor in the DATA LIST with the KOEO.

Is the MAP sensor value within the specified range?

YES - Go to step 4.

NO - Replace the MAP sensor.

4. Check the fuel pressure.

Is the fuel pressure within the specified range?

YES - Go to step 5.

NO - Repair the fuel pump or fuel system.

5. Check the ignition timing.

Is the ignition timing adjusted correctly?

YES - Go to step 6.

NO - Adjust the ignition timing.

6. Monitor the DTC P1128 in the DTC Data List.

Does the DTC P1128 reset?

YES - Go to step 7.

NO - Intermittent. Check the connectors and harness for poor connection. Refer to "How to Cope with Intermittent Problems" in this section.

7. Turn the ignition switch OFF.

8. Replace the MAP sensor. Go to step 9.

9. Turn the ignition switch ON.

10. Erase the DTC(S) with the M.U.T.

11. Start the engine and run it at idle for several minutes.

Is the DTC P1128 detected?

YES - Go to step 12.

NO - Intermittent. Check the connectors and harness for poor connection. Refer to "How to Cope with Intermittent Problems" in this section.

12. Check the following items:

- Engine coolant temperature sensor (ECT) and ECT circuit
- Engine coolant temperature gauge and gauge unit
- Radiator cap
- Radiator hose and radiator (Clogged or collapsed hose, or blocked radiator. Refer to Group 14 - On-vehicle Service.)

Are they in good condition?

YES - Go to step 13.

NO - Repair or replace.

13. Check for "Temporary DTC(s)" in the DTC Memory.

Is "No Temporary DTC(s)" displayed?

YES - Intermittent. Check the connectors and harness for poor connection. Refer to "How to Cope with Intermittent Problems" in this section.

NO - Go to step 14.

DTC Troubleshooting (cont'd)

DTC P0112: IAT Sensor Circuit Low Voltage

1. [illegible]

2. Check for DTC(S) [illegible]

   YES - Go to step 3.

   NO - Intermittent failure, system is OK at this time. Check for poor connection or loose harness connector. Refer to Troubleshooting Intermittent Problems.

3. Turn ignition switch OFF.

4. Disconnect IAT sensor connector.

5. Turn ignition switch ON (II).

6. Check for DTC(S) [illegible]

   YES - Go to step 7.

   NO - Go to step 8.

7. Replace IAT sensor.

8. Jumper [illegible]

9. Check for DTC(S) [illegible]

   YES - Replace ECM.

   NO - Go to step 10.

10. Check connector [illegible]

    INTERMEDIATE CONNECTOR

    [illegible]

    [illegible]

11. [illegible]

[illegible]

12. [illegible]

13. [illegible]

14. [illegible]

15. Turn ignition switch ON (II).

16. Check for DTC(S) [illegible]

    YES - Go to step 17.

    NO - Go to step 18.

17. Turn ignition switch OFF.

18. Turn ignition switch ON (II).

19. Check for DTC(S) [illegible]

    YES - Go to step 20.

    NO - Go to step 21.

20. Replace ECM.

21. Check for DTC(S) [illegible]

    YES - Go to step 22.

    NO - Go to step 23.

22. [illegible]

23. [illegible]

DTC Troubleshooting (cont'd)

DTC P0113: IAT Sensor Circuit High Voltage

1. [illegible]

2. Check for intermittent problems. See CHECKLIST A in the [illegible]

   [illegible]

   YES - Go to step 3.

   NO - [illegible] Check for [illegible] the IAT sensor [illegible]

3. [illegible]

4. Disconnect the IAT sensor 2P connector.

5. Connect ATS wire side female terminals to each other. [illegible]

   [illegible]

   [illegible]

   [illegible]

6. [illegible]

7. Check for [illegible] the ATS SENSOR [illegible] in the [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. Measure voltage between [illegible] connector terminal and body ground.

    [illegible]

    [illegible]

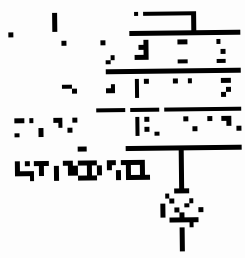
    Is there [illegible]?

    NOTE: If you [illegible] the [illegible] and the IAT sensor, [illegible] step 12.

    NO - Go to step 13.

12. Measure voltage between [illegible] terminal and body ground.

    [illegible]

    [illegible]

    Is there [illegible]?

    YES - [illegible] the wire harness between the ECM [illegible] and the IAT sensor. [illegible] step 13.

    NO - Go to step 13.

13. Turn the ignition switch to OFF.

14. [illegible]

15. [illegible]

16. [illegible]

17. Disconnect the scan tool from the data link connector.
    Will the engine start?

18. Check for intermittent DTCs using "Tools" in the DTC category [illegible].

    Were any DTCs set?

    YES - If DTC P0131 is the only DTC set, check for poor connection at the oxygen sensor connector. If connection is good, replace the oxygen sensor. If any other DTCs are set, go to the applicable DTC table and perform diagnosis.

    NO - Troubleshooting is complete.

19. [illegible]

20. [illegible]

    Did the DTC reset?

    YES - [illegible] Problem was caused by poor connection or loose terminal. Repair as necessary. [illegible] replace the oxygen sensor. [illegible]

DTC Troubleshooting (cont'd)

DTC P0116: ECT Sensor Range/Performance Problem

1. [illegible]

2. Check the ECT sensor's resistance [illegible] the ECT.

   Is the resistance approximately 0.55 K ohms at 176°F (80°C)?

   YES - Go to step 3.

   NO - Go to step 7.

3. Reconnect the connector to the ECT sensor.

4. Turn the ignition switch ON (II).

5. Is the ECT sensor [illegible] DTC P0116 still indicated?

   YES - Intermittent failure, the system is normal at this time. Check for poor connection at the ECT sensor connector. Refer to the troubleshooting for intermittent failures in this section.

   NO - Go to step 6.

6. Replace the ECT sensor with a known good one.

   Is the DTC P0116 still indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is normal at this time. Check for poor connection at the ECT sensor connector. Refer to the troubleshooting for intermittent failures in this section.

7. Check for an open or short in the wire between the ECT sensor and the ECM.

   Is the wire OK?

   YES - Replace the ECM with a known good one, and recheck [illegible]

   NO - Repair as necessary.

8. Check for [illegible] DTC P0116 still indicated?

   YES - Intermittent failure, the system is normal at this time. Check for poor connection at the ECT sensor connector. Refer to the troubleshooting for intermittent failures in this section.

   NO - Go to step 9.

9. Check for an open or short in the wire between the ECT sensor and the ECM.

   Is the wire OK?

   YES - Replace the ECM with a known good one, and recheck [illegible]

   NO - Repair as necessary.

10. [illegible]

11. Replace the ECT sensor with a known good one.

12. Turn the ignition switch ON (II).

13. Recheck for DTC P0116.

14. Is DTC P0116 still indicated?

    YES - Go to step 15.

    NO - Intermittent failure, the system is normal at this time. Check for poor connection at the ECT sensor connector. Refer to the troubleshooting for intermittent failures in this section.

15. Check for [illegible] DTC P0116 still indicated?

    YES - Replace the ECM with a known good one.

    NO - Intermittent failure, the system is normal at this time. Check for poor connection at the ECT sensor connector. Refer to the troubleshooting for intermittent failures in this section.

DTC P0117 TCT Sensor Circuit Low Voltage

1. [illegible]

2. [illegible]

   YES: Go to step 3.

   NO: [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]
   HDS

   [illegible]

   [illegible]

   NO: Go to step 7.

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

[illegible]

[illegible]

[illegible]

12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

16. [illegible]
    [illegible]

17. [illegible]

    [illegible]

    [illegible]

    NO: [illegible]

18. [illegible]

19. [illegible]

    [illegible]

    YES: [illegible]

    NO: [illegible]

DTC Troubleshooting (cont'd)

DTC P0118: ECT Sensor Circuit High Voltage

1. [illegible]

2. Disconnect the ECT SENSOR 1 3P connector and the PCM.

   Measure [illegible] between [illegible] and the PCM.

   Is there [illegible]?

   YES—Repair [illegible] between the ECT sensor 1 and the PCM. Replace [illegible] if [illegible] is damaged. Test the system [illegible]

3. Turn the ignition switch to ON.

4. Disconnect the ECT sensor 1 3P connector.

5. Check for [illegible] between [illegible] terminal and body ground.

   ECT SENSOR 1 3P CONNECTOR

   [illegible] wire side of female terminals

   [illegible] — GRN/BLK wire

   [illegible]

   Is there [illegible]?

6. Turn the ignition switch to [illegible].

7. Check for [illegible] between [illegible] and the DATA LINK [illegible] terminal.

   [illegible] between [illegible] and the DATA LINK [illegible] terminal?

   YES: Go to step 8.

   NO: Go to step 9.

8. [illegible]

9. Turn the ignition switch to [illegible].

10. [illegible]

11. Measure voltage between ECT sensor 1 [illegible] and body ground.

    ECT SENSOR 1 3P CONNECTOR

    [illegible] wire side of female terminals

    [illegible]

    Is there [illegible]?

    YES: Replace the ECT sensor 1. Test the system [illegible].

    NO—Repair [illegible] between the ECT sensor 1 and the PCM. Test the system [illegible].

12. Measure voltage between ECT sensor 1 [illegible] terminal and body ground.

    ECT SENSOR 1 3P CONNECTOR

    [illegible] wire side of female terminals

    [illegible]

    Is there [illegible]?

    YES—Repair [illegible] between the ECT sensor 1 and the PCM. Test the system [illegible].

    NO: Go to step 13.

DTC Troubleshooting (cont'd)

DTC P0125: ECT Sensor Slow Response

Start the engine and let it idle.

Use PGM-FI scan tool to read DATA LIST value for ECT sensor.

Is ECT sensor 20°F (-7°C) or more when engine is first started?

YES: Go to step 2.

NO: Intermittent failure, system is OK at this time. Check for poor connection or loose terminal at the sensor connector.

2. Turn ignition switch OFF.

3. Check the ECT sensor for the DATA LIST value for ECT sensor.

Is the ECT sensor 20°F (-7°C) or more when engine is first started?

YES: Go to step 4.

NO: Intermittent failure, system is OK at this time. Check for poor connection or loose terminal at the sensor connector.

4. Turn ignition switch OFF.

5. Disconnect the ECT sensor connector.

6. Turn ignition switch ON (II).

7. Measure voltage between the ECT sensor terminals.

Is there 4.9 – 5.1 V?

YES: Go to step 8.

NO: Check for poor connection at the ECM connector. If connection is OK, replace the ECM.

8. Check for an intermittent failure, poor connection or loose terminal at the ECT sensor connector.

Is there an intermittent failure, poor connection or loose terminal at the ECT sensor connector?

YES: Repair as necessary.

NO: Replace the ECT sensor.

12. Check for Temporary DTC and DTC Troubleshooting

Is the DTC P0125 indicated?

YES: Go to step 13.

NO: Intermittent failure, system is OK at this time. Check for poor connection or loose terminal at the ECT sensor connector.

13. Replace the PGM-FI MAIN RELAY 1 (see page 11-102).

Is the DTC P0125 indicated?

YES: Troubleshoot the ECT sensor circuit (see page 11-78).

NO: Intermittent failure, system is OK at this time. Check for poor connection or loose terminal at the ECT sensor connector.

DTC P0128: Cooling System Malfunction

[illegible]

P0114, P0115, P0116: Engine coolant temperature (ECT) [illegible]

P0117, P0118: Engine coolant temperature (ECT) [illegible]

P0125: Insufficient coolant temperature for closed loop fuel control

P0128: Coolant thermostat (coolant temperature below thermostat regulating temperature)

P0217: Engine coolant overtemperature condition

P0218: Transmission fluid overtemperature condition

P0219: Engine overspeed condition

P0597, P0598, P0599: Thermostat heater control circuit

P0600: Serial communication link malfunction

If "P0128" set in more than one module, check for a problem with the cooling system.

1. [illegible]

2. Start the engine.

3. Turn the heater control to OFF.

4. Turn the A/C switch to OFF.

5. Connect the DRB II scan tool to the DATA LINK connector.

   [illegible]

   YES - Go to step 6.

   NO - Refer to the Diagnostic Procedures manual and perform the [illegible]

6. Start the engine and allow it to idle.

   Is the engine coolant temperature above 70°C (158°F)?

   YES - Go to step 7.

   NO - Allow the engine to idle until the coolant temperature is above 70°C (158°F).

7. Turn the heater control to MAX HEAT.

8. Turn the A/C switch to ON.

9. Select the ACTUATOR TEST mode with the DRB II scan tool.

10. Select the ATTEMPT TO START function. Is the engine [illegible]

    YES - Go to step 11.

    NO - Refer to the Diagnostic Procedures manual and perform the [illegible]

11. Select the ENGINE SPEED function.

12. Select and record the engine speed [illegible]

13. Repeat the test for each [illegible]

14. [illegible]

DTC Troubleshooting (cont'd)

16. Reset the ECM/PCM with the HDS.

17. Do the ECM/PCM idle learn procedure (see page 11-275).

18. Start the engine. Hold the engine speed at 3,000 rpm with no load [illegible] until the radiator fan comes on, then let it idle.

19. Check for Temporary DTCs or DTCs with the HDS.

    Are any Temporary DTCs or DTCs indicated?

    YES—[illegible] DTC troubleshooting.

    NO—Go to step [illegible]

[illegible] [illegible] DTC [illegible] with the HDS.

    [illegible]

    YES—Troubleshooting is complete. ■

    NO—[illegible]

[illegible] ECM/PCM [illegible] ECM/PCM (see page 11-7).

[illegible]

22. Start the engine. Hold the engine speed at 3,000 rpm without load [illegible] until the radiator fan comes on, then let it idle.

[illegible] Check for Temporary DTCs or DTCs with the HDS.

    Are any Temporary DTCs or DTCs indicated?

    YES—If DTC [illegible] is indicated, [illegible] ECM/PCM [illegible] DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

    NO—[illegible] ECM/PCM [illegible] ECM/PCM [illegible] ■

DTC P0133: Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Circuit Slow Response

DTC P0153: Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Circuit Slow Response

NOTE:
- If DTC P0133 and/or P0153 is stored at the same time as [illegible], troubleshoot [illegible] for DTC P0135 and/or P0155.
- Information marked with an asterisk (*) applies to the [illegible]

1. Turn the ignition switch ON (II).

2. Clear the DTC with the HDS.

3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

4. Test-drive under these conditions:

   - Engine coolant temperature more than 122 °F (50 °C)
   - [illegible] in D position [illegible]
   - Vehicle speed at 30 mph (48 km/h) [illegible] engine speed between 1,700 and 2,500 rpm

5. Monitor the OBD STATUS for DTC P0133 and/or P0153 in the DTCs MENU with the HDS.

   Does the screen indicate PASSED?

   YES—Go to step 2.

   NO—If the screen indicates FAILED, go to step [illegible]. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch OFF.

7. Replace the A/F Sensor (Sensor 1) [illegible].

8. Turn the ignition switch ON (II).

9. Reset the ECM/PCM with the HDS.

10. Do the ECM/PCM idle learn procedure (see page 11-221).

11. Test-drive under these conditions:

    - Engine coolant temperature more than 158 °F (70 °C)
    - [illegible] in D position [illegible]
    - Vehicle speed [illegible] and engine speed between 1,700 and 2,300 rpm

12. Check for Temporary DTC or DTC with the HDS.

    Is any Temporary DTC or DTC indicated?

    YES—If DTC P0133 and/or P0153 is indicated, [illegible] and the ECM/PCM [illegible]. If Temporary DTCs or DTCs [illegible] troubleshooting.

    NO—Go to step 13.

13. Monitor the OBD STATUS for DTC P0133 and/or P0153 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES—Troubleshooting is complete.

    NO—If the screen indicates FAILED, check for poor connections or loose terminals at the A/F Sensor (Sensor 1) and the ECM/PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 11 and recheck.

DTC Troubleshooting (cont'd)

DTC P0134: Front A/F Sensor (Bank 1 Sensor 1) Circuit No Activity Detected

DTC P0154: Front A/F Sensor (Bank 2 Sensor 1) Circuit No Activity Detected

NOTE:
- If DTC P0135, P0141, P0155, P0161 is stored at the same time as this DTC, first troubleshoot that DTC. Then clear the DTC and recheck for this DTC.
- If you don't have an accurate tachometer, substitute a known-good vehicle.

1. Start the engine and let it idle.
2. Check the DTC. Is DTC P0134 or P0154 stored?

   YES - Go to step 3.

   NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the A/F sensor. Refer to the wiring diagram.

3. Turn the ignition switch OFF.
4. Disconnect the A/F sensor 4P connector.
5. Turn the ignition switch ON (II).
6. Measure the voltage between the A/F sensor 4P connector terminals.

   Are they approximately 3.3 V?

   YES - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the A/F sensor. Refer to the wiring diagram.

   NO - Go to step 7.

7. Check for a short to power in the wire between the A/F sensor 4P connector and the PCM.

   Is the wire OK?

   YES - Troubleshooting is complete.

   NO - Replace the wire harness.

DTC P0136 (Bank 1 Sensor 2)

DTC P0156 (Bank 2 Sensor 2)

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

   [illegible]

   [illegible]

   NO: [illegible]

5. [illegible]

   [illegible]

   [illegible]
   - [illegible]
   - [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

6. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

7. [illegible]

   [illegible]

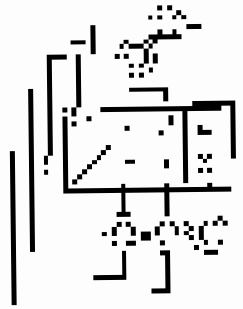
   [illegible]

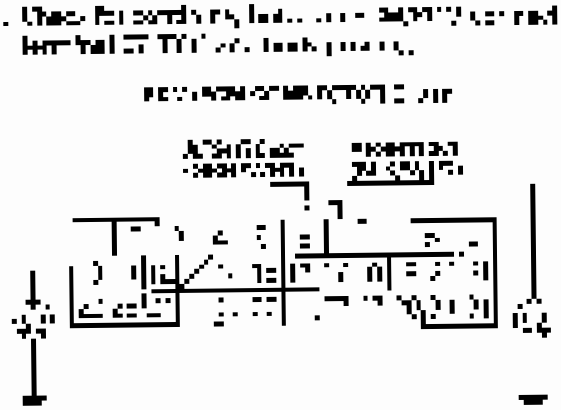
   [illegible]

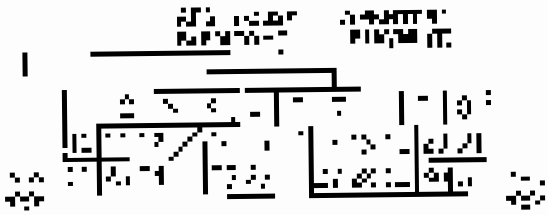
   YES: [illegible]

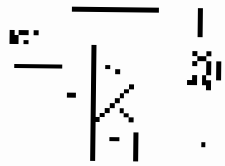
   NO: [illegible]

DTC Troubleshooting (cont'd)

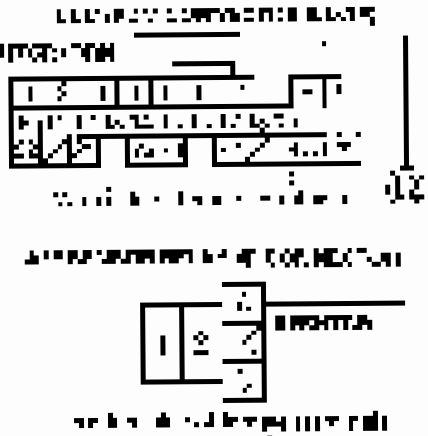








DTC Troubleshooting (cont'd)



NO: Replace the A/T control unit. Refer to the A/T service manual. Go to step 22.

21. Check the A/T [illegible]

NO: Go to step 22.

22. Recheck the A/T [illegible]

23. Check the ECM/PCM [illegible]

24. Check the ECM/PCM [illegible]

25. Check the ECM/PCM [illegible]

26. Check the [illegible]

27. Monitor the ECM STATUS for DTC [illegible]

28. Check the [illegible]

29. Check the [illegible]

DTC P2195: Bank 1 A/F Sensor 1 Slow Response
or Signal Stuck Lean

DTC P2197: Bank 2 A/F Sensor 2 Slow Response
or Signal Stuck Lean

NOTE:

- [illegible]
- [illegible]
- [illegible]

1. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

2. [illegible]

3. [illegible]
   [illegible]

4. [illegible]

5. [illegible]

6. [illegible]
   [illegible]

7. [illegible]

   [illegible]

   YES - If DTC P2197 [illegible]
   [illegible]
   [illegible]

   NO - [illegible]
   [illegible]

8. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

DTC Troubleshooting (cont'd)

DTC P2237: Heated A/F Sensor (Bank 1, Sensor 1) Pump Current High Voltage

DTC P2240: Heated A/F Sensor (Bank 2, Sensor 1) Pump Current High Voltage

NOTE:

- If DTC P2237 and/or P2240 are stored intermittently, the sensor may be operating normally. Check for poor connections or loose terminals at the A/F sensor and ECM. Clear the DTC and test drive the vehicle to see if the DTC reappears.
- If you replace the A/F sensor with a new one, it may take several trips for the ECM to complete its learning procedure.

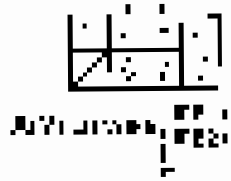
1. Turn the ignition switch to OFF.
2. Check the DTC with the HDS.
3. Start the engine and let it idle for at least 10 minutes or 3,200 rpm with no load. Make sure the heated A/F sensor (Bank 1, Sensor 1) and heated A/F sensor (Bank 2, Sensor 1) have reached operating temperature.
4. Check the HDS screen for DTC or DTCs stored in the ECM.

   Is DTC P2237 and/or P2240 stored in the ECM?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor and ECM. Clear the DTC from the ECM memory.
5. Turn the ignition switch to OFF.
6. Disconnect the HDS from the data link connector.
7. Disconnect the Heated A/F Sensor (Bank 1, Sensor 1) connector.
8. Disconnect the [illegible] connector.

Connect a jumper wire between the [illegible] terminal and body ground.



[illegible]

10. Check for continuity between [illegible] and body ground.

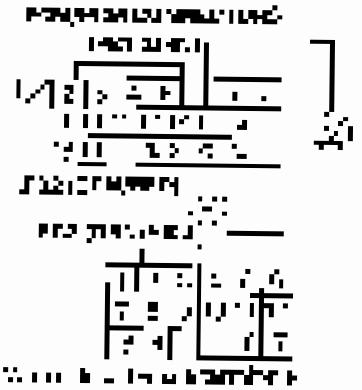
[illegible] terminal and body ground

[illegible]

Is there continuity?

YES - Go to step 11.

NO - Repair open in wire between the [illegible] and the [illegible] terminal. Check for poor connections or loose terminals at the [illegible] and ECM. If the wire and connections are OK, replace the [illegible].



DTC Troubleshooting (cont'd)

DTC P2238: Rear A/F Sensor (Bank 1, Sensor 1) Circuit Low Voltage

DTC P2241: Rear A/F Sensor (Bank 2, Sensor 1) Circuit Low Voltage

1. Turn the ignition switch to OFF.
2. Clear the DTC from the ECM.
3. Start the engine, then accelerate to over [illegible] and maintain that speed for [illegible] minutes.
4. Check for DTC P2238 or P2241.

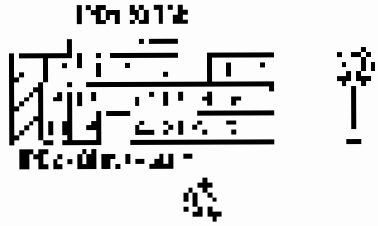
   Is DTC [illegible] indicated?

   YES - Go to step 5.

   NO - Intermittent failure, wiring and connectors may be OK. Check for poor connection or loose terminal. Refer to [illegible]
5. [illegible]
6. Turn the ignition switch to OFF.
7. Disconnect the A/F sensor 2P connector.
8. Disconnect the ECM/PCM connector.

9. Check for continuity between the [illegible] and body ground.

   CONNECTOR DISCONNECTED

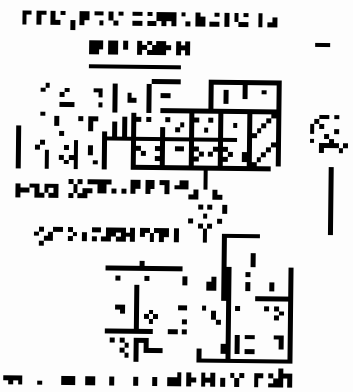


   Is there continuity?

   YES - There is a short to ground in the wire between the ECM/PCM and the A/F sensor 2P connector. Repair as necessary.

   NO - [illegible]

10. Reconnect the ECM/PCM connector.
11. Start the engine, [illegible] and maintain that speed for [illegible] minutes.
    Check for DTC [illegible]. Is DTC [illegible] indicated?



DTC Troubleshooting (cont'd)

DTC P2270: Front A/F Sensor (Bank 1, Sensor 1) VTEC "ON" Lean/High Voltage

DTC P2271: Front A/F Sensor (Bank 1, Sensor 1) VTEC "ON" Rich/Low Voltage

1. [illegible]
2. [illegible]
3. [illegible]
4. Check for Temporary Poor Connection at [illegible] ECM.

   Is there a poor connection?

   YES—Repair as necessary.

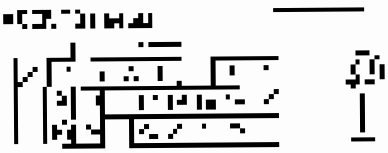
   NO—Check for poor connection at [illegible] ECM. If connection is good, go to A/F Sensor (Bank 1, Sensor 1) [illegible].
5. Turn the ignition switch to [illegible].
6. [illegible]
7. Disconnect the [illegible] connector.
8. [illegible]
9. Check for poor connection at [illegible] terminal.

   Is there a poor connection?

   YES—Repair as necessary.

   NO—Check for poor connection at [illegible] ECM. If connection is good, go to A/F Sensor (Bank 1, Sensor 1) [illegible].
10. Check for open in wire between [illegible] ECM and [illegible].

    Disconnect [illegible] connector.

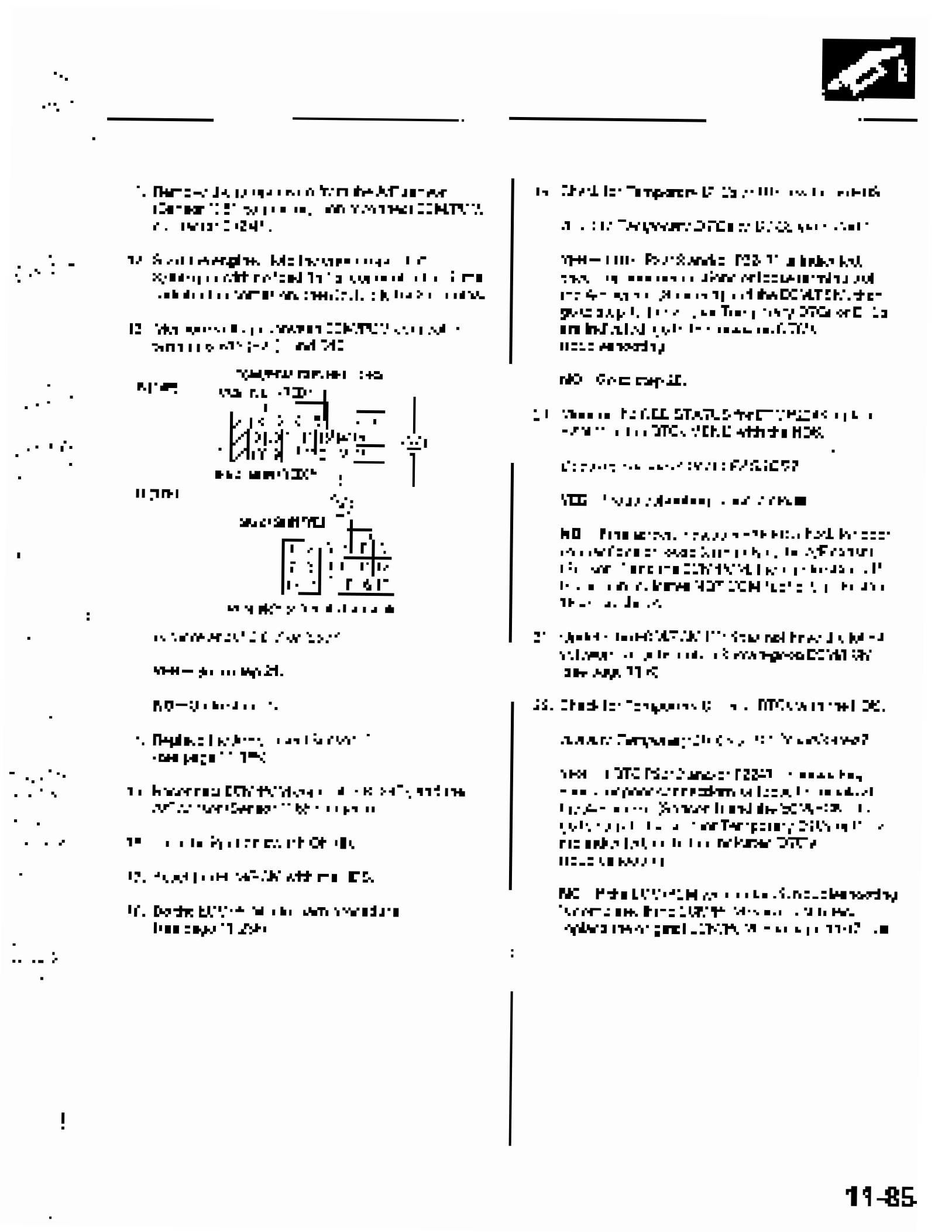
    

    Measure resistance between [illegible] terminal and body ground.

    Is there [illegible]?

    YES—Go to step 11.

    NO—Repair open in wire between [illegible] ECM and [illegible] terminal.
11. [illegible]



DTC Troubleshooting (cont'd)

DTC P2238: Rear A/F Sensor (Bank 1, Sensor 1) VCENT Circuit Low Voltage

DTC P2248: Front A/F Sensor (Bank 2, Sensor 1) VCENT Circuit Low Voltage

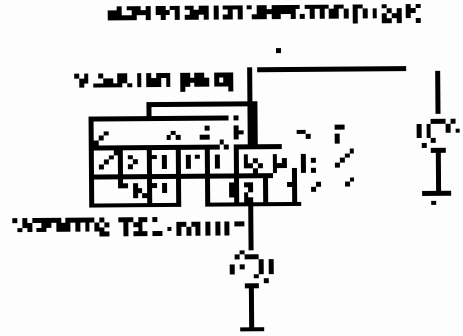
NOTE: Information [illegible]

1. [illegible]
2. [illegible]
3. Start the engine. Make sure engine coolant temperature is above 70°C (158°F). Let the engine idle for at least 2 minutes. Turn the A/C and all accessories OFF. Shift the transmission into Park (A/T) or Neutral (M/T). Let the engine idle at 2,000 rpm for 2 minutes. Check for DTCs.

   Is DTC P2238 or P2248 indicated?

   YES—Go to step 4.

   NO—Intermittent failure, system is OK at this time. Check for poor connection or loose terminal at the A/F sensor and ECM/PCM. If the connection is OK, replace the A/F sensor.
4. Turn the ignition switch OFF.
5. Disconnect the A/F sensor 4P connector.
6. Turn the ignition switch ON (II).
7. Measure voltage between A/F sensor terminal B1 and body ground.
8. Disconnect [illegible]
9. Check for continuity between A/F sensor terminal B1 and body ground.

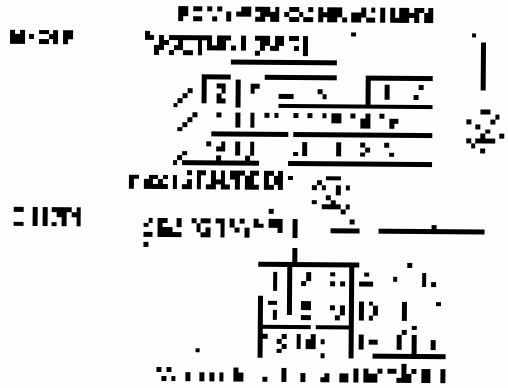


Is there continuity?

YES—Check for short circuit between A/F sensor terminal B1 and the A/F sensor 1 (Bank 1, Sensor 1) or A/F sensor 1 (Bank 2, Sensor 1) (see step 1).

NO—Go to step 10.

10. Reconnect [illegible]
11. Start the engine. Make sure engine coolant temperature is above 70°C (158°F). Let the engine idle for at least 2 minutes. Turn the A/C and all accessories OFF. Shift the transmission into Park (A/T) or Neutral (M/T). Let the engine idle at 2,000 rpm for 2 minutes. Check for DTCs.



DTC Troubleshooting (cont'd)

DTC P2251: Heated A/F Sensor (Bank 1, Sensor 1) VCM Circuit High Voltage

DTC P2254: Heated A/F Sensor (Bank 2, Sensor 1) VCM Circuit High Voltage

NOTE:

- DTC P2251 and/or P2254 may be stored if the power to the VCM is interrupted while the engine is running. If this occurs, the MIL will not illuminate. To erase the code, perform the Idle Learn procedure.
- [illegible]

1. [illegible]

2. Clear the DTC with the HDS.

3. Start the engine, and let the engine idle for [illegible]. Check the [illegible] with the HDS.

4. Check for intermittent [illegible]

   Is DTC P2251 and/or P2254 indicated?

   YES - Go to step 5.

   NO - [illegible] Check for poor connection or [illegible] at the VCM. If the connections are [illegible] Heated Oxygen Sensor [illegible]

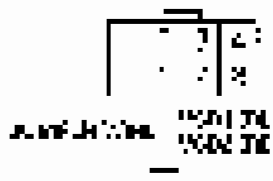
5. [illegible]

6. Disconnect the [illegible]

7. Disconnect the Heated Oxygen Sensor 1 (Bank 1) connector.

8. Turn the ignition switch to ON (II). Measure voltage between [illegible] and body ground.

   Connection: [illegible]



   Is there [illegible]

9. Check for continuity between [illegible] and body ground.

   Connection: [illegible]

   Is there [illegible]

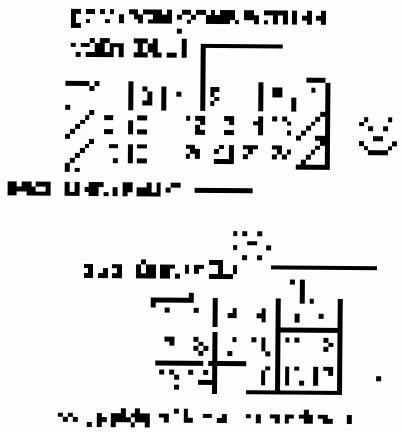
   YES - Go to step 10.

   NO - Repair open in the wire between the [illegible] Heated Oxygen Sensor 1 (Bank 1) connector terminal [illegible]

11. [illegible]

12. [illegible]

13. [illegible]



14. [illegible]

15. [illegible]

16. [illegible]

17. [illegible]

18. [illegible]

19. [illegible]

20. [illegible]

21. [illegible]

22. [illegible]

DTC Troubleshooting (cont'd)

DTC P2602: Front A/F Sensor (Bank 1) Sensor 1 Circuit Low Voltage

DTC P2603: Front A/F Sensor (Bank 2) Sensor 1 Circuit Low Voltage

NOTE: If the vehicle has a malfunction code, record the code before proceeding to the following test.

1. Turn the ignition switch to ON (II).
2. Reset the ECM to clear the DTC.
3. Start the engine, hold the engine speed at 2,000 rpm with no load for at least 2 minutes, and then let it idle. Is the front A/F sensor 1 voltage above 3.6 V?

   YES: Go to step 5.

   NO: Intermittent failure, wire harness or connector is OK. Check for poor connection or loose terminal at front A/F sensor 1 (bank 1 and bank 2) and the ECM.
4. Turn the ignition switch to OFF.
5. Disconnect the front A/F sensor 1 (bank 1 and bank 2) connector.
6. Turn the ignition switch to ON (II).
7. Measure voltage between the front A/F sensor 1 (bank 1 and bank 2) terminals.
8. Disconnect the ECM connector. Check for continuity between the ECM connector and the front A/F sensor 1 (bank 1 and bank 2) connector.

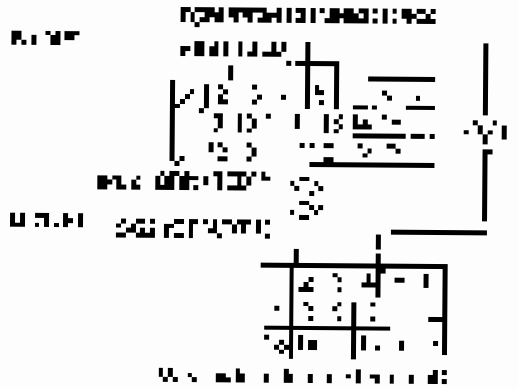
   YES: Replace the front A/F sensor 1 (bank 1 and bank 2). Intermittent failure, wire harness or connector is OK. Check for poor connection or loose terminal at front A/F sensor 1 (bank 1 and bank 2) and the ECM.

   NO: Repair open in wire.
9. Check for continuity between the ECM connector terminal and body ground.

   YES: Repair short to ground in wire.

   NO: Replace the ECM with a new one.

12 [illegible]



[illegible]

YES Go to step 13

NO [illegible]

13 [illegible]

YES Go to step 14

NO [illegible]

14 [illegible]

YES Go to step 15

NO [illegible]

15 [illegible]

YES Go to step 16

NO [illegible]

16 [illegible]

YES [illegible]

NO [illegible]

17 [illegible]

YES [illegible]

NO [illegible]

18 [illegible]

YES [illegible]

NO [illegible]

19 [illegible]

YES [illegible]

NO [illegible]

DTC Troubleshooting (cont'd)

DTC P2627: Rich A/F Correction (Bank 1, Sensor 1) LABEL Circuit Low Voltage

DTC P2628: Rich A/F Correction (Bank 2, Sensor 1) LABEL Circuit Low Voltage

NOTE: Information on the A/F sensor is stored in the ECM memory. Intermittent failures may cause this DTC to be set, but not the MIL.

1. Turn the ignition switch to ON (II).

2. Connect the PGM tester to the DLC.

3. Start the engine. Race the engine at 3,000 rpm with no load for 2 minutes. Let the engine idle for one minute. Check the DTC.

Is DTC P2627 or P2628 indicated?

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals. If no problem is found, replace the ECM and test it on a vehicle that has the DTC.

4. Turn the ignition switch to OFF.

5. Disconnect the A/F sensor 4P connector.

6. Check for continuity between the A/F sensor 4P connector terminal and body ground.

Is there continuity?

YES - Go to step 7.

NO - Go to step 8.

7. Check for short to body ground in the wire between the A/F sensor 4P connector and the ECM 32P connector.

Is there a short to body ground?

YES - Repair short to body ground in the wire between the A/F sensor 4P connector and the ECM 32P connector.

NO - Replace the A/F sensor.

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DTC Troubleshooting (cont'd)

DTC P0133: Front A/F Sensor (Bank 1, Sensor 1) Circuit Slow Response

DTC P0153: Front A/F Sensor (Bank 2, Sensor 1) Circuit Slow Response

NOTE: Use a known-good [illegible]

1. [illegible]
2. Clear the DTC (see page [illegible])
3. Start the engine and let it idle for at least [illegible] minutes. Make sure the A/F sensor heater is working properly (see page [illegible]).
4. Raise the engine speed to [illegible] rpm and maintain it for [illegible] minutes.

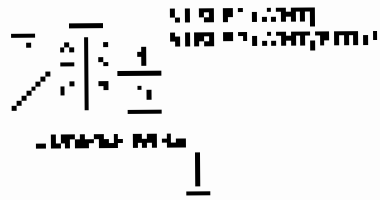
   Is DTC [illegible] indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is good at this time. Check for poor connections or loose terminals at the A/F sensor, ECM, and all related connectors (see page [illegible]).
5. [illegible]
6. Turn the ignition switch OFF.
7. Disconnect the A/F sensor [illegible]
8. Check for DTC P0[illegible]

* Check the A/F sensor heater circuit for an open or short (see page [illegible]):

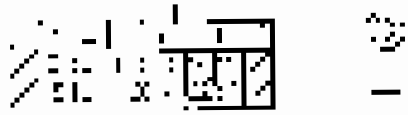
A/F SENSOR 1 (A/F SENSOR 2) CONNECTOR



A/F SENSOR 1 (A/F SENSOR 2)

9. Check for continuity between ECM A/F connector terminal [illegible] and body ground:

ECM A/F CONNECTOR [illegible]

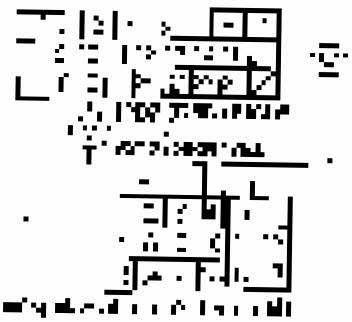


Is there continuity?

YES - [illegible]

NO - Replace the A/F sensor (see page [illegible]).

NOTE: If you replace the ECM, you must have the dealer program the new ECM to your vehicle's immobilizer system (see page [illegible]).



DTC Troubleshooting (cont'd)

DTC P0420 (Honda Diagnostic System II): Catalyst System Efficiency Below Threshold (Bank 1)
DTC P0421 (Honda Diagnostic System II): Warm Up Catalyst Efficiency Below Threshold (Bank 1)

1. Turn the ignition switch OFF.
2. Clear the DTC with the Honda PGM Tester.
3. Start the engine and let it idle until the radiator fan comes on at least once.
4. Drive the vehicle under the following conditions:
   - Engine coolant temperature must be above 70°C (158°F).
   - ATT (Transmission) must be in gear.
   - Vehicle speed must be 40 mph (64 km/h) or more and engine speed must be 1,500 rpm or more.
   - Drive at a steady throttle opening for 10 seconds.
5. Monitor the OBD SYSTEM READINESS test with the Honda PGM Tester or the DTC (SYSTEM READINESS).

Does the OBD SYSTEM READINESS test indicate NOT COMPLETE?

YES - Go to step 6.

NO - The system indicates PASSED. Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM. Refer to the Honda PGM Tester Service Data for DTCs that may be stored. If any other DTCs are stored, troubleshoot those DTCs first.

6. Turn the ignition switch OFF.
7. Disconnect the ECM/PCM connector B (33P) (see page 11-149).
8. Turn the ignition switch ON (II).
9. Measure voltage between ECM/PCM connector B (33P) terminal B1 and body ground.

Is there battery voltage?

YES - Go to step 10.

NO - Repair open in the wire between ECM/PCM connector B (33P) terminal B1 and the No. 7 (10 A) fuse in the under-hood fuse/relay box. Check for poor connections at the ECM/PCM connector B (33P) terminal B1 before replacing the ECM/PCM.

10. Do the DTC P0420 (Honda Diagnostic System II): Catalyst System Efficiency Below Threshold (Bank 1) and DTC P0421 (Honda Diagnostic System II): Warm Up Catalyst Efficiency Below Threshold (Bank 1) recur?

YES - Replace the ECM/PCM with a new one (see page 11-149).

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM. Refer to the Honda PGM Tester Service Data for DTCs that may be stored. If any other DTCs are stored, troubleshoot those DTCs first.

DTC Troubleshooting (cont'd)

DTC P0137: Rear Secondary HO2S (Bank 1, Sensor 2) Circuit Low Voltage

DTC P0157: Front Secondary HO2S (Bank 2, Sensor 2) Circuit Low Voltage

NOTE: If [illegible] DTC P0137 and P0157 [illegible]

1. [illegible]
2. [illegible]
3. Start the engine. Wait [illegible] Is the [illegible] indicator on the [illegible]?
4. [illegible]

   [illegible]

   YES: Go to step 5.

   NO: Go to step 6.
5. Turn the ignition switch to OFF.

   • [illegible] Is the [illegible]?
6. [illegible]
7. [illegible] Is the [illegible]?
8. [illegible]

   Does the [illegible]?

   YES: Go to step 9.

   NO: [illegible]
9. [illegible]

   • Engine coolant temperature [illegible] 70°C (158°F)
   • A/T: [illegible]; M/T: [illegible]
   • Engine speed: [illegible] rpm
   • [illegible]

   Is the [illegible]?
10. [illegible]

    [illegible]

    YES: Go to step 11.

    NO: [illegible]
11. [illegible]
12. Jump the [illegible]
13. [illegible]
14. [illegible]

    [illegible]

    [illegible]

    Is the [illegible]?

    YES: Replace the [illegible] with a new one. Then [illegible]

    NO: Go to step 14.

DTC Troubleshooting (cont'd)

DTC P0158: Rear Secondary HO2S (Bank 2, Sensor 2) Circuit High Voltage

DTC P0159: Rear Secondary HO2S (Bank 2, Sensor 2) Circuit High Voltage

NOTE: Intermittent failures may be caused by poor connections or damaged harness wire. Inspect the connectors and harness wire at the suspected area for poor connection, pin damage, etc.

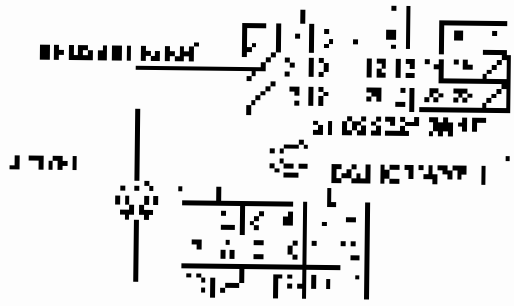
1. Turn the ignition switch to ON (II).
2. Monitor the CKP STATUS data list item using the PGM Tester.
3. Start the engine, and let it idle for more than 30 seconds.
4. Check the HO2S 2 (Bank 2) DATA LIST value.
5. Take a few minutes under these conditions:
   - Engine coolant temperature: more than 176°F (80°C)
   - Vehicle speed: 50 – 75 mph (80 – 120 km/h)
   - Engine speed: 1,500 – 3,000 rpm in 3rd gear with A/T, or in 4th gear with M/T
   - Throttle opening: Constant throttle opening (Do not repeatedly open and close the throttle.)
6. Monitor the CKP STATUS data list item using the PGM Tester.
7. Turn the ignition switch to ON (II).
8. Disconnect the HO2S (Bank 2, Sensor 2) 4P connector.
9. Connect a jumper wire between HO2S (Bank 2, Sensor 2) 4P connector terminal No. 1 and No. 2.

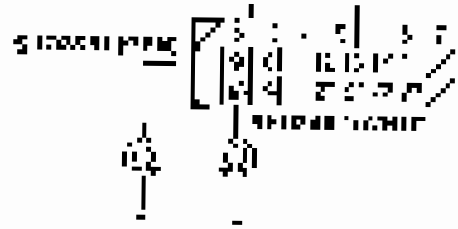
10. Turn the ignition switch to ON (II).
11. Is the voltage displayed on the DATA LIST item No. 05 more than 0.5 V?

    YES: Go to step 12.

    NO: Go to step 13.

12. Turn the ignition switch to OFF.
13. Inspect for poor connection at the ECM.
14. If the connection is OK, replace the ECM.





DTC Troubleshooting (cont'd)

24. [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

25. [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

26. [illegible]

    [illegible]

    - [illegible]
    - [illegible]
    - [illegible]
    - [illegible]

27. [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

DTC P0138: Heated Oxygen Sensor (HO2S) Circuit Bank 1 Sensor 2 Circuit Slow Response

DTC P0153: Heated Oxygen Sensor (HO2S) Circuit Bank 2 Sensor 2 Circuit Slow Response

NOTE: Information provided with an asterisk (*) applies to vehicles with OBD II.

1. Connect scan tool.

2. Start engine and allow it to reach operating temperature.

3. Operate vehicle in closed loop at steady throttle between 2,000 rpm and 3,000 rpm for 2 minutes.

4. Monitor HO2S voltage.

   - Is voltage oscillating above and below 450 mV?
   - Is it oscillating at least 8 times?
   - Does it oscillate between 200 mV and 800 mV?
   - Does it take less than 10 seconds for each transition from rich to lean or lean to rich?

5. Monitor scan tool for DTC P0138 (Bank 1 Sensor 2) or P0153 (Bank 2 Sensor 2).

   Does the scan tool display DTC?

   YES – Go to step 6.

   NO – Intermittent failure. Refer to "Intermittent Failures" in this section. Also check for poor connections or corrosion at HO2S connector. If connections are OK, replace HO2S. Clear DTC. Operate vehicle to verify repair.

6. Disconnect HO2S.

7. Replace HO2S with a known good HO2S.

8. Turn ignition on, with engine off.

9. Monitor HO2S voltage with scan tool.

10. Is the HO2S voltage above 675 mV?
    (Bank 1 Sensor 2 or Bank 2 Sensor 2)

11. Start engine and allow it to reach operating temperature. Operate vehicle in closed loop at steady throttle between 2,000 rpm and 3,000 rpm for 2 minutes.

12. Monitor HO2S voltage.

    Does it oscillate between 200 mV and 800 mV?

    - At least 8 times?
    - Does it take less than 10 seconds for each transition from rich to lean or lean to rich?

13. Turn ignition off.

    Disconnect secondary HO2S connector.

    YES – Replace HO2S with a known good sensor. Clear DTC. Operate vehicle to verify repair.

    NO – Check for poor connections or corrosion at HO2S connector. If connections are OK, replace PCM. Program replacement PCM with Tech 2. Clear DTC. Operate vehicle to verify repair.

14. Turn ignition on, with engine off.

    Monitor HO2S voltage with scan tool.

    Is HO2S voltage above 675 mV?

    YES – Replace HO2S with a known good HO2S. Clear DTC. Operate vehicle to verify repair.

    NO – Check for poor connections or corrosion at HO2S connector. If connections are OK, replace PCM. Program replacement PCM with Tech 2. Clear DTC. Operate vehicle to verify repair.

DTC Troubleshooting (cont'd)

DTC P0141: Heated Oxygen Sensor (HO2S) (Bank 1, Sensor 2) Heater Circuit Malfunction

DTC P0161: Heated Oxygen Sensor (HO2S) (Bank 2, Sensor 2) Heater Circuit Malfunction

While the vehicle is stopped, turn the A/C switch and all accessories off.

1. Turn the ignition switch to OFF.
2. Disconnect the 4P connector from the HO2S.
3. Start the engine.
4. Check the Malfunction Indicator Lamp (MIL).

   Is the MIL on?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connection or damaged wire in the HO2S (Sensor 2) circuit. Refer to troubleshooting inspection, page 11-49.

5. Turn the ignition switch to OFF.
6. Check the HO2S:

   - Bank 1: Measure the resistance between the HO2S terminals 3 and 4.
   - Bank 2: Measure the resistance between the HO2S terminals 1 and 2.
   - See the HO2S (Sensor 2) heater resistance specification.

   Is the resistance within the specification?

   YES - Replace the HO2S (Sensor 2) with a new one. Clear the DTC with the HDS or by disconnecting the battery for 10 seconds. Go to step 8.

   NO - Go to step 7.

7. Check the HO2S (Sensor 2) heater resistance between the HO2S terminal and body ground.

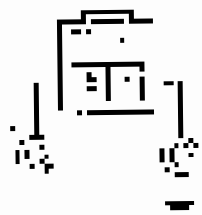
   Is there infinity?

   YES - Replace the HO2S (Sensor 2) with a new one. Clear the DTC with the HDS or by disconnecting the battery for 10 seconds. Go to step 8.

   NO - Go to step 8.

8. Check for poor connection or damaged wire between the HO2S (Sensor 2) and the PCM.

   Is there poor connection or damaged wire?



   YES - Repair as necessary.

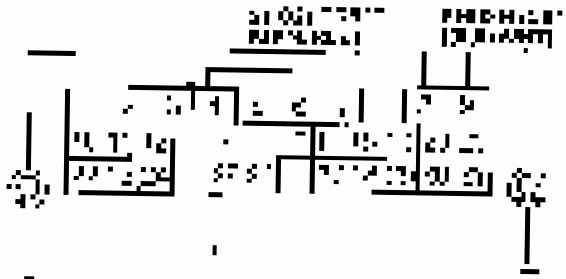
   NO - Go to step 9.

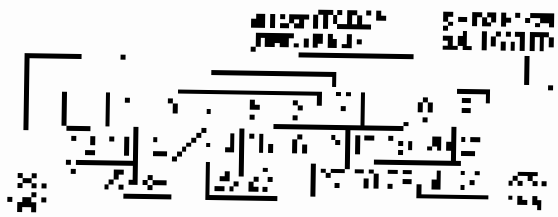
9. Check for poor connection or damaged wire between the HO2S (Sensor 2) and body ground.

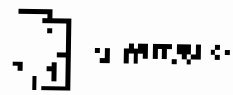
   Is there poor connection or damaged wire?

   YES - Repair as necessary.

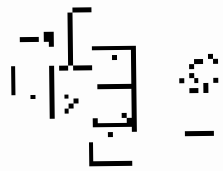
   NO - Go to step 10.







DTC Troubleshooting (cont'd)



DTC Troubleshooting (cont'd)

DTC P0131: Heated Oxygen Sensor (HO2S) 1, Bank 1 Fuel System Too Lean

DTC P0137: Heated Oxygen Sensor (HO2S) 2, Bank 1 Fuel System Too Rich

DTC P0154: Heated Oxygen Sensor (HO2S) 1, Bank 2 Fuel System Too Lean

DTC P0157: Heated Oxygen Sensor (HO2S) 2, Bank 2 Fuel System Too Rich

NOTE: For more information on the relationship between a fuel system DTC and oxygen sensor DTC, see the Fuel System DTC Table in the beginning of this section.
Applicable DTC: P0131, P0137, P0154, and/or P0157
Detected condition: Oxygen sensor voltage does not change enough during specified time
Possible cause
HO2S 1 (P0131, P0154): Fuel injector, Exhaust leak, Poor HO2S 1 ground
HO2S 2 (P0137, P0157): Fuel injector, Exhaust leak, Poor HO2S 2 ground
HO2S 1 (P0131, P0154): Poor HO2S 1 connection, Open or short in HO2S 1 wire, Faulty HO2S 1
HO2S 2 (P0137, P0157): Poor HO2S 2 connection, Open or short in HO2S 2 wire, Faulty HO2S 2
PCM malfunction

1. Check for any other stored DTCs (see page 11-64).

   Is there any other stored DTC?

   YES - Troubleshoot those DTCs first (see page 11-64). Then go to step 2.

   NO - Go to step 2.

2. Perform the Heated Oxygen Sensor (HO2S) Test (see page 11-64). Then go to step 3.

3. Start the engine and let it idle.

4. Select "Sensor" in the data list menu (see page 11-64).

5. Monitor the HO2S 1 voltage and HO2S 2 voltage while the engine is idling.

   - Engine warmed up: Voltage should change rapidly around 0.5 V.
   - ACT: Voltage should change rapidly.
   - Throttle suddenly opened and closed: Voltage should change rapidly between 0.1 V and 0.9 V.

   NOTE: If DTC P0131, P0154, and/or P0137 only is stored, the HO2S 1 and/or HO2S 2 may be detecting a lean condition. If DTC P0157 only is stored, the HO2S 2 may be detecting a rich condition.

6. Is the HO2S 1 voltage and/or HO2S 2 voltage changing rapidly?

   YES - Intermittent failure, the system is normal at this time. Check for poor connections or loose wires at the HO2S 1 and/or HO2S 2 connector.

   NO - Go to step 7.

DTC P0300: Random Misfire Detected
Diagnostic Trouble Code Definitions

DTC P0301: No. 1 Cylinder Misfire Detected

DTC P0302: No. 2 Cylinder Misfire Detected

DTC P0303: No. 3 Cylinder Misfire Detected

DTC P0304: No. 4 Cylinder Misfire Detected

DTC P0305: No. 5 Cylinder Misfire Detected

DTC P0306: No. 6 Cylinder Misfire Detected

Special Tools Required
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Note
- [illegible]
- [illegible]
- [illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Misfire Detection

- Engine speed
- Vehicle speed
- [illegible]
- [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

[illegible]

NOTE: [illegible]

5. [illegible]

[illegible]

[illegible]

6. [illegible]

[illegible]

DTC Troubleshooting (cont'd)

7. [illegible]

   Connect a [illegible]

   VSA [illegible]

   Will the [illegible]

   YES [illegible]

   NO [illegible]

8. [illegible]

   YES [illegible]

   NO [illegible]

9. [illegible]

   [illegible]

   YES [illegible]

   NO [illegible]

10. [illegible]

    Replace [illegible]

11. [illegible]

12. [illegible]

13. [illegible]

    Will the [illegible]

    YES [illegible]

    NO [illegible]

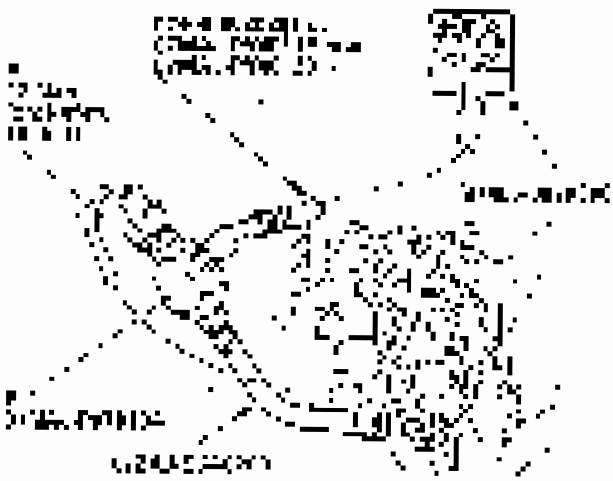
14. [illegible]

    Will the [illegible]

    YES [illegible]

    NO [illegible]

15. [illegible]



DTC Troubleshooting (cont'd)

DTC P0301: No. 1 Cylinder Misfire Detected

DTC P0302: No. 2 Cylinder Misfire Detected

DTC P0303: No. 3 Cylinder Misfire Detected

DTC P0304: No. 4 Cylinder Misfire Detected

DTC P0305: No. 5 Cylinder Misfire Detected

DTC P0306: No. 6 Cylinder Misfire Detected

1. Inspect for the following:

   - Engine oil level
   - Fuel level
   - Throttle position
   - Air leak

   Is the engine OK with the above?

2. Start the engine and let it idle for 10 minutes. Does the engine shake excessively?

3. Check for DTC P0325, P0330, P0335, P0340, P0345, P0350, P0351, P0352, P0353, P0354, P0355, P0356, P0357, P0358, P0359, P0360, P0361, P0362, P0363, P0364, P0365, P0366, P0367, P0368, P0369, P0370, P0371, P0372, P0373, P0374, P0375, P0376, P0377, P0378, P0379, P0380, P0381, P0382, P0383, P0384, P0385, P0386, P0387, P0388, P0389,

9. [illegible]

YES Go to step 10.

NO [illegible]

10 [illegible]

[illegible]

YES [illegible]

NO [illegible]

11 [illegible]

12 [illegible]

13 [illegible]

14. [illegible]

15 [illegible]

16. [illegible]

17. [illegible]

YES [illegible]

NO [illegible]

18 [illegible]

[illegible]

YES [illegible]

NO [illegible]

19 [illegible]

20. [illegible]

21. [illegible]

22 [illegible]

23 [illegible]

[illegible]

NO [illegible]

[illegible]

24. [illegible]

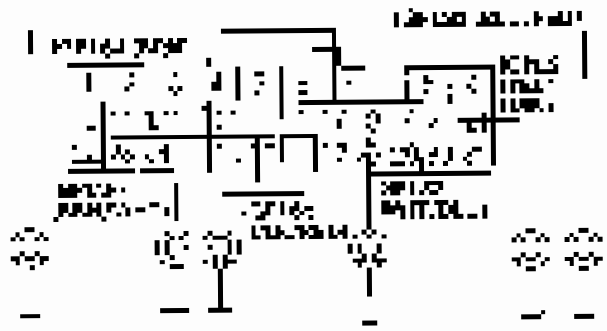
25. [illegible]

26. [illegible]

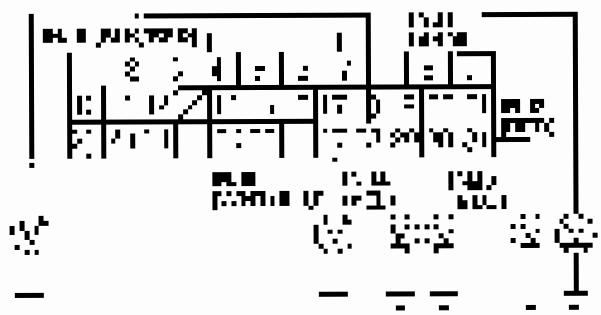
27. [illegible]

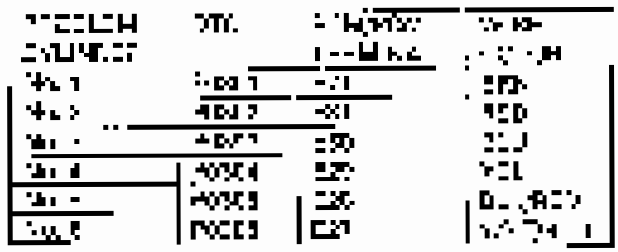
cont'd

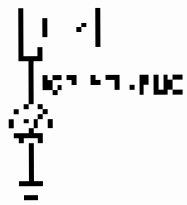
DTC Troubleshooting (cont'd)

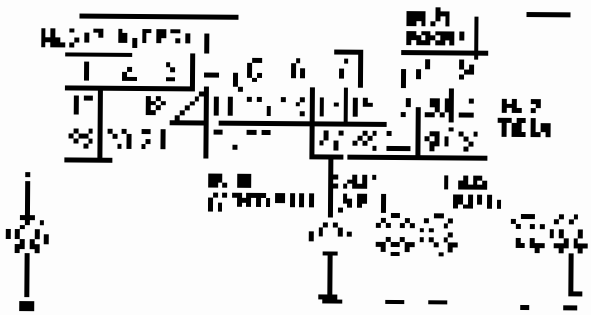


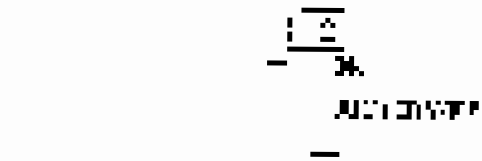
DTC Troubleshooting (cont'd)



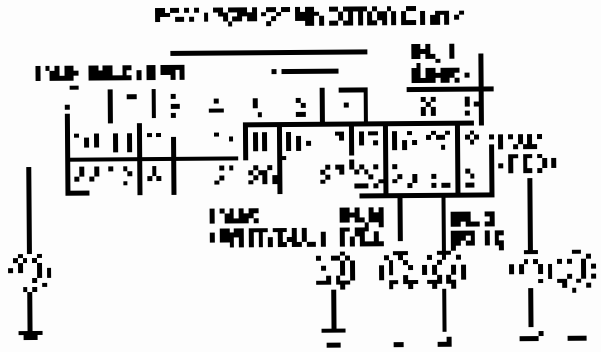








DTC Troubleshooting (cont'd)



YES: Go to step 51.

NO: Temporary poor connection or intermittent failure. Clear the DTC from the ECM memory (see page 11-103), and recheck.

YES: Go to step 54.

NO: Replace the crankshaft position sensor (see page 11-153), then go to step 54.

54. Disconnect the ECM 32P connector.

55. Check for continuity between the ECM and the crankshaft position sensor.

56. Check for continuity between the ECM and body ground.

57. Check for continuity between the ECM and the ignition control module.

58. Check for continuity between the ECM and the ignition coil primary terminal.

59. Check for continuity between the ECM and the ignition coil primary terminal.

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200. Check for continuity between the ECM and the ignition coil primary terminal.

DTC Troubleshooting (cont'd)

DTC P0420: Catalyst System Efficiency Below Threshold

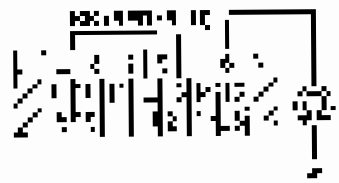
1. [illegible]
2. [illegible] DTC [illegible].
3. [illegible] engine [illegible] 3,000 rpm with no load [illegible] Monitor [illegible] voltage [illegible] sensor [illegible].
4. [illegible] 0.5 V [illegible] 4,000 rpm for [illegible] 60 seconds.
5. [illegible] DTC and [illegible].

   Is DTC P0420 [illegible]?

   YES: [illegible].

   NO: [illegible] Replace [illegible] Check for poor [illegible] connection or damaged [illegible] sensor. [illegible] Clear [illegible] memory. [illegible]
6. [illegible] DTC.
7. Turn the [illegible] OFF.
8. Disconnect [illegible] sensor [illegible] connector.
9. Disconnect [illegible] sensor [illegible] connector.
10. Check [illegible] connector [illegible] connector [illegible] terminals [illegible] corrosion, [illegible] damage, [illegible] pushed back [illegible].

    ECM/PCM Connector [illegible]



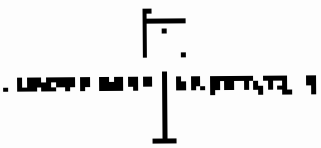
    [illegible] A/C [illegible]

    Is there [illegible]?

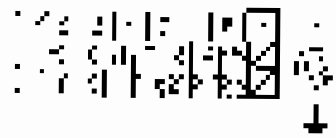
    YES: Check [illegible] connector [illegible] the ECM/PCM. Replace the ECM/PCM. [illegible] Test drive [illegible] 11.

    NO: [illegible].
11. Check [illegible] sensor [illegible] Disconnect [illegible] sensor [illegible] Turn the [illegible] ON (II). [illegible]

    [illegible] SENSOR [illegible] VOLTAGE



    [illegible]



12. Check for continuity between ECM/PCM connector terminal C6 and body ground.

ECM/PCM CONNECTOR C (31P)

Wire side of female terminals

Is there continuity?

YES – Go to step 13.

NO – Repair open in the wire between the ECM/PCM (C6) and the knock sensor, then go to step [illegible].

13. Remove the intake manifold (see page [illegible]).

14. Check for continuity between the knock sensor and the harness [illegible] ground.

Is there continuity?

YES – Go to step 15.

NO – Repair the knock sensor [illegible] then go to step 16.

15. Replace the knock sensor (see page 11-165).

16. Install the intake manifold (see page [illegible]).

17. Turn the ignition switch ON (II).

18. Reset the ECM/PCM with the HDS.

19. Do the ECM/PCM idle learn procedure (see page 11-[illegible]).

20. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

21. Hold the engine speed at 3,000 rpm for at least 30 seconds.

22. Check for Temporary DTCs or DTCs with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES – If DTC P0325 is indicated, [illegible] go to step [illegible]. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

NO – Go to step 23.

23. Monitor the OBD STATUS for DTC P0325 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES – Troubleshooting is complete.■

NO – If the screen indicates FAILED, go to step [illegible]. If the screen indicates NOT COMPLETED, go to step [illegible] and recheck.

24. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see page 11-[illegible]).

25. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

26. Hold the engine speed at 3,000 rpm for at least 30 seconds.

27. Check for Temporary DTCs or DTCs with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES – If DTC P0325 is indicated, check for poor connections or loose terminals at the knock sensor and the ECM/PCM, then go to step 1. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

NO – If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-[illegible]).■

DTC Troubleshooting (cont'd)

DTC P0335: CKP Sensor A Circuit Signal

DTC P0336: CKP Sensor B Circuit Signal

NOTE: If more than one sensor code is stored, troubleshoot the lowest code first.

1. Turn the ignition switch OFF.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for the appropriate DTC with the HDS.

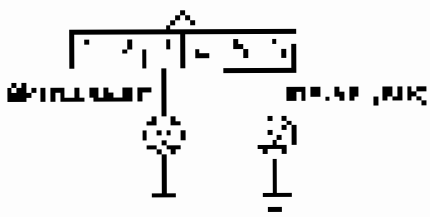
Is DTC P0335 or P0336 indicated?

YES—Go to step 5.

NO—Intermittent failure, system is OK at this time. Check for poor connection or loose terminal at the CKP sensor A (B) and the PCM (ECM).

5. Turn the ignition switch OFF.
6. Disconnect the CKP sensor A (B) 3P connector from the sensor.
7. Turn the ignition switch ON (II).
8. Measure voltage between CKP sensor A (B) 3P connector terminal No. 2 (Yellow/Red) and No. 3 (Green/Red).

CKP SENSOR A (B) 3P CONNECTOR



Wire side of female terminals

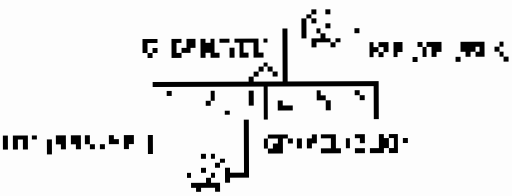
Is there 4.5 – 5.5 V?

YES—Go to step 9.

NO—Replace the PCM (ECM).

9. Turn the ignition switch OFF.
10. Measure resistance between CKP sensor A (B) 3P connector terminal No. 1 (Blue/Yellow) and No. 2 (Yellow/Red).

CKP SENSOR A (B) 3P CONNECTOR



Wire side of female terminals

Is there 1 – 3 kΩ?

YES—Go to step 11.

NO—Replace the CKP sensor A (B).

11. Measure resistance between CKP sensor A (B) 3P connector terminal No. 1 (Blue/Yellow) and No. 3 (Green/Red).

CKP SENSOR A (B) 3P CONNECTOR

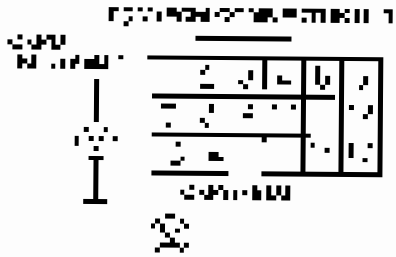
Wire side of female terminals

Is there 1 – 3 kΩ?

YES—Go to step 12.

NO—Replace the CKP sensor A (B).

11. [illegible]



[illegible]

[illegible]

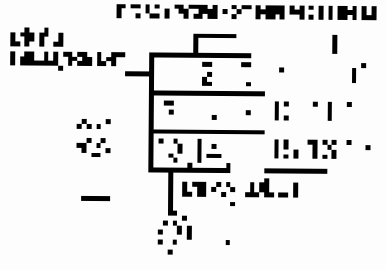
YES: Repair open or short between [illegible] and ECM connector [illegible]. Then go to step 13.

NO: [illegible]

12. [illegible]

13. Check for [illegible]

14. Check for [illegible]



[illegible]

[illegible]

YES: Repair [illegible] between the ECM and [illegible]. Then go to step 15.

NO: [illegible]

15. Turn the ignition switch [illegible]

16. Disconnect ECT sensor [illegible]

17. Turn the ignition switch [illegible]

18. [illegible]

19. Jump [illegible]

20. Jump [illegible]

21. Check [illegible]
See page 11-[illegible]

22. Check ECT sensor [illegible]

23. Check for [illegible]

[illegible]

YES — [illegible]
[illegible]
ECT sensor [illegible]
1. Temperature [illegible]
Intermittent problem
[illegible]

NO — Troubleshoot [illegible]

24. [illegible]

25. Check for [illegible]

[illegible]

YES — [illegible]
[illegible]

NO — [illegible]

DTC Troubleshooting (cont'd)

DTC P0128: TP Sensor A Performance Problem

DTC P0688: ECM Sensor B Intermittent Problem

NOTE: Intermittent failure may be caused by a poor connection or damaged harness wire.

1. [illegible]
   - [illegible]
   - [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

   [illegible]

   YES — [illegible]

   NO — [illegible]
5. [illegible]

   [illegible]

   YES — [illegible]

   NO — [illegible]
6. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
7. [illegible]

   [illegible]

   YES — [illegible]

   NO — [illegible]
8. [illegible]

   [illegible]

   YES — [illegible]

   NO — [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]
13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]
17. [illegible]

    [illegible]

    YES — [illegible]

    NO — [illegible]

DTC P0300: [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

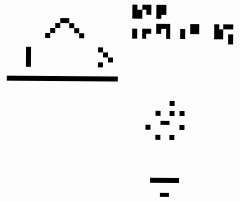
[illegible]?

[illegible]

NO: [illegible]

5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]

[illegible]



[illegible]

[illegible]?

[illegible]

NO: [illegible]

9. [illegible]

[illegible]

[illegible]

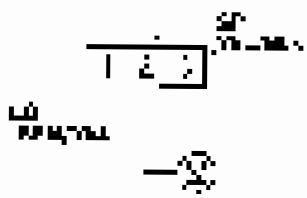
[illegible]

YES: [illegible]

NO: [illegible]

10. [illegible]

[illegible]



[illegible]

[illegible]?

YES: [illegible]

NO: [illegible]

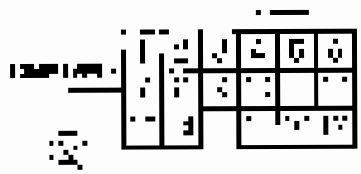
[illegible]

[illegible]

DTC Troubleshooting (cont'd)

1. [illegible]

[illegible]



[illegible]

[illegible]

YES: [illegible]

NO: [illegible]

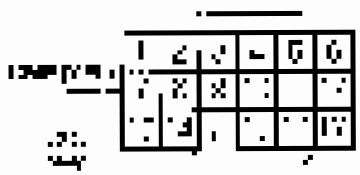
12. [illegible]

13. [illegible]

14. [illegible]

15. Check for open circuit in wire harness between [illegible] and ECM/PCM connector terminal B20 (see page 11-[illegible]).

[illegible]



[illegible]

[illegible]

YES: [illegible]

NO: [illegible]

16. Turn the ignition switch OFF.

17. Replace [illegible]

18. Turn the ignition switch ON (II).

19. Reset the [illegible]

20. Test the [illegible]

21. Is the DTC [illegible]

22. Do the [illegible]

23. [illegible]

24. [illegible]

[illegible]

YES: If DTC [illegible] is not set, [illegible]

25. Check for [illegible]

[illegible]

NOTE: [illegible]

NO: [illegible]

DTC Troubleshooting (cont'd)

B16 P0562 PCM/PCM Power Source Circuit Low Voltage

1. Install a known-good PCM.
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Wait 10 seconds.
5. Turn the ignition switch ON (II).
6. Check for Temporary DTC with the HDS.

   Is DTC P0562 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the PCM (C1) and ECM/PCM (C2). If the connections are OK, replace the ECM/PCM.

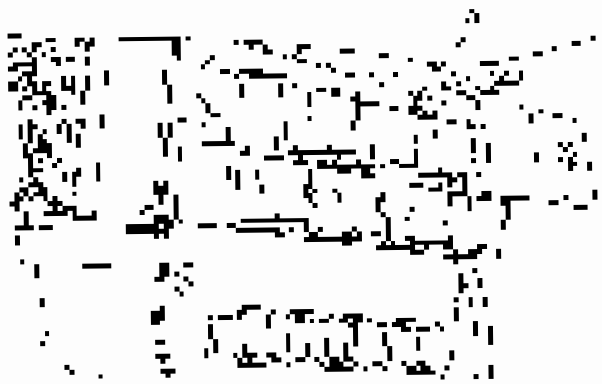
7. Turn the ignition switch OFF.
8. Jump the SCS line to ground.
9. Disconnect the ECM/PCM connector A (31P).
10. Measure voltage between ECM/PCM connector terminal A1 and body ground.

    Is there battery voltage?

    YES - Go to step 11.

    NO - Go to step 12.

11. Turn the ignition switch ON (II). Measure voltage between ECM/PCM connector terminal A1 and body ground.

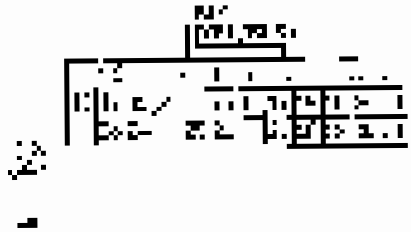


Is there battery voltage?

YES - Go to step 13.

NO - Go to step 14.

DTC Troubleshooting (cont'd)



DTC P0830: [illegible]

Reference:

NOTE: This DTC is set by the ECM/PCM when it does not receive valid information from the [illegible] (PCM) is receiving valid information.

Turn the ignition switch ON (II).

2. Clear the DTC from the ECM.

3. Turn the ignition switch OFF.

4. [illegible]

5. Check for DTC P0830.

Does the MIL come on and does the DTC display?

YES - Continue to 6.

NO - Go back to 1.

6. Inspect the [illegible] for DTC.

Is DTC P0830 displayed?

YES - Go to the DTC P0830 procedure.

NOTE: If the ECM/PCM is replaced, the new ECM/PCM must be programmed for your specific [illegible] ECM/PCM, the new ECM/PCM will not function properly. Refer to the [illegible] for the ECM/PCM programming procedure.

7. Clear the DTC from the ECM.

8. [illegible]

9. Turn the ignition switch OFF and [illegible]

11. Check for [illegible] DTC or DTCs [illegible]

Are any other DTCs displayed?

YES - If DTC P0830 is displayed, [illegible] ECM/PCM. If a [illegible] is suspected, refer to the [illegible] for the [illegible] procedure. If [illegible] DTC is displayed, go to the [illegible] DTC [illegible].

NO - [illegible]

DTC Troubleshooting (cont'd)

DTC P0602: PCM Programming Error
Valid for: Keep Alive Memory (KAM) Error

1. Turn the ignition switch to the OFF position.
2. Clear the DTC from the PCM.
3. Check for Temporary DTC, refer to the DTC Confirmation procedure.

Is DTC P0602 indicated?

YES - Replace the PCM with a new one that has the same part number. Refer to the Powertrain Control Module (PCM) Replacement procedure in the appropriate Service Manual. Is the replacement PCM programmed?

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose wires.

DTC P0603: PCM Power Control Circuit
Valid for: Malfunction

1. Turn the ignition switch to the OFF position.
2. Clear the DTC from the PCM.
3. Check for Temporary DTC, refer to the DTC Confirmation procedure.

Is DTC P0603 indicated?

YES - Replace the PCM with a new one that has the same part number. Refer to the Powertrain Control Module (PCM) Replacement procedure in the appropriate Service Manual. Is the replacement PCM programmed?

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose wires.

DTC P0715: Input Shaft Speed (ISS) Sensor Circuit Malfunction (CVT)

1. [illegible]

2. [illegible]

Is the vehicle equipped with [illegible]?

YES: Proceed to the next step.
Check for poor connection or [illegible] terminal. If no abnormality is found, substitute a known-good [illegible] and recheck.

NO: [illegible]

3. Turn the ignition switch OFF.

4. Disconnect the [illegible] connector.

5. [illegible]

6. Measure the voltage between the [illegible] terminal and [illegible] terminal of the [illegible] connector.

[illegible]

Is the voltage [illegible]?

YES: Go to step 7.

NO: [illegible]

7. Measure the voltage between the [illegible] terminal and [illegible] terminal of the [illegible] connector.

[illegible]

Is the voltage [illegible]?

YES: Go to step 8.

NO: [illegible]

8. [illegible]

Is the voltage [illegible]?

YES: Go to step 9.

NO: [illegible]

9. [illegible]

Is the voltage [illegible]?

YES: Go to step 10.

NO: [illegible]

10. [illegible]

Is the voltage [illegible]?

YES: Go to step

DTC Troubleshooting (cont'd)

9. [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

11. [illegible]

12. [illegible]

13. Check [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

15. [illegible]

16. [illegible]

17. [illegible]

18. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

19. [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

21. [illegible]

22. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

23. [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

DTC P0720 Output Speed Sensor Circuit Malfunction (MT)

1. Start the engine. Drive the vehicle at a speed of 2,000 rpm or more in 3rd gear position. Then release the accelerator pedal completely.

2. Turn the ignition switch to the ON position.

3. Select the CSM mode with the SUBARU SELECT MONITOR III.

Is the vehicle speed displayed?

YES: Go to step 4.

NO: Go to step 5.

4. Stop the engine and turn the ignition switch to the OFF position.

5. Disconnect the connector from the transmission control module (TCM).

6. Turn the ignition switch to the ON position.

7. Measure the voltage between the transmission control module (TCM) connector and the ground.

Is the voltage 10 V or more?

YES: Go to step 8.

NO: Repair the open circuit between the TCM connector and the ignition switch. Then go to step 18.

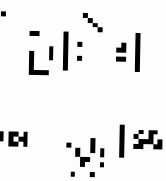
8. Measure the voltage between the transmission control module (TCM) connector and the ground.

Is the voltage 10 V or more?

YES: Go to step 9.

NO: Repair the open circuit between the TCM connector and the ignition switch. Then go to step 18.

9. Measure the voltage between the transmission control module (TCM) connector and the ground.

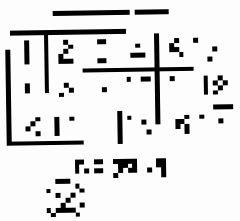


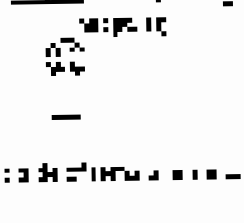
Is the voltage 10 V or more?

YES: Go to step 10.

NO: Repair the open circuit between the TCM connector and the ignition switch. Then go to step 18.

DTC Troubleshooting (cont'd)





23. [illegible]
page [illegible]

24. [illegible]:

- [illegible]
- [illegible]
- [illegible]

25. [illegible]

[illegible]

NOTE: [illegible]

DTC Troubleshooting (cont'd)

DTC P1297 SLD Circuit Low Voltage

1. Turn the ignition switch OFF.
2. Check the SLD connector for poor contact.

   Is it OK?

   YES - Go to step 3.

   NO - Repair poor connection.
3. Turn the ignition switch ON (II).
4. Disconnect the PGM-FI sub-harness.
5. Turn the ignition switch OFF.
6. Check for continuity between SLD terminal and body ground.

   Is there continuity?

   YES - Go to step 7.

   NO - Go to step 8.
7. Turn the ignition switch ON (II).
8. Check for short between SLD and ECM.
9. Replace the ECM with a known good one, and recheck.

10. Check for continuity between SLD terminal and body ground.

Ohmmeter

11. Was there continuity?

    YES - Replace the ECM with a known good one, and recheck.

    NO - Go to step 12.
12. Turn the ignition switch OFF.
13. Disconnect the ECM connector.
14. Check for short between SLD and ECM.
15. Replace the ECM with a known good one, and recheck.
16. Check for open in wire.
17. Turn the ignition switch ON (II).

DTC Troubleshooting (cont'd)

DTC P1298: ELD Circuit High Voltage

1. Start the engine, and let it idle.
2. Check the ELD in the DATA LIST with the HDS.

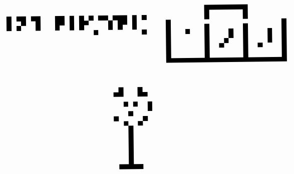
Is [illegible] indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ELD and the ECM/PCM.

3. Turn the ignition switch OFF.
4. Disconnect the ELD 3P connector.
5. Turn the ignition switch ON (II).
6. Measure the voltage between ELD 3P connector terminal No. [illegible] and body ground.

ELD 3P CONNECTOR



Wire side of female terminals

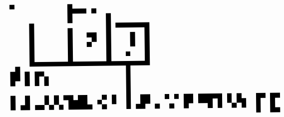
Is there battery voltage?

YES - Go to step 7.

NO - Repair open in the wire between the No. [illegible] fuse [illegible] and the ELD, then go to step 14.

7. Turn the ignition switch OFF.
8. Connect ELD 3P connector terminal No. [illegible] to body ground with a jumper wire.

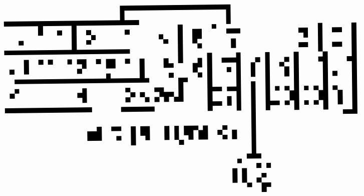
ELD 3P CONNECTOR



Wire side of female terminals

9. [illegible] the jumper wire [illegible] the ELD.
10. Disconnect ECM/PCM connector [illegible].
11. Check for continuity between ECM/PCM connector terminal [illegible] and body ground.

ECM/PCM CONNECTOR [illegible]



Wire side of female terminals

Is there continuity?

YES - Go to step 12.

NO - Repair open in the wire between the ECM/PCM [illegible] and the ELD, then go to step 15.

DTC Troubleshooting (cont'd)

DTC P2227, BARO Sensor Range/Performance Problem

NOTE: If DTC P0107 is also stored, troubleshoot that code first.

1. Turn the ignition switch ON (II), and wait at least 2 seconds.

2. Check the PGM-FI Service Data for DATA LIST #49.

   Is voltage (BARO Sensor) between 2.5 and 4.5 V?

   YES - Go to step 3.

   NO - Substitute a known-good PCM, and recheck. If the symptom/indication goes away, replace the original PCM. If the symptom/indication continues, go to the applicable DTC troubleshooting flow chart.

3. Check the DTC(s) in the PCM.

4. Clear the stored DTC(s) from the PCM. Start the engine, and let it idle for at least 10 minutes. Check if DTC P2227 is stored again.

   Is DTC P2227 stored again?

   YES - Replace the PCM.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose wires.

5. Turn the ignition switch OFF.

6. Disconnect the BARO sensor connector.

7. Check for proper connection at the BARO sensor connector. If OK, reconnect the connector.

8. Check for intermittent DTC P2227 (see page 11-124).

   Is DTC P2227 stored again?

   YES - Replace the BARO sensor.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose wires.

DTC P2228: Wall Sensor Circuit Low Voltage

1. [illegible]

2. [illegible]

   [illegible]

   [illegible]

   [illegible]

3. [illegible]

4. [illegible]

   [illegible]

   YES—[illegible]

5. [illegible]

   NO—[illegible]

DTC P2229: Wall Sensor Circuit High Voltage

1. [illegible]

2. [illegible]

   [illegible]

   YES—[illegible]

   NO—[illegible]

3. [illegible]

4. [illegible]

   [illegible]

   YES—[illegible]

   NO—[illegible]

DTC Troubleshooting (cont'd)

DTC U0073: CAN Communication Bus Off

DTC U0100: CAN Communication with ECM/PCM (Engine Control Module) (1999 TSX)

1. Turn the ignition switch to ON (II).
2. Clear the DTC from the ECM/PCM.
3. Start the engine, and let it idle for 30 seconds.

   Is DTC U0073 and/or U0100 indicated?

   YES: Go to step 4.

   NO: Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM and the gray 4P connector in the engine compartment. Check the wire harness for open circuit and short to ground.

4. Check for DTC U0073 and/or U0100 in the DTC MENU mode. Refer to the Honda PGM Tester or the Honda Diagnostic System (HDS).

   Is DTC U0073 and/or U0100 indicated?

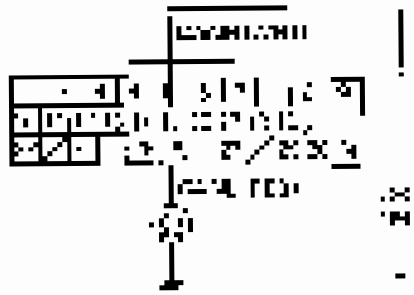
   YES: Go to step 5.

   NO: Go to step 6.

5. Replace the ECM/PCM.
6. Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM and the gray 4P connector in the engine compartment.
7. Disconnect the gray 4P connector from the ECM/PCM.
8. Disconnect the 4P connector from the 4P connector.
9. Properly connect the gray 4P connector and the 4P connector.
10. Turn the ignition switch to ON (II).
11. Disconnect the ECM/PCM connector A (gray)

12. Check for poor connection at the gray 4P connector terminal and the ECM/PCM connector terminal. If the connection is OK, measure the voltage between the following terminals.

    Connection: A14 (+) – Ground (–)



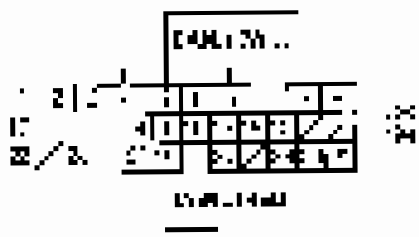
    Is there battery voltage?

    YES: Repair short in the wire between the gray 4P connector and the ECM/PCM connector A (gray). If the wire is OK, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM and the gray 4P connector in the engine compartment.

    NO: Go to step 13.

13. Check for continuity between the gray 4P connector terminal and body ground.

    Connection: A14 – Ground



    Is there continuity?

    YES: Repair short in the wire between the gray 4P connector and the ECM/PCM connector A (gray). If the wire is OK, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM and the gray 4P connector in the engine compartment.

    NO: Go to step 14.

DTC Troubleshooting (cont'd)

DTC U0122: I-CAN Malfunction (VSA ECM/PCM)

NOTE: If DTC U0073 is stored at the same time as DTC U0122, troubleshoot DTC U0073 first, then recheck for DTC U0122.

1. Turn the ignition switch OFF.
2. Clear the DTC with the HDS.
3. [illegible]

   [illegible]

   YES: Go to step 4.

   NO: [illegible] Check for poor connection or loose terminal at the [illegible] If the connection is OK, replace the [illegible]
4. [illegible]

   [illegible]

   YES: Go to step 5.

   NO: Go to step 6.
5. Troubleshoot the [illegible]
6. [illegible] VSA [illegible]

7. Check [illegible] connector for poor connection or loose terminal. If the connection is OK, replace the [illegible]

   [illegible]

   YES: Go to step 8.

   NO: Repair as necessary.
8. Check for an open in the wire between the VSA modulator-control unit 14P connector terminal No. 3 and the ECM/PCM 31P connector terminal No. 28.

   [illegible]

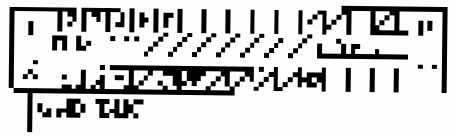
   YES: Go to step 9.

   NO: Repair as necessary.
9. Check for an open in the wire between the VSA modulator-control unit 14P connector terminal No. 4 and the ECM/PCM 31P connector terminal No. 29.

   [illegible]

   YES: Go to step 10.

   NO: Repair as necessary.



MIL Circuit Troubleshooting

1. [illegible]

2. [illegible]
   [illegible] page 11-152.

   Does the MIL flash as shown?

   YES - Go to step 3.

   NO - Refer to the symptom chart for the [illegible]
   [illegible]

3. [illegible]

4. [illegible] Check for poor connection at ECM 32P connector.

   Is the connection OK?

   YES - Go to step 5.

   NO - [illegible]

5. [illegible]

6. [illegible]

7. [illegible] Check for poor connection at ECM 32P connector.

   Is the connection OK?

   YES - Go to step 8.

   NO - [illegible]

8. [illegible] page 11-151.

9. [illegible] Check for poor connection at ECM 32P connector.

   Is the connection OK?

   YES - Go to step 10.

   NO - [illegible]
   [illegible] page 11-151.

10. Check for poor connection at ECM and the IDS.

    Is the connection OK?

    YES - Go to step 11.

    NO - Go to step 9.

11. Check the MIL for the following:

    Does it work OK?

    YES - [illegible]

    NO - Go to the following page, then
    [illegible]

12. Check the IDS for the following:

    Is it OK?

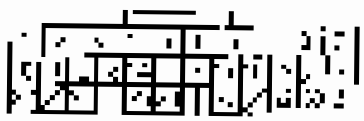
    YES - Go to step 13.

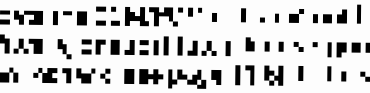
    NO - [illegible]
    [illegible] page 11-151.

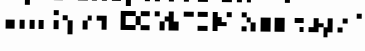
13. Turn the ignition switch OFF.

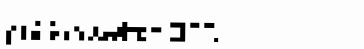
14. Disconnect the ECM 32P connector.

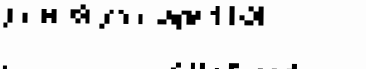
15. Check for open in wire between ECM and the IDS.

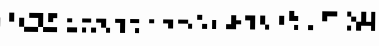


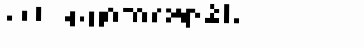












MIL Circuit Troubleshooting (cont'd)

21. [illegible]

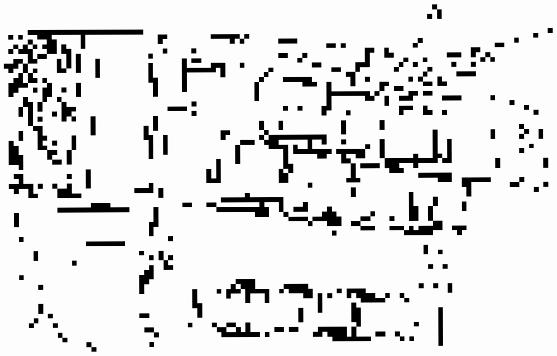
    [illegible]?

    YES – Go to step [illegible].

    NO – Go to step 2[illegible].

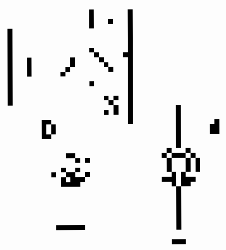
22. Remove the [illegible] from the [illegible].

23. [illegible] PGM-FI [illegible] MAIN [illegible].



25. Check for continuity [illegible] PGM-FI main relay [illegible] MAIN [illegible] individually.

PGM-FI MAIN RELAY [illegible] CONNECTOR



[illegible]

Is there continuity?

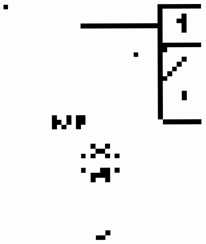
YES – [illegible] PGM-FI [illegible] FI MAIN [illegible] ■

NO – Go to step [illegible].

26. [illegible] between PGM-FI main relay [illegible] MAIN [illegible] connector terminal No. 1 and body ground.

- PGM-FI main relay 2 (FUEL PUMP)
- ECM/PCM connector [illegible]
- [illegible]
- [illegible]
- [illegible] connector

[illegible]



[illegible]

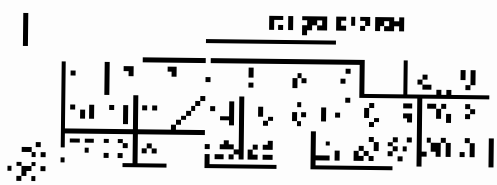
Is there continuity?

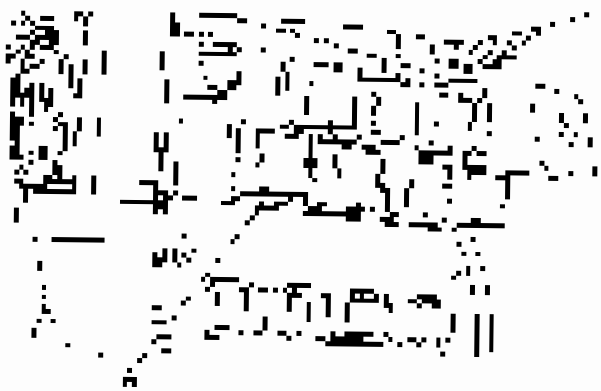
YES – [illegible]

NO – [illegible] ECM/PCM [illegible] known-good ECM/PCM [illegible]. See page 1[illegible]. [illegible] known-good ECM/PCM, replace the original ECM/PCM [illegible] ■

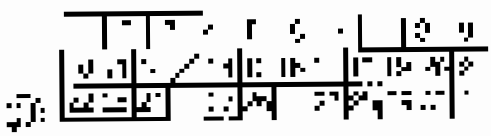
27. [illegible] components.

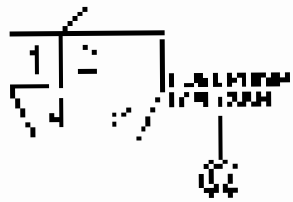
- PGM-FI main relay 2 (FUEL PUMP)
- ECM/PCM connector C (31P)
- Injectors
- Camshaft position [illegible]
- Crankshaft position [illegible]

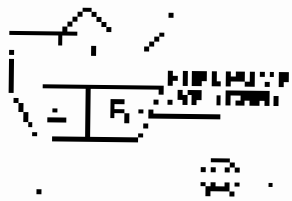


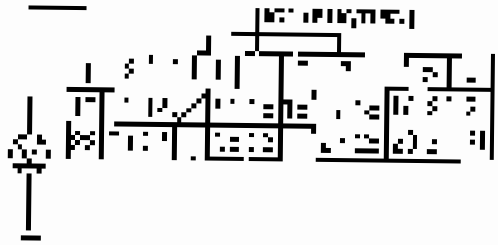


MIL Circuit Troubleshooting (cont'd)

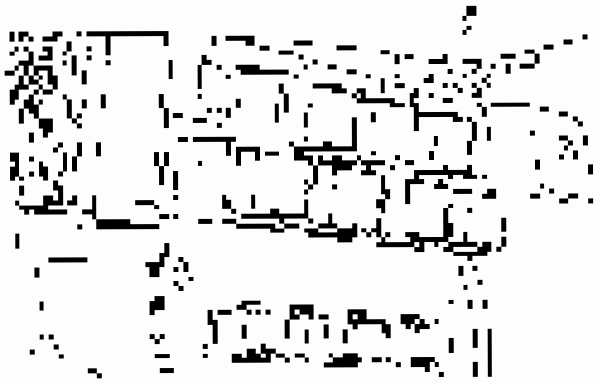


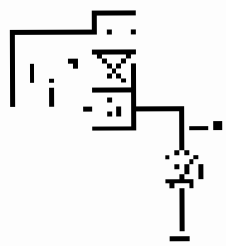


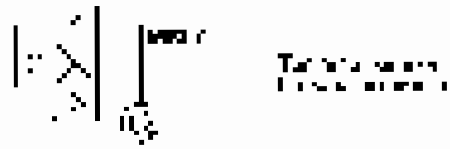


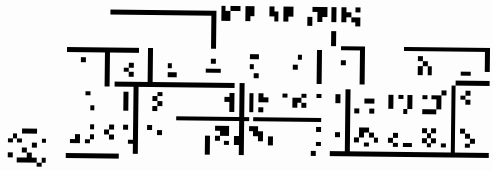


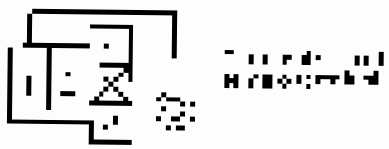
MIL Circuit Troubleshooting (cont'd)

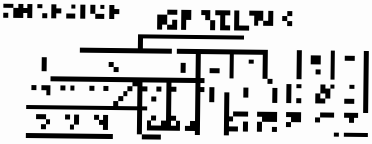




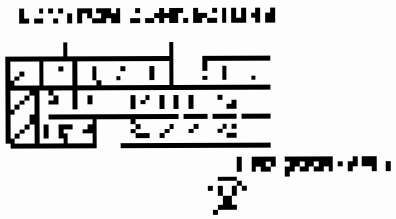


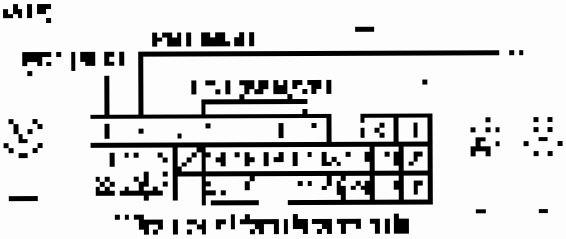






MIL Circuit Troubleshooting (cont'd)

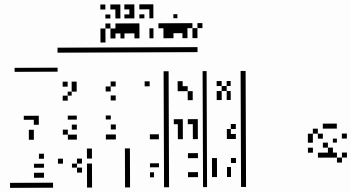




YES - Go to step 51.

NO - Go to step 50.

53. Measure voltage between ECM/PCM connector terminal B1 and body ground.



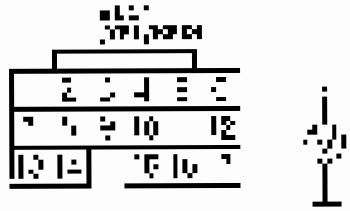
Is there battery voltage?

YES - Go to step 71.

NO - Go to step 54.

54. Check for open circuit in wire harness between ECM/PCM connector terminal B1 and main relay.

- Main relay
- Open circuit in wire harness between main relay and ECM/PCM



Is there continuity?

YES - Go to step 55.

NO - Go to step 52.

16. Turn the ignition switch OFF.

17. Jump the SCS line with the HDS.

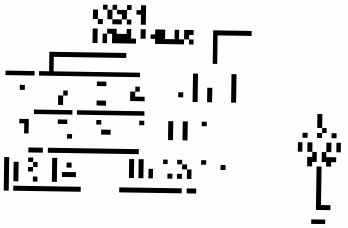
18. Disconnect the connectors from these sensors:

- MAP sensor
- Countershaft (Secondary shaft) speed sensor

19. Disconnect ECM/PCM connector C (31P).

20. Check for continuity between ECM/PCM connector terminal C14 and body ground.

ECM/PCM CONNECTOR C (31P)



Wire side of female terminals

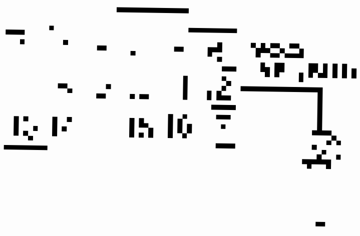
Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C14) and the MAP sensor or [illegible] speed sensor. ■

NO - Check for loose ECM/PCM connectors. If necessary, substitute a known-good ECM/PCM and recheck. If symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-[illegible]). ■

21. Measure voltage between ECM/PCM connector terminal C12 and body ground.

ECM/PCM CONNECTOR C (31P)



Wire side of female terminals

Is there about 5 V?

YES - Go to step [illegible].

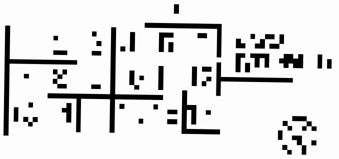
NO - Go to step 22.

22. Turn the ignition switch OFF.

23. Disconnect the connectors from these sensors, then turn the ignition switch ON (II), and measure voltage between ECM/PCM connector terminal C12 and body ground each time a sensor is disconnected:

- MAP sensor
- Mainshaft speed (Input shaft) sensor
- [illegible] sensor
- EGR valve

ECM/PCM CONNECTOR C (31P)



Wire side of female terminals

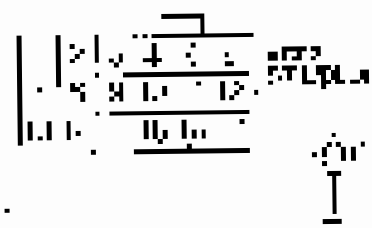
Is there about 5 V?

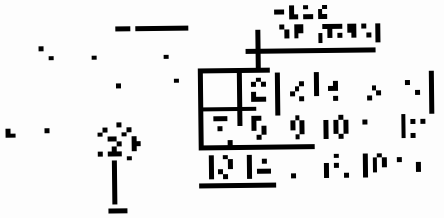
YES - Replace the [illegible] sensor that caused 5 V to be restored. ■

NO - Go to step 24.

(cont'd)

MIL Circuit Troubleshooting (cont'd)





MIL Circuit Troubleshooting (cont'd)

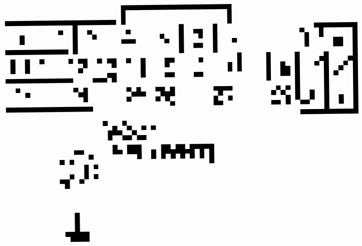
[illegible] Turn the ignition switch OFF.

[illegible] [illegible] the SCS [illegible]

[illegible] Disconnect ECM/PCM connector A (31P).

32. Check for continuity between ECM/PCM connector terminal A[illegible] and body ground.

ECM/PCM CONNECTOR A (31P)



Wire side of female terminals

Is there continuity?

YES – Repair short in the wire between the ECM/PCM (A[illegible]) and [illegible].■

NO – [illegible] ECM/PCM [illegible] [illegible] ECM/PCM [illegible] original ECM/PCM [illegible] 11-[illegible].■

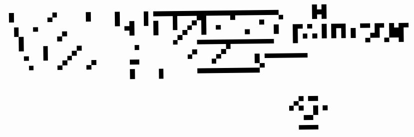
DLC Circuit Troubleshooting

NOTE:

- If the ECM/PCM [illegible] communications with the HDS, [illegible].
- Check the [illegible] [illegible] the [illegible].

1. Measure voltage between DLC terminal No. 16 and body ground.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

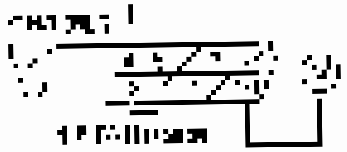
Is there battery voltage?

YES – Go to step 2.

NO – Repair open in the wire between DLC terminal No. 16 and the No. [illegible] fuse in the under-dash fuse/relay box.■

2. [illegible] DLC terminal No. 4 [illegible] body ground.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

Is there continuity to ground?

YES – [illegible]

NO – Repair open in the wire between DLC [illegible] and ground ([illegible]).■

DLC Circuit Troubleshooting (cont'd)

[illegible]

YES - Intermittent failure, system is OK at this time. Check poor connection or loose terminal. Refer to "How to Cope with Intermittent Problems" (page 11-[illegible]).

NO - Go to step 2.

2. Turn ignition switch OFF.

3. Disconnect [illegible] connector.

4. Turn ignition switch ON (II).

5. Measure voltage between [illegible] terminal and body ground.

[illegible]

[illegible]

Voltage should be [illegible]

YES - Replace [illegible]. Clear DTC(s) [illegible]. After repairing the trouble, check for normal system operation. If other DTC(s) are indicated, go to the indicated DTC(s) troubleshooting flow.

NO - Repair open in wire between [illegible] and [illegible]. Clear DTC(s) [illegible]. After repairing the trouble, check for normal system operation. If other DTC(s) are indicated, go to the indicated DTC(s) troubleshooting flow.

[illegible]

[illegible]

YES - Intermittent failure, system is OK at this time. Check poor connection or loose terminal. Refer to "How to Cope with Intermittent Problems" (page 11-[illegible]).

NO - Go to step 2.

2. Turn ignition switch OFF.

3. Disconnect [illegible] connector.

4. Turn ignition switch ON (II).

5. Measure voltage between [illegible] terminal and body ground.

[illegible]

[illegible]

Voltage should be [illegible]

YES - Replace [illegible]. Clear DTC(s) [illegible]. After repairing the trouble, check for normal system operation. If other DTC(s) are indicated, go to the indicated DTC(s) troubleshooting flow.

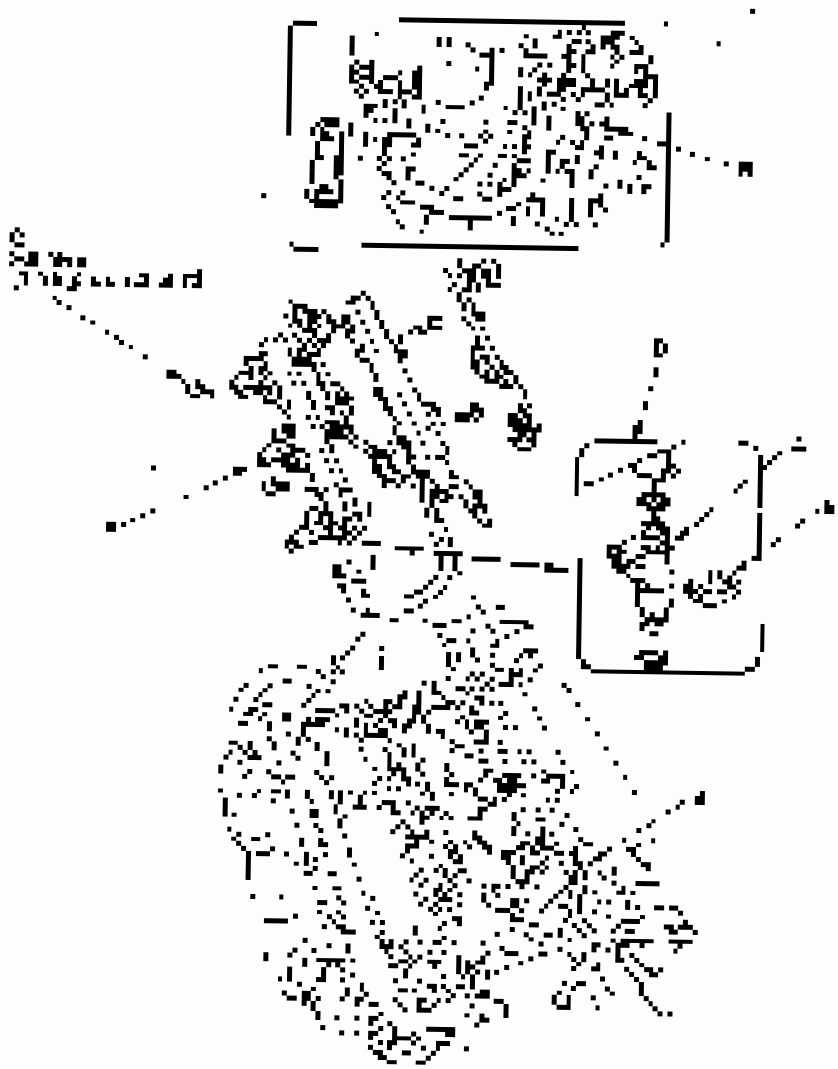
NO - Repair open in wire between [illegible] and [illegible]. Clear DTC(s) [illegible]. After repairing the trouble, check for normal system operation. If other DTC(s) are indicated, go to the indicated DTC(s) troubleshooting flow.

Injector Replacement

1. [illegible]

2. [illegible]

3. [illegible]



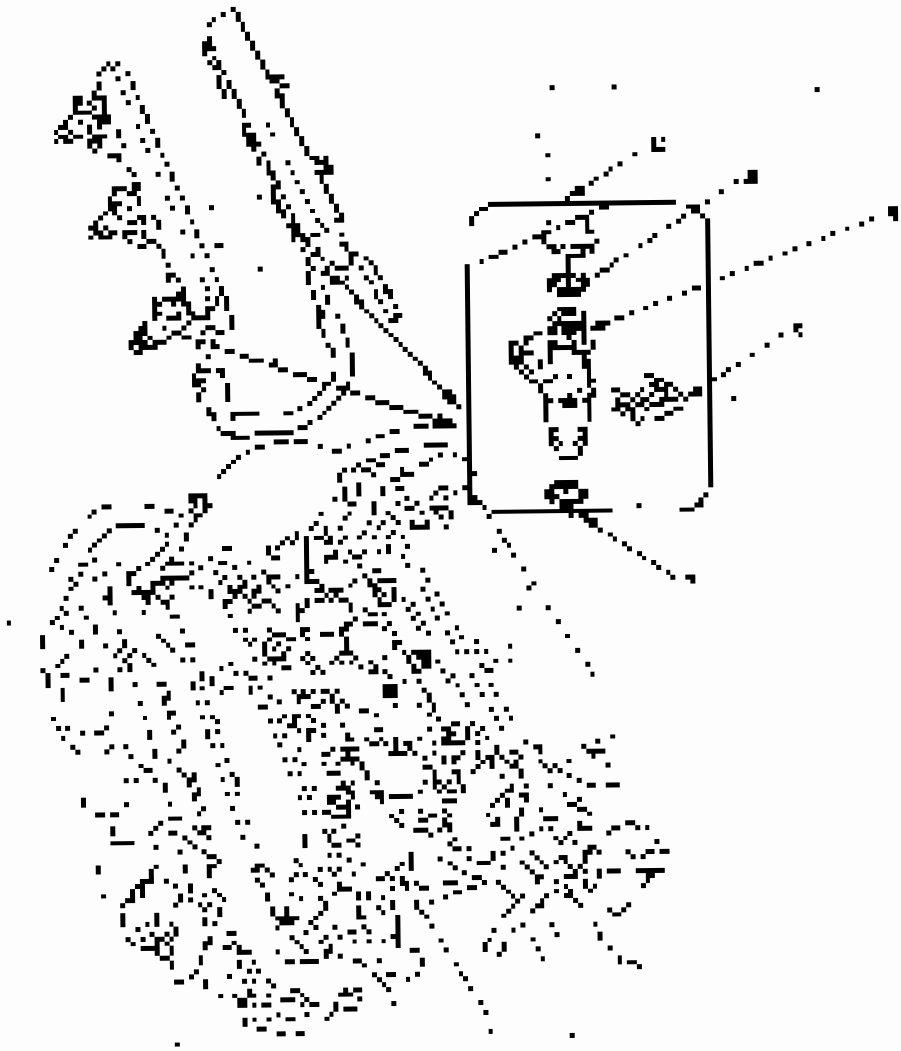
4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

Injector Replacement (cont'd)

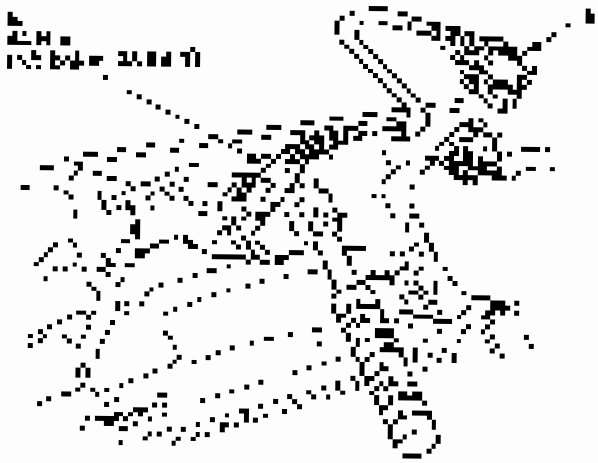


A/F Sensor Replacement

Special Tools Required
[illegible]

Front Bank (Bank 2)

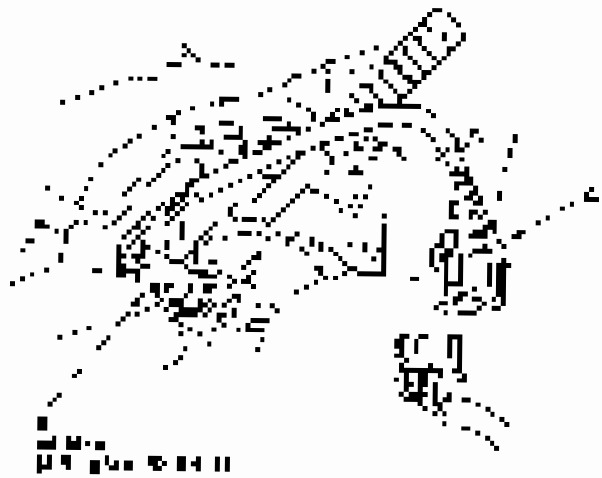
1. Disconnect the front A/F sensor (1) connector (A) from the harness bracket.



2. Install in the reverse order of removal.

Rear Bank (Bank 1)

1. [illegible]



2. [illegible]

Secondary HO2S Replacement

Special Tools Required

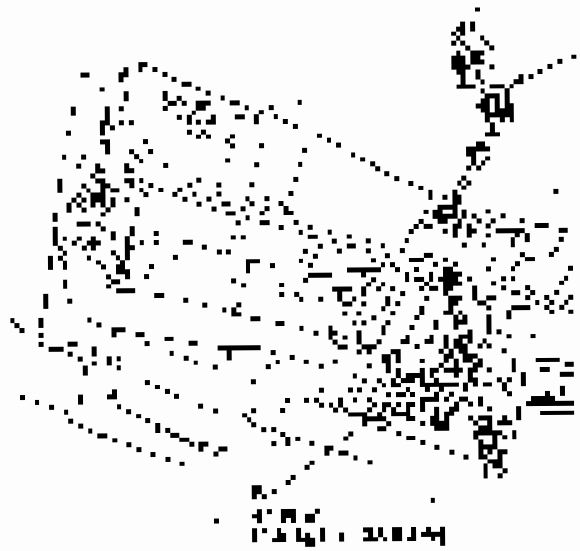
Front Bank (Bank 2)

1. Disconnect the front secondary HO2S 4P connector.

2. Remove the front secondary HO2S from the exhaust pipe.

Rear Bank (Bank 1)

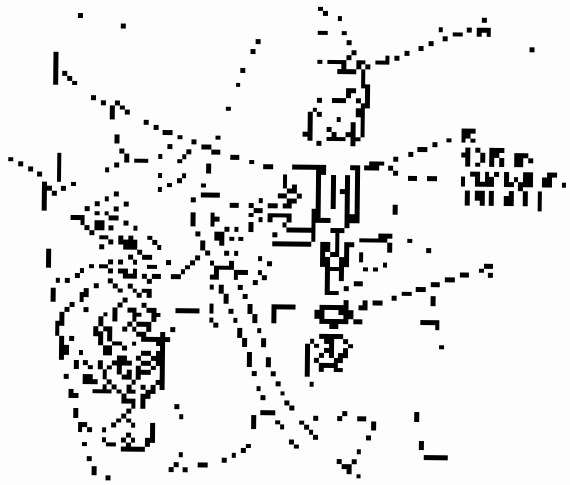
1. Raise the vehicle to service position.



2. Remove the rear secondary HO2S from the exhaust pipe.

ECT Sensor Replacement

1. [illegible]
2. [illegible]



3. [illegible]
4. [illegible]

IAT Sensor Replacement

1. [illegible]

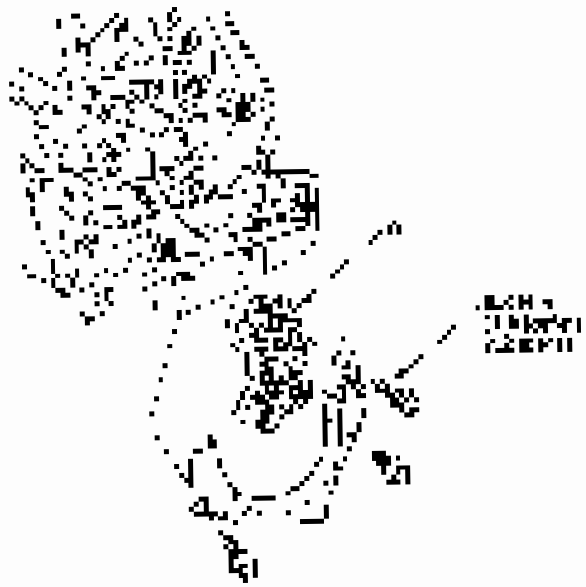
2. [illegible]
3. [illegible]

CKP Sensor Replacement

1. [illegible]

2. [illegible]

3. Remove the [illegible]



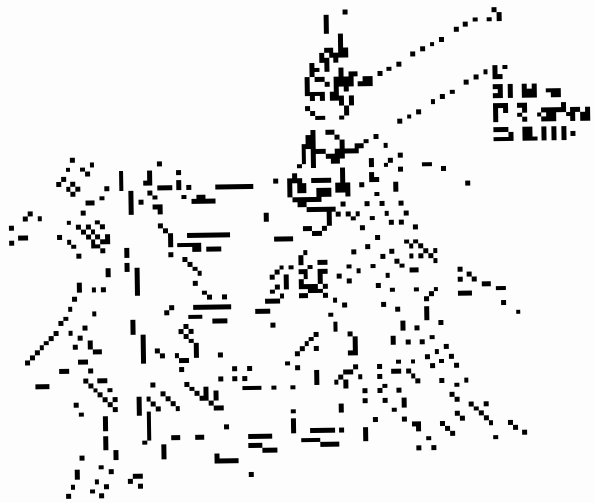
4. [illegible]

Knock Sensor Replacement

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

CMP Sensor Replacement

1. [illegible]

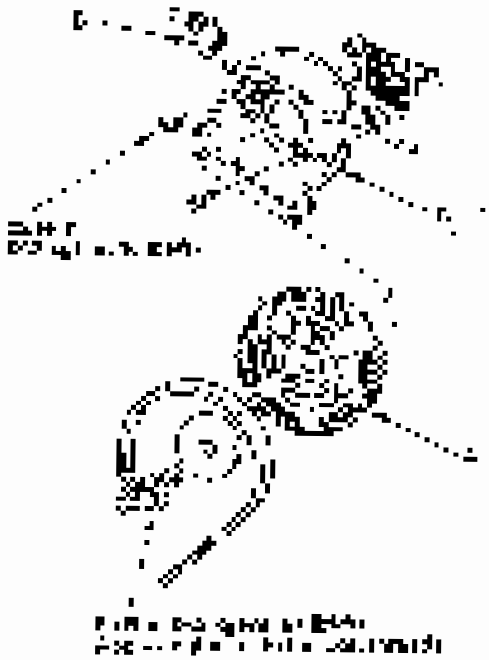
2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

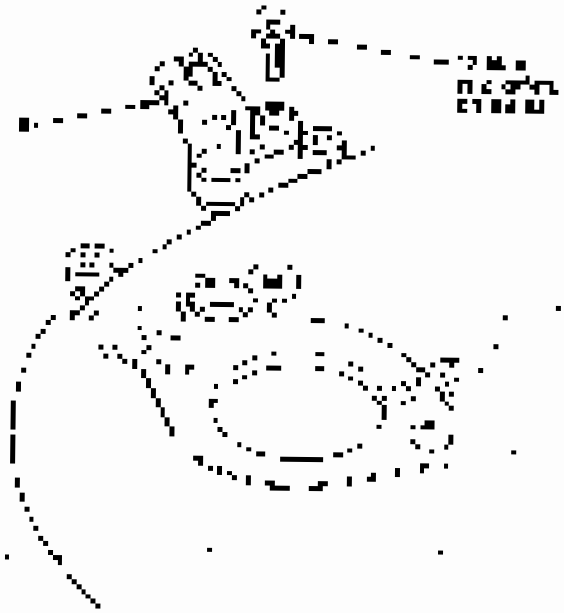
6. [illegible]



[illegible]

7. [illegible]

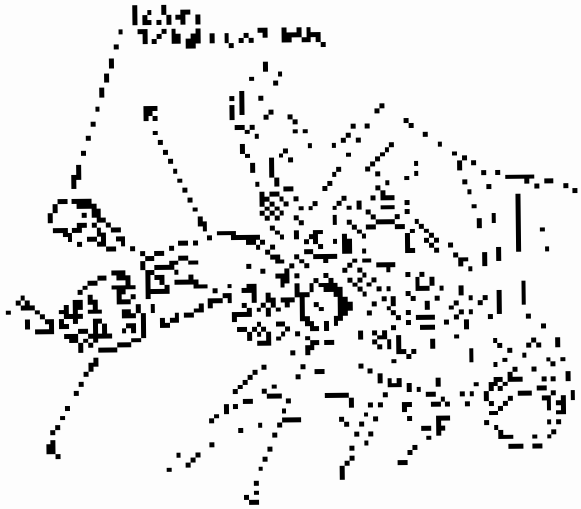
8. [illegible]



9. [illegible]

Input Shaft (Mainshaft) Speed Sensor Replacement (M/T)

1. [illegible]



2. [illegible]

3. [illegible]

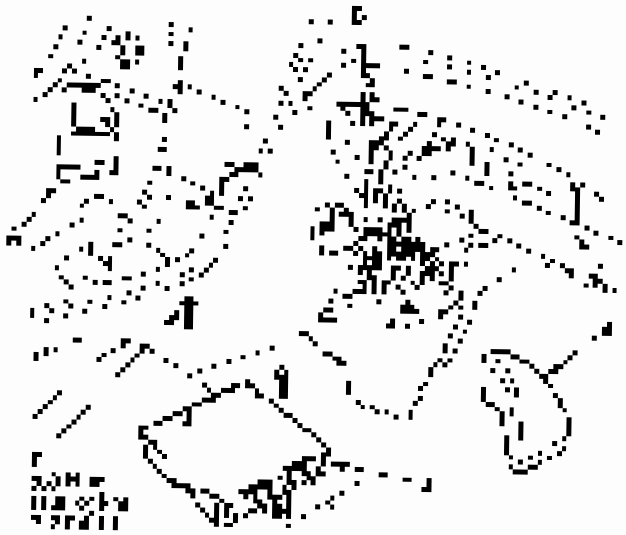
Output Shaft (Countershaft) Speed Sensor Replacement (M/T)

1. [illegible]

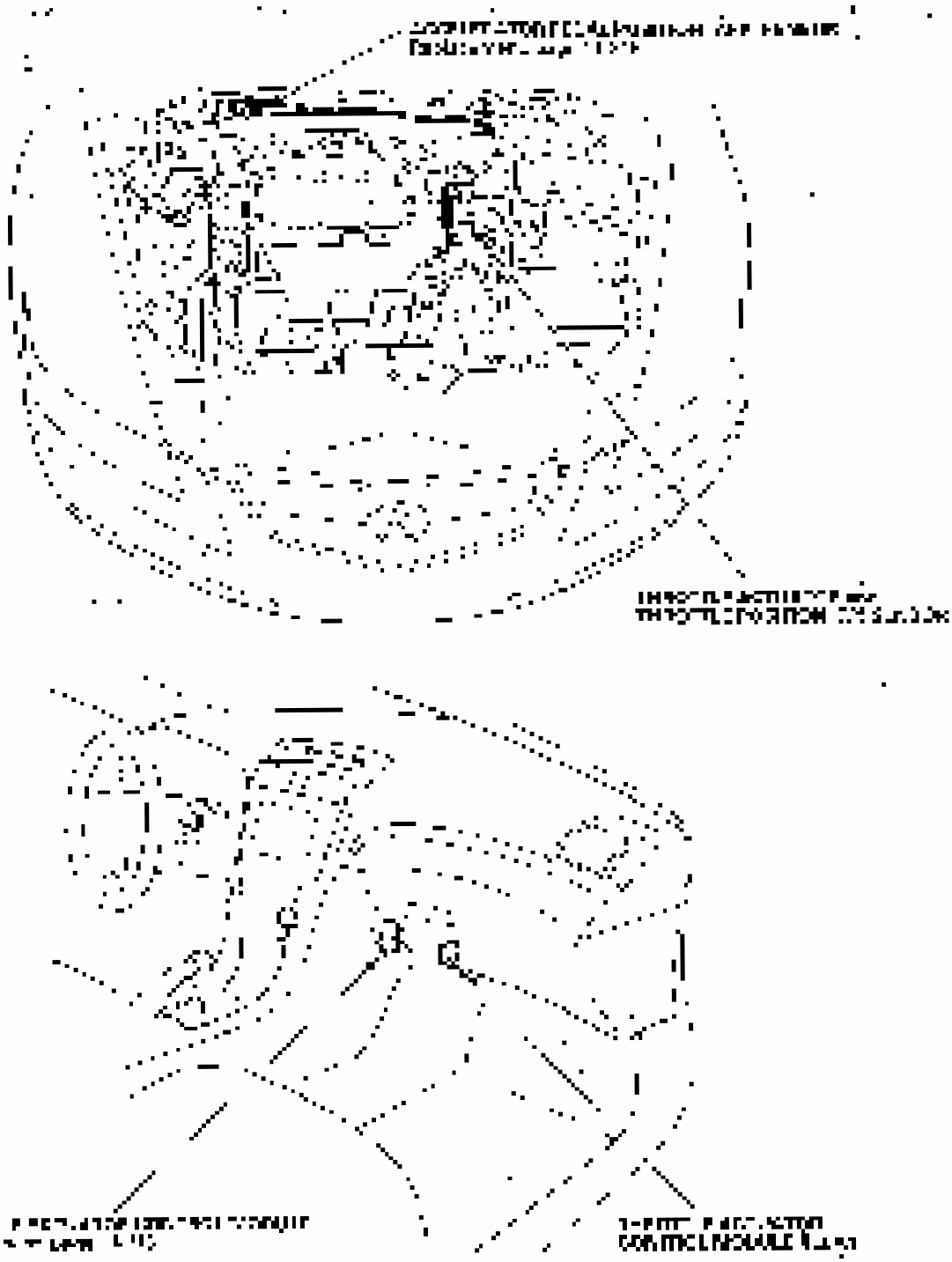
2. [illegible]

3. [illegible]

ECM/PCM Replacement



Component Location Index



DTC P0122: [illegible] Sensor A Circuit [illegible]

1. Turn [illegible]
2. Connect [illegible]
3. [illegible] PCM [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

4. [illegible]

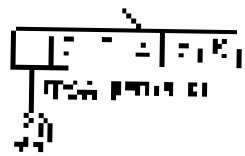
   [illegible]

   YES: [illegible]

   NO: [illegible]

5. [illegible]
6. [illegible]
7. [illegible]
8. Check for [illegible]

   [illegible]



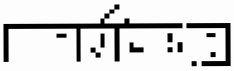
   [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

DTC Troubleshooting (cont'd)



DTC Troubleshooting (cont'd)

DTC P0123, TP Sensor A Circuit High Voltage

1. Turn the ignition switch OFF.
2. Disconnect PCM connector.
3. Check TP sensor connector (E35) for bent, corroded or damaged terminals.

   Is connector in good condition?

   YES - Go to step 4.

   NO - Repair or replace connector. Clear DTC from PCM memory. Recheck for proper operation. If problem recurs, replace TP sensor.

4. Check for intermittent DTC. Clear DTC from PCM memory. Do P0121, P0123 and P0223 intermittent check.

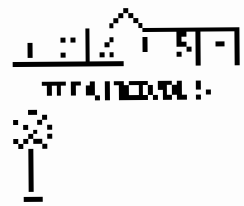
   Is DTC P0121, P0123 and P0223 indicated?

   YES - Go to step 11.

   NO - Go to step 5.

5. Measure resistance between TP sensor connector terminals 1 and 3 and between terminals 2 and 3.

   THROTTLE BODY CONNECTOR



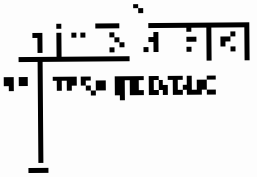
   Is resistance 4 - 6 k Ω?

   YES - Go to step 6.

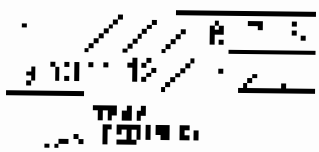
   NO - Go to step 10.

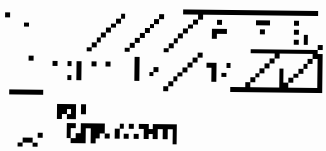
6. Turn the ignition switch ON (II).
7. Disconnect the "A" connector from the PCM. Measure voltage between terminal A-67 and body ground.
8. Is voltage less than 0.5 V?
9. Replace the PCM with a known good one and recheck.
10. Replace the TP sensor. Clear DTC from PCM memory. Recheck for proper operation with a known good PCM.

    THROTTLE BODY CONNECTOR



    Is voltage between 4.5 and 5.5 V?





DTC Troubleshooting (cont'd)

12. Turn the ignition switch OFF.

13. Disconnect the [illegible] connector.

14. Turn the ignition switch ON (II).

15. Measure the voltage between the [illegible] terminal and body ground.

16. Is the voltage 4.5 – 5.5 V?

17. Replace the ECM. (See page [illegible])

18. Check for Temporary DTC's. (See page [illegible])

Are any Temporary DTC's (other than DTC P0607) indicated?

YES – DTC P0607 may be caused by an intermittent problem. Check the connectors and wire harness between the ECM and the [illegible] sensor. Refer to the Temporary DTC and DTC Troubleshooting procedures for the indicated DTC's.

NO – The [illegible] is complete.

DTC P0222 TP Sensor 1 Circuit Low Voltage

1. [illegible]

2. [illegible]

3. [illegible]

   [illegible]

   YES - Go to step 4

   NO - [illegible]

4. [illegible]

   [illegible]

   Yes - Check for poor connection or damaged harness. If connection and harness are OK, replace the ECM. Refer to ECM/PCM Replacement. Test the system for proper operation.

   NO - Go to step 5

5. [illegible]

6. [illegible]

7. [illegible]

8. Check for appropriate harness between [illegible]

   [illegible]

   [illegible]

   Is [illegible]?

   YES — [illegible]

   NO - [illegible]

[illegible]

DTC Troubleshooting (cont'd)

DTC Troubleshooting (cont'd)

DTC P0223: TP Sensor B Circuit High Voltage

1. [illegible]
2. [illegible]
3. [illegible]

NO: [illegible]

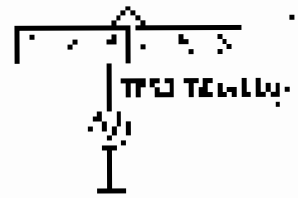
4. [illegible]

YES: Go to step 5.

NO: [illegible]

5. [illegible]

[illegible]



[illegible]

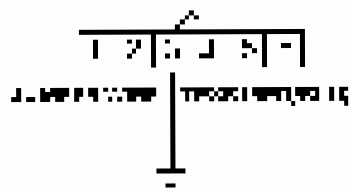
Is the voltage above 2.9 V?

YES: Go to step 6.

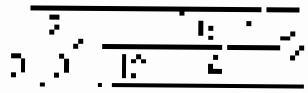
NO: [illegible]

6. [illegible]
7. [illegible]
8. [illegible]

[illegible]



[illegible]



DTC Troubleshooting (cont'd)

DTC P0139: TP Sensor A/B voltage incorrect
Correlation

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

   [illegible]

   YES—[illegible]

   NO—[illegible] Check for poor connection or damaged harness between the ECM and the [illegible] sensor. Repair as necessary. If the connection and harness are normal, replace the [illegible] sensor.

5. Turn the ignition switch OFF.
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]

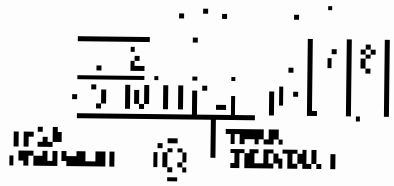
   Does the voltage increase steadily?

   YES—Go to step 10.

   NO—[illegible]

10. Turn the ignition switch OFF.
11. Disconnect the [illegible] module (ECM) connector.
12. [illegible]

[illegible]



[illegible]

YES—[illegible]

NO—[illegible] Check for poor connection or damaged harness between the ECM and the [illegible] sensor. Repair as necessary. If the connection and harness are normal, replace the [illegible] sensor and recalibrate the [illegible] (see page [illegible]).

DTC Troubleshooting (cont'd)

DTC P2122: A/T Throttle Position Sensor Circuit Low Voltage

1. Turn the ignition switch OFF.
2. Check A/T throttle position sensor connector for loose connection.

   Is connection OK?

   YES – Go to step 3.

   NO – Repair or replace connector. Clear DTC from PCM memory. Recheck for DTC. If DTC recurs, replace A/T throttle position sensor. Go to step 10.

3. Turn the ignition switch ON (II).
4. Measure voltage at A/T throttle position sensor.
5. Connect scan tool to DLC.
6. Select A/T throttle position sensor voltage from scan tool data list.

   Is voltage specified?

   YES – Go to step 7.

   NO – Go to step 8.

7. Turn the ignition switch OFF.
8. Disconnect A/T throttle position sensor connector.
9. Turn the ignition switch ON (II).
10. Measure voltage between A/T throttle position sensor harness connector terminal and ground.

    Is voltage specified?

    YES – Go to step 11.

    NO – Go to step 12.

11. Check for poor connection at PCM. If connection is OK, replace PCM. Go to step 13.

12. Repair open or short to ground in harness between A/T throttle position sensor and PCM. Go to step 13.

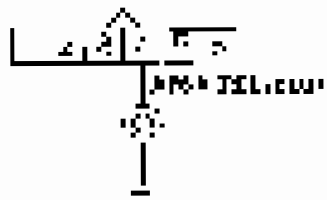
13. Clear DTC from PCM memory. Recheck for DTC.

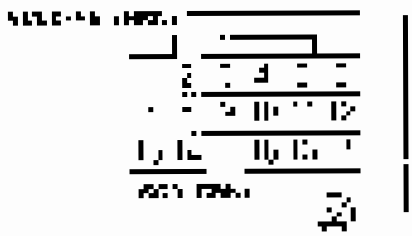
    Is DTC set?

    YES – Go to step 14.

    NO – System is OK.

DTC Troubleshooting (cont'd)





DTC Troubleshooting (cont'd)

DTC P2123: APP Sensor A Throttle Position Sensor 5V Circuit High Voltage

1. [illegible]

2. [illegible]

   [illegible]

   YES - Go to step 3.

   NO - [illegible]

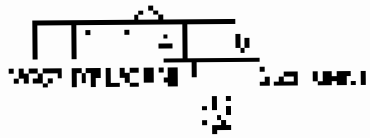
3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

   APP Sensor Connector



   [illegible]

   [illegible]

   YES - Go to step 7.

   NO - Go to step 8.

7. [illegible]

   [illegible]

   YES - [illegible]

   NO - Go to step 9.

8. [illegible]

   [illegible]

   YES - [illegible]

   NO - Go to step 9.

9. [illegible]

   [illegible]

   YES - [illegible]

   NO - Go to step 10.

10. [illegible]

    [illegible]

    YES - [illegible]

    NO - Go to step 11.

11. [illegible]

    [illegible]

    YES - [illegible]

    NO - Go to step 12.

12. [illegible]

    [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

DTC Troubleshooting (cont'd)

DTC P2135: APP Sensor 1/2 (Throttle Position Sensor 1/2 Circuit) Low Voltage

[illegible]

2. [illegible]

[illegible]

[illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

[illegible]

[illegible]

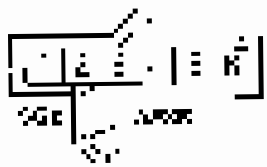
[illegible]

[illegible]

7. [illegible]

8. [illegible]

[illegible]



[illegible]

[illegible]

[illegible]

9. [illegible]

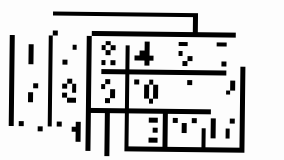
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]



DTC Troubleshooting (cont'd)

10. [illegible]

11. [illegible]

12. [illegible]

13. [illegible]

20. [illegible]
    [illegible]

21. [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

22. [illegible]

    [illegible]

23. [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

DTC P2128 APP Sensor E (Throttle Position Sensor E) Circuit High Voltage

1. [illegible]

2. [illegible] DTC in the history?

   YES - Go to Step 3.

   NO - Intermittent failure (poor connection or wiring damage). Check the connectors for poor connection, bent terminals, corrosion, or damaged wire harness. If the connectors and wire harness are OK, replace the ECM.

3. [illegible]

4. Disconnect the APP sensor E connector.

5. Turn the ignition switch to ON (II).

6. Measure the voltage between terminal 6 of the APP sensor E connector and body ground.

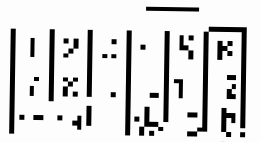
Standard voltage: 4.5 – 5.5 V

Is the voltage as specified?

YES - Go to Step 7.

NO - Go to Step 8.

7. Measure the voltage between DTC P2128 terminal [illegible] and body ground.



Standard voltage: [illegible] V

Is the voltage as specified?

YES - Replace the ECM. Refer to [illegible].

NO - Go to Step 8.

8. Turn the ignition switch to OFF.

9. Replace the APP sensor E. Refer to [illegible].

10. [illegible]

11. Replace the ECM. Refer to [illegible].

12. Do the [illegible] work correctly?

    YES - Go to Step 13.

    NO - Go to Step 14.

13. Check for any [illegible] DTCs in the ECM.

    Are any other DTCs [illegible]?

    YES - Refer to DTC P2128 [illegible]. If the problem persists, replace the ECM. Refer to [illegible].

    NO - Troubleshooting complete.

14. [illegible]

DTC Troubleshooting (cont'd)

DTC P2138: APP Sensor A/B Incorrect Voltage Correlation

1. Install the scan tool.
2. Turn the ignition ON.
3. Monitor the scan tool DTC information.
4. Check for any other DTCs set (DTC P2138 is the only DTC set)?

YES - Go to step 5.

NO - Refer to the applicable DTC table.

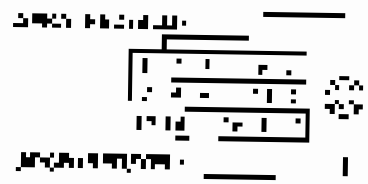
5. Check the APP sensor A and APP sensor B for a DTC P2135 set?

YES - Go to step 6.

NO - Go to step 7.

6. Turn the ignition OFF.
7. Disconnect the APP sensor connector.
8. Turn the ignition ON.
9. Measure the voltage between the APP sensor connector terminal B and ground.

10. Check for a properly operating DTC P2135 circuit (see terminal ID chart).



Measured value in step 9:

Is the voltage between 4.9 and 5.1 volts?

YES - Replace the APP sensor. Refer to the applicable DTC table in step 12.

NO - Go to step 11.

11. Turn the ignition OFF.
12. Disconnect the APP sensor connector.
13. Measure the resistance between terminal A and ground.
14. Turn the ignition ON.
15. Measure the voltage between terminal B and ground.
16. Turn the ignition OFF.
17. Disconnect the PCM connector (see terminal ID chart).
18. Measure the resistance between terminal A and the PCM connector terminal.
19. Turn the ignition ON.
20. Measure the voltage between terminal B and the PCM connector terminal.
21. Check for poor connections at the PCM and the APP sensor.

DTC Troubleshooting (cont'd)

DTC P1604: Intake Valve Control Position / Spring Performance Problem

⚠CAUTION

Do not [illegible] with the [illegible] verify removal [illegible] Air Bag System [illegible] Air Bag System Precautions [illegible]

1. [illegible]
2. [illegible]
3. Start the engine. Run it at engine speed for 5,000 rpm with no load for [illegible] Is the malfunction indicator lamp (MIL) on?

   YES: Go to step 4.

   NO: [illegible]
4. [illegible]
5. [illegible]
6. Check for [illegible] Is DTC P1604 stored in the ECM?

   YES: Go to step 7.

   NO: [illegible]
7. [illegible]
8. Disconnect [illegible]
9. Inspect for [illegible]

   OK:
   - [illegible]
   - [illegible]

   NG: [illegible]

10. Inspect for [illegible]

    Is there [illegible]?

    YES: [illegible]

    NO: Go to step 11.
11. [illegible]
12. [illegible]
13. Check for [illegible] Is DTC P1604 stored in the ECM?
14. [illegible]
15. [illegible]
16. [illegible]
17. Check for Temporary DTCs [illegible] Is DTC P1604 stored in the ECM?

    Are there any other DTCs stored?

    YES: If DTC [illegible] is not stored, [illegible] If [illegible] is stored, [illegible] Intake Valve Control Position / Spring Performance Problem [illegible]

    NO: [illegible]

DTC Troubleshooting (cont'd)

DTC P1486: Throttle Valve Position Sensor Performance Problem

⚠ CAUTION

Do not [illegible] Engine Control Module (ECM). For [illegible] Diagnostic Trouble Code (DTC) [illegible]

1. [illegible]
2. Clear the DTC(s) [illegible]
3. Start the engine. Run the engine speed at 2,000 rpm with no load for [illegible] minutes.
4. Turn the ignition switch OFF, [illegible] seconds.
5. [illegible]
6. Check for Temporary DTC(s) with the HDS

   Is DTC P1486 indicated?

   YES - Go to step 7.

   NO - [illegible] Temporary DTC(s) may have been caused by poor connection or [illegible] Check the suspected circuit for [illegible] Refer to the applicable troubleshooting index in section 11.
7. [illegible]
8. Disconnect the [illegible] from the throttle body.
9. Push the [illegible] valve open as shown.

   NOTE:
   - Do not [illegible] the throttle valve [illegible] during the check.
   - Be careful not to [illegible] fingers during the check.

10. Measure the [illegible]

    Does the [illegible] change?

    YES - Temporary poor [illegible] Repair as necessary [illegible]

    NO - Go to step 11.
11. [illegible]
12. Install the [illegible]
13. Reset the [illegible] ECM.
14. Do not [illegible] the [illegible] pedal. [illegible]
15. [illegible] seconds.
16. [illegible]
17. Check for Temporary DTC(s) with the HDS.

    Are any Temporary DTC(s) or Current DTC(s) indicated?

    YES - [illegible] Repair as necessary. [illegible] Temporary DTC(s) may have been caused by poor connection or [illegible] Check the suspected circuit for [illegible] Refer to the applicable troubleshooting index in section 11.

    NO - This [illegible] complete.

DTC P2181 Intake Actuator System
Malfunction

1. [illegible]

- [illegible]
- [illegible]
- [illegible]

- [illegible]

1. [illegible]

4. [illegible]

[illegible]

YES [illegible]

NO [illegible]

- [illegible]

5. [illegible]

[illegible]

YES [illegible]

NO [illegible]

- [illegible]

7. [illegible]

- [illegible]

- [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

NOTE: [illegible]

[illegible]

YES [illegible]

NO [illegible]

13. [illegible]

14. [illegible]

- [illegible]

- [illegible]

[illegible]

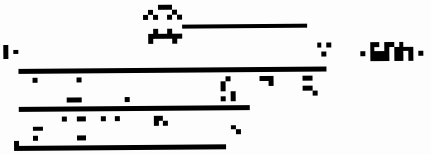
[illegible]

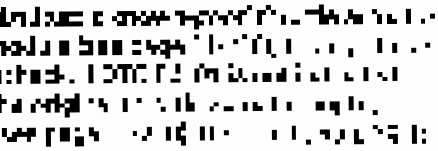
[illegible]

[illegible]

[illegible]

DTC Troubleshooting (cont'd)





DTC P2108, Throttle Actuator Control Module Process

1. [illegible]

2. [illegible]

3. [illegible] Switch OFF

4. [illegible]

5. Check for [illegible]

   [illegible]

   [illegible]

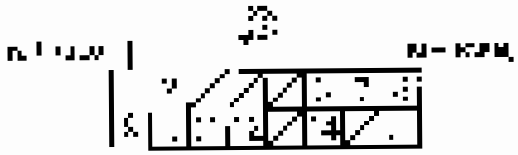
   NO [illegible]

DTC Troubleshooting (cont'd)

DTC P2118: Throttle Actuator Control System-Range/Performance Problem

1. Disconnect the throttle body 6P connector.

2. Make sure there is no foreign material in the connector and no damage to the terminals. Reconnect the connector.



3. Reset the DTC.

4. Start the engine, and let it idle for 10 seconds.

5. Is DTC P2118 indicated?

YES - Replace the throttle body assembly.

NO - Refer to the applicable symptom troubleshooting table.

6. Disconnect the throttle body 6P connector.

7. Measure the resistance between the throughout the test.

8. Is there continuity?

YES - Repair short in the wire between the throughout the test.

NO - Replace the throttle body assembly.

9. Turn the ignition switch to ON (II).

10. Measure the voltage between the throughout the test.

11. Is there battery voltage?

YES - Repair open in the wire between the throughout the test.

NO - Replace the throttle body assembly.

12. Turn the ignition switch to LOCK (0).

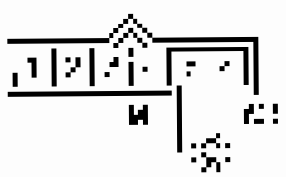
13. Disconnect the ECM/PCM connector.

14. Check for continuity between the throughout the test.

Are they OK?

YES - DTC P2118 is intermittent. Check for poor connection at the ECM/PCM connector. If the connection is good, substitute a known-good ECM/PCM and recheck. If the symptom/indication goes away, replace the original ECM/PCM.

NO - Troubleshoot the wire(s) or connector(s).



DTC P2135: Throttle Actuator Control System - Throttle Position Sensor Circuit Malfunction

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

   YES: [illegible]

   NO: [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]

    NOTE: [illegible]

    [illegible]

    YES: [illegible]

    NO: [illegible]
11. [illegible]

    [illegible]

    YES: [illegible]

    NO: [illegible]
12. [illegible]

    [illegible]

    YES: [illegible]

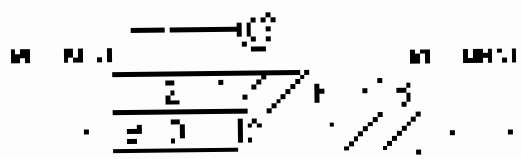
    NO: [illegible]
13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]

[illegible]

[illegible]

[illegible]

DTC Troubleshooting (cont'd)



DTC P2135: Throttle Actuator Control Motor Rationality Malfunction

1. [illegible]

2. Clear history DTCs.

3. Switch ignition OFF and then to ON. (Do not start the engine.)

4. Select the following menu items: DIAGNOSTIC MODE > Active Test > ETC

5. Turn the ignition switch OFF.

6. Disconnect the throttle body assembly connector.

7. Disconnect [illegible]

8. Check for proper connection to [illegible] (Refer to the Wiring Diagram.)

9. Reconnect [illegible]

10. Turn the ignition switch ON.

11. Select the following menu items: DIAGNOSTIC MODE > Active Test > ETC

12. Operate the throttle valve motor using the [illegible]

13. Select the following menu items: DIAGNOSTIC MODE > Trouble Code > [illegible]

14. Check for DTCs.

15. Clear the DTC.

16. Perform the test drive in the same manner as the [illegible]

17. Select the following menu items: DIAGNOSTIC MODE > Trouble Code > [illegible]

18. Check for DTCs.

DTC Troubleshooting (cont'd)

DTC U0100: Lost Communication With Transmission Control Module A

1. [illegible]

2. [illegible]

3. Check for DTC P0705.

   Is DTC P0705 set?

   YES - Check the powertrain control module ground circuits for an open. If the ground circuits are OK, replace the powertrain control module. Refer to Powertrain Control Module (PCM) Replacement/Programming in Section 8C of this manual.

   NO - Go to step 4.

4. [illegible]

5. Check for DTC P0706.

   Is DTC P0706 set?

   YES - Go to step 6.

   NO - Check the transmission control module ground circuits for an open. If the ground circuits are OK, replace the transmission control module. Refer to Transmission Control Module (TCM) Replacement/Programming in Section 8C of this manual.

6. Check the DTC with the [illegible]

7. [illegible]

8. Disconnect the transmission control module connector. Check for [illegible] between the transmission control module ground circuit and the battery negative terminal.

   Is there [illegible]?

   YES - Go to step 9.

   NO - Go to step 10.

9. Check the transmission control module ground circuit for an open.

10. Turn the ignition switch to the ON position.

11. Check the [illegible]

    Is [illegible]?

    YES - Go to step 12.

    NO - Go to step 13.

12. [illegible]

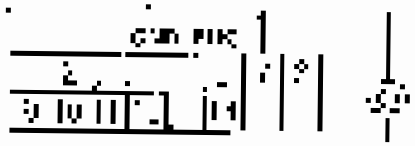
    Is [illegible]?

    YES - Go to step 14.

    NO - Go to step 15.

13. Check for open circuit between the transmission control module connector pin [illegible] and the [illegible] body ground.

    TRANSMISSION CONTROL MODULE (TCM) CONNECTOR



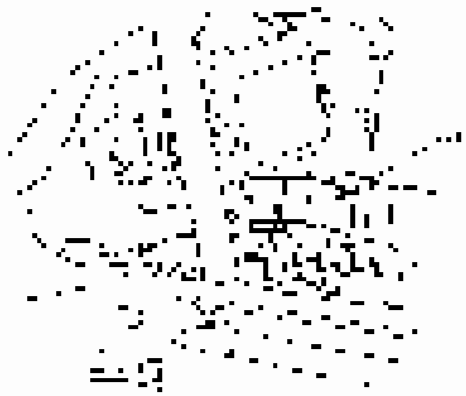
    Is there [illegible]?

    YES - Repair the open circuit.

    NO - Go to step 16.

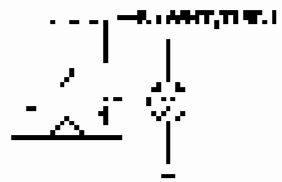
DTC Troubleshooting (cont'd)

16. [illegible]



17. Measure voltage between throttle actuator control module terminal [illegible] and body ground.

[illegible]



[illegible]

Is there about [illegible]?

YES - Go to step 18.

NO - Go to step 19.

18. Check for [illegible] (see page [illegible]). Also check for poor connection at throttle actuator control module connector. If [illegible] and connection are OK, replace throttle actuator control module. After you replace throttle actuator control module, [illegible]

Is the [illegible]?

YES - [illegible]

NO - [illegible]

19. [illegible]

20. Turn the ignition switch OFF.

21. Measure voltage between throttle actuator control module terminal [illegible] and body ground.

[illegible]

[illegible]

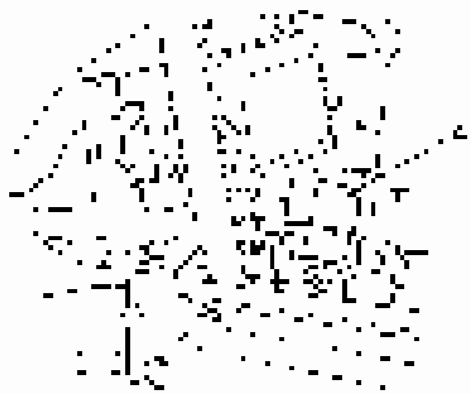
Is there about [illegible]?

YES - Substitute a known-good throttle actuator control module (see page [illegible]). If the symptom/indication goes away, replace the original throttle actuator control module. After you replace throttle actuator control module, [illegible]

NO - [illegible]

22. [illegible]

23. Measure [illegible] throttle actuator control module body [illegible]



24. [illegible]

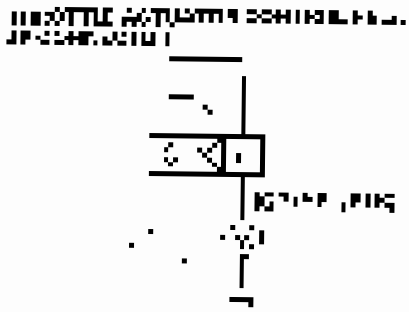
Is the [illegible]

YES Go to step 29.

NO Replace the [illegible] with a new one, then go to step 30.

25. [illegible]

26. [illegible]



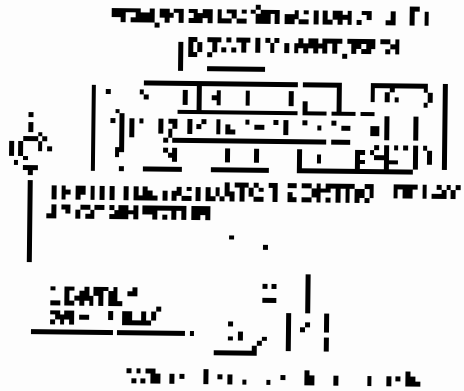
[illegible]

27. [illegible]

28. Jumper the [illegible]

29. Disconnect [illegible]

30. [illegible]



[illegible]

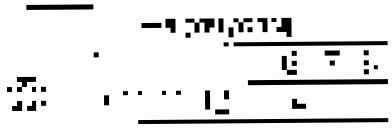
Is the [illegible]

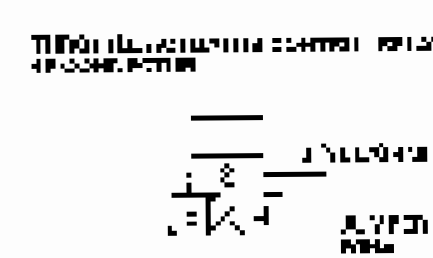
YES Go to step 31.

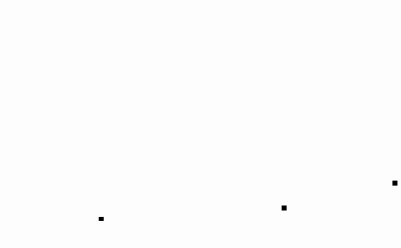
NO [illegible]

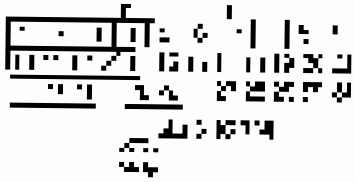
31. [illegible]

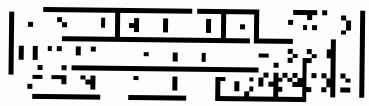
DTC Troubleshooting (cont'd)

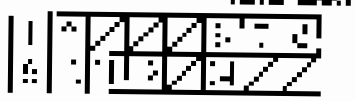












DTC Troubleshooting (cont'd)

42. [illegible]

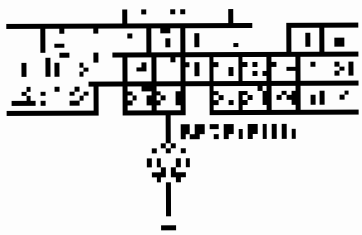
43. [illegible]

44. Disconnect the throttle actuator control module 16P connector.

45. Disconnect [illegible] connector.

46. [illegible]

[illegible] CONNECTOR



[illegible]

Is there continuity?

YES: [illegible]

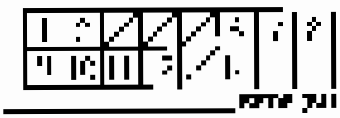
NO: [illegible]

47. Check for [illegible] between [illegible] and the throttle control motor terminal No. 14.

[illegible] CONNECTOR

[illegible]

[illegible] CONTROL MODULE [illegible] CONNECTOR

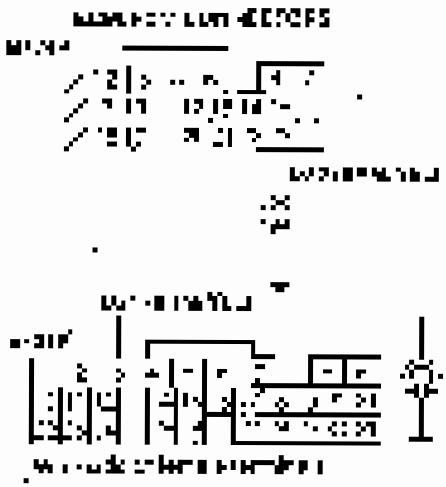


[illegible]

Is there continuity?

YES: Substitute a known-good throttle control module, then go to step 50 and recheck. If DTC [illegible] is not indicated, replace the original throttle control module, then go to step [illegible]. If DTC [illegible] is indicated, go to step [illegible].

NO: [illegible]



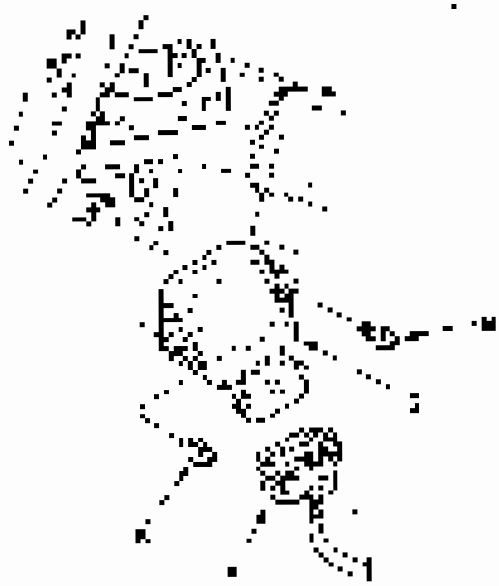
APP Sensor Replacement

1. [illegible]
2. [illegible]

3. [illegible]
4. [illegible]

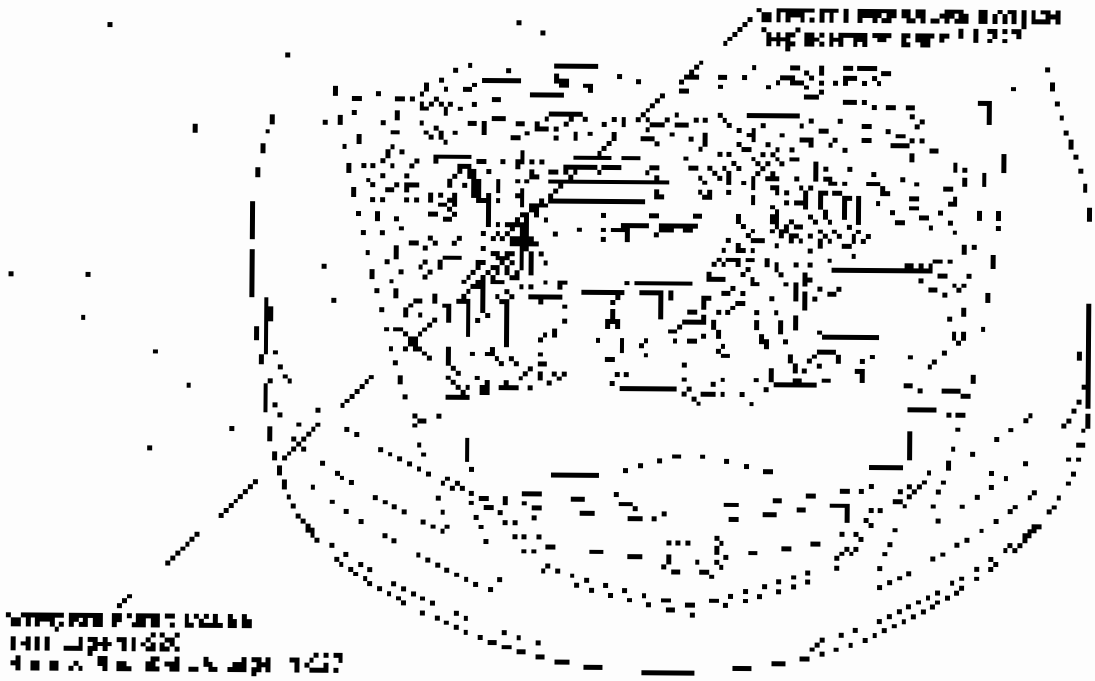
Throttle Actuator Control Module Replacement

1. [illegible]
2. [illegible]



3. [illegible]
4. [illegible]

Component Location Index



DTC Troubleshooting

DTC P2646: VTEC Oil Pressure Switch Circuit Low Voltage

Special Tools Required
- Pressure gauge adapter 07406-0040004
- ATT compression gauge adapter 07406-0040004
- ATT pressure hose 07406-0040004
- ATT pressure hose, 2.5 m (98") 07406-0040004
- ATT pressure gauge set 07406-0040004
- Engine coolant temperature (ECT) sensor harness

1. [illegible]

   Did it exceed 0.5 V?

   YES - Go to step 3.

   NO - A short in the engine oil pressure switch circuit is causing the problem.

2. [illegible]

3. [illegible]

4. Do the VTEC "CS" in the INSPECTION MODE show in the LCD?

   Is the indicator ON?

   YES - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the engine oil pressure switch connector. Refer to troubleshooting for intermittent failures, page 11-[illegible].

   NO - Go to step 5.

5. Turn the ignition switch OFF.

6. Disconnect the VTEC oil pressure switch 2P connector.

7. Turn the ignition switch ON (II).

8. Measure the voltage between the engine oil pressure switch terminal and body ground with the VOM.

   Is there battery voltage?

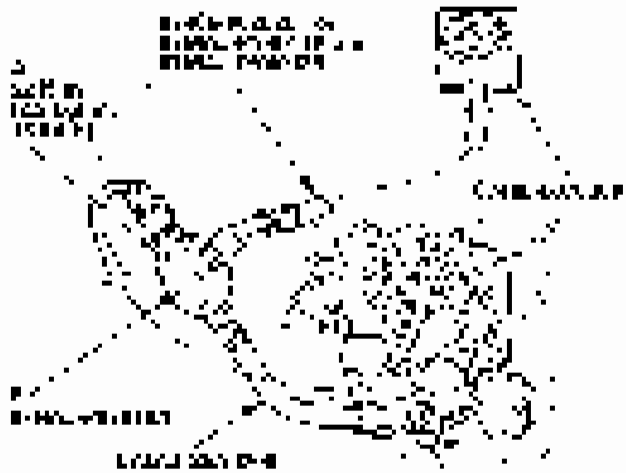
   YES - Go to step 9.

   NO - Open in wire

9. [illegible]

10. Remove the VTEC oil pressure switch (A) and install the special tools as shown. Start the engine and let it idle.

    NOTE: Perform the inspection with the engine coolant temperature below 35°C (95°F).



11. [illegible]

12. [illegible]

13. Check the oil pressure.

    Does the oil pressure increase to 333 kPa (3.4 kgf/cm², 49 psi)?

    YES - Replace the VTEC oil pressure switch. Replacement procedure: [illegible]

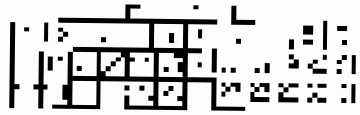
    NO - [illegible] Refer to troubleshooting for poor VTEC solenoid valve operation, page 11-[illegible]

14. Turn the ignition switch OFF.

15. Disconnect the [illegible]

16. Disconnect the VTEC oil pressure switch connector.

17. Disconnect the ECT sensor 2P connector.



DTC Troubleshooting (cont'd)

DTC P2647: VTEC Oil Pressure Switch Circuit High Voltage

1. [illegible]

   Are you using [illegible]?

   YES - Go to step 2.

   NO - Adjust the engine oil to the proper level (see page [illegible]).

2. [illegible]

3. [illegible]

4. Is the VTEC TEST in the HONDA Ch MICH. Unit [illegible]?

   YES - [illegible]
   Check [illegible]
   the VTEC [illegible]

   NO - [illegible]

5. Check for these conditions:

   - VTEC Switch Failure
   - VTEC Switch Open
   - VTEC Switch Shorted to Ground
   - VTEC Switch Pinched or Broken

   Were any of these conditions found?

   YES - Replace the VTEC oil pressure switch.

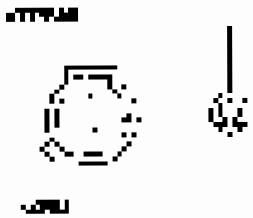
   NO - Check for poor connection or loose terminal at the VTEC oil pressure switch. If OK, replace the VTEC solenoid valve (see page [illegible]).

6. [illegible]

7. Disconnect the [illegible] connector from the VTEC oil pressure switch.

8. Check for continuity between VTEC oil pressure switch terminal and body ground.

   VTEC OIL PRESSURE SWITCH CONNECTOR



   Is there continuity?

   YES - Go to step 9.

   NO - Replace the VTEC oil pressure switch (see page [illegible]).

9. [illegible]

10. Measure voltage between VTEC oil pressure switch terminal and body ground.

    VTEC OIL PRESSURE SWITCH CONNECTOR

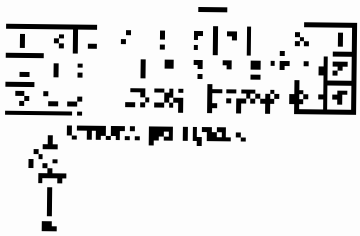
    Is there battery voltage?

    YES - Repair open in wire between [illegible] pressure switch [illegible].

    NO - [illegible]

11. [illegible]

[illegible]



[illegible]

[illegible]

NO – [illegible]

12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

[illegible]

YES – [illegible]

NO – [illegible]

16. [illegible]

17. [illegible]

[illegible]

YES – [illegible]

NO – [illegible]

DTC Troubleshooting (cont'd)

DTC P2646 VTEC Solenoid Valve Circuit Low Voltage

1. Turn the ignition switch OFF.
2. Disconnect the [illegible]
3. [illegible] PGM-FI [illegible]

   Is there any DTC?

   YES - [illegible] Check for poor connection or [illegible] the VTEC [illegible]

   NO - [illegible]
4. [illegible]
5. Disconnect the VTEC [illegible]
6. [illegible] Is there continuity between [illegible] and body ground?

   [illegible]

   [illegible]

   [illegible]

   YES - [illegible]

   NO - Go to step 7.
7. [illegible]
8. [illegible]

A. Check for open circuit between [illegible] and body ground.

   [illegible]

   [illegible]

   [illegible]

   Is there continuity?

   YES - Repair short [illegible] and the VTEC [illegible] and the VTEC [illegible] step 11.

   NO - Go to step 9.

9. Replace [illegible] valve (see page 11-227).
10. [illegible]
11. [illegible] the ignition switch ON (II).
12. Reset the [illegible]
13. Test drive [illegible] the PGM-FI [illegible]
14. [illegible] DTC or DTCs with [illegible]

    Are any [illegible] DTC or DTCs with [illegible]

    YES - [illegible] DTC [illegible] and [illegible] DTC [illegible] and [illegible] DTC [illegible] Then [illegible] DTC troubleshooting.

    NO - Go to step 15.

DTC Troubleshooting (cont'd)

DTC P0548: VTEC Solenoid Valve Circuit High Voltage

1. [illegible]
2. Check the DTC on the [illegible].
3. Start the engine. Run it at [illegible] above 2,000 rpm. Allow it to [illegible] for [illegible] minutes. Does the [illegible] come on?

   YES: Go to step 5.

   NO: [illegible] Check for poor connection or [illegible]. Clear the [illegible] memory. Test drive the [illegible]. If the [illegible] comes on, go to the [illegible] chart.
4. [illegible]
5. [illegible] the VTEC solenoid valve [illegible].
6. Measure resistance between [illegible] and body ground.

   [illegible]

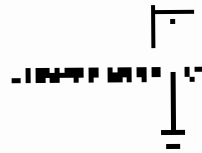
   [illegible]

   Is the [illegible]?

   YES: Go to step 8.

   NO: [illegible]
7. [illegible]
8. [illegible]
9. Connect the [illegible] connector. Turn the ignition switch to ON (II). Measure voltage between [illegible] and body ground.

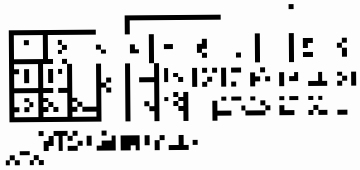
   [illegible]

   [illegible]

   Is there [illegible]?
10. [illegible]
11. Disconnect the [illegible] connector. Turn the ignition switch to ON (II). Measure voltage between [illegible] and body ground.

    [illegible]

    [illegible]

    Is there [illegible]?

    [illegible]

    [illegible]

    NOTE: [illegible] check the [illegible] for DTC P0548 and the VTEC [illegible] [illegible].

12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

16. [illegible]
[illegible]

17. [illegible]
[illegible]

18. [illegible]

Are any [illegible]

YES - [illegible]

NO - [illegible]

19. [illegible]
[illegible]

[illegible]

Yes - [illegible]

NO - [illegible]
[illegible]

20. [illegible]
[illegible]

21. [illegible]

[illegible]

[illegible]

[illegible]

NO - [illegible]

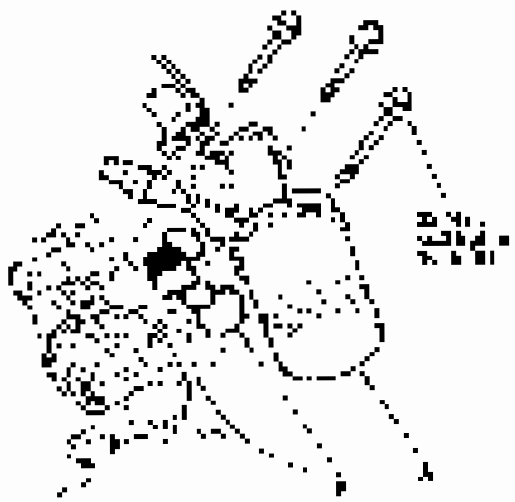
VTEC Solenoid Valve Test

1. Disconnect the VTEC oil pressure switch connector.
2. Vacuum indicates between the VTEC solenoid valve and oil control orifice (OCO) [illegible] ground.

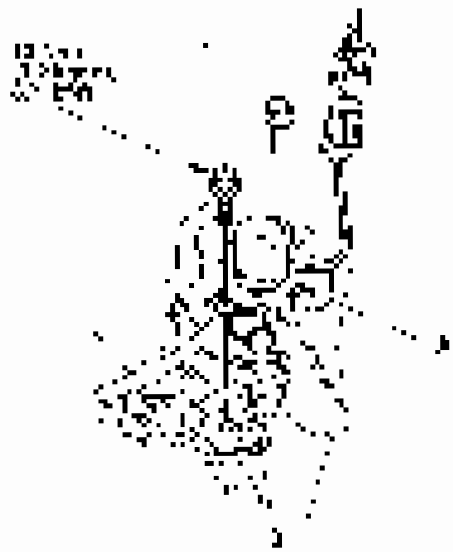
   - [illegible]
   - [illegible]

   Resistance: 14 - 30 Ω

3. Remove the VTEC solenoid valve/oil filter assembly. Air must not escape when the VTEC solenoid valve filter is blown into. Replace the solenoid valve/oil filter assembly if [illegible]

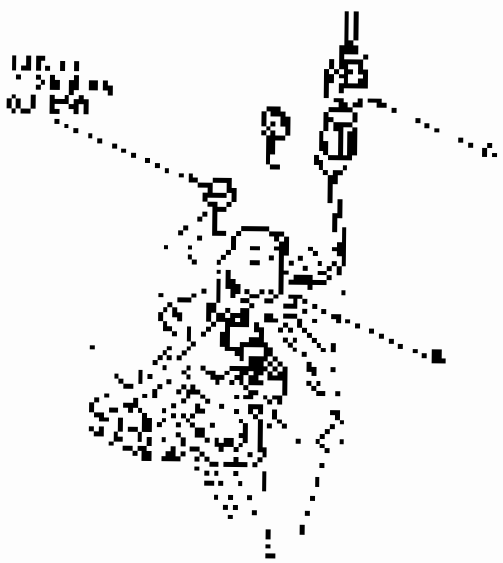


4. [illegible] (OCO) [illegible] Replace the OCO if [illegible]



VTEC Solenoid Valve Removal/ Installation

1. Disconnect the VTEC solenoid valve connector (A).

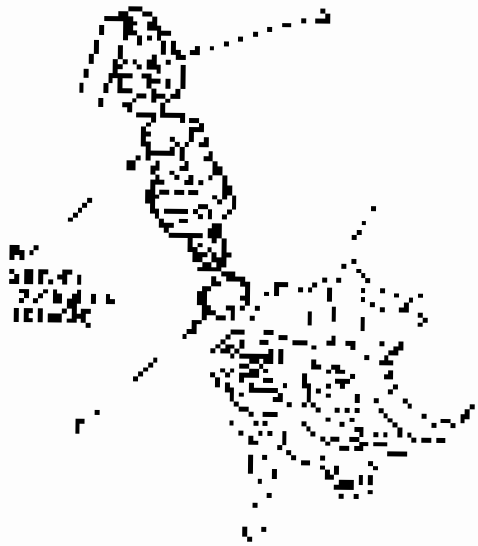


2. Remove the VTEC solenoid valve (B).

3. Install the parts in the reverse order of removal.
   - Always replace the O-ring (C).

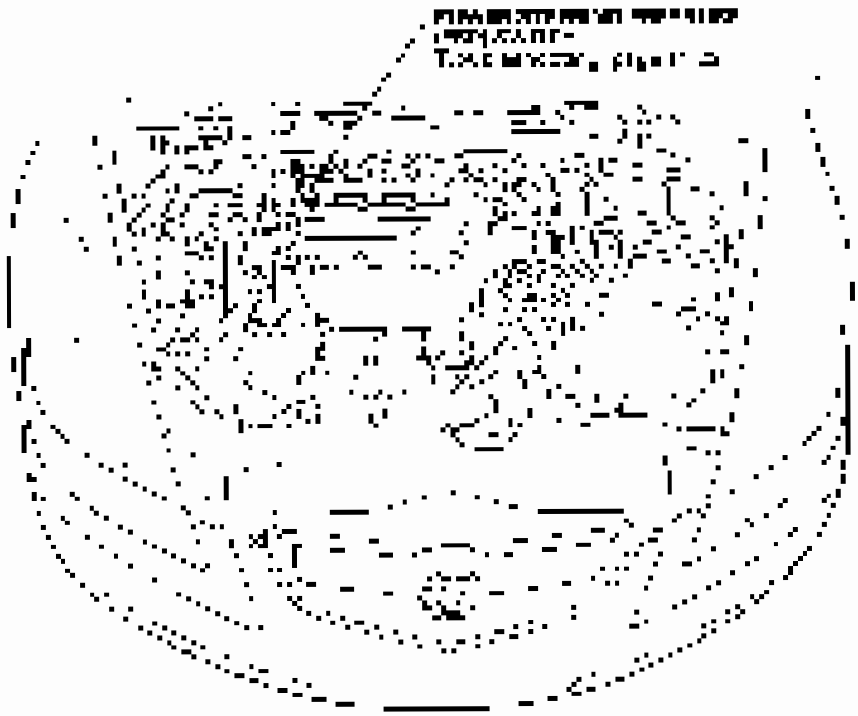
VTEC Oil Pressure Switch Replacement

1. Disconnect the VTEC oil pressure switch connector (A), then remove the VTEC oil pressure switch (B).



2. Install the parts in the reverse order of removal.
   - Always replace the O-ring (C).

Component Location Index



DTC Troubleshooting

DTC P0506 Idle Control System RPM Lower Than Expected

1. [illegible]

2. [illegible] DTC with scan tool.

3. Start the engine and let it idle for at least 10 minutes. Monitor the DTC information for the [illegible].

4. Check for any other DTCs. If DTC P0506 is the only DTC:

   - Engine coolant temperature should be above 160°F (71°C).
   - [illegible]
   - Vehicle speed should be zero (0 mph).
   - [illegible]
   - [illegible]

5. Was the engine idle speed between 1,000 and 1,100 rpm for DTC P0506 on the first try?

   YES - Go to step 6.

   NO - If the engine idle speed was between 1,000 and 1,100 rpm on the second try, the system is OK. If the engine idle speed was not between 1,000 and 1,100 rpm on the second try, go to step 6.

6. Remove the glove box. See the [illegible] body

7. Check for an intermittent [illegible] connection.

   Refer to the sensor circuit [illegible]

   NO - If you found a problem, repair the wire or connector as necessary. Go to step 8.

   YES - Go to step 8.

8. Replace the [illegible] See page 11-227.

9. Test the [illegible] for DTC P0506.

10. Replace the ECM/PCM with a new one. See page 11-231.

11. Start the engine. Idle the vehicle for at least 10 minutes. Monitor the DTC information for the [illegible].

12. Check for any other DTCs. If no DTCs or DTC P0506:

    - Engine coolant temperature should be above 160°F (71°C).
    - [illegible]
    - Vehicle speed should be zero (0 mph).
    - [illegible]
    - [illegible]

DTC Troubleshooting (cont'd)

13. Check for Temporary DTCs or DTCs with the [illegible]

    Are any Temporary [illegible]

    YES—If DTC [illegible] and [illegible] DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

    NO—Go to step [illegible]

14. Monitor the OBD STATUS for [illegible] in the DTCs/MENU with the HDS.

    Does the screen indicate PASSED?

    YES—Troubleshooting is complete. ■

    NO—If the screen indicates FAILED, go to step [illegible] and [illegible]. If the screen indicates EXECUTING, [illegible] If the screen indicates OUT OF CONDITION, [illegible]

15. Remove the [illegible] throttle body.

16. Check [illegible] in the throttle bore.

    Is there [illegible] or damage in the throttle body?

    YES—[illegible] (see page 11-[illegible]) [illegible] damage [illegible] (see page 11-232) [illegible] throttle body [illegible]

    NO—Go to step 17.

17. [illegible] electrical load [illegible] A/C [illegible]

18. Monitor the OBD STATUS for [illegible] in the DTCs/MENU with the [illegible]

    Does the screen indicate [illegible]

    YES—[illegible] is OK [illegible] ■

    NO—If the screen indicates FAILED, [illegible] power steering [illegible] check. If the screen indicates EXECUTING, [illegible] If the screen indicates OUT OF CONDITION, go [illegible]

DTC P0607: ...ule Control System PCM Fi...ilure
Train Exposed

1. Turn ... ignition ... OFF.

2. Connect ... DTC ...

4. ... engine ... speed ...
...

4. ... DTC STATUS ... DTC ...
DTC(s) ... IDS.

Does ... DTC(...

YES - ... DTC(s) ...

- ...
- ...
- ...
- ...
- ...
- ...

NO - ... DTC(...
...
...
...
...

6. Turn ... ignition ... ON.

8. ... DTC(s) ... IDS.

- ... DTC(s) ...

4. ... following ...
DTC(s) ...
...

9. ... Temporary DTC(s) ...

... DTC(s) ...

YES - ... DTC(s) ...
...
...
...
...

NO - ...

12. ... DTC STATUS ... DTC(s) ...
DTC(s) ... IDS.

Does ... DTC(...

YES - ...

NO - ...
...
...
...
...

A/C Signal Circuit Troubleshooting

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible] with the [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible] A/C signal circuit [illegible]

5. Check the A/C system. [illegible]

   Does the A/C system operate?

   YES - The [illegible] A/C signal circuit [illegible]

   NO - [illegible]

6. [illegible]

7. [illegible]

8. Are the [illegible] INSPECTION [illegible]

   [illegible]

   [illegible] (page [illegible])

   NO - [illegible]

9. Measure [illegible] between [illegible] and body ground. Start the engine, and [illegible] A/C switch and blower switch.

   [illegible]

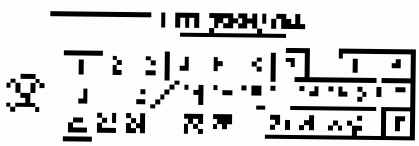
   [illegible]

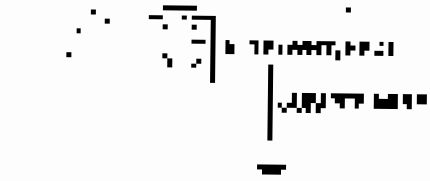
   Is [illegible] A/C switch [illegible]

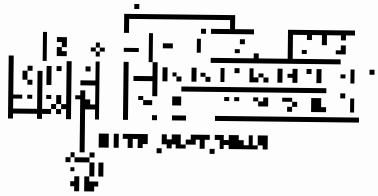
   YES - [illegible] A/C signal circuit [illegible]

   NO - [illegible] (page [illegible])

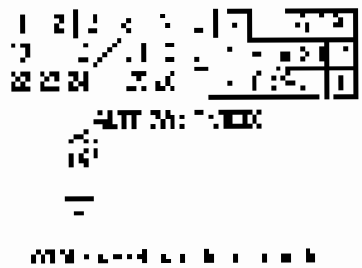
Alternator FR Signal Circuit Troubleshooting





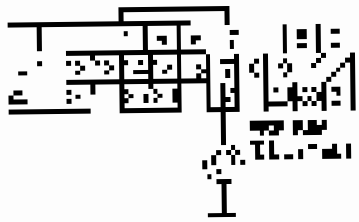


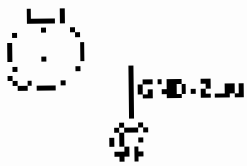
Alternator FR Signal Circuit Troubleshooting (cont'd)



PSP Switch Signal Circuit Troubleshooting

PSP Switch Signal Circuit Troubleshooting (cont'd)





Brake Pedal Position Switch Signal Circuit Troubleshooting

1. [illegible]

2. [illegible]

   Does [illegible]?

   YES - Go to step 3.

   NO - Inspect the connectors and terminals between [illegible]. If they are OK, replace the [illegible].

3. [illegible]

   Does [illegible]?

   YES - The [illegible] is shorted to ground. Repair as necessary.

   NO - Go to step 4.

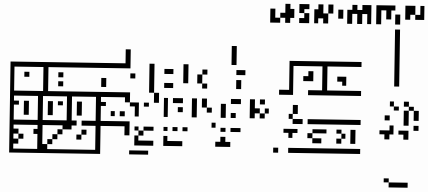
4. [illegible]

5. [illegible]

6. Disconnect the [illegible] connector. Turn the ignition switch ON. Do not start the engine.

7. [illegible]

8. [illegible]



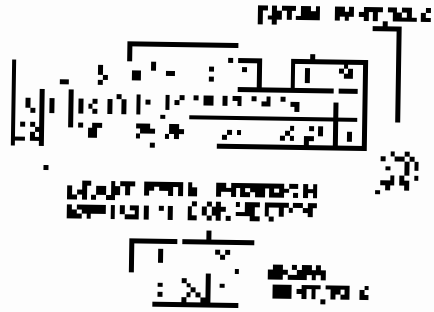
[illegible]

[illegible]?

YES - [illegible]

NO - [illegible]

9. Check for [illegible] between the [illegible] connector terminal and [illegible]. Refer to [illegible].



[illegible]?

YES - Repair the open or high resistance in the brake pedal position switch circuit. Refer to the [illegible] circuit [illegible]. Replace the brake pedal position switch if necessary. [illegible]

NO - Check your [illegible] for [illegible] brake pedal position switch [illegible].

Idle Speed Inspection

NOTE:

- Before checking engine idle speed, check the following items:
  - The malfunction indicator lamp (MIL) is not on. If the MIL is on, perform the self-diagnosis procedure.
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
- [illegible]

1. [illegible] the vacuum hose from the canister purge valve.

2. [illegible]

3. [illegible]

4. Check the idle speed with the transmission in Park or Neutral.

   Idle speed should be [illegible] in Park or Neutral

5. [illegible]

   Idle speed should be [illegible] in Park or Neutral

NOTE: [illegible]

6. [illegible]

EGM/PCM Idle Learn Procedure

The idle learn procedure is necessary for the EGM/PCM to learn the engine's idle characteristics.

Perform this procedure if the following conditions exist:

- The EGM/PCM is replaced.
- The engine is rebuilt.
- The vehicle is driven [illegible]

NOTE: Allowing the EGM/PCM to learn idle characteristics may require several hours of driving. Perform this procedure.

Procedure

1. [illegible]

2. [illegible]

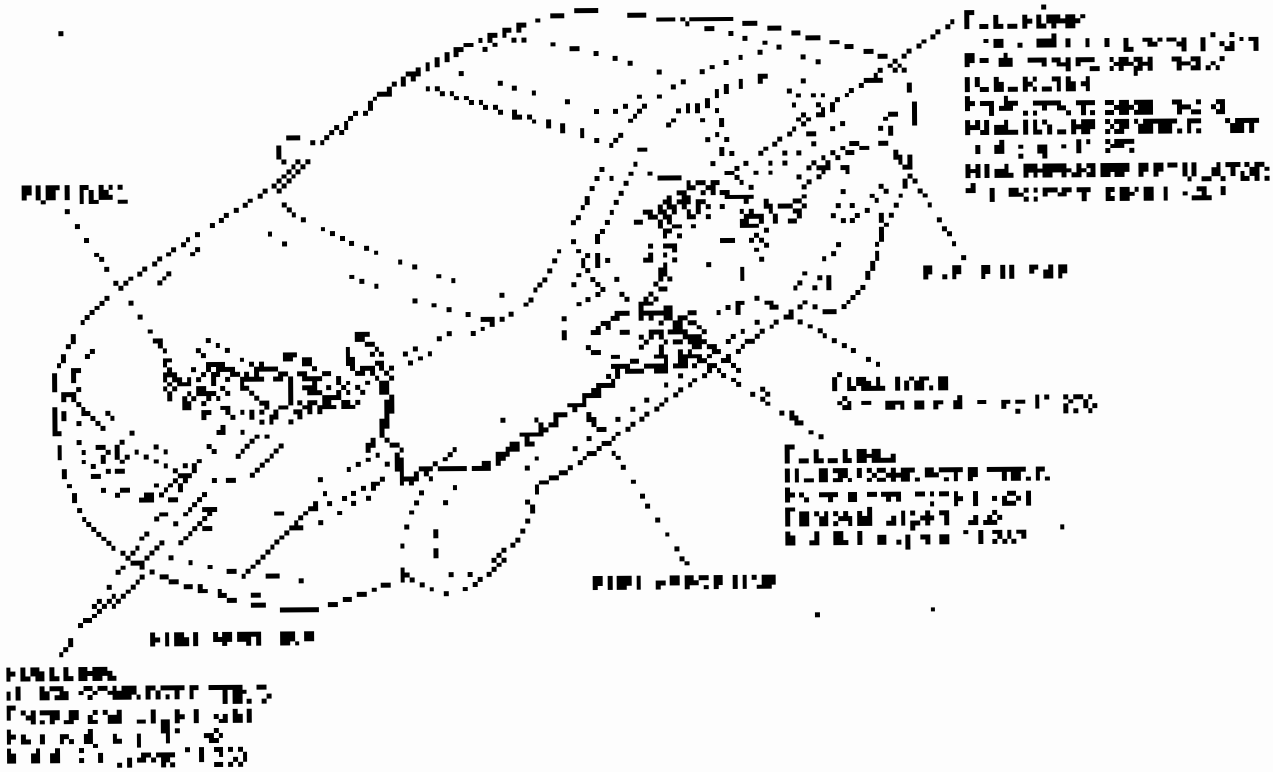
3. [illegible]

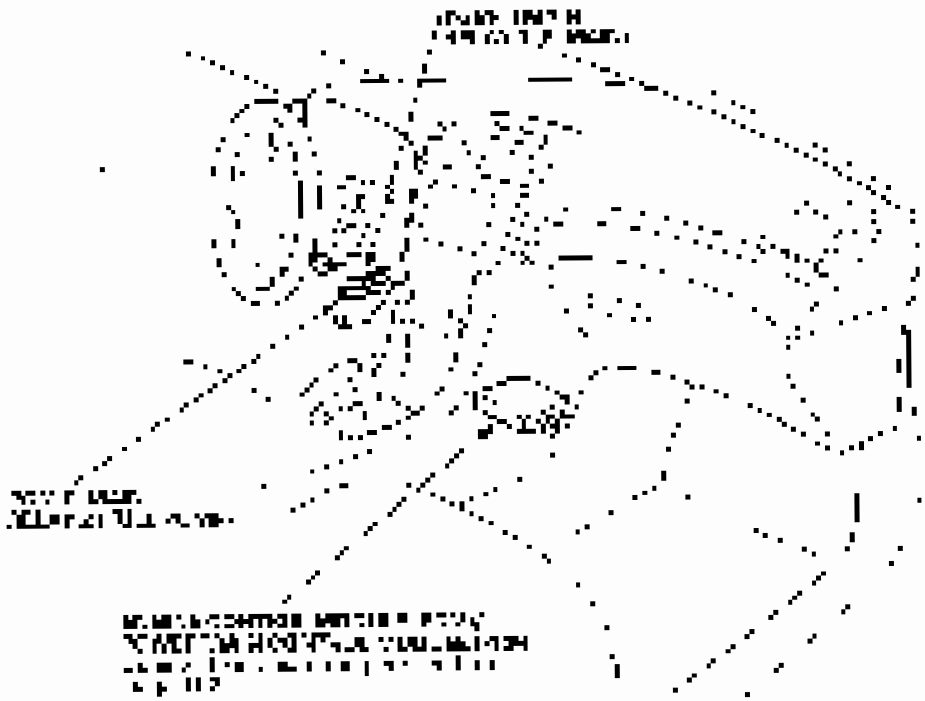
4. [illegible]

5. Turn the engine OFF for [illegible] with the [illegible] cycled.

NOTE: [illegible]

Component Location Index



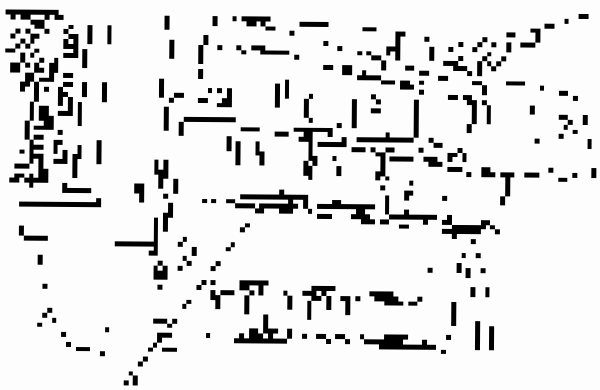


Fuel Pump Circuit Troubleshooting

If you have a problem with the fuel pump, check the fuse first. If the fuse is blown, you will not be able to start the engine. The fuel pump circuit is controlled by the PCM. The PCM operates the fuel pump relay to control power to the fuel pump.

Turn the ignition switch OFF.

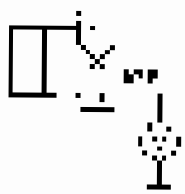
2. Remove the [illegible] fuel pump relay (see page 23-52) from the PGM-FI sub-relay box. [illegible] fuel pump relay box.



3. Turn the ignition switch ON (II).

4. Measure voltage between PCM [illegible] and body ground. [illegible] PGM-FI [illegible] connector terminal. [illegible] relay terminal.

Connection: [illegible] (PCM)



Specified value: [illegible]

YES - Go to step 5.

NO:
- Check for open in [illegible] PGM-FI sub-relay box. ■
- Check for open in [illegible] fuel pump relay box. ■

5. Measure voltage between PCM [illegible] and body ground. [illegible] PGM-FI [illegible] connector terminal. [illegible] fuel pump relay terminal.

Connection: [illegible] (PCM)

Specified value: [illegible]

YES - Go to step 6.

NO:
- [illegible] open in [illegible] PGM-FI sub-relay box. ■
- [illegible] open in [illegible] fuel pump relay box. ■

6. Turn the ignition switch OFF.

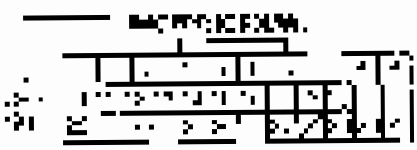
7. Connect [illegible] fuel pump relay to [illegible] PGM-FI sub-relay box. [illegible] jumper wire.

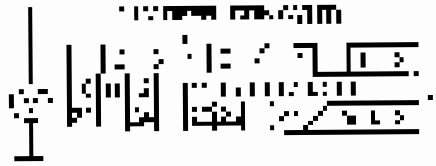
Connection: [illegible] (PCM)

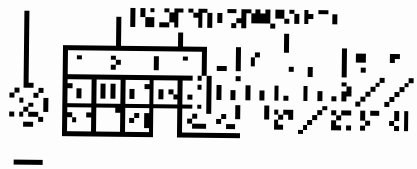
Specified value: [illegible]

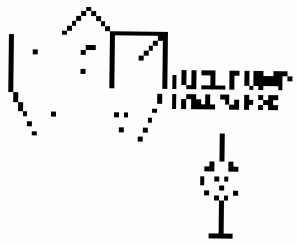
(cont'd)

Fuel Pump Circuit Troubleshooting (cont'd)









Fuel Pump Circuit Troubleshooting (cont'd)

24 [illegible]

23. Measure voltage between fuel pump 2P connector terminal No. 2 and body ground.

Is there battery voltage?

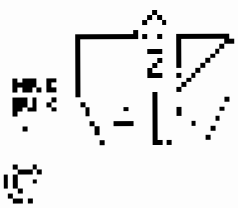
YES - Replace PCM. Test the system.

NO - Repair open in the wire between PCM B connector terminal 3 and fuel pump 2P connector terminal No. 2.

24 [illegible]

25 Turn the ignition switch to ON (II). Measure voltage between fuel pump 2P connector terminal No. 1 and body ground.

Is there battery voltage?



YES - Repair open in the wire between fuel pump 2P connector terminal No. 1 and PCM B connector terminal 4.

NO - Repair open in the wire between fuel pump 2P connector terminal No. 1 and fuse 4 (10 A) in the under-hood fuse/relay box.

Fuel Pressure Relieving

[illegible]

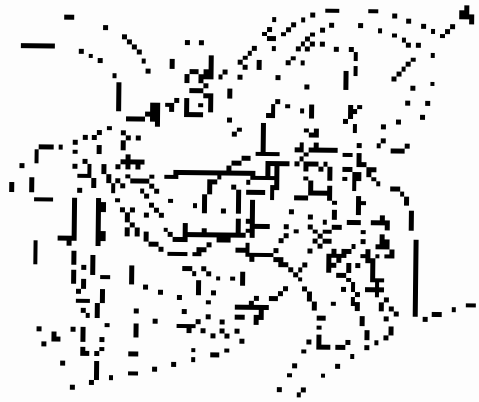
With the KDS:

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

NOTE:
- [illegible]
- [illegible]

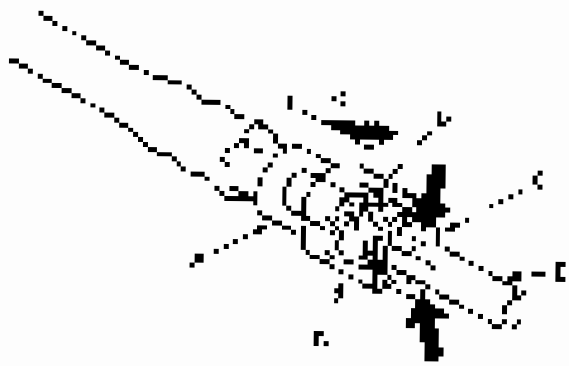
5. [illegible]
6. [illegible]
7. [illegible]

8. [illegible]
9. [illegible]
10. [illegible]



11. [illegible]

NOTE:
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]



Fuel Pressure Relieving (cont'd)

5. [illegible] quick-connect fitting, press the [illegible] release button, and pull the pipe off.

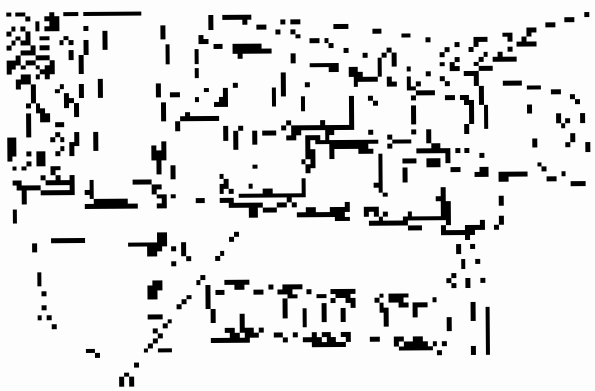
6. [illegible]

- Cover the union with a shop towel to keep dirt out of the fuel system.
- Cap the pipe.

Without the HDS

- Wear eye protection and gloves to avoid injury from escaping fuel under pressure. If fuel comes in contact with your eyes or skin, flush with clean water and seek medical attention.

7. Remove the fuel tank [illegible] (see page 11-[illegible]), then remove the [illegible] from the fuel tank (see page [illegible]).



8. [illegible]

NOTE: Make sure [illegible]

9. [illegible]

10. [illegible]

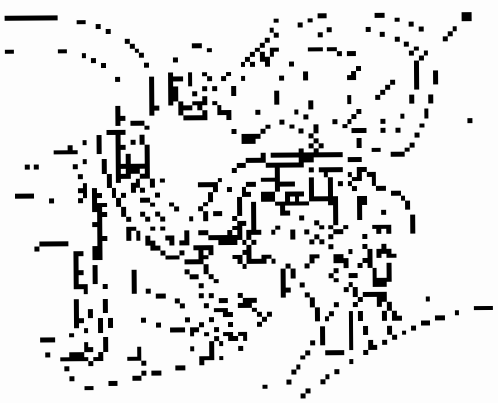
11. Remove the fuel fill cap, and [illegible] to relieve pressure in the fuel tank.

12. Disconnect the [illegible] quick-connect fitting, and disconnect the [illegible] from the pipe.

13. Remove the [illegible] (see page [illegible]).

14. Check the fuel [illegible] for [illegible] and clear if needed.

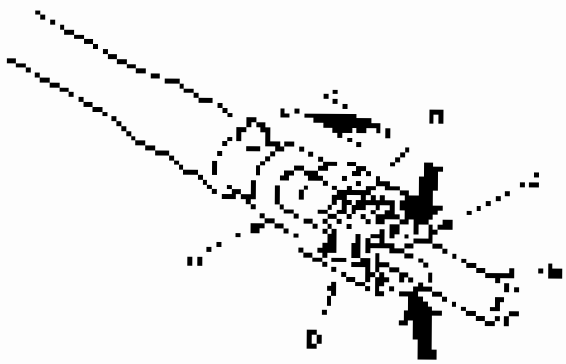
15. Reconnect the [illegible] quick-connect fitting (see page [illegible]).



Fuel Pressure Test

1. [illegible]

   NOTE:
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]



10. [illegible]

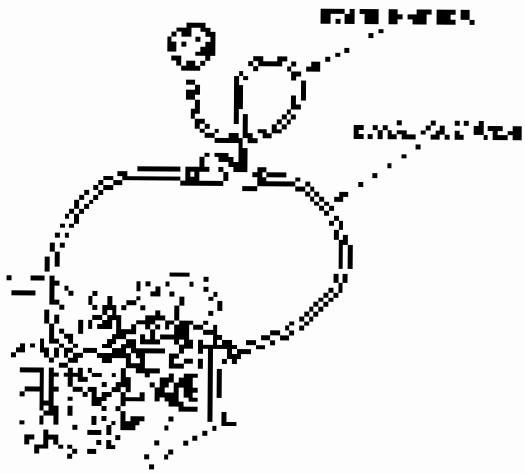
11. [illegible]

    - [illegible]
    - [illegible]

Special Tools Required
- [illegible]

- [illegible]

2. [illegible]



3. [illegible]

   - [illegible]
   - [illegible]

4. [illegible]

   - [illegible]
   - [illegible]

5. [illegible]

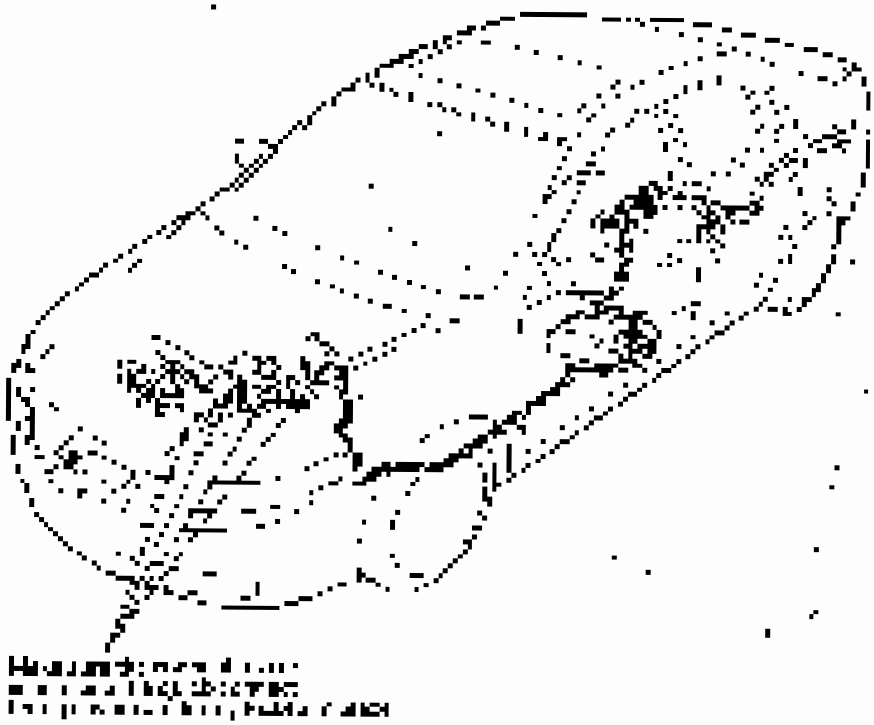
   - [illegible]
   - [illegible]

Fuel Tank Draining

1. [illegible]
2. [illegible]

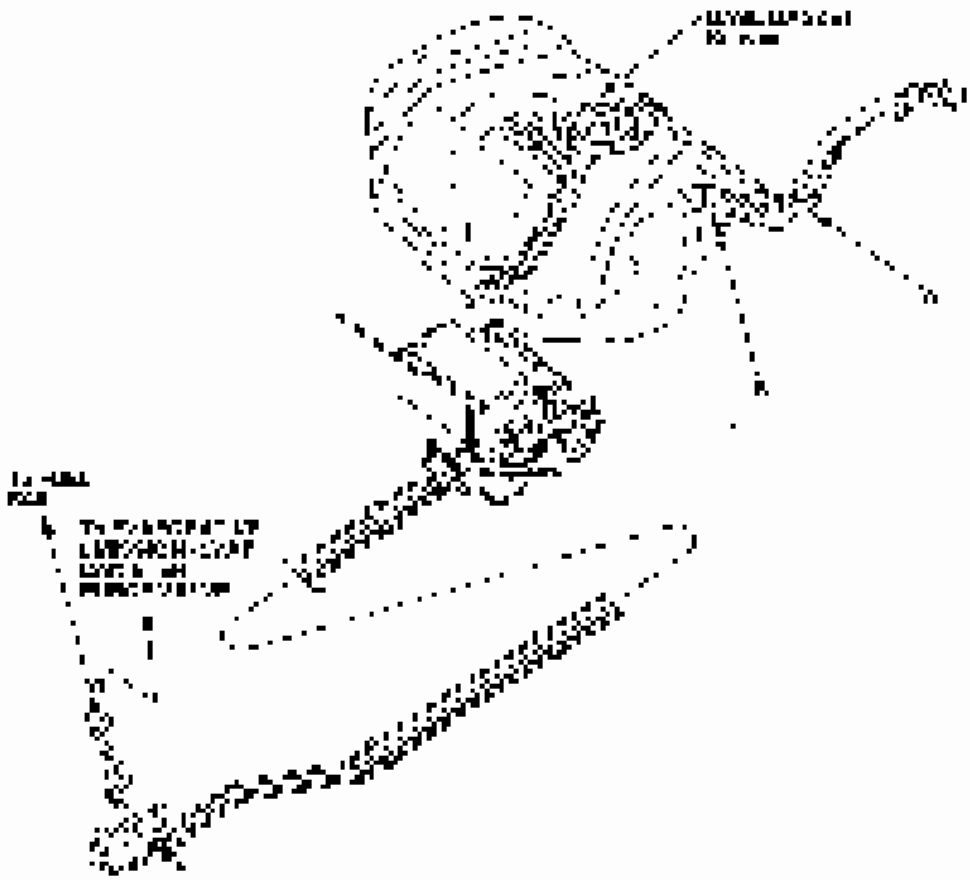
Fuel Line Inspection

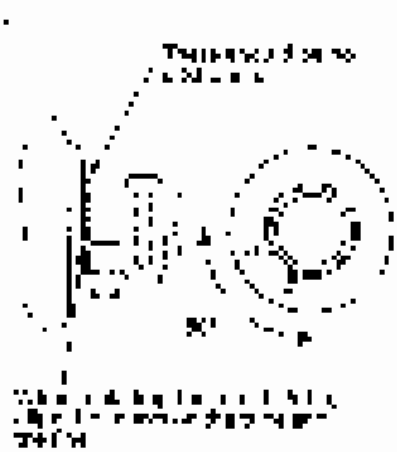
Check for cracks, leaks, damage, and corrosion. Replace any damaged parts.



Fuel Line Inspection (cont'd)

Check all clamps and retighten if necessary.



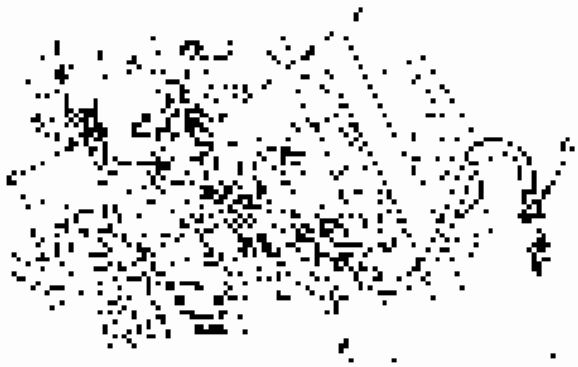


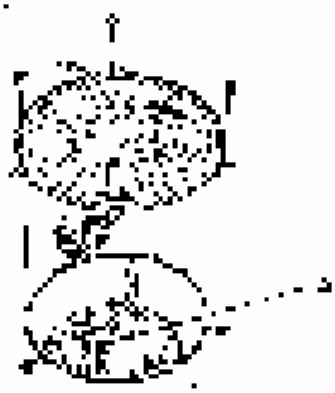
Fuel Line/Quick-Connect Fitting Precaution

Fuel Line/Quick-Connect Fitting Removal

1. [illegible]

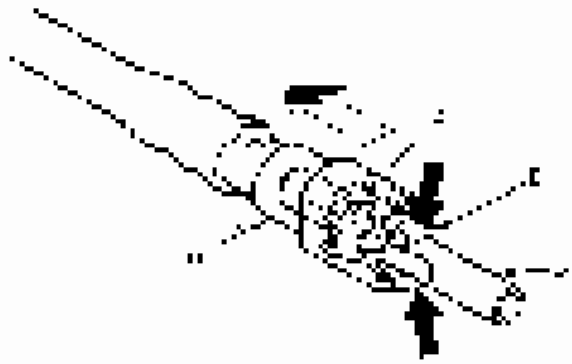
2. [illegible]





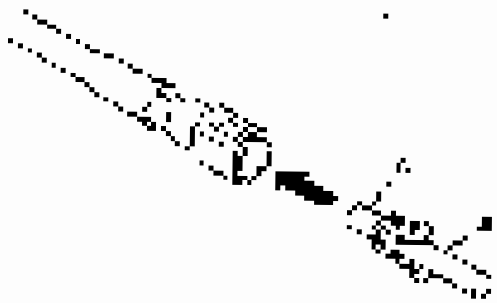
[illegible]

NOTE:
- [illegible]
- [illegible]
- [illegible]



Fuel Line/Quick-Connect Fitting Installation

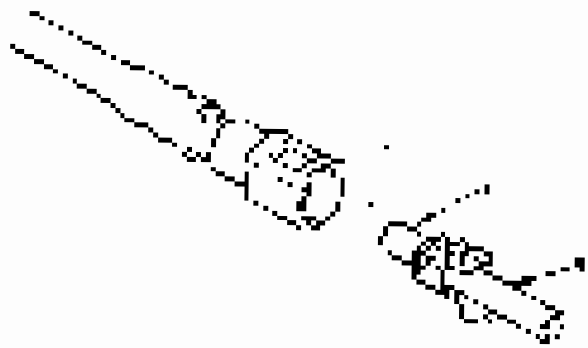
1. Check the [illegible] for damage.
   - [illegible]
   - [illegible] damage [illegible]



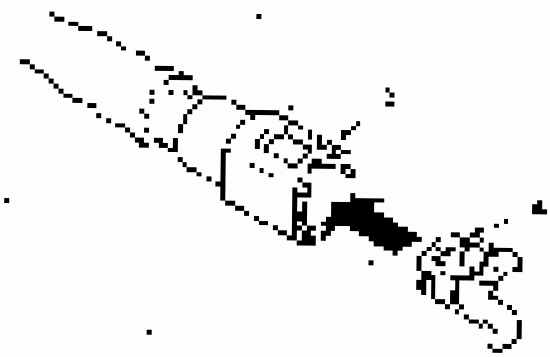
2. [illegible]

NOTE:
- The [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
- [illegible]
- [illegible]
- [illegible]

3. [illegible]

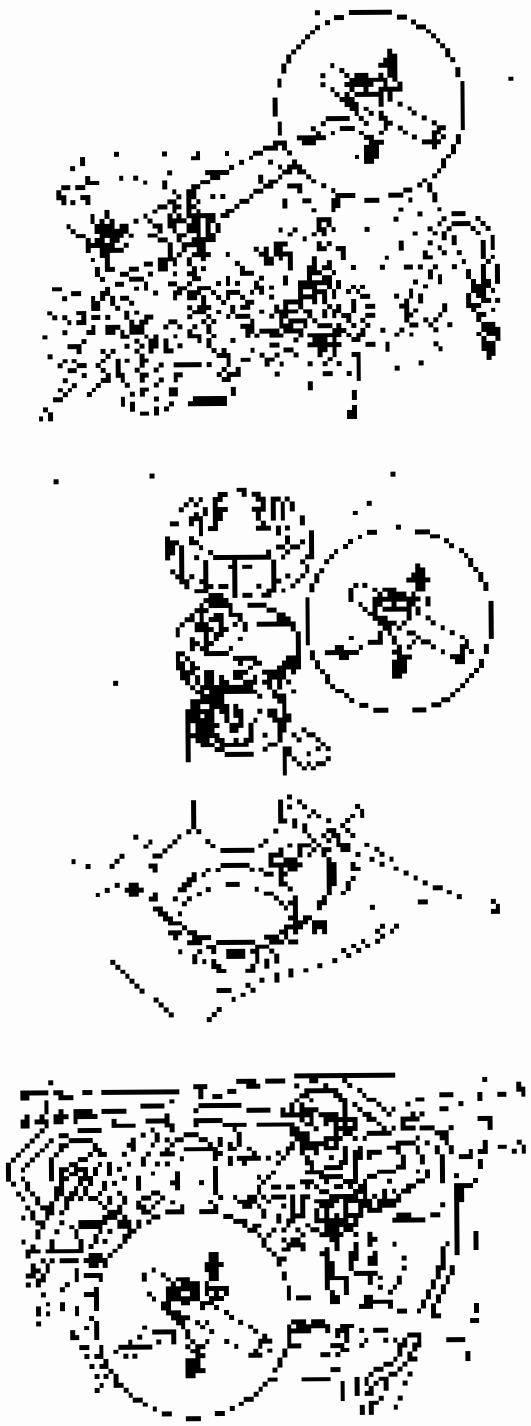


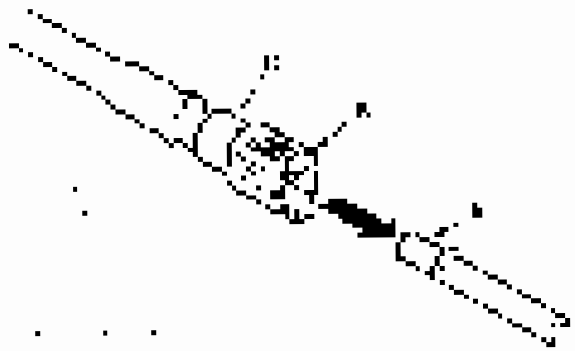
4. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

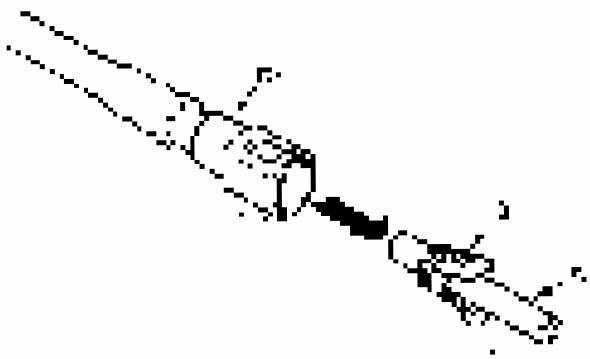


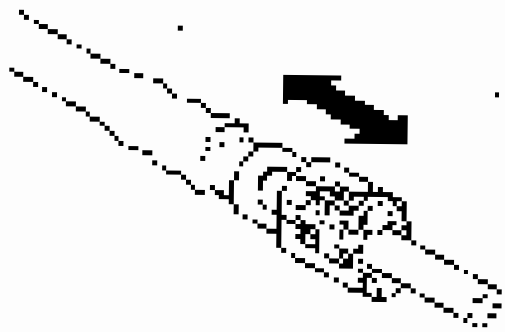
[illegible]

Fuel Line/Quick-Connect Fitting Installation (cont'd)



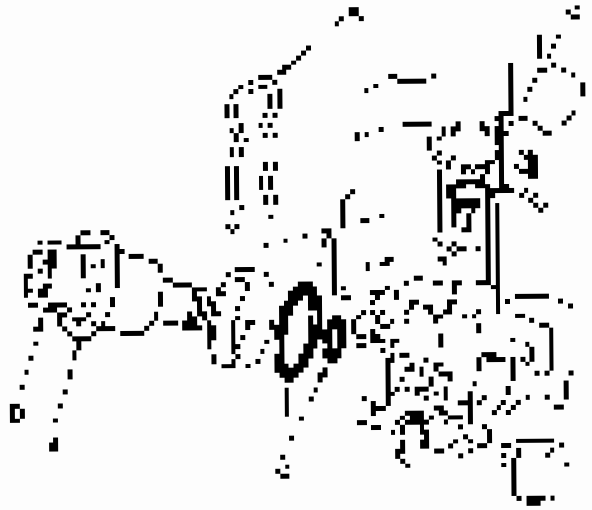






Fuel Pressure Regulator Replacement

1. Remove the fuel pressure gauge. (page 11-257)
2. Remove the engine cover.



3. Remove the fuel pressure regulator (A).
4. Install the regulator in the reverse order of removal with new O-rings (B).
   Make sure the regulator is fully seated in the fuel rail before tightening the bolt.

Fuel Filter Replacement

The fuel filter (A) is integrated into the fuel pump assembly. To replace the filter, remove the fuel pump assembly (page 11-249), then replace the fuel filter and install the fuel pump assembly.

Relieve the fuel pressure (page 11-253).

1. Remove the fuel tank (page 14-2).

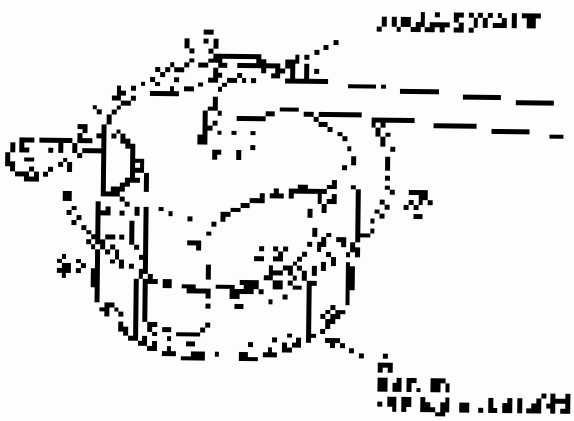
2. Disconnect the fuel pump electrical connector (A).
   - When disconnecting the connector, release the lock tab (B) and push the connector (C) in the direction shown.
   - When installing the connector, align the tab (B) on the connector (C) with the groove in the fuel pump flange (D), then push the connector in until the lock tab clicks.
3. Install the parts in the reverse order of removal with a new fuel pump flange O-ring (E).
   When installing the fuel pump assembly, align the tab on the fuel pump flange with the groove in the fuel tank. (page 11-249)

Fuel Pump/Fuel Gauge Sending Unit Replacement

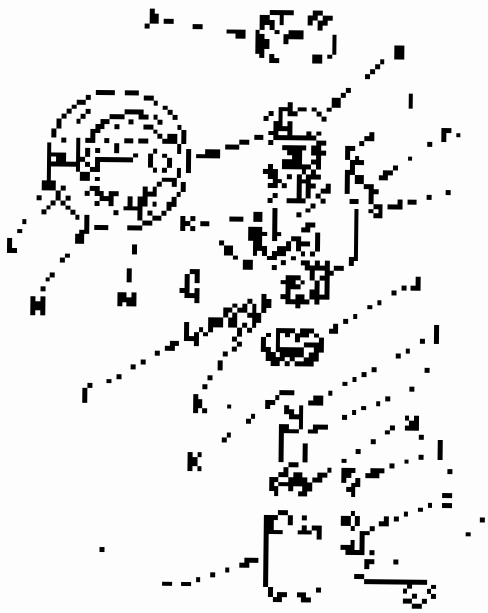
Special Tools Required

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

5. [illegible]
6. [illegible]
7. [illegible]



8. [illegible]



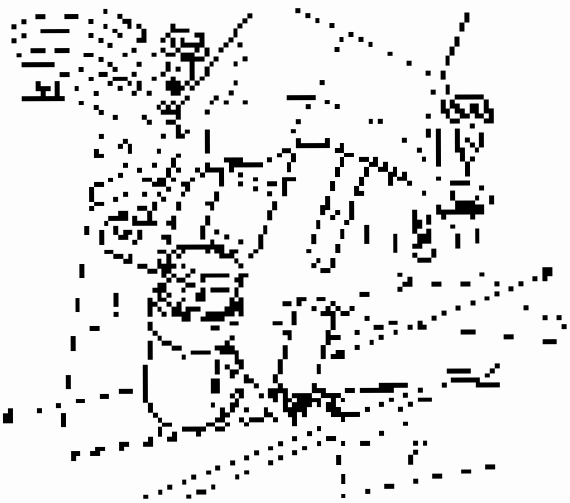
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]

Fuel Tank Replacement

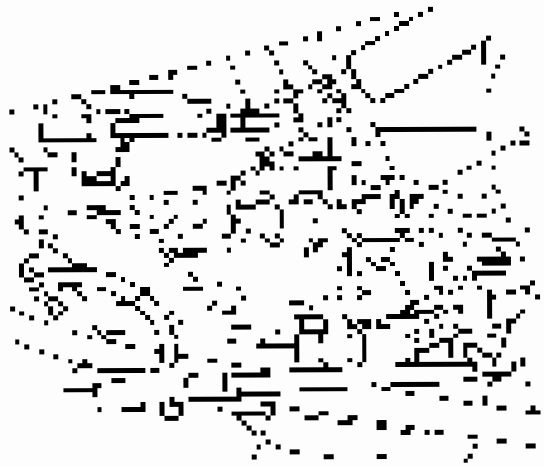
Removal

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

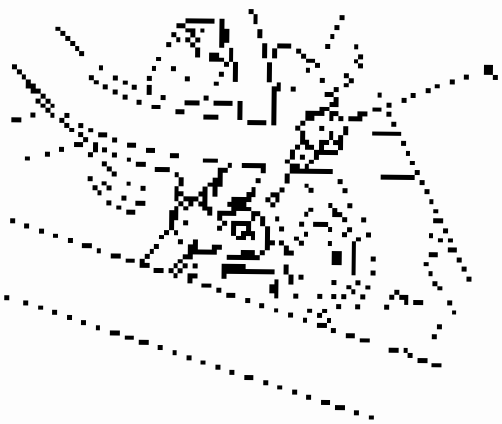
6. [illegible]
7. [illegible]

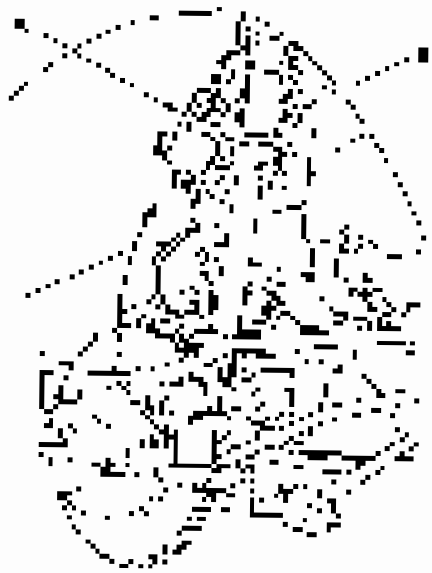


8. [illegible]



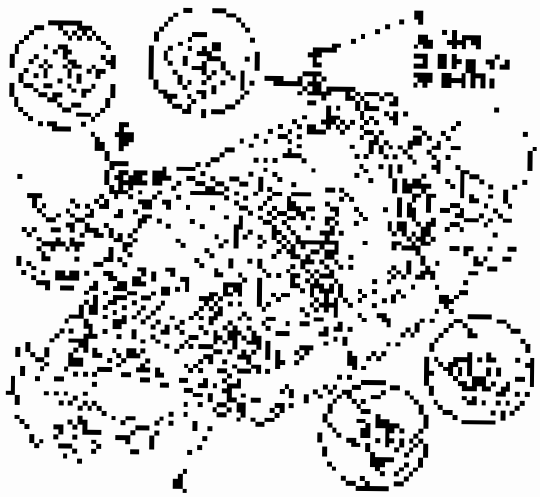
9. [illegible]





Fuel Tank Replacement (cont'd)

Installation



Fuel Gauge Sending Unit Test

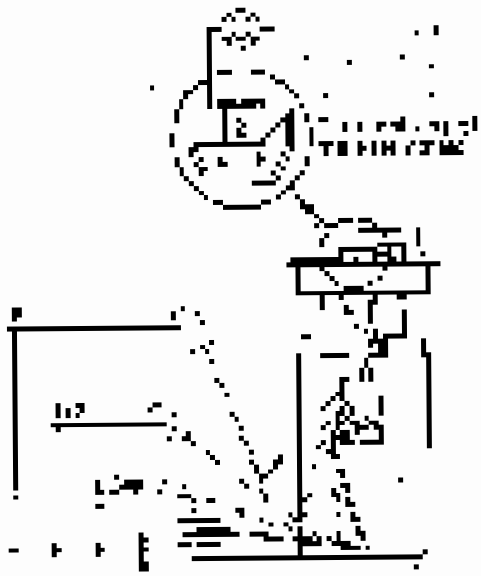
While [illegible] fuel system [illegible] diagram, refer to [illegible] Fuel Supply Diagram Index on page 11-261.

1. [illegible] sending unit [illegible] connected to the [illegible] harness plug [illegible] Fuel Gauge Sending Unit on page 11-[illegible].
   - Fuel pump [illegible]
   - [illegible] harness [illegible] fuel pump harness [illegible]
2. [illegible] the [illegible] Fuel Gauge Sending Unit on page 11-[illegible].
3. Do the gauge sending unit tests [illegible] harness plug [illegible].
   - If the [illegible] proceed to the next step.
   - If the [illegible] replace the gauge sending unit [illegible].
4. Turn the ignition switch OFF.
5. Remove [illegible].
6. Remove the [illegible] fuel pump harness.

7. Measure the [illegible] pump harness [illegible].
8. Measure [illegible] sending unit [illegible] on page 11-[illegible].
9. Measure the [illegible] between the [illegible] terminal [illegible] and [illegible] terminals in the [illegible] Fuel Gauge Sending Unit [illegible].

Float Position	Ohms	Ohms	Ohms	Ohms
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

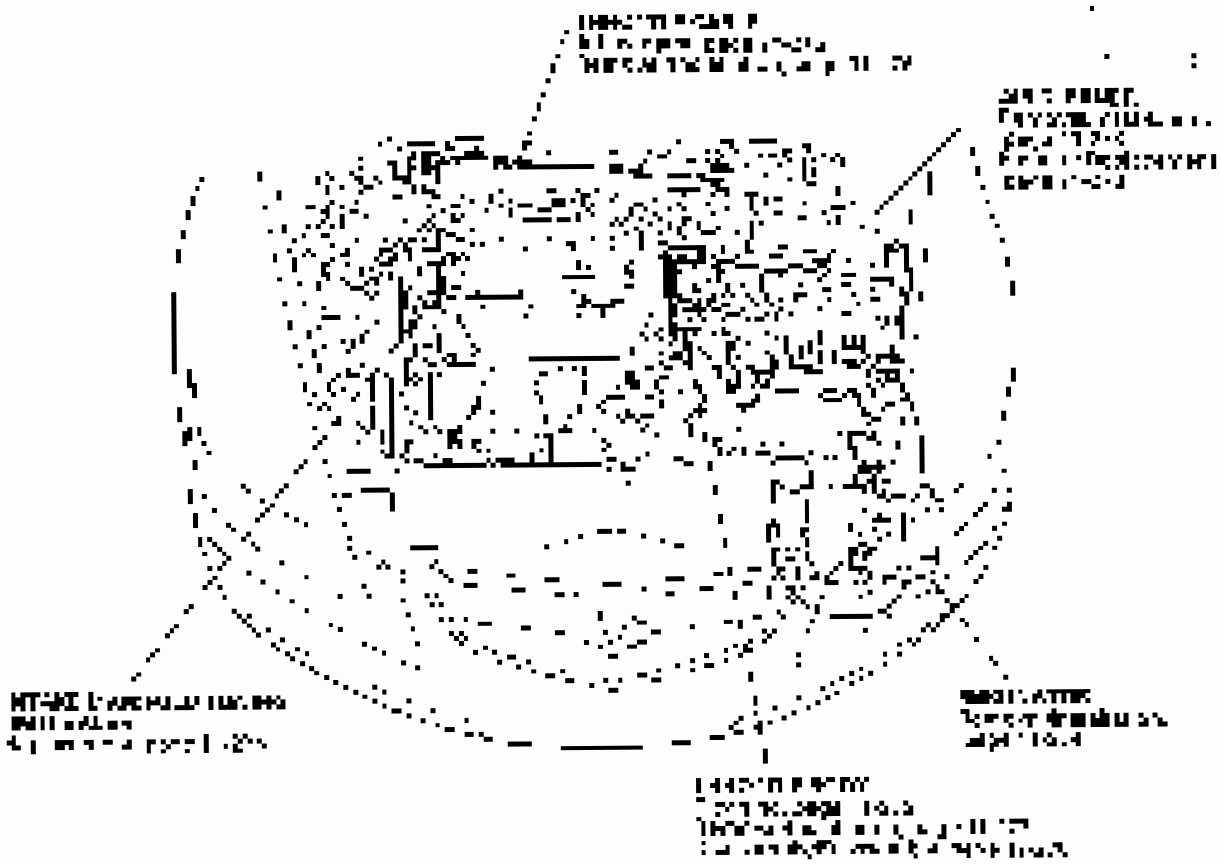
[illegible] the [illegible] sending unit [illegible] from the [illegible] Fuel Gauge Sending Unit on page 11-[illegible].



Low Fuel Indicator Test

1. [illegible]
   - [illegible]
   - [illegible]
2. [illegible]
   - [illegible]
   - [illegible]
3. [illegible]

Component Location Index



DTC P1297: EVT Valve Stuck Shut

Start the engine and [illegible]

2. Monitor the EVT VALVE parameter in the PCM data stream with the [illegible]

3. Operate the EVT VALVE [illegible] with the scan tool.

Is the [illegible]?

YES - Go to step 4.

NO - Intermittent. Check for poor [illegible] connections or damaged harness between the [illegible] and the PCM. If the problem is not found, replace the PCM.

4. Turn the ignition OFF.

5. Disconnect the EVT solenoid [illegible] connector.

6. Turn the ignition ON.

7. Operate the EVT VALVE [illegible] with the scan tool.

Is the [illegible]?

YES - Replace the [illegible].

NO - Go to step 8.

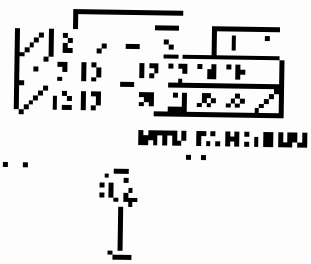
8. Turn the ignition OFF.

9. Check the [illegible] for a short to [illegible].

10. Disconnect the PCM [illegible] connector.

11. Check for [illegible] between the [illegible] terminal and [illegible].

[illegible]



[illegible]

Is there [illegible]?

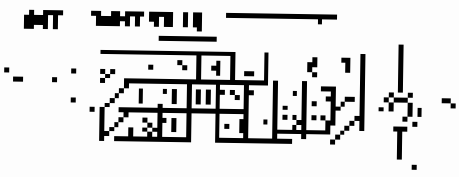
YES - Repair the [illegible] between the [illegible] and the PCM. If the problem is not found, replace the PCM.

NO - Go to step 12.

12. Turn the ignition [illegible].

13. Check for [illegible] between [illegible] and [illegible].

Is there [illegible]?



[illegible]

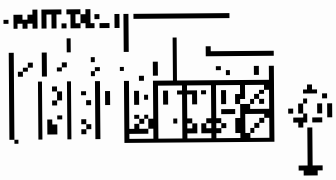
Is there [illegible]?

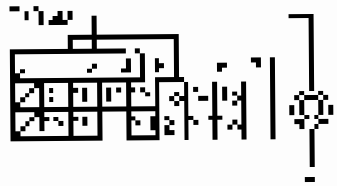
YES - Replace the [illegible]. If the problem is not found, replace the PCM. [illegible]

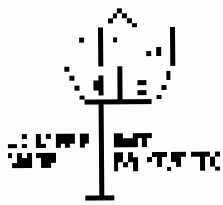
NO - Go to step 14.

[illegible]

DTC Troubleshooting (cont'd)

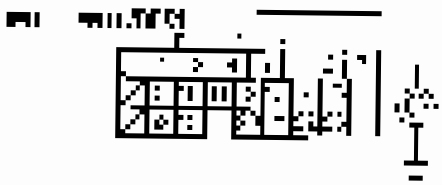






20. [illegible]

[illegible]



[illegible]

[illegible]

NO: [illegible]

21. [illegible]

22. [illegible]

23. [illegible]

24. [illegible]

25. [illegible]

26. [illegible]

27. [illegible]

28. [illegible]

29. [illegible]

30. [illegible]

31. [illegible]

32. [illegible]

33. [illegible]

34. [illegible]

35. [illegible]

36. [illegible]

DTC Troubleshooting (cont'd)

DTC P1528, TVT Valve Stuck Open

1. [illegible]

NOTE: [illegible]

2. [illegible]

3. [illegible]

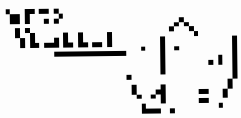
4. [illegible]

5. [illegible]

6. Turn the ignition switch OFF.

7. Disconnect the TVT actuator 2P connector.

TVT ACTUATOR CONNECTOR



8. [illegible]

YES: Go to step 9.

NO: [illegible]

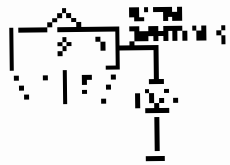
9. [illegible]

10. Turn the ignition switch ON (II).

11. [illegible]

12. Measure voltage between TVT actuator 2P connector terminal No. 1 and body ground.

TVT ACTUATOR CONNECTOR



[illegible]

YES: Go to step 13.

NO: [illegible]

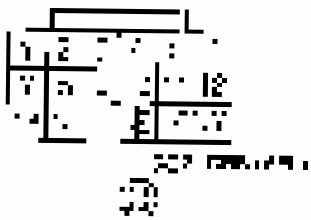
13. Turn the ignition switch OFF.

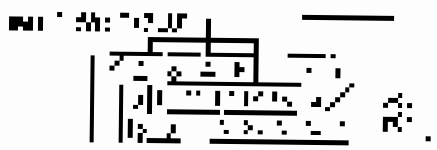
14. [illegible]

15. Disconnect [illegible] connector from the TVT actuator and body ground.

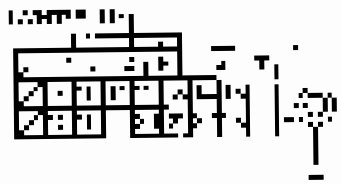
TVT ACTUATOR CONNECTOR

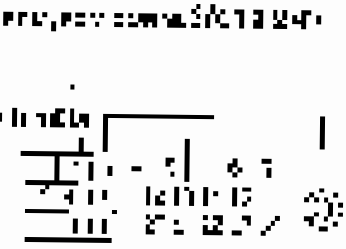
[illegible]





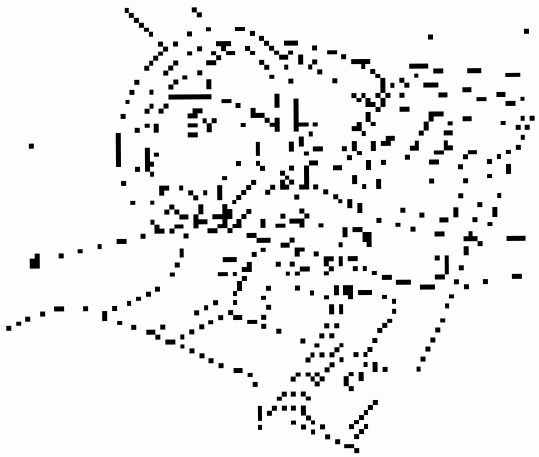
DTC Troubleshooting (cont'd)





Throttle Body Test

1. [illegible]



2. [illegible]

3. [illegible]

- [illegible]

Throttle Body Cleaning

ACAUTION

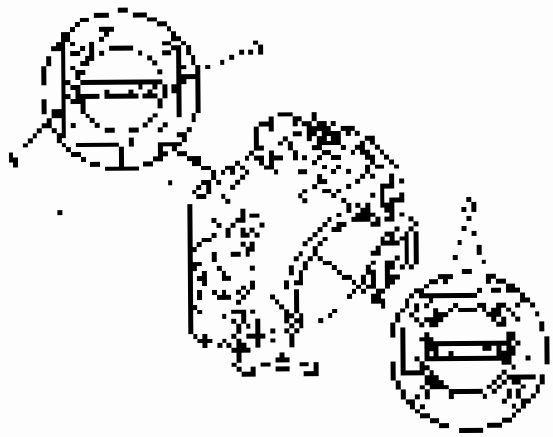
[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

NOTE:
- [illegible]
- [illegible]
- [illegible]



4. [illegible]

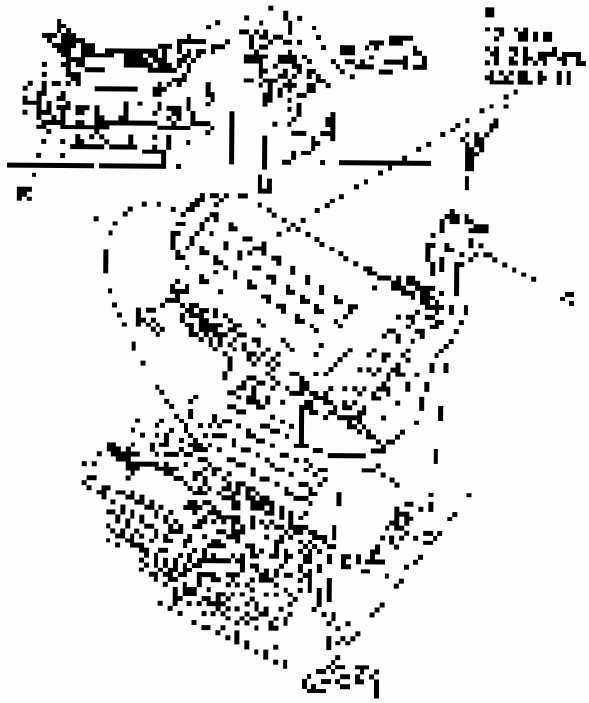
5. [illegible]

6. [illegible]

- [illegible]

Air Cleaner Removal/Installation

1. Remove the bolts (A) and nuts (B).



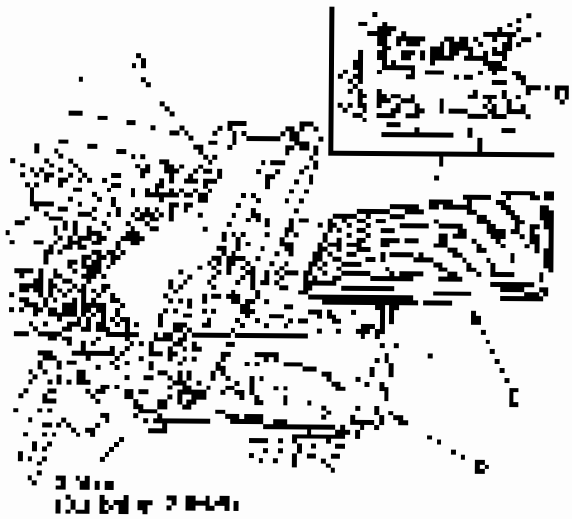
2. Remove the air cleaner (C).

3. Install in the reverse order of removal.

Air Cleaner Element Replacement

NOTE: To avoid damage, do not remove the air cleaner element unless necessary.

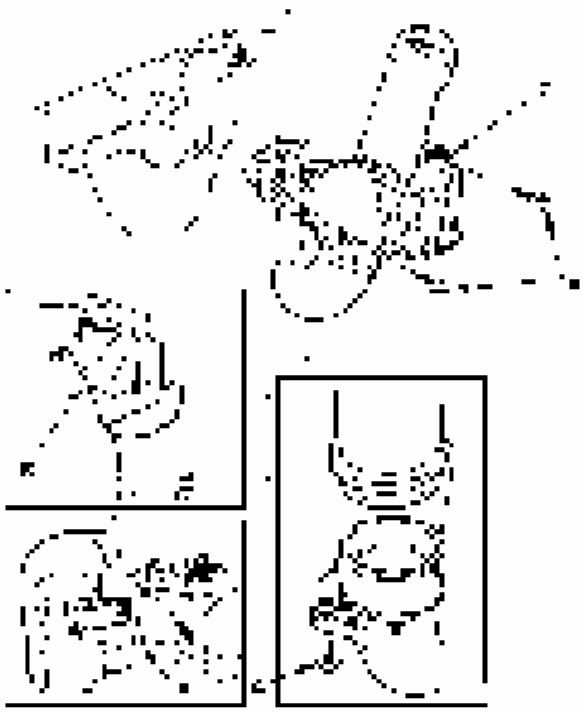
1. Disconnect the crankcase breather hose (A) and vacuum hose (B).



2. Remove the air cleaner assembly (C) from the air cleaner housing (D).

3. Loosen the clamp (A) and remove the air cleaner element (B).

Resonator Removal/Installation



JMT Actuator Replacement

Throttle Cable Adjustment

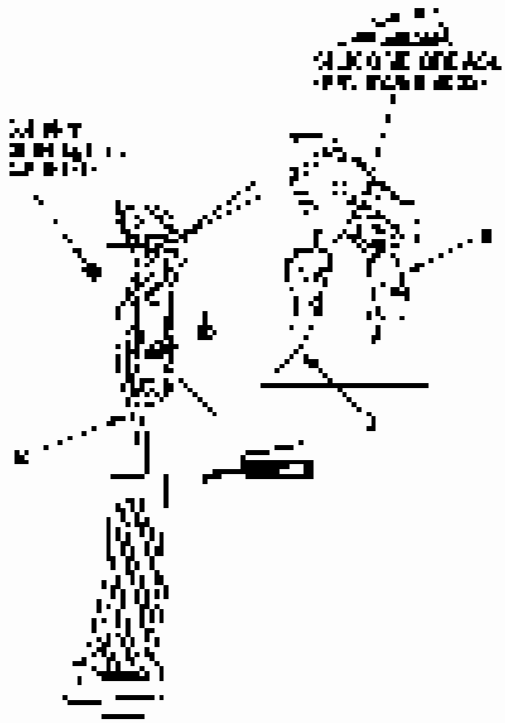
Throttle Cable Removal/Installation

[illegible]

2. [illegible] the throttle cable bracket from the throttle body.

3. [illegible]

4. Remove the throttle cable [illegible] from the throttle linkage pocket (B).

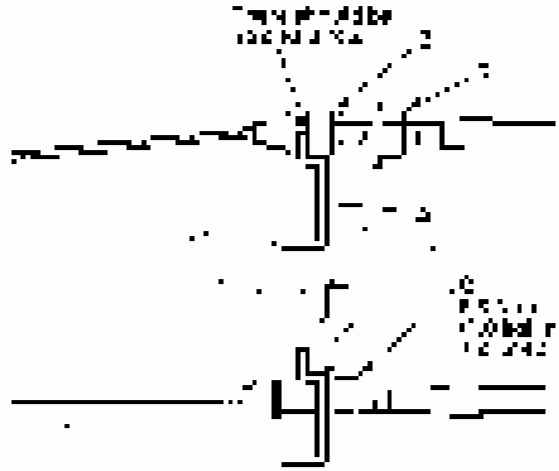


5. [illegible]

6. Route the engine throttle cable [illegible] with the throttle body. Be sure the throttle cable [illegible] between the throttle body and the engine.

7. [illegible]

8. [illegible]



9. [illegible]

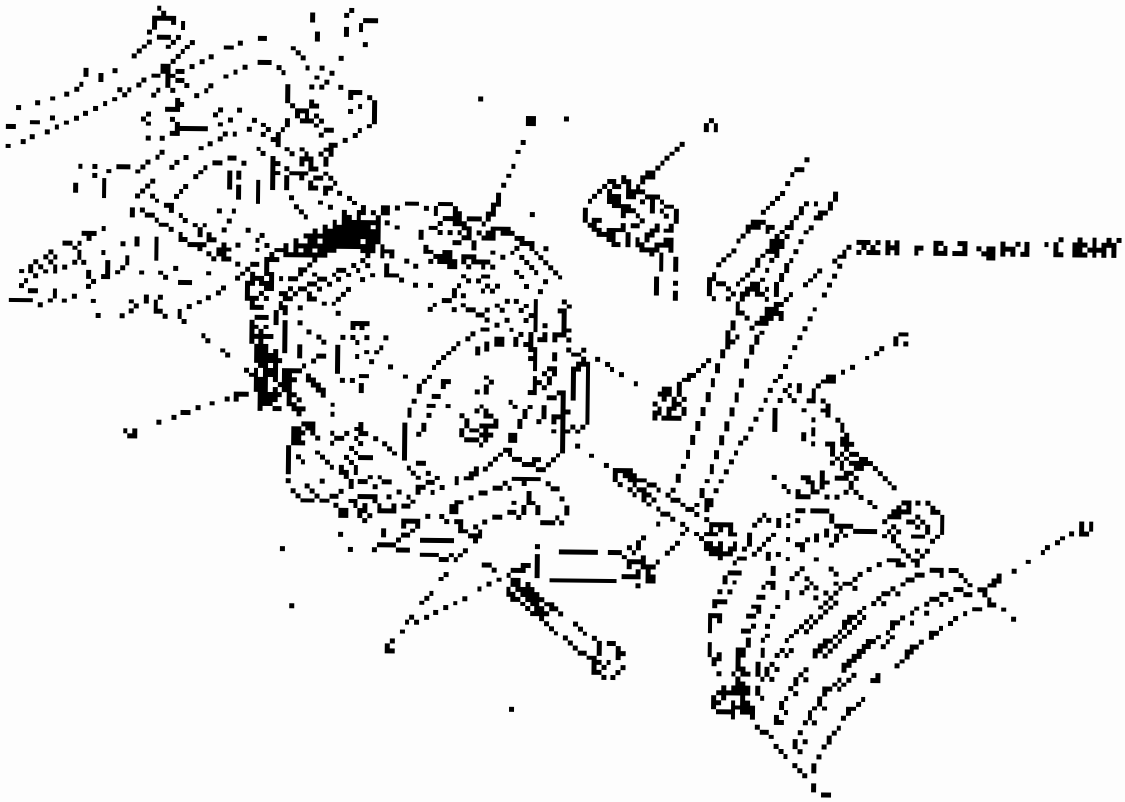
10. [illegible]

Throttle Body Removal/Installation

⚠CAUTION

[illegible]

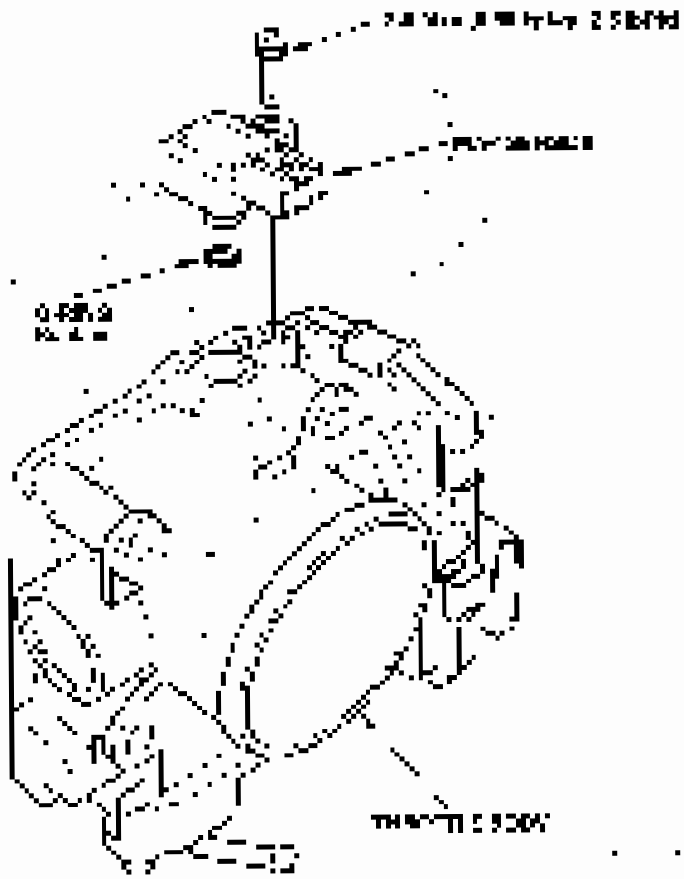
1. [illegible]



2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

- [illegible]
- [illegible]

Throttle Body Disassembly/Reassembly



DTC Troubleshooting

DTC P0420 Bank 1 Catalyst System Efficiency Below Threshold (Bank 1)

DTC P0430 Bank 2 Catalyst System Efficiency Below Threshold (Bank 2)

Key =
- [illegible] DTC P0420 [illegible] DTC P0430 [illegible]
- P0420, P0430: Secondary HO2S [illegible]
- [illegible]

1. [illegible]
2. Check the DTC's [illegible]
3. [illegible] A/F [illegible]
4. [illegible]
   - [illegible] DTC P0420
   - A/F [illegible]
   - [illegible]
   - [illegible]
5. [illegible] DTC P0420 P0430 [illegible]

   Does the [illegible]?

   YES - Go to step 6.

   NO - Go to step 7.
6. [illegible]
7. [illegible] DTC P0420 [illegible]

   Does the [illegible]?

   YES - Go to step 8.

   NO - [illegible] CONSULT [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]

DTC Troubleshooting (cont'd)

8. [illegible]

9. [illegible]

10. Check for DTC MONITOR CONDITION from DATA LIST in scan tool.

    [illegible]

    Will [illegible]?

    YES: Go to step 11.

    NO: Go to step 12.

11. Test drive under these conditions:

    - Engine [illegible] (engine coolant temperature: 70°C (158°F))
    - [illegible]
    - [illegible]
    - [illegible] 4th gear with [illegible] Load: [illegible] Between 25 and 55 km/h (16 and 34 mph) Accelerator pedal: [illegible]

12. Check the CODE STATUS for DTC P0420 in [illegible] Freeze Frame DATA and Snapshot DATA.

    [illegible]

    Is [illegible]?

    YES: Go to step 13.

    NO: Go to step 14.

13. Continue [illegible].

14. Check for [illegible] DTC and DTC with the [illegible]

    [illegible]

    Is [illegible]?

    YES: Go to step 15.

    NO: Go to step 16.

15. [illegible]

    Code Number: Check P0420?

    YES: Troubleshooting is complete.

    NO: [illegible]

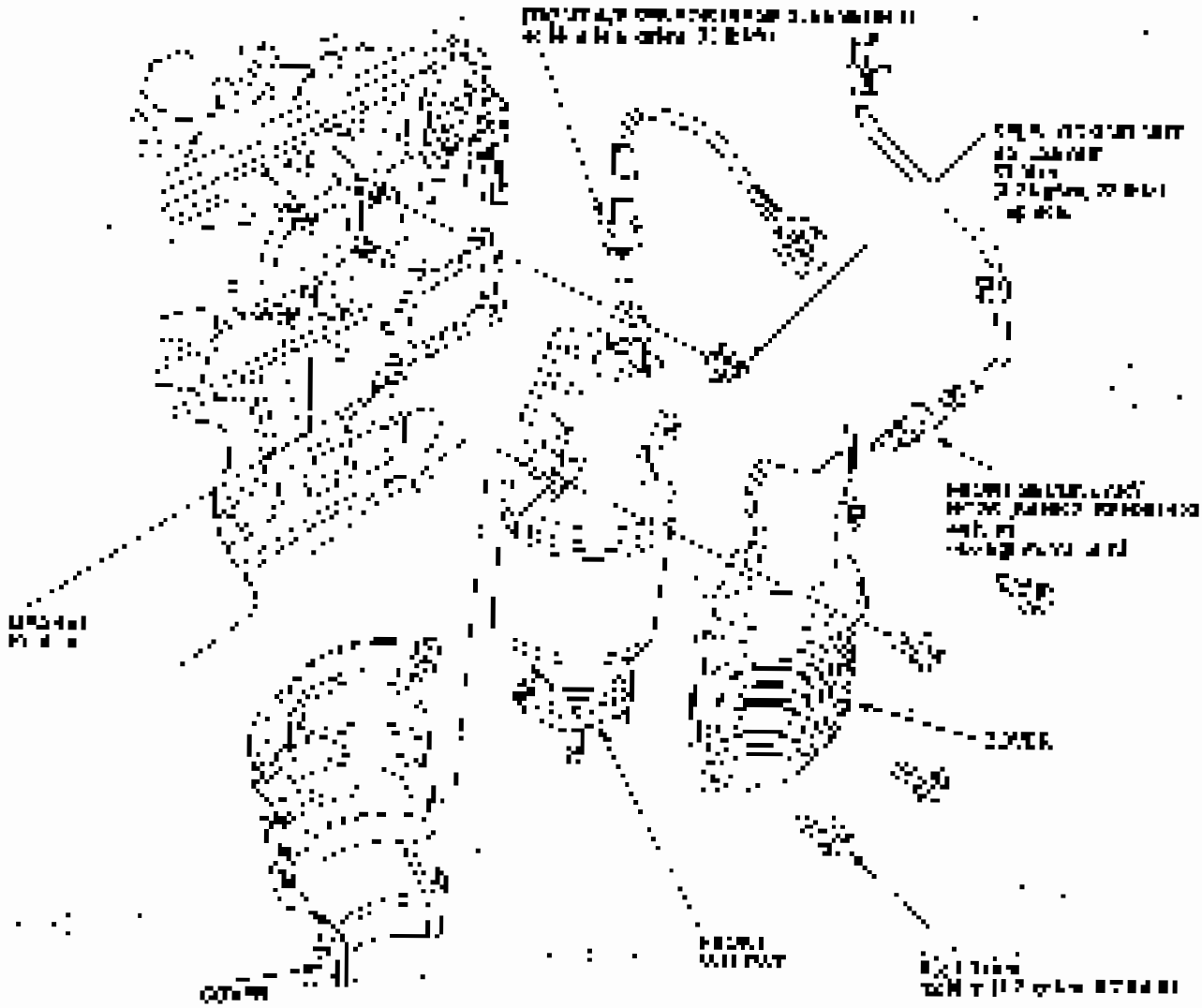
Warm Up TWC Removal/Installation

FRONT

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

5. [illegible]

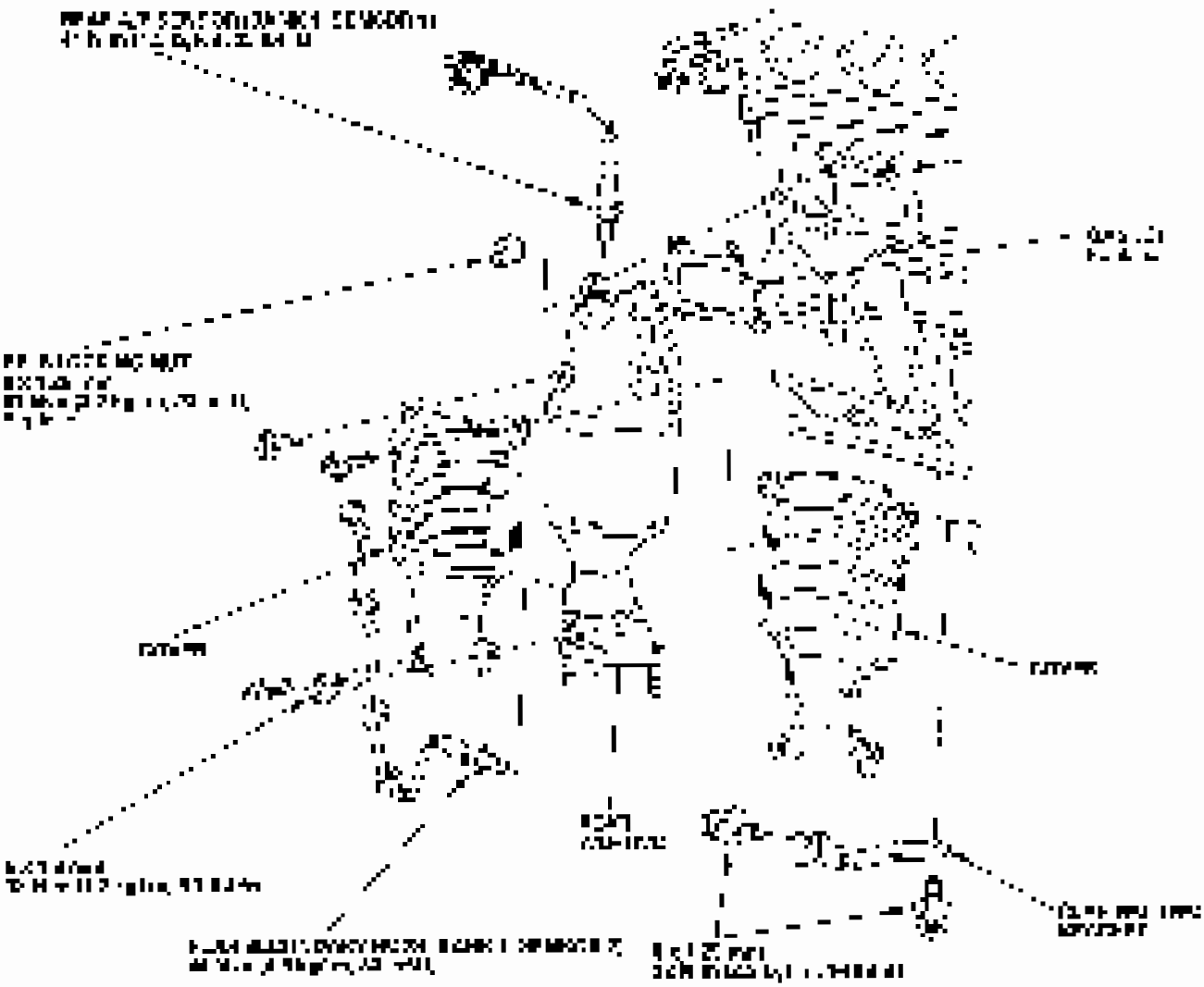
Warm Up TWC Removal/Installation (cont'd)

REAR

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

5. [illegible]

Component Location Index

DTC Troubleshooting

DTC P0401: EGR Insufficient Flow

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

   [illegible]

   [illegible]

   [illegible]

5. [illegible]

   [illegible]
   - [illegible]
   - [illegible]

6. [illegible]

   [illegible]

   [illegible]

   [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

    - [illegible]
    - [illegible]
    - [illegible]

11. [illegible]

    [illegible]

    [illegible]

12. [illegible]

    [illegible]

    [illegible]

13. [illegible]

    [illegible]

    [illegible]

14. [illegible]

    [illegible]

    [illegible]

DTC Troubleshooting (cont'd)

DTC P0401: EGR Control Circuit Range/Performance Problem

1. Turn the ignition switch to ON (II).
2. Clear the DTC using the HDS.
3. Start the engine, hold the engine speed at [illegible] load in Park, and check for DTC P0401. Is the DTC indicated?

YES - Go to step 4.

NO - Check for poor connection or other DTC. If no other DTC, go to step 5.

4. Do the DTC troubleshooting for DTC P0401. Is the repair complete?

YES - Go to step 5.

NO - Check for poor connection or other DTC. If no other DTC, go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the EGR valve 6P connector.
7. Turn the ignition switch to ON (II). Measure voltage between the EGR valve 6P connector terminal No. 1 and body ground.

EGR valve 6P connector

EGR valve 6P connector terminal side

Is there 4.5 – 5.5 V?

YES - Go to step 8.

NO - Repair open in the wire between the EGR valve 6P connector terminal No. 1 and the PCM connector terminal No. [illegible]. Go to step 8.

8. Measure resistance between the EGR valve 6P connector terminals No. 2 and No. 3.

EGR valve 6P connector

EGR valve 6P connector terminal side

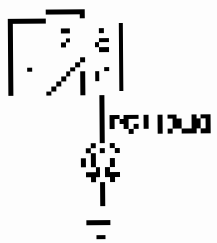
Is there 100 – 300 Ω?

YES - Go to step 9.

NO - Go to step 9.

9. Check for poor connection at the EGR valve 6P connector and PCM connector. If connections are OK, substitute a known-good PCM and recheck.

EGR valve 6P connector



EGR valve 6P connector terminal side

Is the symptom/indication gone?

YES - Go to step 10.

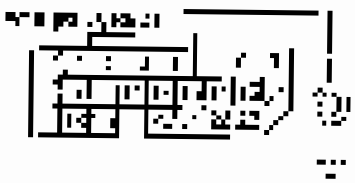
NO - Replace the PCM, then go to step 10.

A. Connector C18 terminals for HDG

1. Disconnect ECM connector

2. Measure resistance between ECM connector terminal and body ground.

Standard resistance:



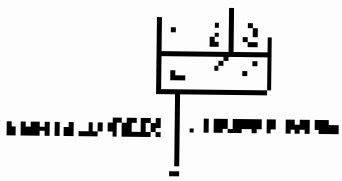
Is resistance 10 Ω or less?

YES: Replace the ECM and perform the ECM/PCM JIT and the DTC confirmation procedure.

NO: Repair or replace harness or connector.

3. Connect ECM connector. Measure resistance between terminal and body ground.

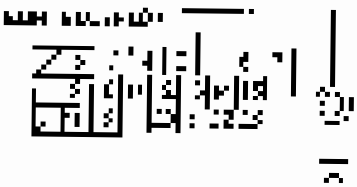
Standard resistance:



Is resistance 10 Ω or less?

4. Check for continuity between PCM/ECM connector terminal 55 and body ground.

Standard resistance:



Is resistance 10 Ω or less?

YES: Go to step 5.

NO: Repair or replace harness or connector between ECM/PCM connector terminal 55 and body ground.

5. Check the ECM (refer to page 11-283).

6. Check for intermittent problems (refer to page 11-283).

7. Replace the ECM with a known good one and recheck.

8. Check the ECM/PCM connector for loose, corroded or damaged terminals, or terminals pushed back in the connector.

DTC Troubleshooting (cont'd)

20. [illegible] CHECK.

21. [illegible] DTC [illegible] HDS.

22. Do the [illegible] MENU [illegible] see page 11-[illegible].

23. [illegible]

24. [illegible] TEST [illegible] INSPECTION [illegible] HDS.

[illegible]

YES - [illegible]

NO - [illegible]

25. [illegible] DTC.

26. [illegible] the EGR valve (see page 11-[illegible]).

27. Turn the ignition switch to LOCK (0).

28. [illegible]

29. [illegible] procedure [illegible] page 11-[illegible].

30. [illegible]

31. Do the EGR [illegible] MENU with the HDS.

32. Check for [illegible] DTC with the HDS.

[illegible] DTC [illegible]

YES - [illegible]

NO - [illegible]

33. [illegible] OBD STATUS [illegible] DTCs MENU with the HDS.

[illegible]

YES - [illegible]

NO - [illegible] OUT OF CONDITION [illegible]

34. [illegible] DTC [illegible]

35. [illegible] INSPECTION [illegible]

36. Check for Temporary DTC [illegible] HDS.

[illegible]

YES - [illegible] DTC [illegible] DTC [illegible]

NO - [illegible]

DTC P0406: EGR Valve Position Sensor Circuit High Voltage

1. Reset the ECM/PCM with the HDS.

2. Check the EGR VALVE in the DATA LIST with the HDS.

   Is 4.90 V or more indicated?

   YES – Go to step 3.

   NO – Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. ■

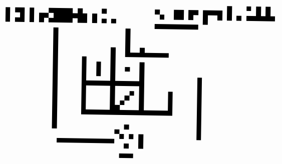
3. Turn the ignition switch OFF.

4. Disconnect the EGR valve 6P connector.

5. Turn the ignition switch ON (II).

6. Measure voltage between EGR valve 6P connector terminals No. 2 and No. 4.

EGR VALVE 6P CONNECTOR



Wire side of female terminals

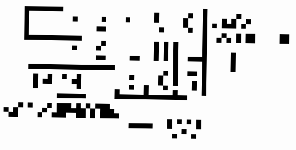
   Is there about 5 V?

   YES – Go to step 8.

   NO – Go to step 7.

7. Measure voltage between ECM/PCM connector terminals [illegible]

ECM/PCM CONNECTOR [illegible]



Wire side of female terminals

   Is there about 5 V?

   YES – Repair open in the wire between the EGR valve and the ECM/PCM [illegible], then go to step 10.

   NO – Go to step 14.

8. Turn the ignition switch OFF.

9. Replace the EGR valve (see page 11-278).

10. Turn the ignition switch ON (II).

11. Reset the ECM/PCM with the HDS.

12. Do the ECM/PCM [illegible] (see page 11-288).

13. Check for Temporary DTCs or DTCs with the HDS.

    Are any Temporary DTCs or DTCs indicated?

    YES – If DTC P0406 is indicated, check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

    NO – Troubleshooting is complete. ■

14. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see page 11-8).

15. Check for Temporary DTCs or DTCs with the HDS.

    Are any Temporary DTCs or DTCs indicated?

    YES – If DTC P0406 is indicated, check for poor connections or loose terminals at the EGR valve and the ECM/PCM, then go to step 1. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

    NO – If the ECM/PCM was [illegible] troubleshooting [illegible] If the ECM/PCM was substituted, [illegible] original ECM/PCM (see page 11-7). ■

DTC Troubleshooting (cont'd)

DTC P2413: EGR System Malfunction

1. Turn the ignition switch ON-II.
2. Clear the DTC with the HDS.
3. Start the engine, then let it idle for more than 2 minutes. Is DTC P2413 indicated? Use the HDS to check for pending DTCs.

YES: Go to step 4.

NO: Intermittent failure

4. Turn the ignition switch OFF.
5. Turn the ignition switch ON-II.
6. Check the EGR valve for DTC P2413 with the HDS.

Is the EGR valve OK?

YES: Go to step 7.

NO: Replace the EGR valve (page 11-284).

7. Disconnect the EGR valve 6P connector.
8. Turn the ignition switch OFF.
9. Disconnect the PGM-FI sub-harness 33P connector.
10. Check for continuity between the EGR valve harness side connector terminal and body ground.

EGR valve harness side connector

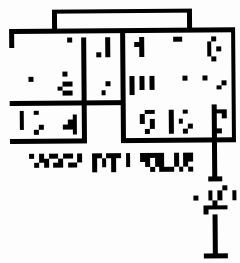
Is there continuity?

YES: Go to step 11.

NO: Open in wire

11. Check for continuity between the PGM-FI sub-harness 33P connector terminal and body ground.

PGM-FI sub-harness 33P connector



Is there continuity?

YES: Replace the PGM-FI unit with a new one, then go to step 12.

NO: Open in wire

12. Clear the DTC with the HDS.
13. Start the engine, then let it idle for more than 2 minutes. Is DTC P2413 indicated?

YES: Intermittent failure

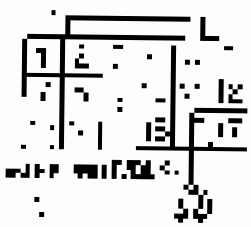
NO: Go to step 14.

12. [illegible]

a. [illegible]

b. [illegible]

13. [illegible]



[illegible]

[illegible]

YES—[illegible]

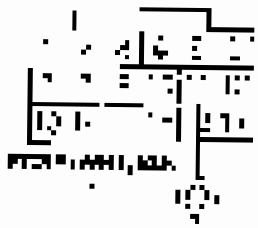
NO—[illegible]

7. [illegible]

[illegible]

[illegible]

8. [illegible]



[illegible]

[illegible]

YES—[illegible]

NO—[illegible]

14. [illegible]

15. [illegible]

21. [illegible]

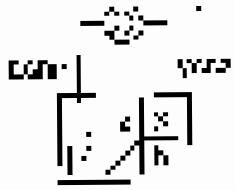
[illegible]

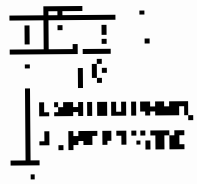
[illegible]

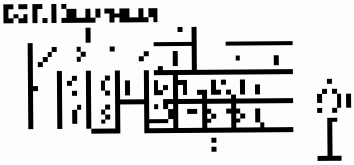
[illegible]

NO—[illegible]

DTC Troubleshooting (cont'd)



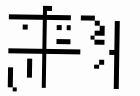




30. [illegible]

31. [illegible]

[illegible]



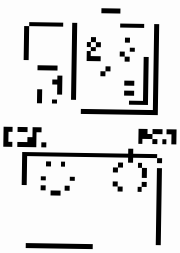
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]



[illegible]

32. [illegible]

[illegible]

[illegible]

[illegible]

33. [illegible]

[illegible]

[illegible]

34. [illegible]

35. [illegible]

36. [illegible]

[illegible]

37. [illegible]

[illegible]

[illegible]

[illegible]

DTC Troubleshooting (cont'd)

47. Turn the ignition switch OFF.

48. Replace the EGR valve (page 11-292).

49. Turn the ignition switch ON (II).

50. Erase the stored DTC with the HDS.

51. Start the engine and let it idle for 30 seconds.

52. Do the EGR TEST in the INSPECTION Mode with the HDS.

53. Check for temporary DTC(s) with the HDS.

    Are any temporary DTC(s) stored?

    YES: Replace the PGM-FI sub-harness (page 11-290). Check for poor connections or loose terminals at the ECM/PCM. If the connections are OK, replace the ECM/PCM (page 11-290). Then do the EGR TEST in the INSPECT Mode with the HDS.

    NO: Go to step 54.

54. Is DTC 32-13 (P0403) or DTC 32-14 (P0404) in the temporary DTC(s)?

    Is DTC 32-13 (P0403) stored?

    YES: Troubleshoot DTC 32-13 (P0403).

    NO: Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM (page 11-290). Then do the EGR TEST in the INSPECT Mode with the HDS.

55. Clear the DTC(s) with the HDS, start the engine, and let it idle for 30 seconds.

56. Do the EGR TEST in the INSPECTION Mode with the HDS.

57. Check for temporary DTC(s) or DTC(s) in the field.

    Are any temporary DTC(s) or DTC(s) in the field?

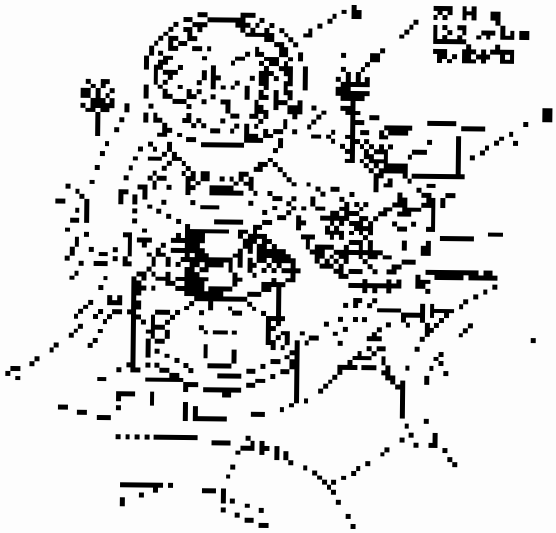
    YES: If DTC 32-13 (P0403) is stored, check for poor connections or loose terminals at the ECM/PCM. If the connections are OK, replace the ECM/PCM (page 11-290). Then do the EGR TEST in the INSPECT Mode with the HDS. If DTC(s) are stored, troubleshoot the stored DTC(s).

    If DTC 32-13 (P0403) is not stored, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM (page 11-290). Then do the EGR TEST in the INSPECT Mode with the HDS.

EGR Valve Replacement

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

5. [illegible]

DTC Troubleshooting

DTC P2279 Intake Air System Leak

NOTE: If DTC [illegible] is stored in memory along with DTC P2279, first troubleshoot DTC [illegible].

1. Check for vacuum leaks at these areas:
   - PCV valve
   - PCV hose
   - Engine oil dipstick
   - Throttle body
   - Intake manifold
   - Related vacuum hoses

   Are they properly OK?

   YES - Go to step 2.

   NO - Repair or replace the leaking part, then go to step 4.

2. Disconnect the [illegible] engine connector. Inspect for water in the connector, corrosion, poor contact, bent or broken terminals, etc.

   Is the connector in good condition?

   YES - Substitute a known-good [illegible] and recheck. If the symptom/indication goes away, replace the original [illegible]. If not, go to step 3.

   NO - Repair or replace as necessary, then go to step 4.

3. Check for Temporary PCM Substitution.

   Is the Temporary PCM Substitution OK?

   YES - [illegible] Replace the PCM with a known-good one, and recheck. If the symptom/indication goes away, replace the original PCM. If the symptom/indication does not go away, [illegible] the problem.

   NO - Go to step 4.

4. Check for any other DTCs.

   Are DTC [illegible] indicated?

   YES - Troubleshoot those DTCs first.

   NO - Clear the DTC, then test-drive the vehicle and recheck. If DTC [illegible] returns, replace the [illegible].

PCV Valve Inspection and Test

1. [illegible]

2. [illegible]

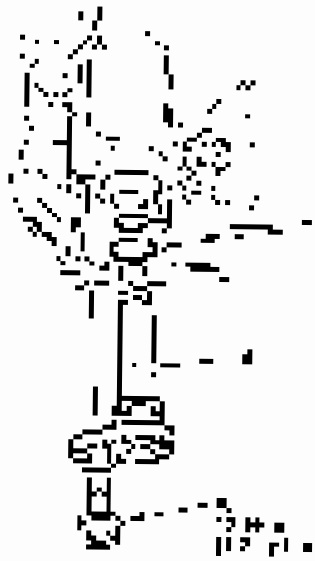
3. [illegible]

PCV Valve Replacement

1. [illegible]

2. Remove the hose.

   ▲PCV Valve cannot be removed from the hose.

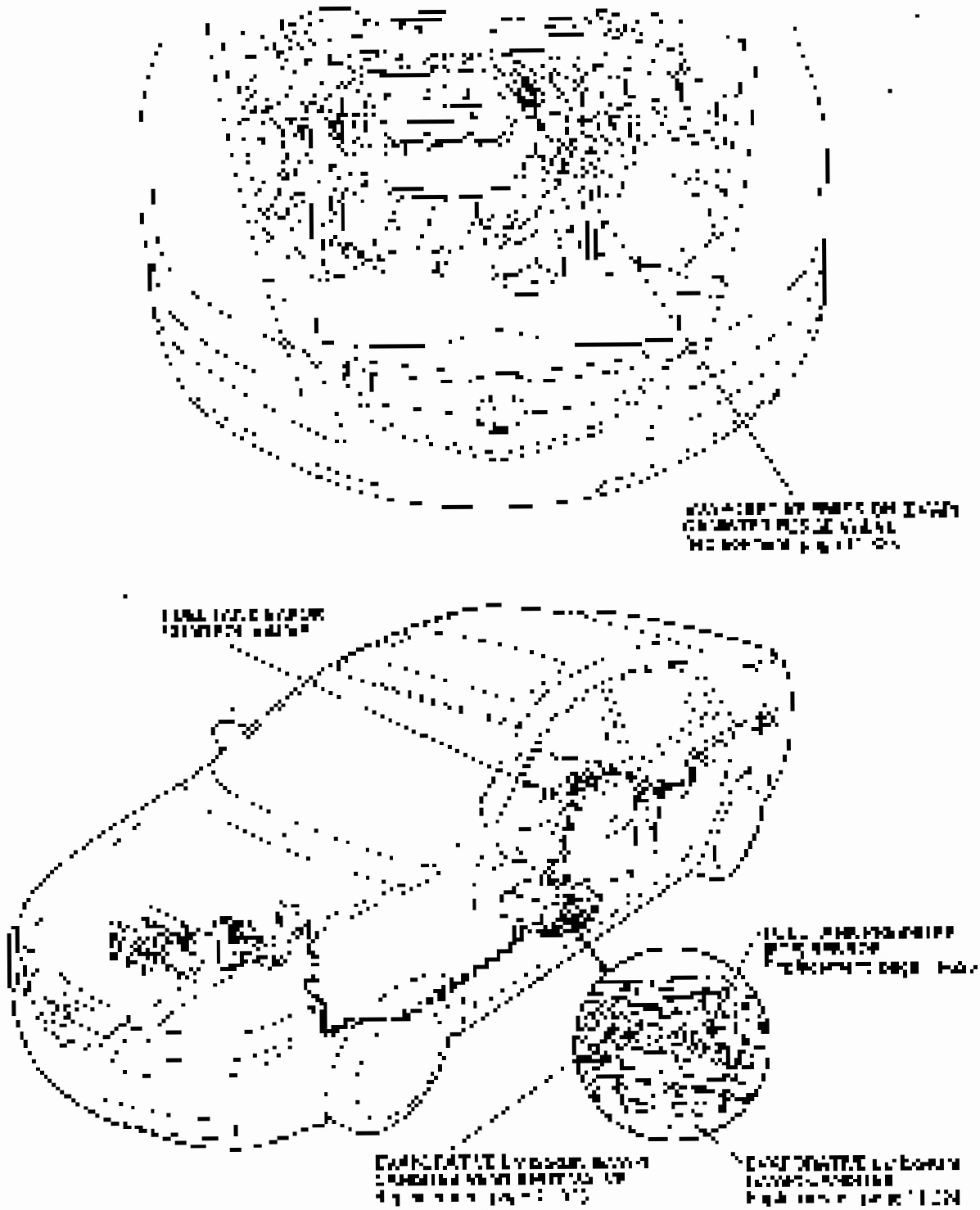


3. [illegible]

4. Install in the reverse order of removal.

   NOTE:
   - When installing the PCV valve, make sure the O-ring is in place.
   - After installing, check for vacuum leaks. O-ring (2)

Component Location Index



DTC Troubleshooting

DTC P0412: EVAP System Switching Valve Circuit

DTC P0456: EVAP Control System Very Small Leak (0.020 inch)

NOTICE:

- The following procedure is designed to verify the integrity of the EVAP system and its components. Before performing this procedure, read the entire procedure to understand what is required. Do not perform this procedure if any condition is present that could cause it to be performed incorrectly. Such conditions include, but are not limited to, a fuel level that is too low or too high, or recent refueling with a fuel that is suspected of being contaminated. Failure to follow these guidelines may result in an inaccurate test.

Special Tools Required:
Vacuum pump/pressure tester (J 41413) and EVAP service port adapter (J 41413-200)

NOTE: If not familiar with this procedure, it is recommended that you review the Description and Operation section for the EVAP system before proceeding with this procedure. Knowledge of how the system operates will help you to correctly diagnose the system.

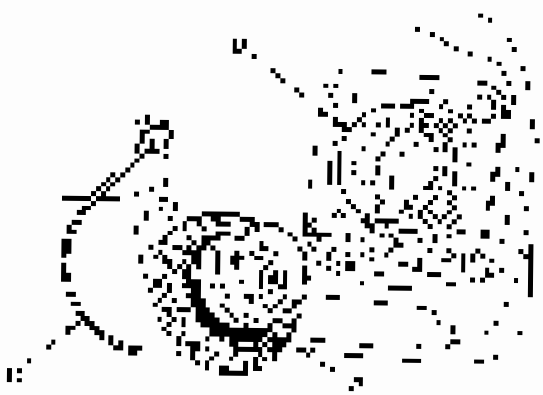
1. Check the fuel level and the type of fuel in the vehicle. Refer to Fuel Recommendations in Maintenance and Lubrication.

   Was the correct fuel type and a proper amount of fuel in the vehicle?

   YES—Go to step 2.

   NO—Drain and refill the fuel tank with the correct fuel. Go to step 2.

2. Check for fuel in the vapor hose and the hose to the purge valve. Refer to Fuel System Diagnosis in Engine Controls.



3. Check the EVAP system for a small leak.

4. Clear the DTC with a scan tool.

5. Drive the vehicle until the TEST drive cycle has been completed.

   Is the check engine light on?

   YES—Go to step 6.

   NO—Intermittent failure, system is currently OK. Check for poor connections or loose harness connectors. Review the EVAP service procedures in this section. Refer to "Intermittent Conditions" in Engine Controls.

   NO—Go to step 7.

6. Turn the ignition to OFF.

7. Turn the ignition to ON (KOEO).

8. Is the check engine light on?

   YES—Go to step 9.

   NO
   - Perform the first step of the symptom table.
   - Go to step 22.

DTC Troubleshooting (cont'd)

19. [illegible]

17. [illegible]

[illegible]

[illegible]

NO: [illegible]

11. [illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]

NO: [illegible]

12. [illegible]

- [illegible]
- [illegible]

[illegible]

[illegible]

NO: [illegible]

21. [illegible]

22. [illegible]

24. [illegible]

24. [illegible]

22. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

DTC Troubleshooting (cont'd)

DTC P0443: Evaporative Control Purge Valve Circuit Malfunction

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

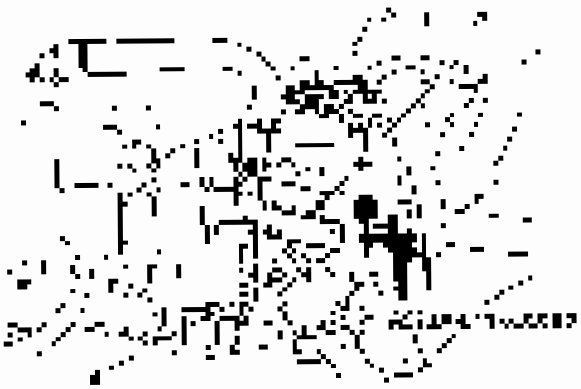
4. [illegible]

   YES - [illegible]

   NO - [illegible]

5. [illegible]

6. [illegible]



7. [illegible]

   8. [illegible]

   YES - [illegible]

   NO - [illegible]

9. [illegible]

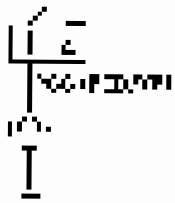
10. [illegible]

[illegible]

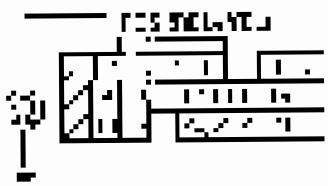
[illegible]

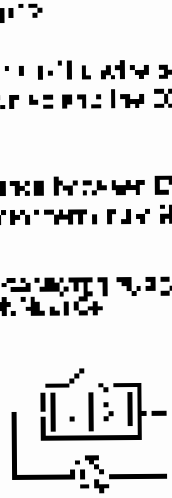
YES - [illegible]

NO - [illegible]



DTC Troubleshooting (cont'd)





DTC P1451: FT- Sensor Range/Performance Problem

[illegible]

1. [illegible]

2. Clear the DTC and Test the HCA.

3. Start the engine and let it idle until it warms up.

4. [illegible]

   Press the [illegible] button.

   YES - Go to step 5.

   NO - If the screen returns to the [illegible] menu, the system is OK at this time. Check for poor connections or loose terminals at the HCA and ECM/PCM. If the connections are OK, replace the HCA. Go to step 5.

5. [illegible]

6. Test drive the vehicle [illegible]

7. [illegible]

8. Reset the ECM/PCM [illegible]

9. Do the ECM/PCM Idle Learn procedure [illegible]

10. Start the engine and let it idle for 3 minutes.

11. Check for DTC P1451 and [illegible]

    Is the DTC P1451 [illegible]?

    YES - If DTC P1451 is [illegible], the HCA may be faulty. Check for poor connections or loose terminals at the HCA and the ECM/PCM. If the connections are OK, replace the HCA. Go to step 5. Refer to the DTC P1451 Troubleshooting.

    NO - [illegible]

12. Perform the [illegible] DTC P1451 [illegible]

    Was the [illegible] P1451?

    YES - [illegible]

    NO - If the DTC P1451 is [illegible], the HCA may be faulty. Check for poor connections or loose terminals at the HCA and the ECM/PCM. If the connections are OK, replace the HCA. Go to step 5.

DTC Troubleshooting (cont'd)

DTC P0452: EVAP Sensor Circuit Low Voltage

1. [illegible]
2. [illegible]
3. Turn the ignition switch OFF.
4. [illegible]
5. [illegible]
6. Start the engine and let it idle.

   [illegible]

   YES: Go to step 7.

   NO: [illegible]

7. [illegible]
8. [illegible]
9. Monitor the HDS DTC STATUS for DTC P0452 [illegible] DTC is NOT listed with the HDS:

   Does [illegible]

   YES: Go to step 10.

   NO: [illegible]

10. Turn the ignition switch OFF.
11. [illegible]
12. Turn the ignition switch ON (II).
13. Check the EVAP [illegible] connector (A18) [illegible] HDS:

    [illegible]

    NO: Go to step 20.

    YES: Go to step 14.

14. Measure voltage between [illegible] and body ground.

    [illegible]

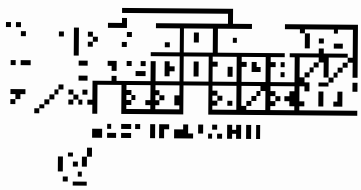
    [illegible]

    Is the [illegible]

    YES: Go to step 15.

    NO: Go to step 17.

14. [illegible]



15. [illegible]

YES: [illegible]

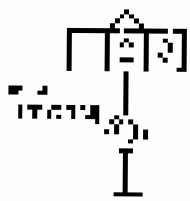
NO: [illegible]

16. [illegible]

17. [illegible]

18. [illegible]

19. [illegible]



20. [illegible]

YES: [illegible]

NO: [illegible]

21. [illegible]

22. [illegible]

23. [illegible]

24. [illegible]

25. [illegible]

26. [illegible]

27. [illegible]

28. [illegible]

YES: [illegible]

NO: [illegible]

DTC Troubleshooting (cont'd)

25. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see page 11-4).

26. Check for Temporary DTCs or DTCs with the HDS.

    Are any Temporary DTCs or DTCs indicated?

    YES–If DTC P0452 is indicated, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-7).■

DTC P0453: TP Sensor 2 Circuit High Voltage

1. [illegible]
2. [illegible]
3. Turn the ignition switch OFF.
4. Disconnect the [illegible]
5. Turn the ignition switch ON.
6. [illegible] TP SENSOR 2 [illegible] DATA LIST and select [illegible]

   [illegible] TP Sensor 2 [illegible] 0.5 volts?

   YES - Go to step 10.

   NO - Go to step 7.

7. [illegible]
8. [illegible]
9. Monitor the [illegible] DTC P0453 [illegible] DTC P0453 [illegible]

   Does the [illegible]

   YES - Go to step 10.

   NO - [illegible]

10. Turn the ignition switch OFF.
11. Reconnect the TP sensor [illegible]
12. Turn the ignition switch ON.
13. Measure voltage between TP sensor [illegible] terminal No. 2 and [illegible]

    [illegible]

    [illegible]

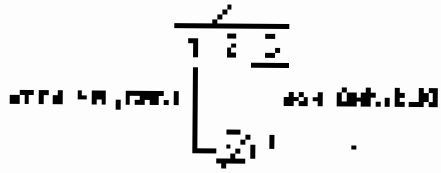
    Is the voltage [illegible]

    YES - Go to step 14.

    NO - Go to step 15.

14. Measure voltage between [illegible] terminal No. 1 and No. 3.

    [illegible]

    [illegible]

    Is the voltage [illegible]

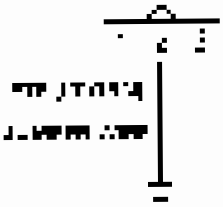
    YES - Go to step 16.

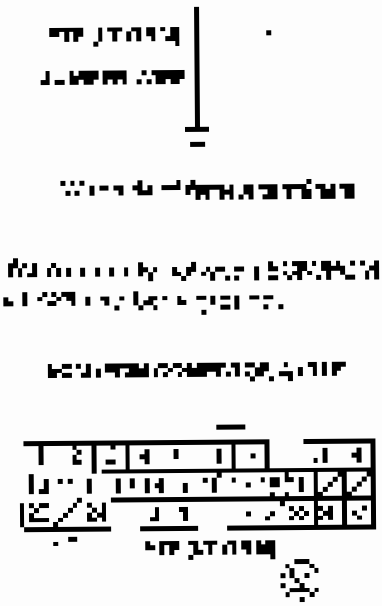
    NO - [illegible] Replace the [illegible] TP sensor. Refer to [illegible]

15. Turn the ignition switch OFF.
16. [illegible]
17. Disconnect the [illegible]

[illegible]

DTC Troubleshooting (cont'd)





DTC P1457: EVAP System Leak Detected Fuel Fill Cap Loose or Missing

Check whether the fuel fill cap is properly tightened. Is the check result normal?

YES: Go to step 2.

NO: Properly tighten the fuel fill cap, then go to step 8.

2. Check the fuel fill cap gasket for damage. Is the fuel fill cap gasket damaged?

YES: Replace the fuel fill cap with a new one, then go to step 8.

NO: Go to step 3.

3. [illegible]

4. [illegible]

5. Do the DTC P1457 [illegible] set?

YES: Go to step 6.

NO: Go to step 8.

6. [illegible]

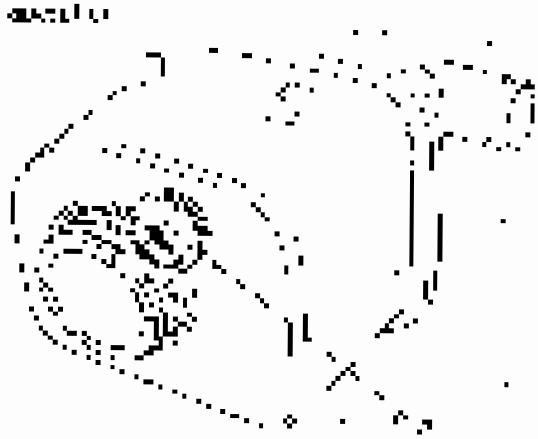
7. [illegible]

8. Connect the [illegible]

9. Turn the ignition switch [illegible]

10. [illegible]

11. [illegible]



Was the valve closed?

YES: Check the mounting of the EVAP purge control valve. If OK, go to step 12.

NO: Go to step 13.

DTC Troubleshooting (cont'd)

2. Turn the ignition switch to [illegible]

3. Reset the [illegible] to the [illegible] position.

4. Start the engine and [illegible]

5. Select the CONTROL mode. DG.

6. Set the DCV-CONTROL to [illegible] position.
Data type: [illegible]

7. Set the [illegible] to the [illegible] position.
Value: [illegible]

Is the [illegible] 0.2V?

YES: Troubleshooting is complete.

NO: Check for poor connection or loose terminal at the [illegible] sensor. If the connection is [illegible] replace the [illegible] sensor. If the [illegible] is [illegible]

8. [illegible]

9. [illegible]

10. Select the DCV-CONTROL mode. DG.

11. Set the CONTROL [illegible]
see page [illegible]

12. Select the [illegible] TEST mode. Is the [illegible] 0.2V?

YES: Troubleshooting is complete.

NO: Check for poor connection or loose terminal at the [illegible] sensor. If the connection is [illegible] replace the CONTROL [illegible]

DTC P0496: EVAP System High Purge Flow

1. [illegible]
2. [illegible]
3. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

DTC Troubleshooting (cont'd)

DTC P0456 (EVAP Control System Small Leak)

Special Tools Required

- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

YES - [illegible]

NO - [illegible]

2. [illegible]
3. Clear the DTC from the [illegible].
4. Start the [illegible] Test [illegible], [illegible] VEHICLE [illegible].

[illegible]

[illegible]

NO - Go to step 5.

5. Check for [illegible] between the [illegible] and the EVAP canister purge valve.

[illegible]

YES - Go to step 6.

NO - Repair the [illegible] (see page 11-[illegible]).

6. Disconnect the vacuum hose from the EVAP canister purge valve and plug it. Disconnect the [illegible] connector from the EVAP canister purge valve. Connect a vacuum pump to the EVAP canister purge valve.

7. [illegible]
8. Clear the DTC from the [illegible].
9. Start the [illegible] Test [illegible], [illegible] VEHICLE [illegible].

[illegible]

[illegible]

NO - Go to step 5.

10. Reconnect the vacuum hose to the EVAP canister purge valve port.
11. Disconnect the [illegible] connector from the [illegible]. Connect a [illegible] between the [illegible] terminal and [illegible].

17. [illegible]

    YES - [illegible]

    NO - [illegible]

18. [illegible]

19. [illegible]

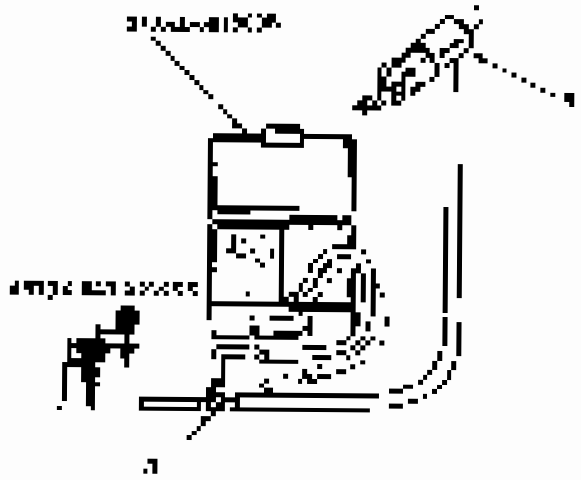
20. [illegible]

    YES - [illegible]

    NO - [illegible]

21. [illegible]

22. [illegible]



23. [illegible]

24. [illegible]

25. [illegible]

26. [illegible]

    YES - [illegible]

    NO - [illegible]

DTC Troubleshooting (cont'd)

DTC P0458: EVAP Control System Purge Control Valve Circuit Low Voltage

1. [illegible]

2. [illegible]

3. Check for [illegible] DTC P0458 [illegible]

   Is DTC P0458 [illegible]?

   YES - Go to step 4.

   NO - Go to step 5.

4. [illegible] DTC P0458 [illegible]

   Is DTC P0458 [illegible]?

   YES - Go to step 5.

   NO - [illegible]

5. Check for [illegible] DTC P0458 [illegible]

   Is DTC P0458 [illegible]?

   YES - Go to step 6.

   NO - [illegible]

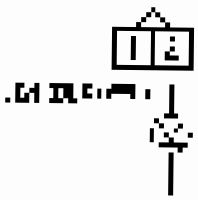
6. Turn the ignition switch OFF.

7. Disconnect the EVAP [illegible] connector.

8. [illegible]

- Measure voltage between EVAP [illegible] and [illegible]

EVAP CANISTER PURGE VALVE SOLENOID



[illegible]

Is there [illegible]?

YES - Go to step 9.

NO - Replace the [illegible]. [illegible] Refer to [illegible] Control Module and Programming. Then go to step 9.

9. Turn the ignition switch OFF.

10. Measure resistance between EVAP [illegible] and [illegible]

EVAP CANISTER PURGE VALVE SOLENOID

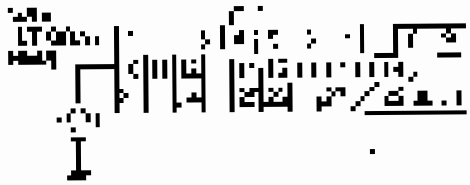
[illegible]

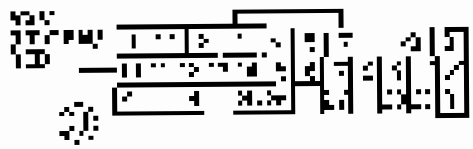
Is the [illegible]?

YES - Go to step 11.

NO - Go to step 12.

DTC Troubleshooting (cont'd)





DTC Troubleshooting (cont'd)

DTC P0443: EVAP Canister Purge Control Valve Control Circuit High Voltage

1. [illegible]
2. [illegible]
3. Disconnect A/T [illegible] and the [illegible] connector. Turn the ignition switch ON (II).
4. Check for [illegible] between the [illegible] and body ground.

   Is there [illegible]?

   YES – [illegible]

   NO – [illegible]

DTC P1458: [illegible] Sensor Range/Performance Problem

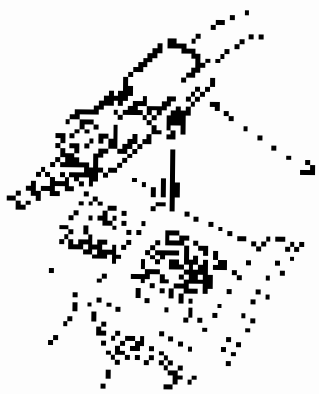
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

7. [illegible]



8. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

13. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

DTC Troubleshooting (cont'd)

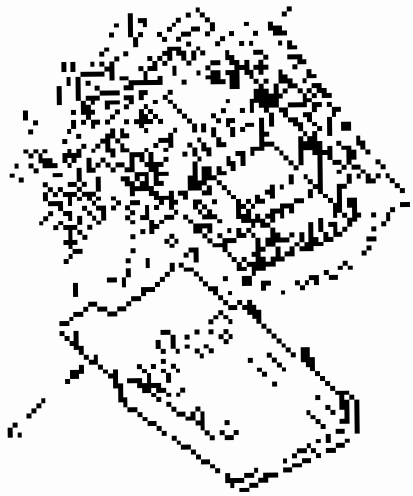
DTC P2422: EVAP Control System Switching Valve Stuck Closed Malfunction

1. Turn the ignition switch OFF.
2. Connect the PGM Tester.
3. [illegible]
4. [illegible]
   Perform the EVAP System Test.
   Does the system pass the test?
   YES: [illegible]
   NO: [illegible]
5. Clear the DTC with the PGM Tester.
6. Start the engine and let it idle.
7. Perform the Evaporative Emission Control System Test in the Troubleshooting section.
8. [illegible]
9. Turn the ignition switch OFF.
10. Disconnect the EVAP control valve connector. Is there corrosion in the connector?

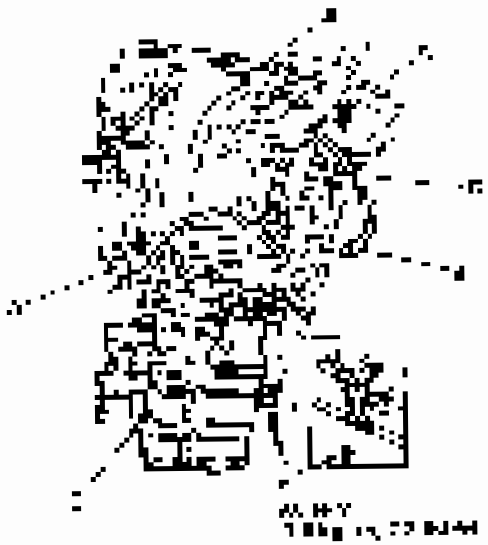
   YES: Clean the connector. Go to the EVAP system leak test in the applicable model and year group.
   NO: Go to step 12.
12. Turn the ignition switch ON (II).
13. Clear the DTCs with the PGM Tester.
14. Turn the ignition switch OFF.
15. Reconnect the EVAP control valve connector.
16. Turn the ignition switch ON (II).
17. Start the engine. Is [illegible]

EVAP Canister Replacement

1. [illegible]

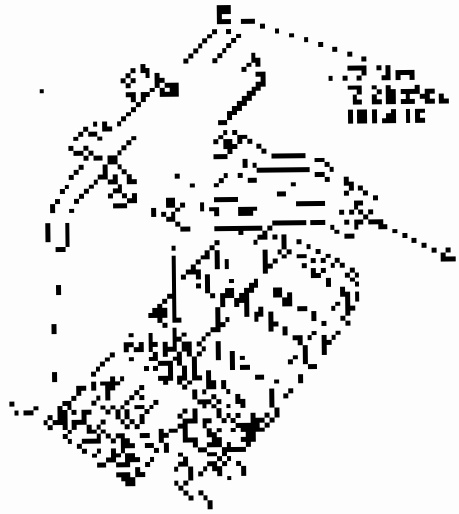


2. [illegible]



3. [illegible]

4. [illegible]

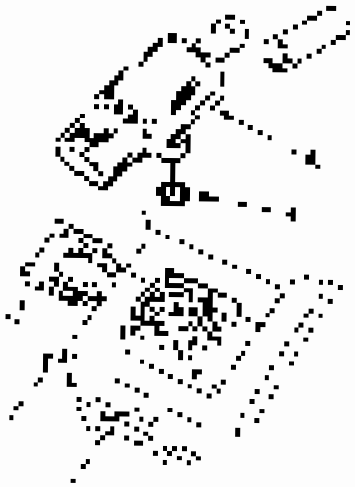


5. [illegible]

FTP Sensor Replacement

1. Remove [illegible]

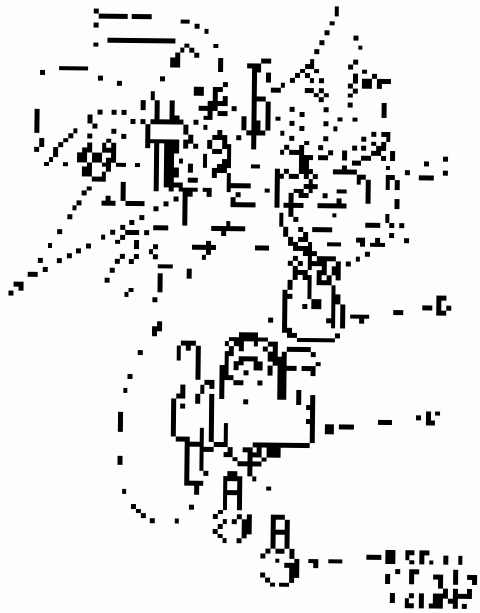
2. Remove [illegible]



3. Install [illegible]

EVAP Canister Purge Valve Replacement

1. Disconnect [illegible]



2. Remove [illegible]

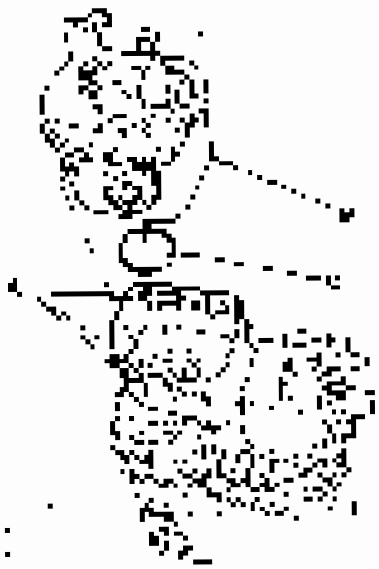
3. Install [illegible]

EVAP Canister Vent Shut Valve Replacement

1. [illegible]

2. [illegible]

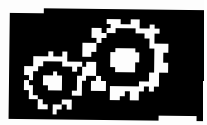
NOTE: [illegible]

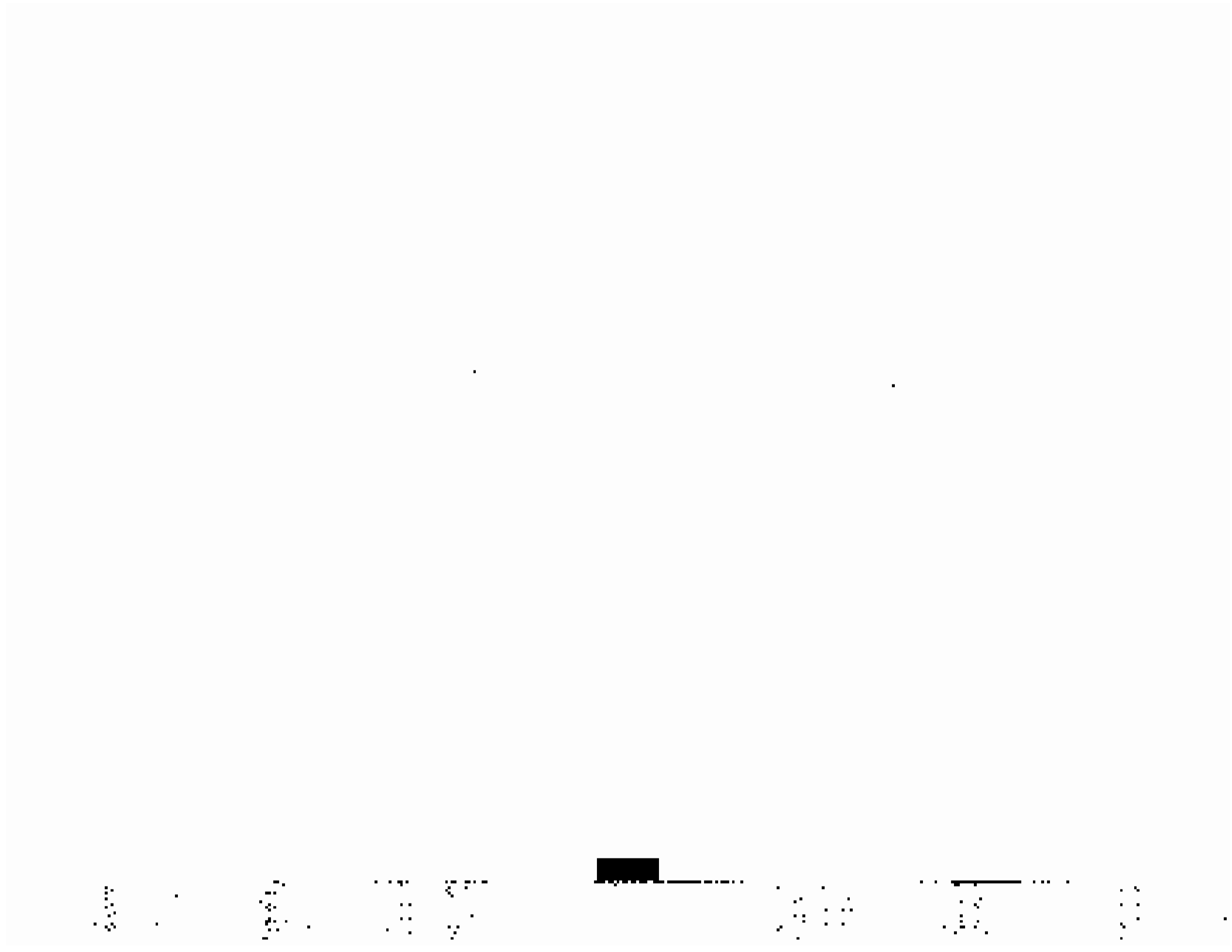


3. [illegible]

NOTE: [illegible]

Transaxle



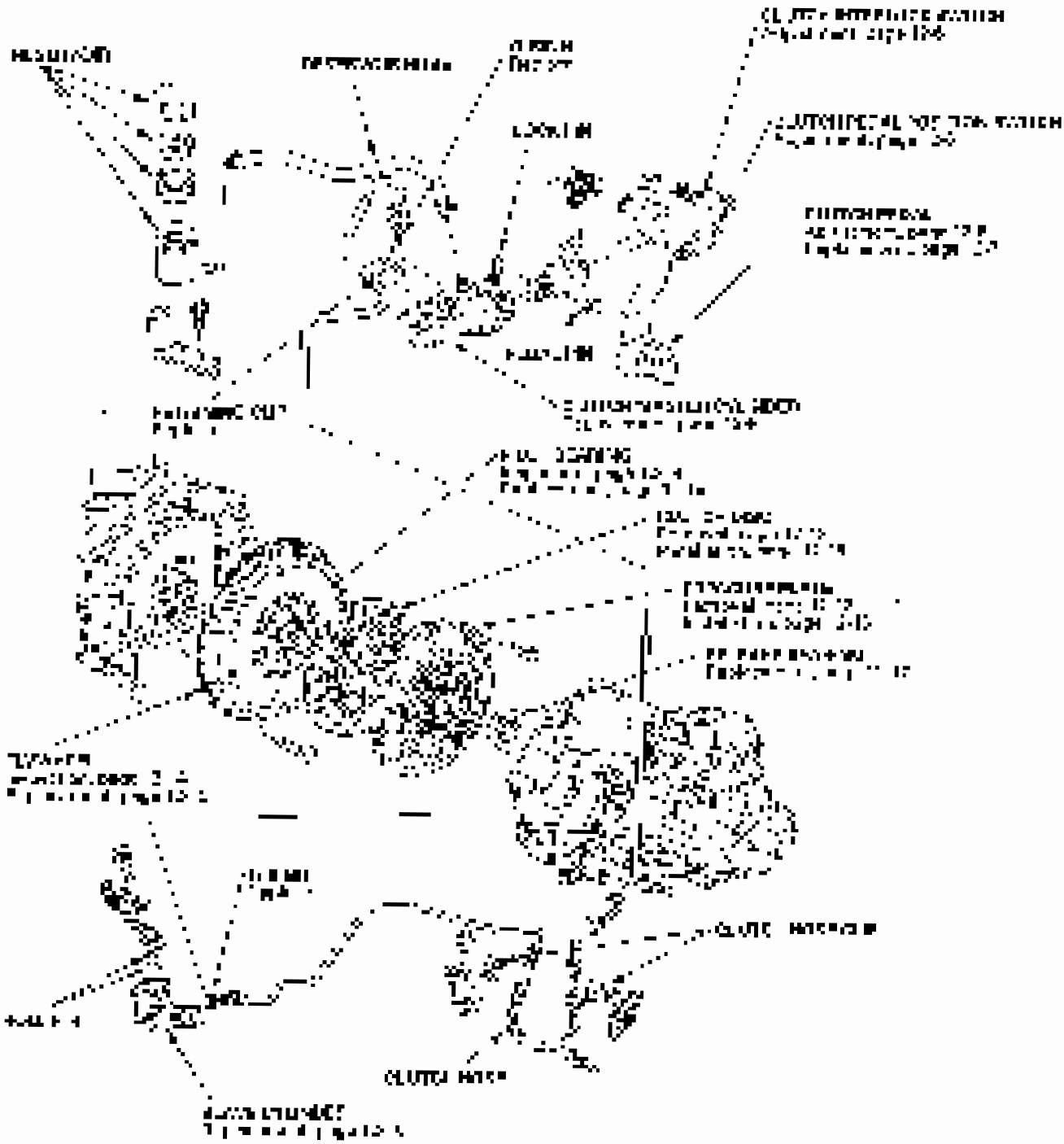


Clutch

Special Tools

Ref. No	Tool Number	Description	Qty
[illegible]	[illegible]	[illegible]	[illegible]

Component Location Index

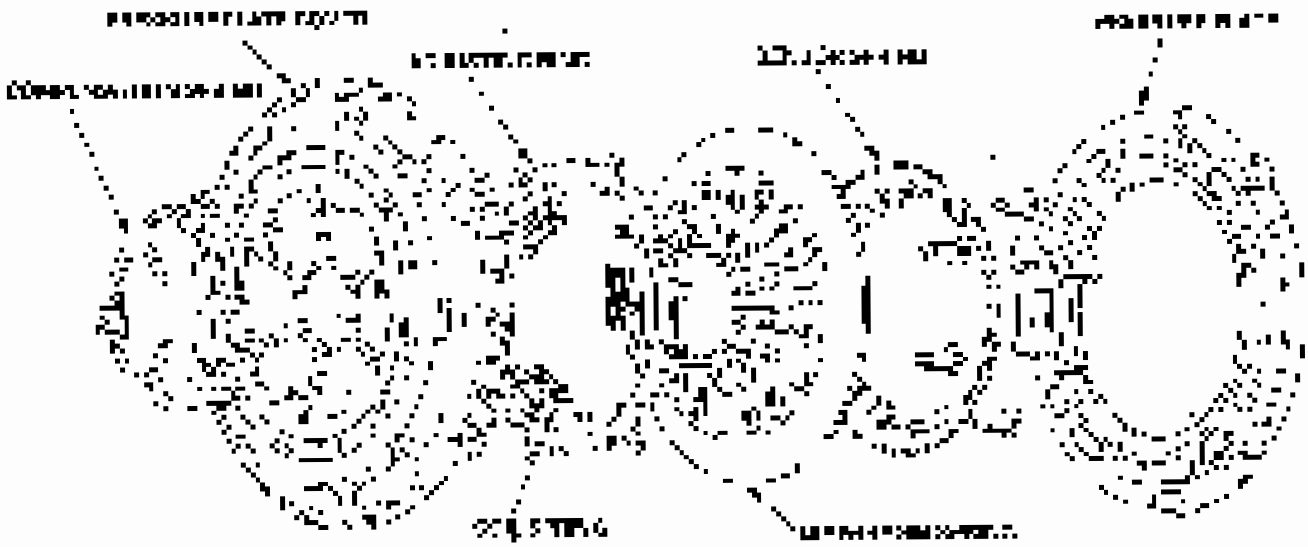


System Description

Self-Adjusting Clutch (SAC)

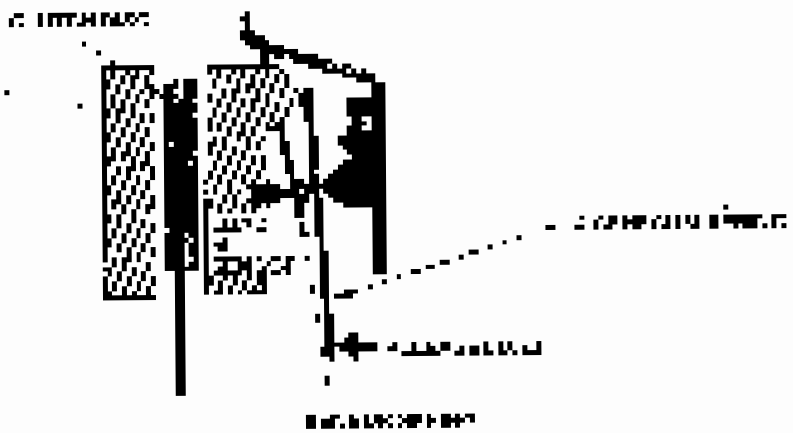
Function

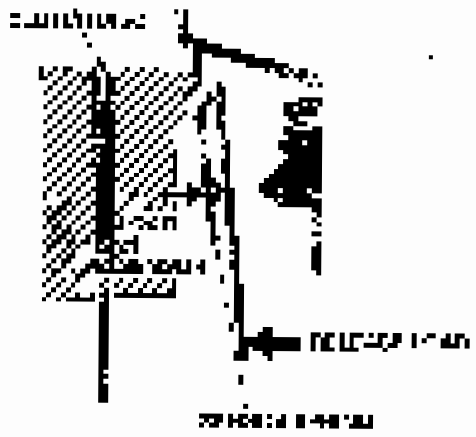
Construction

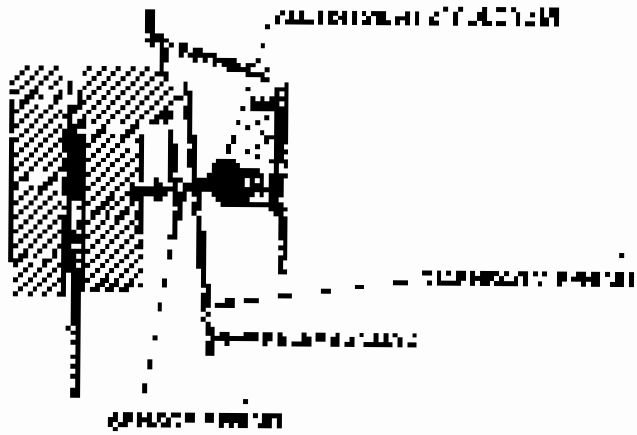


Operation

1. At normal clutch engagement







Clutch Pedal, Clutch Pedal Position Switch, and Clutch Interlock Switch Adjustment

Clutch Pedal Stroke	133 - 148 mm (5.23 - 5.83 in.)
Clutch Pedal Free Play	10 - 15 mm (0.39 - 0.59 in.)
Clutch Pedal Height	161 mm (6.34 in.)
Clutch Pedal Disengagement Height	84 mm (3.31 in.)

Clutch Pedal Replacement

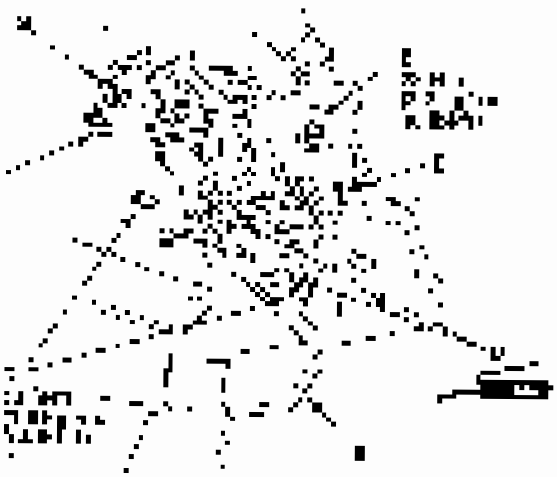
1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]



6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

Clutch Master Cylinder Replacement

1. Remove the [illegible]

2. [illegible]

3. [illegible]

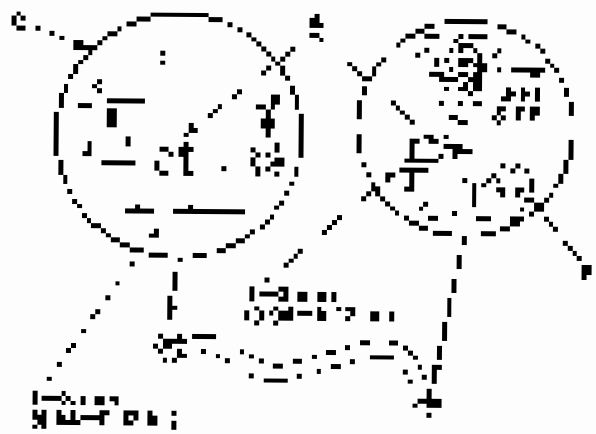
4. [illegible]

5. Remove the [illegible]

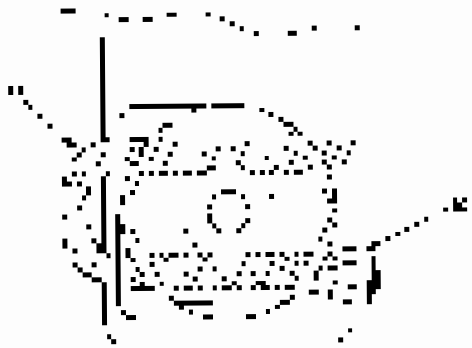
6. Remove the [illegible]

7. [illegible]

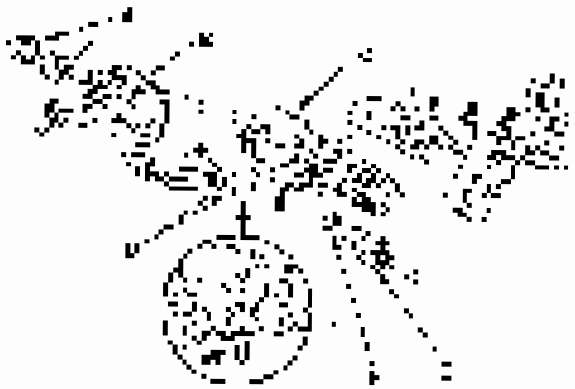
8. [illegible]

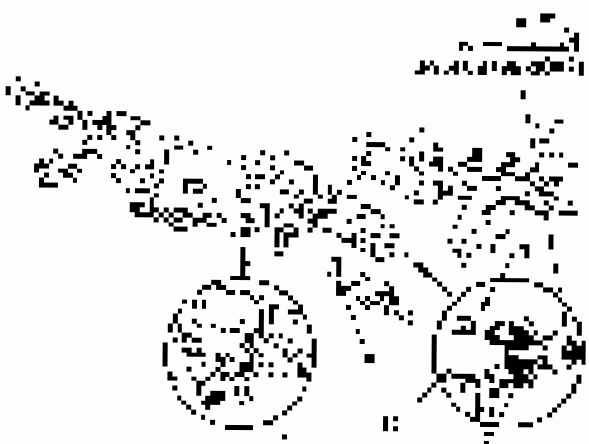


Clutch Master Cylinder Replacement (cont'd)



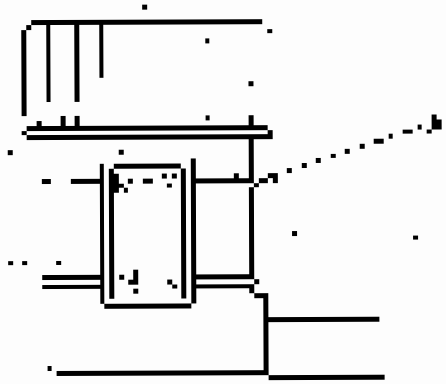
Slave Cylinder Replacement





Slave Cylinder Replacement (cont'd)

11. [illegible]



12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

16. [illegible]

17. [illegible]

Clutch Replacement

Special Tools Required
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

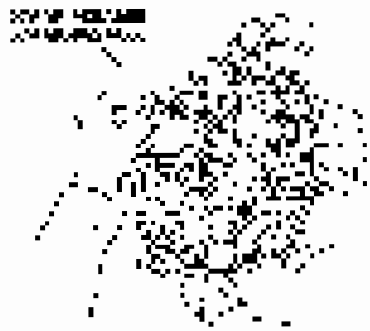
NOTICE

[illegible]

Pressure Plate and Clutch Disc Removal

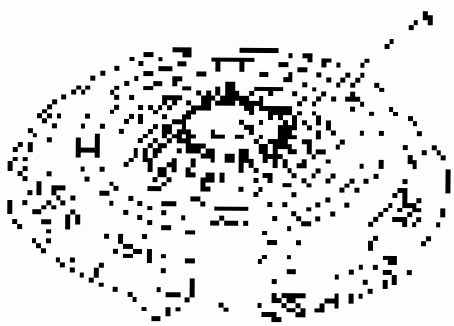
1. [illegible]

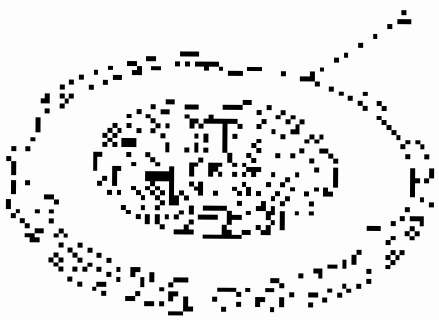
Standard: [illegible]
Service Limit: [illegible]

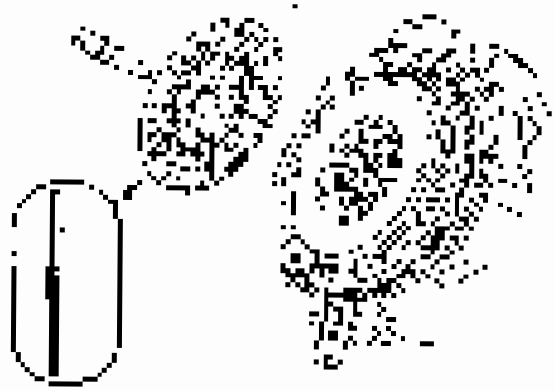


2. [illegible]

3. [illegible]



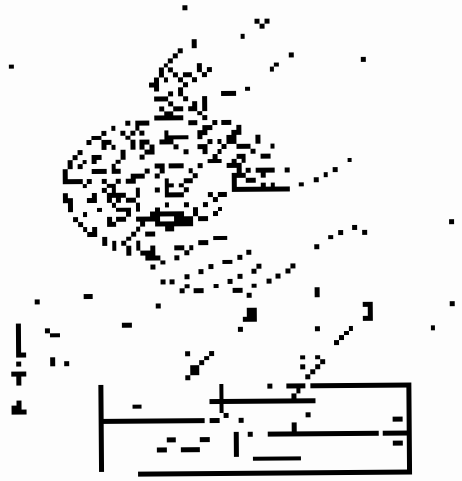




Clutch Replacement (cont'd)

1. [illegible]

12. [illegible]



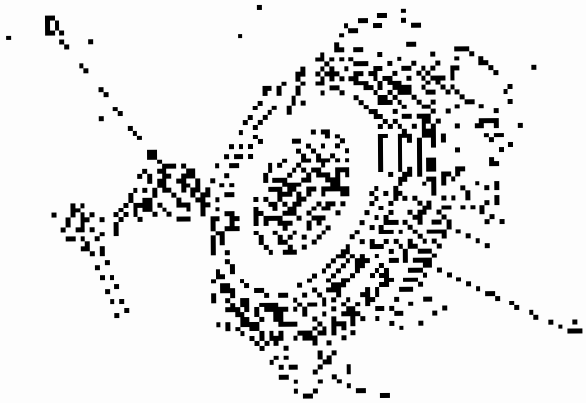
Flywheel and Pilot Bearing Inspection

[illegible]

1. [illegible]

2. [illegible]

Standard [illegible]

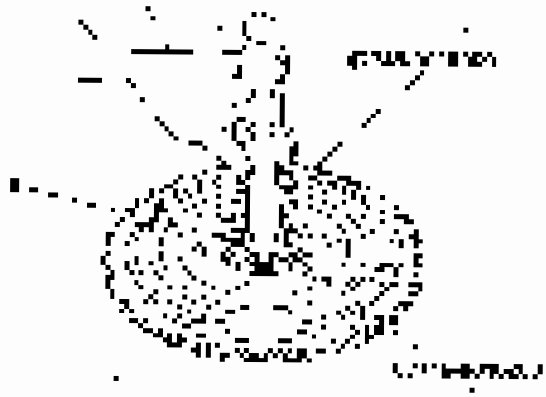


4. [illegible]

Flywheel and Pilot Bearing Replacement

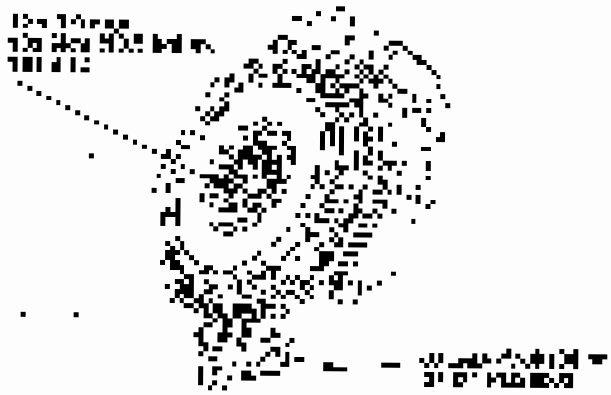
1. [illegible]

4. Install the new pilot bearing in the crankshaft using the special tool. Apply [illegible] to the bearing outer surface.



5. [illegible]

6. Install the flywheel. Coat the [illegible] with [illegible] and install the [illegible].

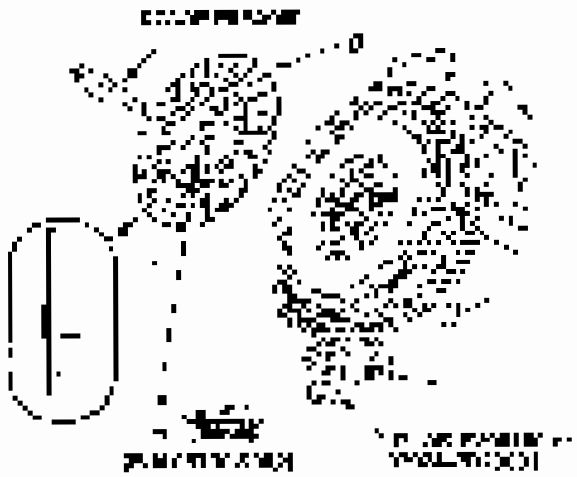


Clutch Replacement (cont'd)

Clutch Disc and Pressure Plate Installation

1. [illegible]

2. Install the alignment tool.



3. Apply a coating of high temperature grease (P/N 08733-9022 or equivalent) to the [illegible]. Install the clutch disc with the [illegible] facing toward the flywheel.

4. Align the clutch disc with the [illegible] using the alignment tool.

5. Install the pressure plate and the mounting bolts. Do not tighten yet.

6. Install the [illegible].

7. [illegible]

8. Tighten the [illegible] bolts in a crisscross pattern to [illegible] N·m (kgf·m, lbf·ft). Then tighten them to [illegible] N·m (kgf·m, lbf·ft).

PRESSURE PLATE MOUNTING BOLT TORQUE: [illegible] N·m (kgf·m, lbf·ft)

9. [illegible]

10. [illegible]

Release Bearing Replacement

[illegible]

2. [illegible]

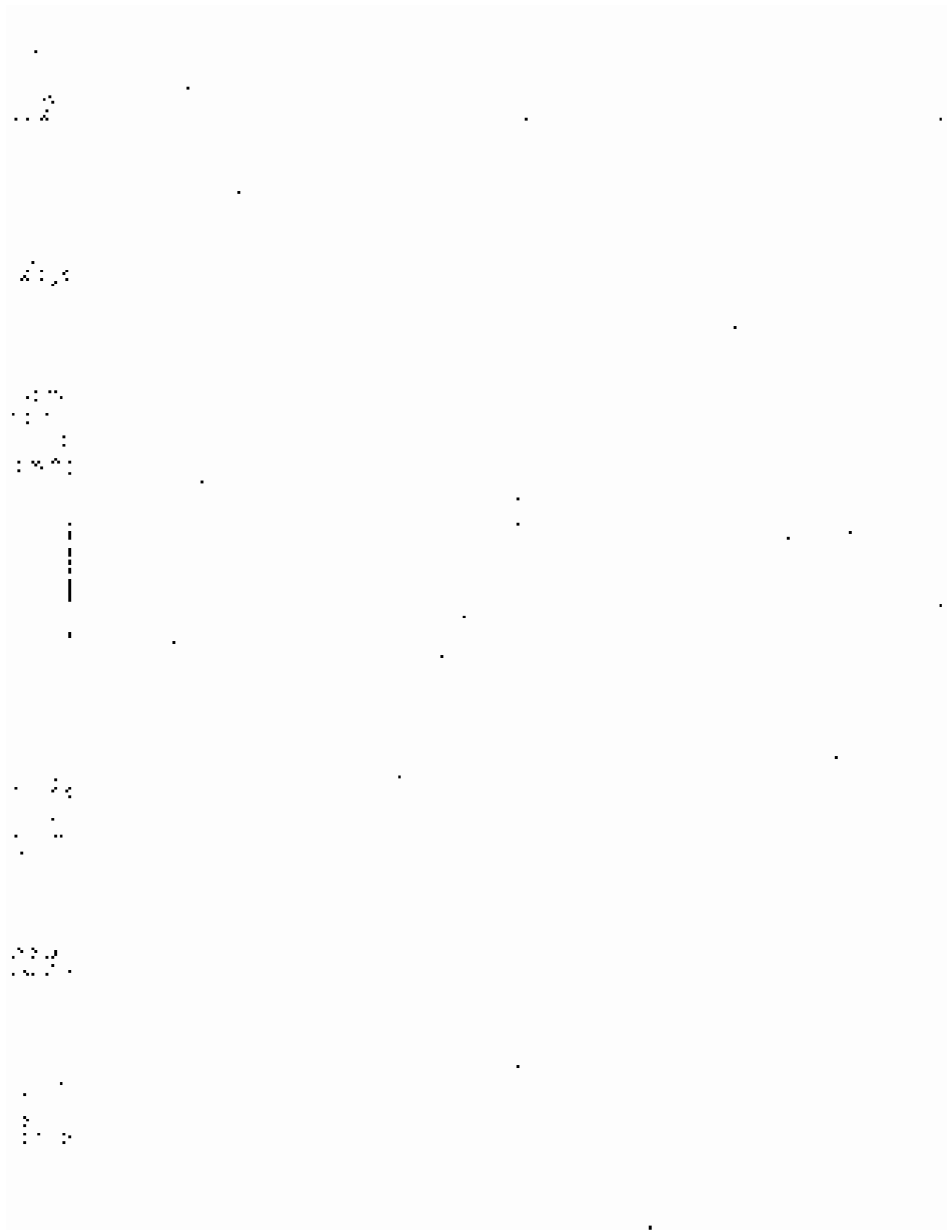
3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]



Manual Transmission

Special Tools

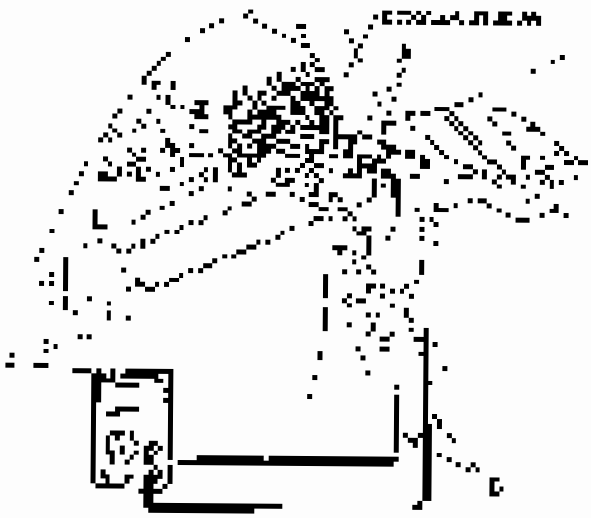
Ref No.	Tool Number	Description	Qty
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	2
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1

[illegible]

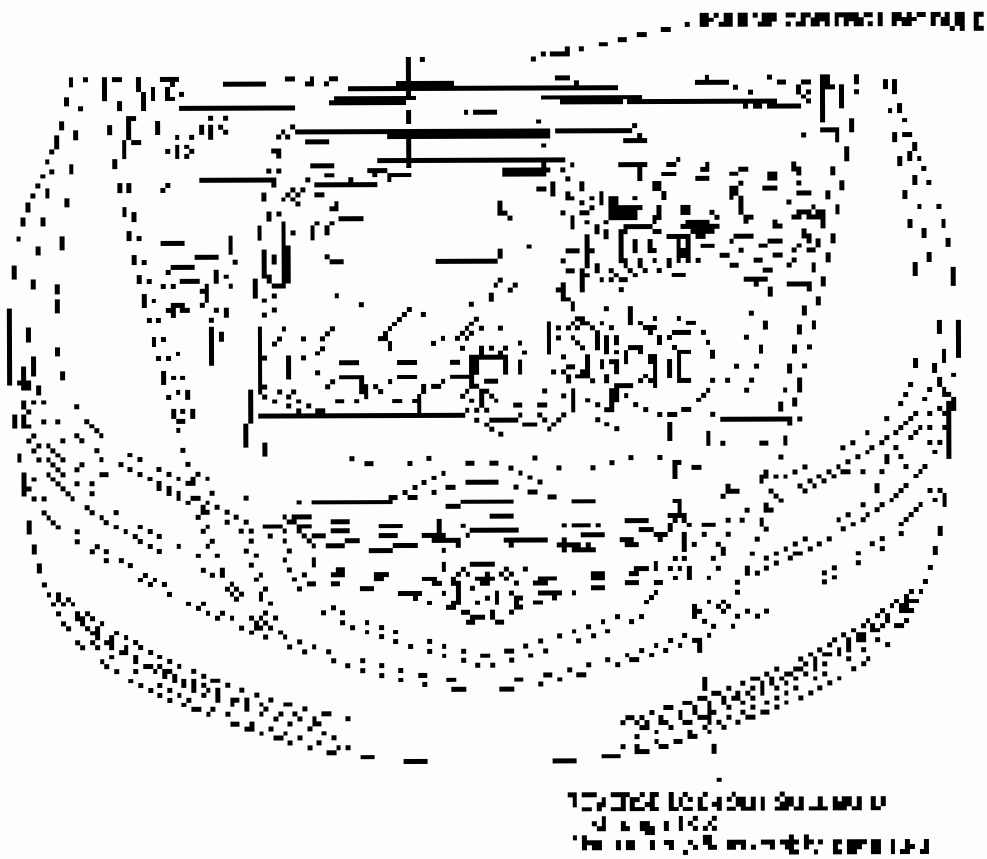
[illegible]

General Troubleshooting Information

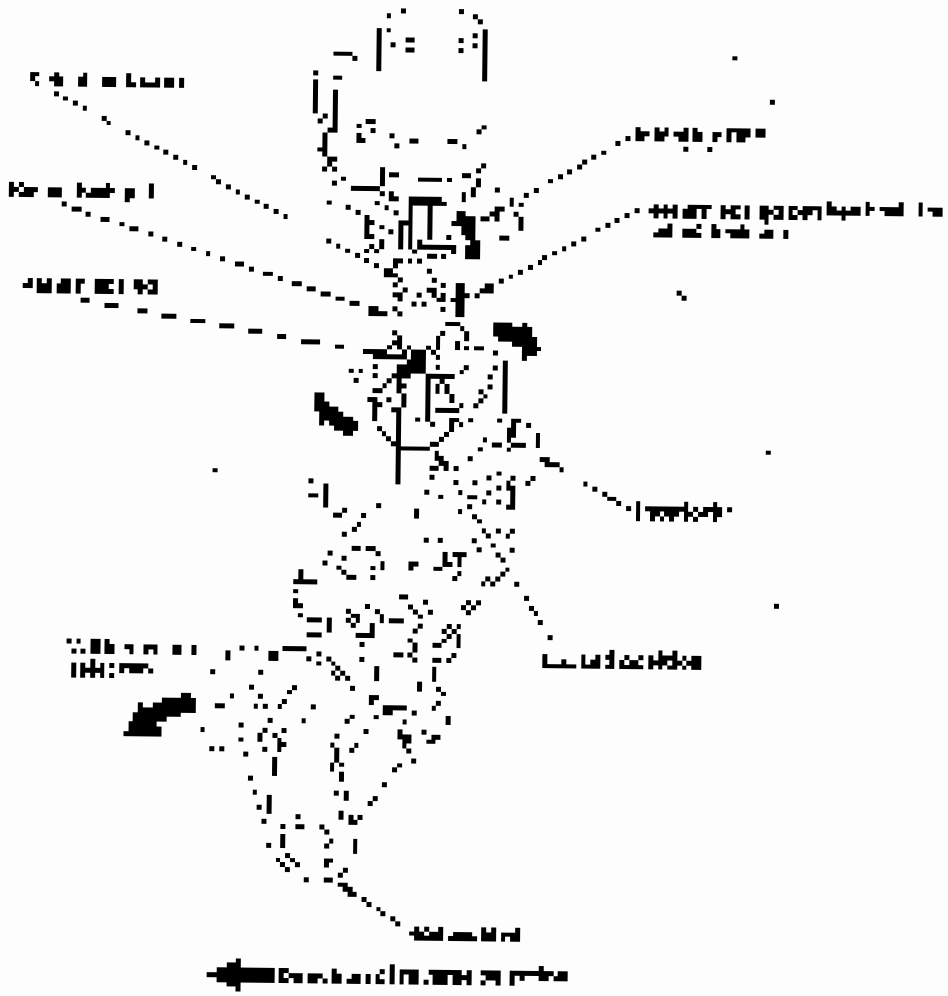
How to Troubleshoot Circuits at the ECM



Component Location Index

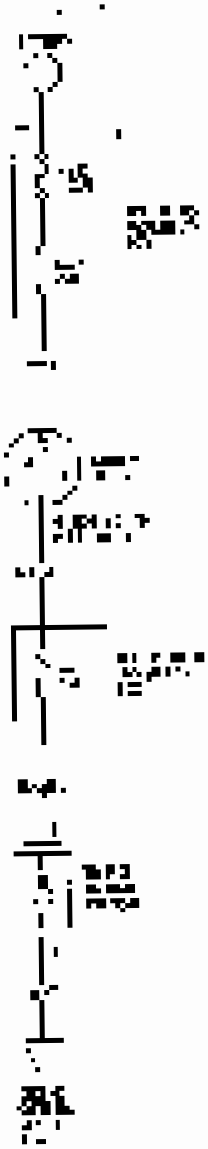


System Description



Reverse Lockout System

Circuit Diagram



Circuit Troubleshooting

1. [illegible]

   [illegible]

   YES: Go to step 2.

   NO: [illegible]

2. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

3. [illegible]

4. [illegible]

   [illegible]

   YES: Go to step 5.

   NO: [illegible]

5. [illegible]

   [illegible]

   YES: Go to step 6.

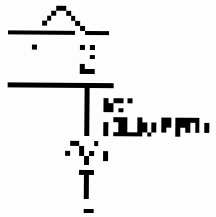
   NO: Go to step 7.

6. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]



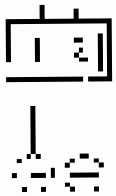
Reverse Lockout Solenoid Test

1. [illegible]

2. [illegible]

[illegible]

[illegible]



[illegible]

3. [illegible]

4. [illegible]

Reverse Lockout Solenoid Disassembly/Reassembly

1. [illegible]

2. [illegible]

[illegible]

[illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

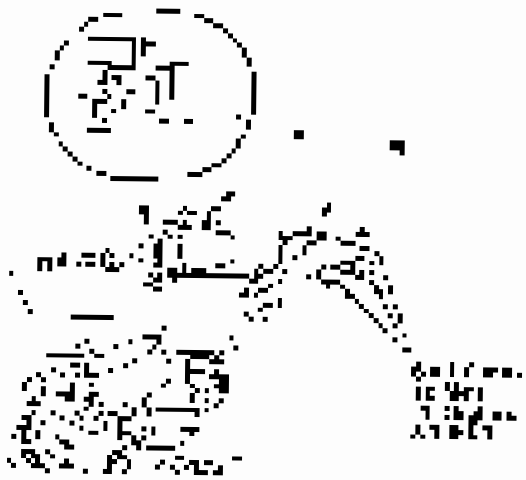
9. [illegible]

10. [illegible]

NOTE: [illegible]

11. [illegible]

12. [illegible]



13. [illegible]

14. [illegible]

15. [illegible]

16. [illegible]

17. [illegible]

18. [illegible]

Transmission Fluid Inspection and Replacement

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

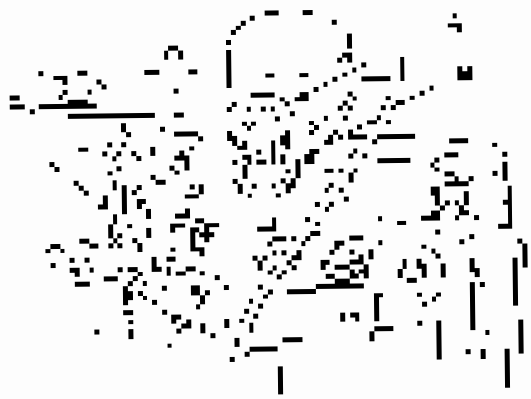
5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]



Back-up Light Switch Test

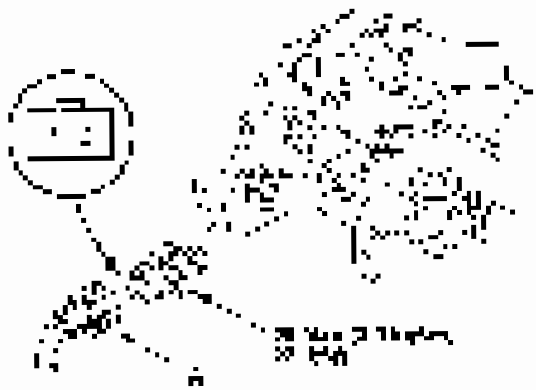
1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]



6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

Transmission Removal

Special Tools Required
- [illegible]
- [illegible]
- Engine hanger bracket kit 303-001(T90T-6001-A)
- Transaxle support plate 303-037(T90T-6000-F)

NOTE: Use fender covers to avoid damaging paint during this procedure.

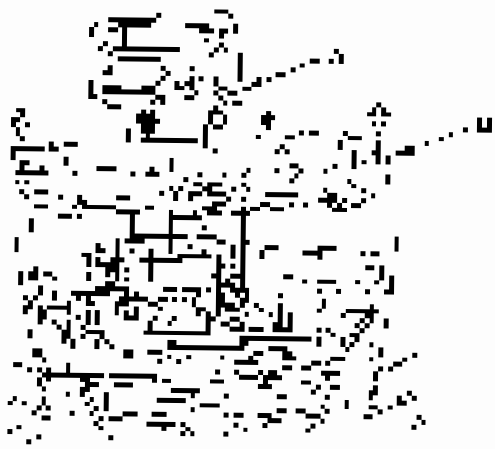
1. [illegible]
2. Lift the vehicle.
3. Disconnect the battery ground cable from the battery. Position the cable so it will not contact the battery post.

   NOTE: Do not remove the battery. Removal will cause the radio anti-theft system to lock up. If the battery is removed, refer to the owner's guide for the radio anti-theft code.

4. Remove the [illegible] and the [illegible]

5. [illegible] and the engine support insulator nuts. Position the engine hanger bracket and chain assembly.

6. Remove the [illegible] and the left front wheel.



Transmission Removal (cont'd)

1. [illegible]

4. [illegible]

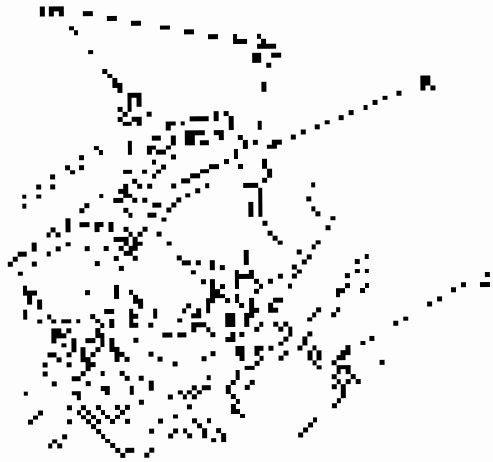
5. [illegible]

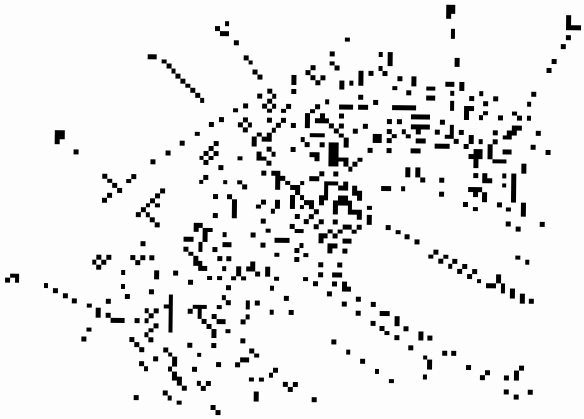
[illegible]

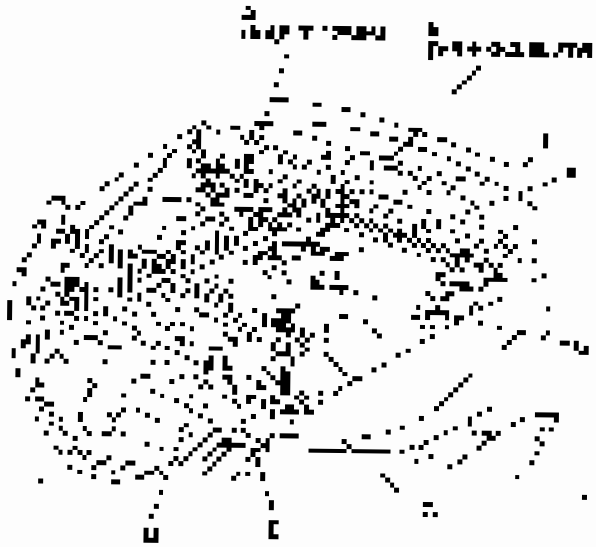
[illegible]

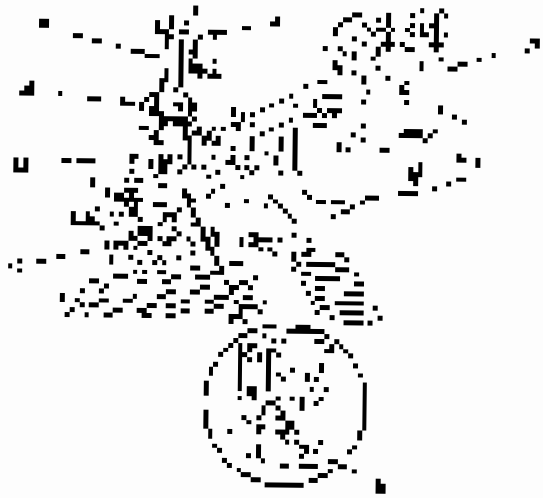
[illegible]

Transmission Removal (cont'd)









Transmission Removal (cont'd)

20. [illegible]

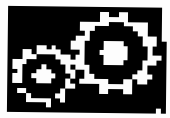
22. [illegible]

23. [illegible]

24. [illegible]

25. [illegible]

26. [illegible]



24. [illegible]

25. [illegible]

26. [illegible]

27. [illegible]

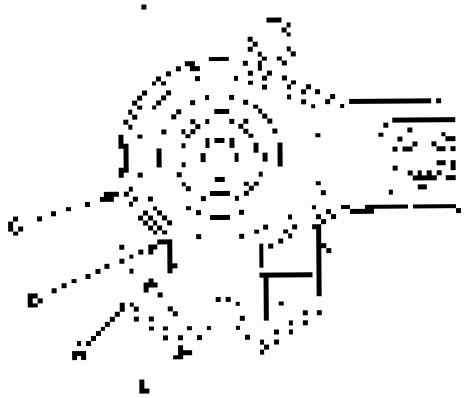
28. [illegible]

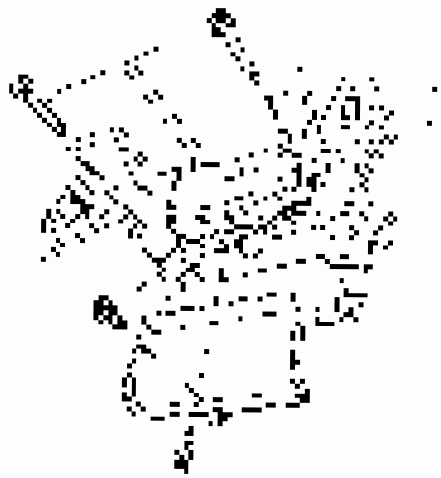
29. [illegible]

30. [illegible]

31. [illegible]

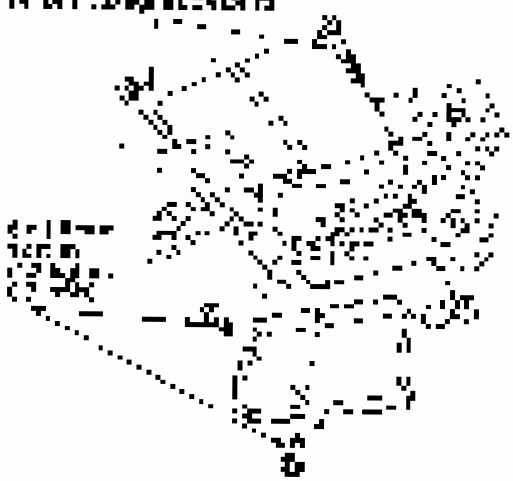
Transmission Removal (cont'd)

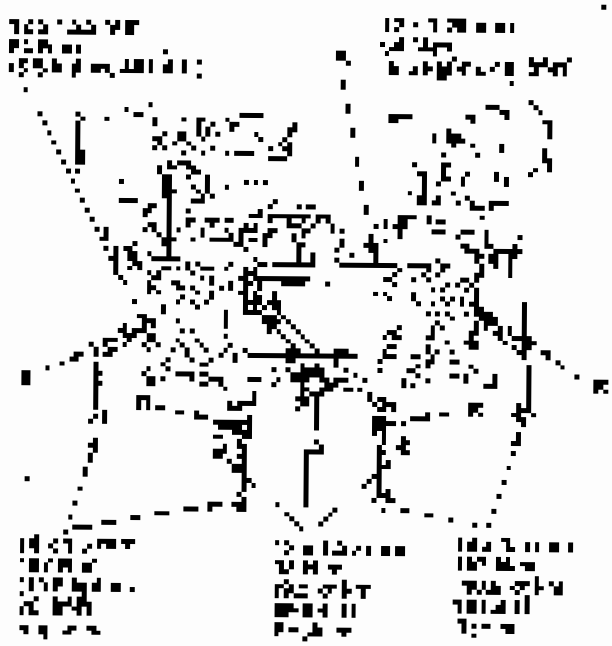




Transmission Removal (cont'd)

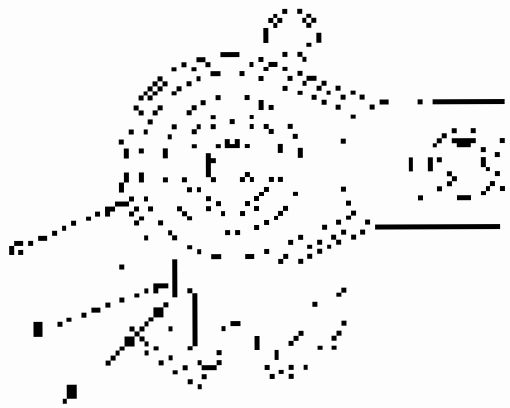
Transmission Installation

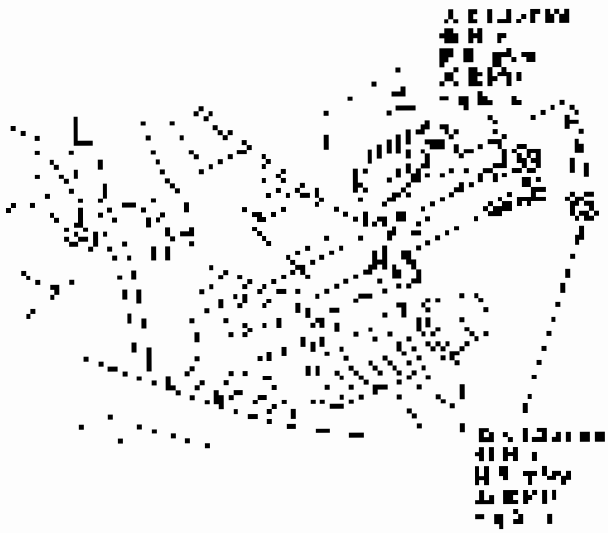


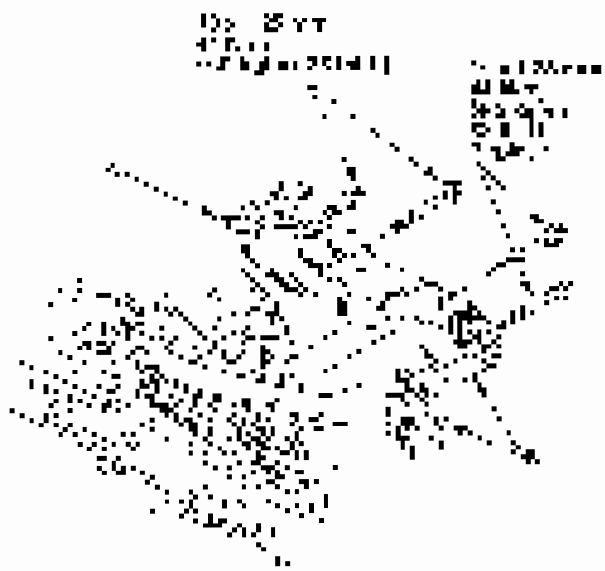


Transmission Installation (cont'd)

3. Adjust the clutch master cylinder with the edge of the clutch master cylinder. Check and adjust the clutch pedal free play. Refer to the clutch pedal adjustment procedure in this section.

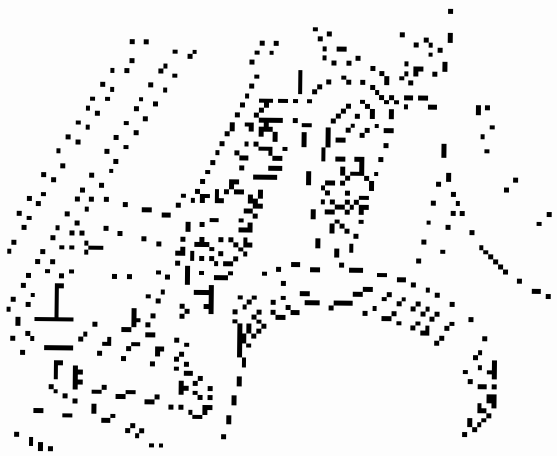






3. Install the [illegible] mounting bolts.

4. Connect the [illegible] connector.



11. [illegible]

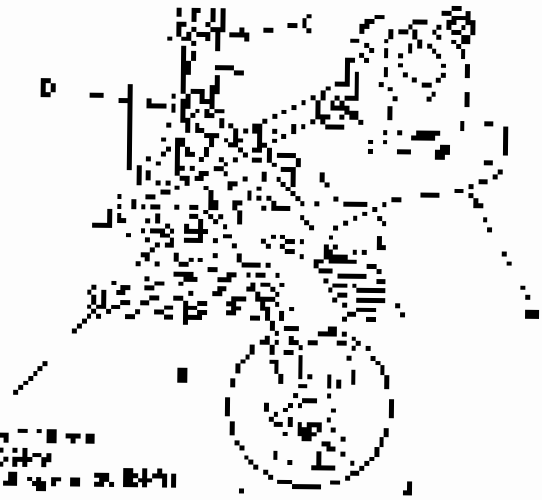
12. Install the [illegible] page 1[illegible]-26.

17. [illegible]

18. Lower the vehicle.

19. [illegible]

20. Connect the [illegible]



21. Install the [illegible]

22. Install the [illegible]

23. Install the [illegible]

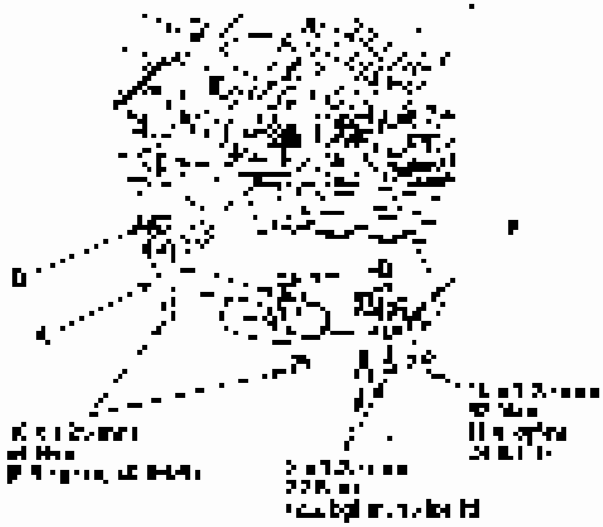
24. Install the [illegible] (see page 1[illegible]).

25. Install the [illegible] (see page 1[illegible]).

26. Connect the [illegible] (see page 1[illegible]-20).

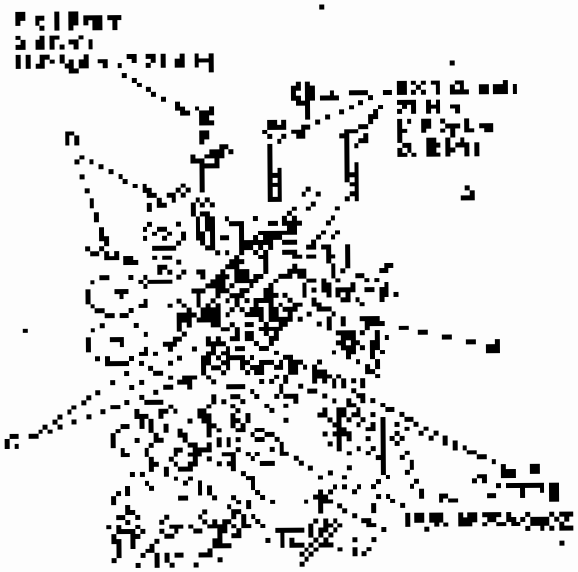
(cont'd)

Transmission Installation (cont'd)



Transmission Installation (cont'd)

32. Connect the clutch hose (1).

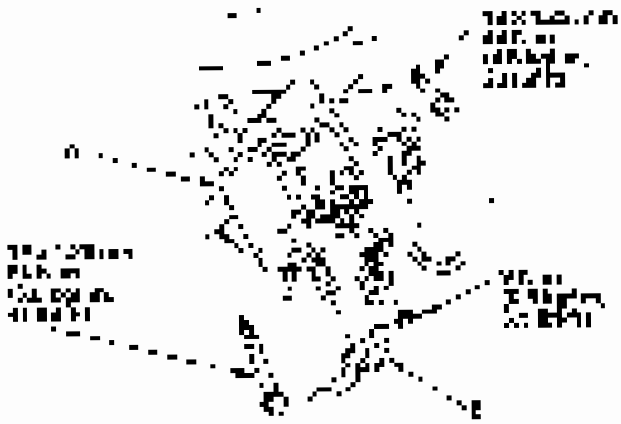


33. Install the clutch master cylinder (1) and tighten the nuts (2).

34. Apply light coat of multi-purpose grease to the pivot ball of the release fork (1) and install the release fork (2).

35. Install the [illegible]

40. Install the starter motor (1) and tighten the starter cable (2).



41. Connect the [illegible] and install the [illegible]

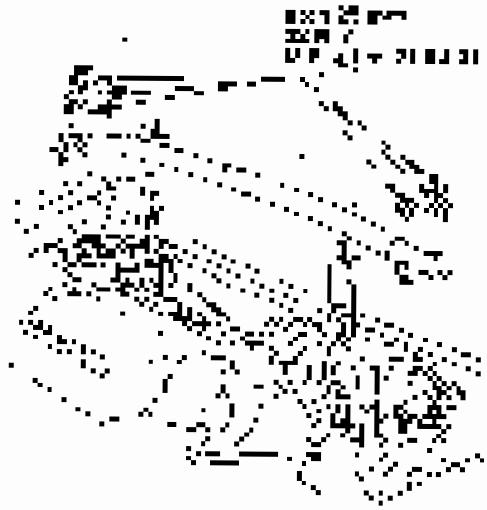
42. [illegible]

43. [illegible]

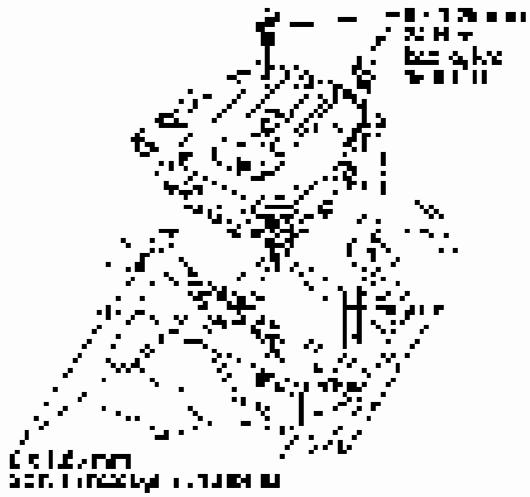
44. [illegible]

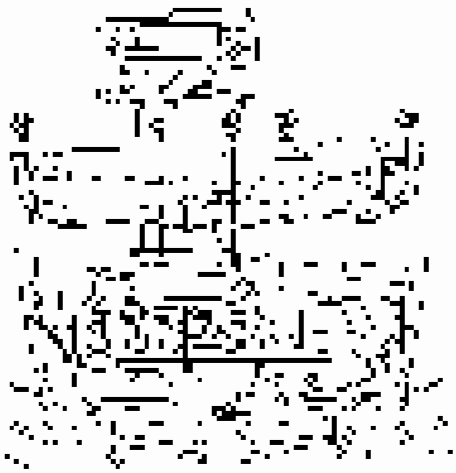
45. [illegible]

a. [illegible]



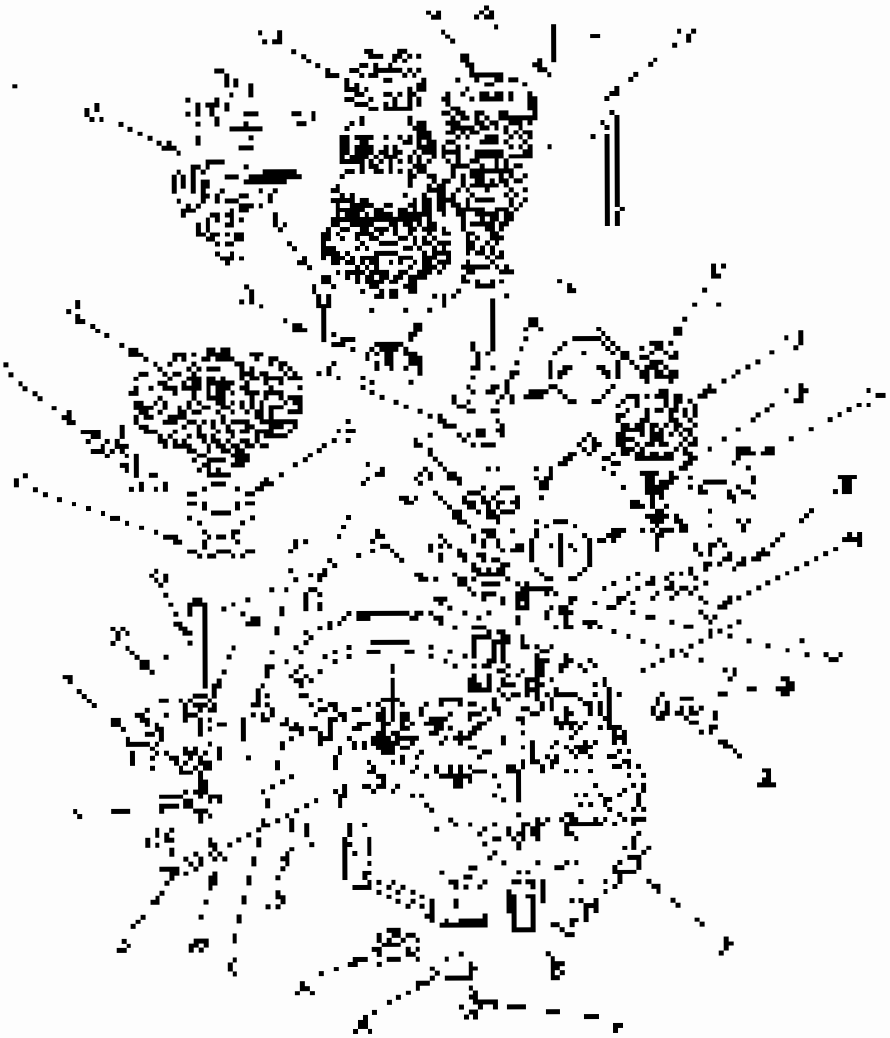
Transmission Installation (cont'd)





Transmission Disassembly

Exploded View: Clutch Housing



Exploded View - Transmission Housing

Transmission Disassembly (cont'd)

[illegible]

- [illegible]

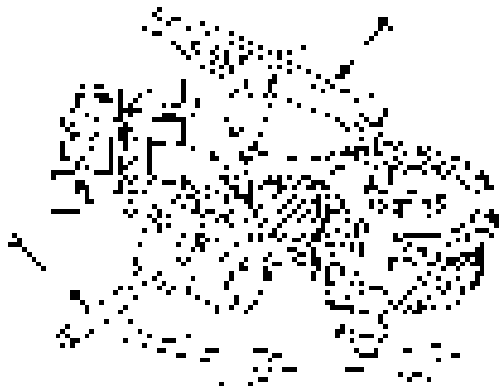
5. [illegible]

8. [illegible]

9. [illegible]

Transmission Disassembly (cont'd)

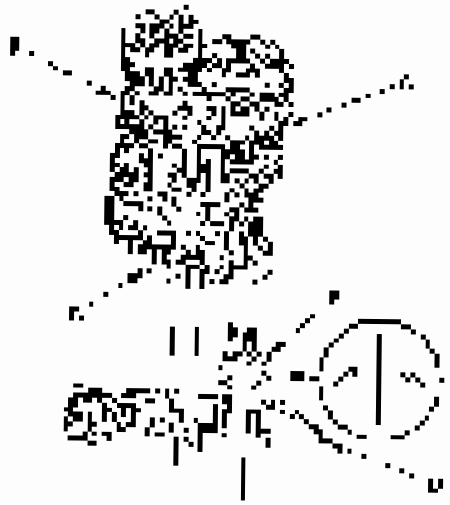
11. [illegible]

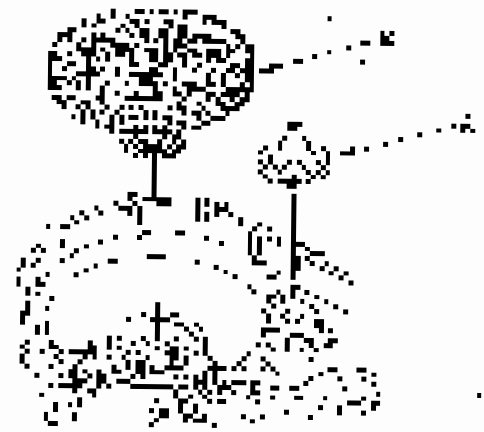


12. [illegible]

13. [illegible]

14. [illegible]





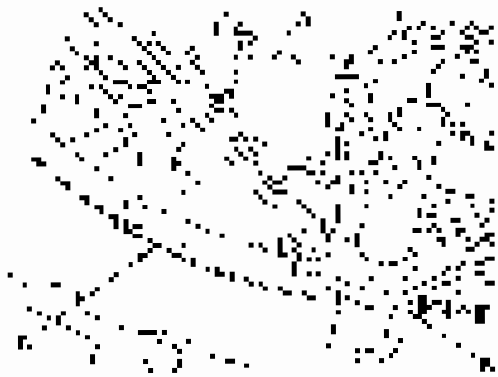
Transmission Disassembly (cont'd)

50. [illegible]

Reverse Shift Lever Clearance Inspection

1. [illegible]

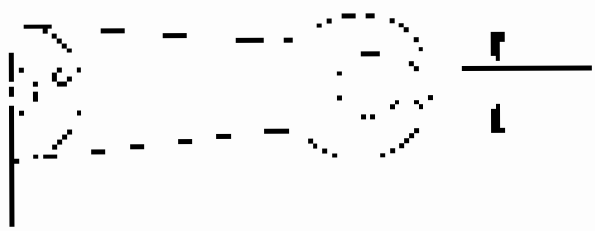
Standard: [illegible] (0.002 - 0.020 in)
Service limit: [illegible] (0.02 in)



2. [illegible]

- [illegible]
- [illegible]

Standard: 0.400 - [illegible] (0.3937 - [illegible])



Select Arm Clearance Inspection

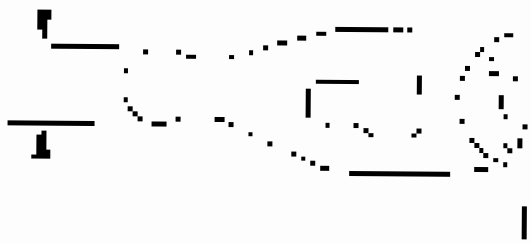
2. Measure the clearance between the select arm and the [illegible] with a feeler gauge (C). If the clearance is more than the service limit, go to step 4.

Standard: [illegible]
Service Limit: 0.5 mm (0.020 in.)

4. Measure the [illegible] clearance.

- If the clearance is within the standard, replace the [illegible].
- If the clearance is more than the standard, replace the [illegible].

Standard: [illegible]



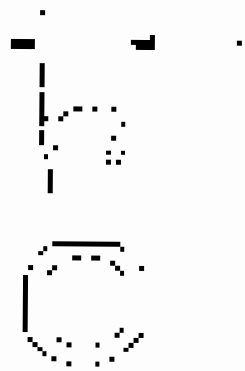
1. Measure the clearance between the [illegible] with a feeler gauge (C). If the clearance is more than the service limit, go to step 3.

Standard: [illegible]
Service Limit: 0.5 mm (0.020 in.)

3. Measure the [illegible] clearance.

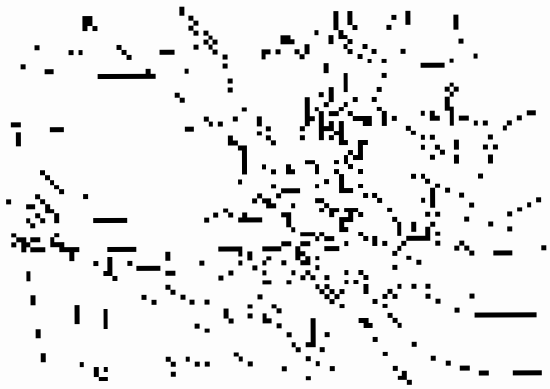
- If the clearance is within the standard, replace the [illegible].
- If the clearance is more than the standard, replace the [illegible].

Standard: [illegible]



Shift Arm Clearance Inspection

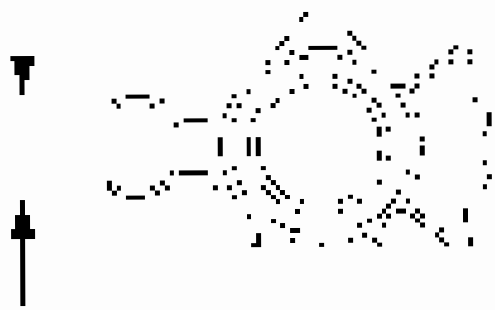
1. [illegible]



2. [illegible]

- [illegible]
- [illegible]

[illegible]



Oil Pump Clearance Inspection

[illegible]

[illegible]

2. [illegible]

[illegible]

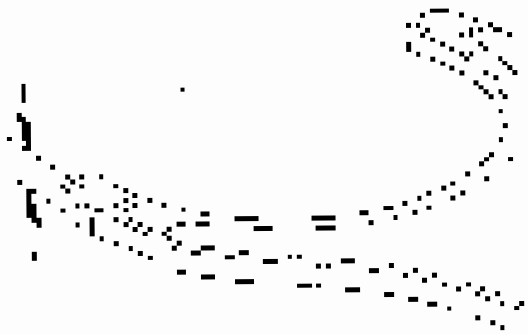
Shift Fork Clearance Inspection

Shift Fork Clearance Inspection (cont'd)

1. [illegible]

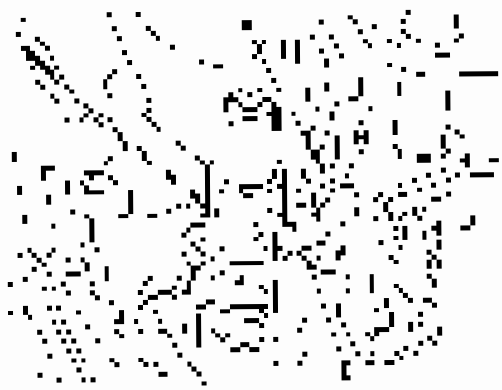
- [illegible]
- [illegible]

[illegible]
[illegible] 7.4 7.5 mm
[illegible]
[illegible] 0.2 0.4 mm [illegible]



2. [illegible]

[illegible] 0.2 0.6 mm [illegible]
[illegible] 0.7 mm [illegible]

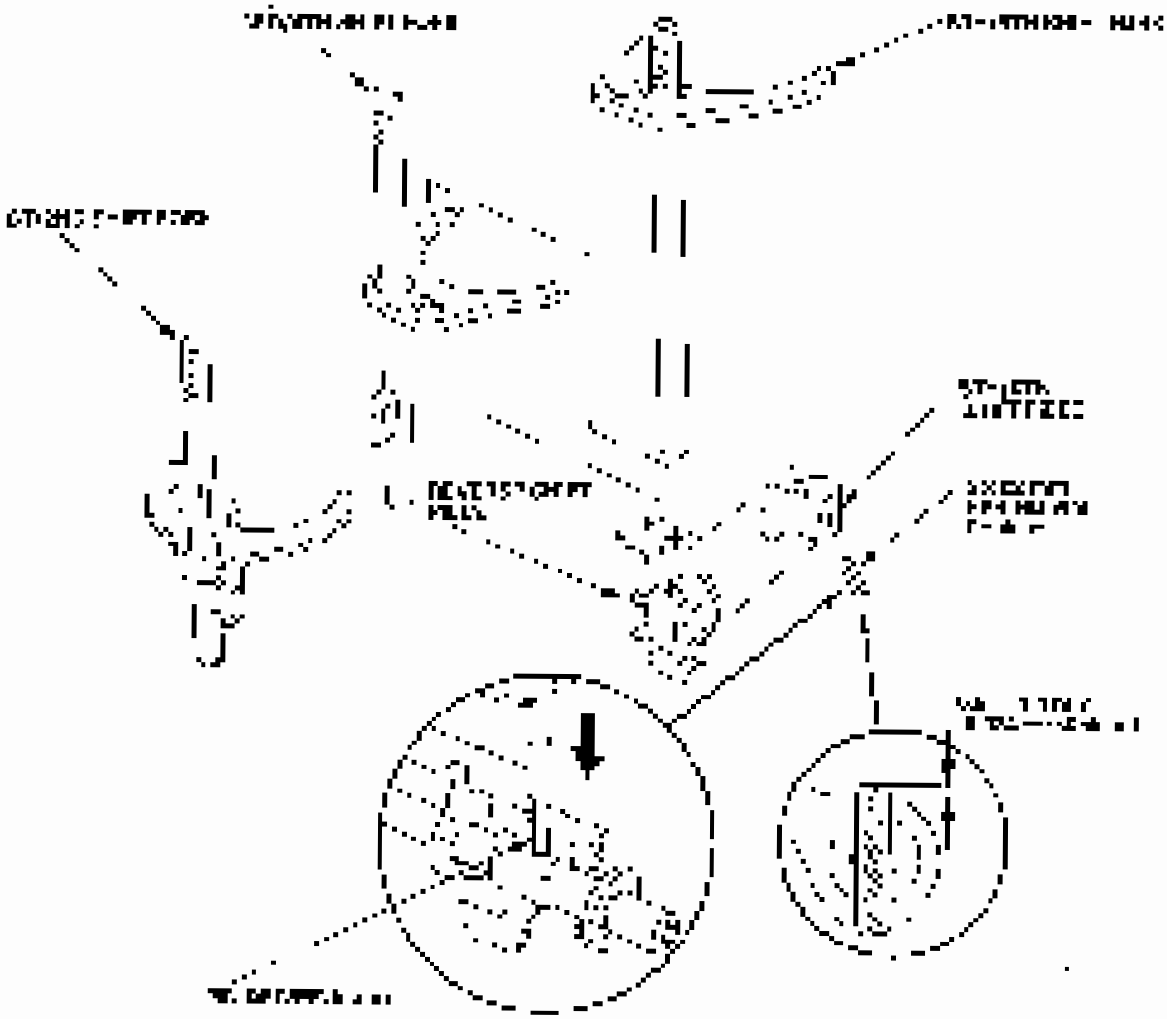


3. [illegible]

- [illegible]
- [illegible]

[illegible] 12.5 13.0 mm [illegible]

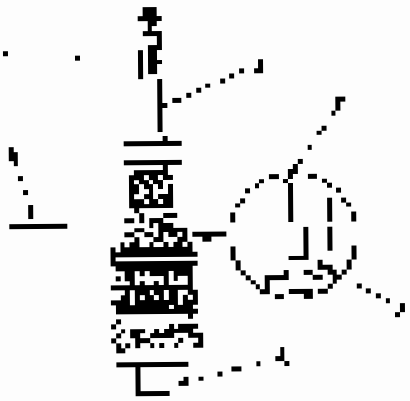
Shift Fork Disassembly/Reassembly



Mainshaft Assembly Clearance Inspection

NOTE: Prior to inspection, be sure all parts are clean and free of oil.

1. Set the mainshaft assembly in a vise with soft jaws.



2. Measure the clearance between the 2nd gear and 3rd-5th gear as follows:

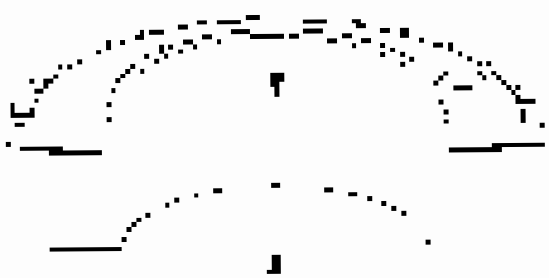
- Push the 2nd gear as far as it will go toward the vise jaws.
- Insert a feeler gauge between the 3rd gear and the 3rd-5th gear spacer.

Standard: [illegible]
Service Limit: [illegible]

3. Measure the clearance between the 3rd gear and the 3rd-5th gear spacer as follows:

- Push the 3rd gear as far as it will go toward the vise jaws.
- Insert a feeler gauge between the 2nd gear and the 3rd-5th gear spacer.

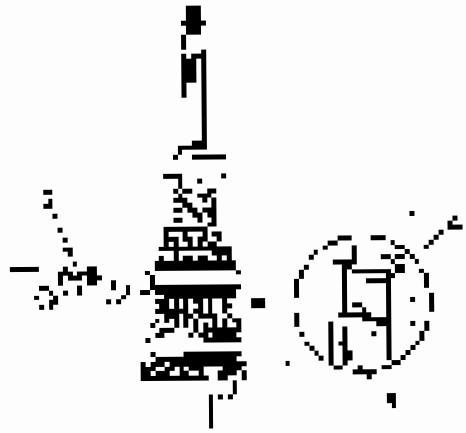
Standard: [illegible]
Service Limit: [illegible]



4. Measure the clearance between the 3rd-5th gear spacer and the ball bearing as follows:

- Push the 3rd-5th gear spacer as far as it will go toward the vise jaws.
- Insert a feeler gauge between the ball bearing and the 3rd-5th gear spacer.

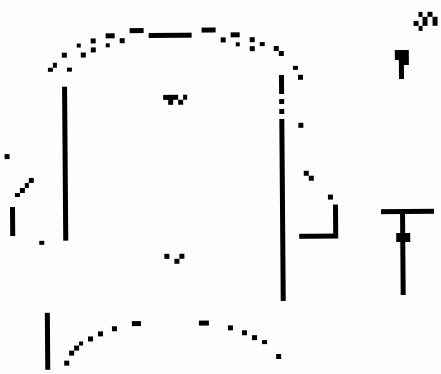
Standard: 0.05 [illegible] (0.002 in.)
Service Limit: 0.3 mm (0.012 in.)

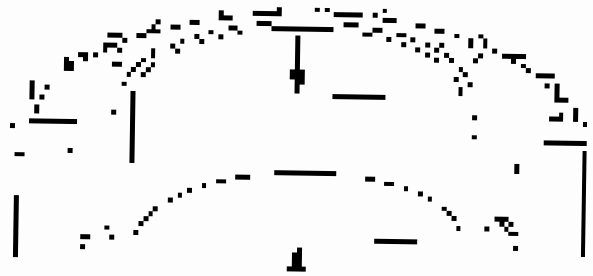


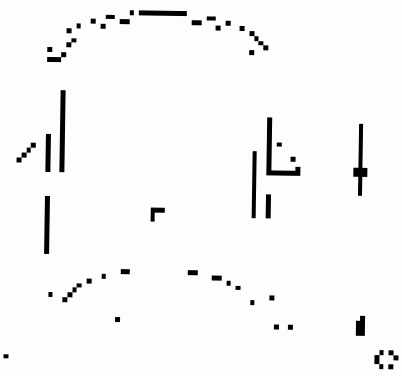
5. Measure the clearance between the ball bearing and the collar.

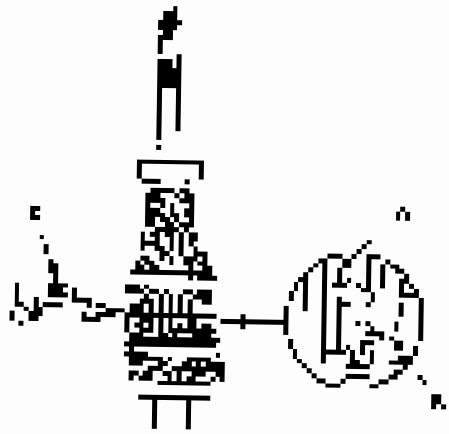
- Push the ball bearing as far as it will go toward the vise jaws.
- Insert a feeler gauge between the collar and the ball bearing.

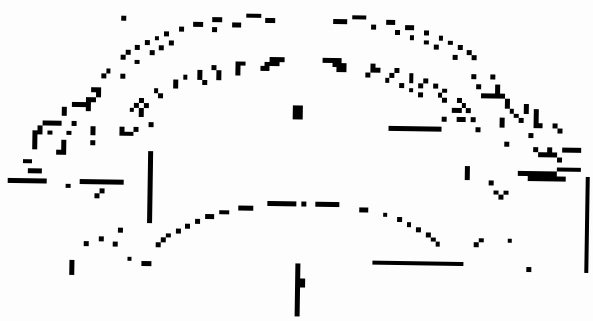
Standard: [illegible] (0.002 in.)







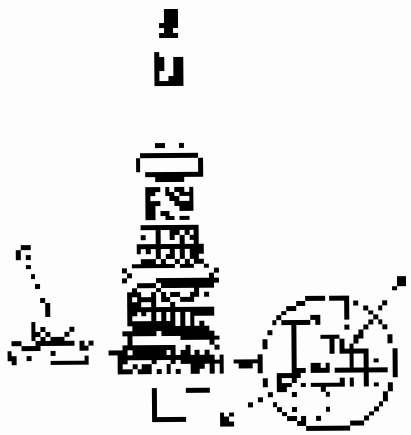




Mainshaft Assembly Clearance Inspection (cont'd)

10. [illegible]

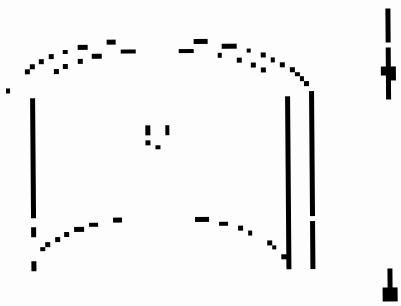
Standard: [illegible]
Service Limit: [illegible]



11. [illegible]

- [illegible]
- [illegible]

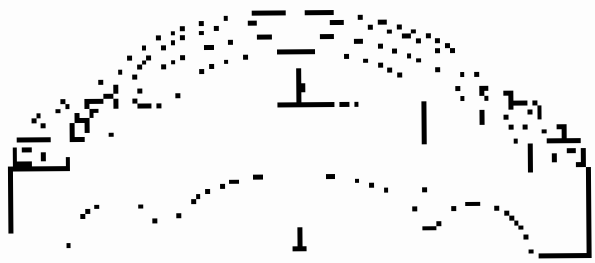
Standard: [illegible]



12. [illegible]

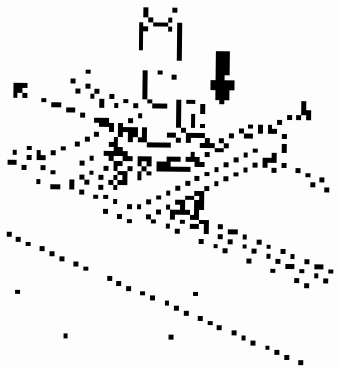
- [illegible]
- [illegible]

Standard: [illegible]
Service Limit: [illegible]

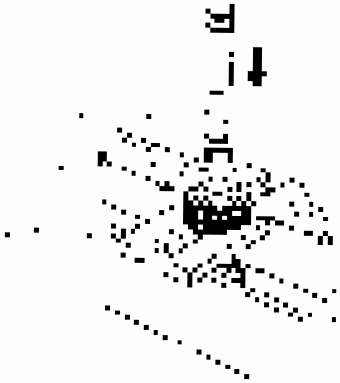


Mainshaft Disassembly

1. [illegible]



2. Support the gear [illegible]



3. Support the gear [illegible]

4. Press off the [illegible]

Mainshaft Inspection

1. [illegible] passage, pitting, [illegible] damage, [illegible] A, B, C, D, E, and F. Replace the mainshaft if [illegible]

Standard:

A. Ball bearing press-fit area (transmission housing side)
[illegible]
B. Gear and clutch hub sliding surface:
[illegible]
C. 4th/5th synchro clutch collar surface
[illegible]
D. Needle bearing surface
[illegible]
E. Ball bearing press-fit area (rear side)
[illegible]
F. Main drive gear press-fit area
[illegible]

Dimensions:

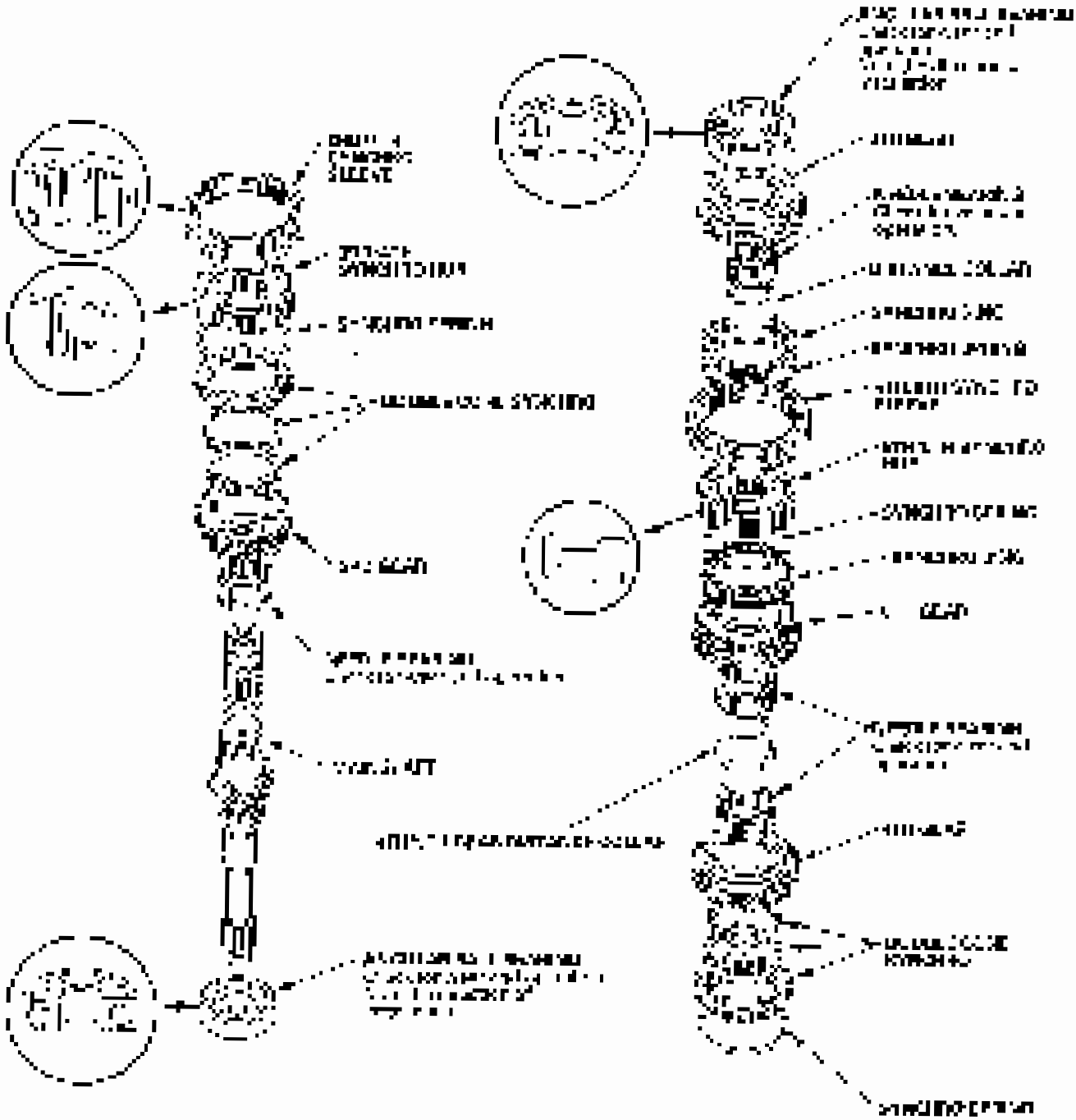
A: [illegible] mm (1.218 in.)
B: [illegible] mm (1.256 in.)
C: [illegible] mm (1.416 in.)
D: [illegible] mm (1.024 in.)
E: [illegible] mm (1.488 in.)
F: [illegible] mm (1.[illegible] in.)

2. [illegible] mainshaft runout. Replace the mainshaft if runout exceeds the service limit. Support the mainshaft on V-blocks and measure runout with a dial indicator. Rotate the mainshaft [illegible].

Standard: [illegible] mm (0.0001 in.) or less
Service Limit: 0.05 mm (0.002 in.)

Mainshaft Reassembly

Exploded View:



cont'd

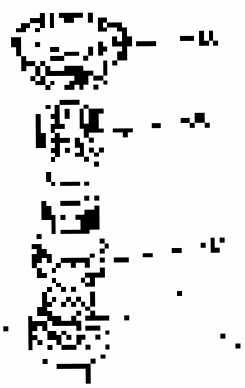
Mainshaft Reassembly (cont'd)

[illegible]

[illegible]

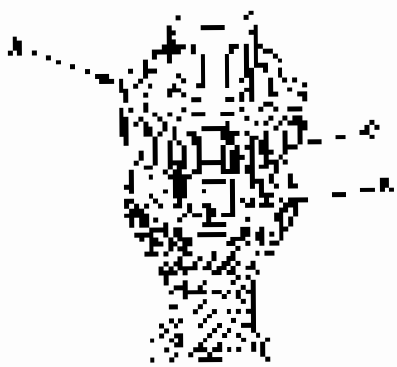
[illegible]

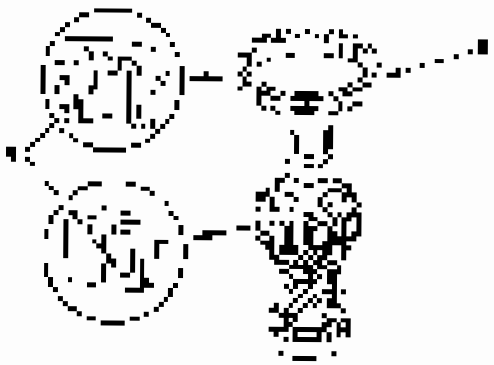
[illegible]

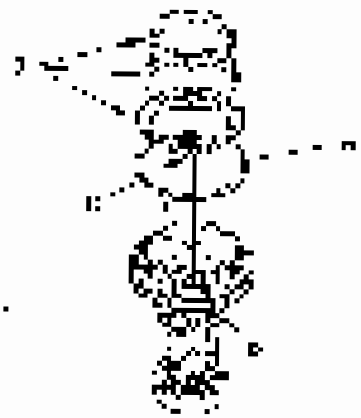


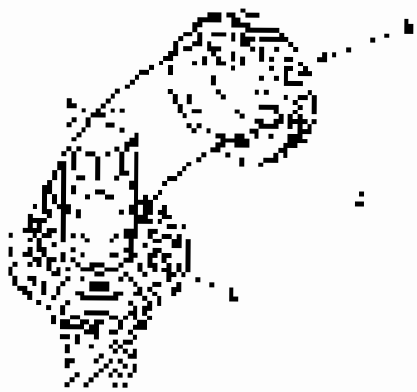
[illegible]

[illegible]



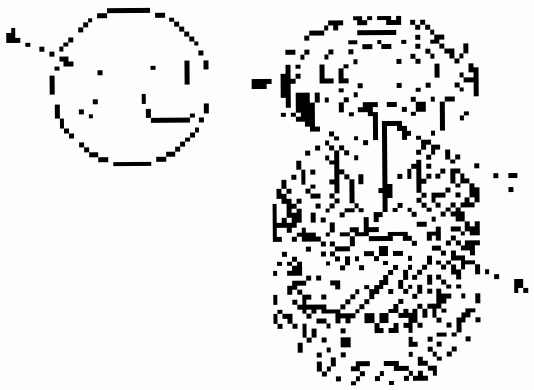






Mainshaft Reassembly (cont'd)

12. [illegible]



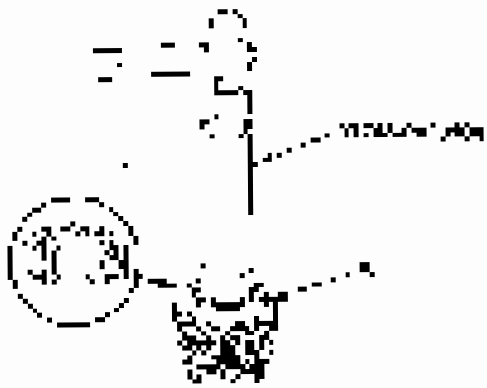
13. [illegible]

14. [illegible]

15. [illegible]

16. [illegible]

17. [illegible]

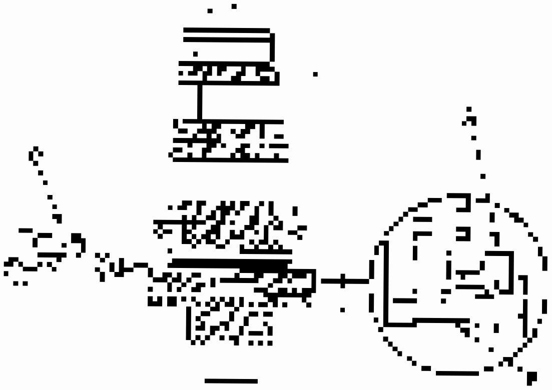


Countershaft Assembly Clearance Inspection

[illegible]

Measure the clearance between [illegible] and the countershaft [illegible]

Standard: 0.04 – 0.17 mm (0.002 – [illegible] in)
Service Limit: [illegible]



5. Measure the [illegible] gear.

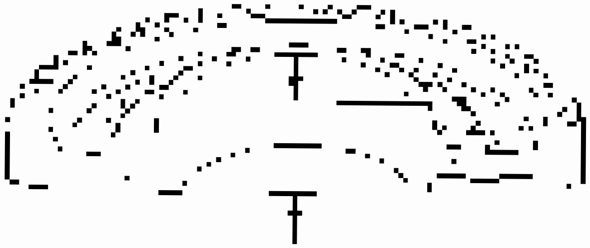
- [illegible] gear.
- [illegible]

Standard: [illegible]

3. Measure the thickness of [illegible]

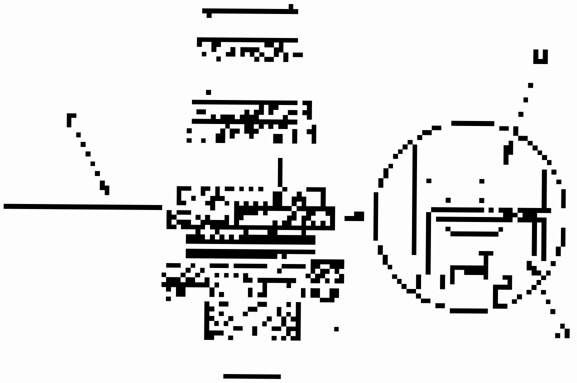
- [illegible]
- [illegible]

Standard: 22.9? – 22.9? mm [illegible]
Service Limit: 22.85 mm [illegible]



4. Measure the clearance between 3rd gear (A) and 2nd gear (B) [illegible]

Standard: 0.05 – 0.1? mm [illegible]
Service Limit: 0.2? mm [illegible]



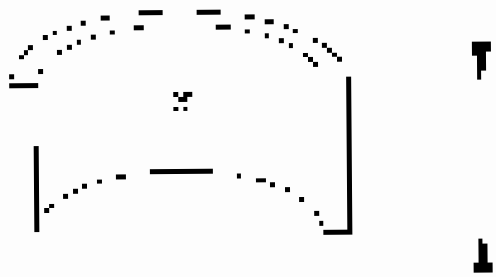
(cont'd)

Countershaft Assembly Clearance Inspection (cont'd)

a. [illegible]

- [illegible]
- [illegible]

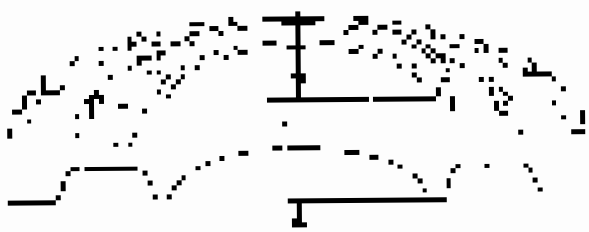
[illegible]



d. [illegible]

- [illegible]
- [illegible]

[illegible]

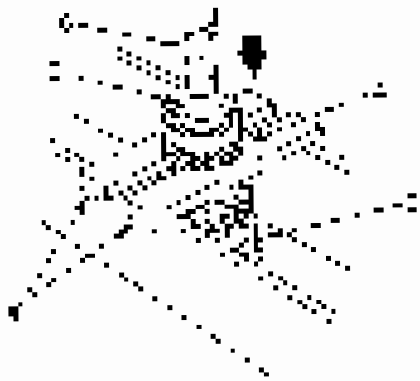


Countershaft Disassembly

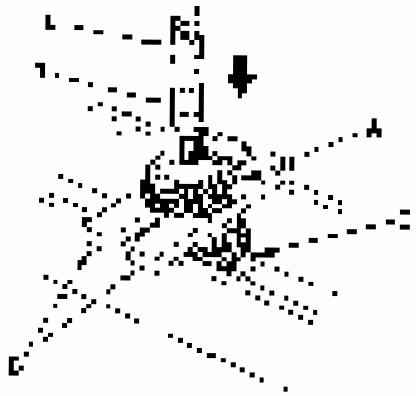
1. [illegible]

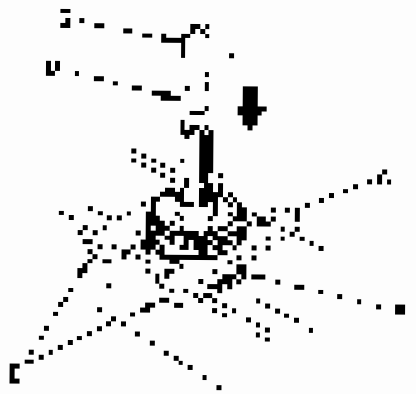
2. [illegible]

3. [illegible]



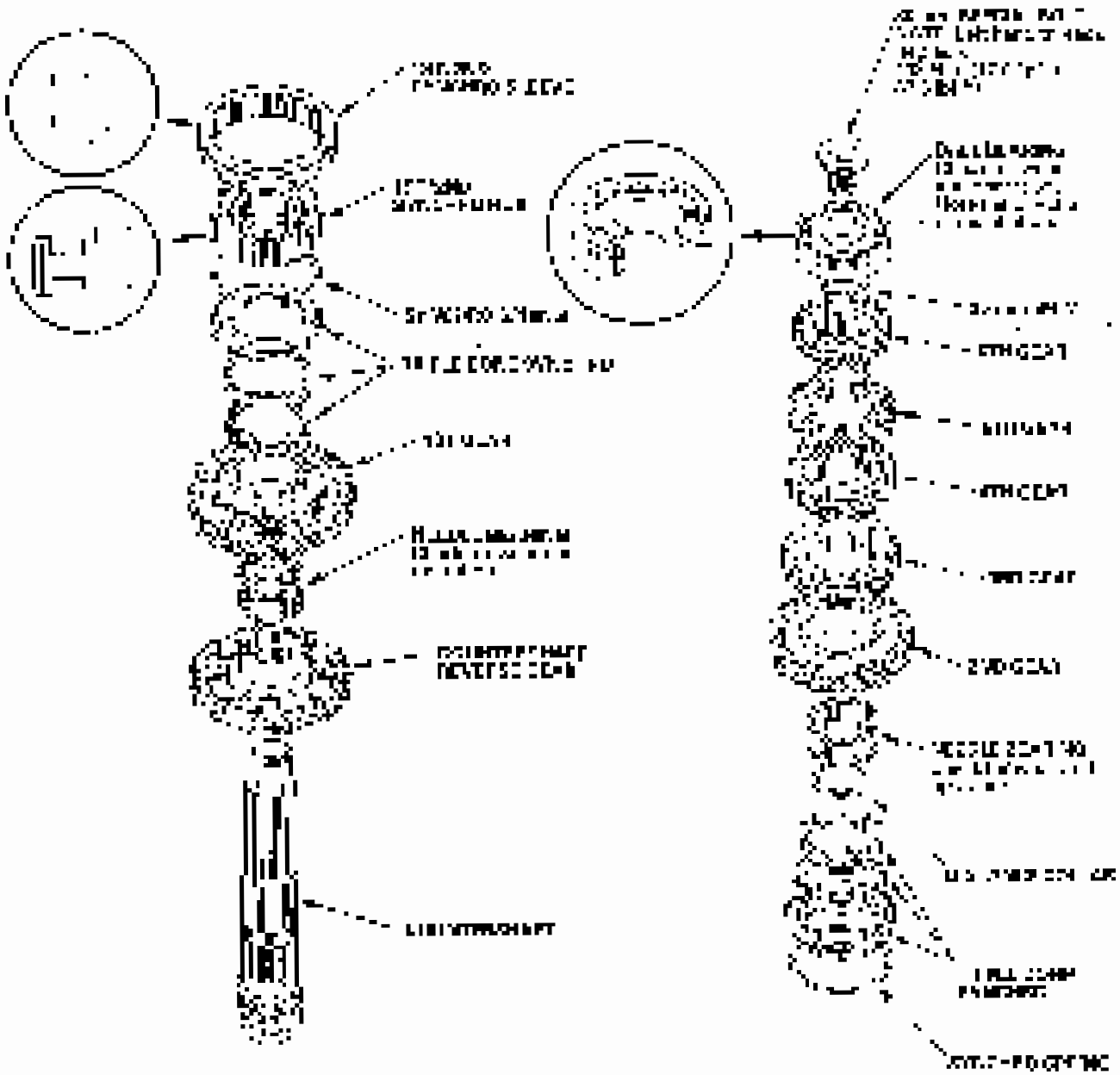
4. [illegible]





Countershaft Reassembly

Exploded View

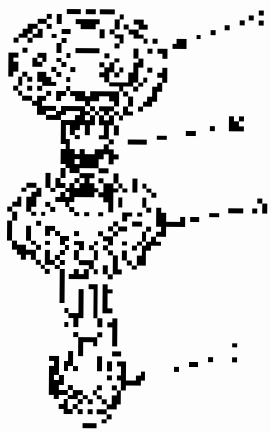


Special Tools Required

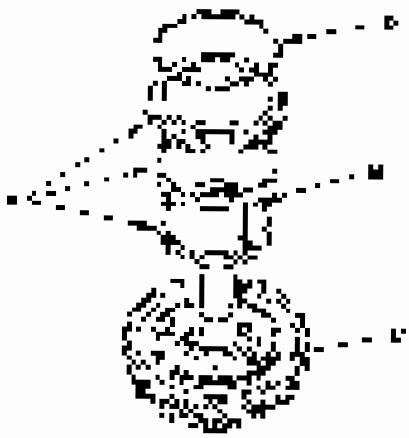
NOTE: Refer to the Parts Manual for the correct bearing driver set.

1. Clean all parts in solvent and dry them with compressed air.

2. Install the inner bearing race (A) on the bearing driver (B). Install the bearing (C) on the bearing driver (B).



3. Install the inner bearing race (A) on the right (front) wheel hub (B). Install the bearing (C) on the bearing driver (D).

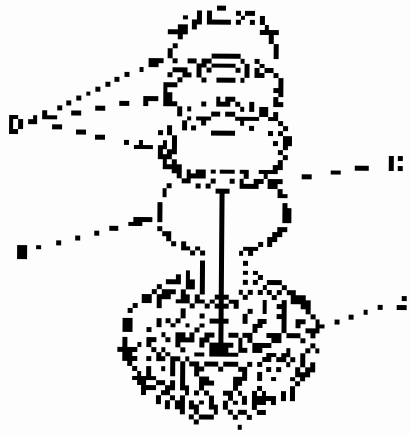


4. Install the bearing (A) on the bearing driver (B).

5. Install the bearing (A) on the left (rear) wheel hub (B).

6. Install the bearing (A) on the bearing driver (B).

7. Install the bearing (A) on the left (rear) wheel hub (B).

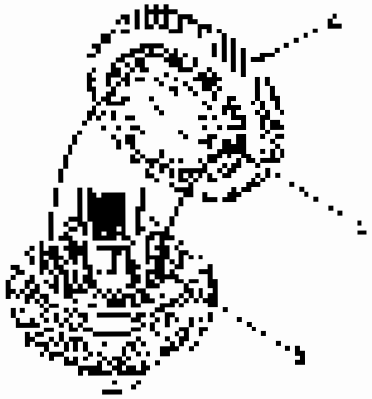


8. Install the right (front) wheel hub (A) on the spindle. Make sure the bearing (B) is seated in the hub (A).

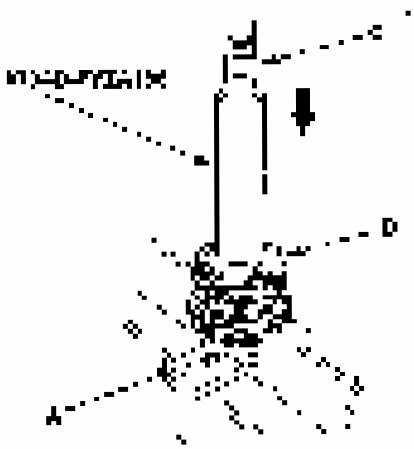
9. Install the bearing (A) on the left (rear) wheel hub.

Countershaft Reassembly (cont'd)

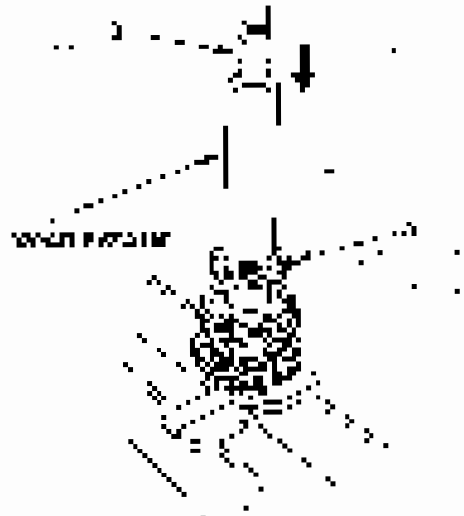
5. Install 3rd gear (A) and synchro ring (B) on countershaft (C).



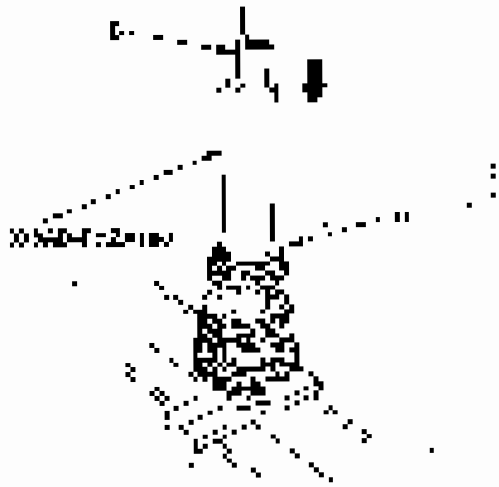
6. Install the 3rd gear synchro unit (A) and 3rd/4th shift fork (B) as a unit on the countershaft (C).

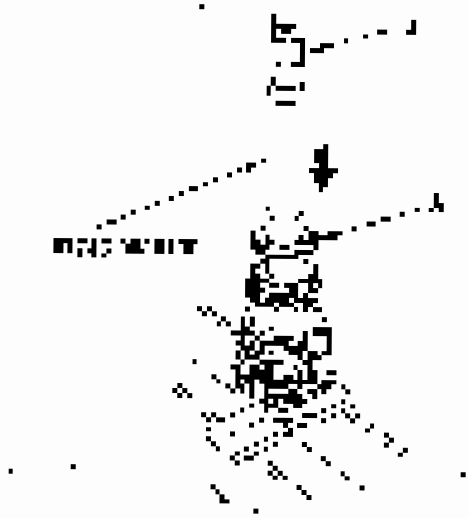


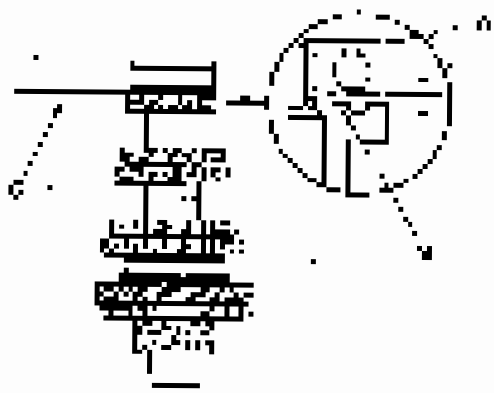
7. Install 4th gear (A) and synchro ring (B) on countershaft (C).

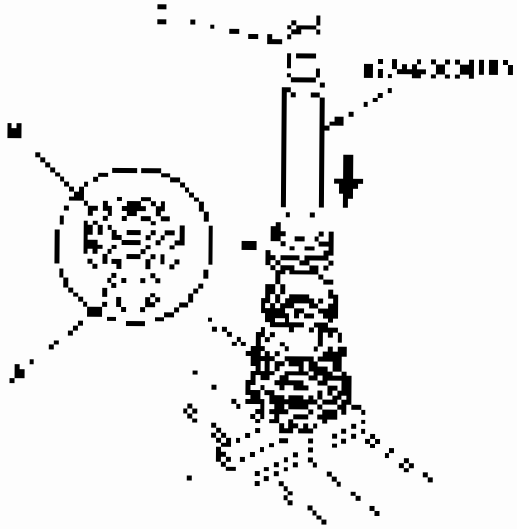


8. Install 5th gear (A) and synchro ring (B) on countershaft (C).







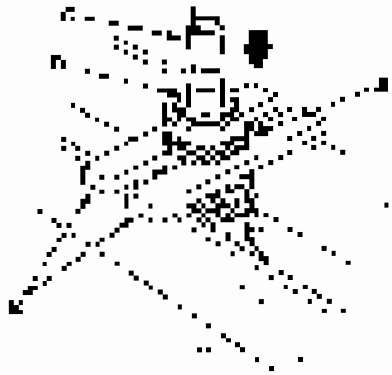


Countershaft Reassembly (cont'd)

16. Select the proper [illegible] from the table below.

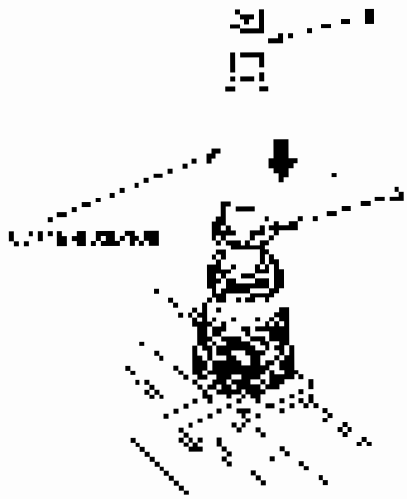
	Part Number	Thickness
A	[illegible]	[illegible]
AA	[illegible]	[illegible]
B	[illegible]	[illegible]
BB	[illegible]	[illegible]
C	[illegible]	[illegible]
CC	[illegible]	[illegible]
D	[illegible]	[illegible]
DD	[illegible]	[illegible]
E	[illegible]	[illegible]
F	[illegible]	[illegible]
G	[illegible]	[illegible]
H	[illegible]	[illegible]
HC	[illegible]	[illegible]
J	[illegible]	[illegible]
JJ	[illegible]	[illegible]
K	[illegible]	[illegible]
KK	[illegible]	[illegible]
L	[illegible]	[illegible]
M	[illegible]	[illegible]
MM	[illegible]	[illegible]
N	[illegible]	[illegible]
NN	[illegible]	[illegible]
P	[illegible]	[illegible]
PP	[illegible]	[illegible]
Q	[illegible]	[illegible]

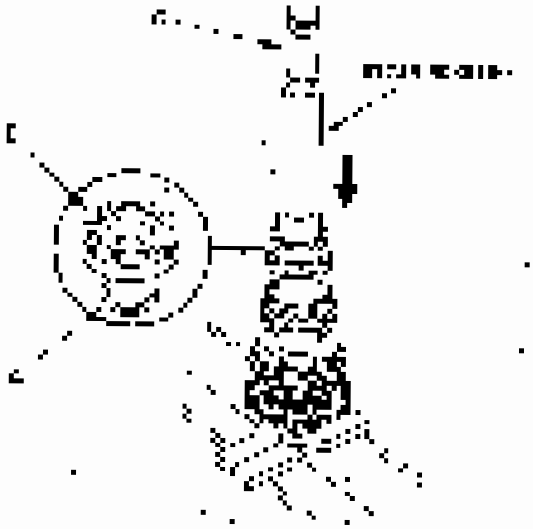
17. Support 5th gear and 5th synchro hub (A), and press a new 5th synchro ring (B) and synchro assembly (C) onto the countershaft (D) until it bottoms.



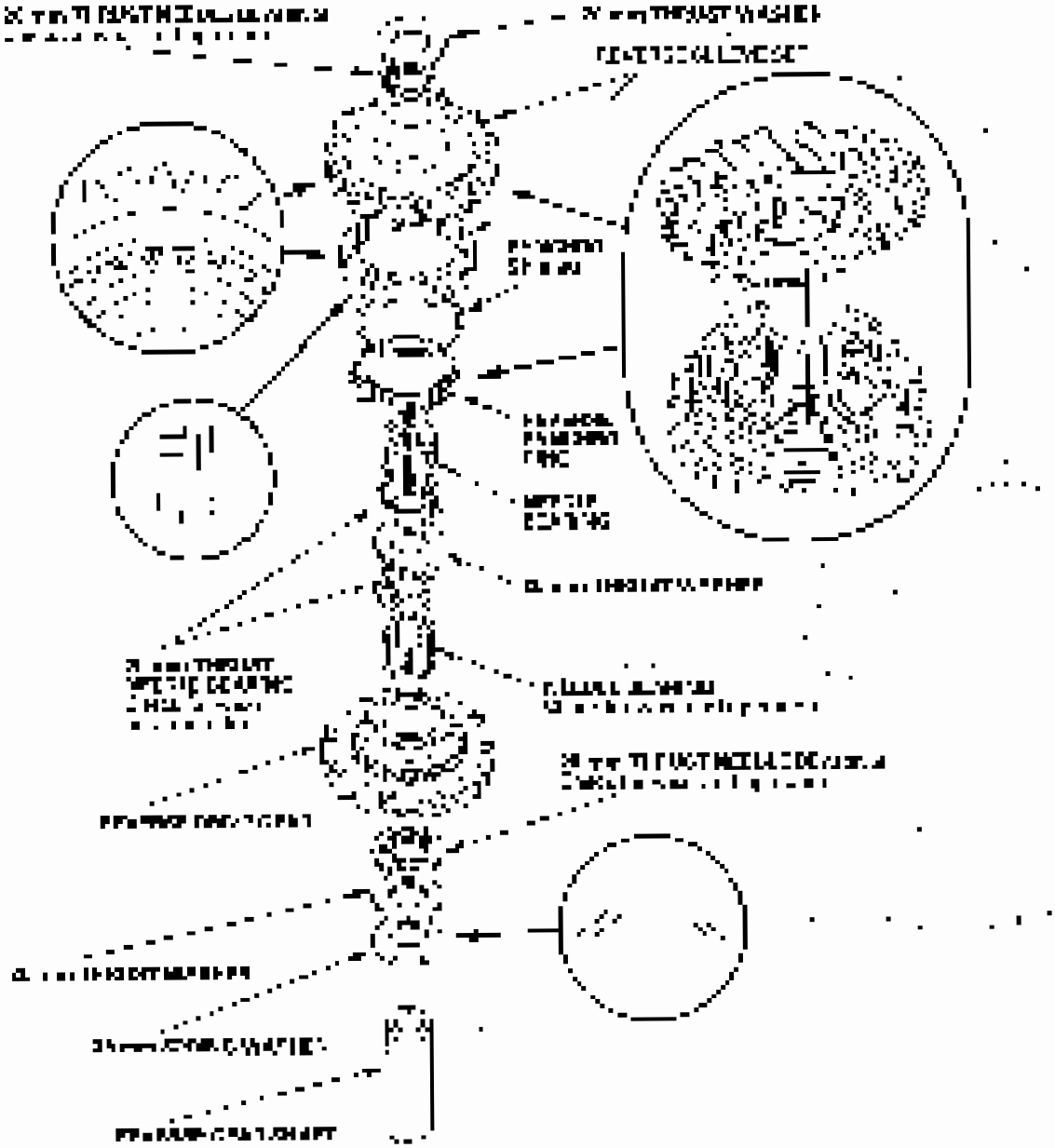
18. Install a new 5th gear bushing (A) onto the countershaft (B) until it bottoms.

19. Install 5th gear (A) and bushing (B) onto the countershaft.





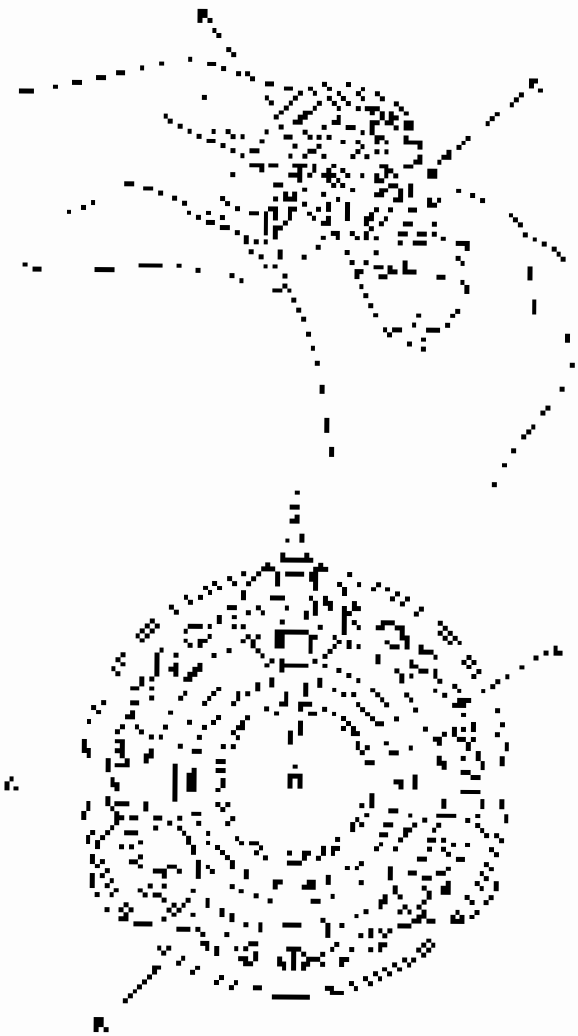
Reverse Idler Gear Shaft Assembly Disassembly/Reassembly



Synchro Sleeve and Hub Inspection and Reassembly

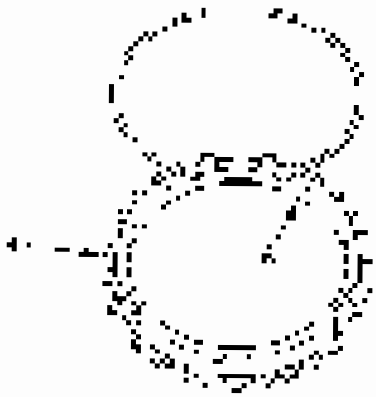
1 [illegible]

2 [illegible]



Synchro Ring and Gear Inspection

[illegible]



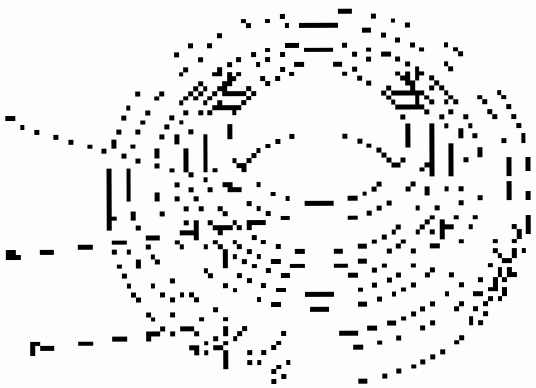
[illegible]

[illegible]

[illegible]

Synchro Ring and Gear Inspection (cont'd)

1. [illegible]



4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

Synchro Ring-to-Gear Clearance
Standard:
1st gear: [illegible]
2nd gear: [illegible]
Service limit: 0.4 mm (0.016 in)

Double Cone Synchro-to-Gear Clearance
Standard:
1st: Outer Synchro Ring (Inner Synchro Cone) to Gear
0.70 – 1.15 mm (0.028 – 0.045 in)
2nd: Synchro Cone to Synchro Ring
0.40 – 0.80 mm (0.016 – 0.031 in)
3rd: Outer Synchro Ring to Synchro Hub
1.05 – 1.50 mm (0.041 – 0.059 in)
Service limit:
1st: 0.3 mm (0.012 in)
2nd: 0.3 mm (0.012 in)
3rd: 0.6 mm (0.024 in)

Triple Cone Synchro-to-Gear Clearance
Standard:
1st: Outer Synchro Ring to Synchro Cone (1)
1st gear: [illegible]
2nd gear: [illegible]
2nd: Synchro Cone to Inner Cone (2)
1st gear: [illegible]
2nd gear: [illegible]
3rd: Inner Synchro Ring to Gear (3)
1st gear: [illegible]
2nd gear: [illegible]
Service limit:
1st: 0.3 mm (0.012 in)
2nd: 0.3 mm (0.012 in)
3rd: 0.5 mm (0.020 in)

Mainshaft Oil Seal Replacement

Special Tools Required
- Attachment, 47 mm x 52 mm x 12 mm 07746-0030300
- Driver 07749-0010000

1. Remove the transmission assembly.

2. Remove the oil seal from the transmission case with a screwdriver, taking care not to damage the bearing bore or damage the bearing if it is removed.

3. Drive a new oil seal into the transmission case using the special tools.

Countershaft Bearing Replacement

Special Tools Required
- Adapter, 52 mm (07746-0030100)
- Attachment, 72 mm x 75 mm (07746-0030400)
- Driver 07749-0010000
- Remover, 20 mm (07936-3710100)

1. Remove the bearing retainer and the countershaft bearing (1).

2. Remove the countershaft bearing (1) from the countershaft using the special tools and a press.

Countershaft Bearing Replacement (cont'd)

2. Install the new main bearing in the bearing driver set.

3. Install the new countershaft ball bearing (6206) in the bearing driver set.

Mainshaft Thrust Clearance Adjustment

Special Tools Required
- Main shaft puller, 07GAD-PG40110
- Main shaft puller set 07GAD-PG40100

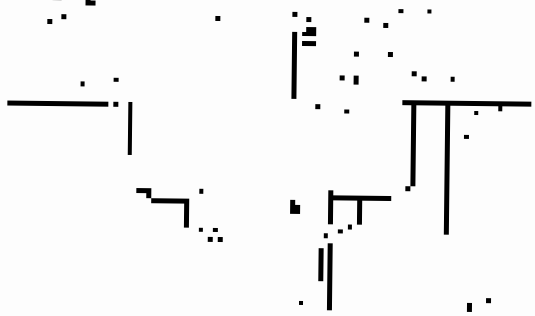
NOTES:
- Clean and dry the mainshaft thrust washers and bearings before measurement.
- Measure the thrust clearance at room temperature.

1. Remove the transmission housing and mainshaft assembly from the vise.

2. Install the mainshaft bearing (6206) in the main shaft puller set, then install the main shaft puller set on the mainshaft. Install the mainshaft bearing puller on the mainshaft. Hold the mainshaft puller set in a vise, and remove the mainshaft bearing.

NOTE: Be careful not to damage the mainshaft when removing the bearing.

3. Measure clearance between the mainshaft 3rd gear and the mainshaft bearing inner race using a feeler gauge. Measure at 3 places. Record the measurements for reference during reassembly.



Mainshaft Thrust Clearance Adjustment (cont'd)

6. Install the selected 3.5 mm (0.14 in) thick thrust washer and mainshaft bearing (1).

7. [illegible]

8. [illegible]

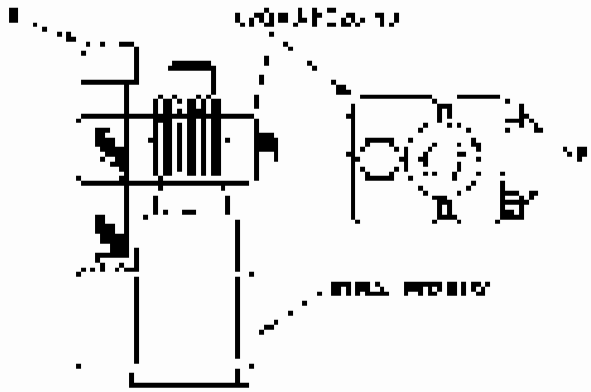
9. [illegible]

NOTE: [illegible]

10. [illegible]

11. Attach the special tool as shown in the installation drawing.

- [illegible]
- [illegible]
- [illegible]



12. [illegible]

13. [illegible]

1. [illegible]

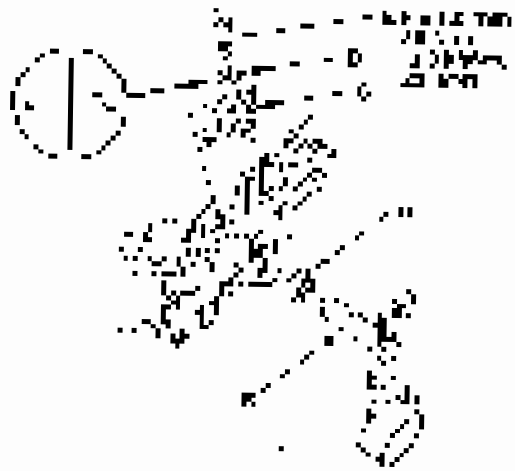
6. [illegible]

7. [illegible]

Standard: [illegible]

NOTE: [illegible]

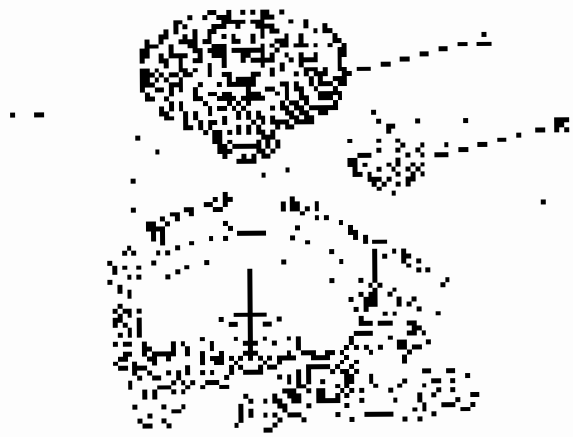
1. [illegible]

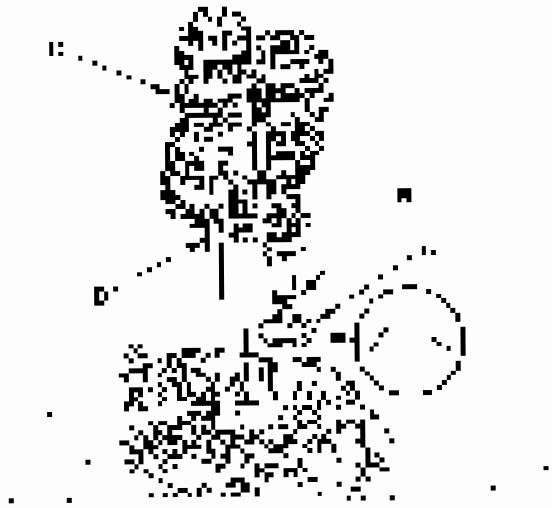


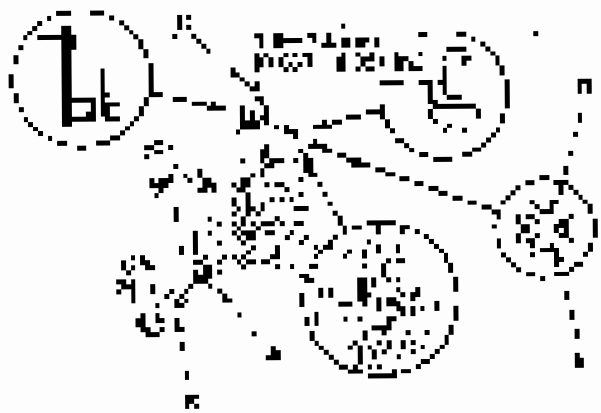
2. Select the proper [illegible] according to the measurement you made in Step 5 of "Input Shaft Thrust Clearance Adjustment" on page 13-66 and install it onto the input shaft [illegible].

(cont'd)

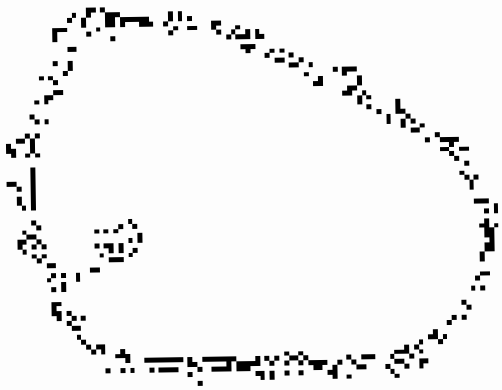
Transmission Reassembly (cont'd)

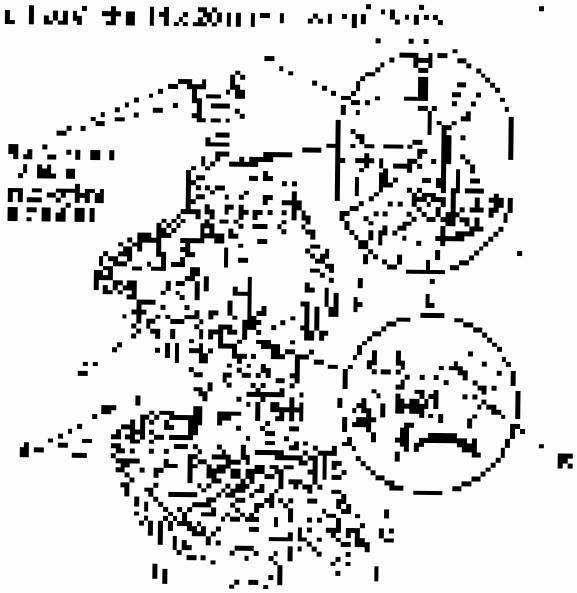


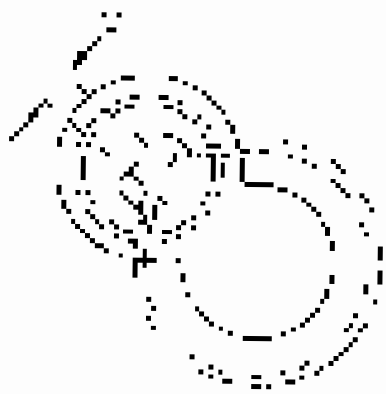




Transmission Reassembly (cont'd)





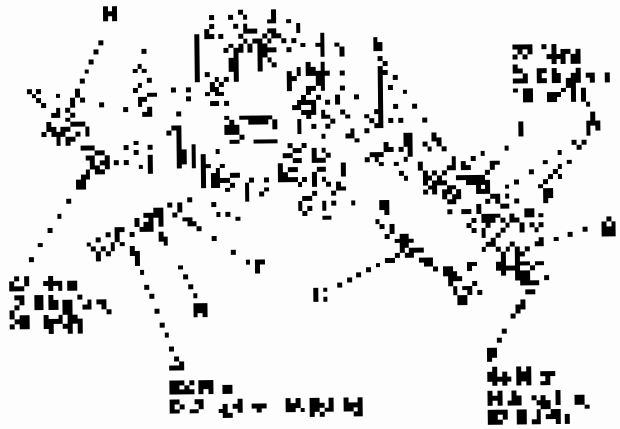


Transmission Reassembly (cont'd)

23. [illegible]

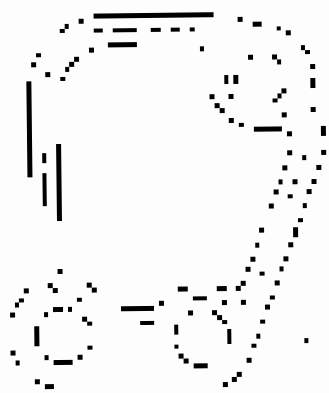
24. [illegible]

25. [illegible]

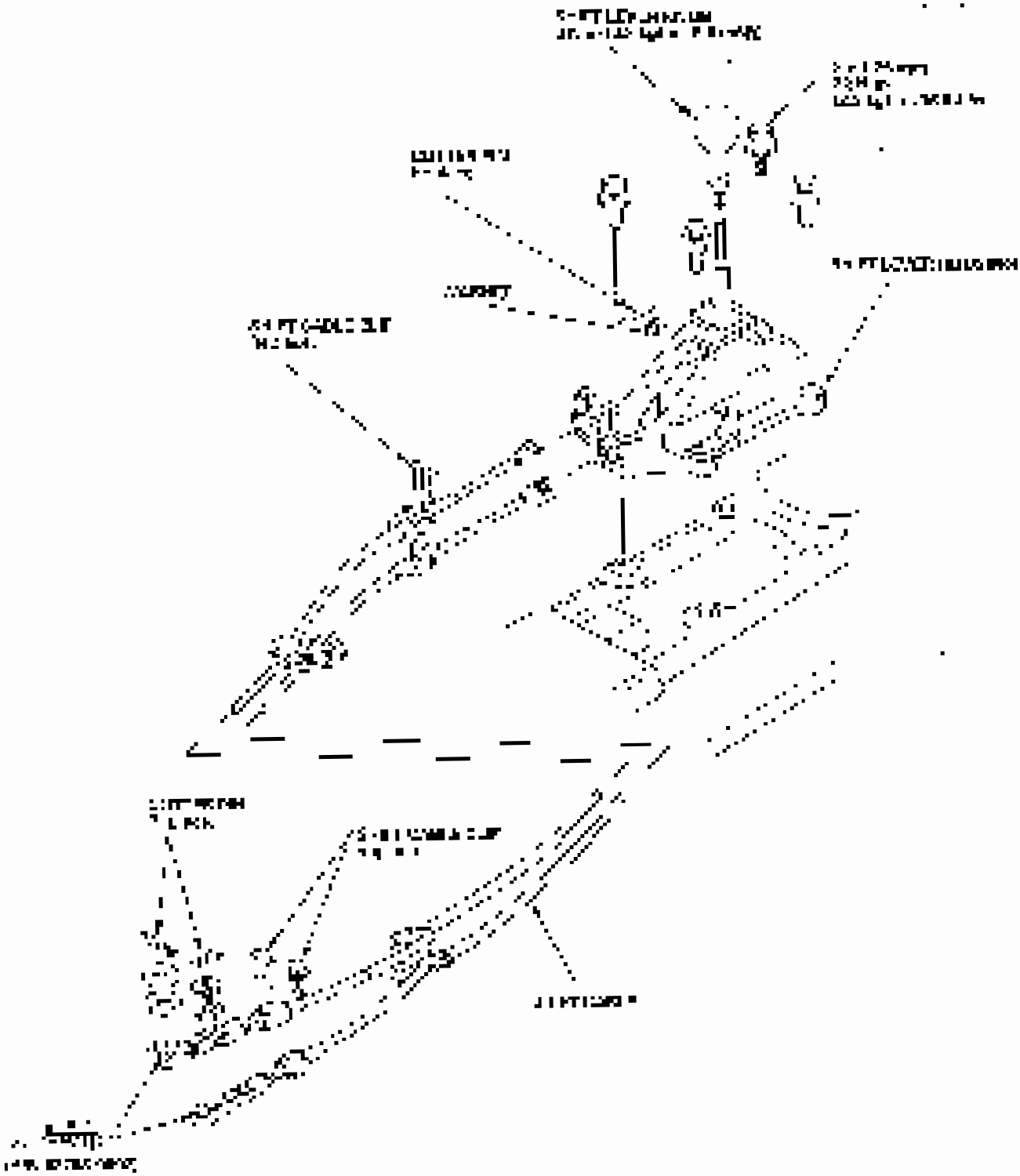


26. [illegible]

NOTE: [illegible]



Gearshift Mechanism Replacement



Shift Lever Housing Replacement

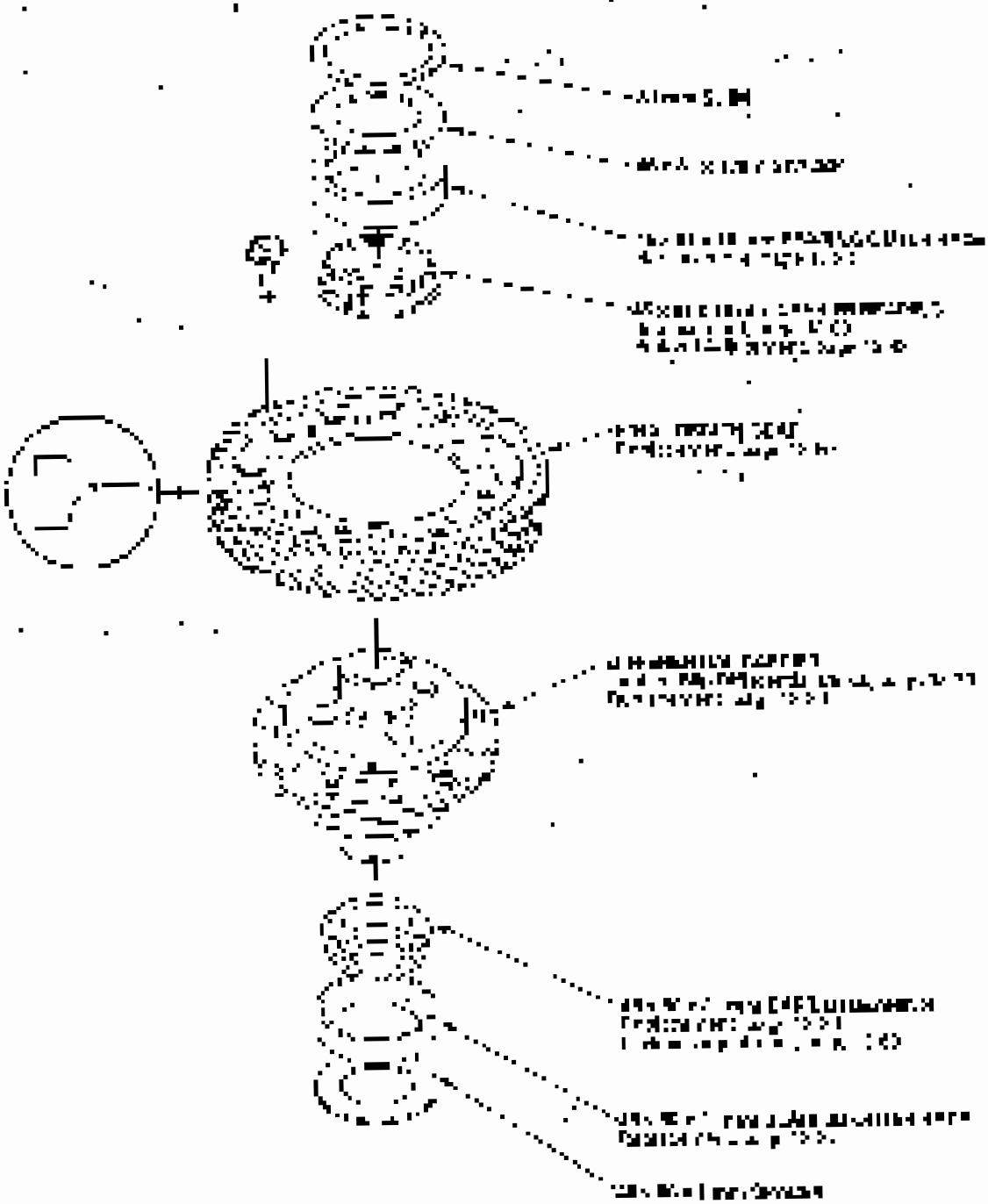
1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]

5. [illegible]
6. [illegible]
7. [illegible]

8. [illegible]
9. [illegible]
10. [illegible]

Component Location Index



Limited Slip Differential Check

Operational Check

NOTE: This test is for vehicles equipped with Porsche Limited Slip Differential. Limited slip differentials provide more traction than conventional differentials when driving on slippery surfaces. The differential gears lock when one wheel starts to spin faster than the other. The vehicle should be weighted (for example, with a load of 220 lbs. in the passenger seat) when performing this test. After the vehicle is lifted, the rear wheels must be free to turn.

Secure vehicle on a hoist. Mark the rear wheels.

1. Turn the ignition key to the position which allows the steering wheel to be turned.

2. Apply the brakes and turn the steering wheel to the left and right.

3. Apply the brakes and turn the steering wheel to the left and right. Compare the distance the wheels turn. If the distance is not equal, the limited slip differential is faulty and must be replaced.

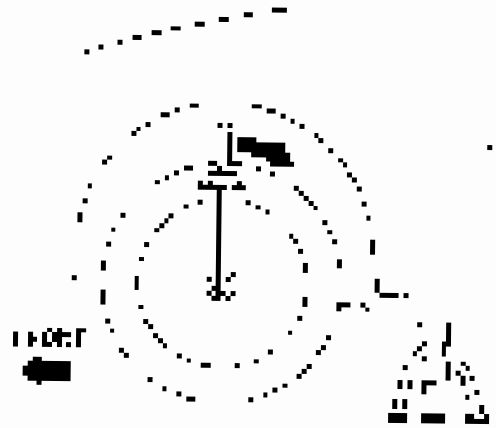
Rotating Torque Check

1. Set parking brake and put transmission in neutral.

2. Remove the front wheel and tire assembly from the side of the vehicle that is to be checked.

3. Using a torque wrench, measure the rotating torque of the drive flange.

4. Measure the rotating torque of the drive flange in the opposite direction. Record the highest reading obtained in each direction. The difference between the two readings must not exceed the specified limit.



5. Install the front wheel and tire assembly. Tighten the wheel lug nuts to specification.

6. Calculate the locking angle.

Formula

$$\frac{\text{Difference between the two readings}}{\text{Rotating torque specified}} \times 100$$

Example

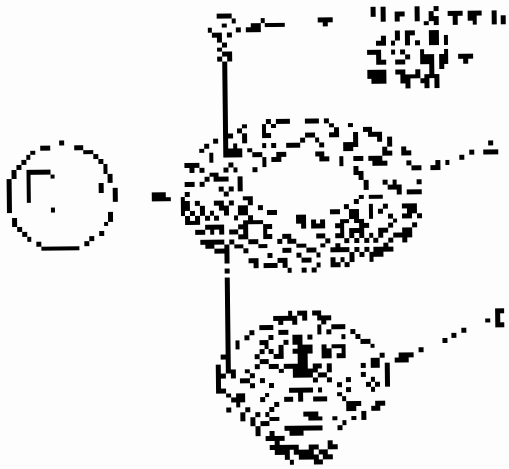
$$\frac{\text{Difference between the two readings}}{\text{Rotating torque specified}} \times 100$$

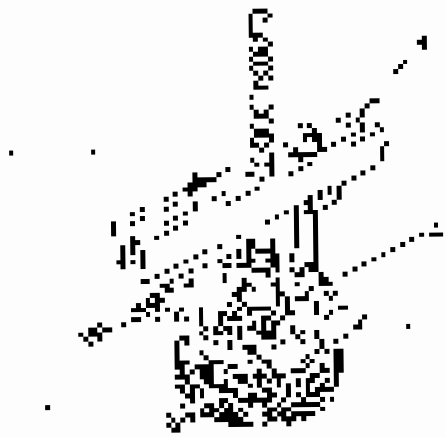
7. Repeat the test on the left front wheel.

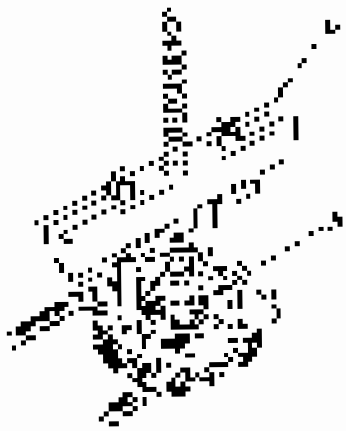
8. The locking angle must not exceed the specified limit. If the locking angle is greater than the limit, the differential is faulty and must be replaced.

Differential Carrier, Final Driven Gear Replacement

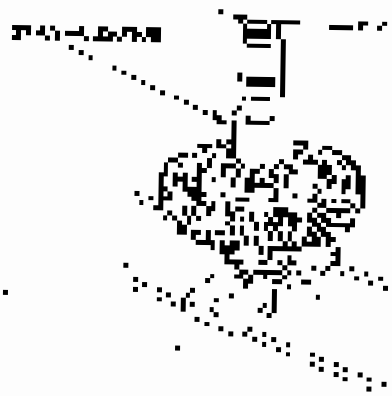
Carrier Bearing Replacement

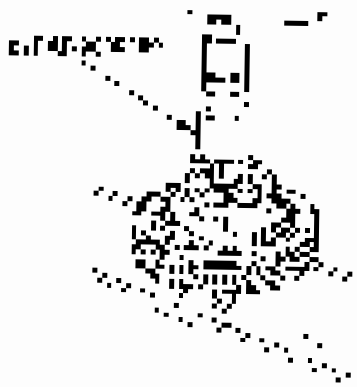






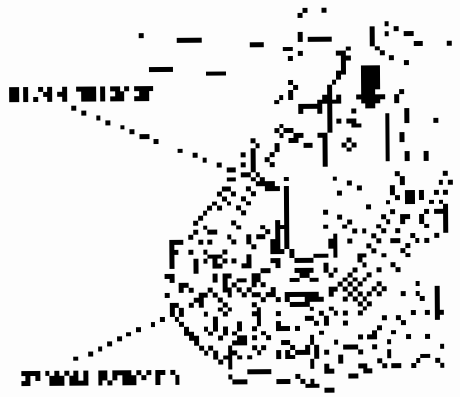
Oil Seal Replacement





Oil Seal Replacement (cont'd)

4. [illegible]



3. [illegible]

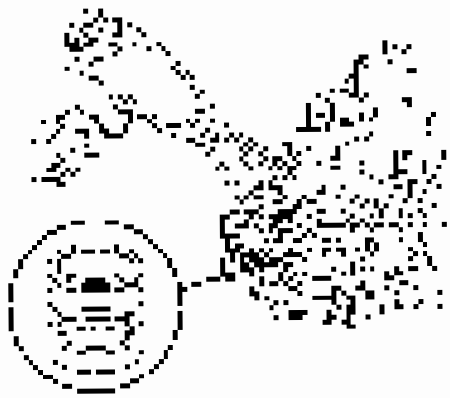
Bearing Outer Race Replacement

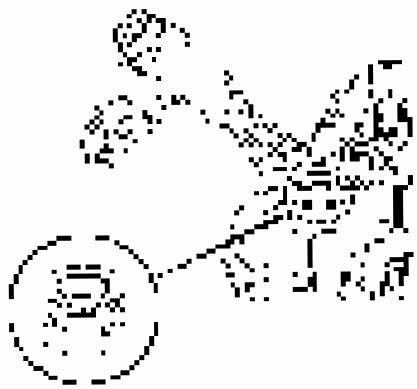
Special Tools Required
- [illegible]
- [illegible]

NOTE:
- [illegible]
- [illegible]

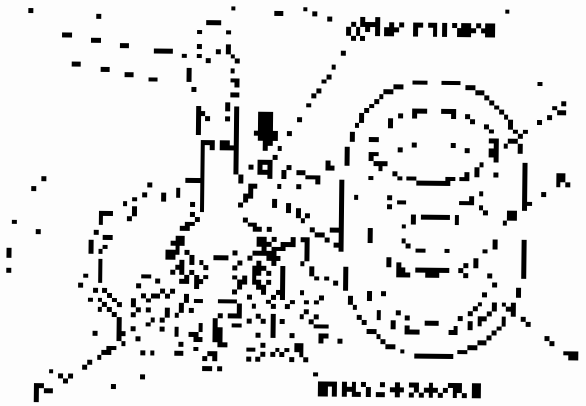
1. [illegible]

2. [illegible]





Carrier Bearing Preload Adjustment

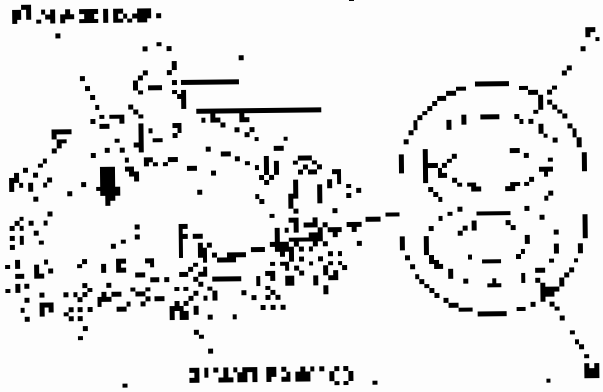


Carrier Bearing Preload Adjustment (cont'd)

3. [illegible]

4. [illegible]

5. [illegible]



6. [illegible]

NOTE: [illegible]

7. [illegible]

Carrier Bearing Preload Adjustment (cont'd)

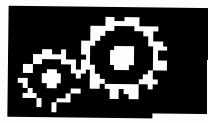
10. [illegible]
    - [illegible]
    [illegible]

11. [illegible]

12. [illegible]

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (For automatic transmission) (Multimode type required)

- To avoid serious injury or death, when removing, installing or performing inspection on SRS, be sure to observe the following precautions.
- Improper maintenance, including incorrect removal or installation of SRS, can lead to personal injury caused by unexpected activation of SRS.
- Do not use electrical test equipment on any circuit related to SRS unless instructed to in this section. SRS wiring harnesses can be identified by yellow and/or orange harness connectors.
- SRS contains electronic parts. Before performing any work on SRS, turn ignition switch to "LOCK" position, disconnect both battery cables and wait at least 3 minutes.



Automatic Transmission

A/T Gear Position Indicator

A/T Interlock System

Special Tools

No.	Tool Number	Description	Qty
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	2
[illegible]	[illegible]	[illegible]	2
[illegible]	[illegible]	[illegible]	2
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1

[illegible]

[illegible]

[illegible]

How to Check for DTCs with the Honda Diagnostic System

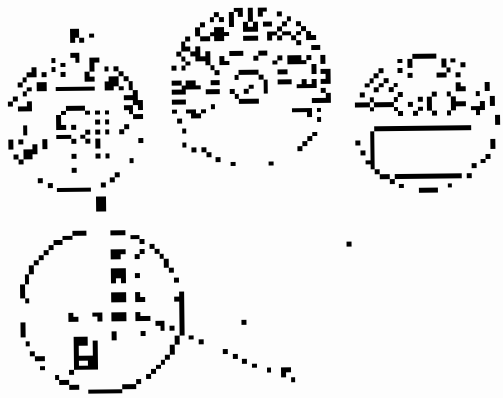
1. Connect the HDS to the DLC. Refer to the HDS manual for specific instructions.
2. Turn the ignition switch ON (II). Follow the HDS on the screen to read the DTCs and the freeze data.
3. If there is a hard code and multiple soft codes, troubleshoot the hard code first. For example, DTC P2000 may prevent other DTCs from setting. After repairing the hard code, recheck for DTCs, and any problems they produce. Troubleshoot the soft codes individually.

5. Clear the DTCs and freeze data.

1. Clear the stored information only after recording it and after you have performed the troubleshooting procedure for the DTC. If you clear the DTC before troubleshooting, the information will be lost. The problem will not be fixed. Make several test drives to verify that the repair is right.

General Troubleshooting Information (cont'd)

How to Check for DTCs with the SCS Works (overlooking the flash codes)



1. Connect the PGM Tester to the DLC. Check the PGM Tester's battery voltage. If it is low, recharge the battery before proceeding.
2. Turn the ignition switch ON (II). Using the PGM Tester, select the SELECT MODE screen. Select the D4 protocol and follow the instructions on the screen.
3. Start the engine, and let it idle. Drive the car at least 2 minutes at speeds above 10 mph (16 km/h). Stop the car, and let the engine idle for 2 minutes.
4. Access the DTC screen. Record any DTCs.
5. Refer to the Troubleshooting Index to find the page number for the DTC indicated by the PGM Tester. Troubleshoot the first DTC. If more than one DTC is indicated, troubleshoot the lowest DTC first.
6. Repeat the DTC check.
7. After the system is free of DTCs, disconnect the PGM Tester from the DLC. Clear the DTC from memory by disconnecting the battery for 10 seconds or more. Test drive the car to make sure the MIL comes on.

How to Troubleshoot Circuits at the PCM

Special Tools Required
Breakout box (J35616) or equivalent

Install the breakout box between the wiring harness and the PCM. Refer to the appropriate wiring diagram.

2. Using the breakout box, probe the PCM according to the DTC you are trying to diagnose with the recommended test and/or digital multimeter.

3. Connect the appropriate test equipment (refer to the wiring diagram and breakout box instructions). Refer to the PCM connector illustration.

4. Using the wiring diagram, probe the appropriate test points. For example, if you are testing for a voltage, probe the appropriate circuit with the positive meter lead and the negative meter lead to ground.

5. Perform the circuit tests. If the circuit tests normal, the problem may be an intermittent condition. Refer to Symptoms. If you are instructed to replace the PCM, refer to PCM Replacement/Programming.

How to Clear ALDL DTCs

1. Connect the ECM to the DLC.
2. Turn the ignition switch to ON.
3. Clear the DTCs using the ALDL.

ONBD Status

The ONBD System shows the current status of the ONBD system. This includes whether the system is enabled or disabled, whether the vehicle is currently being driven under conditions that will allow the ONBD system to run, and whether the ONBD system has run and completed.

- PASS: On Board Diagnostics have been run and fully tested.
- FAILED: On Board Diagnostics have been run and failed the test.
- NOT COMPLETED: On Board diagnostics have not been run and completed this key cycle. Refer to the Emission Label for more information.

General Troubleshooting Information (cont'd)

PCM Updating and Substitution for Testing

Special Tools Required
[illegible]

[illegible]

Do not use a battery charger to maintain the battery voltage during the PCM replacement. Some battery chargers produce voltage spikes that can damage the PCM.

How to Update the PCM

NOTE:
- [illegible]
- Make sure the battery is fully charged before updating the PCM. A low battery can cause the update to fail.
- Do not connect or disconnect any electrical component during the update. It will cause the update to fail.
- Before you update the PCM, make sure all other electrical accessories are turned off. Failure to do so may cause the update to fail.
- The update takes about 10 minutes. Do not start the engine during the update. Make sure the battery is fully charged before you begin the update. If the battery goes dead during the update, the PCM will be damaged.

1. Turn the ignition switch to ON (II). Do not start the engine.
2. Connect the Honda Diagnostic System (HDS) to the data link connector under the driver's dashboard.

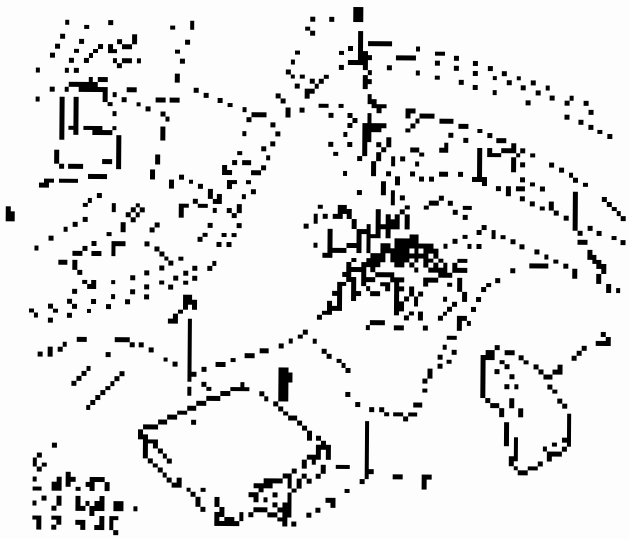
3. Follow the instructions that appear on the HDS screen. Select the PCM update (reflash) mode. Follow the instructions on the HDS.

How to Substitute the PCM

1. [illegible]
2. [illegible]
3. Jump the SCS line with the HDS.
4. Remove the PCM and install a new or known good PCM.
5. After installing a known good PCM, the DTCs will show you if the repair is successful.
6. After completing your repair, be sure to perform the PCM update (reflash) procedure listed above. This will ensure that the PCM has the latest software.

How to Remove and Install the PCM

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]



6. [illegible]
7. [illegible]

How to Perform a Troubleshooting Session

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]

DTC Troubleshooting Index

DTC*	Display	MIL (*2)	Detection Item	Page
P0705-00**	Blinks	Off	Transmission range sensor circuit malfunction (PRNDL input)	page 14-[illegible]
P0706-00**	Blinks	Off	Transmission range sensor circuit range/performance	page 14-[illegible]
P0711-00**	Blinks	Off	ATF temperature sensor range/performance	page 14-[illegible]
P0712-00**	Blinks	Off	ATF temperature sensor low input	page 14-[illegible]
P0713-00**	Blinks	Off	ATF temperature sensor high input	page 14-[illegible]
P0715-00**	Blinks	Off	Input shaft speed sensor circuit malfunction (no signal)	page 14-[illegible]
P0716-00**	Blinks	Off	Input shaft speed sensor range/performance	page 14-[illegible]
P0717-00**	Blinks	Off	Input shaft speed sensor circuit no signal	page 14-[illegible]
P0720-00**	Blinks	Off	Output shaft speed sensor circuit malfunction (no signal)	page 14-[illegible]
P0721-00**	Blinks	Off	Output shaft speed sensor range/performance	page 14-[illegible]
P0731-00**	Blinks	Off	1st gear incorrect ratio	page 14-[illegible]
P0732-00**	Blinks	Off	2nd gear incorrect ratio	page 14-[illegible]
P0733-00**	Blinks	Off	3rd gear incorrect ratio	page 14-[illegible]
P0734-00**	Blinks	Off	4th gear incorrect ratio	page 14-[illegible]
P0735-00**	Blinks	Off	5th gear incorrect ratio	page 14-[illegible]
P0741-00**	Blinks	Off	Torque converter clutch circuit performance or stuck Off	page 14-[illegible]
P0742-00**	Blinks	Off	ATF clutch pressure control solenoid valve A circuit stuck ON	page 14-[illegible]
P0743-00**	Blinks	Off	ATF clutch pressure control solenoid valve A circuit stuck OFF	page 14-[illegible]
P0751-00**	Blinks	Off	Shift solenoid valve A performance	page 14-[illegible]
P0752-00**	Blinks	Off	Shift solenoid valve A stuck ON	page 14-[illegible]
P0756-00**	Blinks	Off	Shift solenoid valve B performance	page 14-[illegible]
P0757-00**	Blinks	Off	Shift solenoid valve B stuck ON	page 14-[illegible]
P0761-00**	Blinks	Off	Shift solenoid valve C performance	page 14-[illegible]
P0762-00**	Blinks	Off	Shift solenoid valve C stuck ON	page 14-[illegible]
P0776-00**	Blinks	Off	4-5 shift pressure control solenoid valve B circuit performance	page 14-[illegible]
P0777-00**	Blinks	Off	4-5 shift pressure control solenoid valve B circuit stuck ON	page 14-[illegible]
P0841-00**	Blinks	Off	ATF pressure sensor circuit	page 14-[illegible]

NOTE:

- *1: This DTC is not stored in the ECM's memory. Instead, it is stored in the TCM's memory. To read this DTC, connect the Honda PGM Tester to the data link connector (DLC) and follow the instructions in the PGM Tester's User's Manual.
- *2: The MIL comes on when the same failure occurs in two consecutive driving cycles. It goes off automatically if the failure does not occur for 40 consecutive warm-up cycles.

NOTE: [illegible] General Troubleshooting [illegible] (see page 14-[illegible]) [illegible]

DTC*1	D Indicator	MIL	Detection Item	Page
[illegible]	Blinks	ON	[illegible]	See page 14-133
[illegible]	Blinks	ON	[illegible]	See page 14-[illegible]
[illegible]	Blinks	OFF	[illegible]	See page 14-[illegible]
[illegible]	Blinks	OFF	[illegible]	See page 14-[illegible]
[illegible]	Blinks	[illegible]	[illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	[illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	[illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	[illegible] OFF	See page 14-[illegible]
[illegible]	Blinks	ON	A/T clutch pressure [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	A/T clutch pressure [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	A/T clutch pressure [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	A/T clutch pressure [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	A/T clutch pressure [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	[illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	Shift solenoid valve [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	Shift solenoid valve [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	Shift solenoid valve [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	Shift solenoid valve [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	Shift solenoid valve [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	Shift solenoid valve [illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	[illegible]	See page 14-[illegible]
[illegible]	Blinks	ON	[illegible]	See page 14-172

NOTE:

*1: The DTC [illegible]

*2: [illegible]

Symptom Troubleshooting Index

Symptom	Probable cause	Page
	Communication link between multiplex integrated control unit and gauge control module (GCM)	

Symptom	Possible causes	Notes
Engine runs but vehicle does not move in any gear	1. Low ATF level 2. Plugged ATF filter or strainer 3. Clogged ATF cooler 4. ATF pump worn or damaged 5. Torque converter one-way clutch not holding 6. ATF pump intake screen restricted 7. Valve body malfunction 8. Broken input shaft 9. Transmission overheating 10. Incorrect gear selection	• Low ATF level can be caused by external leakage or internal slippage due to worn clutches or seals. • Check for leaks around ATF pump, pump cover, and input shaft. • Inspect suction screen in ATF pump for restriction. Clean or replace as necessary. Flush ATF cooler and lines. • Remove and inspect ATF pump for damage. Check pump gears for wear or damage. Replace pump if worn or damaged. • Check torque converter one-way clutch for proper operation. Replace converter if clutch is not holding properly. • Remove valve body and inspect for damaged or worn components. Replace as necessary. Check for proper valve body bolt torque. • Inspect input shaft for damage. Replace if necessary. • Check for proper ATF level and condition. Refer to Section 1B for recommended maintenance procedures.
Vehicle moves with excessive D, L or R engagement	1. Engine speed too high with gear selected 2. Throttle cable misadjusted 3. Transmission overheating	• Engine speed too high with gear selected. Check for proper idle speed. Refer to Section 4 for procedures. • Throttle cable misadjusted. Check for proper cable adjustment. Refer to Section 4 for procedures. • Transmission overheating. Check for proper ATF level and condition. Check for restricted ATF cooler and lines. Refer to Section 1B for recommended maintenance procedures.

Symptom Troubleshooting Index (cont'd)

Symptom	Probable cause(s)	Notes
[illegible]	[illegible]	- [illegible] - [illegible] and damage. - [illegible]
[illegible]	1. [illegible] 2. [illegible] 3. [illegible] 4. [illegible] 5. [illegible] 6. [illegible] worn or damaged	- [illegible] - Check for a missing [illegible] - [illegible] - [illegible] - [illegible] - [illegible] - [illegible] and damage. [illegible]

Symptom	Possible cause	Remedy
[illegible]	1. [illegible] ATF level	- Check ATF level. Add ATF as required.
[illegible]	2. [illegible] valve body	- Check for leaks and repair as necessary.
[illegible]	3. Stator one-way clutch	- Check for leaks between oil pump and transmission case. Repair as necessary.
	4. Engine [illegible]	- Check for engine problems.
	5. ATF [illegible]	- Inspect oil pump gears and housing for excessive wear or damage. Replace as necessary.
	6. Torque converter [illegible]	- Inspect valve body for sticking valves or broken springs. Replace as necessary.
		- Inspect torque converter for damage. Replace as necessary.
Vehicle [illegible]	1. Shift cable [illegible]	- Check shift cable adjustment. Adjust as necessary.
	2. Shift [illegible]	- Check for broken valve springs. Replace as necessary.
		- Inspect valve body for sticking valves or broken springs. Replace as necessary.
		- Inspect oil pump gears and housing for excessive wear or damage. Replace as necessary.
Vehicle [illegible]	1. Throttle [illegible]	[illegible]
	2. Engine [illegible]	
	3. Torque converter [illegible]	
	4. [illegible]	
[illegible]	1. [illegible] ATF level	- Check ATF level. Add ATF as required.
	2. [illegible]	- Inspect oil pump gears and housing for excessive wear or damage. Replace as necessary.
	3. Stator one-way clutch	- Check for ATF pump cavitation. Add ATF as required.
	4. Engine [illegible]	- Check for engine problems.
	5. Throttle [illegible]	
	6. ATF [illegible]	
	7. [illegible]	

Symptom Troubleshooting Index (cont'd)

Symptom		Possible cause(s)	Note
	1.		
	2.		
	3.		
	4.		
	5.		
	6.		
	7.		
	8.		
	9.		
	10.		
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	14.		
	15.		

Symptom		Probable cause(s)	Remedy
[illegible]	1.	[illegible]	• [illegible]
[illegible]	2.	[illegible]	• [illegible]
	3.	[illegible]	• [illegible]
	4.	[illegible]	
	5.	[illegible]	
	6.	[illegible]	• [illegible]
	7.	[illegible]	
	8.	[illegible]	• [illegible]
	9.	[illegible]	
	10.	[illegible]	• [illegible]
	11.	[illegible]	• [illegible]
	12.	[illegible]	
	13.	[illegible]	
	14.	[illegible]	
[illegible]	1.	[illegible]	• [illegible]
	2.	[illegible]	• [illegible]
	3.	[illegible]	• [illegible]
	4.	[illegible]	
	5.	[illegible]	
[illegible]	1.	[illegible]	• [illegible]
	2.	[illegible]	• [illegible]

Symptom Troubleshooting Index (cont'd)

Symptom		Probable cause(s)	Refer
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	1		
	2		
	3		
	4		
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		

Symptom	Probable cause(s)	Notes
[illegible]	1. [illegible] 2. [illegible] 3. [illegible] 4. [illegible] 5. [illegible] 6. [illegible] 7. [illegible] 8. [illegible] 9. [illegible] 10. [illegible] 11. [illegible]	• [illegible] • [illegible] • [illegible] • [illegible]
[illegible]	1. [illegible] 2. [illegible] 3. [illegible] 4. [illegible] 5. [illegible] 6. [illegible] 7. [illegible] 8. [illegible] 9. [illegible] 10. [illegible] 11. [illegible] 12. [illegible] 13. [illegible]	• [illegible] • [illegible] • [illegible] • [illegible]

Symptom Troubleshooting Index (cont'd)

Symptom		Probable cause(s)	Menu
Incorrect fluid level and/or improper fluid condition	1	Improper fluid level or fluid condition	• Inspect the appearance of ATF and check the level.
	2	Fluid overheated (Burnt smell and/or poor performance; shifting harsh; slippage; noise)	• Inspect the condition of the vehicle's cooling system. Check the ATF cooler and lines for restriction or damage. Inspect the transmission for internal damage and wear. Refer to the troubleshooting guide and test procedures.
Vehicle does not move in any drive position (Stall Test Normal)		Transmission assembly damaged	Inspect the transmission assembly.
Vehicle does not move in any drive position (Stall Test Engine speed too high)		Line pressure low or pump worn	• Check for low or contaminated fluid. Inspect the pump gears. If worn, replace the pump assembly.
			• Check the strainer.
Vehicle moves in reverse, but not in drive	1	Transmission range switch damaged or misadjusted	• Check the manual valve adjustment. Inspect the transmission range switch. If damaged, replace it. If misadjusted, adjust it. Refer to the troubleshooting guide and test procedures.
	2	Manual valve damaged or misadjusted	
	3	Valve body damaged	• Inspect the valve body. Refer to the troubleshooting guide and test procedures.
Transmission overheats	1	Fluid level low	• Check the fluid level. Inspect the vehicle for external leaks. Repair as needed.
	2	Automatic transmission fluid (ATF) cooler system restricted	• Check the ATF cooler and lines for restriction or damage. Flush the cooler and lines after repair. Refer to the troubleshooting guide and test procedures.
	3	Torque converter one-way clutch slipping	
Transmission noisy in Park and Neutral	1	Fluid level low	Check the fluid level. Inspect the vehicle for external leaks. Repair as needed. If fluid is contaminated, drain and refill transmission. If contamination continues, refer to the troubleshooting guide.
	2	ATF pump worn or cover porosity	
	3	Torque converter one-way clutch worn	
	4	Input shaft bearing worn	
	5	Idler gear bearing worn or damaged	
	6	Parking gear and/or shaft worn	

Symptom	Probable causes	Notes
[illegible]	1. [illegible] position 2. [illegible] 3. [illegible] solenoid [illegible] 4. [illegible] defective 5. Torque converter [illegible] defective 6. [illegible] 7. [illegible] 8. [illegible]	• [illegible] voltage [illegible] • Check [illegible] connectors [illegible] pressure control [illegible] damage. [illegible] • [illegible]
Torque converter [illegible]	1. Torque [illegible] solenoid valve [illegible] 2. A/T [illegible] solenoid [illegible] 3. [illegible] shaft [illegible] sensor defective 4. [illegible] defective 5. [illegible] 6. [illegible] defective 7. Loose [illegible] defective 8. Loose [illegible]	[illegible] and check for loose connectors [illegible] A/T clutch pressure control solenoid [illegible] for wear and damage. If the A/T clutch pressure control solenoid [illegible] replace [illegible]
A/T gear position indicator [illegible]	1. Transmission [illegible] 2. [illegible] 3. Shift cable [illegible] 4. [illegible]	• Check the [illegible] connectors. [illegible] switch. [illegible] • [illegible] • [illegible]
[illegible]	Disconnected [illegible] speed sensor connector.	Check [illegible] and check for loose connector.
The [illegible] transmission [illegible]	VTEC [illegible]	Check [illegible]

System Description

General Operation

Torque Converter Clutch Solenoid

Electronic Control

Hydraulic Control

Shift Control Mechanism

Line Pressure Control

Gear Selection

Position		Description
[illegible]		[illegible]
[illegible]		[illegible]
[illegible]		[illegible]
[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]
[illegible]		[illegible]

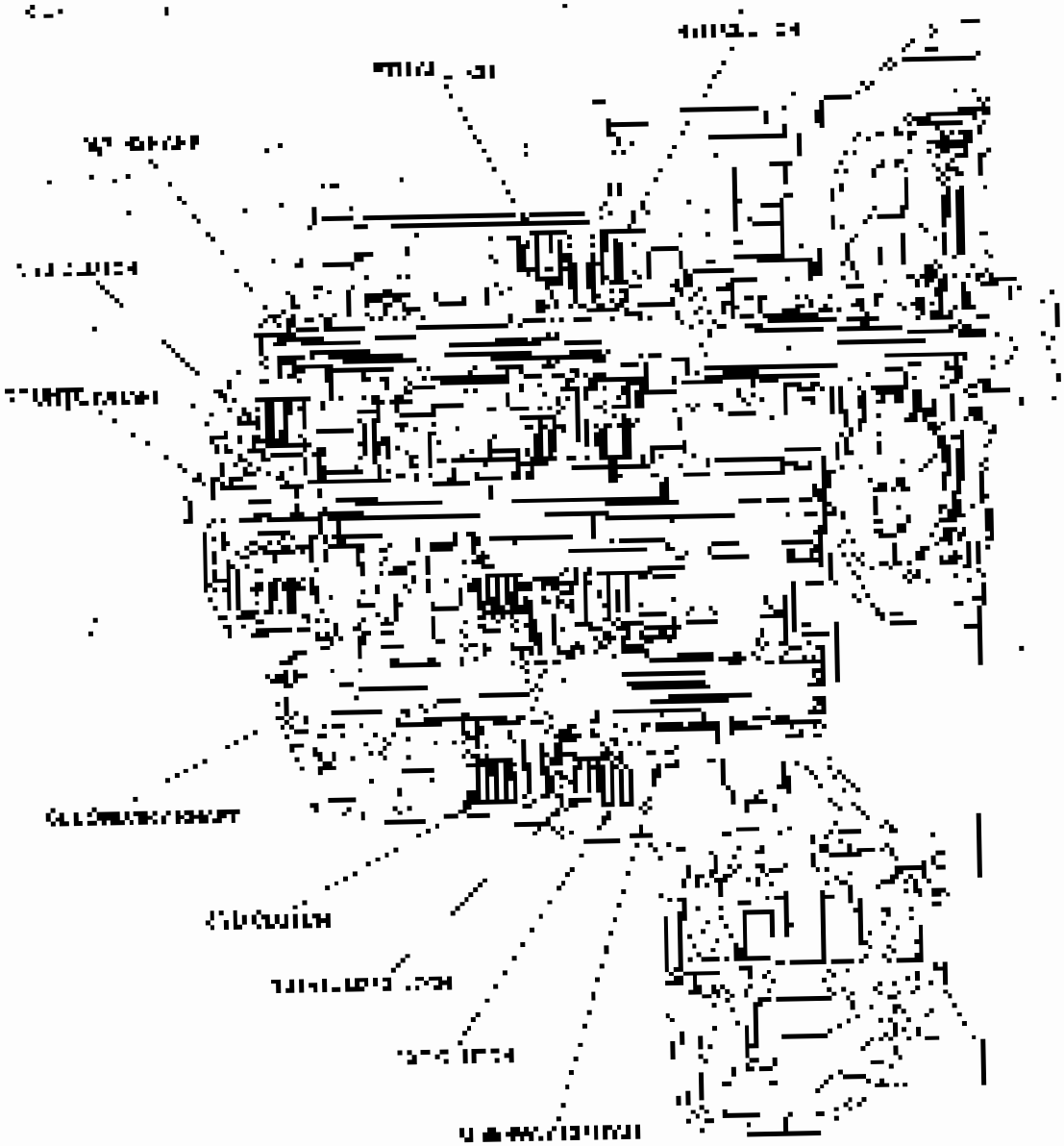
[illegible]

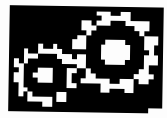
Automatic Transmission Shift Position Indicator

[illegible]

System Description (cont'd)

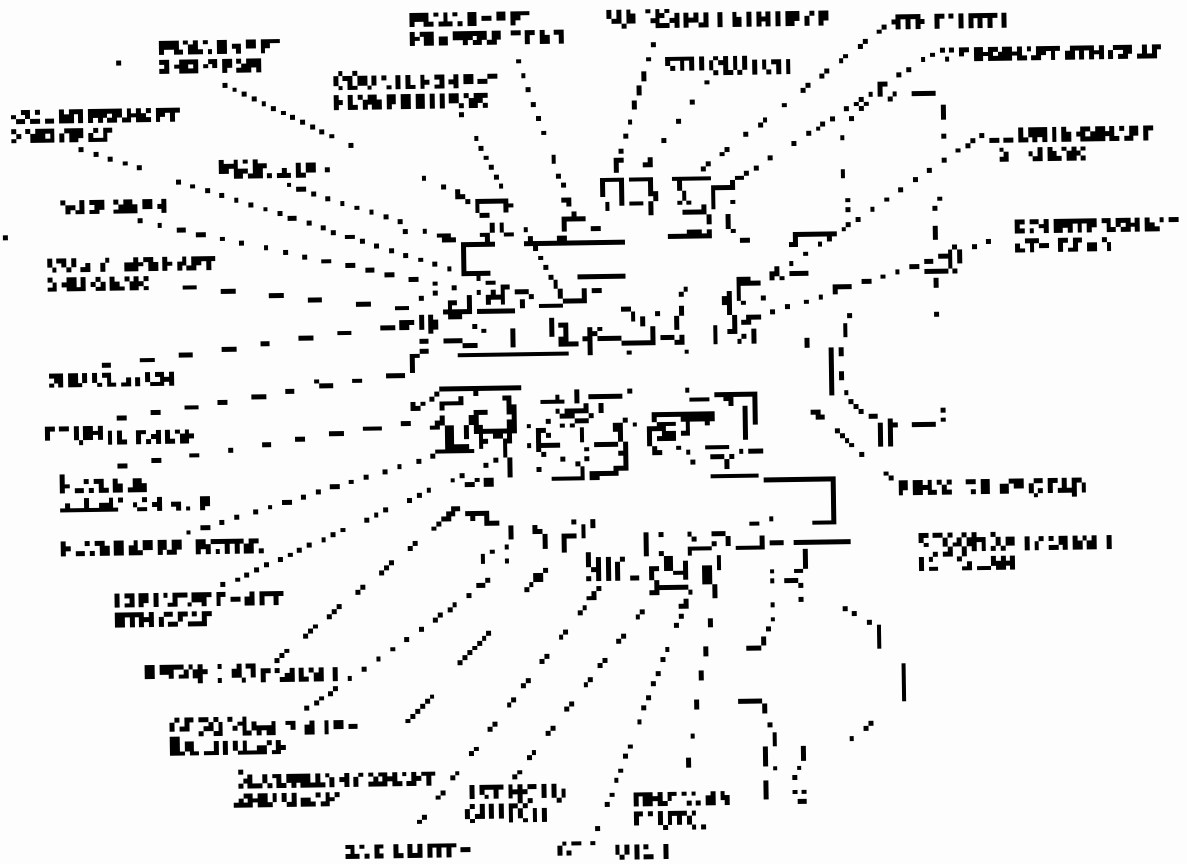
Clutches

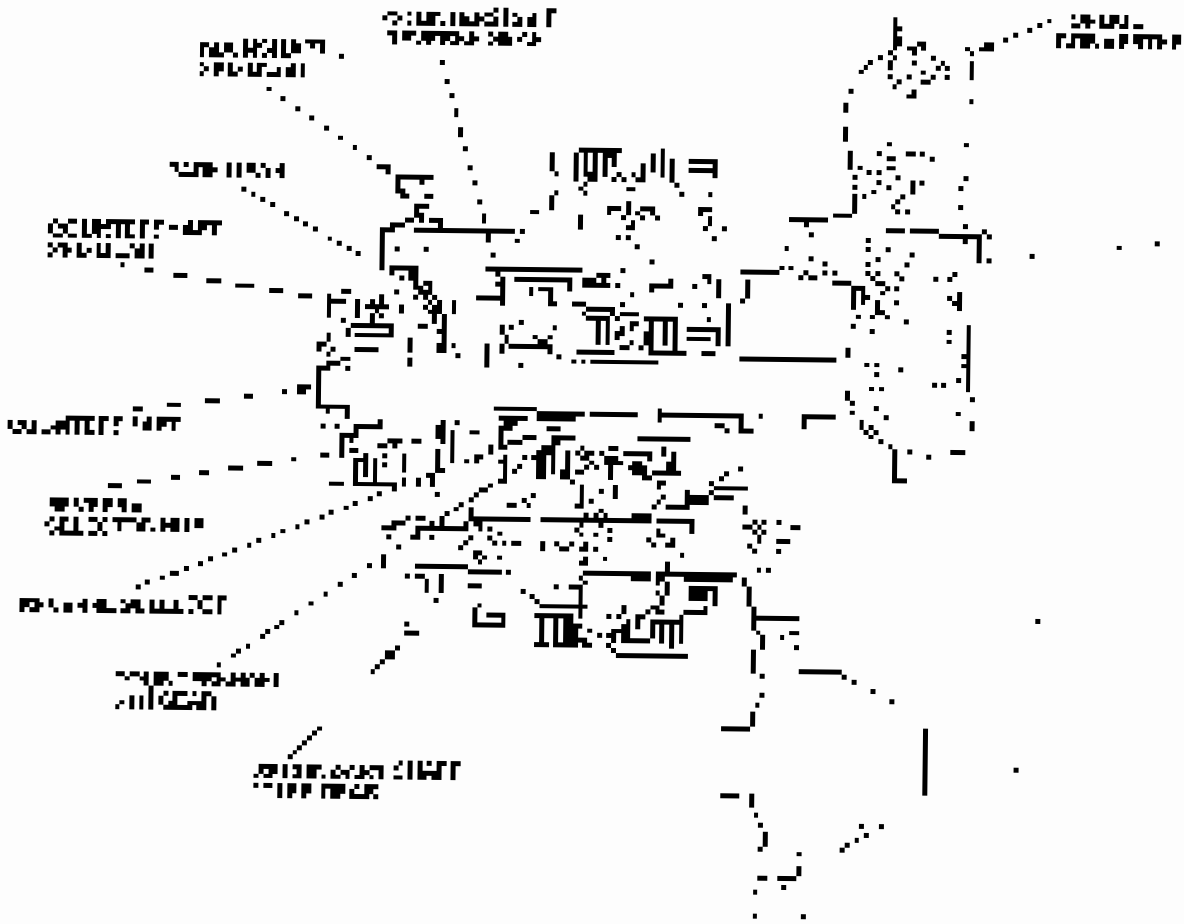




System Description (cont'd)

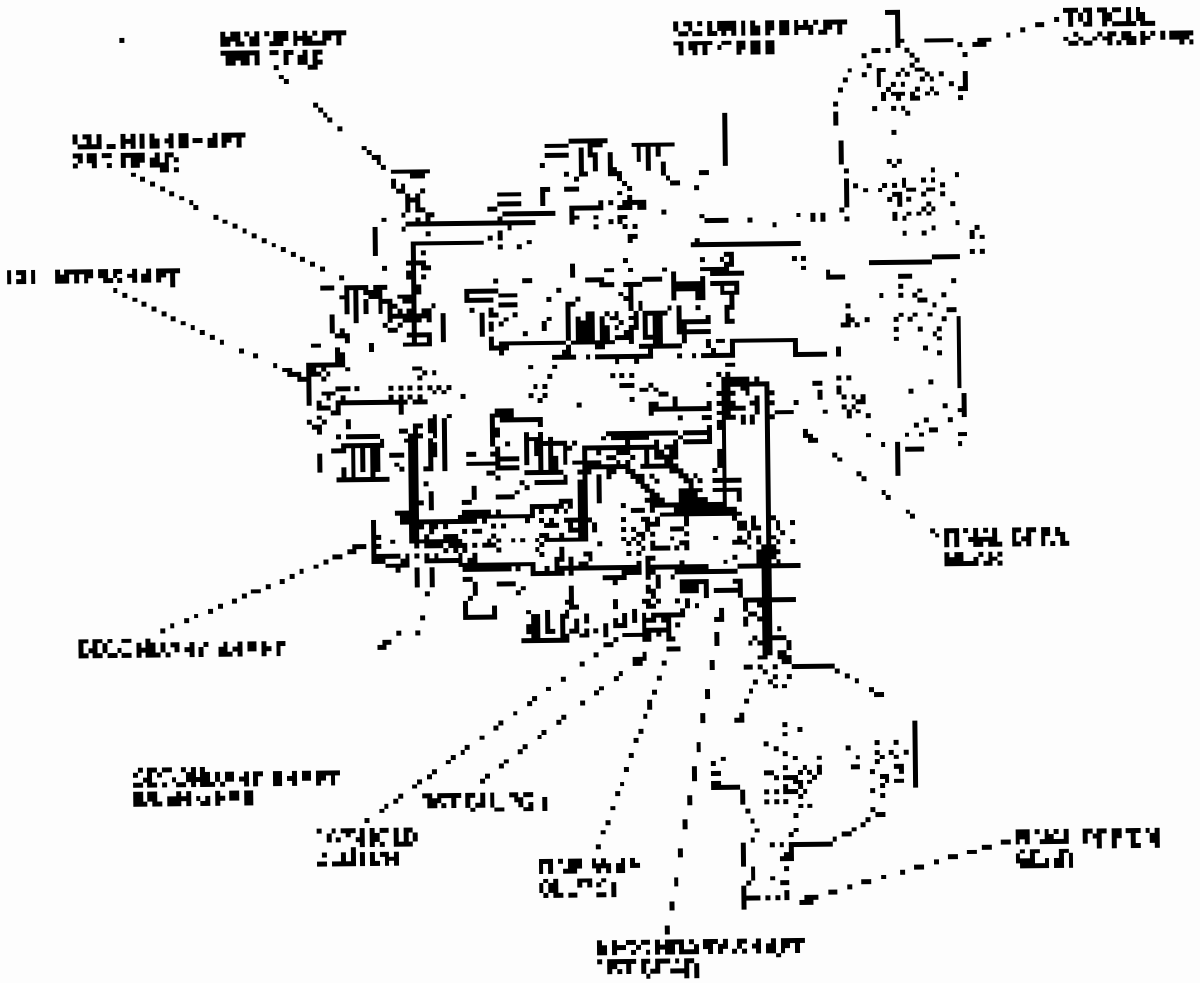
Power Flow

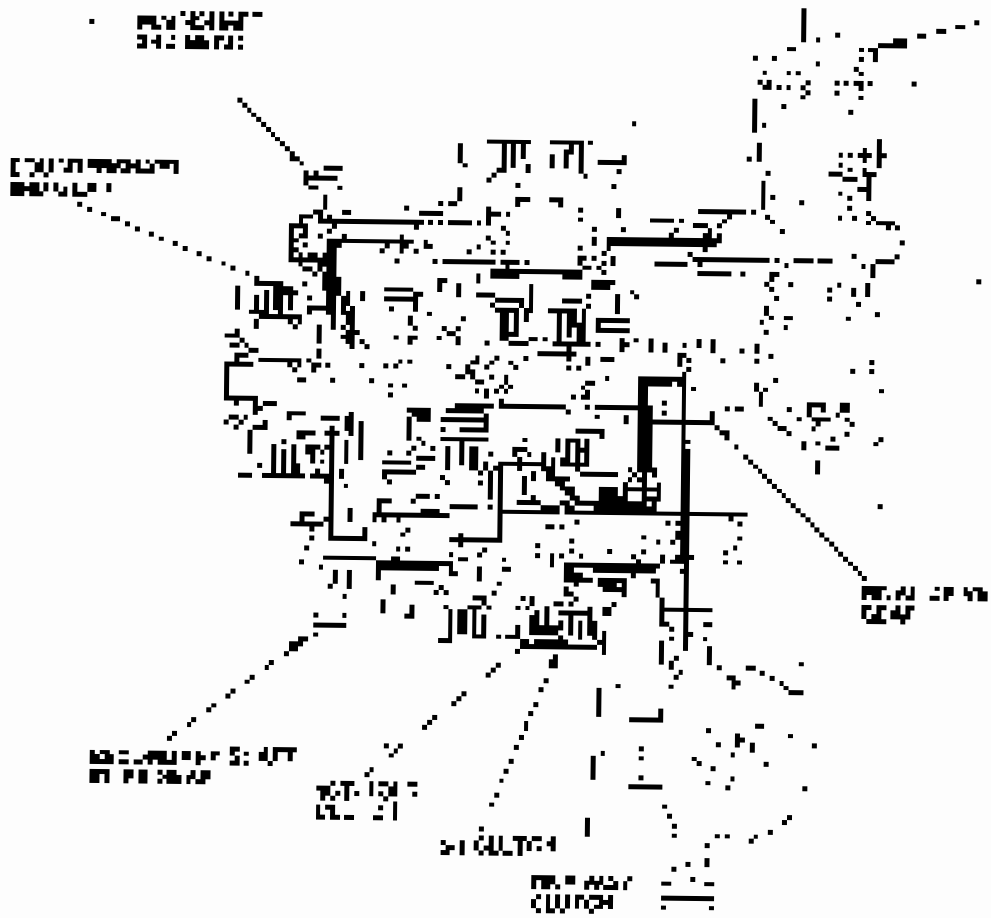




System Description (cont'd)

Power Flow (cont'd)

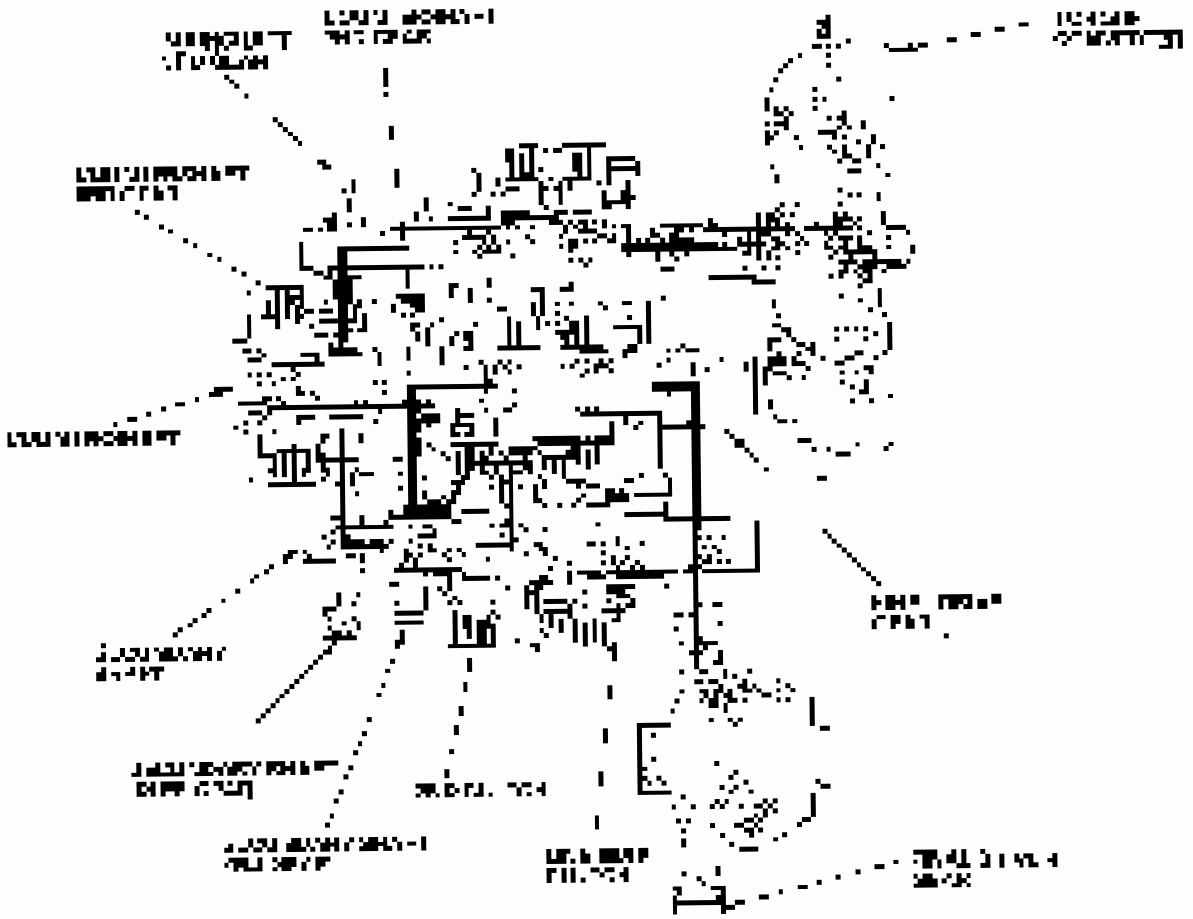


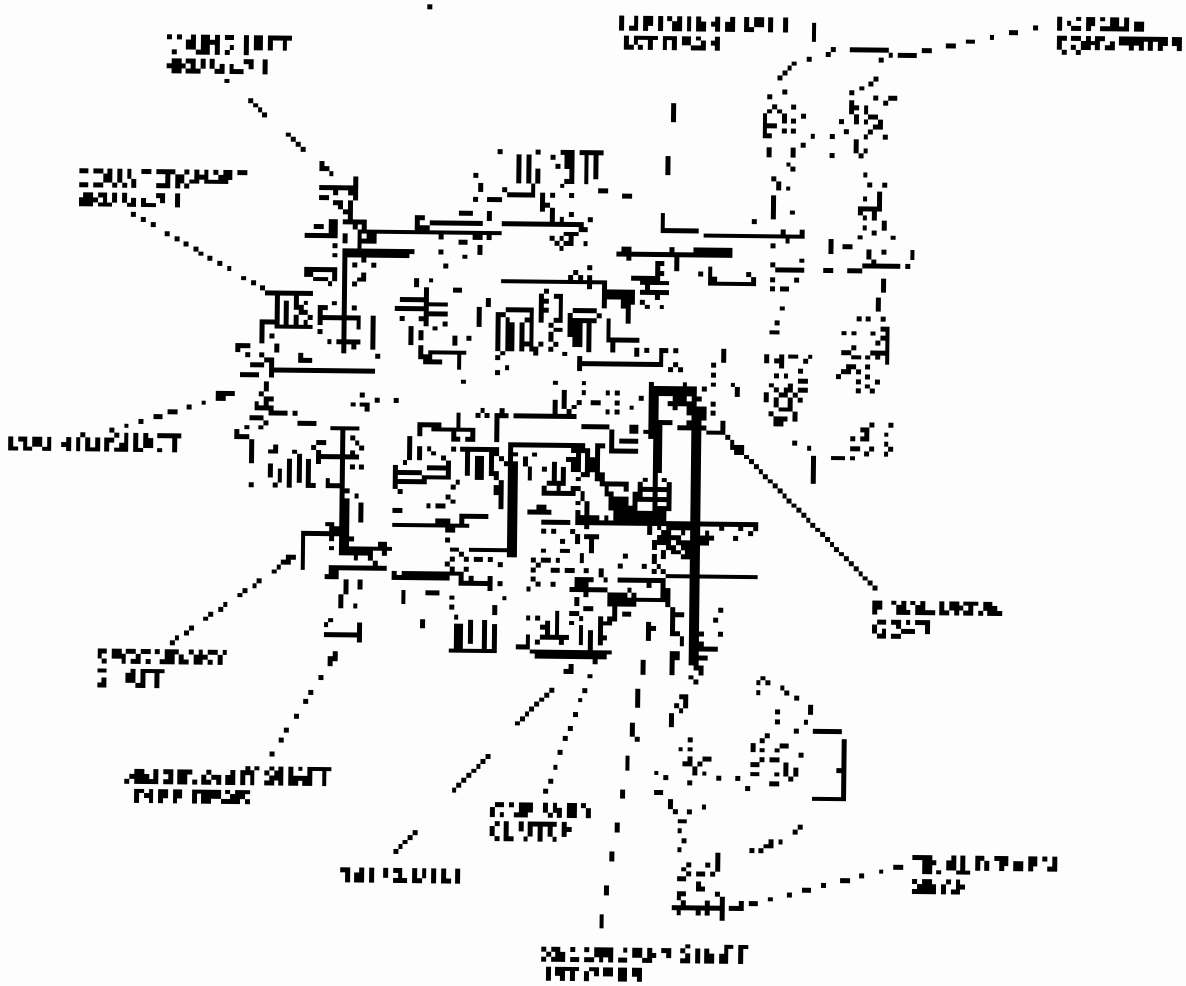


System Description (cont'd)

Power Flow (cont'd)

[illegible]



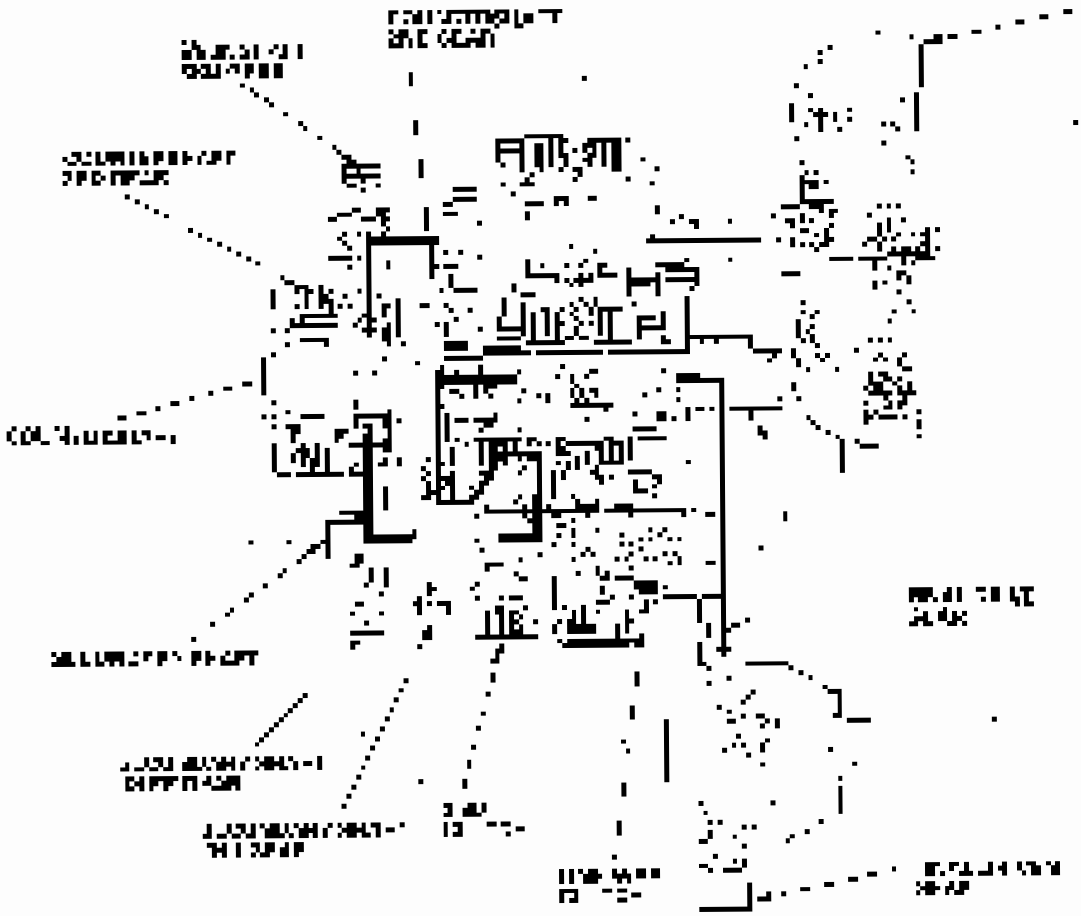


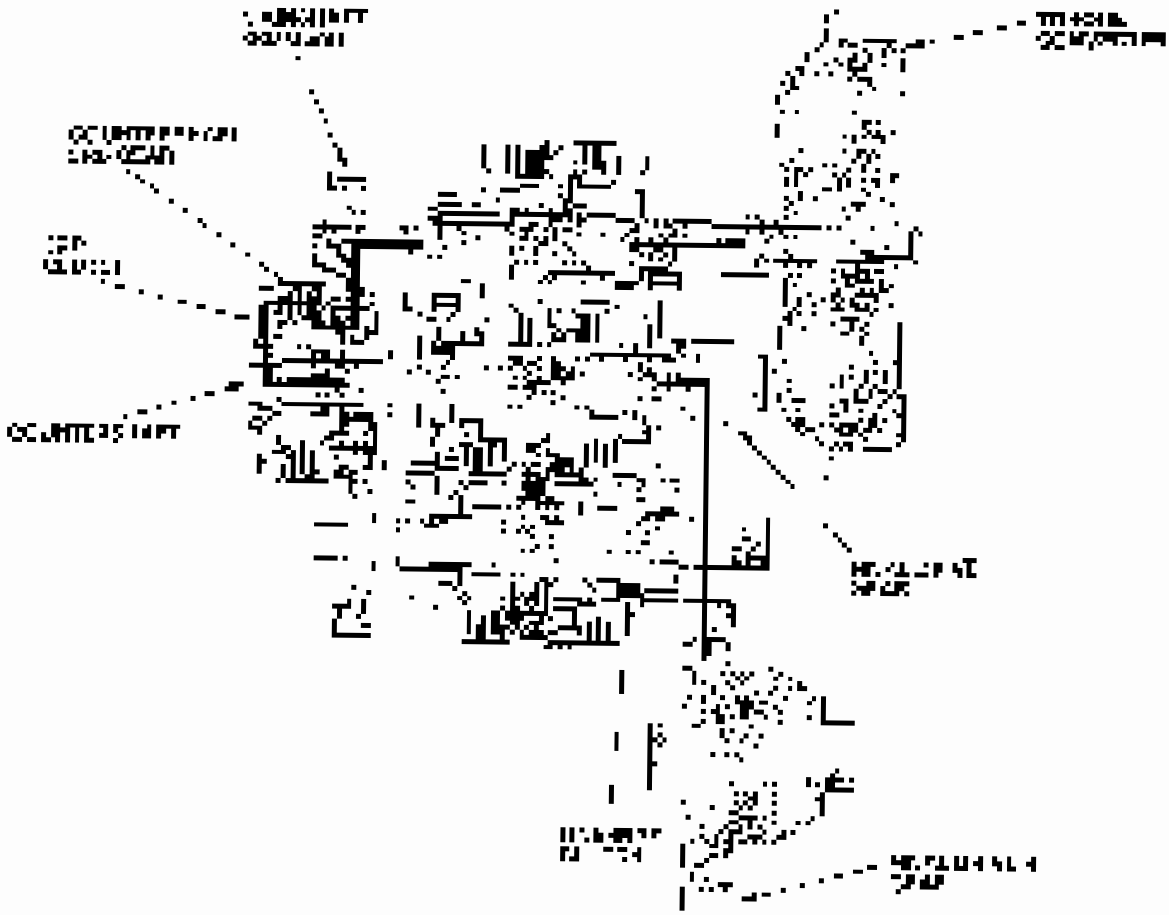
System Description (cont'd)

Power Flow (cont'd)

D Position, 2nd gear

- Hydraulic pressure [illegible] the [illegible] brake band and [illegible] clutch, and power is transmitted through the [illegible] gear.
- The [illegible] gear is [illegible] and [illegible] gear.
- The [illegible] gear is [illegible] gear.
- Power is transmitted to the [illegible] gear.
- Hydraulic pressure is also applied to the [illegible] clutch, but [illegible] gear.



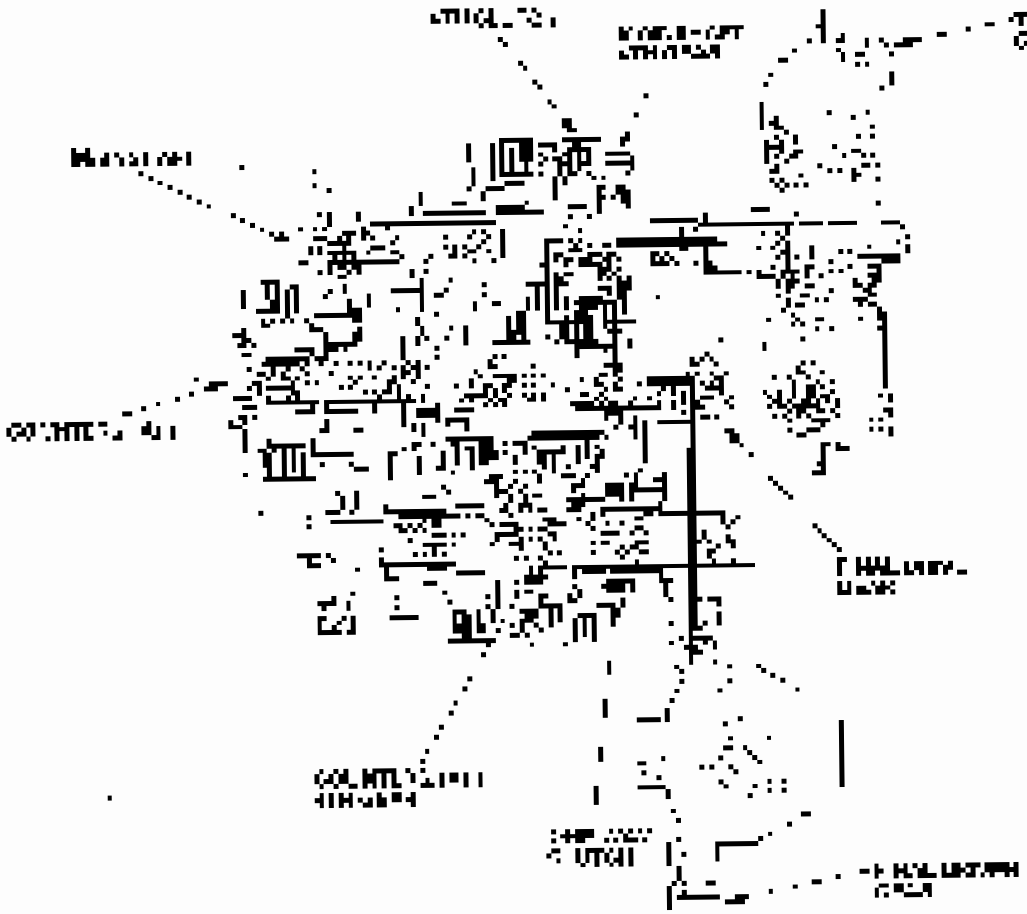


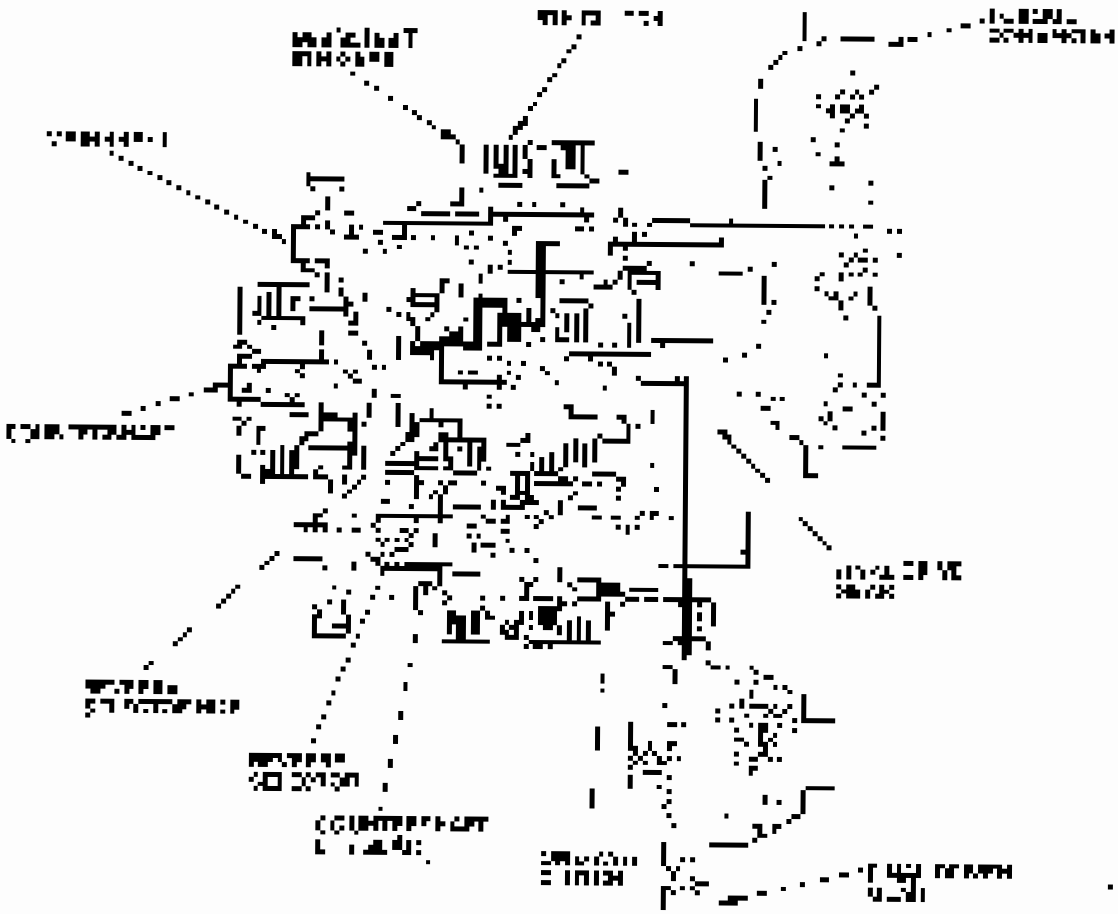
System Description (cont'd)

Power Flow (cont'd)

D Position (1st gear)

- Hydraulic pressure is applied to the 1st clutch, and the 1st one-way clutch locks the inner race of the 1st one-way clutch.
- The rotation of the input shaft is transmitted to the counter drive gear through the 1st clutch and the 1st one-way clutch.
- Power is transmitted to the final drive gear, while the rotation is reduced by the counter driven gear.
- Hydraulic pressure is also applied to the 2nd clutch, but the 2nd one-way clutch overruns because the counter driven gear rotates faster than the inner race.
- Power flow is the same as the 1st gear in the manual mode.



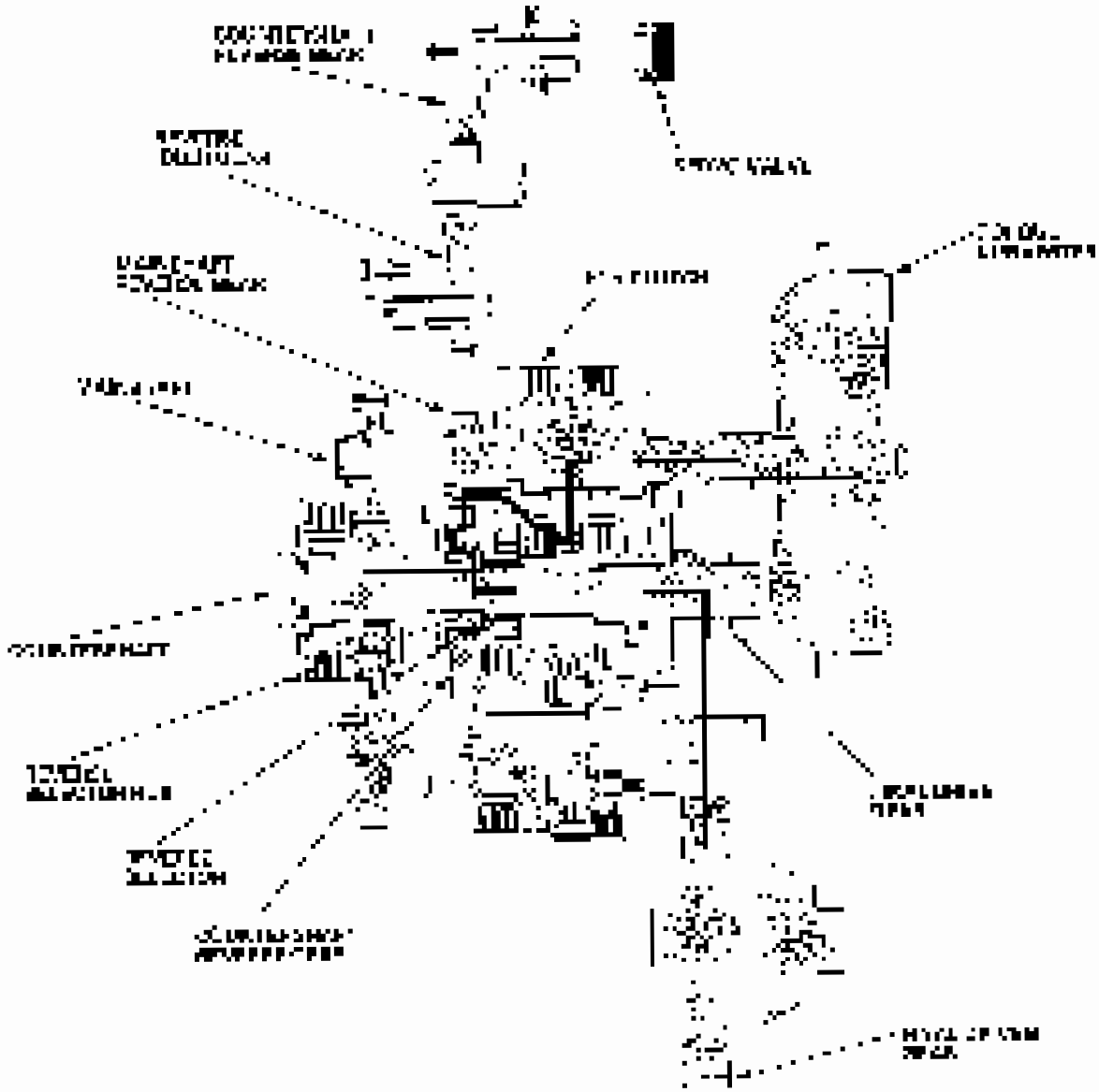


Systems Description (cont'd)

Power Flow (cont'd)

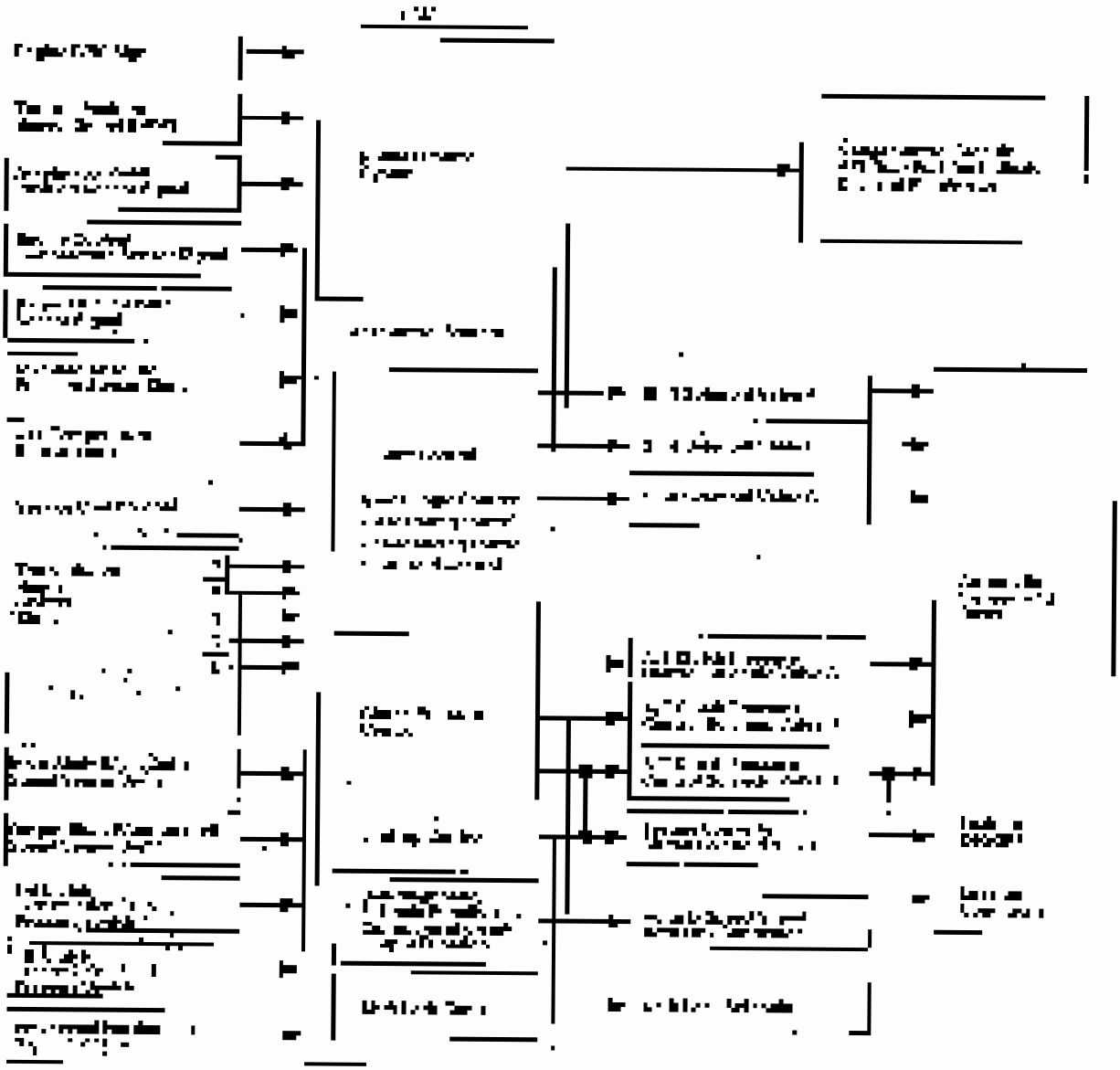
R Position

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]



Electronic Control System

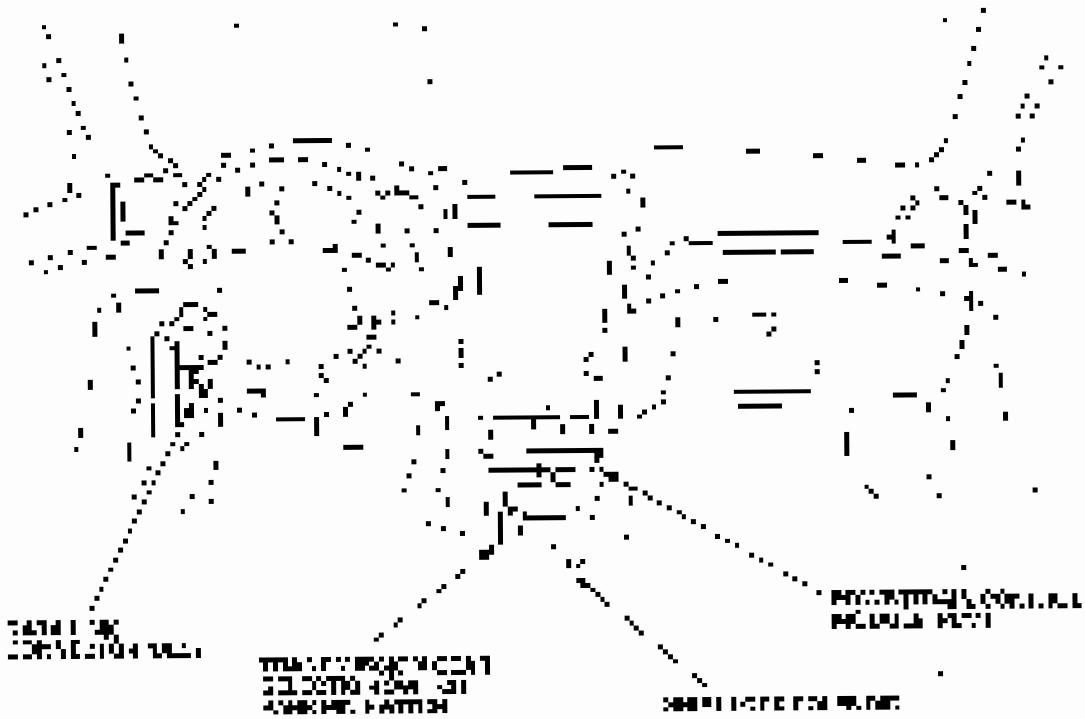
Function Diagram

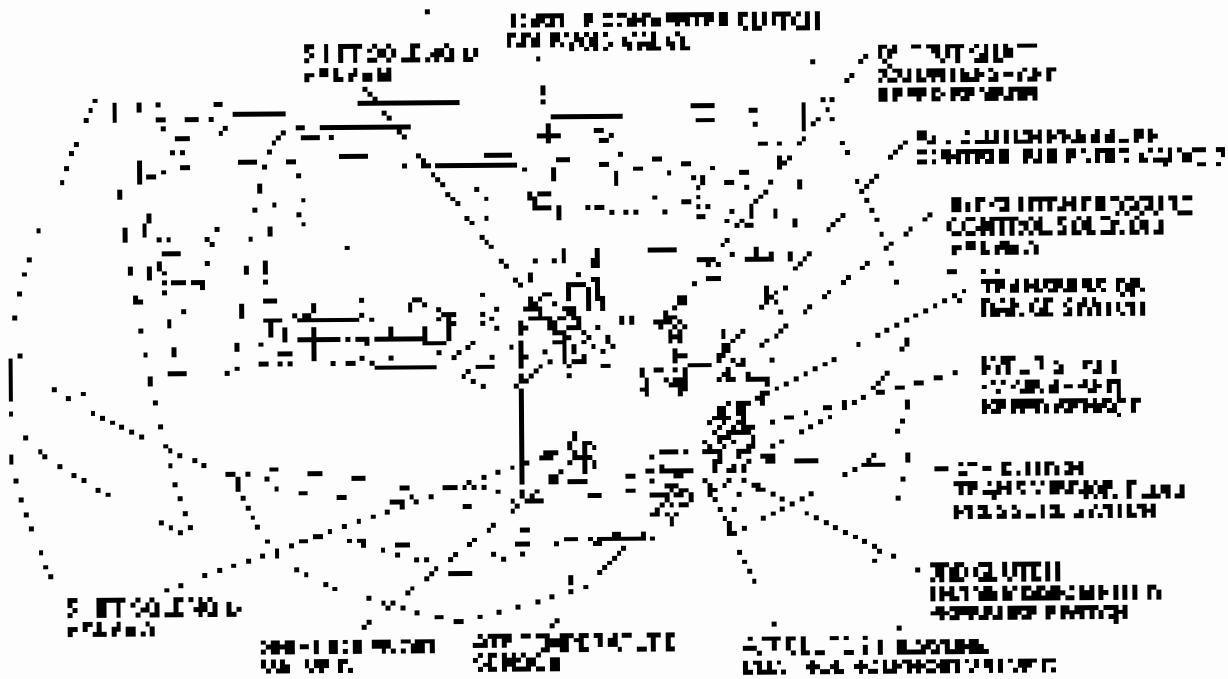


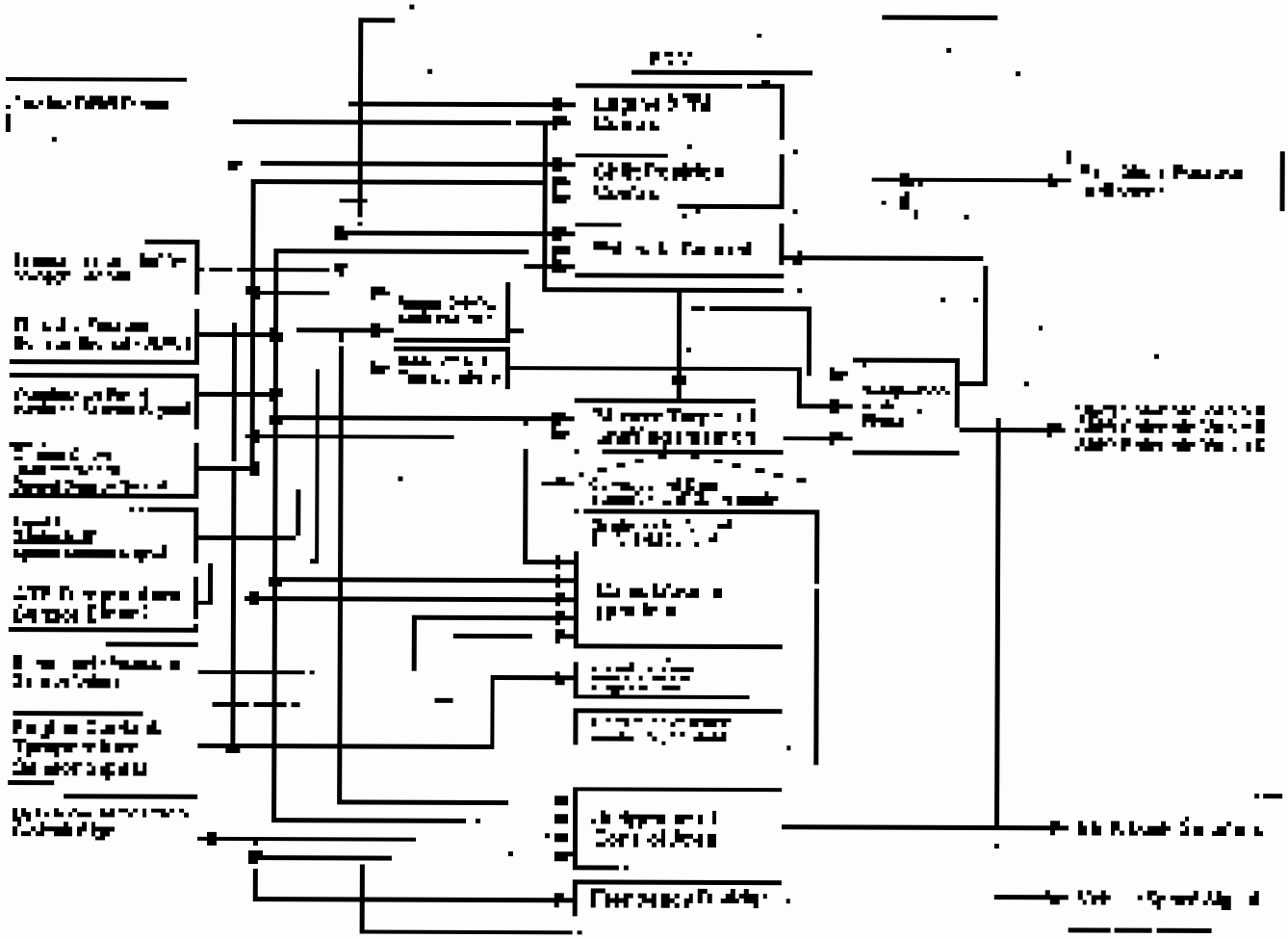
System Description (cont'd)

Electronic Control System (cont'd)

Transmission Location



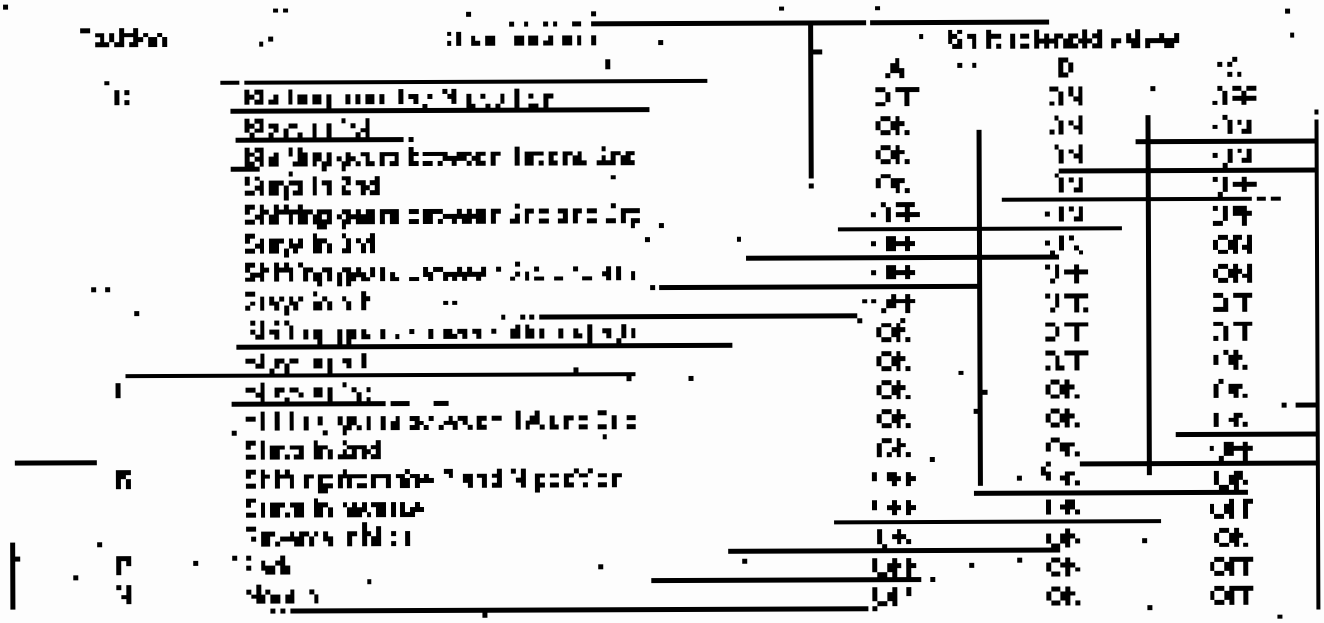




System Description (cont'd)

Electronic Control System (cont'd)

Shift Control

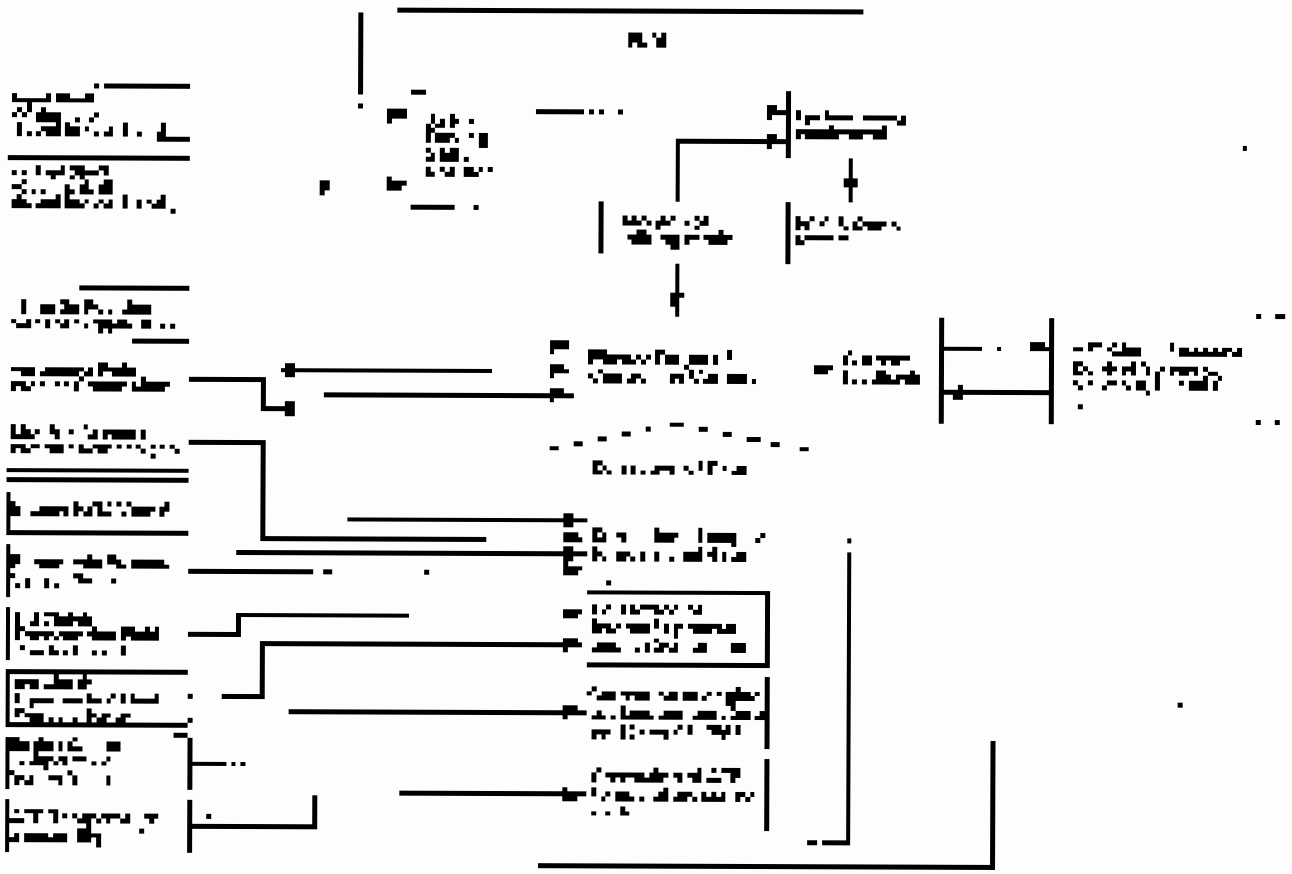


System Description (cont'd)

Electronically Controlled System (cont'd)

Deceleration Control

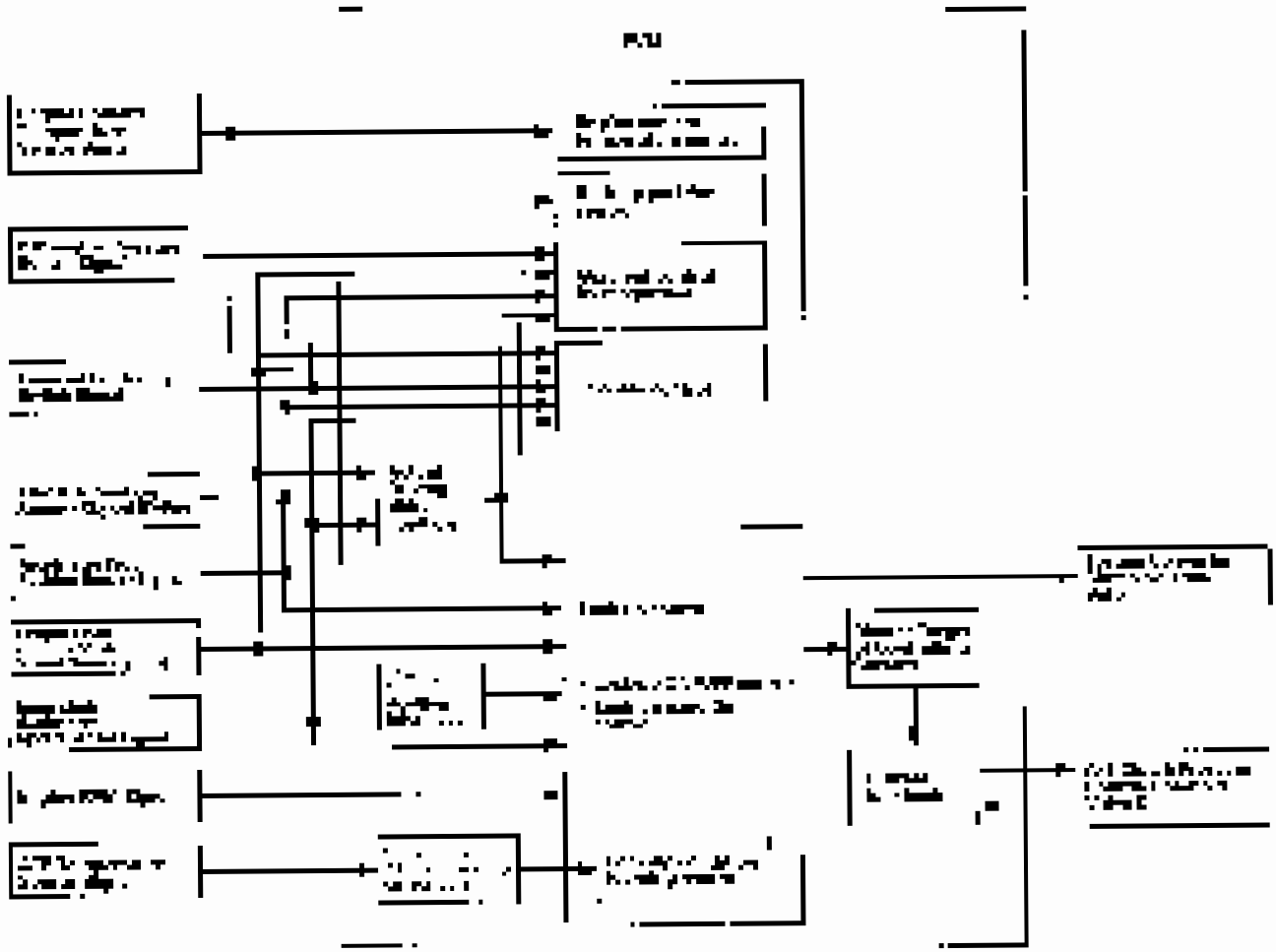
Shift Mechanism

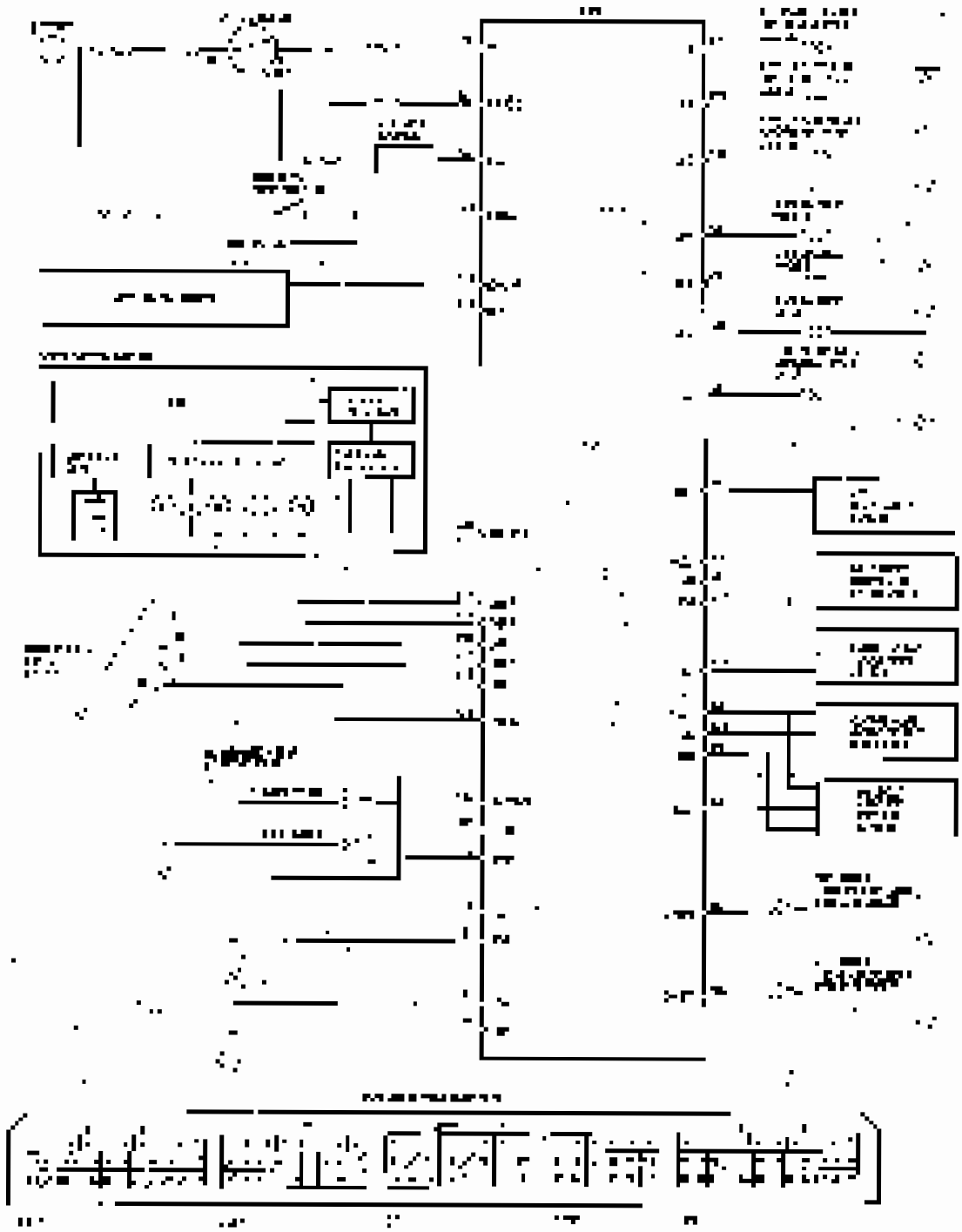


System Description (cont'd)

Electronic Control System (cont'd)

Lock-up Control



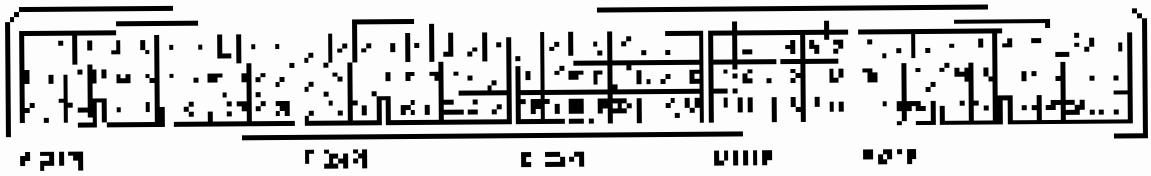


System Description (cont'd)

Electronic Control System (cont'd)

[illegible]

[illegible]



PCM CONNECTOR A (cont'd)

Terminal Number	Wire Color	Signal	Description	Signal Condition/Terminal Voltage
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A11	[illegible]	[illegible]	[illegible]	[illegible]
A12	[illegible]	[illegible]	[illegible]	[illegible]
A14	[illegible]	[illegible]	[illegible]	[illegible]
A15	[illegible]	[illegible]	[illegible]	[illegible]
A16	[illegible]	[illegible]	[illegible]	[illegible]
A17	[illegible]	[illegible]	[illegible]	[illegible]
A18	[illegible]	[illegible]	[illegible]	[illegible]
A19	[illegible]	[illegible]	[illegible]	[illegible]
A20	[illegible]	[illegible]	[illegible]	[illegible]
A21	[illegible]	[illegible]	[illegible]	[illegible]

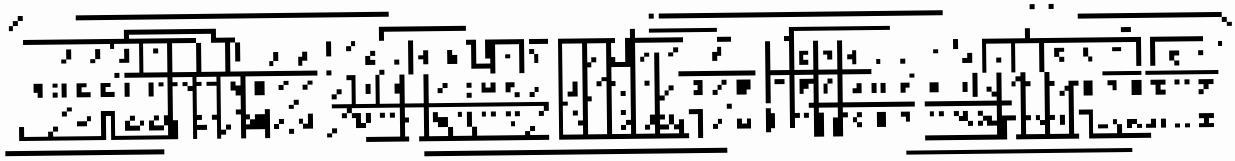
Terminal Number	Wire Color	Signal	Description	Measuring Condition/Terminal Voltage
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Transmission range switch (D) position signal input	[illegible]

Terminal Number	Wire Color	Signal	Description	Measuring Condition/Terminal Voltage
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

System Description (cont'd)

Electronic Control System (cont'd)

PCM Inputs and Outputs (cont'd)



PCM SOHC connector pins

Terminal Number	Wire Color	Signal	Description	Measuring Condition/Terminal Voltage
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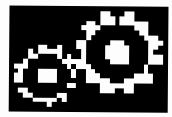
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

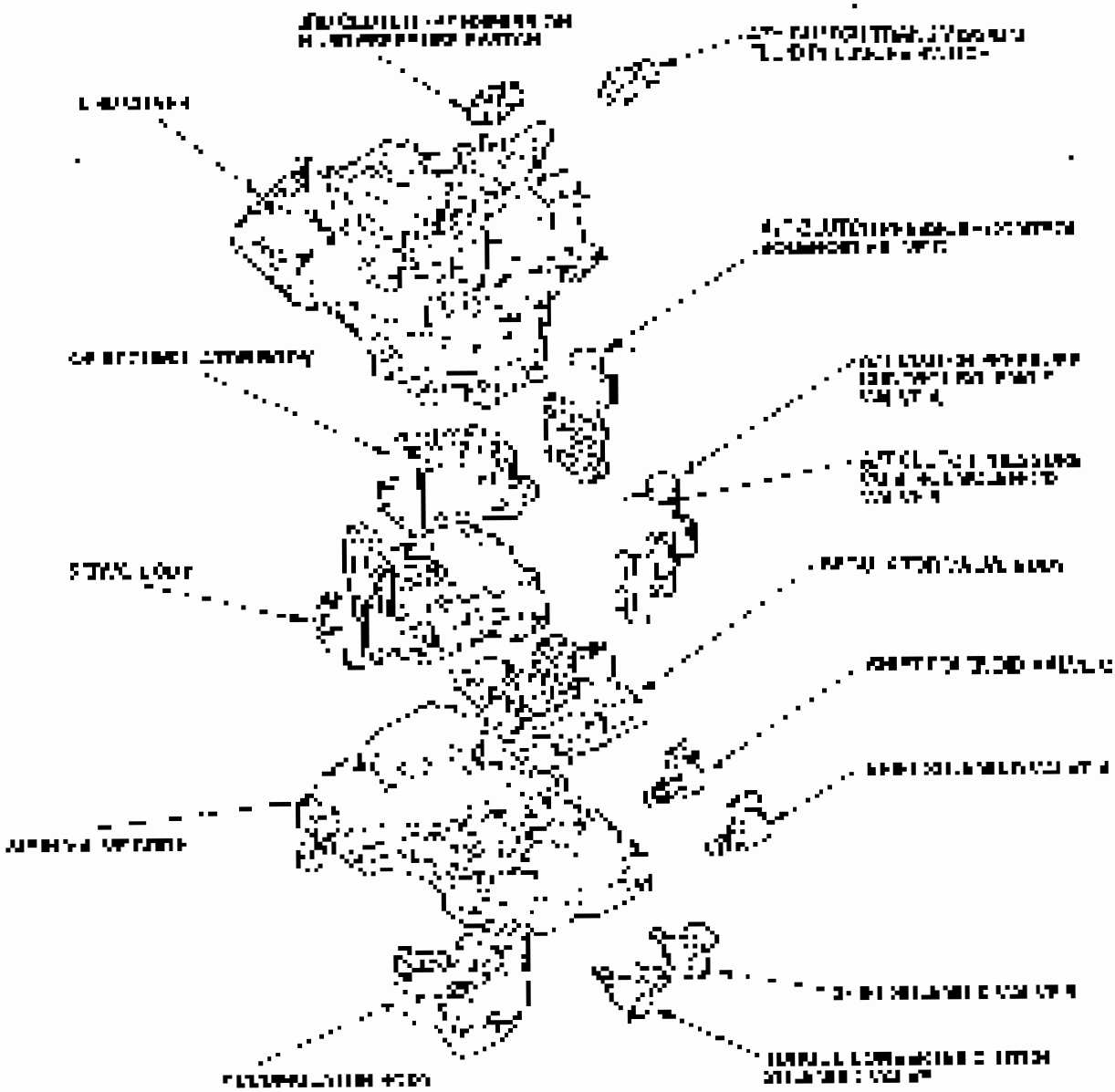


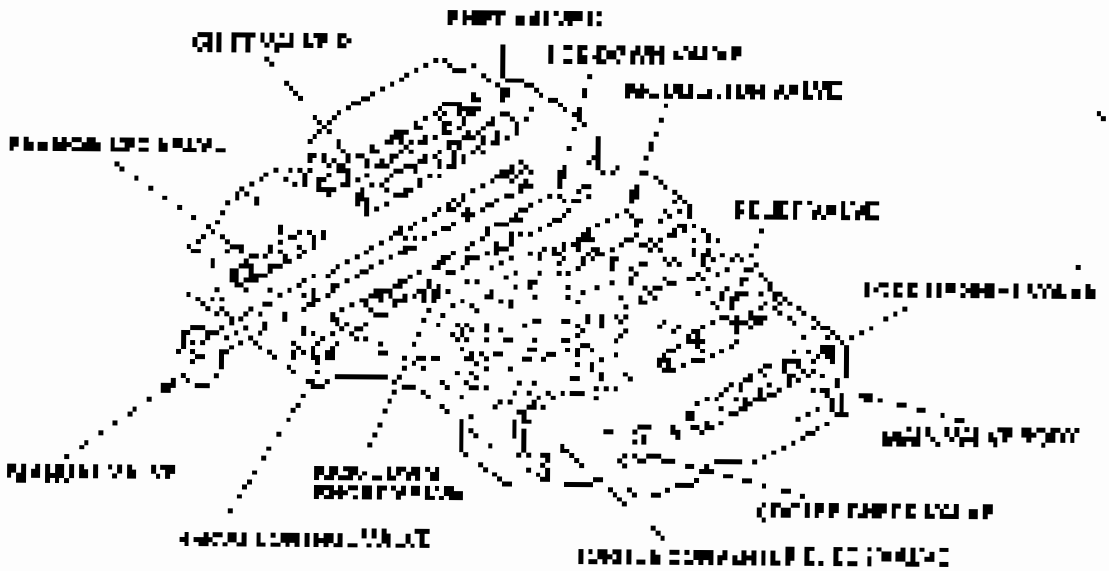
Terminal Number	Wire Color	Signal	Description	Measuring Conditions/Terminal Voltage
E4	[illegible]	[illegible]	Sensor ground	[illegible]
E5	[illegible]	[illegible]	Power supply for sensors	[illegible]
E6	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]	[illegible]
E7	[illegible]	[illegible]	[illegible]	[illegible]
E8	[illegible]	VCC2	Power supply for sensors	[illegible]
				[illegible]
E9	[illegible]	[illegible]	Output signal from [illegible]	[illegible]
			[illegible]	[illegible]

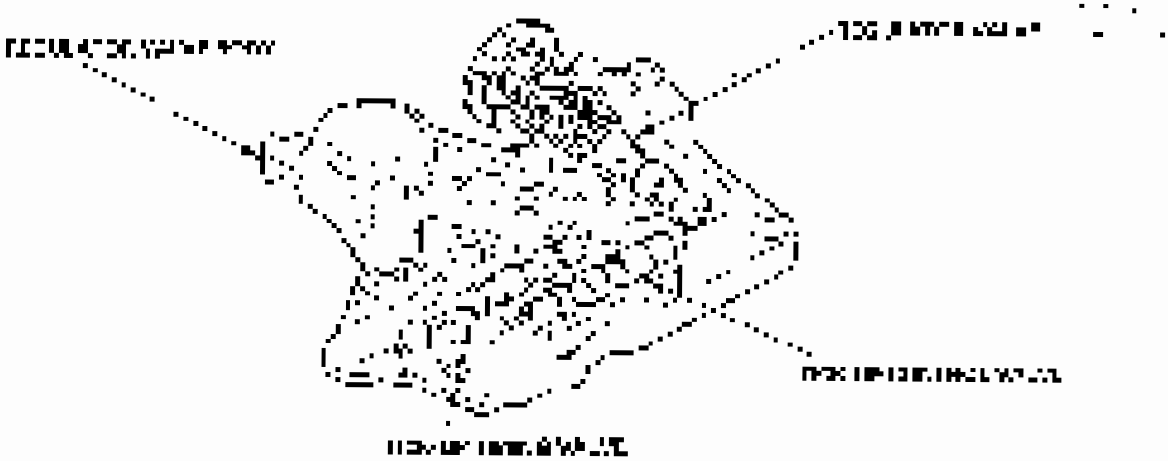
Terminal Number	Wire Color	Signal	Description	Measuring Conditions/Terminal Voltage
E1	[illegible]	[illegible]	[illegible]	[illegible]
E2	[illegible]	[illegible]	[illegible]	[illegible]
E3	[illegible]	[illegible]	[illegible]	[illegible]
E4	[illegible]	[illegible]	[illegible]	[illegible]
				[illegible]
E10	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]	[illegible]

System Description (cont'd)

Hydraulic Controls

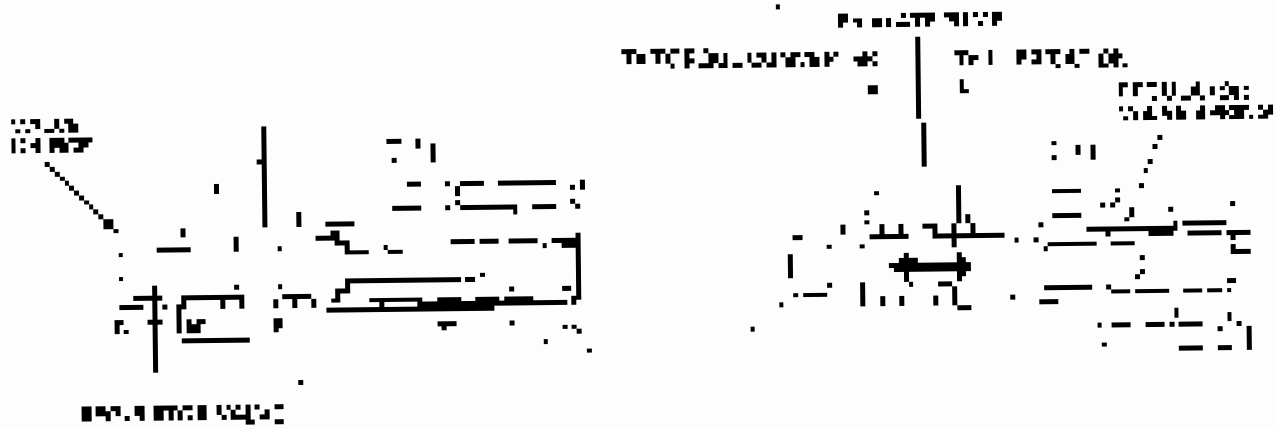


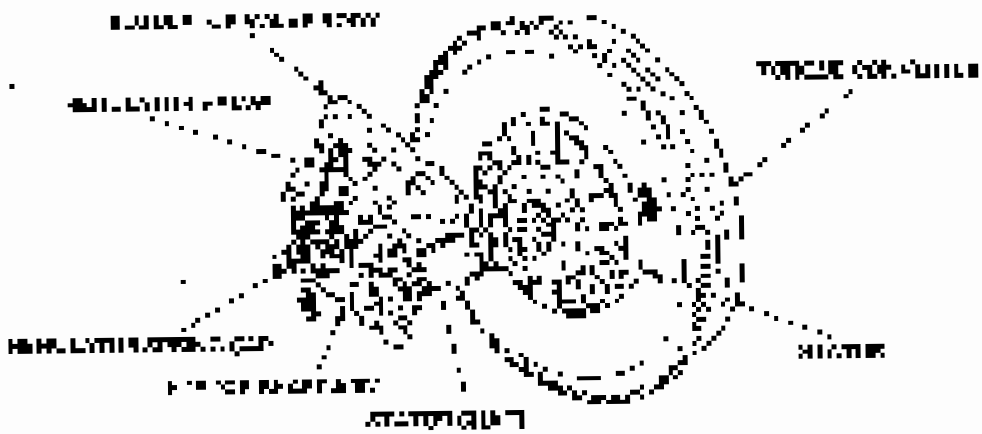


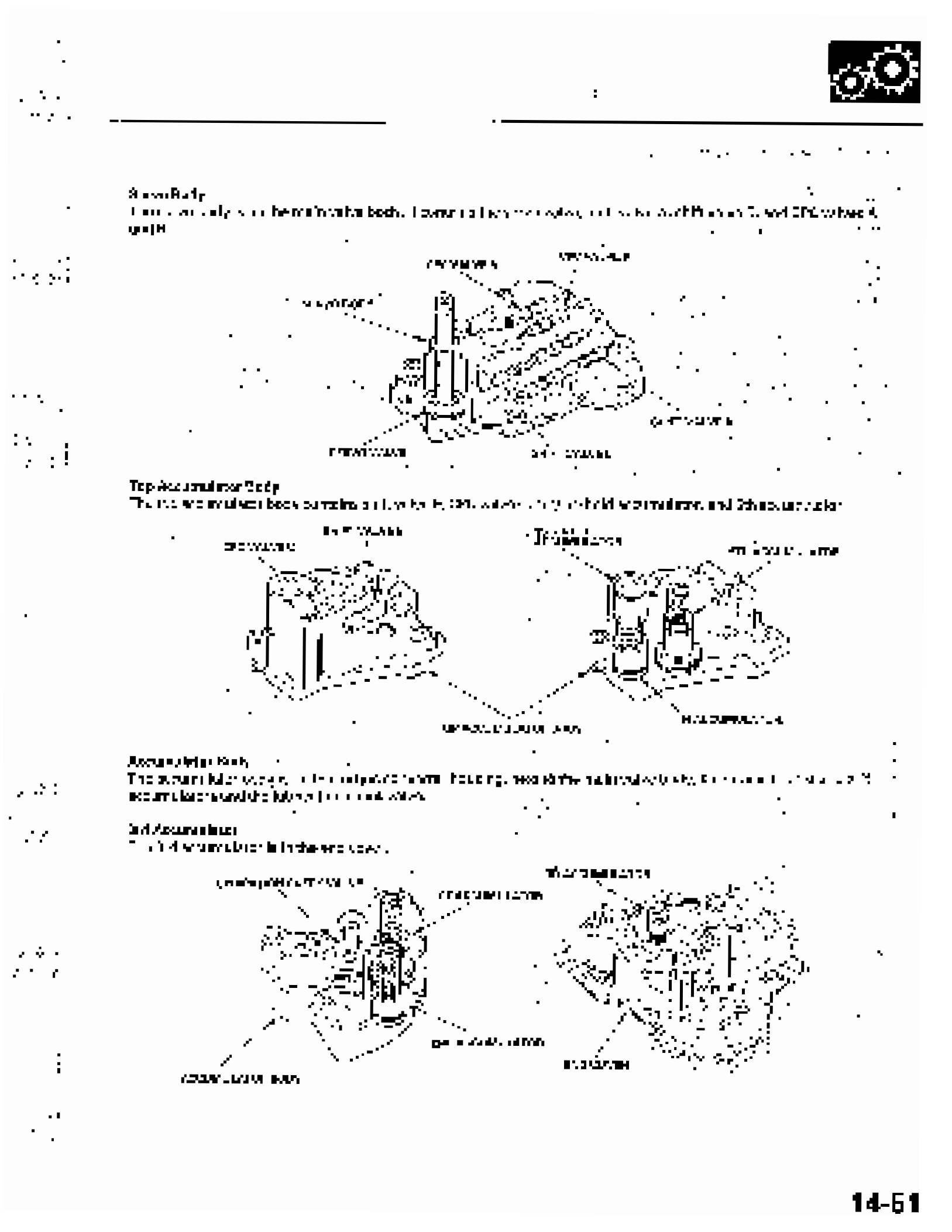


System Description (cont'd)

Hydraulic Controls (cont'd)



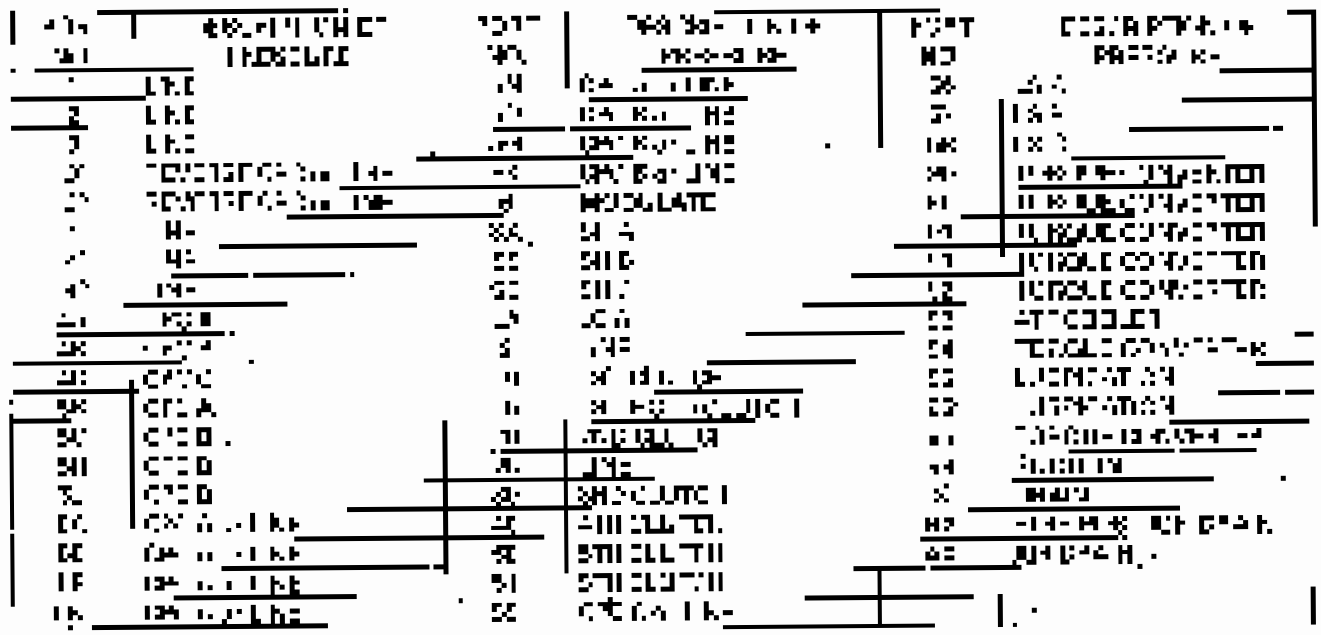




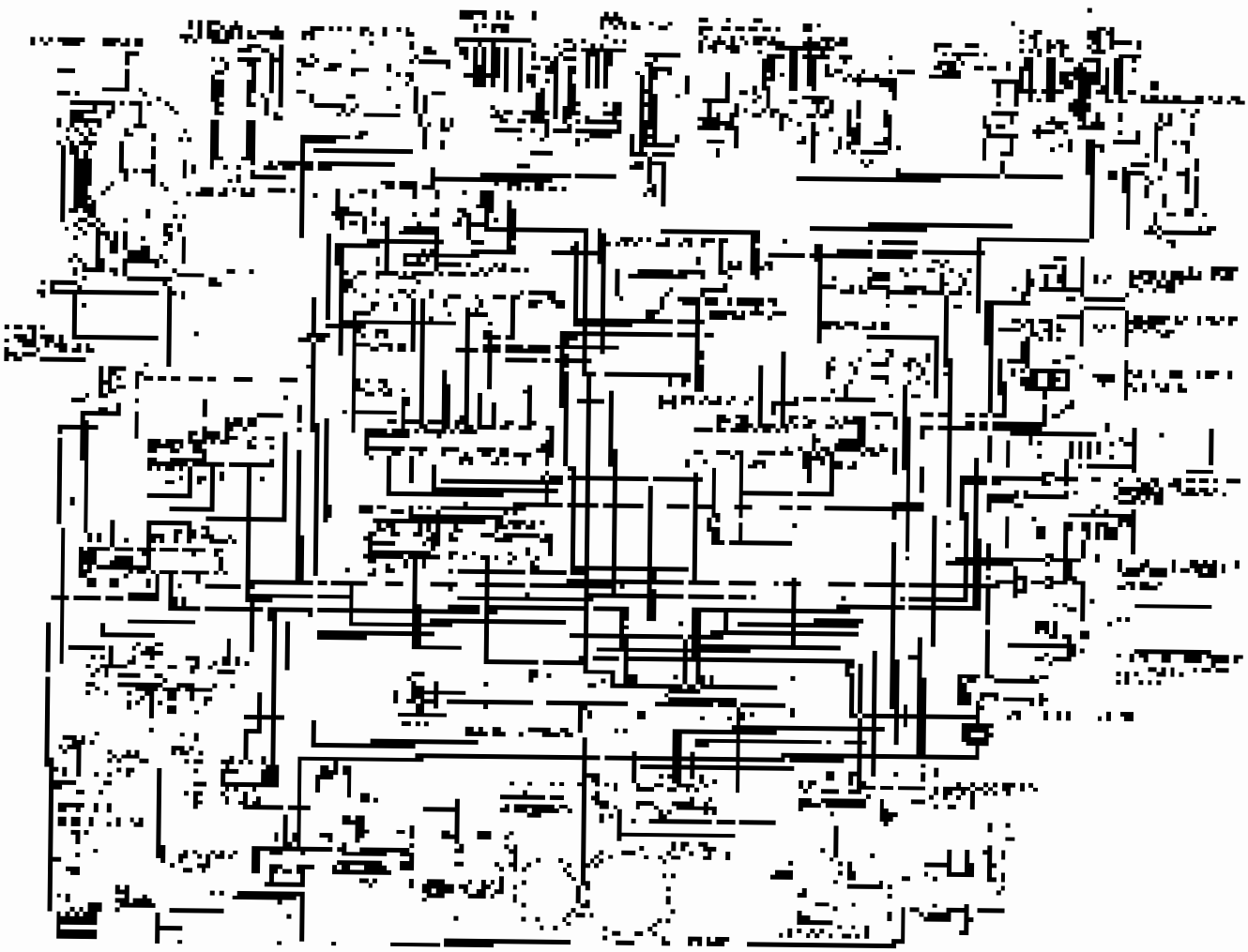
System Description (cont'd)

Hydraulic Flow

[illegible]

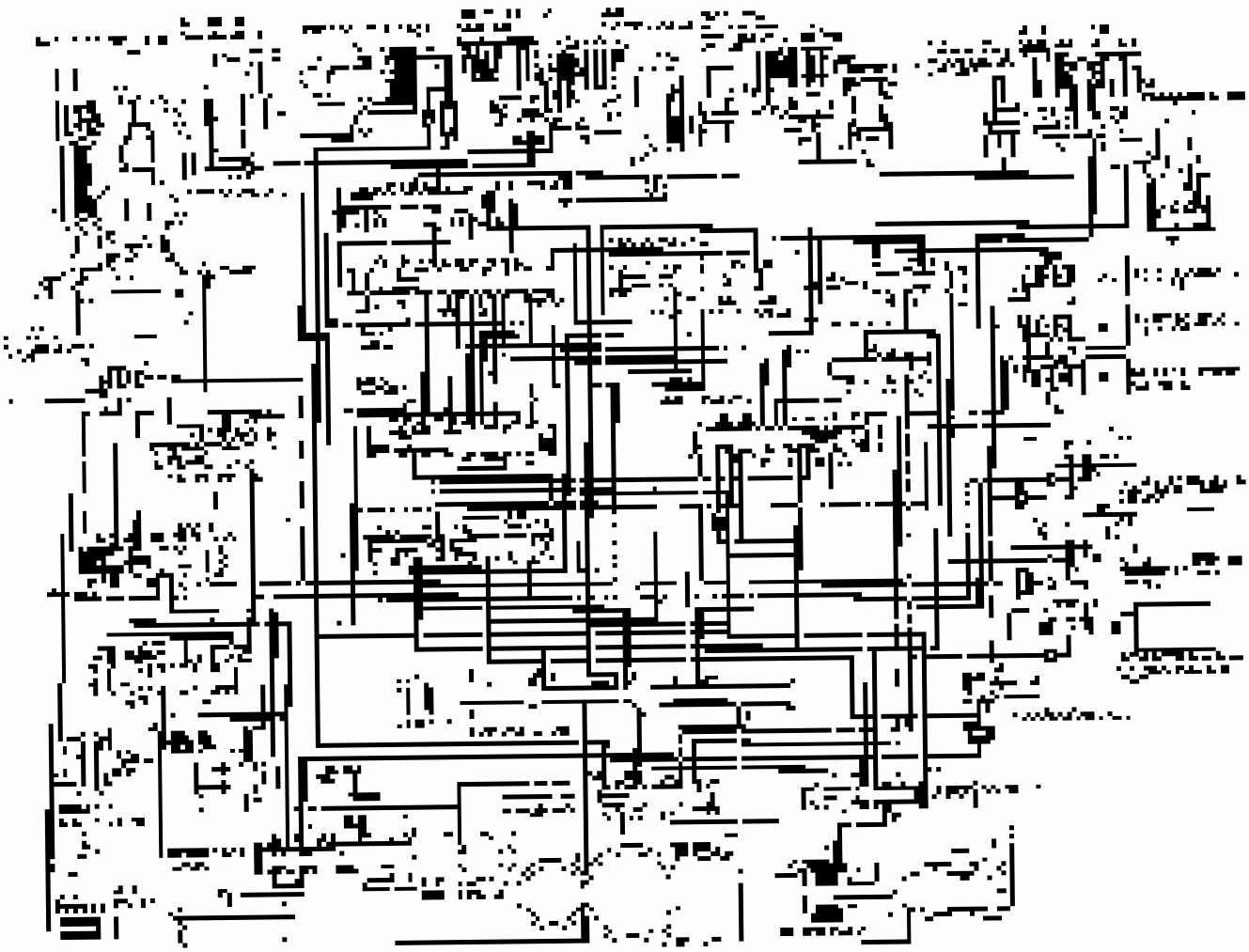


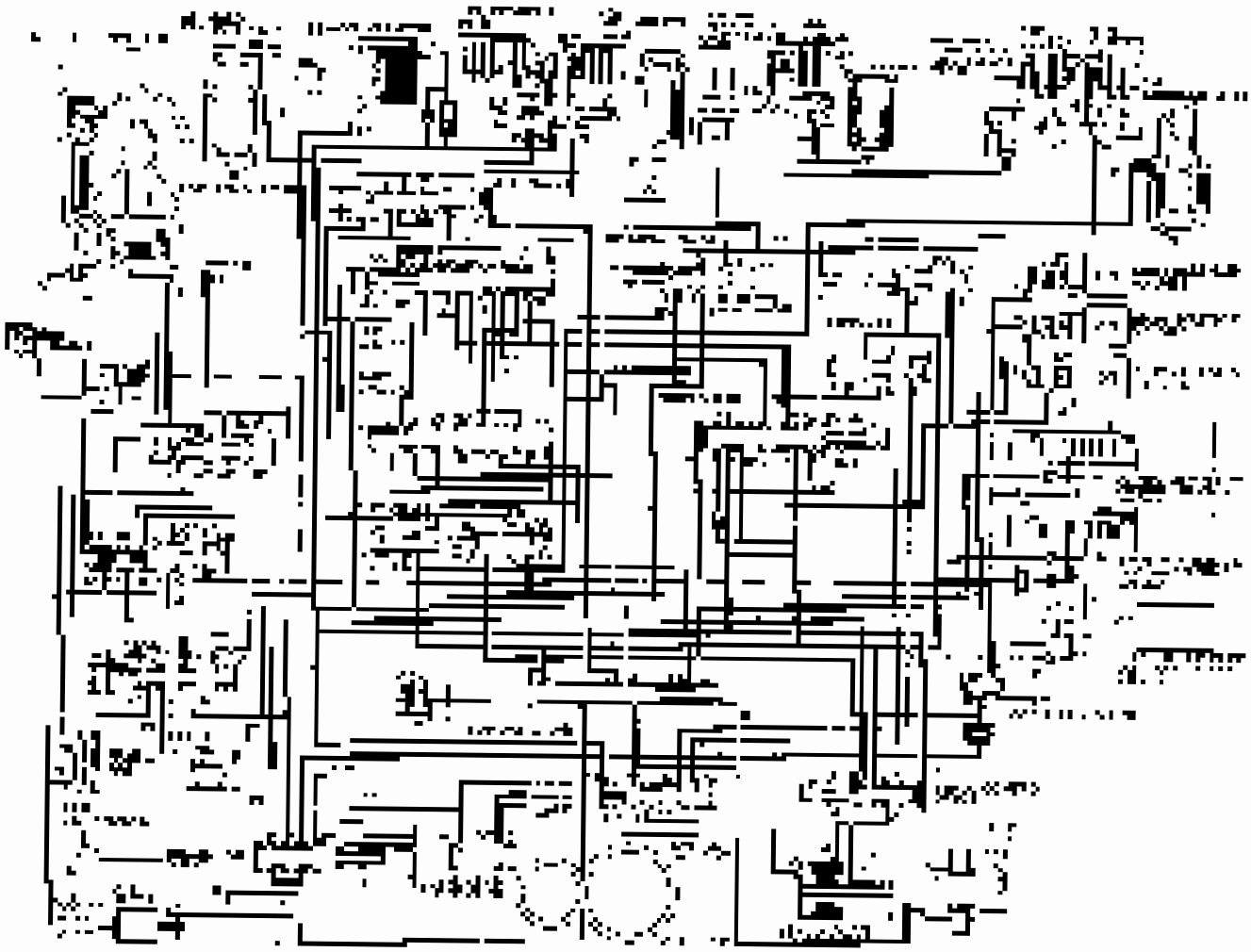
[illegible]



System Description (cont'd)

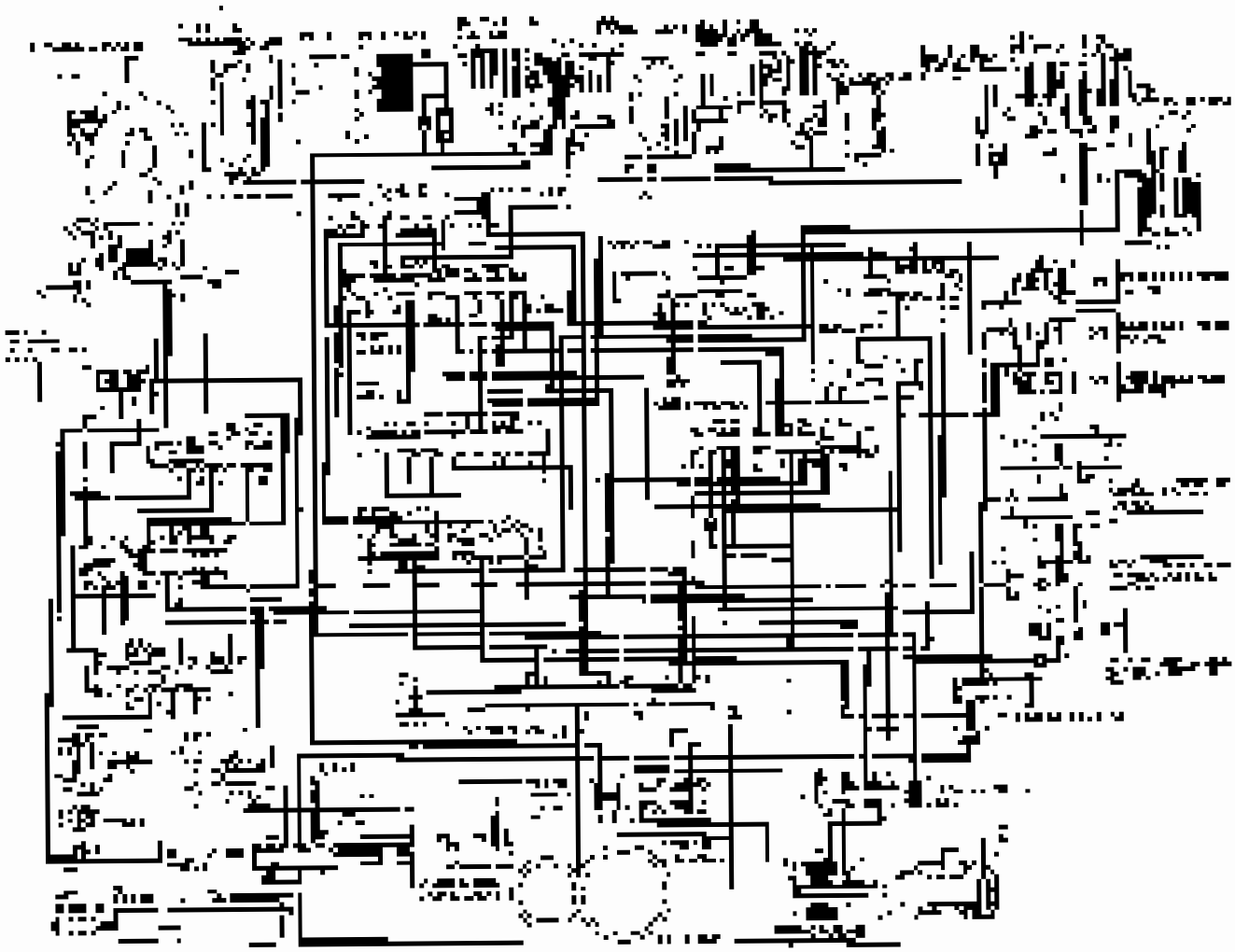
Hydraulic Flow (cont'd)

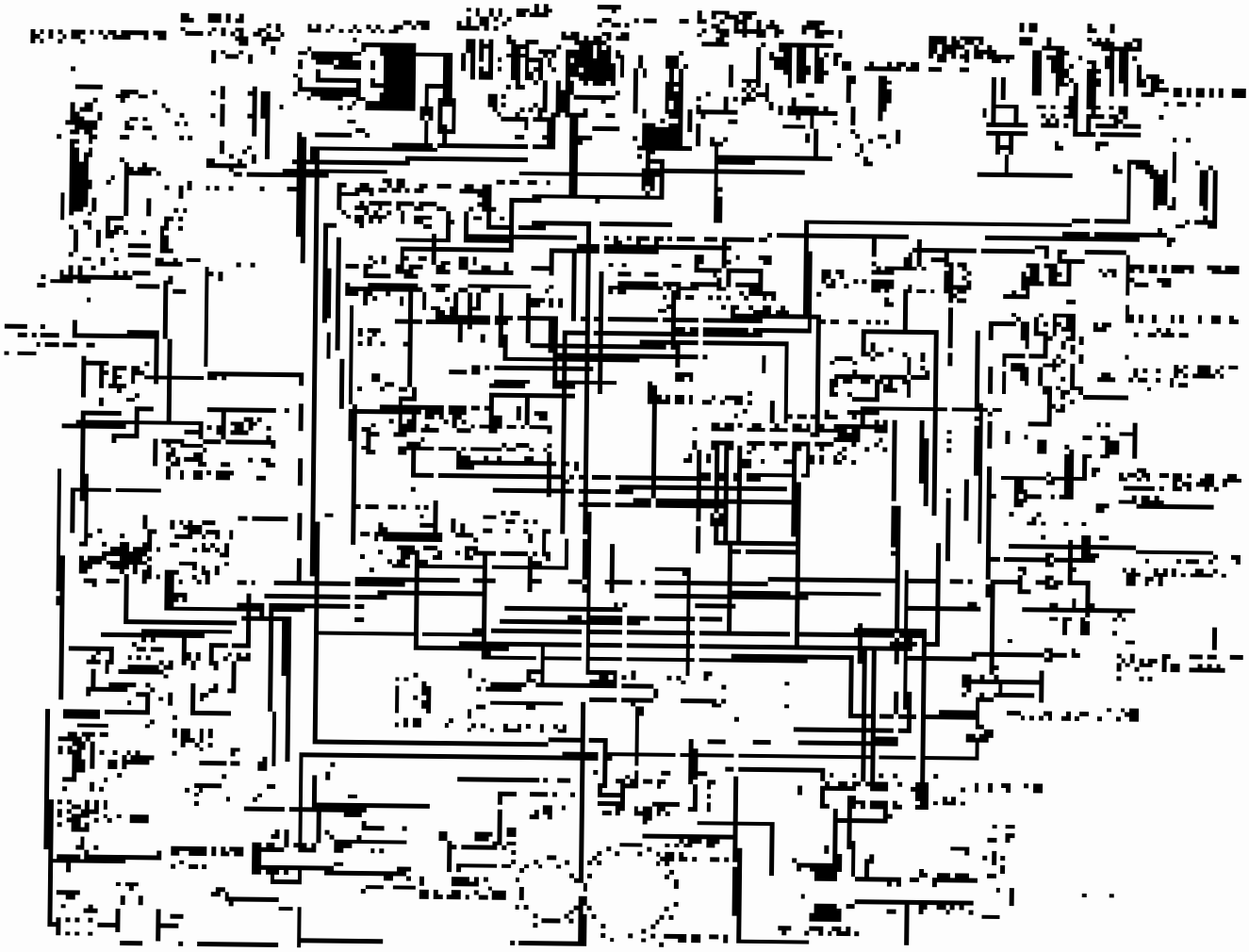




System Description (cont'd)

Hydraulic Flow (cont'd)

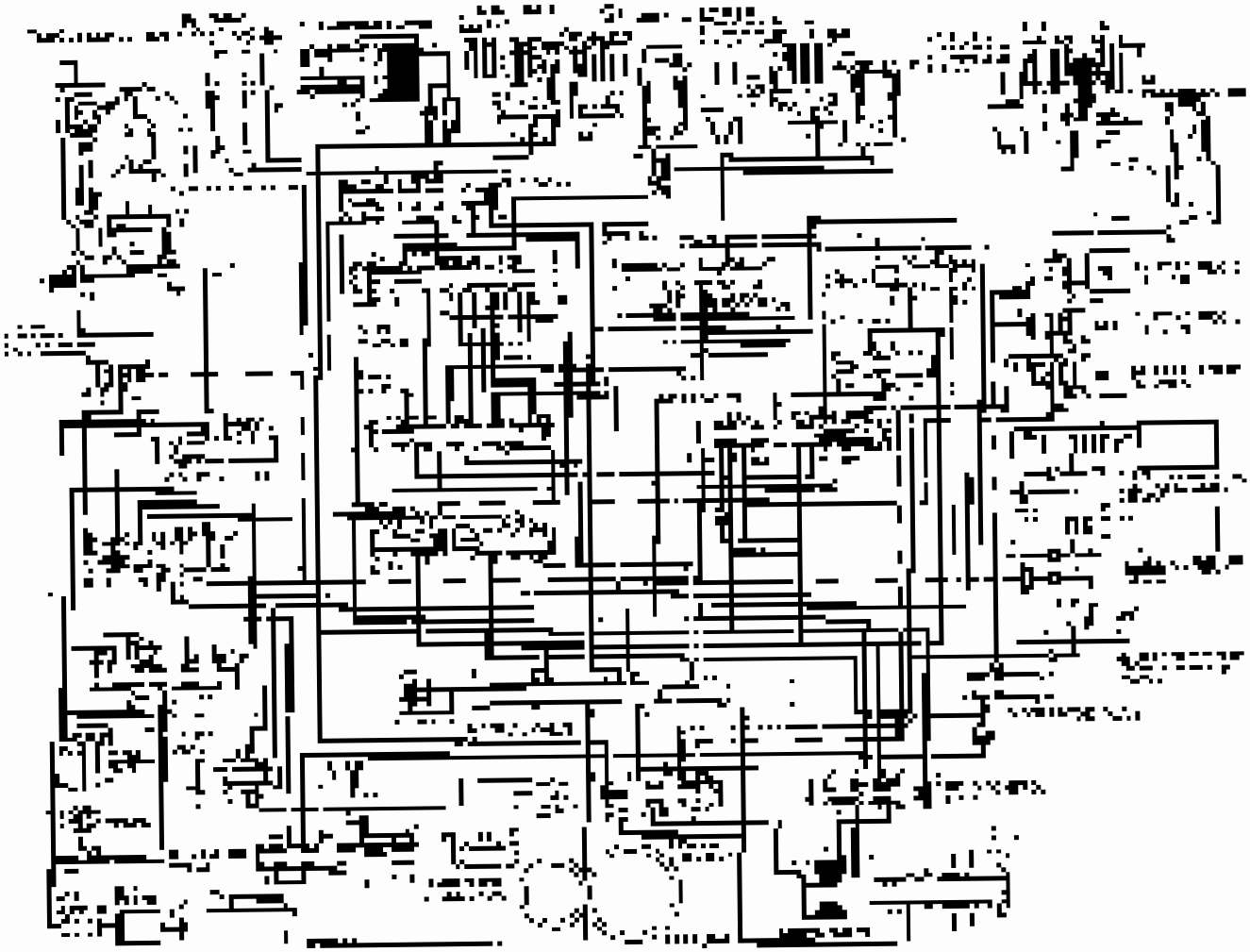


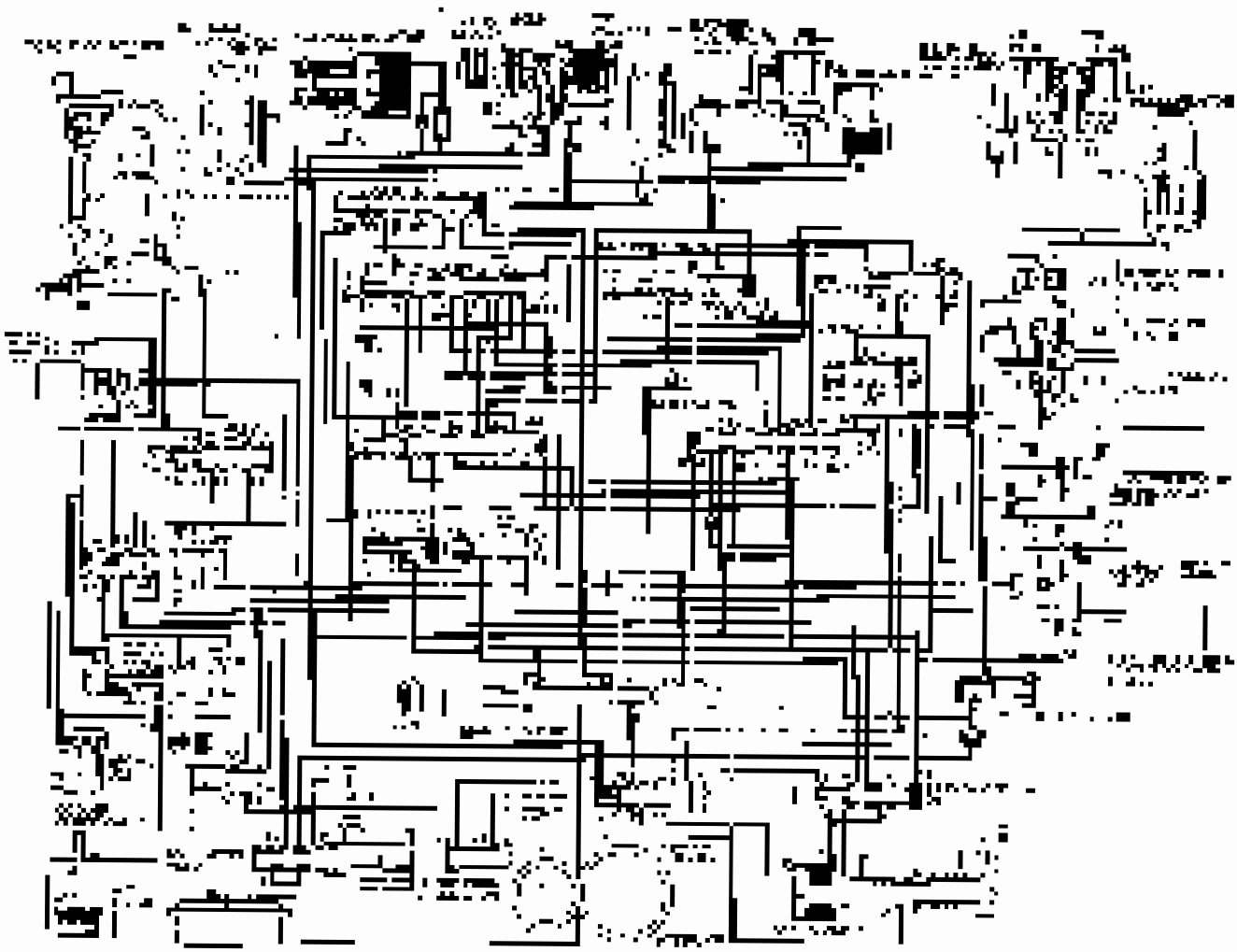


System Description (cont'd)

Hydraulic Flow (cont'd)

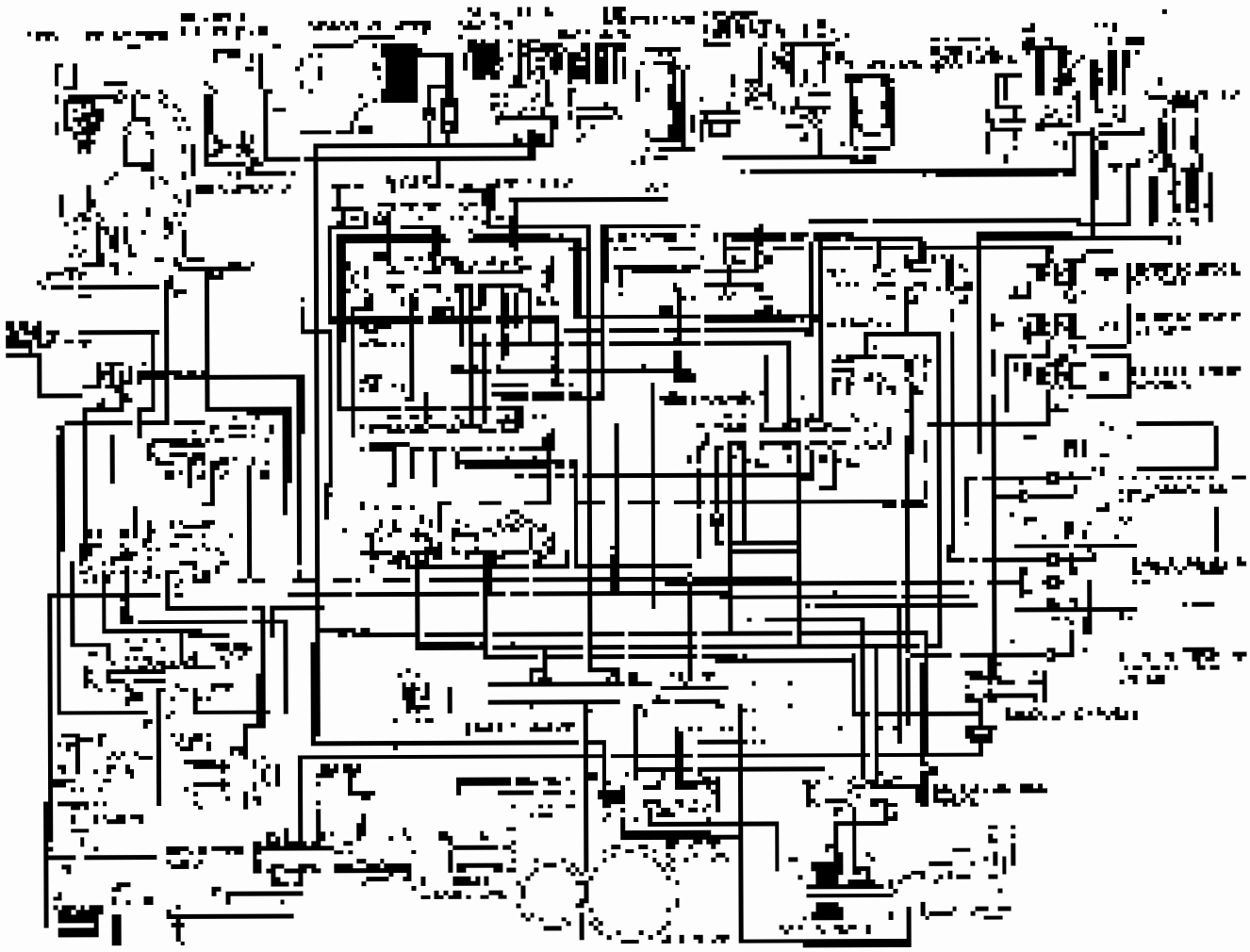
D Position (Shifts between 2nd gear and 3rd gear)

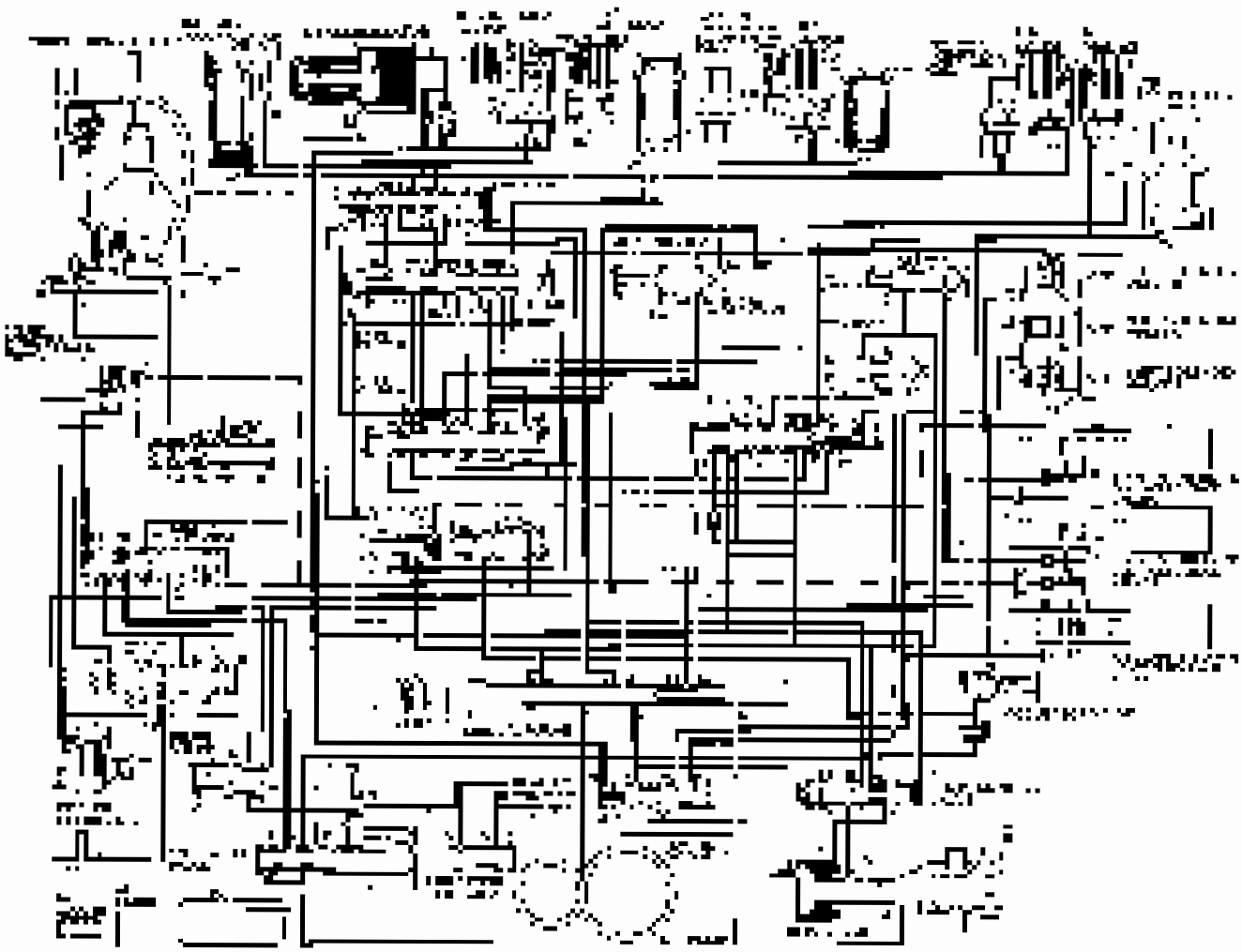




System Description (cont'd)

Hydraulic Flow (cont'd)

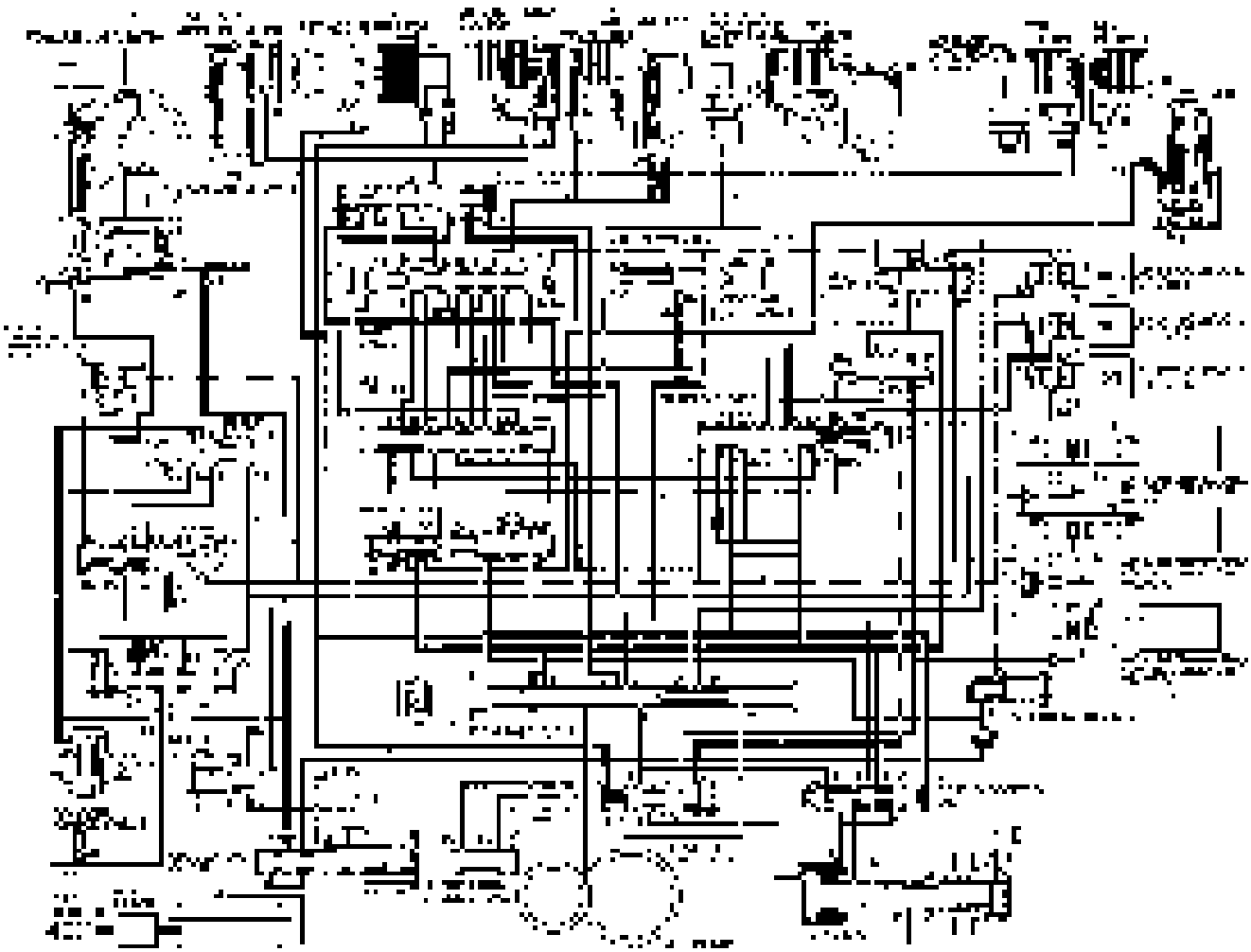


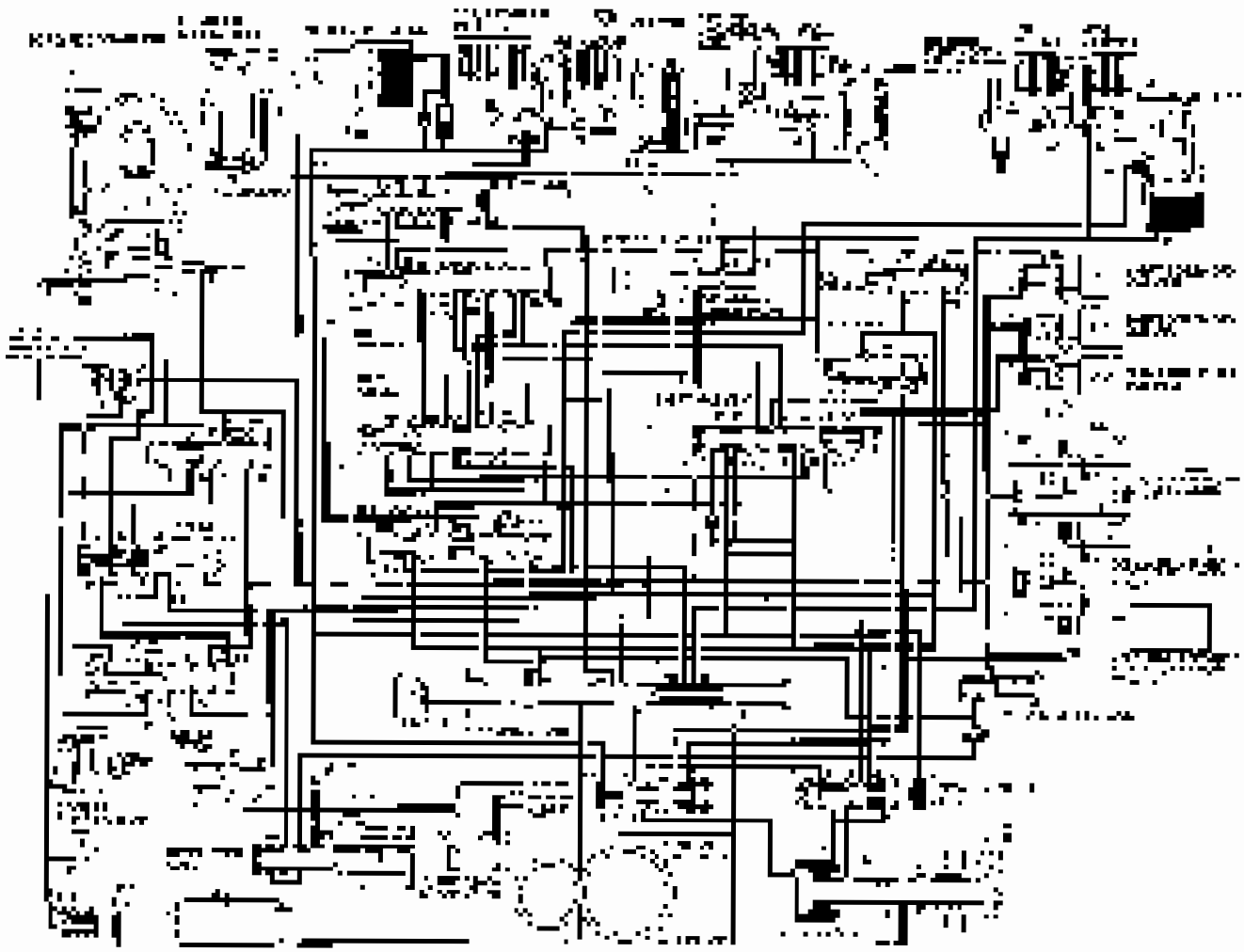


System Description (cont'd)

Hydraulic Flow (cont'd)

D Position 5th Hold between 4th gear and 5th gear



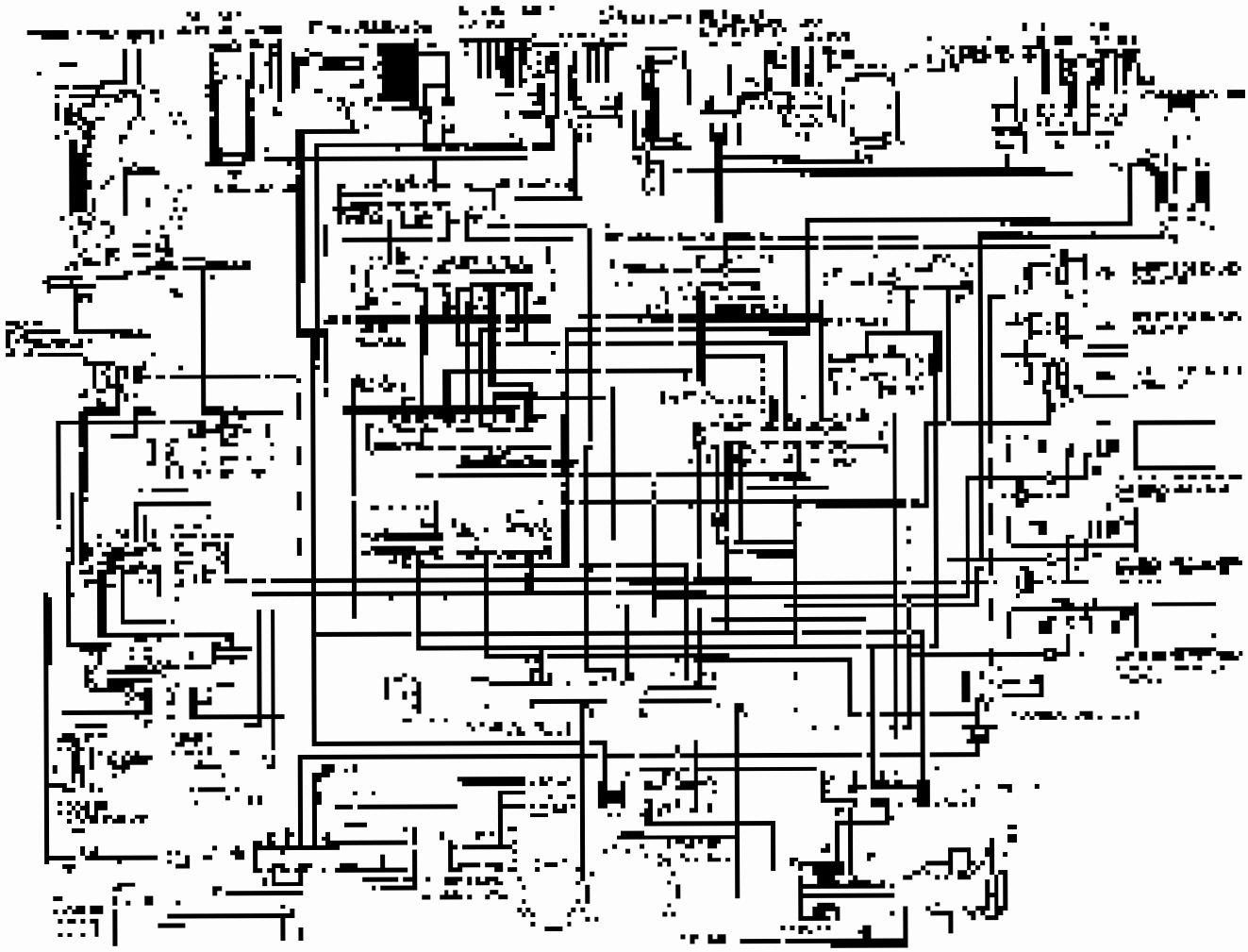


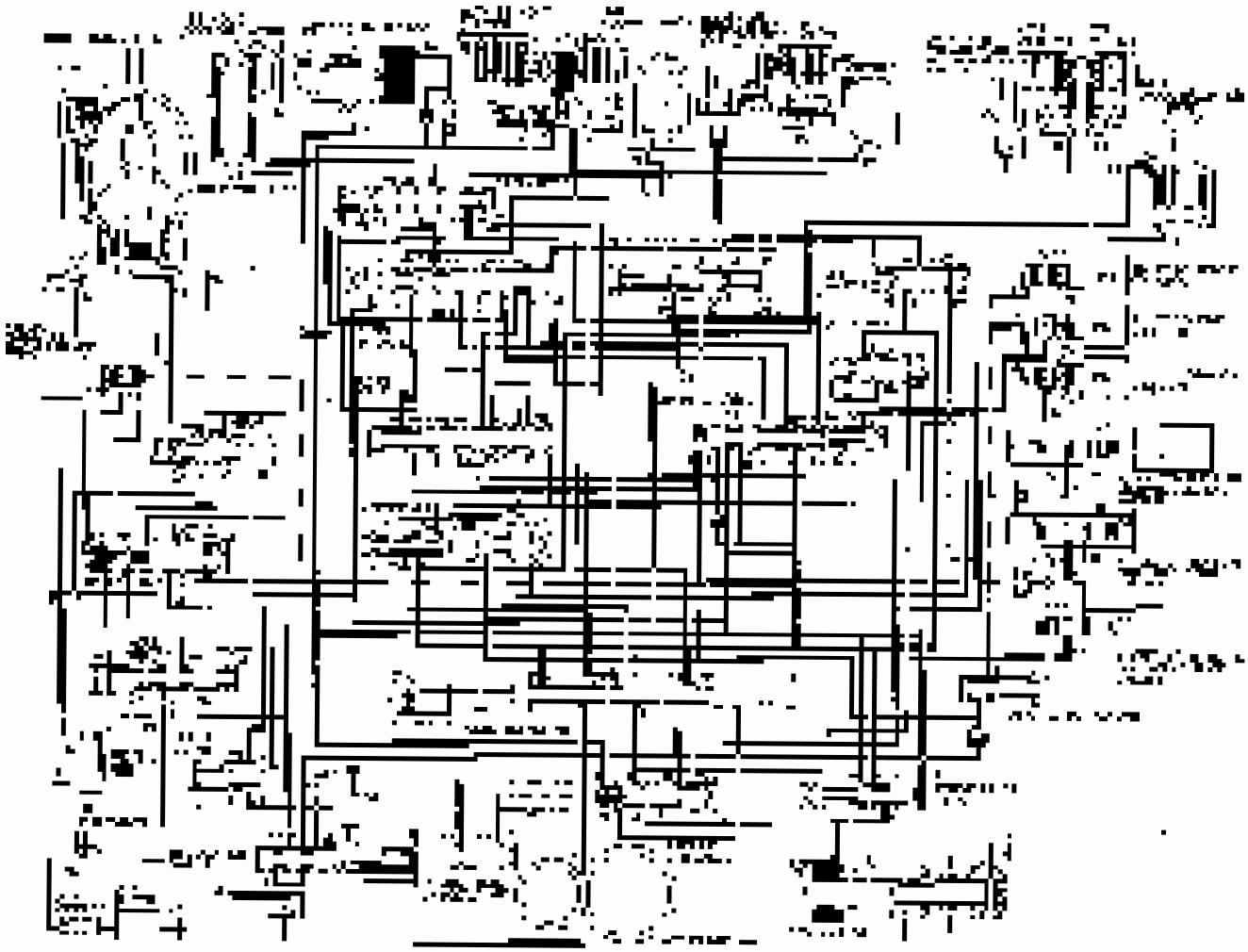
System Description (cont'd)

Hydraulic Flow (cont'd)

1-Position Engaged

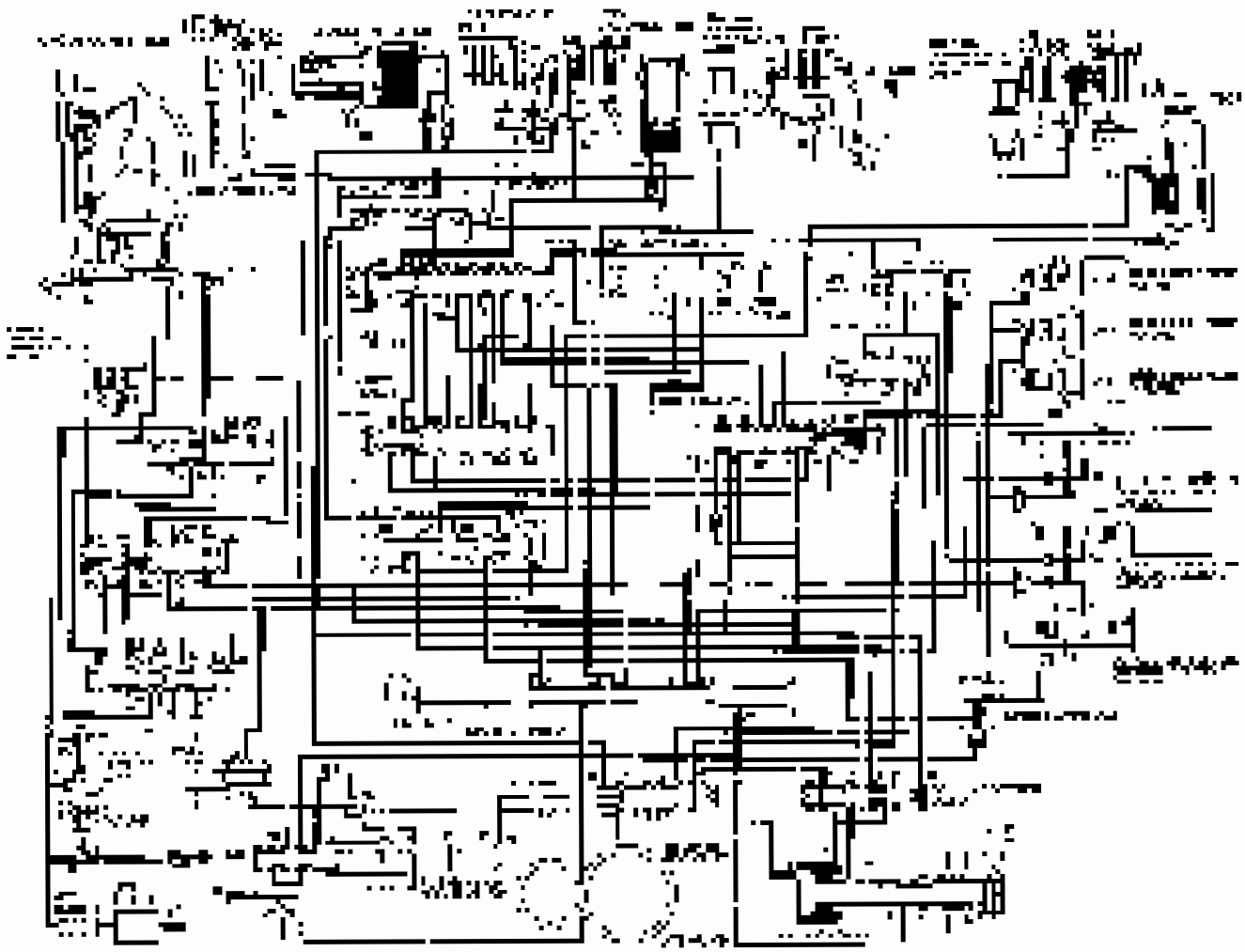
- [illegible]
- [illegible]
- [illegible]

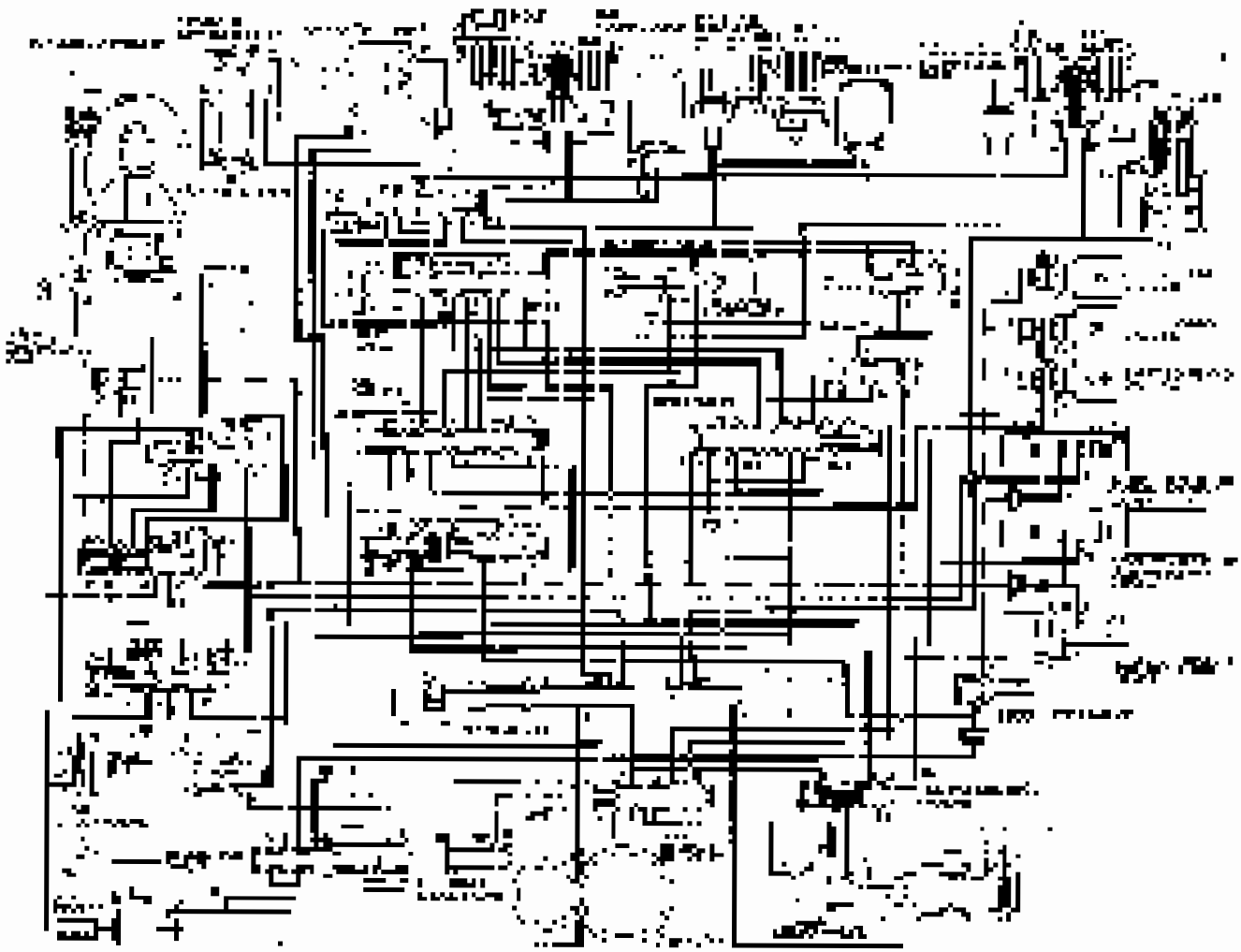




System Description (cont'd)

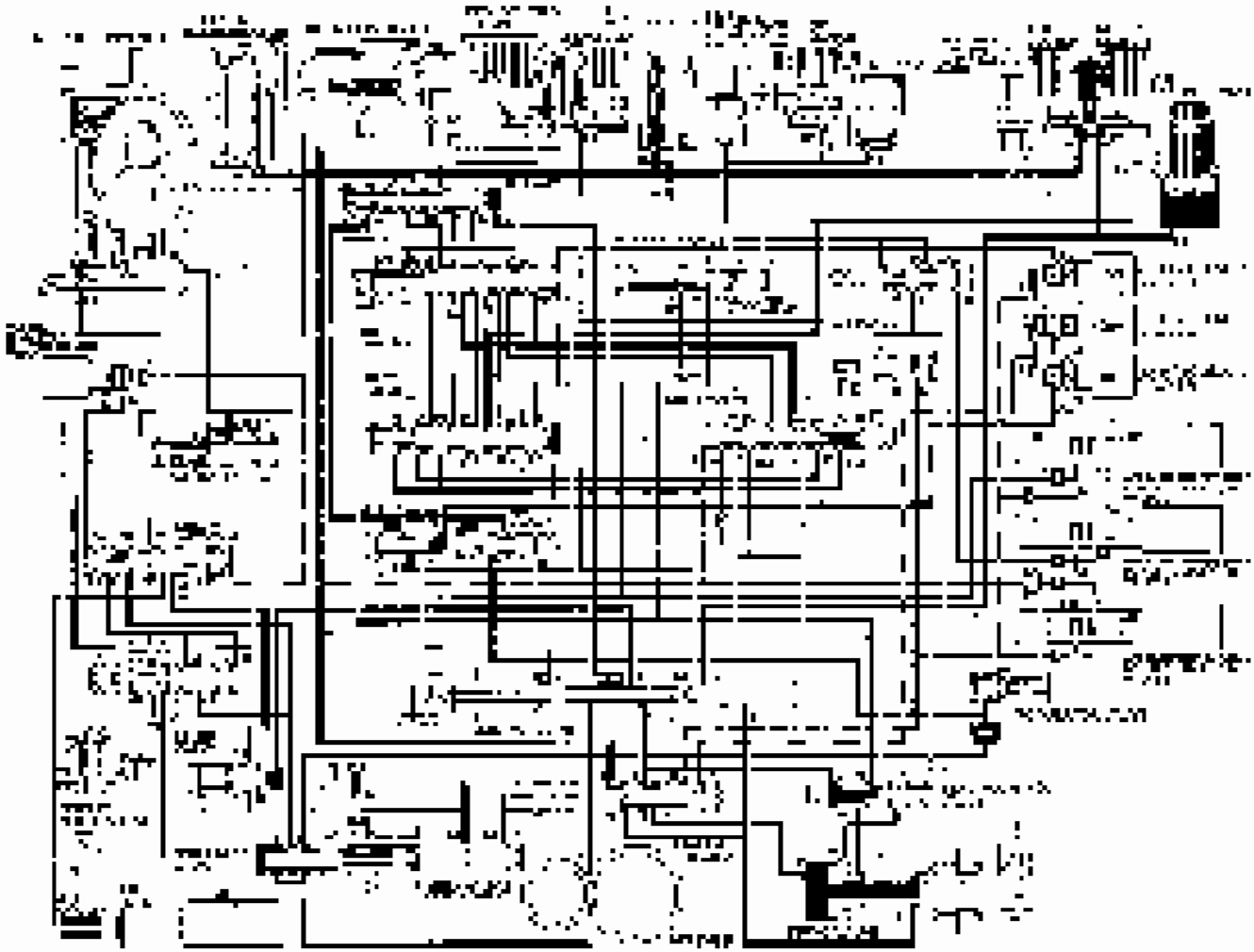
Hydraulic Flow (cont'd)

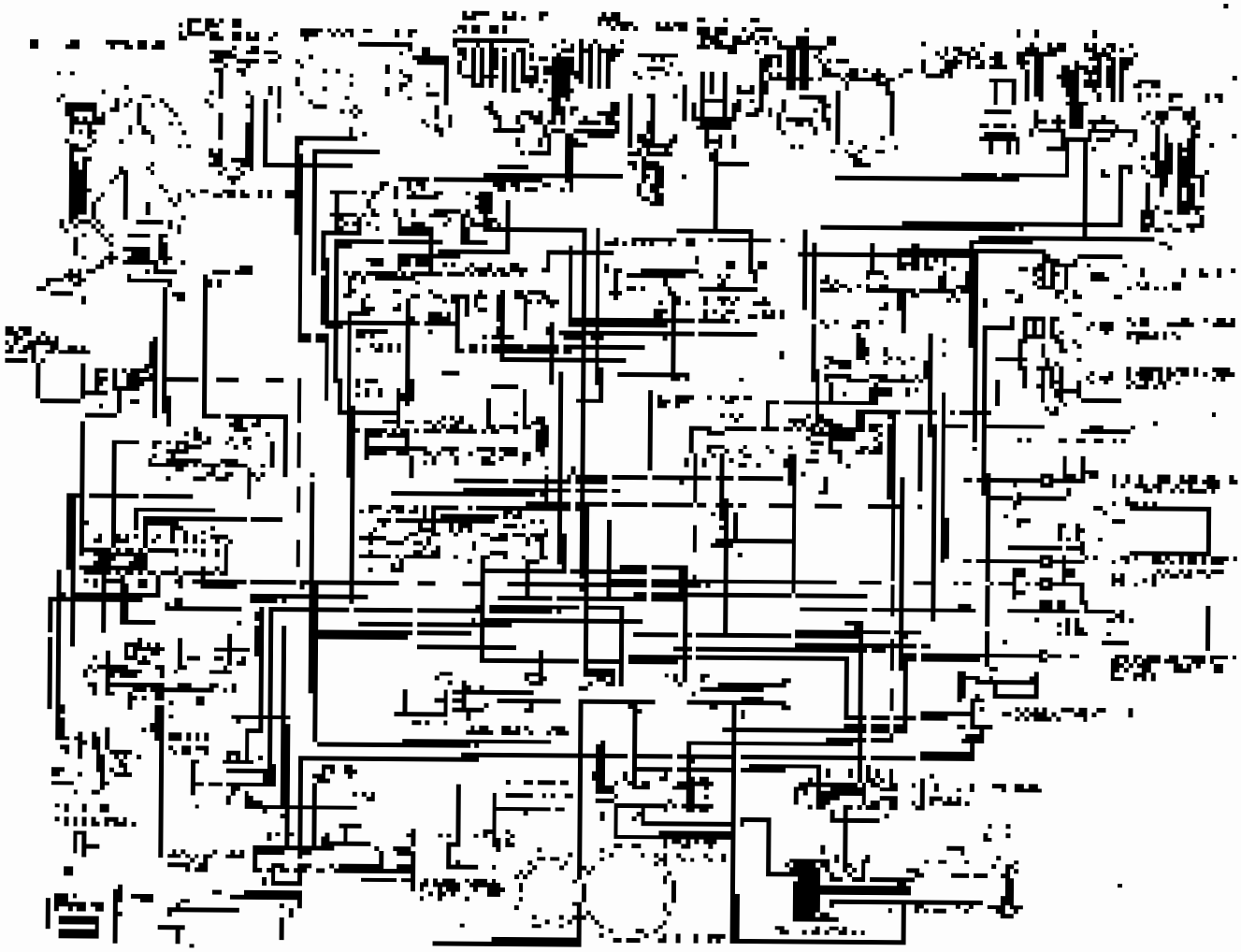




System Description (cont'd)

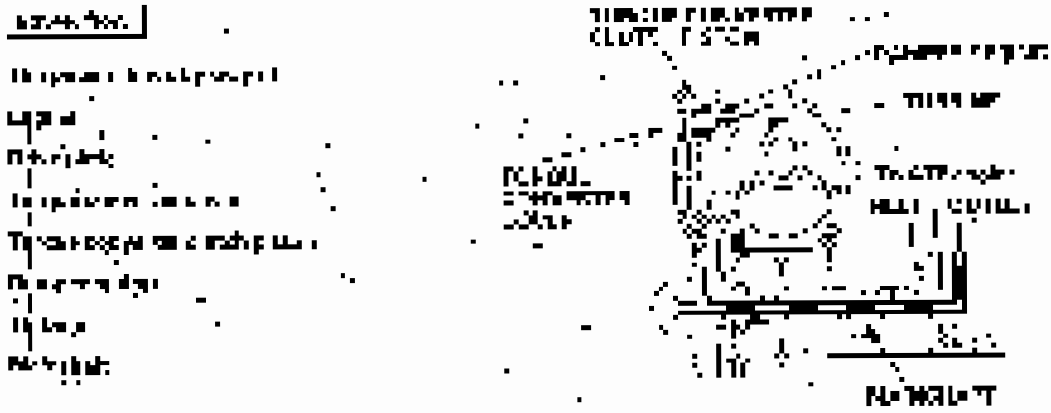
Hydraulic Flow (cont'd)

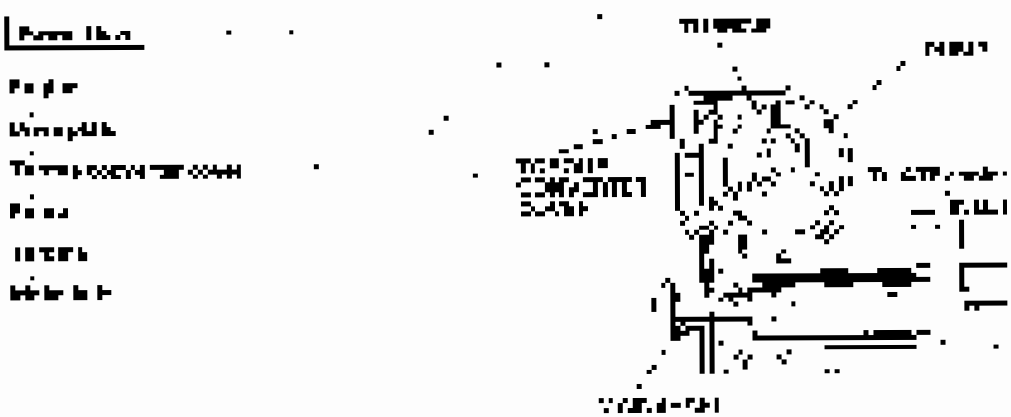


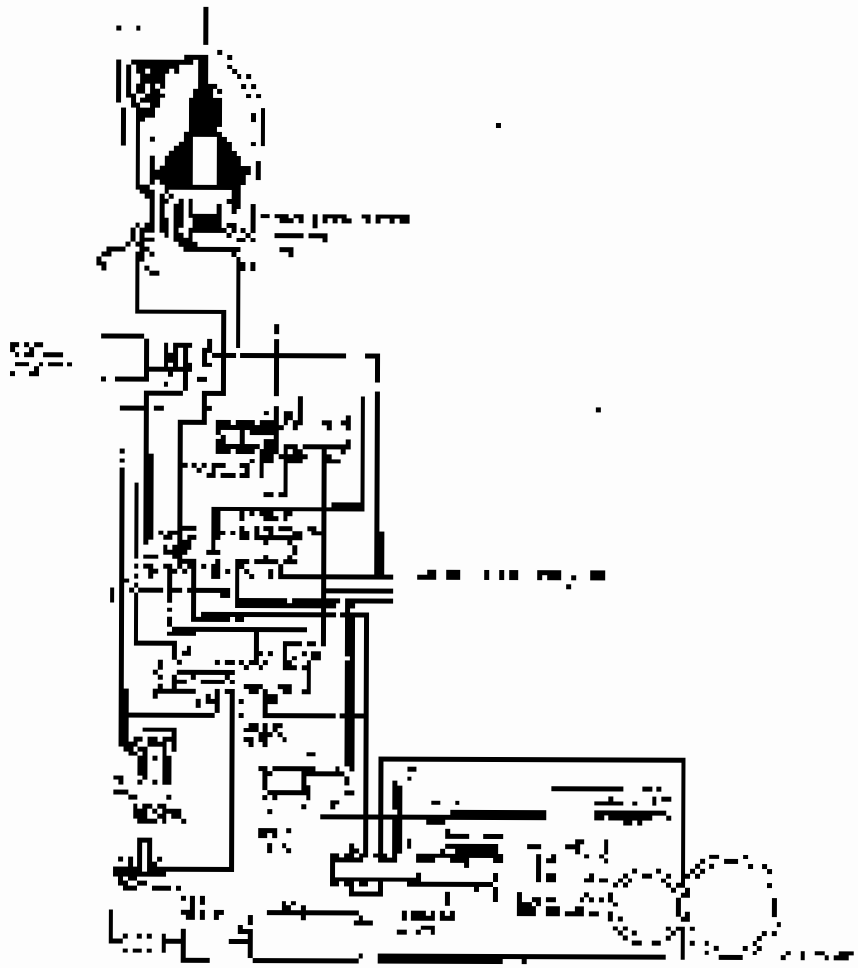


System Description (cont'd)

Lockup System

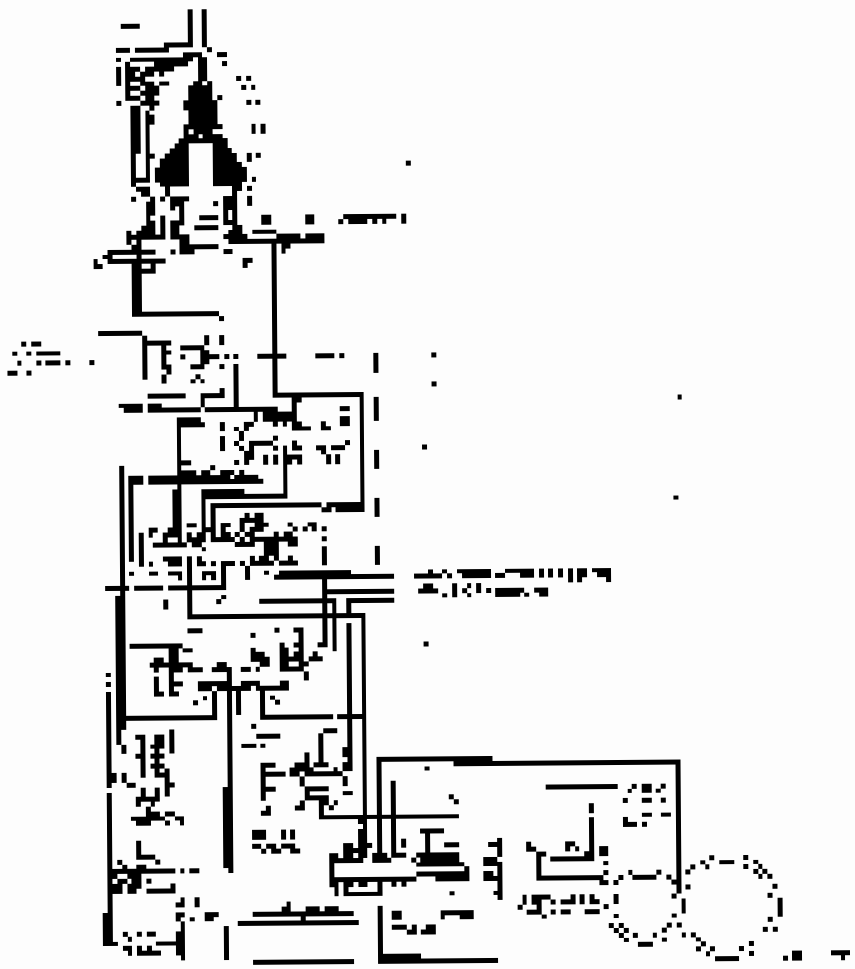


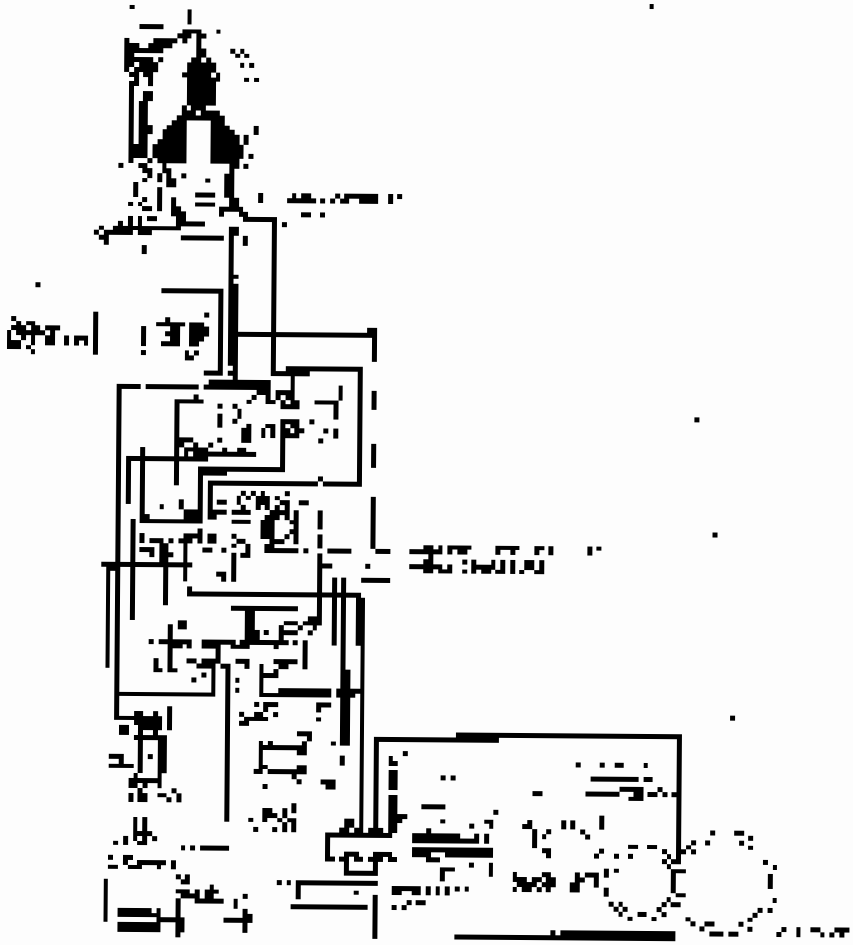




System Description (cont'd)

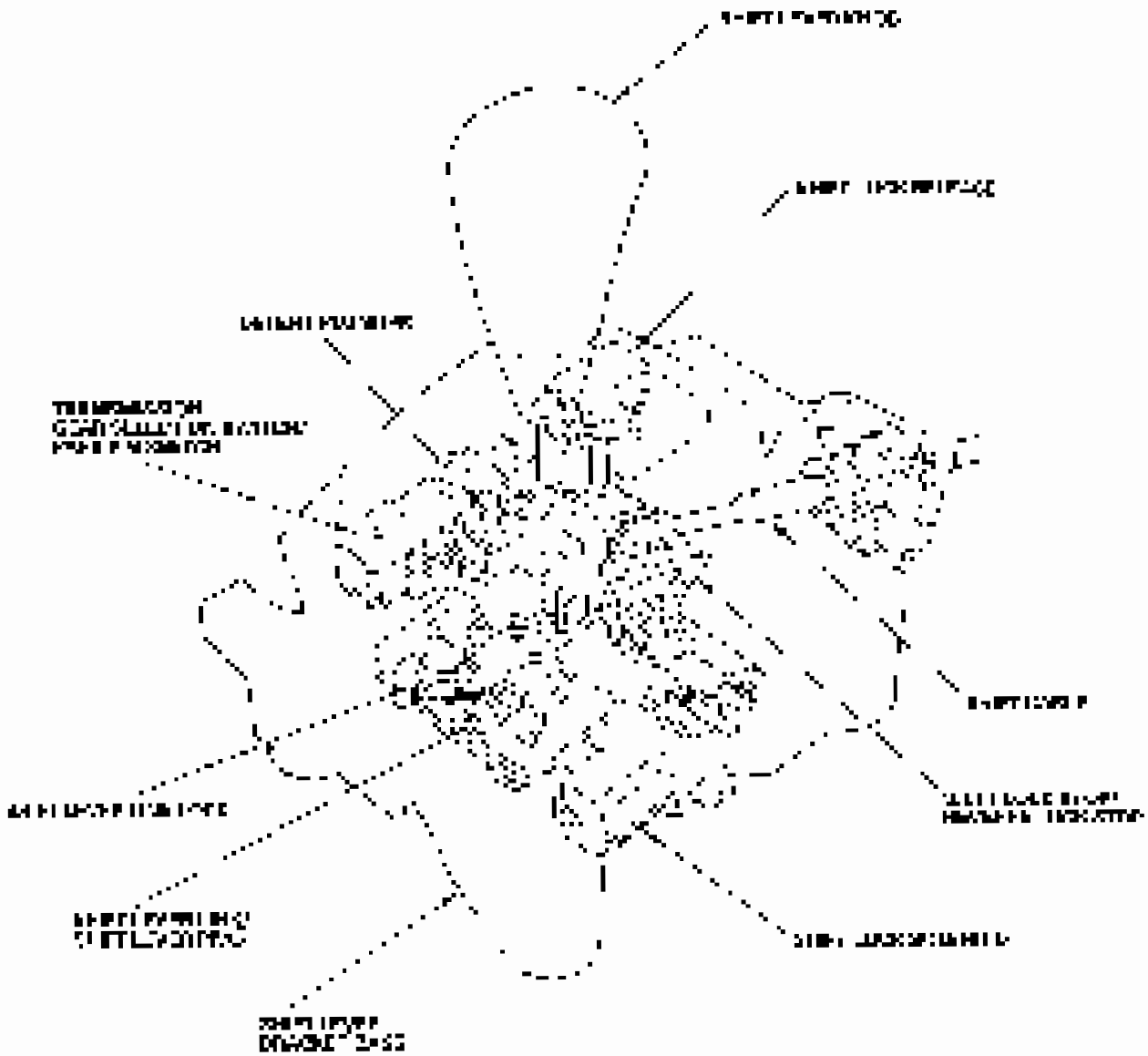
Lock-up System (cont'd)

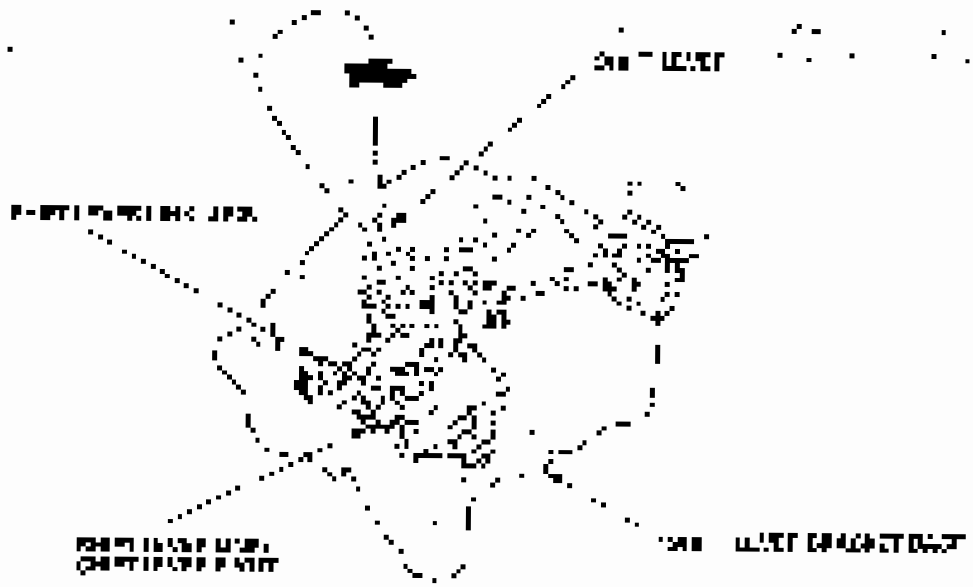


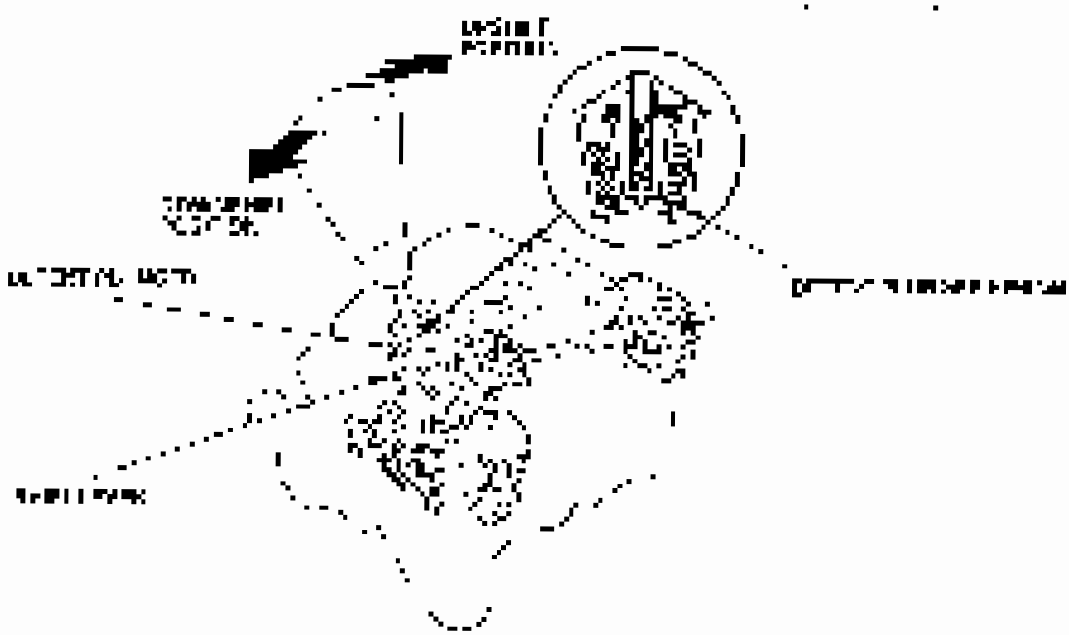


System Description (cont'd)

Shift Lever Mechanism

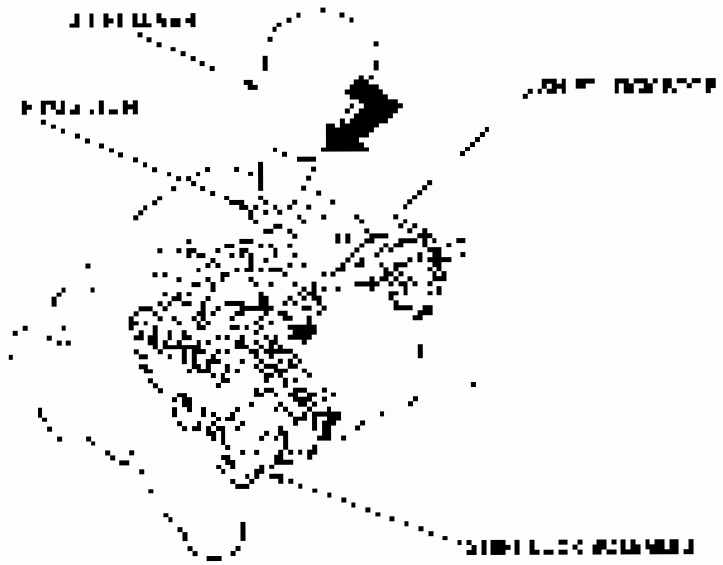


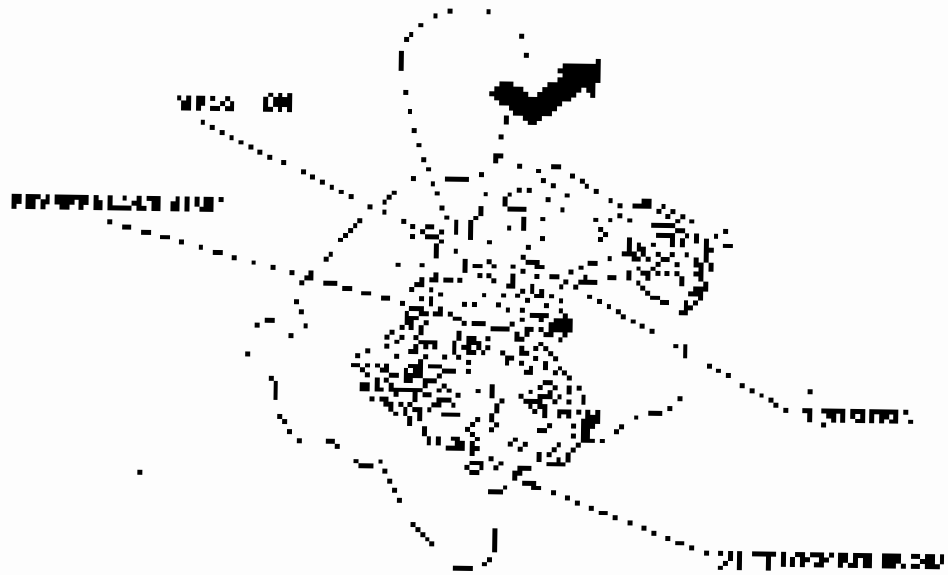


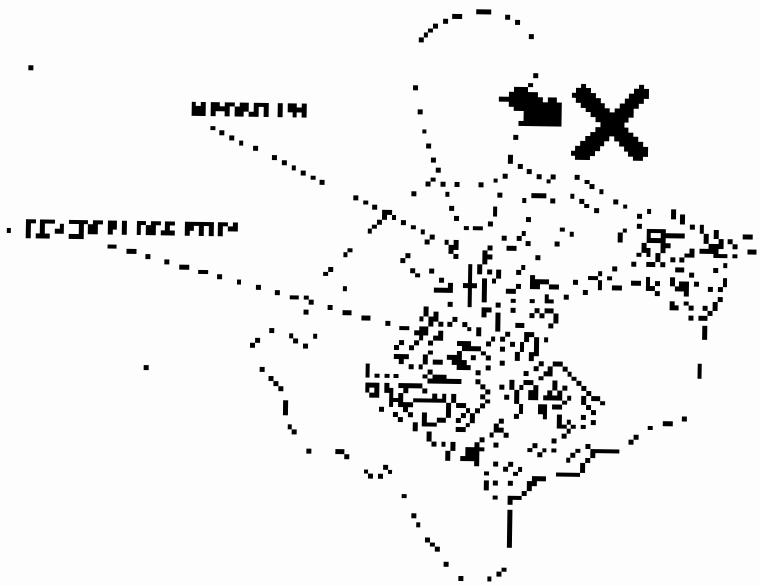


System Description (cont'd)

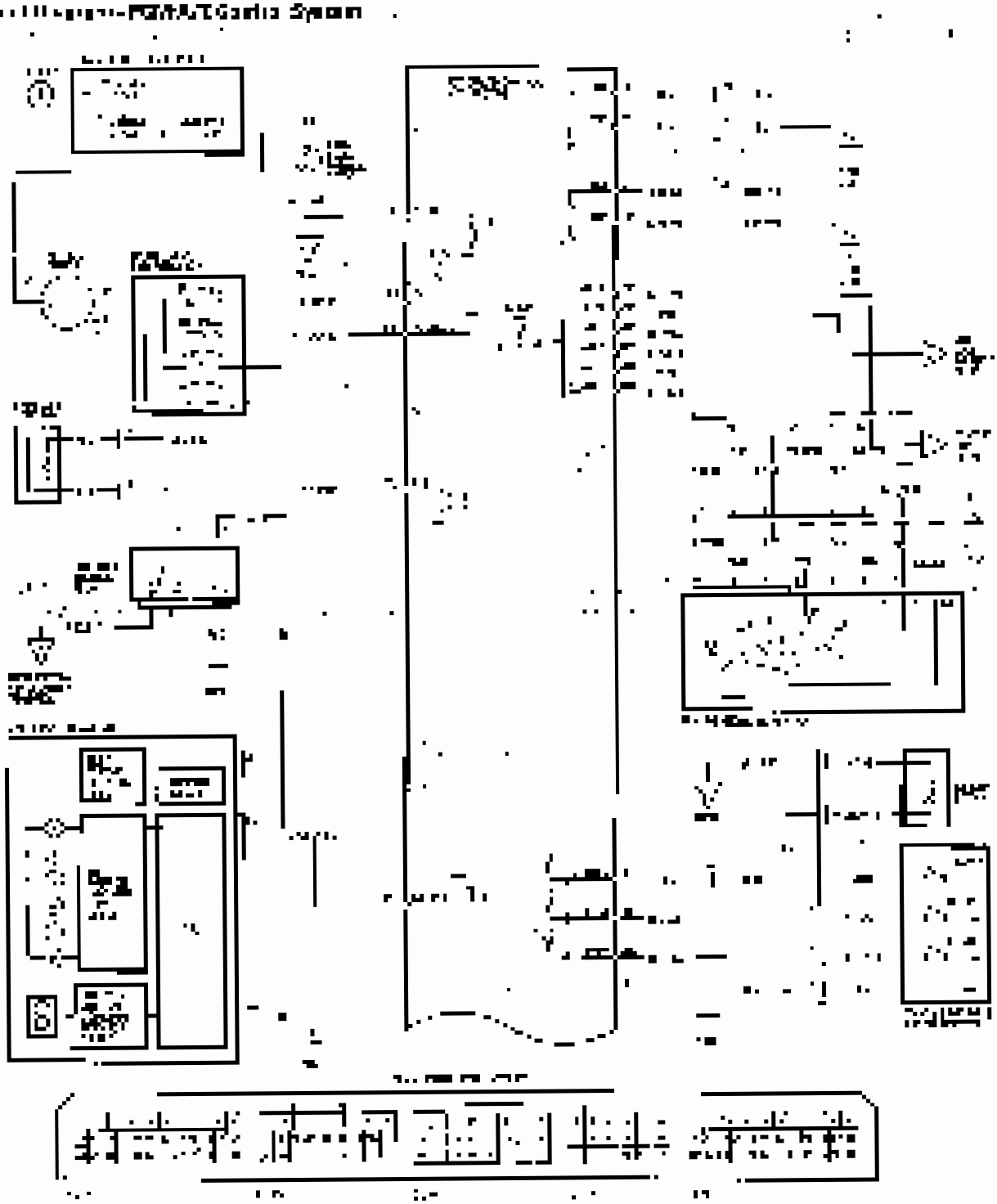
Shift Lock/Reverse Lock Mechanism

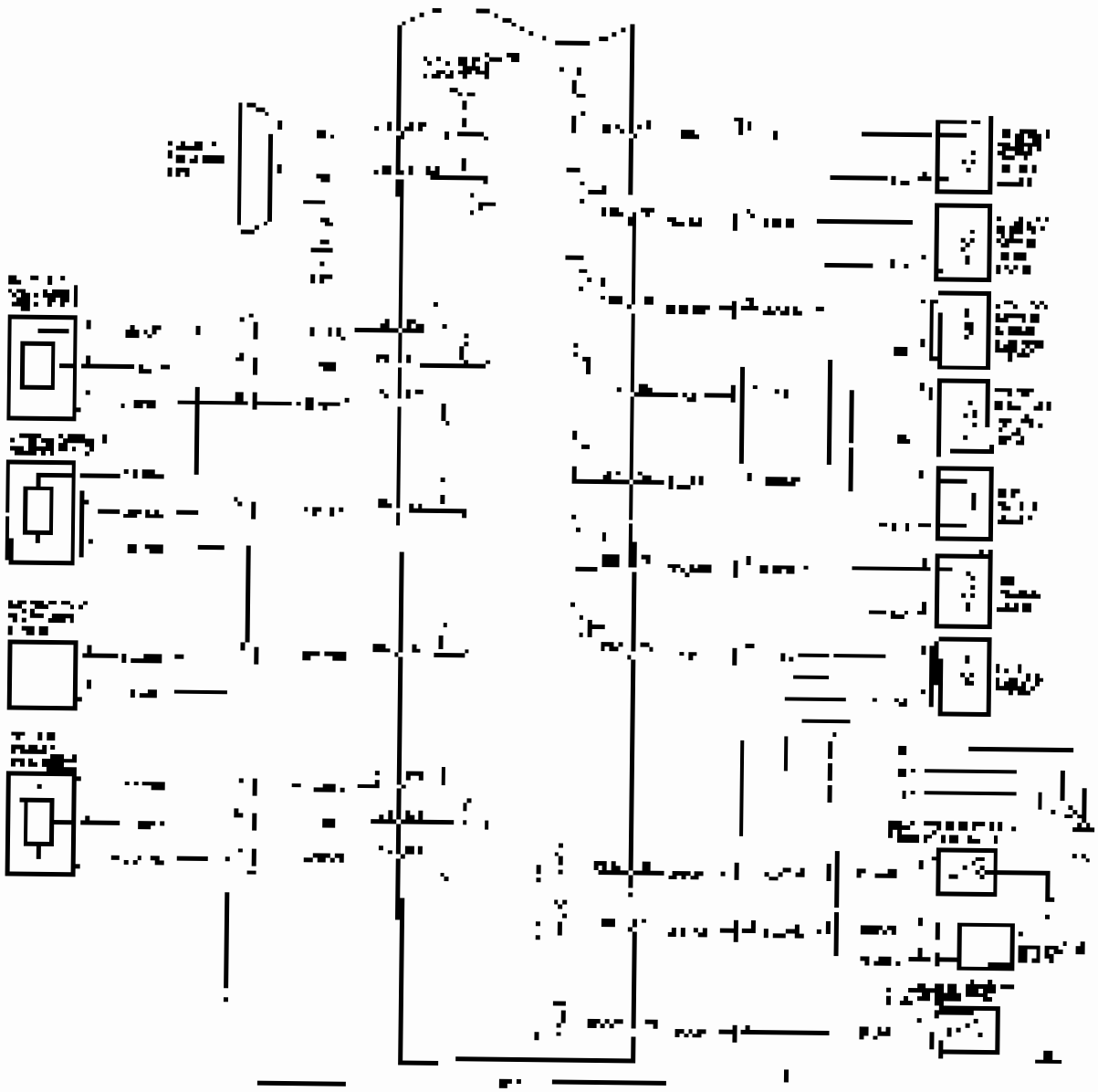






System Description (cont'd)





DTC Troubleshooting

DTC P0705 Transmission Range Sensor Circuit Malfunction (PRNDL Input)

NOTE:

- Record all freeze frame data before performing this troubleshooting procedure. Refer to page 14-[illegible]. This data will be lost when the battery is disconnected.
- This DTC can be set when a short circuit in the park/neutral position switch circuit causes the transmission to shift into reverse gear.

1. Check for DTC with HDS.

2. Does the DTC indicate?

3. Check the park/neutral position switch for proper installation and adjustment. Refer to page 14-[illegible].

   Is the switch properly adjusted?

   YES - Go to step 4.

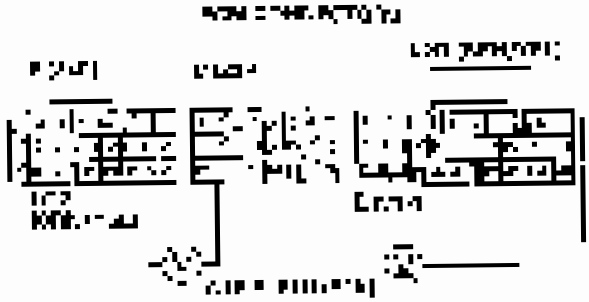
   NO - Adjust the switch properly. Refer to page 14-[illegible]. Then check for DTC P0705. Is DTC P0705 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the park/neutral position switch and PCM.

4. Turn the ignition switch to ON (II).

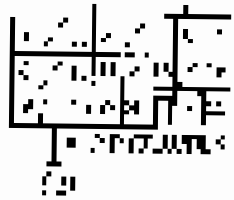
5. Measure the voltage between PCM connector terminals C1 and [illegible] with the park/neutral position switch in each shift position.



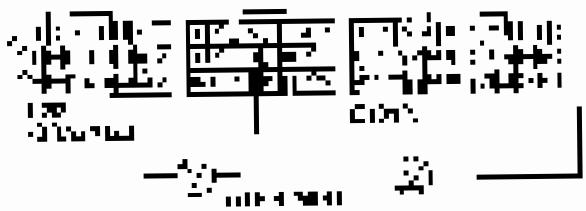
   Is there battery voltage?

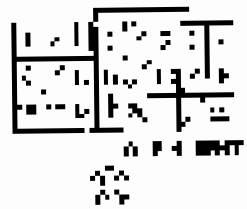
   YES - Go to step 6.

   NO - Go to step 7.

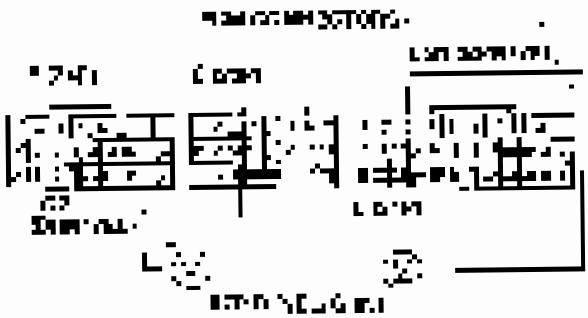


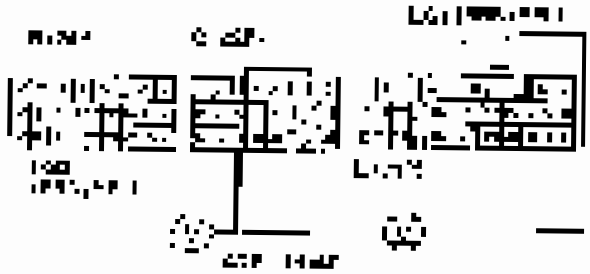
DTC Troubleshooting (cont'd)



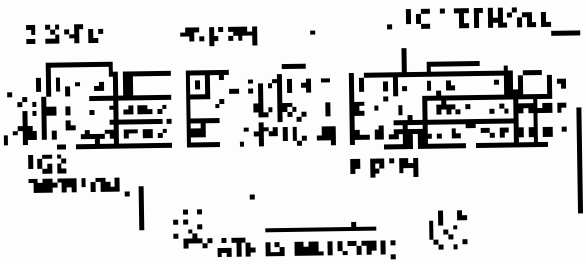


DTC Troubleshooting (cont'd)





DTC Troubleshooting (cont'd)



DTC P0705 Transmission Range Sensor Circuit (Open)

NOTE:

- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

YES - [illegible]

NO - [illegible]

5. [illegible]

6. [illegible]

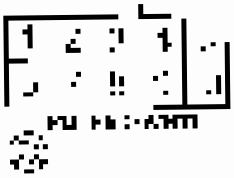
7. [illegible]

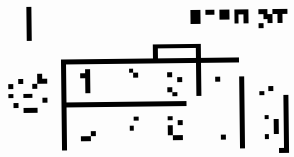
8. [illegible]

9. [illegible]

10. [illegible]

DTC Troubleshooting (cont'd)





DTC P0711: ATF Temperature Sensor Circuit "Range" Performance

Note:

- [illegible]
- [illegible]

1. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

2. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

3. [illegible]

   [illegible]

   YES: [illegible]

   [illegible]

4. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

   [illegible]

   [illegible]

   NO: [illegible]

DTC Troubleshooting (cont'd)

DTC P0712 ATF Temperature Sensor Circuit (Low)

NOTE:
- Record all [illegible] Freeze Data: [illegible] Troubleshooting Information on page 14-91 before you start this procedure.
- This [illegible] procedure checks for an open in the [illegible] sensor circuit or a shorted sensor. It cannot be used to check for an intermittent condition.

1. Check ATF [illegible] sensor voltage with the [illegible] Shop Tool.

   Is ATF [illegible] sensor voltage 2.0V or less?

   YES - Go to step 2.

   NO - [illegible] Replace the [illegible] sensor. Go to step 5.

2. Disconnect the ATF [illegible] sensor connector and check for [illegible] between the terminals.

3. Check for [illegible] between the ATF [illegible] sensor terminal and body ground.

   Is there [illegible] between the terminal and body ground?

   YES - Go to step 4.

   NO - Replace the [illegible] sensor. Go to step 5.

4. Turn the [illegible] ATF.

5. Clear the DTC from the [illegible] ECM.

6. [illegible]

7. Check for DTC P0712 [illegible] ECM.

   Is DTC P0712 [illegible]?

   YES - Go to step 8.

   NO - [illegible] Go to step 9.

8. Check for [illegible] between the ATF [illegible] sensor terminal and body ground.

   Is there [illegible] between the terminal and body ground?

   YES - The [illegible] sensor is [illegible]

   NO - [illegible] Go to step 9.

9. Check for [illegible] between the ATF [illegible] sensor terminal and [illegible]

   ATF [illegible]

   [illegible]

   Is there [illegible] between the terminals?

   YES - [illegible] Replace the [illegible] sensor. Go to step 5.

   NO - [illegible] Go to step 10.

10. Check for [illegible] between the ATF [illegible] sensor terminal and [illegible]

    Is there [illegible] between the terminals?

    YES - The problem is [illegible]

    NO - [illegible] Go to step 11.

DTC P0712: ATF Temperature Sensor Circuit Open:

NOTE:

- [illegible]
- [illegible]

1. [illegible]

   [illegible]

   YES: Go to step 2.

   NO: [illegible]

2. [illegible]

3. Disconnect the A-1 [illegible] connector.

4. [illegible]

5. [illegible]

   [illegible]

   ATF temperature sensor

   [illegible]

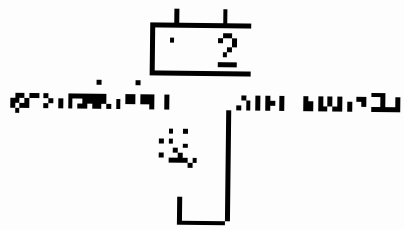
   [illegible]

   YES: [illegible]

   NO: [illegible]

6. Measure [illegible] ATF temperature sensor connector [illegible].

   [illegible]



   [illegible]

   [illegible]

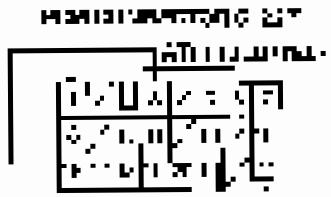
   YES: [illegible]

   NO: [illegible]

cont'd

DTC Troubleshooting (cont'd)

7. [illegible]



8. [illegible]

[illegible]

[illegible]

9. [illegible]

10. [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

P1815/P0716 Input Shaft Speed Sensor Circuit Range/Performance

Note:

- [illegible]
- This code will not be stored in the ECM until the problem is corrected and the vehicle is driven over the conditions for the diagnosis.

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

   Did the code reset?

   YES - Go to step 6.

   NO - [illegible]

6. [illegible]

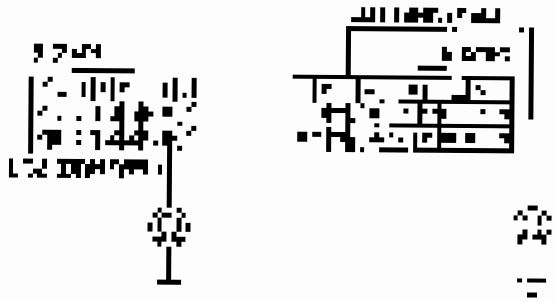
7. [illegible]

8. [illegible]

   - [illegible]

9. Check for continuity between ECM connector terminal B18 and body ground.

   [illegible]



   [illegible]

   Is there continuity?

   YES - Go to step 10.

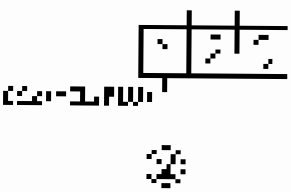
   NO - [illegible]

10. [illegible]

11. [illegible]

12. Measure resistance between ECM connector terminal B18 and body ground.

    [illegible]



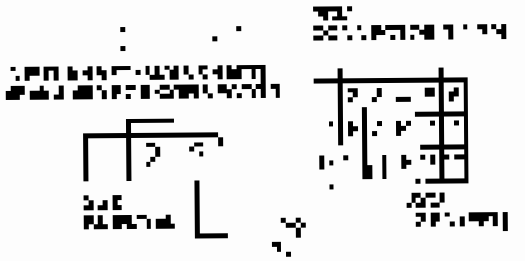
    [illegible]

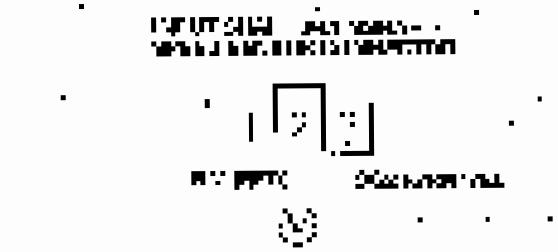
    Is there continuity?

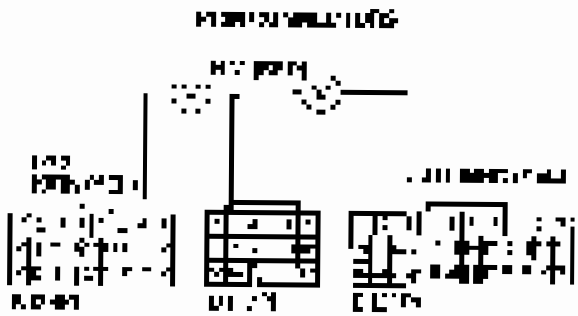
    YES - Go to step 13.

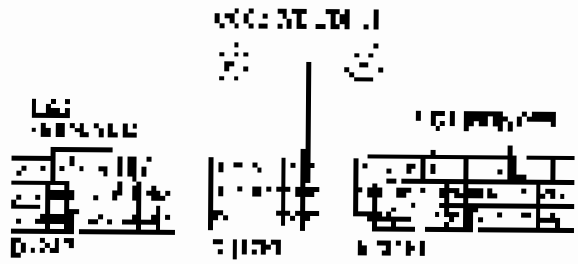
    NO - Go to step 14.

DTC Troubleshooting (cont'd)

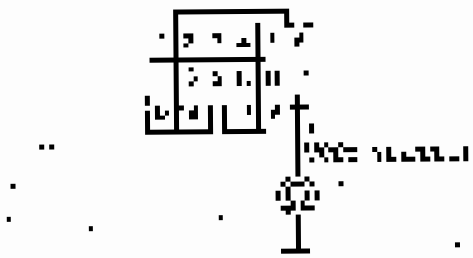


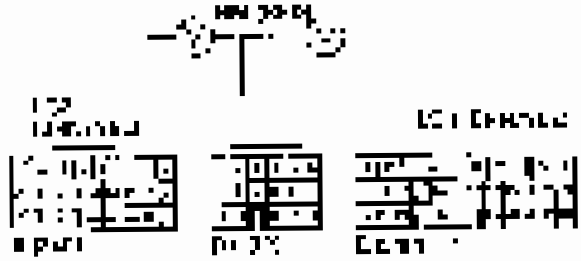






DTC Troubleshooting (cont'd)





DTC P[illegible] Engine Start [Manual] : Ignition Switch Signal Circuit [No Signal Input]

NOTE:
- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

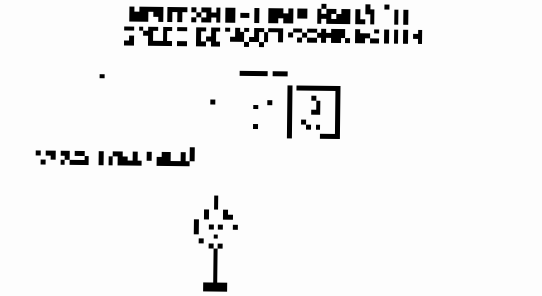
8. [illegible]

9. [illegible]

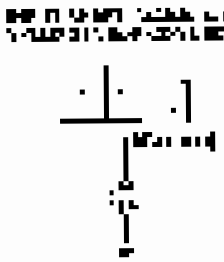
10. [illegible]

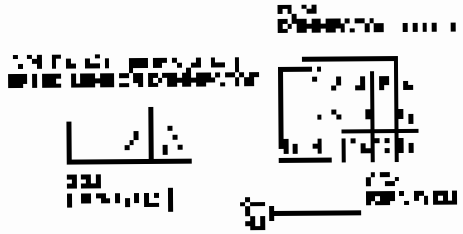
11. [illegible]

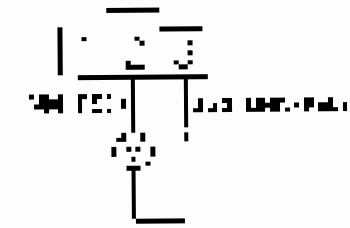
12. [illegible]

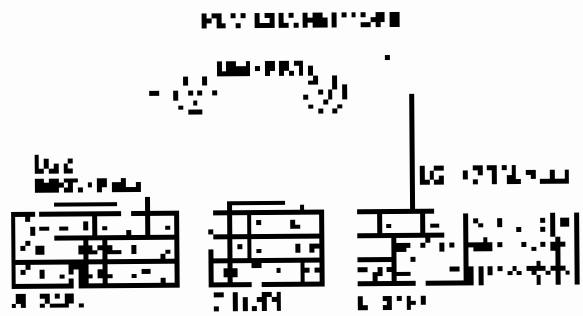


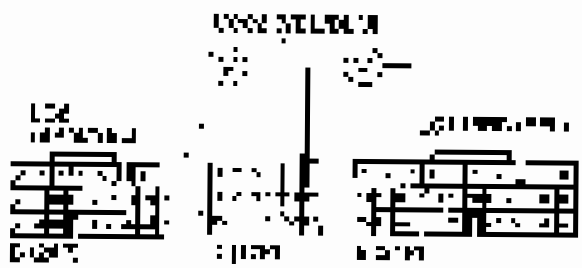
DTC Troubleshooting (cont'd)





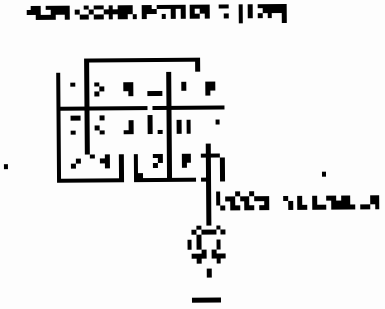






DTC Troubleshooting (cont'd)

22. [illegible]



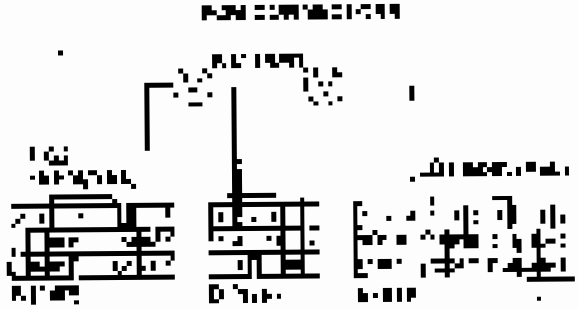
[illegible]

Is there continuity?

YES - [illegible]

NO - [illegible]

23. [illegible]



[illegible]

Is there continuity?

YES - [illegible]

NO - [illegible]

24. [illegible]

25. [illegible]

26. [illegible]

Is there continuity?

YES - [illegible]

NO - [illegible]

DTC P0715: Input Shaft (Vehicle Speed) Sensor [where fitted] Circuit Failure

NOTES:
- Check all connectors for clean and tight connections before carrying out any diagnosis. Refer to Troubleshooting: Intermittent Faults at the end of this section.
- This vehicle is equipped with an OBD system. Any OBD trouble codes stored should be recorded before clearing the codes from memory. Refer to the OBD System Operation section.

1 [illegible]

2 Turn the ignition switch to the ON position with the engine OFF and observe the [illegible]

3 Check the OBD-II DTC [illegible]

[illegible]

YES – Go to step 4.

NO – [illegible] Check for poor connections or damaged wiring between the [illegible] and the ECM. Repair as necessary. If no faults are found, substitute a known good ECM and recheck. If the symptom is no longer present, refer to the ECM Replacement section and replace the ECM. Recheck.

4 Turn the ignition switch to OFF.

5 Disconnect the input shaft [vehicle] speed [illegible] sensor connector. Using a voltmeter connected to the [illegible] ground, switch the ignition ON and check for [illegible]

Is the [illegible] present?

YES – Go to step 6.

NO – Repair the [illegible] between the [illegible] sensor connector and the ECM. Recheck.

6 Connect a [illegible] between the [illegible] sensor connector and ground.

7 Start the engine and [illegible] with the engine [illegible] Observe the [illegible] Does the [illegible]

Does the [illegible]?

YES – Go to step 8.

NO – If the problem has been corrected, the [illegible] was probably caused by poor [illegible] Check for [illegible] and repair as necessary ■

8 Turn the ignition switch to OFF.

9 Disconnect the [illegible]

10 Measure the [illegible] connector [illegible]

11 [illegible]

12 Check for [illegible] between the [illegible] and body ground.

[illegible]

1	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Is [illegible]?

YES – Repair the [illegible] between the ECM connector and [illegible] Recheck.

NO – Go to step 13.

[illegible]

DTC Troubleshooting (cont'd)

12. Connect PGM-FI main relay 1 connector.

13. Turn the ignition switch to ON (II).

14. Measure the voltage between the shaft speed sensor 2 terminal and body ground.

Is the voltage 4.5 V or more?

YES—Replace the transmission shaft speed sensor 2 (see page 14-103), then go to step 15.

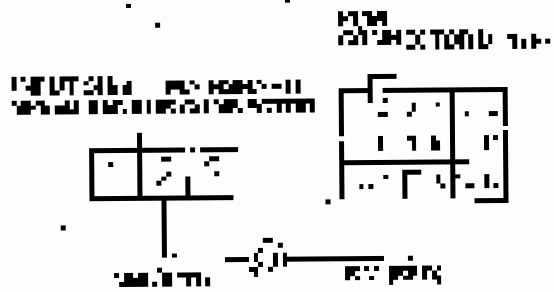
NO—Go to step 16.

15. Turn the ignition switch to ON (II).

16. Turn the ignition switch to ON (II).

17. Connect all connectors.

18. Start the engine, and let it idle for 10 seconds.



Is the voltage 4.5 V or more?

YES—Update the PCM (Replace the PCM, if the updated PCM still has the same problem.), then go to step 19.

NO—Replace the PCM with a known good one, then go to step 19. (If the problem goes away, replace the original PCM.)

19. Clear the DTC from the PGM-FI memory.

20. Inspect all the related connectors for poor contact or bent pins.

21. Check for DTC. Is DTC P1731 indicated this time?

YES—Intermittent failure, system is OK at this time.

NO—Go to step 22.

DTC P0721: Output Shaft (Countershaft) Speed Sensor Circuit (Range/Performance)

NOTE:

- Record all freeze data and [illegible] Troubleshooting Information (see page 14-[illegible]) [illegible].
- This code is caused by an electrical circuit problem and/or [illegible] mechanical problem in the transmission.

1. [illegible] the DTC with the HDS.

2. [illegible] the front of the vehicle [illegible] securely supported, and allow [illegible] wheels [illegible] rotate freely.

3. [illegible] drive the [illegible] over 30 mph (48 km/h) [illegible] decelerate [illegible] down [illegible].

4. Check the [illegible] for DTC P0721.

   Is DTC P0721 indicated?

   YES—Go to step [illegible].

   NO—Intermittent failure, [illegible] at this time. Check for poor connections or loose terminals at [illegible] speed sensor and [illegible] PCM. [illegible] step [illegible].

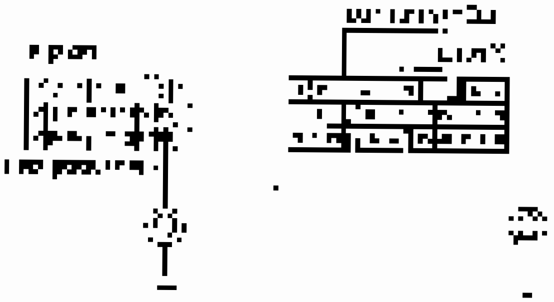
5. Turn the ignition switch OFF.

6. [illegible] HDS [illegible] DLC.

7. [illegible] PCM connectors [illegible] and E (31P), [illegible] output shaft (countershaft) speed sensor [illegible].

8. Check for continuity between PCM connector [illegible] and body ground, and between [illegible].

PCM CONNECTOR E (31P)



Wire side of female terminals

Is there continuity?

YES—[illegible].

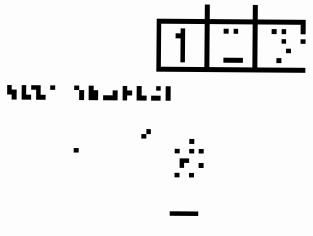
NO—[illegible] PCM connector [illegible] and body ground [illegible], then go to step 30.

9. Connect PCM connectors [illegible] (44P) and E (31P).

10. [illegible] ignition switch ON (II).

11. Measure the voltage between output shaft (countershaft) speed sensor connector terminal No. 1 and body ground.

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CONNECTOR



Wire side of female terminals

Is there about 5 V?

YES—Go to step [illegible].

NO—[illegible].

(cont'd)

DTC Troubleshooting (cont'd)

12. Turn the ignition switch OFF.

13. [illegible]

14. Disconnect [illegible]

15. Connect a test light between [illegible] (yellow/green) wire terminal in the 3P connector and body ground.

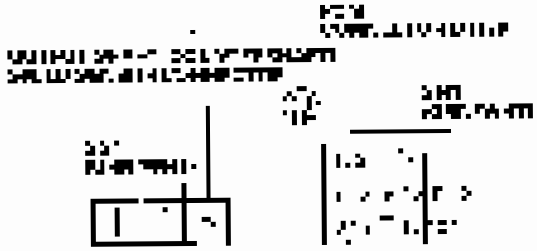
16. Turn the ignition switch ON (II).

Is the test light on?

YES - [illegible] Replace the [illegible] with a known-good one, and recheck. If the symptom/indication goes away, go to step 17. If it does not go away, go to step 23.

NO - Go to step 16.

16. Check for continuity between [illegible] (yellow/green) wire terminal in the 3P connector and body ground.



Is there continuity?

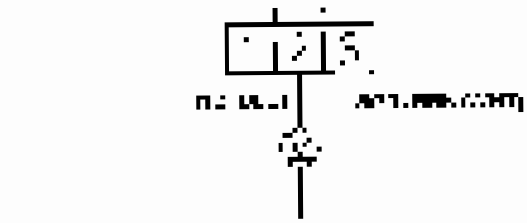
YES - Go to step 17.

NO - Check for open in the [illegible] wire between the [illegible] and the PCM. If the wire is OK, go to step 23.

17. Connect PCM connector.

18. Turn the ignition switch ON (II).

19. Measure voltage between [illegible] (yellow/green) wire terminal in the 3P connector and body ground.



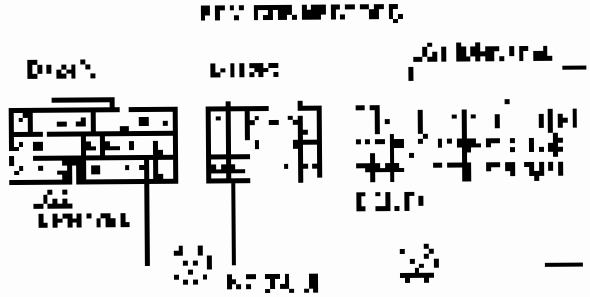
Is there battery voltage?

YES - Go to step 20.

NO - Check for open in the [illegible] wire between the [illegible] and the [illegible]. If the wire is OK, go to step 23.

20. Check for open or poor [illegible] wire terminal in the [illegible] connector.

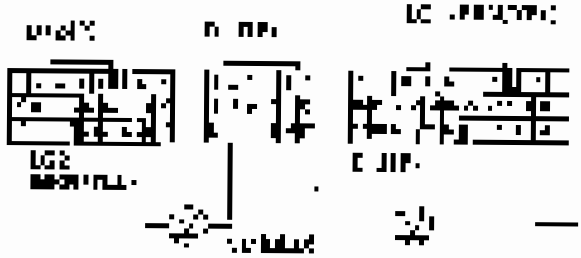
21. Measure the voltage between PCM connector terminal B7 and body ground.

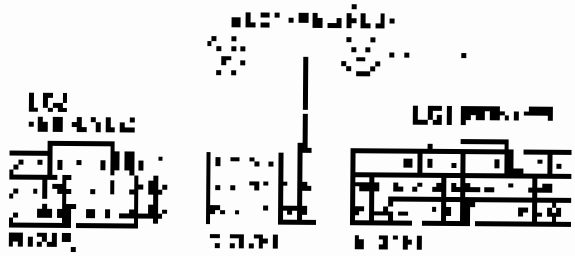


Is there battery voltage?

YES - Go to step 22.

NO - Check for open in the [illegible] wire between the [illegible] and the PCM. If the wire is OK, go to step 23.





DTC Troubleshooting (cont'd)

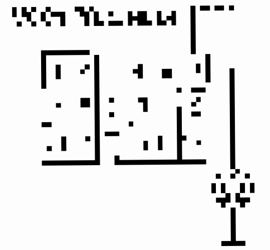
25. Turn the ignition switch OFF.

26. Jump the SCS line with the HDS.

27. Disconnect PCM connector [illegible] (31P).

28. Check for continuity between PCM connector terminal [illegible] and body ground.

PCM CONNECTOR [illegible] (31P)



Wire side of female terminals

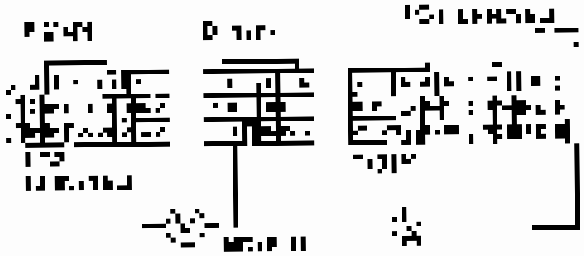
Is there continuity?

YES—Repair short in the wire between PCM connector terminal [illegible] and the [illegible], then go to step 30.

NO—Check for loose or poor connections at the PCM connector and the DLC. If the connections are OK, update the PCM if it does not have the latest software (see page 11-[illegible]), or substitute a known-good PCM (see page 11-[illegible]), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM. ■

29. Measure the voltage between PCM connector terminals [illegible] and D12 or E[illegible].

PCM CONNECTORS



Wire side of female terminals

Is there [illegible]?

YES—Repair open in the wire between PCM connector terminal D14 and the [illegible], then go to step 30.

NO—Check for loose or poor connections at the PCM connectors and the DLC. If the connections are OK, update the PCM if it does not have the latest software (see page 11-[illegible]), or substitute a known-good PCM (see page 11-[illegible]), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM. ■

30. Clear the DTC with the HDS.

31. Test-drive the vehicle [illegible] same conditions [illegible] data.

32. Check for DTCs [illegible] DTC MENU [illegible] [illegible] (P1[illegible]).

Is there [illegible]?

YES—The problem has been corrected. ■

NO—The [illegible] ■

DTC P1722, Output Shaft [illegible] Speed Sensor Circuit [illegible]

A/CTT:

- [illegible]
- [illegible]

1. Check for DTC(s).

2. [illegible]

3. [illegible]

- [illegible]

NO - [illegible]

4. [illegible]

5. [illegible]

6. Check [illegible]

[illegible]

[illegible]

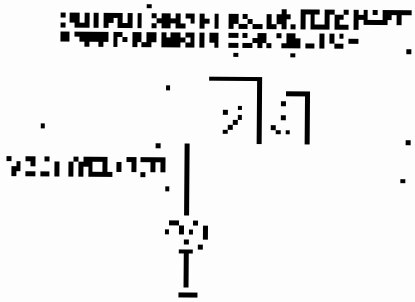
YES - Go to step 7.

NO - Repair open in the wire between [illegible] and ground. If [illegible], go to step 7.

7. Check [illegible].

8. Turn the ignition [illegible].

9. [illegible]



[illegible]

[illegible]

YES - Go to step 10.

NO - [illegible]

DTC Troubleshooting (cont'd)

9. [illegible]

10. [illegible]

11. Disconnect [illegible]

12. Check for open circuit in wire between [illegible] (except [illegible]) and [illegible] terminal No. [illegible]

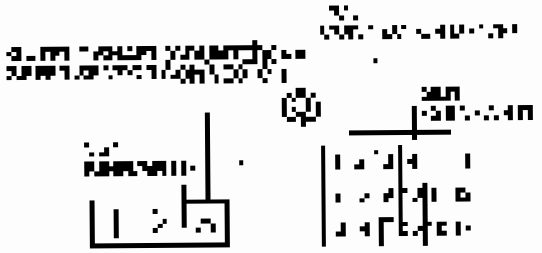
[illegible]

Continue [illegible]

YES: Replace [illegible] with a new one. Then [illegible] PCM connector and [illegible] connector. Clear the DTC. Go to the [illegible] step 10.

NO: [illegible] step 13.

13. Check for open circuit in wire between [illegible] (except [illegible]) and [illegible] terminal No. [illegible] PCM connector.



[illegible]

Is [illegible]?

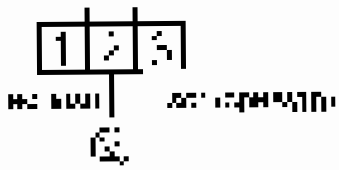
YES: [illegible] step 14.

NO: Repair open circuit in wire between [illegible] (except [illegible]) and [illegible] terminal No. [illegible] PCM connector. Then [illegible] Section 23.

14. Connect [illegible] connector [illegible]

15. Turn the ignition switch [illegible]

16. Measure voltage between [illegible] terminal No. [illegible] PCM connector and body ground.



[illegible]

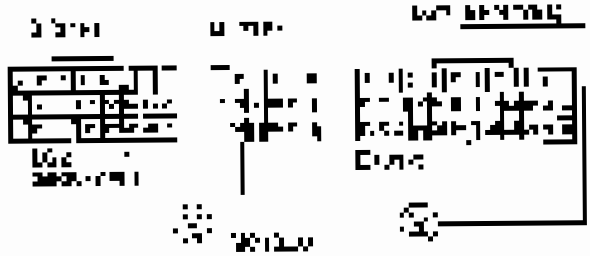
Is [illegible]?

YES: Go to step 17.

NO: [illegible] step 21.

17. Disconnect [illegible] connector from [illegible]

18. Measure resistance between [illegible] terminal No. [illegible] PCM connector and body ground.



[illegible]

Is [illegible]?

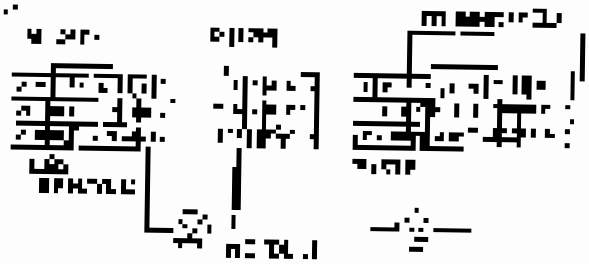
YES: Go to step 19.

NO: Repair open circuit in wire between [illegible] terminal No. [illegible] PCM connector and [illegible] terminal No. [illegible] PCM connector. Then [illegible] Section 23.

2. [illegible]

23. [illegible]

PCV connections



[illegible]

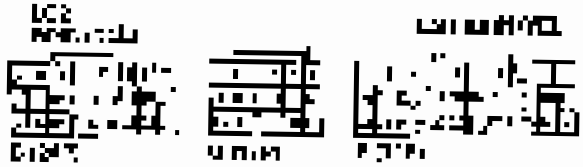
[illegible]

YES — Replace the PCV valve. See the [illegible] page 14-[illegible]. Be sure to use the correct PCV valve for your engine. Incorrect PCV valve can affect [illegible]

NO — Replace the [illegible] page 14-[illegible]. See [illegible] page 20.

24. Check for the voltage at the [illegible] connector terminal No. [illegible] and [illegible] as [illegible]

[illegible]



[illegible]

Is the voltage [illegible]?

YES — Repair [illegible] between the PCV connector terminal No. [illegible] and the [illegible] shaft position sensor. If the wire harness is [illegible] page 22.

NO — Go to step 25.

[illegible]

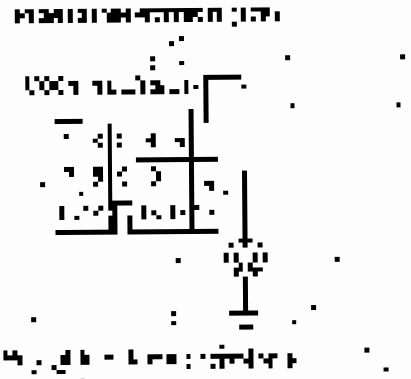
DTC Troubleshooting (cont'd)

25. Turn the ignition switch OFF.

26. Jumper the SCS line to ground.

27. Disconnect PGM-FI unit connector B (32P).

28. Check for continuity between PGM-FI unit connector terminal B1 and body ground.



Is there continuity?

YES: Replace the PGM-FI unit with a known-good one, then go to step 29.

NO: Check for poor connection at PGM-FI unit connector. If connection is OK, repair open in wire between PGM-FI unit connector and body ground. If you have no trouble code at this point, intermittent failure is probably present. Check for poor connection and refer to the troubleshooting for the applicable trouble code.

29. Reconnect the PGM-FI unit connector.

30. Clear the DTC with the HDS.

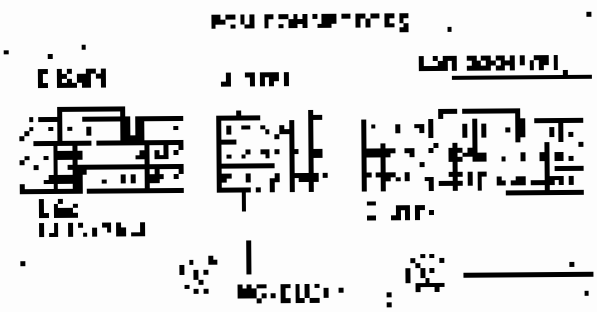
31. Test-drive the vehicle to the conditions listed in the DTC confirmation procedure.

32. Check for DTC P0722 (ATJS) in DTC RECALL with the HDS.

Is DTC P0722 (ATJS) indicated?

YES: The problem has been corrected.

NO: Replace the PGM-FI unit with a known-good one.



DTC P0722 Output Shaft Speed Sensor Circuit No Signal

NOTE:
- Record all appropriate Generic Scan Tool information before beginning diagnostic procedures.
- This vehicle is equipped with a transaxle control module which is located in the engine compartment. Refer to the appropriate service manual for the location.

1. Connect a scan tool to the DLC and turn the ignition ON.

2. Start the engine and allow it to idle. Monitor the output shaft speed sensor parameter identification (PID) with the scan tool. Is the output shaft speed sensor PID displaying 0 RPM?

   YES — Go to step 3.

   NO — Refer to the appropriate symptom diagnostic table.

3. Turn the ignition OFF.

4. Disconnect the TCM connector.

5. Measure the resistance between the output shaft speed sensor signal terminal and the TCM connector terminal.

6. Turn the ignition ON.

7. Measure the voltage between the output shaft speed sensor signal terminal and ground.

8. Is the voltage greater than 4.5 volts?

   YES — Replace the TCM. Refer to Transmission Control Module (TCM) Replacement - 4L60-E/4L65-E/4L70-E in Transmission Control Module (TCM) Replacement - 4L60-E/4L65-E/4L70-E. Is the action complete?

   NO — Go to step 9.

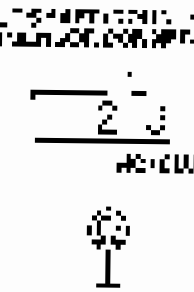
9. Measure the resistance between the output shaft speed sensor signal terminal and ground.

10. Is the resistance greater than 10,000 ohms?

    YES — Replace the output shaft speed sensor. Refer to Output Shaft Speed Sensor Replacement - 4L60-E/4L65-E/4L70-E in Output Shaft Speed Sensor Replacement - 4L60-E/4L65-E/4L70-E. Is the action complete?

    NO — Go to step 11.

11. Check the connector for poor terminal contact. Repair the connector if necessary. Is the action complete?



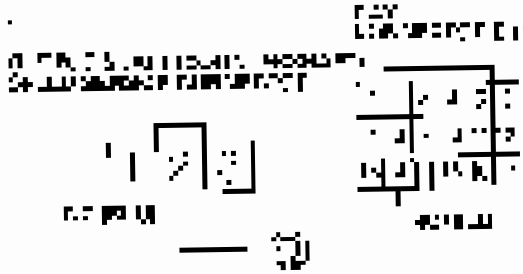
    YES — Go to step 12.

    NO — Refer to the appropriate symptom diagnostic table.

12. Replace the TCM. Refer to Transmission Control Module (TCM) Replacement - 4L60-E/4L65-E/4L70-E in Transmission Control Module (TCM) Replacement - 4L60-E/4L65-E/4L70-E. Is the action complete?

    NO — Go to step 2.

DTC Troubleshooting (cont'd)



DTC P0133: HO2S Slow Response (Bank 1 Sensor 1)
Circuit Symptoms Circuit

1) [illegible] Troubleshooting page [illegible]

Warm up the engine to normal operating temperature.

2. [illegible]

3. [illegible]

NOTE: [illegible]

[illegible] OFF [illegible]

YES—[illegible]

NO—[illegible]

4. [illegible]

5. Check the [illegible].

6. Turn the ignition switch to OFF. [illegible]

7. [illegible] OFF [illegible]

[illegible] Diagnostic Trouble Code (DTC).

[illegible]

YES—[illegible]

NO—[illegible] CONNECTOR [illegible]

DTC Troubleshooting (cont'd)

DTC P0731 (Problem Found Once) and P0732: Clutch Hydraulic Circuit

1. Start up the engine. Let it run at idle for 10 seconds.
2. Check the [illegible] indicator.
3. [illegible]

   YES: [illegible]

   NO: [illegible]
4. [illegible]

   YES: [illegible]

   NO: [illegible]
5. [illegible]

   YES: [illegible]

   NO: [illegible]
6. [illegible]
7. [illegible]
8. [illegible]

DTC P0715: Problem in Ext Clutch and Ext Control Hydraulic Circuit

NOTE: If you have a Honda scan tool, connect it to the DLC and follow the instructions in the scan tool's manual before you continue.

1. Start the engine, let it idle, and shift the transmission into Neutral.

2. Check the ATF level and condition (see page 14-6). Is the ATF level correct, and is the ATF clean and free of metal particles?

   NOTE: If the ATF is dirty or contains metal particles, the clutch or solenoid valve may be damaged. Before you replace the transmission, flush the cooler lines (see page 14-6).

   YES: Replace the ATF (see page 14-6), then go to step 3.

   NO: Repair or replace the transmission (see page 14-44), then go to step 3.

3. Check the ATF temperature.

   Is the ATF temperature between 50°C (122°F) and 80°C (176°F)?

   YES: Go to step 4.

   NO: Repeat the test drive until the ATF temperature reaches 50°C (122°F) to 80°C (176°F), then go to step 4.

4. Check for DTC P0715.

   Is DTC P0715 indicated?

   YES: Go to step 5.

   NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

5. Check the ATF pressure switch.

   Is the ATF pressure switch OK?

   YES: Go to step 6.

   NO: Replace the ATF pressure switch (see page 14-44), then go to step 6.

6. Check for DTC P0715.

   Is DTC P0715 indicated?

   YES: Go to step 7.

   NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

7. Check the solenoid valve for external leaks and check the same solenoid valve for internal leaks as explained in the Honda scan tool's manual. Is the solenoid valve OK?

   YES: Replace the ECM/PCM, then go to step 8.

   NO: Replace the solenoid valve (see page 14-44), then go to step 8.

8. Check for DTC P0715.

   Is DTC P0715 indicated?

   YES: Go to step 9.

   NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

9. Check the ATF STATUS screen on the Honda scan tool. Is the ATF temperature between 50°C (122°F) and 80°C (176°F)?

   YES: Replace the transmission (see page 14-44), then go to step 10.

   NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

10. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 11.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

11. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 12.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

12. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 13.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

13. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 14.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

14. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 15.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

15. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 16.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

16. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 17.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

17. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 18.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

18. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 19.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

19. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 20.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

20. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 21.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

21. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 22.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

22. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 23.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

23. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 24.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

24. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 25.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

25. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 26.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

26. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 27.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

27. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 28.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

28. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 29.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

29. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 30.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

30. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 31.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

31. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 32.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

32. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 33.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

33. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 34.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

34. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 35.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

35. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 36.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

36. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 37.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

37. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 38.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

38. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 39.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

39. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 40.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

40. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 41.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

41. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 42.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

42. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 43.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

43. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 44.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

44. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 45.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

45. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 46.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

46. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 47.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

47. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 48.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

48. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 49.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

49. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 50.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

50. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 51.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

51. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 52.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

52. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 53.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

53. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 54.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

54. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 55.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

55. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 56.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

56. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 57.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

57. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 58.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

58. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 59.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

59. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 60.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

60. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 61.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

61. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 62.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

62. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 63.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

63. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 64.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

64. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 65.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

65. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 66.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

66. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 67.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

67. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 68.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

68. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 69.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

69. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 70.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

70. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 71.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

71. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 72.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

72. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 73.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

73. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 74.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

74. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 75.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

75. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 76.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

76. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 77.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

77. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 78.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

78. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 79.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

79. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 80.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

80. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 81.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

81. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 82.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

82. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 83.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

83. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 84.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

84. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 85.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

85. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 86.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

86. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 87.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

87. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 88.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

88. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 89.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

89. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 90.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

90. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 91.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

91. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 92.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

92. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 93.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

93. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 94.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

94. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 95.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

95. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 96.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

96. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 97.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

97. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 98.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

98. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 99.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

99. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 100.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

100. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 101.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

101. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 102.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

102. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 103.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

103. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 104.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

104. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 105.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

105. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 106.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

106. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 107.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

107. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 108.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

108. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 109.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

109. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 110.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

110. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 111.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

111. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 112.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

112. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 113.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

113. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 114.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

114. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 115.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

115. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 116.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

116. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 117.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

117. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 118.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

118. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 119.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

119. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 120.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

120. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 121.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

121. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 122.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

122. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 123.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

123. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 124.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

124. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 125.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

125. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 126.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

126. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 127.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

127. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 128.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

128. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 129.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

129. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 130.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

130. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 131.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

131. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 132.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

132. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 133.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

133. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 134.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

134. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 135.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

135. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 136.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

136. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 137.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

137. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 138.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

138. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 139.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

139. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 140.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

140. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 141.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

141. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 142.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

142. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 143.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

143. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 144.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

144. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 145.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

145. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 146.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

146. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 147.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

147. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 148.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

148. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 149.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

149. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 150.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

150. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 151.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

151. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 152.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

152. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 153.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

153. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 154.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

154. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 155.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

155. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 156.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

156. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 157.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

157. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 158.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

158. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 159.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

159. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the transmission (see page 14-44), then go to step 160.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

160. Check for DTC P0715.

    Is DTC P0715 indicated?

    YES: Replace the ECM/PCM, then go to step 161.

    NO: Intermittent failure. The system is good at this time. Check for poor connections or loose terminals at the ECM/PCM connector.

161.

DTC Troubleshooting (cont'd)

DTC P0731: Problem in 4th Gear Function with Multiple Circuits

NOTE: Before you do this procedure, read the general troubleshooting information for the P0700 series codes.

1. Warm up the engine to normal operating temperature, then turn the ignition switch OFF.

2. Check for any other trouble codes.

   Are there any other trouble codes?

   YES: Troubleshoot those codes first.

   NO: Go to the next step.

3. Check the ATF level and condition.

   Is the ATF level and condition OK?

   YES: Go to the next step.

   NO: Refill or change the ATF.

4. Make sure the transmission is in Park.

   Is the transmission in Park?

   YES: Go to the next step.

   NO: Put the transmission in Park.

5. Measure the input voltage at the TCM.

   Is the voltage between 10 and 14 V?

   YES: Go to the next step.

   NO: Check the 10 A fuse A, B, C, or D. If the fuse is OK, check for poor connections or open circuit between the fuse and the TCM.

6. Clear the DTC and test drive.

7. Test drive the vehicle and see if the same DTC recurs.

   Does the same DTC recur?

   YES: Go to the next step.

   NO: Intermittent failure, the system is OK at this time.

8. Turn the ignition switch OFF, then disconnect the TCM connector.

9. Check the DLC STATUS screen on the PGM Tester for the following codes:

   Are there any codes other than P0731?

   YES: Replace the TCM, then go to the next step.

   NO: Replace the ATF temperature sensor/TP sensor unit, then go to the next step.

10. Test drive the vehicle and see if the same DTC recurs.

    Does the same DTC recur?

    YES: Replace the TCM, then go to the next step.

    NO: Intermittent failure, the system is OK at this time.

J1IG Purge Problem In The Clutch And Shift Hydraulic Circuit

NOTE: Perform this procedure only if directed to do so by a diagnostic flow chart or by the procedure in which you are instructed.

1. [illegible]

2. Check the [illegible]

4. [illegible]

YES - [illegible]

NO - [illegible]

4. [illegible]

YES - Go to step 5.

NO - [illegible]

5. [illegible]

YES - Go to step 6.

NO - [illegible]

6. [illegible]

7. [illegible]

8. Check the [illegible]

[illegible]

YES - [illegible]

NO - [illegible]

DTC Troubleshooting (cont'd)

DTC P0741, Torque Converter CA (Bit C) Circuit Stuck OFF

1. Connect the scan tool to the DLC, and turn the ignition switch ON (II). Reset the DTC, and start the engine. Drive the vehicle under the following conditions: Vehicle speed: 40 mph (64 km/h) or more. Engine coolant temperature: 176°F (80°C) or more. Throttle opening angle: 1/8 or more. Shift lever: D position. Engine speed: 1,000 rpm or more. Drive the vehicle for 10 minutes.
2. Check the ATF level and condition. Refer to the procedure in the maintenance section.
3. Connect the ATF temperature gauge to the ATF drain bolt hole. Start the engine, and let it idle until the ATF temperature reaches 140°F (60°C). Drive the vehicle under the following conditions: Vehicle speed: 40 mph (64 km/h) or more. Engine coolant temperature: 176°F (80°C) or more. Throttle opening angle: 1/8 or more. Shift lever: D position. Engine speed: 1,000 rpm or more. Drive the vehicle for 10 minutes.

   Is the ATF temperature 140°F (60°C) or more?

   YES: Replace the torque converter assembly with a new one, then go to step 4.

   NO: Repair the overheating problem, then go to step 4.
4. Check for DTC P0741.

   Is DTC P0741 indicated?

   YES: Go to step 5.

   NO: INTERMITTENT FAILURE: Check for poor connections or loose terminals at the ATF LOCK-UP SOLENOID VALVE and ATF LOCK-UP SOLENOID VALVE connector. Clear the DTC, then go to step 5.
5. Check for DTC P0741.

   Is DTC P0741 indicated?

   YES: Go to step 6.

   NO: INTERMITTENT FAILURE: Check for poor connections or loose terminals at the ATF LOCK-UP SOLENOID VALVE and ATF LOCK-UP SOLENOID VALVE connector. Clear the DTC, then go to step 6.
6. Select "ACTIVE TEST" mode from the HONDA DIAGNOSTIC SYSTEM (HDS). Select "TEST VEHICLE" from the ACTIVE TEST menu. Select "ATF LOCK-UP SOLENOID VALVE" from the TEST VEHICLE menu.

   Does the engine stall?

   YES: Go to step 7.

   NO: Replace the ATF LOCK-UP SOLENOID VALVE with a new one, then go to step 7.
7. Turn the ignition switch OFF (0). Disconnect the ATF LOCK-UP SOLENOID VALVE connector. Turn the ignition switch ON (II). Measure the voltage between the ATF LOCK-UP SOLENOID VALVE connector terminal and body ground.
8. Check the CAN communication system. Refer to the CAN communication section.

   Is the CAN communication system normal?

   YES: Replace the PCM with a new one, then go to step 9.

   NO: Repair the CAN communication system, then go to step 9.
9. Clear the DTC.
10. Check for DTC P0741.
11. Test-drive the vehicle under the same conditions as when the DTC was first detected.

    Is DTC P0741 indicated?

    YES: Go to step 12.

    NO: Intermittent failure: Check for poor connections or loose terminals at the PCM connector.

DTC P0746: A/T Clutch Pressure Control Solenoid Valve A Stuck OFF

NOTE: [illegible] Troubleshooting [illegible] page [illegible]

1. Warm up the engine [illegible] operating temperature [illegible]

2. Check [illegible] the proper level, [illegible]

3. [illegible]

   NOTE: [illegible]

   [illegible]

   YES—[illegible]

   NO—[illegible]

4. Clear the DTC [illegible]

5. Test-drive the vehicle [illegible]

6. [illegible]

7. Check the [illegible] MENU [illegible] P0746.

   [illegible]

   YES—[illegible]

   NO—[illegible] NOT COMPLETED, [illegible] step 5 [illegible]

8. [illegible]

9. [illegible] TEST MENU [illegible] HDS.

   [illegible]

   YES—[illegible]

   NO—[illegible]

10. Clear the [illegible]

11. Test-drive the vehicle [illegible]

12. [illegible]

13. Check the [illegible] MENU [illegible]

    [illegible]

    YES—The problem was [illegible]

    NO—[illegible]

DTC Troubleshooting (cont'd)

DTC P1744: A/T Clutch Pressure Control Solenoid Valve A Stuck OFF

1. Reset the ECM. See page [illegible] for how to reset the ECM.
2. Start the engine and drive at more than 12 mph (20 km/h) in any position for more than 20 seconds.
   Is the MIL on?
   YES: Go to step 3.
   NO: Intermittent failure. Check for poor connections or loose terminals at the ECM and transmission connectors. If the connections are good, refer to the troubleshooting flowchart for the symptom.
3. Turn the ignition switch OFF.
   Disconnect the A/T CKP sensor 2P connector.
   Turn the ignition switch ON (II).
   Is the MIL on?
   YES: Replace the A/T CKP sensor 2P connector. Go to step 4.
   NO: Replace the ECM.
4. Clear the DTC from the ECM.
5. Start the engine and drive at more than 12 mph (20 km/h) in any position for more than 20 seconds.
   Is the MIL on?
   YES: Go to step 6.
   NO: Intermittent failure. Check for poor connections or loose terminals at the ECM and transmission connectors. If the connections are good, refer to the troubleshooting flowchart for the symptom.
6. Turn the ignition switch OFF.
   Disconnect the A/T CKP sensor 2P connector.
   Turn the ignition switch ON (II).
   Is the MIL on?
   YES: Replace the ECM.
   NO: Replace the A/T CKP sensor 2P connector.

DTC P1745: A/T Clutch Pressure Control Solenoid Valve A Stuck ON

1. Reset the ECM. See page [illegible] for how to reset the ECM.
2. Start the engine and drive at more than 12 mph (20 km/h) in any position for more than 20 seconds.
   Is the MIL on?
   YES: Go to step 3.
   NO: Intermittent failure. Check for poor connections or loose terminals at the ECM and transmission connectors. If the connections are good, refer to the troubleshooting flowchart for the symptom.
3. Turn the ignition switch OFF.
   Disconnect the A/T CKP sensor 2P connector.
   Turn the ignition switch ON (II).
   Is the MIL on?
   YES: Replace the A/T CKP sensor 2P connector. Go to step 4.
   NO: Replace the ECM.
4. Clear the DTC from the ECM.
5. Start the engine and drive at more than 12 mph (20 km/h) in any position for more than 20 seconds.
   Is the MIL on?
   YES: Go to step 6.
   NO: Intermittent failure. Check for poor connections or loose terminals at the ECM and transmission connectors. If the connections are good, refer to the troubleshooting flowchart for the symptom.
6. Turn the ignition switch OFF.
   Disconnect the A/T CKP sensor 2P connector.
   Turn the ignition switch ON (II).
   Is the MIL on?
   YES: Replace the ECM.
   NO: Replace the A/T CKP sensor 2P connector.

DTC P0751: Shift Solenoid Valve A Stuck OFF

NOTE: Record all freeze data [illegible] and [illegible] snapshot [illegible]

1. Warm up the engine to normal operating temperature [illegible]

2. Check the [illegible] the proper [illegible]

3. [illegible] the ATF [illegible]

   NOTE: [illegible]

   [illegible] ATF OK?

   YES- Replace the ATF [illegible]

   NO- [illegible] ■

4. Clear the DTC with the HDS.

5. Test-drive the [illegible] 12 mph (20 km/h) [illegible]

6. [illegible] 12 mph (20 km/h) [illegible]

7. Check the [illegible] DTCs MENU [illegible] P0751

   [illegible]

   YES- Go to step [illegible]

   NO- [illegible] DTC [illegible] ■

8. Clear the DTC with the HDS.

9. [illegible] TEST MENU with the HDS.

   [illegible]

   YES- Go to step 10.

   NO- [illegible] valve A [illegible] page 14-1[illegible] then go to step 10.

10. Test-drive the vehicle [illegible] 12 mph (20 km/h) [illegible]

11. [illegible] 20 seconds [illegible]

12. Check the OBD STATUS [illegible] DTC [illegible] code P0751

    [illegible]

    YES- [illegible]

    NO- [illegible] ■

13. Clear the DTC with the HDS.

14. [illegible] 12 mph (20 km/h) [illegible]

15. [illegible] 20 seconds [illegible]

16. Check the OBD STATUS [illegible] MENU [illegible] P0751.

    [illegible]

    YES- [illegible] ■

    NO- [illegible] ■

DTC Troubleshooting (cont'd)

DTC [illegible]: Shift Solenoid Valve A Stuck ON

[illegible]

1. [illegible]

2. [illegible]

[illegible]

NOTE: [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

4. [illegible]

5. [illegible]

[illegible]

6. [illegible]

[illegible]

7. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

8. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

9. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

10. [illegible]

[illegible]

11. [illegible]

12. [illegible]

13. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

14. [illegible]

15. [illegible]

16. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

DTC P0756 Shift Solenoid D Performance (Shift OFF

Applicable vehicle: All models
Troubleshooting for intermittent DTC: Refer to page 14-[illegible]

1. Warm up the engine to normal operating temperature.

2. Drive the vehicle in the range where the DTC was set.

3. Shift the transmission to the position where the DTC was set, and drive the vehicle under the same conditions.

NOTE: If the vehicle is driven in a manner that does not satisfy the conditions for the DTC, the DTC will not be set.

Is the DTC set?

YES: Replace the ATF control solenoid valve. Refer to page [illegible]

NO: Replace or repair the [illegible]

4. Recheck the DTC.

5. Shift the shift lever to the position where the DTC was set, and drive the vehicle under the same conditions.

6. Select the PGM-FI data list using the Honda PGM Tester or the generic scan tool, and read the data list. Refer to page [illegible]

7. Check the CKP SENSOR 1 and MAIN RELAY data parameters.

Do the data parameters indicate 5 V?

YES: Go to step 8.

NO: Check the CKP sensor 1 circuit. Refer to page [illegible]

8. Check the DTC.

9. Select the SHIFT SOLENOID D data parameter.

Does the data parameter indicate ON?

YES: Go to step 10.

NO: Check the shift solenoid D circuit. Refer to page [illegible]

10. Check the DTC.

11. Select the SHIFT SOLENOID D data parameter.

Does the data parameter indicate ON?

YES: Go to step 12.

NO: Check the shift solenoid D circuit. Refer to page [illegible]

12. Check the DTC.

13. Select the SHIFT SOLENOID D data parameter.

Does the data parameter indicate ON?

YES: Go to step 14.

NO: Check the shift solenoid D circuit. Refer to page [illegible]

14. Check the DTC.

15. Select the SHIFT SOLENOID D data parameter.

Does the data parameter indicate ON?

YES: The problem is not in the [illegible]

NO: Check the shift solenoid D circuit. Refer to page [illegible]

DTC Troubleshooting (cont'd)

DTC P0753: Shift Solenoid Valve B Stuck ON

NOTE: Perform All Inspection Before General Troubleshooting Inspection on page 14-23 before you start this procedure.

1. With engine running at normal operating temperature, [illegible]

2. [illegible]

3. Drive the ATF [illegible] through A position and [illegible] position. [illegible] Is the [illegible]

NOTE: If [illegible] ATF and OIL Check Valve [illegible] Transmission Hydraulic and Mechanical [illegible]

Does ATF [illegible]?

YES: Replace [illegible] Valve Body on page 14-[illegible], then go to step 4.

NO: [illegible]

4. Clear the DTC with the HDS.

5. [illegible] the vehicle until the [illegible] speed reaches [illegible] mph (50 km/h). Stop the vehicle and [illegible] for 20 seconds. Is the [illegible] set?

6. Record the [illegible] DTC [illegible] Is DTC P0753 [illegible]?

7. [illegible]

YES: Go to step 8.

NO: [illegible] ATF [illegible] Transmission Hydraulic and Mechanical [illegible]

8. Clear the DTC with the HDS.

9. [illegible] the vehicle until the [illegible] speed reaches [illegible] mph (50 km/h). Stop the vehicle and [illegible] for 20 seconds. Is the [illegible] set?

10. Record the [illegible] DTC [illegible] Is DTC P0753 [illegible]?

11. [illegible]

YES: Go to step 12.

NO: [illegible] ATF [illegible] Transmission Hydraulic and Mechanical [illegible]

12. Clear the DTC with the HDS.

13. [illegible] the vehicle until the [illegible] speed reaches [illegible] mph (50 km/h). Stop the vehicle and [illegible] for 20 seconds. Is the [illegible] set?

14. Record the [illegible] DTC [illegible] Is DTC P0753 [illegible]?

15. [illegible]

YES: Go to step 16.

NO: [illegible] ATF [illegible] Transmission Hydraulic and Mechanical [illegible]

16. [illegible]

YES: [illegible]

NO: [illegible]

DTC P0301: Shift Solenoid Injection C Stuck ON

NOTE: If the scan tool was connected and the ignition switch was turned ON before performing this test, turn the ignition switch OFF and wait at least 10 seconds before proceeding with this test.

1. Warm up the engine to normal operating temperature, then turn the ignition switch OFF and wait at least 10 seconds before proceeding with the next step.
2. Connect the scan tool to the data link connector (DLC) located under the driver's side of the dashboard. Turn the ignition switch ON (II). Reset the scan tool DTC memory. Start the engine and let it idle. Monitor the scan tool data stream.

   NOTE: If the engine does not start or if the DTC does not reset, refer to the appropriate DTC table in this section. If the engine starts and the DTC does not reset, proceed to the next step.

   Is the DTC reset?

   YES — Replace the ATF pressure switch assembly (see page 14-210). Check the ATF level and condition (see page 14-6). Refill as necessary.

   NO — Replace the PCM (see page 14-210).

3. Clear the DTC from the PCM memory.
4. Start the engine and let it idle. Monitor the scan tool data stream. Wait at least 30 seconds. Repeat this step as necessary.
5. Select SHIFT SOL INJ C from the SCAN TOOL DATA menu. Monitor the SHIFT SOL C item in the SHIFT SOL TEST MENU. Select ON/OFF.

   Does the shift solenoid C click?

   YES — Go to step 6.

   NO — Replace the shift solenoid C (see page 14-210). Check the ATF level and condition (see page 14-6). Refill as necessary.

6. Turn the ignition switch OFF. Disconnect the PCM connector. Turn the ignition switch ON (II). Measure the voltage between the shift solenoid C connector terminal and body ground.

   Is there battery voltage?

   YES — Go to step 7.

   NO — Repair the open in the wire between the shift solenoid C connector terminal and the PCM connector terminal.

7. Check the DTC (see step 3).

   Is the DTC set?

   YES — Replace the PCM (see page 14-210).

   NO — Intermittent failure. The wire harness is OK at this time. Check the connectors and terminals (see page 14-210).

8. Select SHIFT SOL INJ C from the SCAN TOOL DATA menu. Monitor the SHIFT SOL C item in the SHIFT SOL TEST MENU. Select ON/OFF.

   Does the shift solenoid C click?

   YES — Go to step 9.

   NO — Replace the shift solenoid C (see page 14-210). Check the ATF level and condition (see page 14-6). Refill as necessary.

9. Turn the ignition switch OFF. Disconnect the PCM connector. Turn the ignition switch ON (II). Measure the resistance between the shift solenoid C connector terminal and the PCM connector terminal.

   Is there less than 5 ohms?

   YES — Go to step 10.

   NO — Repair the open in the wire between the shift solenoid C connector terminal and the PCM connector terminal.

10. Check the DTC (see step 3).

    Is the DTC set?

    YES — Replace the PCM (see page 14-210).

    NO — Intermittent failure. The wire harness is OK at this time. Check the connectors and terminals (see page 14-210).

11. Turn the ignition switch OFF. Disconnect the PCM connector. Measure the resistance between the shift solenoid C connector terminal and body ground.

    Is there more than 10 kilohms?

    YES — Go to step 12.

    NO — Repair the short to ground in the wire between the shift solenoid C connector terminal and the PCM connector terminal.

12. Check the DTC (see step 3).

    Is the DTC set?

    YES — Replace the PCM (see page 14-210).

    NO — Intermittent failure. The wire harness is OK at this time. Check the connectors and terminals (see page 14-210).

13. Check the DTC (see step 3).

14. Turn the ignition switch OFF. Disconnect the PCM connector. Turn the ignition switch ON (II). Measure the voltage between the shift solenoid C connector terminal and body ground.

    Is there battery voltage?

    YES — Go to step 15.

    NO — Repair the open in the wire between the shift solenoid C connector terminal and the PCM connector terminal.

15. Turn the ignition switch OFF. Disconnect the shift solenoid C connector. Measure the resistance between the shift solenoid C connector terminal and body ground.

    Is there more than 20 kilohms?

    YES — Go to step 16.

    NO — Repair the short to ground in the wire between the shift solenoid C connector terminal and the PCM connector terminal.

16. Check the DTC (see step 3).

    Is the DTC set?

    YES — Replace the shift solenoid C (see page 14-210).

    NO — Intermittent failure. The wire harness is OK at this time. Check the connectors and terminals (see page 14-210).

DTC Troubleshooting (cont'd)

DTC P0702 (3rd Subaru Select Monitor CVT)

NOTE: Record all freeze frame data. It may be helpful when troubleshooting. Clear the stored DTC after recording the freeze frame data.

1. Start the engine and let it idle for at least 10 seconds.
2. Check for DTC P0705 (3rd Subaru Select Monitor CVT).

Is DTC P0705 detected?

YES: Replace the transmission assembly. Go to step 3.

NO: Replace the ECM. Go to step 3.

3. Clear the DTC. Go to step 4.
4. Test drive the vehicle under the following conditions: Vehicle speed: over 10 km/h (6 mph) Engine speed: over 1,000 rpm Engine coolant temperature: over 70°C (158°F) Throttle position: over 20 degrees. Drive the vehicle for at least 10 seconds.
5. Read the DTC. Is DTC P0702 detected?

YES: Go to step 6.

NO: Perform the Diagnostic Procedure with Diagnostic Trouble Code (DTC).

6. Turn the ignition switch to OFF and wait at least 10 seconds.
7. Start the engine and let it idle for at least 10 seconds.
8. Read the DTC. Is DTC P0702 detected?

YES: Replace the transmission assembly.

NO: Replace the ECM.

DTC P0703 (3rd Subaru Select Monitor CVT)

1. Select the "DTC CONFIRMATION" mode in the "DIAGNOSTIC TEST MODE" of Subaru Select Monitor CVT. Refer to "DIAGNOSTIC TEST MODE" in "ON-BOARD DIAGNOSTIC".

Is the "DTC CONFIRMATION" displayed?

YES: Replace the transmission assembly. Go to step 2.

NO: Replace the ECM. Go to step 2.

2. Clear the DTC. Go to step 3.
3. Test drive the vehicle under the following conditions: Vehicle speed: over 10 km/h (6 mph) Engine speed: over 1,000 rpm Engine coolant temperature: over 70°C (158°F) Throttle position: over 20 degrees. Drive the vehicle for at least 10 seconds.
4. Read the DTC. Is DTC P0703 detected?

YES: Go to step 5.

NO: Perform the Diagnostic Procedure with Diagnostic Trouble Code (DTC).

5. Turn the ignition switch to OFF and wait at least 10 seconds.
6. Start the engine and let it idle for at least 10 seconds.
7. Read the DTC. Is DTC P0703 detected?

YES: Replace the transmission assembly.

NO: The problem has been corrected.

DTC P0778 A/T Clutch Pressure Control Solenoid Valve B Stuck OFF

Refer to the applicable Service Data and Specifications Series for the engine you are working on.

1. Connect the scan tool to the data link connector.

2. Start the engine and drive the vehicle under the following conditions:

3. Select "DTC" from the scan tool menu. Then read the pending DTC.

NOTE: If the engine cannot be restarted because the vehicle will not be driven, the A/T fluid temperature should be raised to operating temperature before performing the "Pattern" drive cycle.

Is DTC P0778 detected?

YES - Go to step 4.

NO - Refer to the applicable Service Data and Specifications Series for the engine you are working on.

4. Clear the DTC with the scan tool.

5. Drive the vehicle under the same conditions as in step 2.

6. Read the pending DTC with the scan tool. Then go to the next step if the vehicle was driven more than 20 minutes under the same conditions as in step 2.

7. Check the DTC with the scan tool. Is DTC P0778 detected?

Is DTC P0778 detected?

YES - Go to step 8.

NO - Refer to the applicable Service Data and Specifications Series for the engine you are working on.

8. Check the following:

9. Select "DTC" from the scan tool menu. Then read the pending DTC.

Is DTC P0778 detected?

YES - Go to step 10.

NO - Refer to the applicable Service Data and Specifications Series for the engine you are working on.

10. Clear the DTC with the scan tool.

11. Drive the vehicle under the same conditions as in step 2.

12. Read the pending DTC with the scan tool. Then go to the next step if the vehicle was driven more than 20 minutes under the same conditions as in step 2.

13. Check the DTC with the scan tool. Is DTC P0778 detected?

Is DTC P0778 detected?

YES - Go to step 14.

NO - Refer to the applicable Service Data and Specifications Series for the engine you are working on.

DTC Troubleshooting (cont'd)

DTC P1727: A/T TCL (6th Pressure Control Solenoid) Valve B Stuck ON

1. Warm up the engine to normal operating temperature.
2. Check for DTCs and note any that are displayed.
3. [illegible]

   YES — [illegible]

   NO — Replace the [illegible]
4. Clear the DTC with the [illegible]
5. Test drive the vehicle in the D position until the [illegible] 2nd gear. Drive at 20 mph (32 km/h) for [illegible] from 20 seconds after the [illegible]
6. Check the [illegible]

   Does the [illegible]?

   YES — [illegible]

   NO — [illegible]
7. [illegible]

   YES — [illegible]

   NO — [illegible]
8. Check for DTCs [illegible]
9. [illegible]

   YES — [illegible]

   NO — [illegible]
10. Clear the DTC [illegible]
11. Test drive the vehicle in the D position until the [illegible] 2nd gear. Drive at 20 mph (32 km/h) for [illegible] from 20 seconds after the [illegible]
12. Check the [illegible]

    Does the [illegible]?

    YES — [illegible]

    NO — Replace the [illegible]

DTC P0190: Problem in Sensor Control System

NOTE: Temporary intermittent problems may cause a hard code (see page 11-5) to be stored temporarily. Refer to intermittent failure, page 11-5.

1. Warm up the engine to normal operating temperature.

2. Turn the ignition switch OFF for 10 seconds.

3. Start the engine, and let it idle for 1 minute.

NOTE: If the engine does not start, turn the ignition switch OFF, wait 10 seconds, and repeat Step 3 up to 10 times. If the engine still does not start, check the fuel line for clogging.

Is DTC P0190 indicated?

YES - Replace the fuel pressure sensor (see page 11-204), then go to Step 4.

NO - Intermittent failure, the system is good at this time.

4. Turn the ignition switch OFF.

5. Disconnect the fuel pressure sensor 3P connector, then turn the ignition switch ON (II). Wait 20 seconds, then measure the voltage between the wire side of the connector terminals.

6. Repeat Step 5 at least 3 times, then check the voltage readings. Is there 0.2 V or more between the terminals?

7. Check for DTC P0191 in the PGM-FI memory (see page 11-5).

Is DTC P0191 indicated?

YES - Go to Step 8.

NO - Intermittent failure, the system is good at this time.

8. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 9.

NO - Intermittent failure, the system is good at this time.

9. Turn the ignition switch OFF.

10. Disconnect the fuel pressure sensor 3P connector, then turn the ignition switch ON (II).

11. Measure the voltage between the wire side of the connector terminals.

12. Check for DTC P0192 and P0193 in the PGM-FI memory (see page 11-5).

Is DTC P0192 indicated?

YES - Go to Step 13.

NO - Intermittent failure, the system is good at this time.

13. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the fuel pressure sensor (see page 11-204), then go to Step 14.

NO - Intermittent failure, the system is good at this time.

14. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 15.

NO - Intermittent failure, the system is good at this time.

15. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 16.

NO - Intermittent failure, the system is good at this time.

16. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 17.

NO - Intermittent failure, the system is good at this time.

17. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 18.

NO - Intermittent failure, the system is good at this time.

18. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 19.

NO - Intermittent failure, the system is good at this time.

19. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 20.

NO - Intermittent failure, the system is good at this time.

20. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 21.

NO - Intermittent failure, the system is good at this time.

21. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 22.

NO - Intermittent failure, the system is good at this time.

22. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 23.

NO - Intermittent failure, the system is good at this time.

23. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 24.

NO - Intermittent failure, the system is good at this time.

24. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 25.

NO - Intermittent failure, the system is good at this time.

25. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 26.

NO - Intermittent failure, the system is good at this time.

26. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 27.

NO - Intermittent failure, the system is good at this time.

27. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 28.

NO - Intermittent failure, the system is good at this time.

28. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 29.

NO - Intermittent failure, the system is good at this time.

29. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 30.

NO - Intermittent failure, the system is good at this time.

30. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 31.

NO - Intermittent failure, the system is good at this time.

31. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 32.

NO - Intermittent failure, the system is good at this time.

32. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 33.

NO - Intermittent failure, the system is good at this time.

33. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 34.

NO - Intermittent failure, the system is good at this time.

34. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 35.

NO - Intermittent failure, the system is good at this time.

35. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 36.

NO - Intermittent failure, the system is good at this time.

36. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 37.

NO - Intermittent failure, the system is good at this time.

37. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 38.

NO - Intermittent failure, the system is good at this time.

38. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 39.

NO - Intermittent failure, the system is good at this time.

39. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 40.

NO - Intermittent failure, the system is good at this time.

40. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 41.

NO - Intermittent failure, the system is good at this time.

41. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 42.

NO - Intermittent failure, the system is good at this time.

42. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 43.

NO - Intermittent failure, the system is good at this time.

43. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 44.

NO - Intermittent failure, the system is good at this time.

44. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 45.

NO - Intermittent failure, the system is good at this time.

45. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 46.

NO - Intermittent failure, the system is good at this time.

46. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 47.

NO - Intermittent failure, the system is good at this time.

47. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 48.

NO - Intermittent failure, the system is good at this time.

48. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 49.

NO - Intermittent failure, the system is good at this time.

49. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 50.

NO - Intermittent failure, the system is good at this time.

50. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 51.

NO - Intermittent failure, the system is good at this time.

51. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 52.

NO - Intermittent failure, the system is good at this time.

52. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 53.

NO - Intermittent failure, the system is good at this time.

53. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 54.

NO - Intermittent failure, the system is good at this time.

54. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 55.

NO - Intermittent failure, the system is good at this time.

55. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 56.

NO - Intermittent failure, the system is good at this time.

56. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 57.

NO - Intermittent failure, the system is good at this time.

57. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 58.

NO - Intermittent failure, the system is good at this time.

58. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 59.

NO - Intermittent failure, the system is good at this time.

59. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 60.

NO - Intermittent failure, the system is good at this time.

60. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 61.

NO - Intermittent failure, the system is good at this time.

61. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 62.

NO - Intermittent failure, the system is good at this time.

62. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 63.

NO - Intermittent failure, the system is good at this time.

63. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 64.

NO - Intermittent failure, the system is good at this time.

64. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 65.

NO - Intermittent failure, the system is good at this time.

65. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 66.

NO - Intermittent failure, the system is good at this time.

66. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 67.

NO - Intermittent failure, the system is good at this time.

67. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 68.

NO - Intermittent failure, the system is good at this time.

68. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 69.

NO - Intermittent failure, the system is good at this time.

69. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 70.

NO - Intermittent failure, the system is good at this time.

70. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 71.

NO - Intermittent failure, the system is good at this time.

71. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 72.

NO - Intermittent failure, the system is good at this time.

72. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 73.

NO - Intermittent failure, the system is good at this time.

73. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 74.

NO - Intermittent failure, the system is good at this time.

74. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 75.

NO - Intermittent failure, the system is good at this time.

75. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 76.

NO - Intermittent failure, the system is good at this time.

76. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 77.

NO - Intermittent failure, the system is good at this time.

77. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 78.

NO - Intermittent failure, the system is good at this time.

78. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 79.

NO - Intermittent failure, the system is good at this time.

79. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 80.

NO - Intermittent failure, the system is good at this time.

80. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 81.

NO - Intermittent failure, the system is good at this time.

81. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 82.

NO - Intermittent failure, the system is good at this time.

82. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 83.

NO - Intermittent failure, the system is good at this time.

83. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 84.

NO - Intermittent failure, the system is good at this time.

84. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 85.

NO - Intermittent failure, the system is good at this time.

85. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 86.

NO - Intermittent failure, the system is good at this time.

86. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 87.

NO - Intermittent failure, the system is good at this time.

87. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 88.

NO - Intermittent failure, the system is good at this time.

88. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 89.

NO - Intermittent failure, the system is good at this time.

89. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 90.

NO - Intermittent failure, the system is good at this time.

90. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 91.

NO - Intermittent failure, the system is good at this time.

91. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 92.

NO - Intermittent failure, the system is good at this time.

92. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 93.

NO - Intermittent failure, the system is good at this time.

93. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 94.

NO - Intermittent failure, the system is good at this time.

94. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 95.

NO - Intermittent failure, the system is good at this time.

95. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 96.

NO - Intermittent failure, the system is good at this time.

96. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 97.

NO - Intermittent failure, the system is good at this time.

97. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 98.

NO - Intermittent failure, the system is good at this time.

98. Check for DTC P0191.

Is DTC P0191 indicated?

YES - Go to Step 99.

NO - Intermittent failure, the system is good at this time.

99. Check for DTC P0192.

Is DTC P0192 indicated?

YES - Go to Step 100.

NO - Intermittent failure, the system is good at this time.

100. Check for DTC P0193.

Is DTC P0193 indicated?

YES - Replace the ECM (see page 11-204), then go to Step 101.

NO - Intermittent failure, the system is good at this time.

DTC Troubleshooting (cont'd)

DTC P0815, Shift Up Position Switch Circuit Malfunction, Shift Down Position Switch Circuit Malfunction, Shift Up Position Switch Circuit Stuck ON, Shift Down Position Switch Circuit Stuck ON

NOTE:
- Check for poor connections or loose terminals at the transmission range switch and the PCM before performing the following procedure.
- Intermittent failure may be caused by a poor connection in the transmission.

1. Turn the ignition switch to ON (II).
2. Shift to the N position.
3. Verify that the transmission operates correctly when shifting through all gear positions. Does the transmission operate correctly?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the transmission range switch and the PCM. Refer to the symptom to component chart for the PCM.
4. Turn the ignition switch to OFF.
5. Disconnect the transmission range switch 12P connector.
6. Turn the ignition switch to ON (II).
7. Shift the transmission range switch to each position, and check the voltage between the following terminals.

   Terminal (+) - Terminal (-)

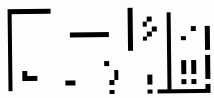
   1 - 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

   Is there 10 - 14 V at all times?

   YES - Go to step 8.

   NO - Replace the transmission range switch. Refer to section 23.
8. Turn the ignition switch to OFF.
9. Disconnect the PCM connector A (33P).
10. Check for open in wire between the transmission range switch and the PCM connector A (33P) terminals as follows:

    TRANSMISSION RANGE SWITCH 12P CONNECTOR

    PCM CONNECTOR A (33P)

Transmission range switch 12P connector terminal	PCM connector A (33P) terminal
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12

    Is there continuity?

    YES - Repair short to power in the wire between the PCM connector and the transmission range switch connector. Then go to step 13.

    NO - Check for poor connections or loose terminals at the PCM connector and the transmission range switch connector. If the connections are good, repair open in the wire between the PCM connector and the transmission range switch connector. Then go to step 13.

DTC Troubleshooting (cont'd)

DTC P0715: Shaft or Transmission Gear Selection Switch Circuit Malfunction
Transmission Gear Selection Switch Circuit Low
Downshift Switch Stuck ON

NOTE:
- Review all Freeze Frame and Failed Record Data before troubleshooting. Information recorded at the time of the problem may help you duplicate the problem.
- The vehicle must be driven at speeds above [illegible] to perform some of the following tests. Find a safe area to perform these tests.

1. [illegible]

2. Set the [illegible] position.

3. Verify that the [illegible] switch operates correctly when shifted between the [illegible] and [illegible] positions.

   Is the switch operating correctly?

   YES—Go to step 4.

   NO—Turn the ignition switch OFF. Refer to the [illegible] Check the [illegible] switch for poor connections or loose terminals. If the switch and harness are good, replace the [illegible] switch.

4. Turn the ignition switch ON (II).

5. [illegible]

   Is the [illegible] indicator [illegible]?

   YES—Go to step 6.

   NO—Check for poor connections or loose terminals at the [illegible] ECM. If the connections are good, replace the [illegible] ECM.

6. Turn the ignition switch OFF (0).

7. Verify that the [illegible] switch operates correctly when shifted between the [illegible] and [illegible] positions.

   Is the switch operating correctly?

   YES—Go to step 8.

   NO—Refer to the [illegible] switch [illegible] page [illegible] for parts replacement.

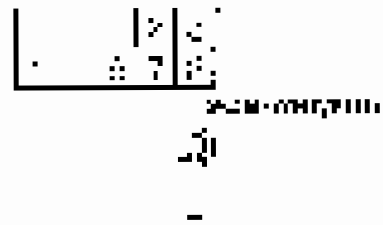
8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible] ground.

[illegible]

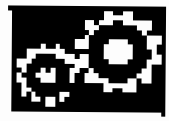


[illegible]

[illegible]

NOTE—[illegible] between the ECM connectors and the [illegible] and the ECM connectors and the [illegible] switch connectors.

NO—Check for poor connections or loose terminals at the ECM connectors. If the connections are good, replace the [illegible] ECM. [illegible]



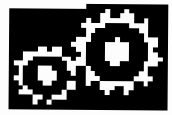
DTC Troubleshooting (cont'd)

DTC P0841: Short in 3rd Clutch Pressure Switch Circuit, or Open in 3rd Clutch Pressure Switch Circuit, or Stuck Transmission Fluid Pressure Sensor/Switch, or Stuck Valve Body

NOTE:
- If you replaced the transmission assembly, check for any DTC(s) stored in the PCM memory. Refer to the DTC troubleshooting information for those DTC(s) first, then troubleshoot this DTC.
- The Transfer Pressure Control Solenoid Valve (TPCSV) is located in the valve body. If you replaced the valve body, check for any DTC(s) stored in the PCM memory. Refer to the DTC troubleshooting information for those DTC(s) first, then troubleshoot this DTC.

1. Check for DTC(s).

2. Check for DTC P0730, P0731, P0732, P0733, P0734, P0735, P0736, P0740, P0741, P0742, P0743, P0744, P0745, P0746, P0747, P0748, P0749, P0750, P0751, P0752, P0753, P0754, P0755, P0756, P0757, P0758, P0759, P0760, P0761, P0762, P0763, P0764, P0765, P0766, P0767, P0768, P0769, P0770, P0771, P0772, P0773, P0774, P0775, P0776, P0777, P0778, P0779,



DTC Troubleshooting (cont'd)

DTC P0845: Output Hydraulic Circuit Transmission Fluid Pressure Switch Circuit Transmission Fluid Pressure Switch Circuit OFF

NOTE:

- Record all freeze data before clearing DTCs. This data will be helpful when duplicating the problem.
- If you cannot duplicate the DTC, but the problem still exists, refer to the intermittent problem troubleshooting table.

1. Check for DTC P0845.

2. Start the engine, and let it idle for at least 10 seconds. Check for DTC P0845 with the Honda PGM Tester.

   Is DTC P0845 indicated?

   YES - Go to step 3.

   NO - Go to step 4.

3. Refer to the table for DTC P0845 in the troubleshooting index, then perform the appropriate troubleshooting for any DTC found. Then return to this step.

4. Record the FREEZE DATA for DTC P0845, then clear the DTC from memory.

   Did the engine start?

   YES - Go to step 5.

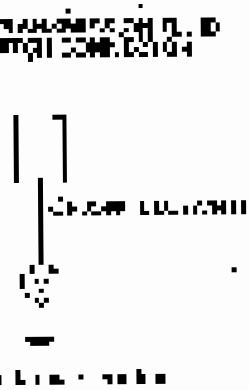
   NO - Refer to the table for DTC P0845 in the troubleshooting index, then perform the appropriate troubleshooting for any DTC found. Then return to this step.

5. Turn the ignition switch OFF.

6. Disconnect the 3P connector from the transmission fluid pressure switch.

7. Turn the ignition switch ON (II).

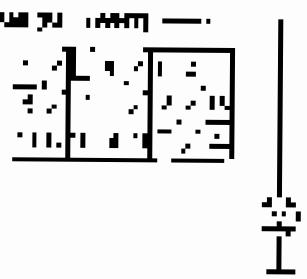
8. Measure the voltage between the harness side connector terminal and body ground.



   Is there battery voltage?

   YES - Go to step 9.

   NO - Go to step 10.



DTC Troubleshooting (cont'd)

DTC P0932: Shift Shaft Select Position Sensor Circuit Low Voltage / Shift Shaft Select Position Sensor Circuit High Voltage / Fluid Pressure Switch Stuck ON

Notes:
- Perform all steps and observe all notes in the Troubleshooting Info table on page 14-[illegible] before you proceed.
- This code [illegible]

1. [illegible] DTC with the HDS.

2. Check for any [illegible] DTC in the HDS for the A/T control system.

   Is there any [illegible] DTC?

   YES: [illegible]

   NO: Go to step 3.

3. Start the engine and let it idle for [illegible] seconds. Check the [illegible] indicator light on the instrument panel.

   Is the [illegible] indicator light on?

   YES: Go to step 5.

   NO: Intermittent failure, the system is working normally at this time. Check for poor connections or loose terminals at the [illegible] ECM. If the wire harness is OK, replace the [illegible] ECM. After replacing the [illegible] ECM, go to step 4.

4. [illegible] DTC.

5. Disconnect the shift shaft [illegible] connector.

6. Turn the ignition switch ON (II).

7. [illegible] PRESSURE SWITCH [illegible] in the A/T harness.

   Is the [illegible] PRESSURE SWITCH [illegible]?

   YES: Replace the [illegible] with a new one. See page [illegible]. Then go to step 11.

   NO: Go to step 8.

8. [illegible] DTC.

9. Jump the SCS line with a [illegible].

10. Disconnect the [illegible] connector [illegible].

11. Check for continuity between [illegible] and body ground.

Is there continuity?

YES: Repair short in the wire between the [illegible] connector and the PGM-FI ECM. Then go to step 12.

NO: Go to the PGM-FI [illegible] and troubleshoot the [illegible] circuit. If the wire harness is OK, replace the PGM-FI ECM. After replacing the PGM-FI ECM, go to step 12.

DTC Troubleshooting (cont'd)

DTC P0731: Gear 1 4th Clutch Transmission Range Sensing Switch Circuit, or 4th Clutch Transmission Fluid Pressure Switch Circuit Low

NOTE:

- Observe all precautions and follow the Electrical Troubleshooting Flow Chart in the beginning of this section.
- This vehicle is equipped with a Malfunction Indicator Lamp (MIL). Before you begin troubleshooting, check the MIL and record any DTCs.

1. Check for other DTCs with the HDS.

   Are there any other DTCs?

   YES: Go to the appropriate DTC troubleshooting.

   NO: Go to step 2.

2. Check the PRESSURE SWITCH signal with the multimeter (A/T control unit).

   Voltage: Ignition switch ON (II)

   YES: Go to step 3.

   NO: Go to step 4.

3. Disconnect the 4th clutch pressure switch 2P connector. Check for continuity between the body and the terminal on the 4th clutch pressure switch side.

   Is there continuity?

   YES: Replace the 4th clutch pressure switch.

   NO: Repair open in the wire between the 4th clutch pressure switch and the A/T control unit.

4. Check the VSS signal with the HDS (see page 14-[illegible]).

   Is the VSS indicated?

   YES: Go to step 5.

   NO: Go to step 6.

5. Disconnect the 4th clutch transmission range sensing switch 2P connector. Check for continuity between the body and the terminal on the 4th clutch transmission range sensing switch side.

   Is there continuity?

   YES: Replace the 4th clutch transmission range sensing switch.

   NO: Repair open in the wire between the 4th clutch transmission range sensing switch and the A/T control unit.

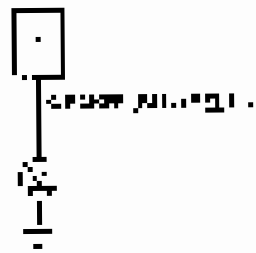
6. Turn the ignition switch OFF.

7. Disconnect the 4th clutch pressure switch 2P connector.

8. Turn the ignition switch ON (II).

9. Measure the voltage between the 4th clutch transmission range sensing switch connector terminal and body ground.

   4TH CLUTCH TRANSMISSION RANGE SENSING SWITCH CONNECTOR

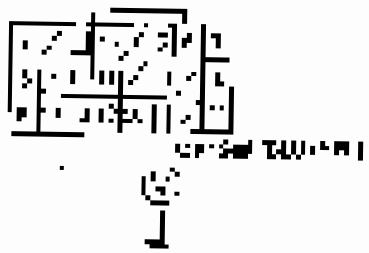


   Is there battery voltage?

   YES: Replace the 4th clutch pressure switch. If the problem still exists after replacing the 4th clutch pressure switch, replace the A/T control unit.

   NO: Go to step 10.

10. [illegible]



DTC Troubleshooting (cont'd)

DTC P0753: Shift Solenoid A Electrical
Malfunction, Shift Solenoid B Electrical
Malfunction, Shift Solenoid C Electrical
Malfunction, Shift Solenoid D Electrical
Malfunction, Shift Solenoid E Electrical
Malfunction

NOTE:
- Record all freeze data and any other relevant information before clearing DTCs. Clearing DTCs will erase freeze data and other information.
- Turn off all accessories before performing this troubleshooting procedure. Failure to do so may cause inaccurate test results.

1. Turn the ignition switch OFF.
2. Disconnect the connector.
3. Verify that there is no corrosion, foreign material, damage, or bent terminals in the connector (female terminals) or mating connector (male terminals).

Is the connector OK?

YES - Go to step 4.

NO - Clean or repair the connector. If the connector is damaged, replace it. If the connector is OK, replace the shift solenoid valve assembly. After repair, verify that the malfunction no longer exists and there are no other DTCs.

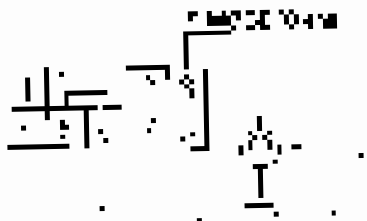
4. Turn the ignition switch ON (II).
5. Measure the voltage between the shift solenoid valve connector terminal and body ground.
6. Turn the ignition switch OFF.
7. Verify that there is battery voltage (10 - 16 V) at the PGM-FI main relay 1 (10 A) in the IPDB.

Is there battery voltage?

YES - Go to step 8.

NO - Repair open in the wire between the shift solenoid valve connector and the PGM-FI main relay 1 (10 A) in the IPDB.

8. Jump the SCS line and the HCA.
9. Disconnect the test harness connector.
10. Check for continuity between the shift solenoid valve connector terminal and body ground.



Is there continuity?

YES - Check for poor connections or loose terminals at the PCM connector. If the connections are OK, replace the PCM. After repair, verify that the malfunction no longer exists and there are no other DTCs.

NO - Check for poor connections or loose terminals at the shift solenoid valve connector. If the connections are OK, replace the shift solenoid valve assembly. After repair, verify that the malfunction no longer exists and there are no other DTCs.

DTC Troubleshooting (cont'd)

DTC P1888: Clutch or Transmission Gear Selection Switch Circuit Low (Manual Transmission Gear Selection Switch Circuit OFF)

NOTE:

- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

3. [illegible]

   [illegible]

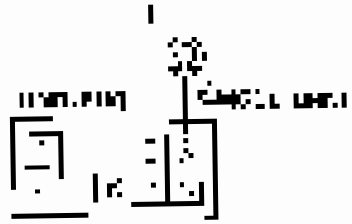
   [illegible]

   NO: [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

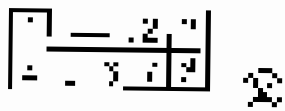


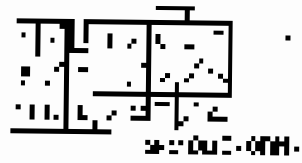
[illegible]

[illegible]

YES: [illegible]

NO: [illegible]





DTC Troubleshooting (cont'd)

DTC P1682: Pressure Control Solenoid A Circuit Low Voltage

NOTE:

- Do not disconnect the transmission harness connector with the ignition switch ON. Doing so may cause the PCM to set additional DTCs.
- If you replaced the PCM because it was damaged when you disconnected the transmission harness connector with the ignition switch ON, the new PCM may also be damaged.

1. Connect the HDS to the DLC.

2. Check for other DTCs.

Is P1682 indicated?

YES - Go to step 3.

NO - Go to step 7.

3. Select "DTC RESET" in the "TCM" menu, then select "TEST DRIVE" in the "CONTROL MODE" menu. Clear the DTC. Test drive the vehicle.

4. Select "DTC RESET" in the "TCM" menu. Check for DTC P1682.

Is DTC P1682 indicated?

YES - Go to step 5.

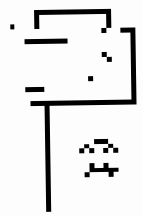
NO - Intermittent failure, the system is good at this time. Check for poor connections or loose terminals at the PCM and transmission harness connector.

5. Turn the ignition switch OFF.

6. Disconnect the 4P connector from the transmission harness connector.

7. Measure the resistance between the terminals in the transmission harness connector.

4P CONNECTOR
SOLENOID VALVE A CONNECTOR



Terminal side of female connector

Is the resistance 11 - 16 Ω?

YES - Go to step 8.

NO - Replace the A/T shift solenoid valve body. Test drive the vehicle, and recheck for DTCs. If DTC P1682 returns, go to step 8.

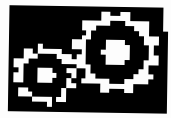
8. Check for continuity between the transmission harness connector terminal and body ground.

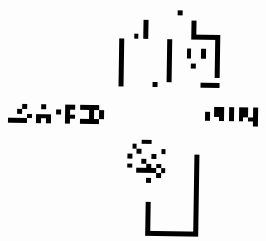
4P CONNECTOR
SOLENOID VALVE A CONNECTOR

Terminal side of female connector

Is there continuity?

YES - Repair short to ground in the wire between the A/T shift solenoid valve A and ground. If the wire is good, check for poor connections or loose terminals at the PCM and transmission harness connector.





DTC Troubleshooting (cont'd)

DTC P0868 Low Voltage in A/T Clutch Pressure Control Solenoid Valve A

NOTE:

- Before you perform this procedure, check the battery terminals for loose or poor connections.
- If you cannot duplicate the DTC, check for poor connections or loose terminals at the A/T clutch pressure control solenoid valve A connector.

1. Connect the PGM-FI scan tool to the DLC.

2. Start the engine. Is the MIL on?

   YES - Go to step 3.

   NO - Go to step 4.

3. Select DTC/FFD (SCS) from the TEST MENU, then select DTC. Is DTC P0868 indicated?

   YES - Go to step 5.

   NO - Go to step 4.

4. Check for intermittent failure, using the troubleshooting procedure in the appropriate section. Is the problem found?

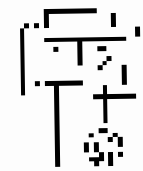
   YES - Go to step 5.

   NO - Check the DLC for poor connections or loose terminals. If the problem is found, repair it. If no problem is found, go to step 5.

5. Turn the ignition switch OFF.

6. Disconnect the A/T clutch pressure control solenoid valve A connector.

7. Measure the resistance between the A/T clutch pressure control solenoid valve A connector terminal and body ground.



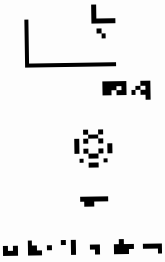
Terminal side of female connector

Is there 20 – 30 Ω?

YES - Go to step 8.

NO - Replace the A/T clutch pressure control solenoid valve A. Go to page 14-149, then go to step 9.

8. Check for open in wire between the A/T clutch pressure control solenoid valve A connector and body ground.



Wire side of female connector

Is there an open?

YES - Repair open in wire between the A/T clutch pressure control solenoid valve A connector and body ground. Go to step 9.

NO - Replace the A/T clutch pressure control solenoid valve A. Go to page 14-149, then go to step 9.

DTC Troubleshooting (cont'd)

DTC P0988: Problem in A/T Clutch Pressure Control Solenoid Valve B Circuit

NOTE:
- Perform all inspections around when Check Engine Light is illuminated. Information is important to locate problem.
- If you have any questions on this circuit, refer to Introduction in this section.

1. Check for DTC.

2. Check for DTC P0988 is set.

   Is DTC P0988 set?

   YES—Go to step 3.

   NO—Go to step 4.

3. Select DTC P0988 in FREEZE DATA mode. Check the following: TCM POWER, GROUND CIRCUIT, CONTROL SOLENOID VALVE B CIRCUIT, and CONTROL SOLENOID VALVE B.

   Is there a problem?

   YES—Go to step 5.

   NO—Intermittent. Refer to "Intermittent Failure" in this section.

4. Clear the DTC. Test drive the vehicle under the same conditions as when the problem occurred.

   Is DTC P0988 set?

   YES—Go to step 5.

   NO—Intermittent. Refer to "Intermittent Failure" in this section.

5. Measure resistance between TCM connector terminals and body ground.

   A/T CONTROL SOLENOID VALVE B CIRCUIT

   TCM connector terminal side

   Is there 10–16 Ω?

   YES—Go to step 6.

   NO—Check for poor connection at TCM connector. If connection is good, replace TCM.

6. Measure resistance between TCM connector terminals and body ground.

   A/T CONTROL SOLENOID VALVE B CIRCUIT

   TCM connector terminal side

   Is there 10–16 Ω?

   YES—Go to step 7.

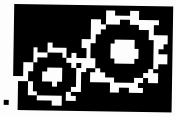
   NO—Check for poor connection at TCM connector. If connection is good, replace TCM.

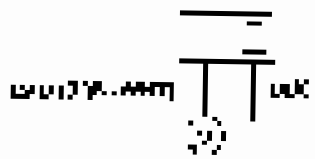
7. Check for DTC.

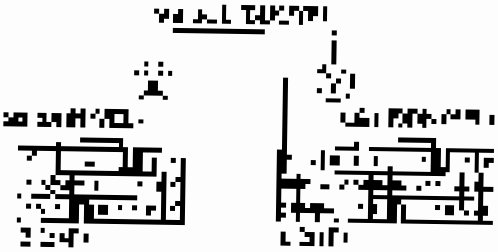
   Is DTC P0988 set?

   YES—Go to step 8.

   NO—Replace solenoid valve body with a new one. Refer to A/T solenoid valve body replacement. Then verify repair. If DTC P0988 is set, replace TCM.







DTC Troubleshooting (cont'd)

DTC P1811: Problem in A/T Clutch Pressure Control Solenoid Valve B

NOTE:
- If you have other transmission codes, perform the Troubleshooting for those codes before proceeding with this troubleshooting. (See page 14-XX for a code list.)
- Make sure the vehicle is not in limp mode (the shift pattern is different from normal driving). If the vehicle is in limp mode, the MIL will not blink.

1. Check for any other DTCs.

   > Is another DTC P0987 indicated?

   YES: Go to the DTC P0987 table.

   NO: Go to step 2.

2. Select A/T SOLENOID/SWITCH in the Honda PGM Tester. Enter the A/T Solenoid/Switch Test. Select the A/T SOLENOID/SWITCH test item.

3. Start the A/T clutch pressure control solenoid valve B test in the A/T solenoid/switch test.

4. Check for DTC P1811 in the DTC(S) indicated.

   Is DTC P1811 indicated?

   YES: Replace the A/T clutch pressure control solenoid valve B. (See page 14-XX.)

   NO: Intermittent failure. The system is OK at this time. Check for poor connections or loose terminals at the A/T clutch pressure control solenoid valve B and PCM. If the connections are OK, replace the A/T clutch pressure control solenoid valve B. (See page 14-XX.)

5. Test drive the vehicle and recheck DTC.

   > Does the A/T clutch pressure control solenoid valve B code reset?

   YES: Replace the A/T clutch pressure control solenoid valve B. (See page 14-XX.)

   NO: Go to step 6.

6. Select A/T SOLENOID/SWITCH in the Honda PGM Tester. Enter the A/T Solenoid/Switch Test. Select the A/T SOLENOID/SWITCH test item.

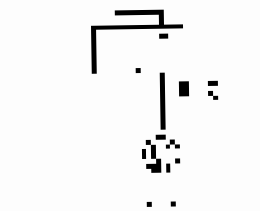
7. Start the A/T clutch pressure control solenoid valve B test in the A/T solenoid/switch test.

Is the A/T clutch pressure control solenoid valve B operating sound heard?

YES: Go to step 8.

NO: Replace the A/T clutch pressure control solenoid valve B. (See page 14-XX.) Clear the codes. Test drive the vehicle and recheck for DTC P1811. If DTC P1811 is indicated, replace the PCM. (See page 14-XX.)

8. Check for poor connections or loose terminals at the A/T clutch pressure control solenoid valve B and PCM. If the connections are OK, replace the A/T clutch pressure control solenoid valve B. (See page 14-XX.)



Is the connection OK?

YES: Replace the PCM. (See page 14-XX.) Clear the codes. Test drive the vehicle and recheck for DTC P1811. If DTC P1811 is indicated, replace the A/T clutch pressure control solenoid valve B. (See page 14-XX.)

NO: Repair the poor connection or loose terminal. Clear the codes. Test drive the vehicle and recheck for DTC P1811. If DTC P1811 is indicated, replace the A/T clutch pressure control solenoid valve B. (See page 14-XX.)

DTC Troubleshooting (cont'd)

DTC P1870 (Powertrain): A/T Clutch Pressure Control Solenoid Valve C Circuit

NOTE:
- Record all freeze frame data before clearing DTC. The freeze frame data will be erased when the DTC is cleared.
- The fault code is caused by an intermittent condition. Refer to Intermittent Failure and Poor Connection Inspection in this section.

1. Check for DTC.

2. Check other DTC for this system.

   Is DTC P1870 (Powertrain) indicated?

   YES - Go to step 3.

   NO - Go to step 4.

3. Switch ECM to A/T test mode II (see page 14-50), then perform A/T Clutch Pressure Control Solenoid Valve C Circuit Test.

4. Select "A/T CLUTCH SOLENOID VALVE C" in the "ACTIVE TEST" mode using HDS. Monitor the "A/T CLUTCH SOLENOID VALVE C" while driving. Does it change between "ON" and "OFF"?

5. Check for intermittent failure, poor connection or loose terminal in the A/T clutch pressure control solenoid valve C circuit.

   Is there a problem?

   YES - Repair as necessary.

   NO - Replace A/T clutch pressure control solenoid valve C (see page 14-184). Then perform A/T Clutch Pressure Control Solenoid Valve C Circuit Test (see page 14-50).

6. Check for intermittent failure, poor connection or loose terminal in the A/T clutch pressure control solenoid valve C circuit.

   Is there a problem?

   YES - Repair as necessary.

   NO - Replace A/T clutch pressure control solenoid valve C (see page 14-184). Then perform A/T Clutch Pressure Control Solenoid Valve C Circuit Test (see page 14-50).

7. Check for DTC.

   Is DTC P1870 (Powertrain) indicated?

   YES - Go to step 8.

   NO - Replace ECM (see page 14-50). Then perform A/T Clutch Pressure Control Solenoid Valve C Circuit Test (see page 14-50).

8. Check for intermittent failure, poor connection or loose terminal in the ECM.

   Is there a problem?

   YES - Repair as necessary.

   NO - Replace ECM (see page 14-50). Then perform A/T Clutch Pressure Control Solenoid Valve C Circuit Test (see page 14-50).

10) Turn ignition switch OFF.

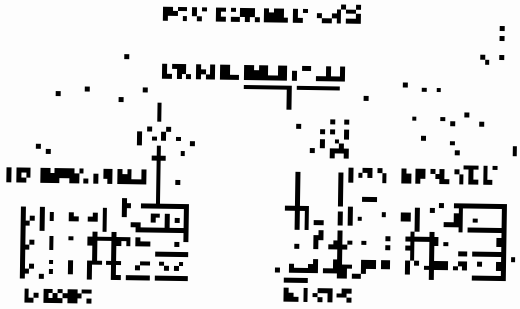
11) Disconnect scan tool from DLC. If equipped with M/T, start engine and allow it to idle. If equipped with A/T, start engine and move selector lever to "N" position and allow it to idle.

Is voltage between specified value and battery voltage?

YES: Go to step 12.

NO: Repair open circuit between PCM connector terminal [illegible] and ignition switch. Check for blown fuse. If fuse is blown, check for short circuit in harness between fuse and PCM. Replace fuse after repairs.

12) With ignition switch in ON position, measure voltage between PCM connector terminal [illegible] and body ground.



Is voltage between specified value and battery voltage?

YES: Check for poor connection at PCM connector. If connection is OK, replace PCM. After replacement, if DTC [illegible] is set, replace PCM again.

NO: Check for blown fuse. If fuse is blown, check for short circuit in harness between fuse and PCM. Repair open circuit between PCM connector terminal [illegible] and ignition switch. Replace fuse after repairs.

13) Connect scan tool to DLC.

14) Turn ignition switch to ON position. Read [illegible] using scan tool.

15) Check for DTC [illegible] or [illegible] using scan tool.

Is DTC [illegible] or [illegible] set?

YES: Go to applicable DTC chart.

NO: Replace [illegible]

DTC Troubleshooting (cont'd)

DTC P0731 Problem in A/T Clutch Pressure Control Solenoid Valve 2

[illegible]
- Refer to the applicable troubleshooting information by engine type and transmission software.
- This code is stored when the A/T control unit detects a problem and cannot move the shift lever to the correct position.

1. [illegible] with the HDS.
2. [illegible] DTC P0731 [illegible]

   DTC P0731 detected?

   YES – Go to step 3.

   NO – Go to step 4.
3. Select CLUTCH PRESSURE CONTROL SOLENOID VALVE 2 TEST (Manual Transmission) or CONTROL SOLENOID VALVE CONTROL TEST (Automatic Transmission) with the HDS.

   Did the A/T clutch pressure control solenoid valve 2 [illegible]?

   YES – Go to step 5.

   NO – Replace the A/T clutch pressure control solenoid valve 2 (see page 14-[illegible]). Then go to step 6.
4. Check the 3P [illegible] connector at the A/T clutch pressure control solenoid valve 2 for poor connection.

   Was the connector loose?

   YES – Repair the connector. Then go to step 6.

   NO – Replace the A/T clutch pressure control solenoid valve 2 (see page 14-[illegible]). Then go to step 6.
5. Check for poor connection at the A/T clutch pressure control solenoid valve 2 connector. Also check the terminals for bent or damage.

   Was the connector loose, or the terminals bent or damaged?

   YES – Repair the connector or terminals. Then go to step 6.

   NO – Replace the A/T clutch pressure control solenoid valve 2 (see page 14-[illegible]). Then go to step 6.
6. Test drive the vehicle.

   Does the A/T clutch pressure control solenoid valve 2 [illegible]?

   YES – Update the PCM if there is a newer version of the software. Then go to step 7. If the problem is intermittent, refer to the applicable troubleshooting information by engine type and transmission software. If you cannot duplicate the problem, go to step 7.

   NO – Replace the PCM (see page 23-[illegible]). Then go to step 7.
7. Check the A/T clutch pressure control solenoid valve 2 [illegible] with the HDS.

   Is the A/T clutch pressure control solenoid valve 2 [illegible]?

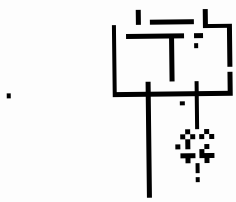
   YES – Go to step 8.

   NO – Refer to the applicable troubleshooting information by engine type and transmission software.
8. Check for poor connection at the A/T clutch pressure control solenoid valve 2 connector. Also check the terminals for bent or damage.

   Was the connector loose, or the terminals bent or damaged?

   YES – Repair the connector or terminals. Then go to step 9.

   NO – Refer to the applicable troubleshooting information by engine type and transmission software.



DTC Troubleshooting (cont'd)

DTC P0973: Short in Shift Solenoid Valve A Circuit

NOTE:

- Record all freeze data and any on-board snapshot, and review the general troubleshooting information [illegible] before you troubleshoot.
- [illegible] and [illegible] problem in the transmission.

1. Clear the DTC with the HDS.

2. [illegible] after [illegible] in the 1st through 4th gears.

3. Check for DTC P0973 again.

   Is DTC P0973 indicated?

   YES—Go to step [illegible].

   NO—[illegible]

4. [illegible] in MISC TEST [illegible] MENU, then perform the A/T [illegible] SHIFT SOLENOID TEST [illegible] HDS.

5. Turn [illegible] D position [illegible]

6. Check [illegible] in DTCs MENU [illegible] 4000 [illegible]

   Is [illegible]?

   YES—Go to step [illegible].

   NO—Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at shift solenoid valve A and the PCM. If [illegible] NOT COMPLETE [illegible] instructions.

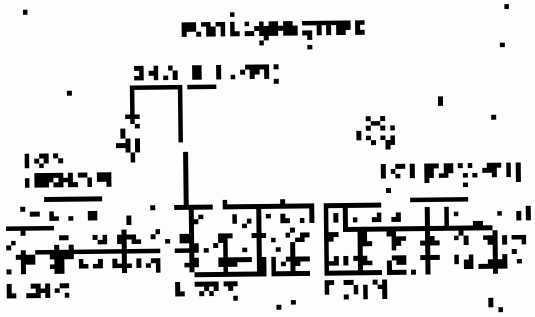
7. Turn the ignition switch OFF.

8. Jump the SCS line with the HDS.

9. Disconnect the PCM connectors B (24P), C (22P), and E (31P).

10. Measure the resistance between PCM connector terminals C[illegible] and E[illegible].

PCM CONNECTORS



Wire side of female terminals

Is the resistance [illegible] 12-25 Ω?

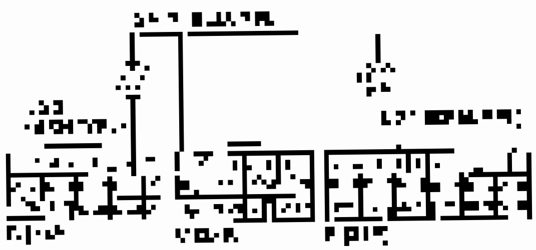
YES—Go to step 11.

NO—Update the PCM if it does not have the latest software, or substitute a known-good PCM, then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM.

11. Disconnect shift solenoid valve A connector.

12. Check for continuity between PCM connector terminal C[illegible] and [illegible].

PCM CONNECTORS

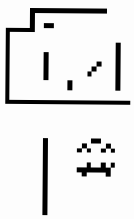


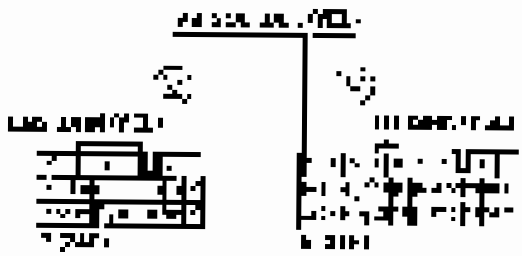
Wire side of female terminals

Is there continuity?

YES—Repair short to ground in the wire between the PCM connector terminal C[illegible] and shift solenoid valve A, then go to step [illegible].

NO—Go to step 13.





DTC Troubleshooting (cont'd)

DTC P0974, Over [illegible] Shift Solenoid Valve A Circuit

NOTE:

- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

3. Check for VTA Potentiometer

   [illegible]

   Yes—[illegible]

   NO—[illegible]

4. Select SHIFT SOL TEST in MISCELLANEOUS TEST [illegible] SHIFT SOL in SHIFT SOL TEST [illegible]

5. Turn ignition switch ON (II).

   Do the shift solenoid valves A operate?

   YES—Go to step 6.

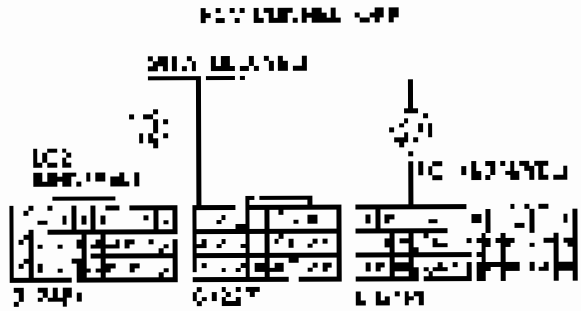
   NO—[illegible] COMPLETE [illegible]

6. Turn the ignition switch OFF.

7. Disconnect the [illegible] connector.

8. Check for [illegible] between [illegible] and body ground.

9. Measure resistance between [illegible] connector terminal [illegible] and body ground.

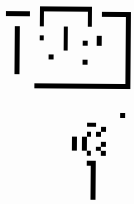


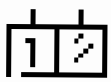
[illegible]

Is there [illegible]?

YES—Check for poor connection at [illegible] connector. If [illegible] is found, replace [illegible]. If [illegible] is found, replace the [illegible]. If the problem persists, replace the [illegible]

NO—Go to step 10.





DTC Troubleshooting (cont'd)

DTC P0973: Shift Solenoid Valve A Circuit Low

NOTE:
- Record all freeze data and scan tool information before performing Troubleshooting. Clear codes and freeze data after recording all information.
- This code will not be stored if no other codes are stored. If another code is stored, troubleshoot that code first.

1. Check for DTC (see page 14-[illegible]).
2. [illegible]
3. Check for DTC Pending Code

   Is DTC P0973 stored pending?

   YES—Go to step 4.

4. Select SHIFT SOL TEST in SCS. Select P/N SCS1 in SHIFT SOL TEST. Monitor SHIFT SOL TEST in DATA LIST.

5. Turn the ignition switch OFF.

6. Is the SCS1 line switch to P/N?

   YES—Continue to 7.

   NO—Replace the [illegible] with a new one. Clear the DTC (see page 14-[illegible]). Perform the Shift Solenoid Valve A Circuit Test (see page 14-[illegible]).

7. Turn the ignition switch ON (II).

8. Is the SCS line switch to P/N?

9. Disconnect PCM connector [illegible]. Check for [illegible] between [illegible] and body ground.

10. Disconnect the [illegible] connector from the PCM.

    PCM connector

    [illegible]

    Wire side of female terminals

11. Check for [illegible] between [illegible] and body ground.

    Is there [illegible]?

    YES—Repair [illegible] between [illegible] and PCM connector [illegible] (see page 14-[illegible]).

    NO—[illegible]

12. Check for [illegible] between PCM connector terminal [illegible] (see page 14-[illegible]) and body ground.

    PCM connector

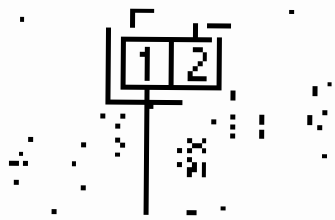
    [illegible]

    Wire side of female terminals

    Is there [illegible]?

    YES—Check for [illegible] between PCM connector terminal [illegible] and [illegible] (see page 14-[illegible]).

    NO—[illegible]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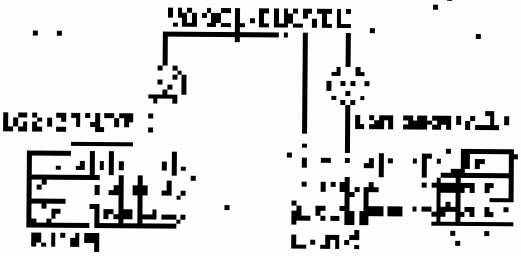
2



DTC Troubleshooting (cont'd)

DTC P1877: Open in Shift Solenoid Valve B Circuit

[illegible]

- Review all freeze data and relevant driver's concern. Troubleshooting driver's concern may help you duplicate the malfunction.
- This code is stored if your vehicle's shift solenoid valve and valve body have any of the malfunctions listed below.

1. [illegible]
2. [illegible]
3. Check the DTC history.

   Is DTC P1877 recorded?

   YES—Go to step 4.

   NO—Go to step 5.

4. Select SHIFT SOL TEST in the HDS and perform the SHIFT SOL TEST in the ATM-shift solenoid test group.

   Is the test result normal?

   YES—Go to step 5.

   NO—Replace the shift solenoid valve B. Perform the ATM-shift solenoid test group.

5. Turn the ignition switch OFF.
6. Disconnect the ECM connector.
7. Check the ECM connector (B124, C122, and C123) and the [illegible]

   Is there a problem?

   YES—Repair as necessary.

   NO—Go to step 8.

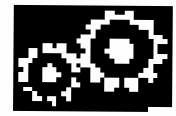
8. Measure the resistance between the ECM connector terminals (B124 and C122) and the shift solenoid valve B connector terminal.

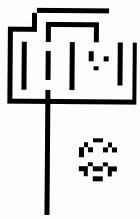
Wire side of female terminals

Is there [illegible]

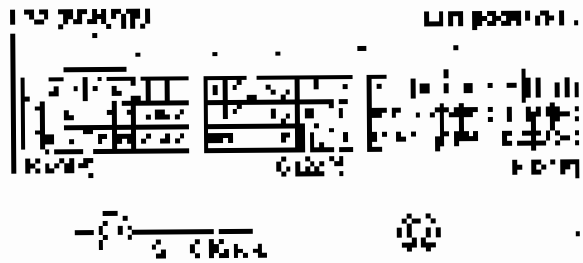
YES—Replace the [illegible] Perform the ATM-shift solenoid test group. If DTC P1877 is recorded, replace the shift solenoid valve B. Perform the ATM-shift solenoid test group. If DTC P1877 is recorded again, replace the original ECM with a new one. If DTC P1877 is recorded again, [illegible]

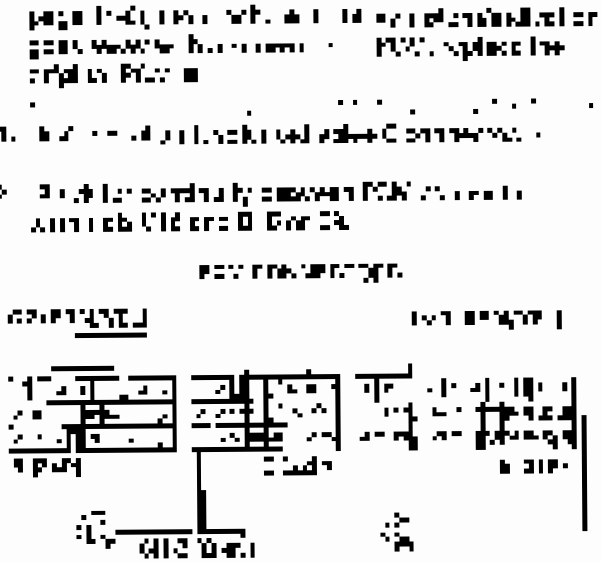
NO—Go to step 9.

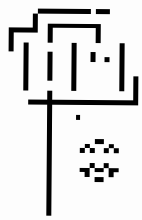


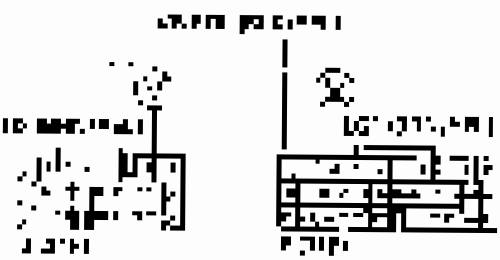


DTC Troubleshooting (cont'd)









DTC Troubleshooting (cont'd)

DTC P0[illegible] (Lock-up Solenoid Valve) Circuit

NOTE:

- [illegible]
- [illegible]

1. Check the DTC with the HDS.

2. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

3. [illegible]

4. [illegible]

5. Check the [illegible]

   [illegible]

   YES: [illegible]

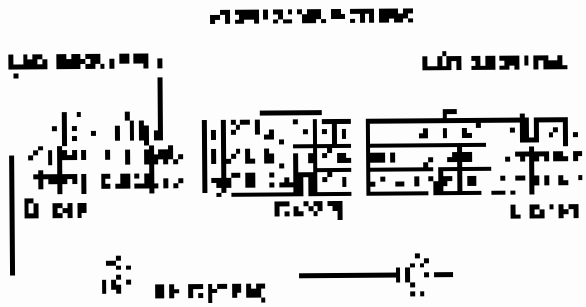
   NO: [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

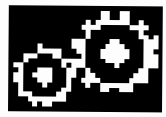


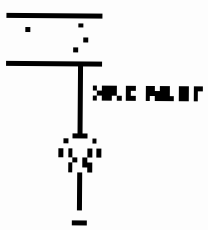
[illegible]

[illegible]

YES: [illegible]

NO: [illegible]





DTC Troubleshooting (cont'd)

DTC P2703: Short in Torque Converter Clutch Solenoid Valve Circuit

NOTE:
- Record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 14-3) before you troubleshoot.
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.

2. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on). Test-drive the vehicle for several minutes in the D position in all five gears.

3. Check for [illegible] DTC P2703 [illegible].

   Is DTC P2703 indicated?

   YES—Go to step 7.

   NO—Go to step 4.

4. Select [illegible] in the MISCELLANEOUS TEST MENU [illegible] A/T LOCK-UP SOLENOID VALVE [illegible] TEST MENU with the HDS.

5. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on). Test-drive the vehicle for several minutes in the D position in all five gears.

6. Check the [illegible] MENU for a pending (intermittent) failure.

   [illegible]

   YES—Go to step 7.

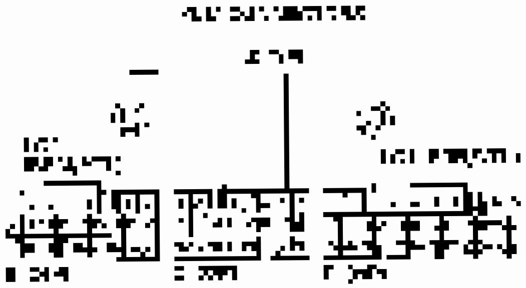
   NO—Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at [illegible] ground between the [illegible] valve and PCM. [illegible] COMPLETE [illegible].

7. Turn the ignition switch OFF.

8. Jump the SCS line with the HDS.

9. Disconnect PCM connectors [illegible] (31P).

10. Measure the resistance between PCM connector terminals C2 and [illegible].



Wire side of female terminals

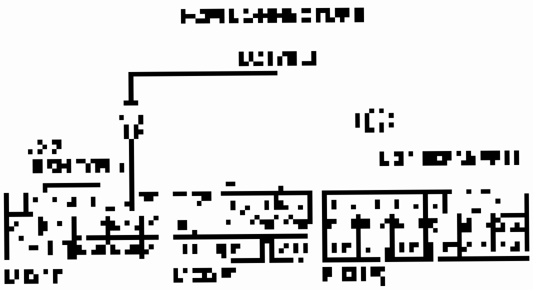
Is there [illegible] 12–25 Ω?

YES—Go to step 11.

NO—Update the PCM if it does not have the latest software, or substitute a known-good PCM (see page 11-[illegible]), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM. ■

11. Disconnect the torque converter clutch solenoid valve connector.

12. Check for continuity between PCM connector terminals C2 and E15 (GND).

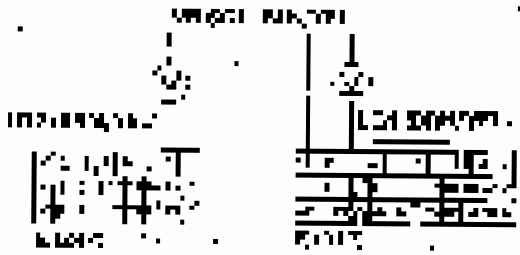


Wire side of female terminals

Is there continuity?

YES—Repair short to ground in the wire between PCM connector terminal C2 and the torque converter clutch solenoid valve, then go to step [illegible].

NO—Go to step 13.



DTC Troubleshooting (cont'd)

DTC P2731: Clutch Torque Converter Control Solenoid Valve Electric Open Circuit

NOTE:

- Perform the Inspection and Maintenance (Troubleshooting Information) on page 14-8 before you begin these procedures.
- This code will not be stored if other transmission problems are present. Be sure there are no other transmission problems before you begin.

1. Check for DTC P0705 (page 14-105).

2. Check for open or short in the wire between the PCM connector terminal C8 (+) and the TCC solenoid valve connector terminal (+) (see page 14-173).

   Is the wire open or shorted?

   YES—Repair open or short.

   NO—Go to step 3.

3. Check for poor connection at PCM connector terminal C8 and TCC solenoid valve connector terminal (+).

   Is the connection loose or poor?

   YES—Repair poor connection.

   NO—Go to step 4.

4. Check the TCC solenoid valve (see page 14-173).

   Does the TCC solenoid valve work properly?

   YES—Intermittent failure, the system is OK at this time. Check for poor connection and recheck symptoms. If symptoms appear, replace the PCM with a known good one and recheck.

   NO—Replace the TCC solenoid valve.

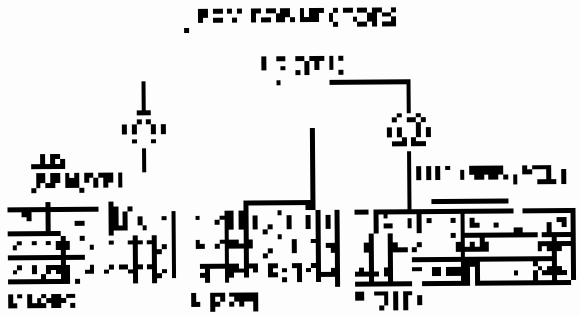
5. Check for poor connection at PCM connector terminal C8 (+) and TCC solenoid valve connector terminal (+).

   Is the connection loose or poor?

   YES—Repair poor connection.

   NO—Replace the PCM with a known good one and recheck.

6. Check for continuity between PCM connector terminal C8 (+) and body ground.

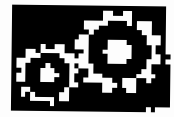


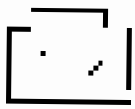
   There should be no continuity.

   Is there continuity?

   YES—Short in the wire between the PCM connector terminal C8 (+) and the TCC solenoid valve connector terminal (+). Repair short in the wire between the PCM connector terminal C8 (+) and the TCC solenoid valve connector terminal (+) (see page 14-173). If the wire is OK, replace the PCM with a known good one and recheck.

   NO—Go to step 7.





Road Test

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

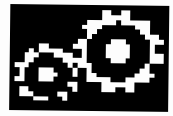
Up-shift Speeds

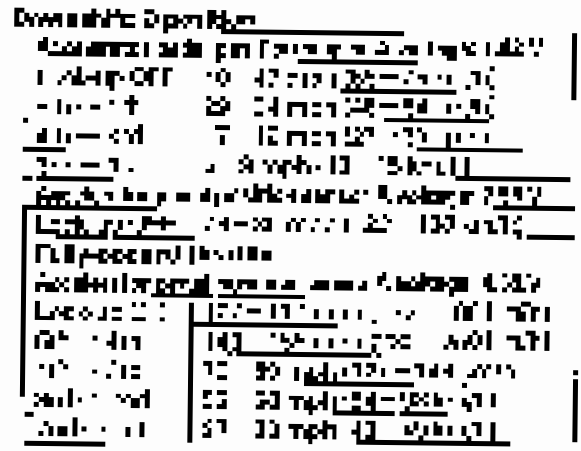
[illegible]		
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

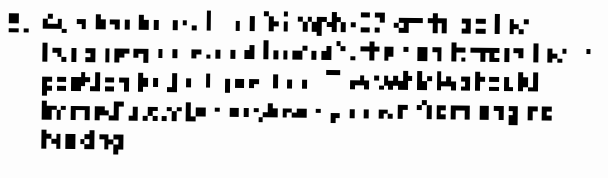
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Full-throttle Down-shift Speeds

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]







Downshift Operation

Accelerator pedal [illegible] Throttle Position Sensor Voltage [illegible]

Lock-up OFF	40 - 42 mph ([illegible] km/h)
4th → 3rd	29 - 34 mph ([illegible] km/h)
3rd → 2nd	7 - 12 mph ([illegible] km/h)
2nd → 1st	4 - 9 mph ([illegible] km/h)

Accelerator pedal released: Throttle Position Sensor Voltage [illegible]

Lock-up OFF	24 - 30 mph ([illegible] km/h)

Fully-opened throttle

Accelerator pedal depressed: Throttle Position Sensor Voltage [illegible]

Lock-up OFF	[illegible] mph ([illegible] km/h)
[illegible]	[illegible] mph ([illegible] km/h)
[illegible]	[illegible] mph ([illegible] km/h)
2nd → [illegible]	53 - 59 mph ([illegible] km/h)
[illegible]	33 mph ([illegible] km/h)

5. Accelerate to about 35 mph (57 km/h) so the transmission is in [illegible], then shift from [illegible] position to [illegible] position. The vehicle should immediately begin slowing down from engine braking.

6. Check for abnormal noise and clutch slippage in the following positions.

   [illegible] Position
   Accelerate from a stop at full throttle. Check that there is no abnormal noise and clutch slippage.

   [illegible] (Reverse) Position
   Accelerate from a stop at full throttle, and check for abnormal noise and clutch slippage.

7. Test in [illegible] (Park) Position.
   Park vehicle on slope [illegible], apply the brake, and shift into [illegible] position. Release the brake; the vehicle should not move.

   NOTE: [illegible] When stopped on [illegible] [illegible] [illegible] [illegible] [illegible]

Stall Speed Test

1. [illegible]

2. [illegible]

3. [illegible]

4. After the engine is warmed up to normal operating temperature, [illegible] and then shift to D position.

5. Fully depress the brake pedal and apply the parking brake. Start the engine and gradually depress the accelerator pedal to the floor. Quickly read the stall speed and immediately release the accelerator pedal.

   NOTE:
   - Do not hold the accelerator pedal down for more than 5 seconds.
   - Shift the selector lever to the N position and cool the engine for more than 1 minute.
   - Do not conduct the test with the engine coolant temperature below 50°C (122°F).

   Stall Speed rpm
   Specification: 2,000 rpm
   Service Limit: 1,850 - 2,150 rpm

6. [illegible]

Problem	Probable cause
Stall speed high High engine RPM Poor acceleration	• Low line pressure • Slipping clutch or brake • Improper ATF level • Regulator valve stuck • Slipping stator
Stall speed high Shock when shifting into reverse	Slipping clutch or brake
Stall speed low Poor acceleration Poor fuel economy	• Engine output low • Torque converter one-way clutch slipping • Improper engine-transmission matching

Pressure Test

Special Tools Required

- [illegible]
- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

Pressure Test (cont'd)

8. Start the engine and allow it to idle. Check the fluid level.

9. Warm up the engine to the normal operating temperature (ATF temperature 50–80°C (122–176°F)).

NOTE: If you cannot warm up the engine, perform the test with the ATF at room temperature.

Pressure	Fluid temperature	
	Standard	Service limit
Line pressure	400 – 430 kPa (4.1 – 4.4 kgf/cm², 58 – 62 psi)	400 kPa (4.1 kgf/cm², 58 psi)
	850 – 900 kPa (8.7 – 9.2 kgf/cm², 124 – 131 psi)	850 kPa (8.7 kgf/cm², 124 psi)
	At stall speed	

10. Shift the shift lever to each position and measure the line pressure at the idle speed and the stall speed with the vehicle stopped.

Stall speed: Speed at which the engine speed stops increasing even though the accelerator pedal is fully depressed with the shift lever in D position and the vehicle stopped.

11. Release the accelerator pedal and shift the shift lever to N position. Run the engine at idle speed for approximately 2 seconds then increase the engine speed to 2,000 rpm and quickly close the throttle valve fully.

12. Measure the clutch pressure when the throttle valve is quickly closed.

Pressure	Fluid temperature	
	Standard	Service limit
Clutch pressure	1,200 – 1,400 kPa (12.2 – 14.3 kgf/cm², 174 – 203 psi)	1,200 kPa (12.2 kgf/cm², 174 psi)
Brake pressure	1,200 – 1,400 kPa (12.2 – 14.3 kgf/cm², 174 – 203 psi)	1,200 kPa (12.2 kgf/cm², 174 psi)

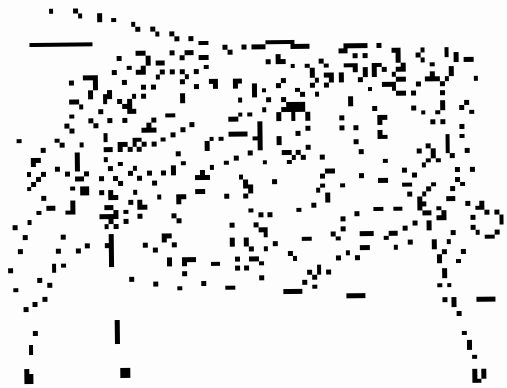
13. Release the parking brake and shift the shift lever to D position. Run the engine at idle speed for approximately 2 seconds then increase the engine speed to 2,000 rpm and quickly close the throttle valve fully.

14. Measure the lock-up pressure when the throttle valve is quickly closed.

15. Install the shift lever position switch. Check that the shift lever position switch is properly adjusted. Refer to the Shift Lever Position Switch Adjustment section.

16. Start the engine and allow it to idle. Check the fluid level.

17. Warm up the engine to the normal operating temperature (ATF temperature 50–80°C (122–176°F)).



18. Shift the shift lever to each position and measure the line pressure at the idle speed and the stall speed with the vehicle stopped.

Stall speed: Speed at which the engine speed stops increasing even though the accelerator pedal is fully depressed with the shift lever in D position and the vehicle stopped.

19. Release the accelerator pedal and shift the shift lever to N position. Run the engine at idle speed for approximately 2 seconds then increase the engine speed to 2,000 rpm and quickly close the throttle valve fully.

20. Measure the clutch pressure when the throttle valve is quickly closed, increasing engine speed to 2,000 rpm, then quickly closing the throttle valve fully. Measure the brake pressure when the throttle valve is quickly closed, increasing engine speed to 2,000 rpm, then quickly closing the throttle valve fully. Measure the lock-up pressure when the throttle valve is quickly closed, increasing engine speed to 2,000 rpm, then quickly closing the throttle valve fully.

Pressure	Fluid temperature	
	Standard	Service limit
Clutch pressure	1,200 – 1,400 kPa (12.2 – 14.3 kgf/cm², 174 – 203 psi)	1,200 kPa (12.2 kgf/cm², 174 psi)
Brake pressure	1,200 – 1,400 kPa (12.2 – 14.3 kgf/cm², 174 – 203 psi)	1,200 kPa (12.2 kgf/cm², 174 psi)
Lock-up pressure	1,200 – 1,400 kPa (12.2 – 14.3 kgf/cm², 174 – 203 psi)	1,200 kPa (12.2 kgf/cm², 174 psi)

20. [illegible]

21. [illegible]

[illegible]	[illegible]	
[illegible]	Standard	Minimum limit
[illegible]	[illegible]	[illegible]

22. [illegible]

23. [illegible]

24. [illegible]

25. [illegible]

[illegible]	[illegible]	
[illegible]	Standard	Minimum limit
[illegible]	[illegible]	[illegible]

26. [illegible]

Problem	Possible cause
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

27. [illegible]

28. [illegible]

29. [illegible]

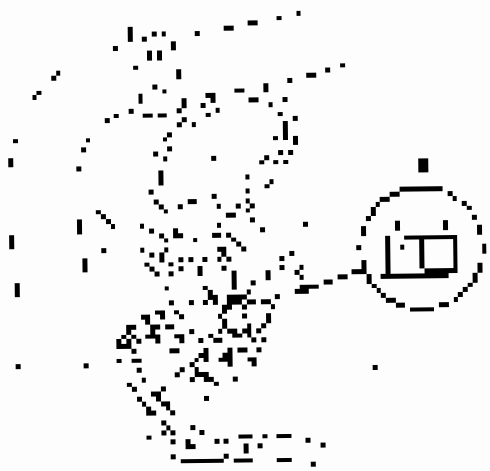
Shift Solenoid Valve A Test

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]



5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

Shift Solenoid Valve A Replacement

1. Make sure you have the customer's vehicle [illegible]
2. Remove the shift [illegible]
3. [illegible]
4. [illegible]
5. Remove the [illegible]
6. Remove the [illegible]
7. [illegible]
8. [illegible]

9. [illegible]
10. [illegible]
11. Check [illegible]

12. Install the [illegible]
13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]

Shift Solenoid Valve B Test

1. [illegible]

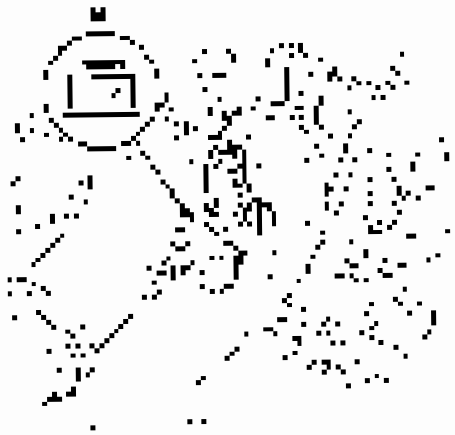
2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]



7. [illegible]

   Standard: [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

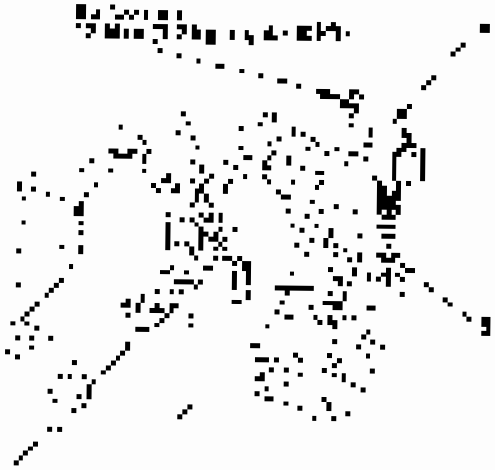
11. [illegible]

12. [illegible]

Shift Solenoid Valve B Replacement

1. [illegible]

[illegible]



4. [illegible]

5. [illegible]

6. [illegible]

Shift Solenoid Valve C Test

1. [illegible]

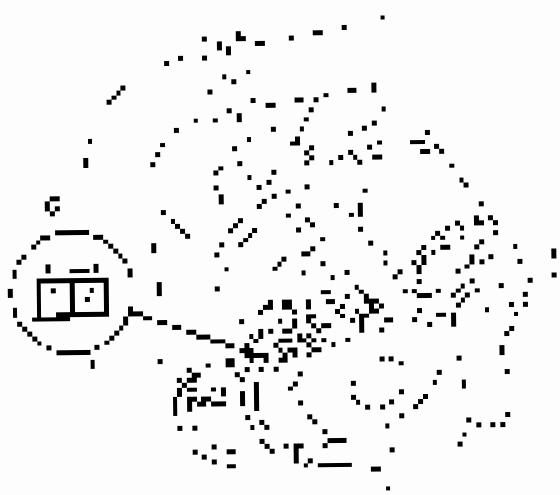
2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]



7. [illegible]

   Standard: [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

Shift Solenoid Valve C Replacement

1. [illegible]

[illegible]

2. [illegible]

3. [illegible]

Torque Converter Clutch Solenoid Valve Test

※ Select "ACTUATOR SOL TEST" in the "ACTUATOR TEST" mode using the SSM II and the IIA.

※ Using the "ACTUATOR TEST" mode in the "ACTUATOR SOL TEST", check the operation sound of the solenoid valve.

4. Torque converter clutch solenoid valve operation sound
   Is the solenoid valve operation sound heard?
   If heard → OK
   If not heard → Go to step 5.

5. Measure the resistance between the solenoid valve connector terminals.
   Standard: 10—24 Ω

6. Replace the torque converter clutch solenoid valve.

※ If the resistance is within the standard value, the solenoid valve may be faulty. Replace the solenoid valve. If the resistance is out of the standard value, check the solenoid valve connector and wiring harness. Refer to "Inspection of Solenoid Valve Connector and Wiring Harness".

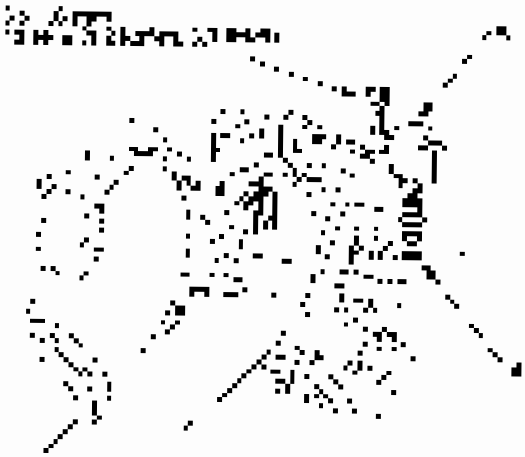
7. Replace the torque converter clutch solenoid valve. Refer to "Torque Converter Clutch Solenoid Valve Removal".

8. Road test the vehicle and check the operation of the torque converter clutch solenoid valve. Refer to "Torque Converter Clutch Solenoid Valve Operation Check".

Torque Converter Clutch Solenoid Valve Replacement

1. [illegible]

2. [illegible]

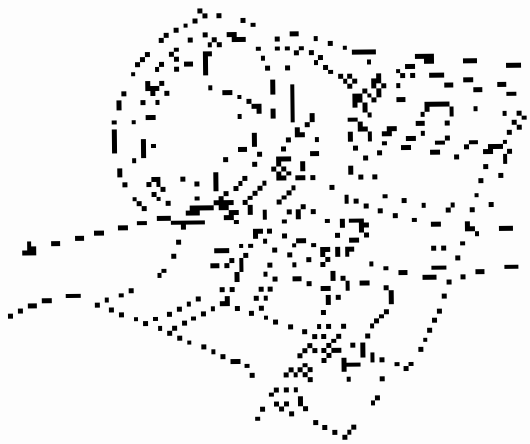


3. [illegible]

4. [illegible]

5. [illegible]

A/T Clutch Pressure Control Solenoid Valve A and B Test



2. Select [illegible] TEST [illegible] SOLENOID A/T TEST from the menu screen.

3. [illegible] TEST [illegible] TEST [illegible]

4. [illegible] A/T clutch pressure control solenoid valve A and B [illegible] and OK.
   Refer to [illegible] page 5.

5. Make sure that the [illegible] and [illegible] and [illegible] and [illegible]

6. [illegible]

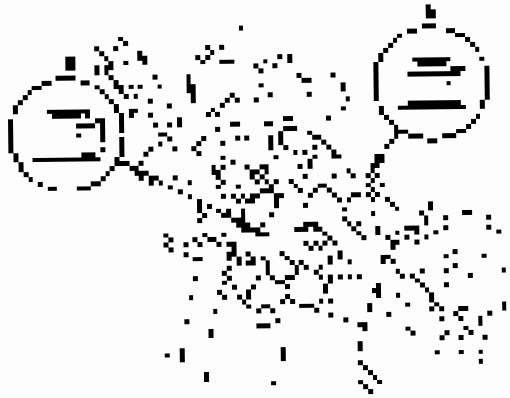
7. [illegible] Disconnect [illegible] terminal, then [illegible]

8. [illegible]

9. Remove the battery [illegible]

10. [illegible]

11. Disconnect [illegible] A/T clutch pressure control solenoid valve A connector and A/T clutch pressure control solenoid valve B connector. Measure the resistance between the terminals of the A/T clutch pressure control solenoid valve A connector and the terminals of the A/T clutch pressure control solenoid valve B connector.
    Is the resistance OK (approx. 10 – 30 Ω)?



YES – [illegible]

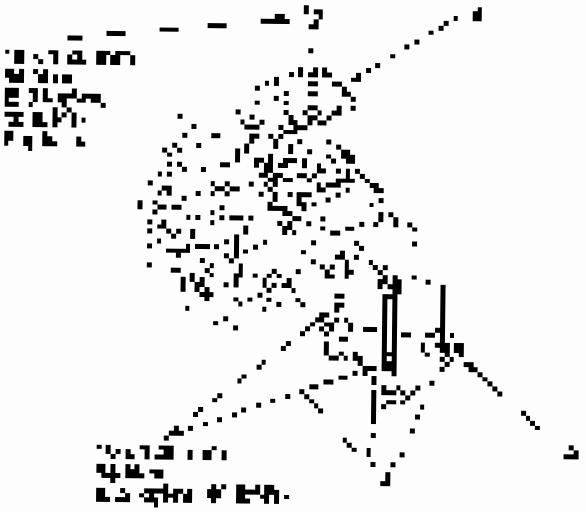
NO – Replace the A/T clutch pressure control solenoid valve A or B [illegible] page 14-[illegible]).

12. Turn the ignition switch to ON (II). Measure the voltage between the A/T clutch pressure control solenoid valve A connector A terminal and the A/T clutch pressure control solenoid valve B connector B terminal.
    Is there battery voltage?

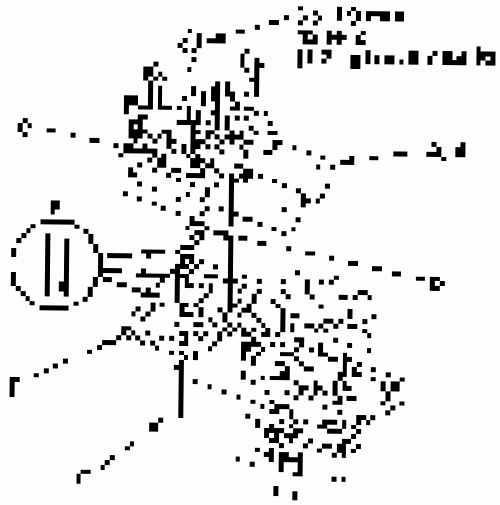
YES – Replace the A/T [illegible] page 14-[illegible]). Then [illegible]

NO – [illegible]

13. Remove the oil pump assembly (1) and mechanical (2) and mechanical clutch (3).

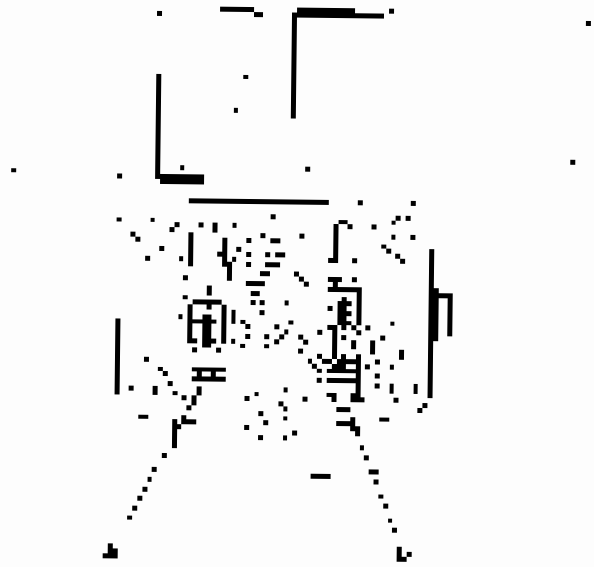


11. Remove the oil seal (1) from the oil pump body.



15. Install the oil seal (1) in the oil pump body using the special tool (2).

14. Install the mechanical clutch (1) and oil pump assembly (2) to the transmission case (3).



15. Tighten the oil pump mounting bolts to the specified torque in the sequence shown.

16. Install the oil pump gasket (1) and the oil pump cover (2).

17. Check that the oil pump cover (1) rotates smoothly and that the seal lip (2) is not damaged.

18. Install the oil pump cover bolts (1) and tighten them to the specified torque in the sequence shown.

19. Install the oil pump cover bolts (1) and tighten them to the specified torque in the sequence shown.

20. Install the oil pump cover bolts (1) and tighten them to the specified torque in the sequence shown.

A/T Clutch Pressure Control Solenoid Valve A and B Test (cont'd)

24. [illegible]

25. [illegible]

26. Check for over [illegible] PCM to the clutch pressure control solenoid valve A and B for. Good engine speed. [illegible] OK, and then temporary use PCM and valve.

27. [illegible]

28. [illegible]

29. Examine valve body for [illegible] and [illegible] and the A/T valve body assembly, and check.

A/T Clutch Pressure Control Solenoid Valve A and B Replacement

1. [illegible]

2. [illegible]

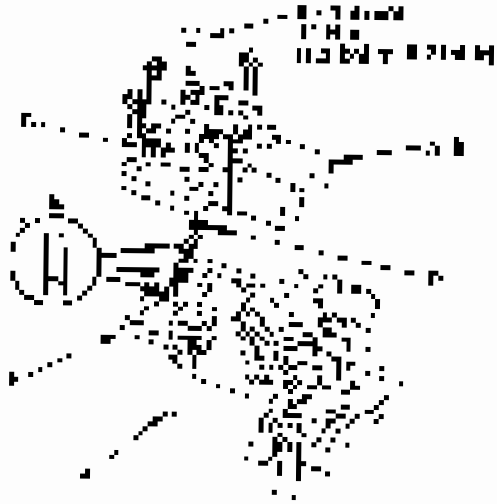
3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]



8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

16. [illegible]

17. [illegible]

A/T Clutch Pressure Control Solenoid Valve C Test

[illegible] to the ECM/PCM.

2. Select [illegible] TEST MODE. (See page [illegible])

[illegible] TEST MODE TO [illegible] TEST.

4. [illegible] connection to the [illegible] Select mode A/T clutch pressure control solenoid valve C test. (See page [illegible] Then select [illegible] A/T, (See page [illegible])

5. Start the engine and warm it up to normal operating temperature. Drive the vehicle in 2nd gear at a steady throttle position of 1/8 to 1/4 and check the [illegible] pressure.

6. Return the ignition switch to OFF. Disconnect the [illegible] and check for damage, bent terminals, or poor connection at the [illegible] terminals.

7. Remove the battery [illegible] from the battery, then remove the [illegible] from the [illegible]

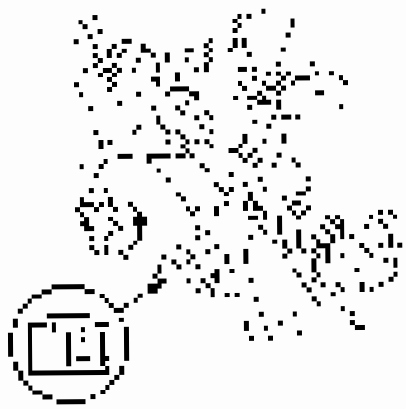
8. Remove the [illegible]

9. Remove the [illegible]

10. If [illegible] is not as specified, replace the [illegible] with a new one. If the [illegible] is as specified, the [illegible] is OK.

11. If [illegible] is not as specified, check the [illegible] for [illegible] and [illegible] between the [illegible] and [illegible] terminals. If [illegible] is found, repair the [illegible] harness or connector. If the [illegible] harness and connectors check OK, replace the [illegible] and retest the [illegible]

12. If [illegible] is as specified, check the [illegible] for [illegible] and [illegible] between the [illegible] and [illegible] terminals. If [illegible] is found, repair the [illegible] harness or connector. If the [illegible] harness and connectors check OK, replace the [illegible] and retest the [illegible]



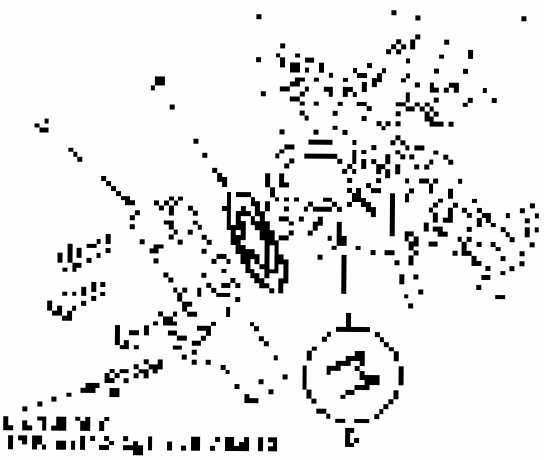
13. Measure A/T clutch pressure control solenoid valve C resistance between [illegible] and [illegible] terminals.

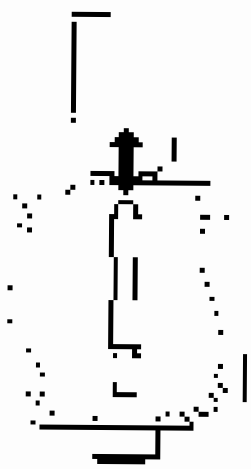
Standard: [illegible]

14. If the [illegible] is as specified, the [illegible] is OK. If not, replace the A/T clutch pressure control solenoid valve C. (See page [illegible])

15. If [illegible] is not as specified, check the [illegible] for [illegible] and [illegible] between the [illegible] and [illegible] terminals. If [illegible] is found, repair the [illegible] harness or connector. If the [illegible] harness and connectors check OK, replace the [illegible] and retest the [illegible]
A/T clutch pressure control solenoid valve C

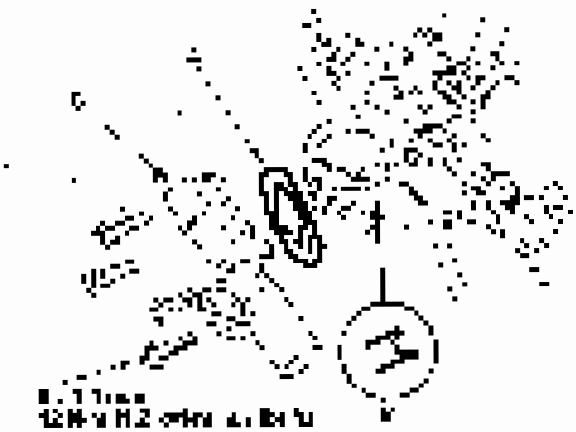
16. Perform [illegible] A/T clutch pressure control solenoid valve C test. (See page [illegible] If the [illegible] is as specified, go to step [illegible]





A/T Clutch Pressure Control Solenoid Valve C Replacement

1. [illegible]
2. Remove the left side engine [illegible]
3. [illegible]
4. [illegible]
5. Remove the A/T [illegible]
6. [illegible]
7. [illegible]
8. Remove A/T clutch pressure control solenoid valve C connector.
9. Remove A/T clutch pressure control solenoid valve C.



10. [illegible]
11. Check inside the passage of the A/T body where [illegible]
12. [illegible]
13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]
17. [illegible]
18. [illegible]
19. [illegible]
20. [illegible]

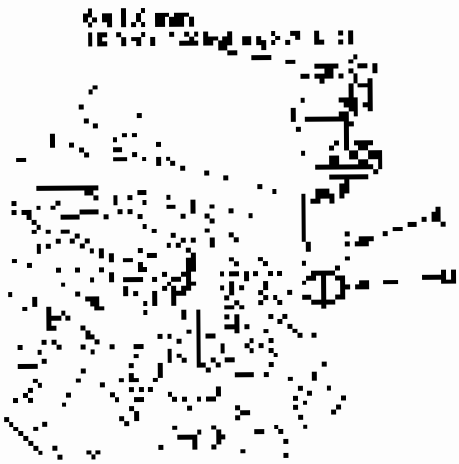
Input Shaft (Mainshaft) Speed Sensor Replacement

1. [illegible]
3. [illegible]
4. [illegible]
   - [illegible]

5. [illegible]
   - [illegible]
7. [illegible]

Output Shaft (Countershaft) Speed Sensor Replacement

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]



7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]

3rd Clutch Transmission Fluid Pressure Switch Replacement

1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]

4th Clutch Transmission Fluid Pressure Switch Replacement

1. [illegible]
2. [illegible]
4. [illegible]

5. [illegible]
6. [illegible]

ATF Temperature Sensor Replacement

1. [illegible]

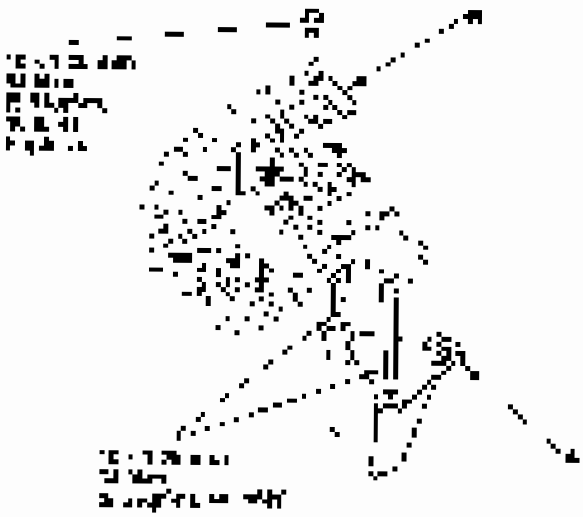
2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]



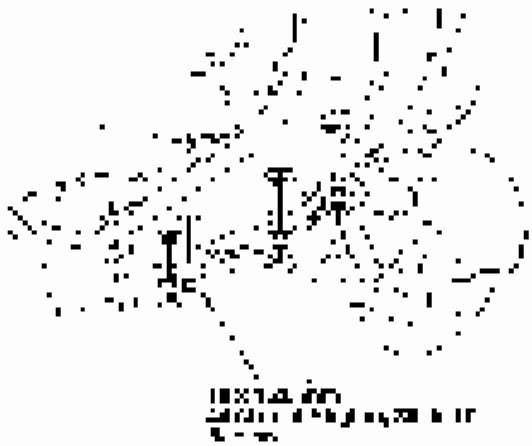
7. [illegible]

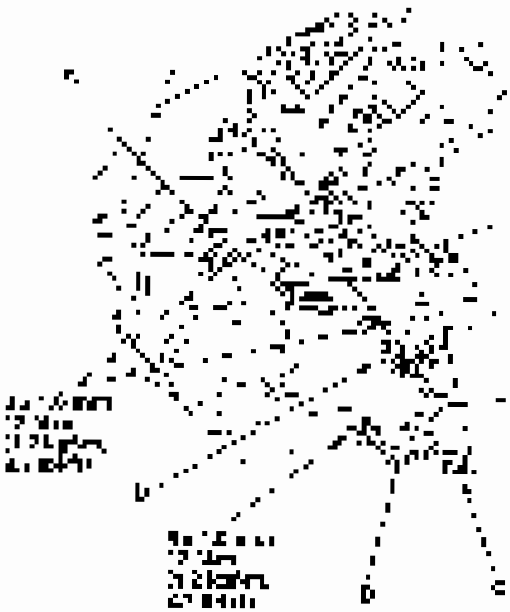
8. [illegible]

9. [illegible]

cont'd

ATF Temperature Sensor Replacement (cont'd)





Transmission Gear Selection Switch Test

1. [illegible]
2. [illegible]

[illegible]

3. [illegible]
   [illegible]
   [illegible]
4. [illegible]
   [illegible]
   [illegible]
5. [illegible]
   [illegible]
   [illegible]
6. [illegible]
   [illegible]
7. [illegible]

Transmission Gear Selection Switch Replacement

1. [illegible]
2. [illegible]
   [illegible]

3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]

ATF Level Check

NOTE: Keep all foreign particles out of the transmission.

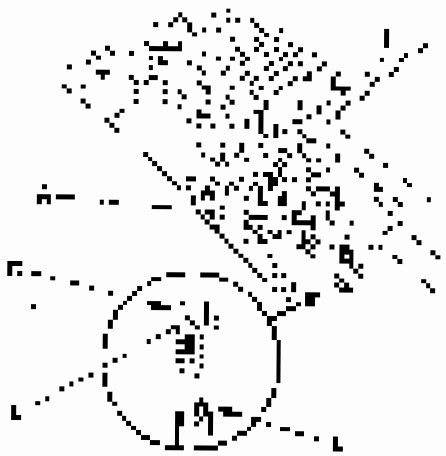
1. [illegible] engine warm [illegible]
   [illegible]

2. [illegible], start the engine, [illegible]

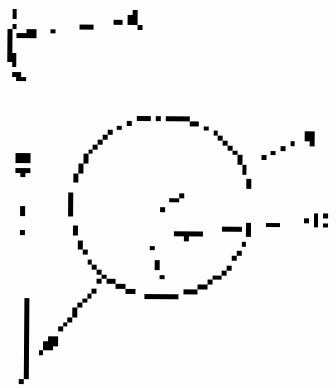
   NOTE: Check the fluid level [illegible] of the engine is warm.

3. [illegible] fluid color [illegible]

4. [illegible] the dipstick [illegible] the cap. Quickly [illegible] the reservoir [illegible]



5. Remove the dipstick [illegible] should be between [illegible] mark. If [illegible]



6. [illegible] with the [illegible] recommended [illegible] upper mark on the dipstick. [illegible] NOTE: Do not overfill. [illegible] will be difficult to [illegible]

7. [illegible] recommended [illegible]

8. [illegible] ATF [illegible]

9. [illegible] the dipstick [illegible] the cap. [illegible] the engine [illegible]

ATF Replacement

NOTE: Keep all foreign particles and moisture away from the ATF.

1. Drive the vehicle to warm the ATF to normal operating temperature (ATF temperature: 50 – 80°C).
2. Park the vehicle on a level surface and turn the engine off.
3. Remove the drain plug (A) and drain the ATF completely.

4. Reinstall the drain plug (A) with a new gasket (see illustration).

5. Refill the transmission with the specified amount of fluid (see below). Use DEXRON®-III (or later) automatic transmission fluid. Do not overfill. Check the ATF level (see page 14-203).

Recommended Transmission Fluid: DEXRON®-III
Refill: 2.5 US qt (2.4 l) drain and refill
7.9 / 7.4 US qt (7.5 / 7.0 l) dry fill

6. Install a new ATF filler hole plug with a new O-ring (see illustration).

Transmission Removal

Special tool(s) required
- Engine support fixture
- Transmission support fixture
- Engine support bracket

1. Make sure you have the customer's vehicle information and radio preset information. Refer to Owner Information and Clock Setting in this section.

2. Disconnect the negative cable from the battery. Refer to Battery Cable Disconnect and Connect in this section.

3. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Removal and Installation.

4. Drain the engine oil.

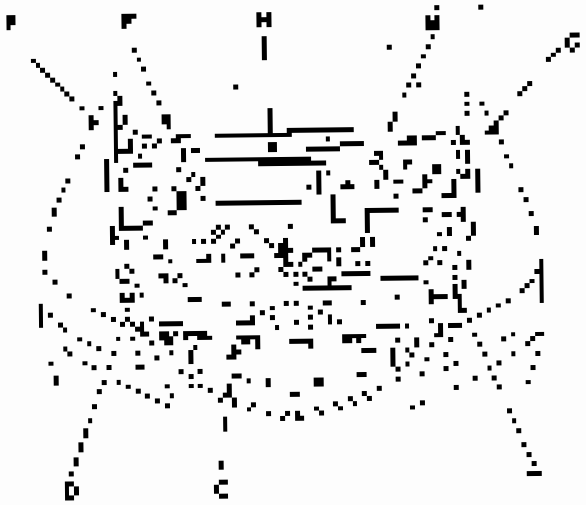
5. Drain the cooling system. Refer to Cooling System Draining in this section.

6. Remove the drive belt. Refer to Drive Belt Removal.

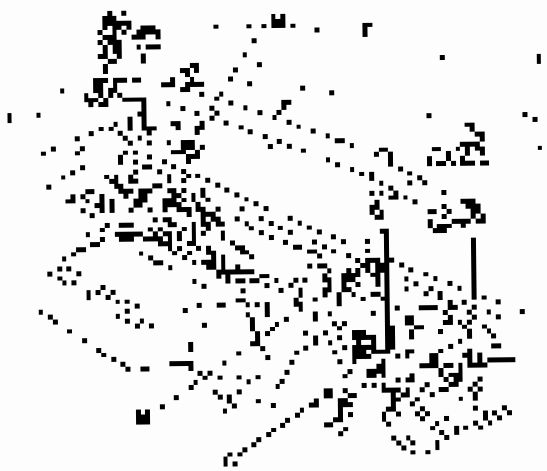
7. Remove the power steering pump and bracket assembly from the engine. Refer to Power Steering Pump Removal and Installation in Steering. Position the power steering pump and bracket assembly aside. Do not disconnect the power steering hoses.

Transmission Removal (cont'd)

5. [illegible]



6. [illegible]



7. [illegible]

8. [illegible]

9. [illegible]

Transmission Removal (cont'd)

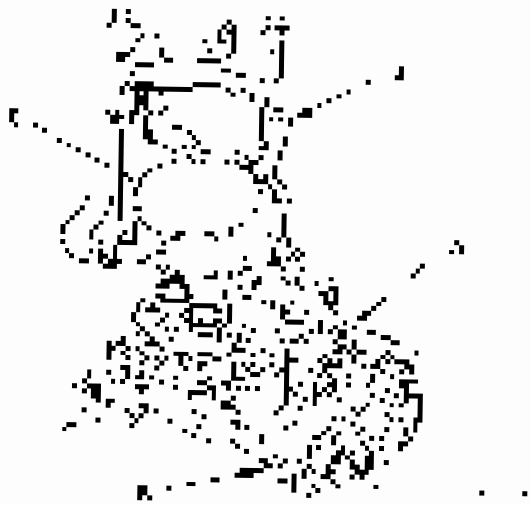
33. [illegible]

34. [illegible]

35. [illegible]

36. [illegible]

37. [illegible]



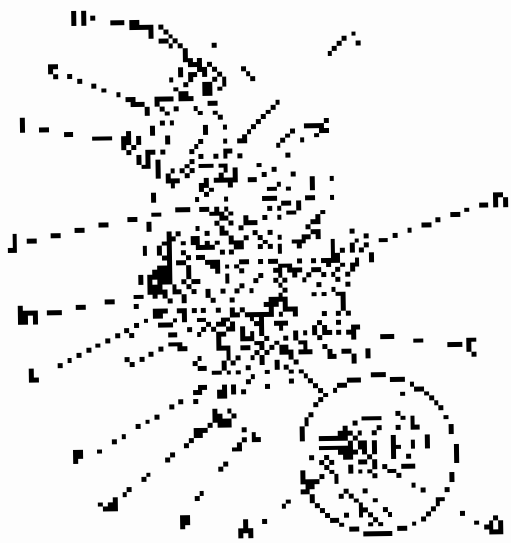
Transmission Removal (cont'd)

4) [illegible]

5) [illegible]

6) [illegible]

7) [illegible]



8) [illegible]

9) [illegible]

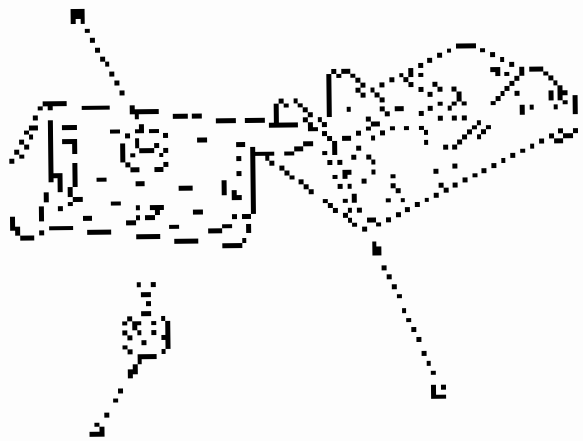
Transmission Removal (cont'd)

46. [illegible]

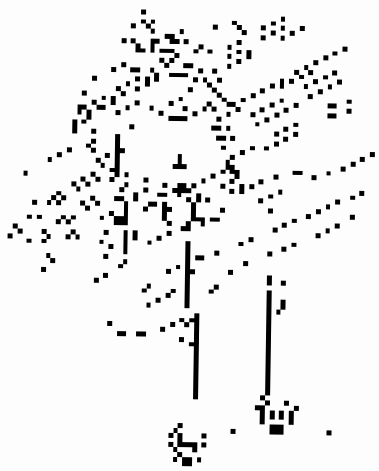
47. [illegible]

48. [illegible]

49. [illegible]



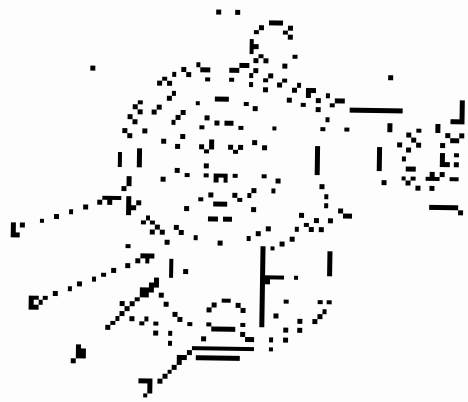
50. [illegible]



51. [illegible]

54. [illegible]

55. [illegible]



Transmission Removal (cont'd)

54. [illegible]

55. [illegible]

56. [illegible]

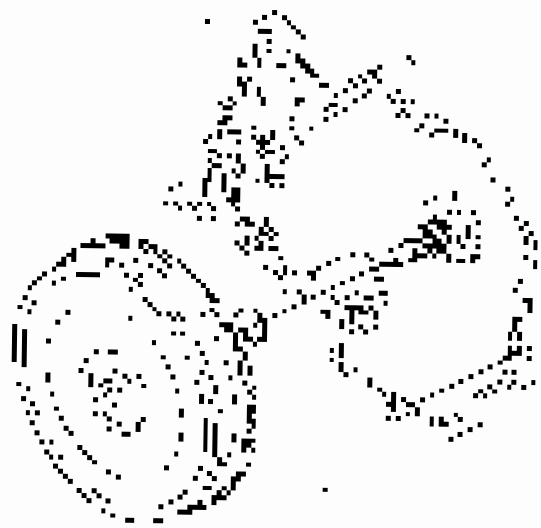
57. [illegible]

58. [illegible]

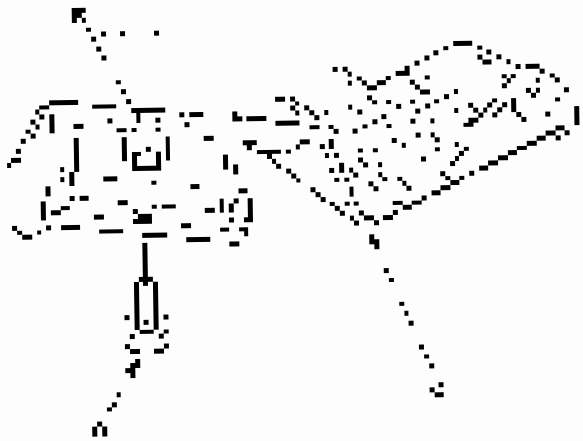
59. [illegible]

60. [illegible]

61. [illegible]



Transmission Removal (cont'd)



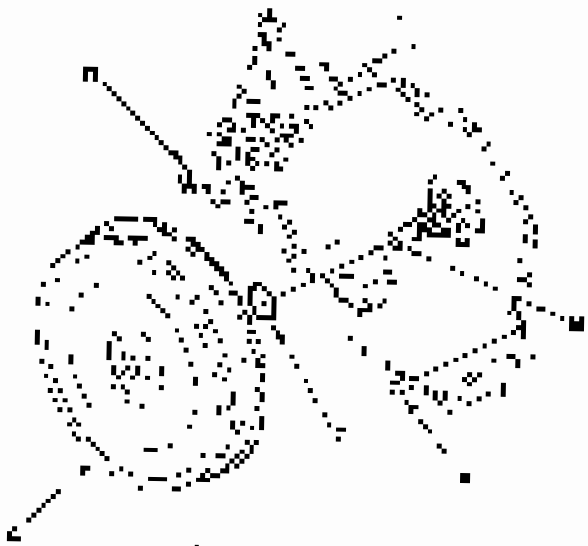
Drive Plate Removal and Installation

Transmission Installation

[illegible]

1. [illegible]

2. [illegible]



3. [illegible]

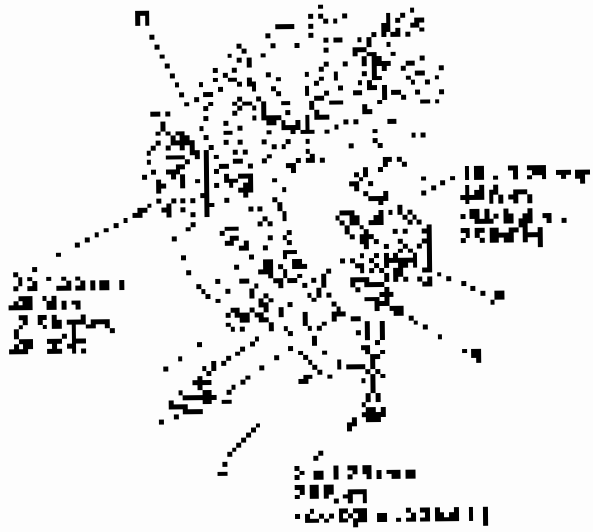
4. [illegible]

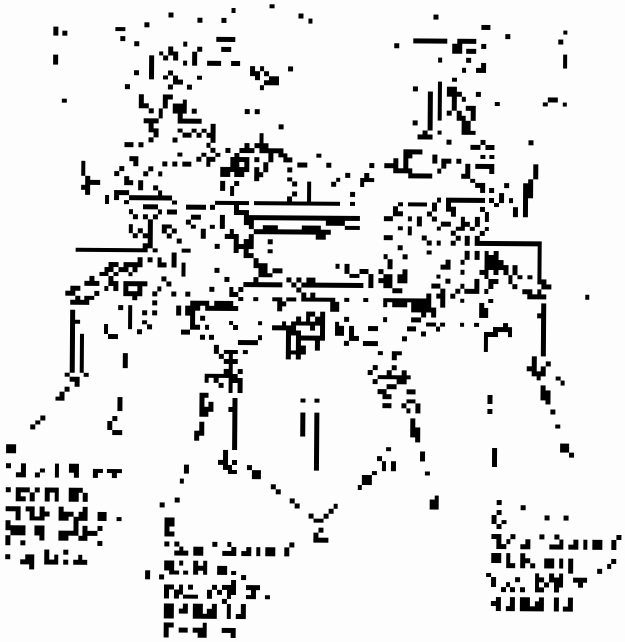
5. [illegible]

6. [illegible]

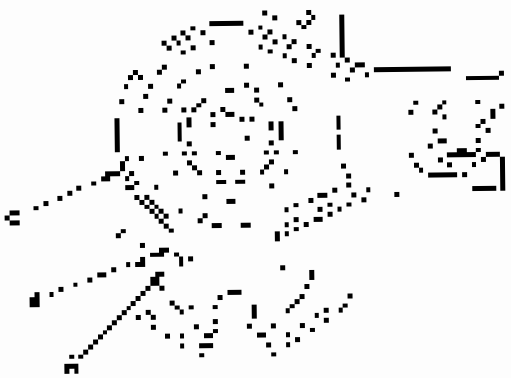
7. [illegible]

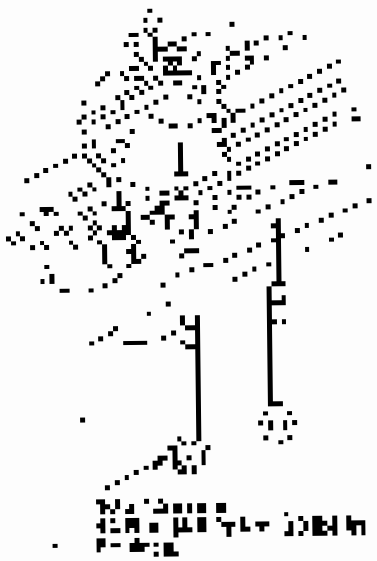
Transmission Installation (cont'd)





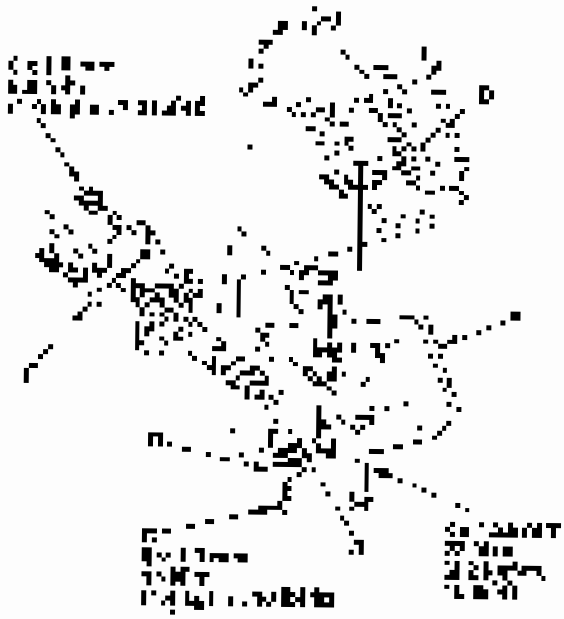
Transmission Installation (cont'd)





25. [illegible]

26. [illegible]

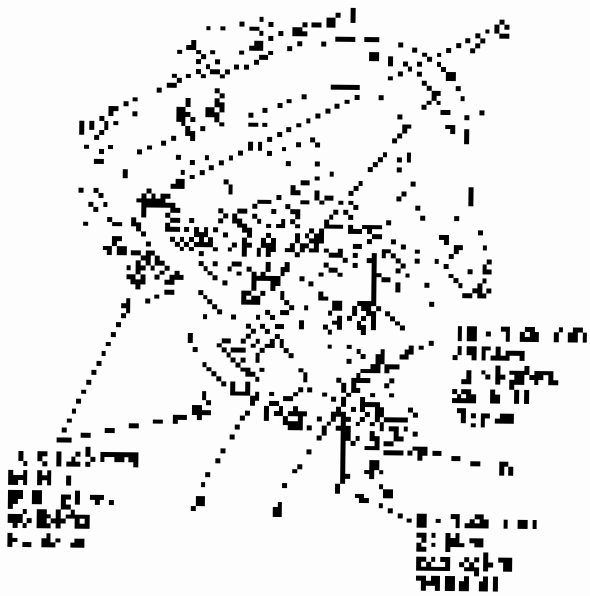


27. [illegible]

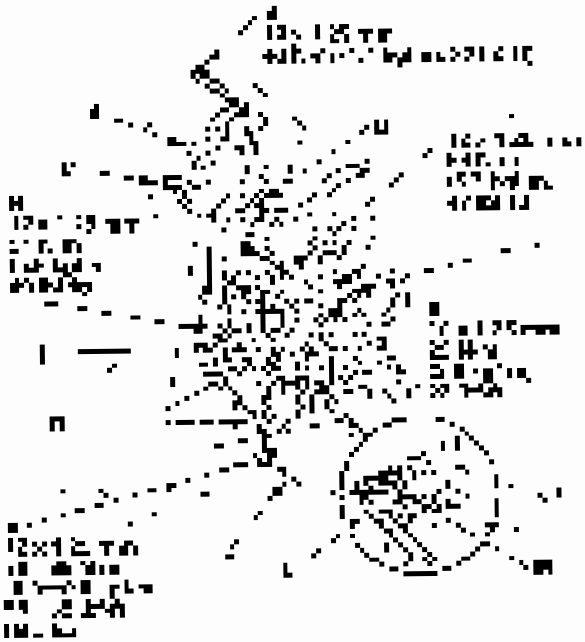
28. [illegible]

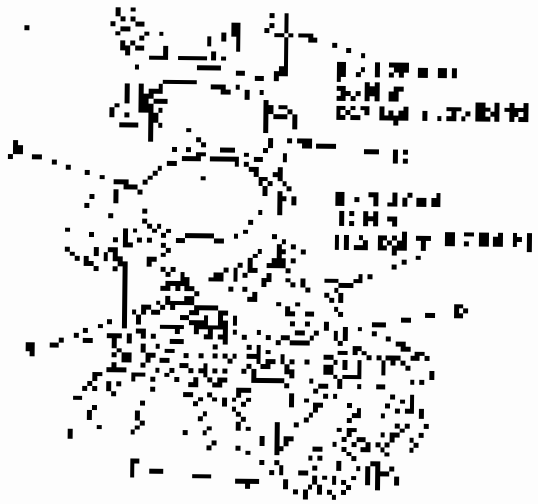
29. [illegible]

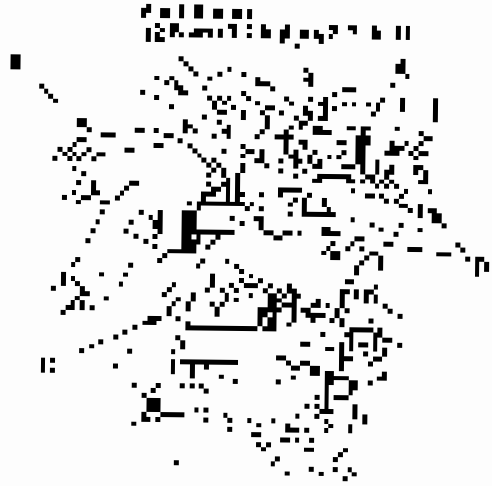
30. [illegible]

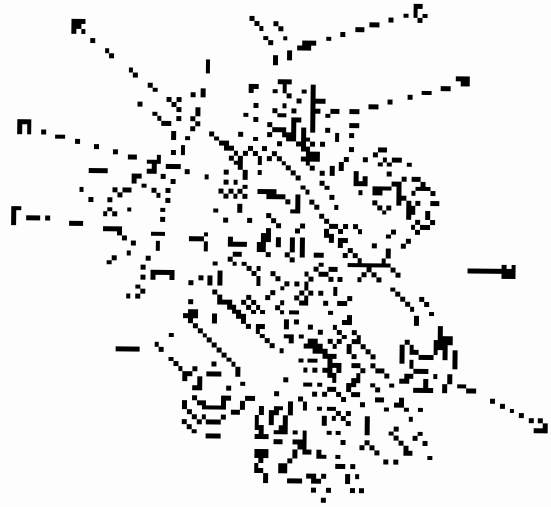


Transmission Installation (cont'd)

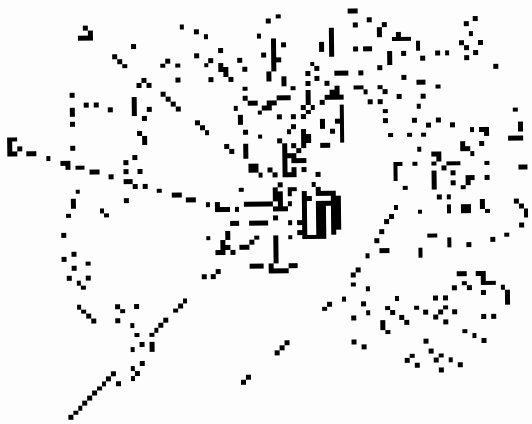


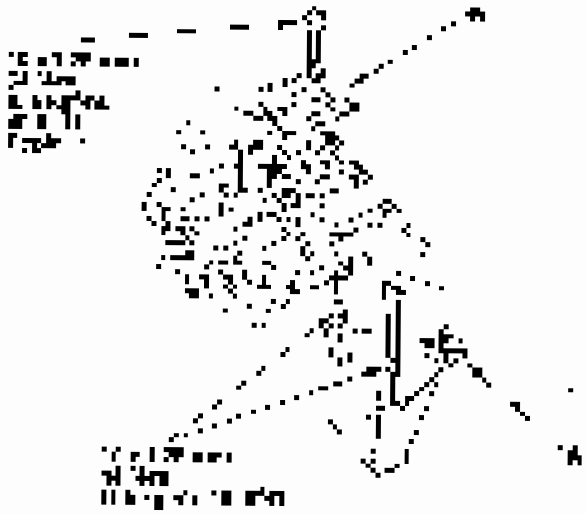


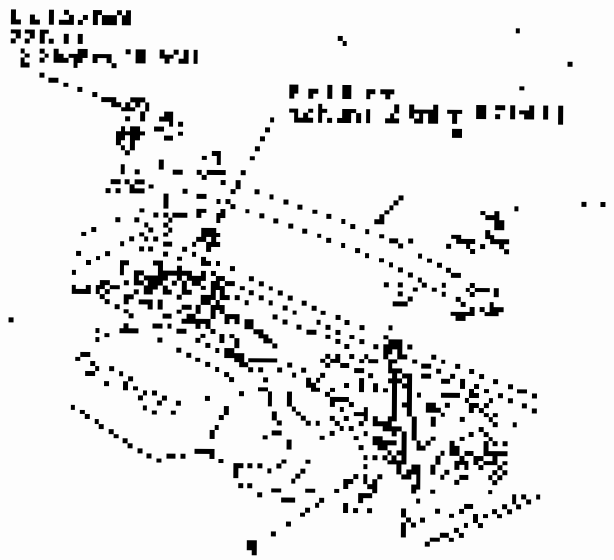




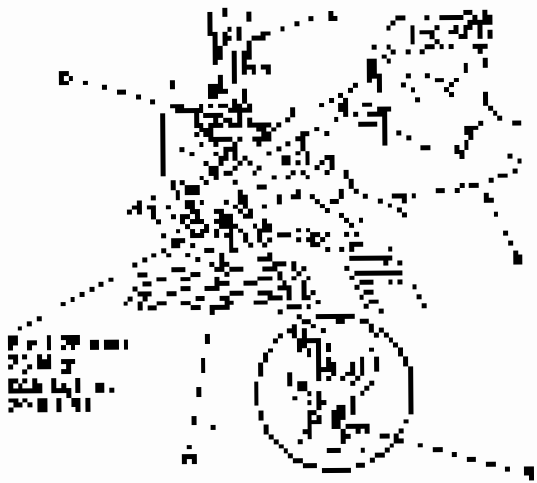
Transmission Installation (cont'd)

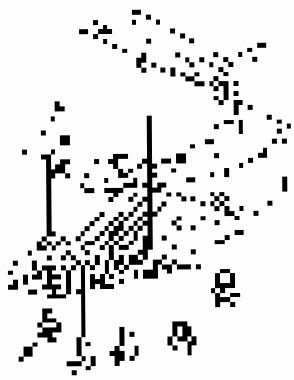






Transmission Installation (cont'd)





Shift Lever Removal

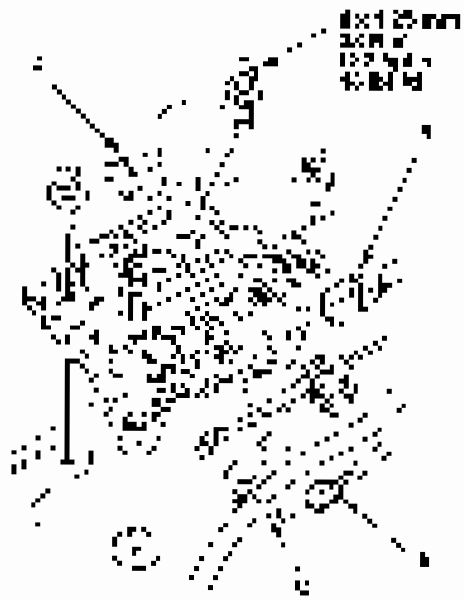
1. [illegible]
2. Shift the transmission into the "P" position.
3. Remove the console box from the floor.

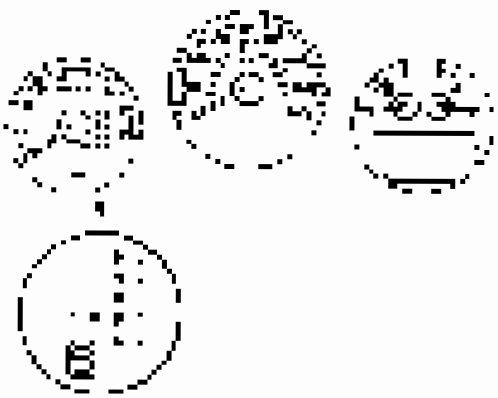
4. [illegible]

5. Disconnect the shift lock solenoid connector (A) and the park/neutral position switch connector (B).

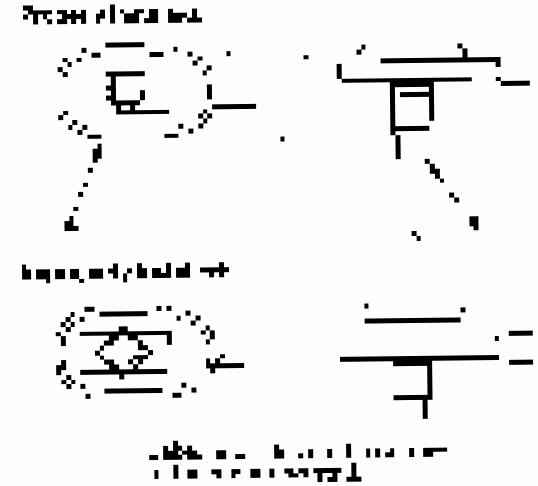
6. Remove the shift lever assembly (C).
7. Remove the shift lever assembly.

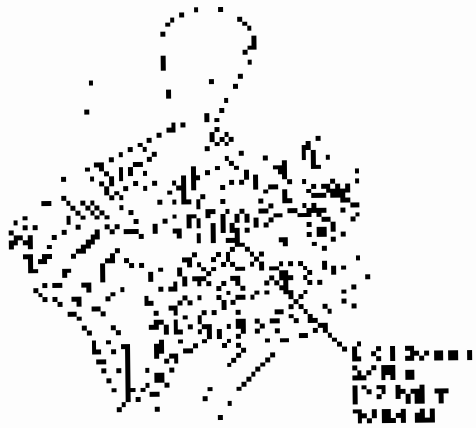
Shift Lever Installation



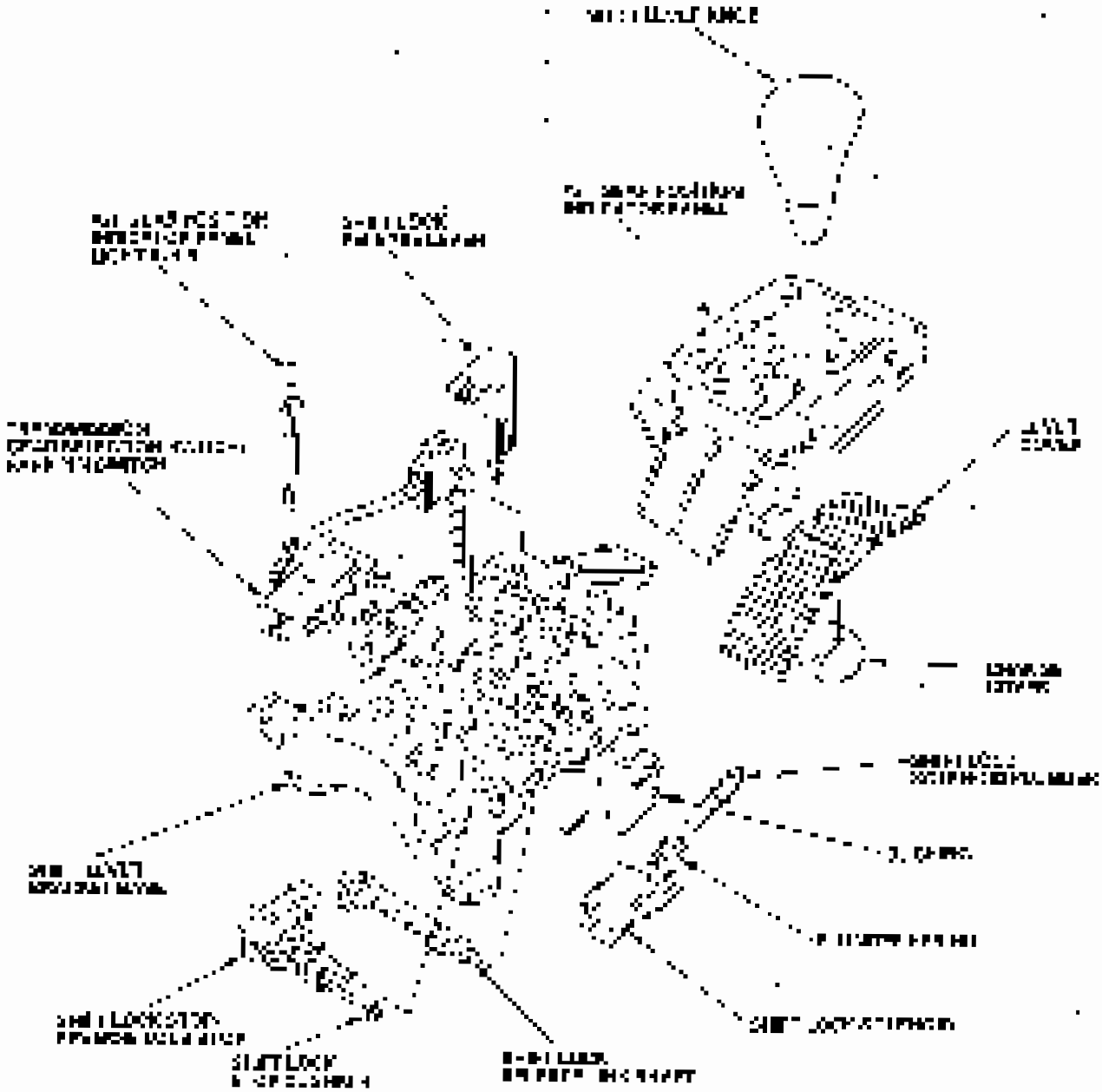


Shift Lever Installation (cont'd)





Shift Lever Disassembly and Reassembly



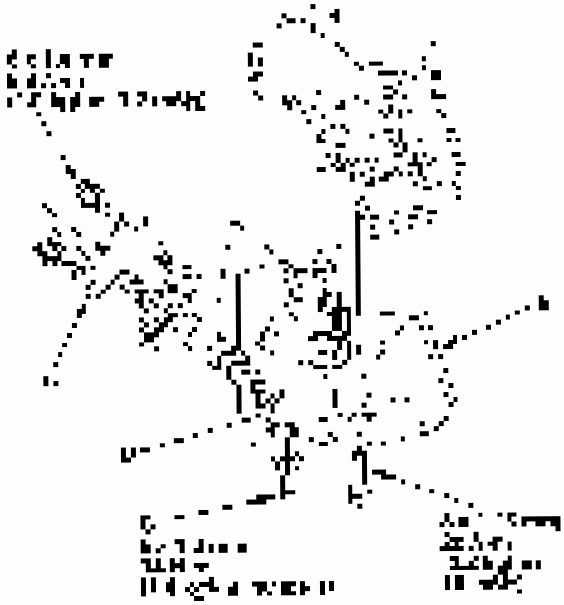
Shift Cable Replacement

1. [illegible]
2. [illegible]
3. [illegible]

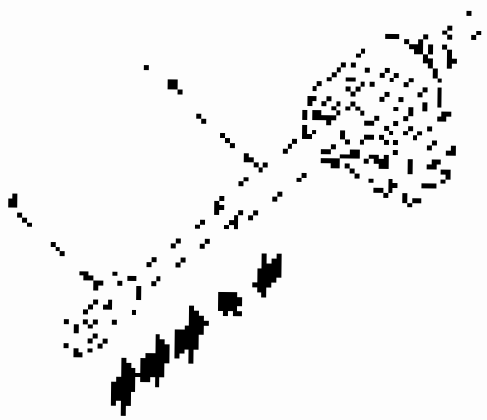
4. [illegible]

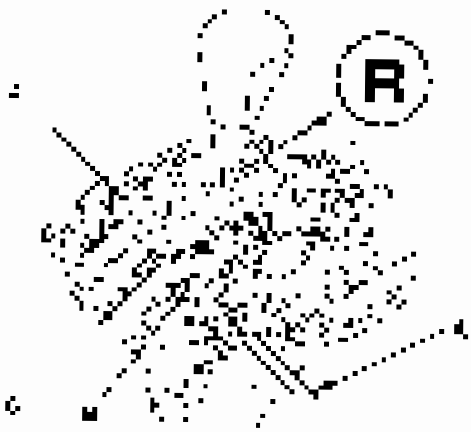
5. [illegible]

6. [illegible]

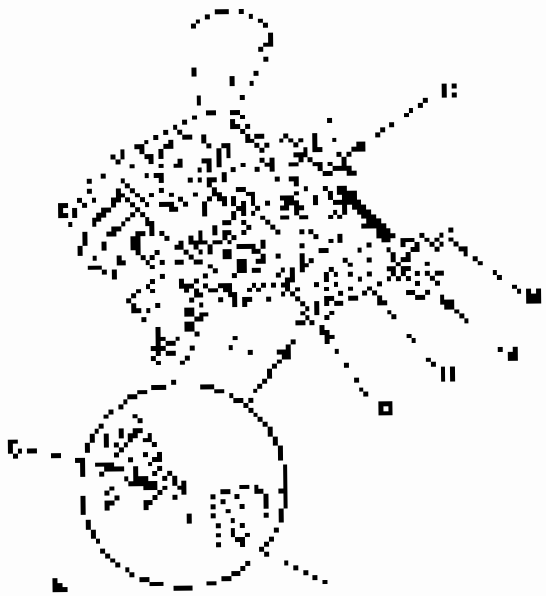


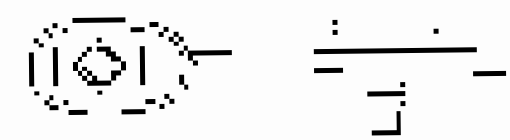
7. [illegible]




R

Shift Cable Replacement (cont'd)





Shift Cable Adjustment

1. [illegible]
2. Shift the gear selector lever to the [illegible] position.
3. Remove the [illegible] shift cable end.

4. [illegible] shift cable [illegible] and the transfer gear selector lever [illegible] Make sure that the shift cable end [illegible] smoothly without applying any force. If not, [illegible]

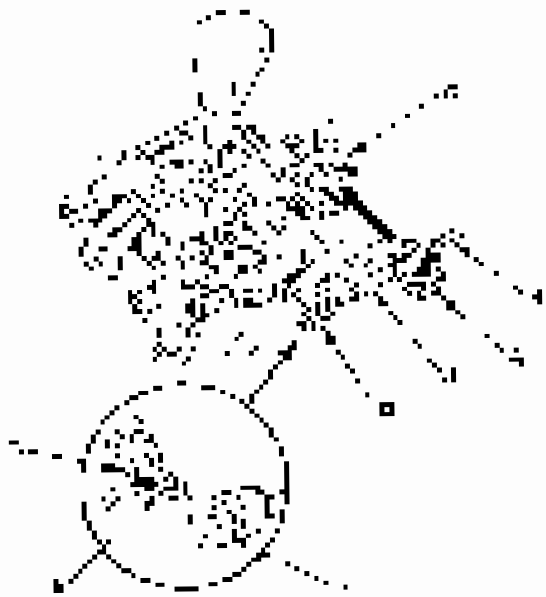
5. [illegible] shift cable end [illegible] shift cable guide [illegible] position.

6. [illegible] shift cable end [illegible] transfer gear selector lever [illegible] position.
7. [illegible]
8. [illegible] Make sure that the [illegible] shift cable end [illegible] smoothly without applying any force. If not, [illegible] Then check the shift cable end [illegible] for smooth movement.

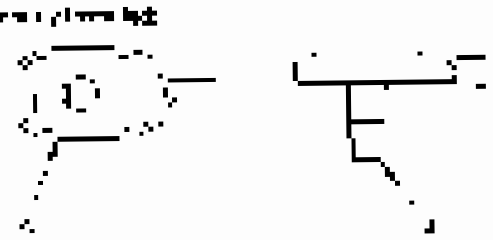
[illegible]

Shift Cable Adjustment (cont'd)

4. [illegible]



11. [illegible]



[illegible]

17. [illegible]

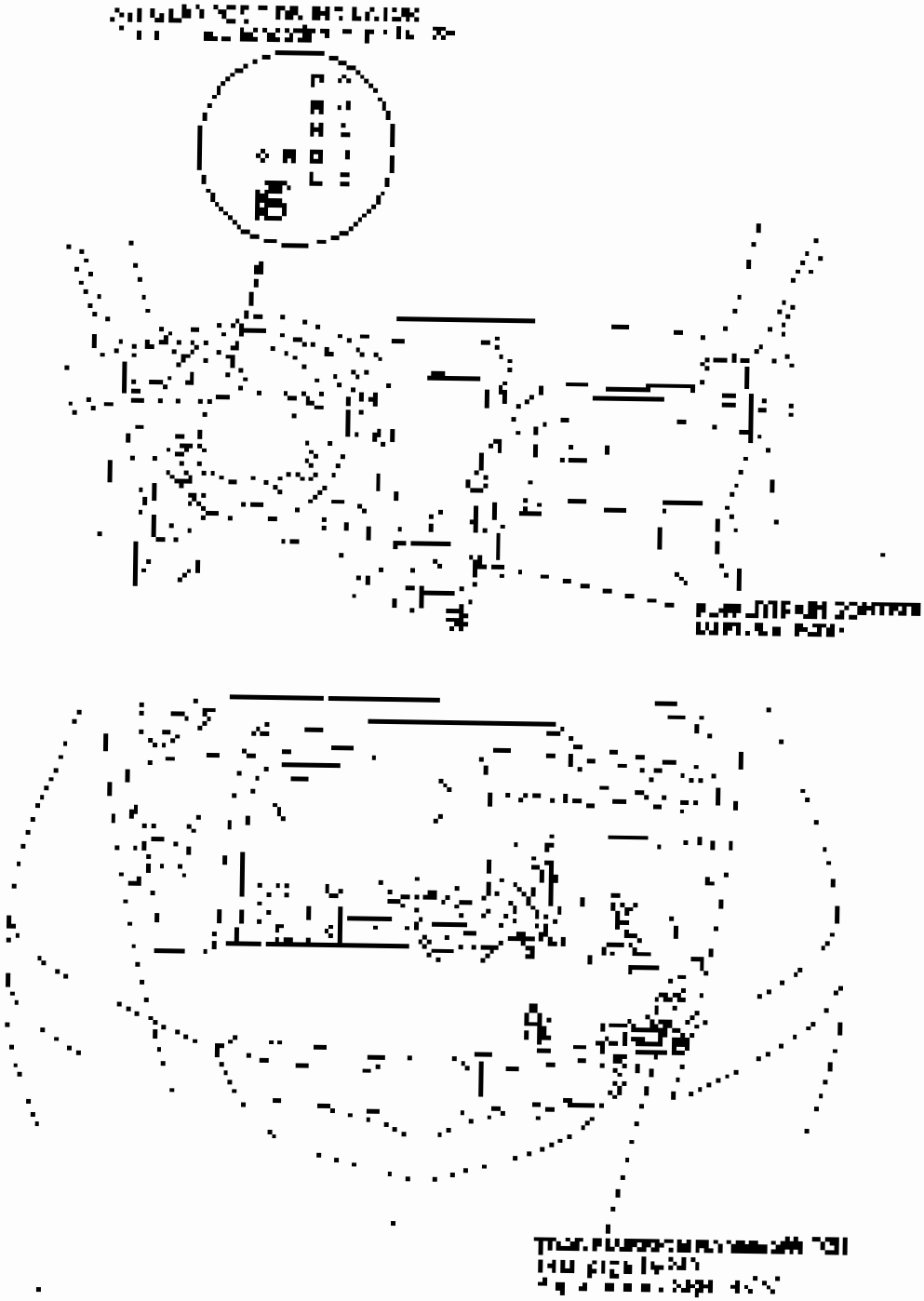
[illegible]

18. [illegible]

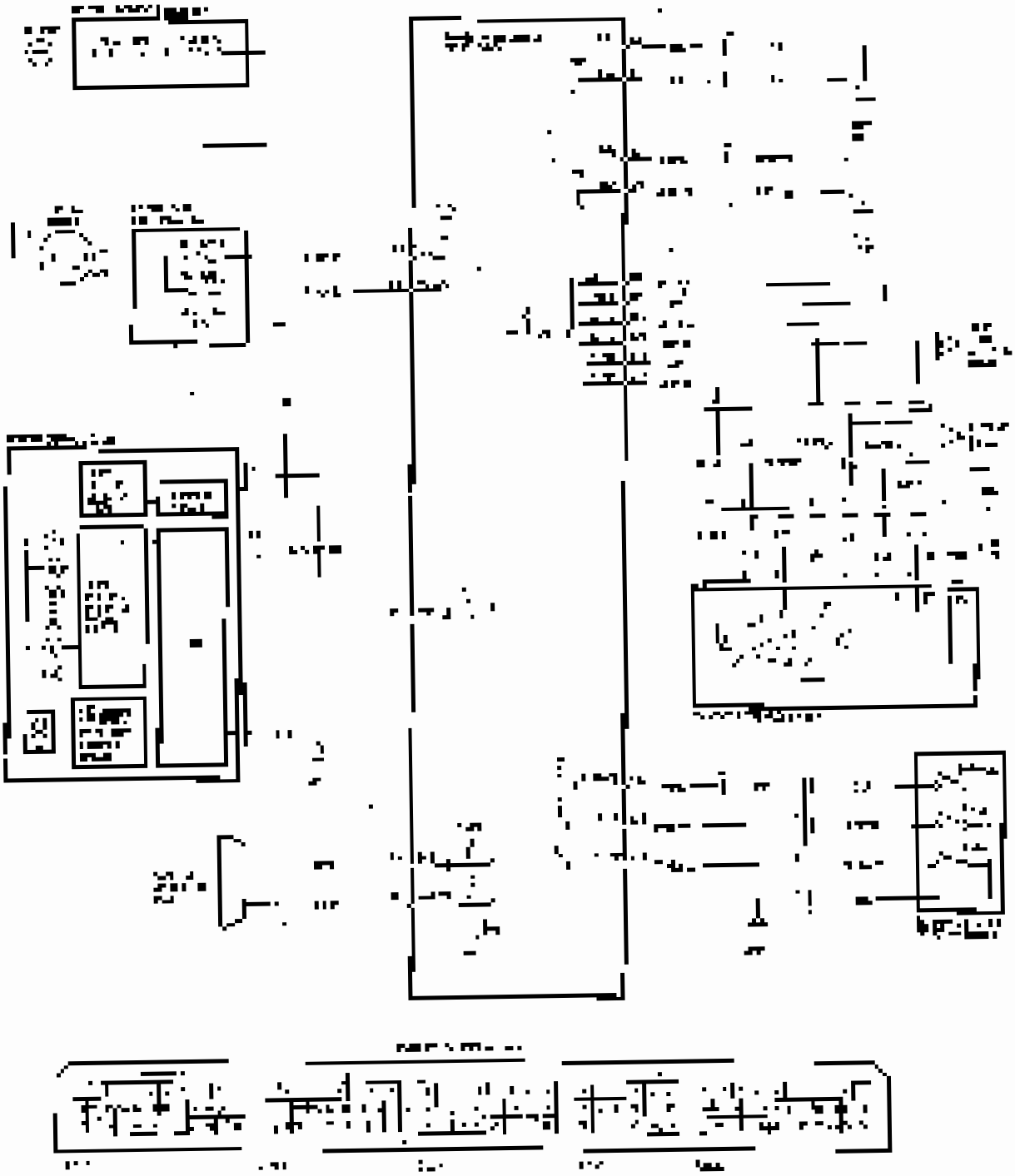
19. [illegible]

20. [illegible]

Component Location Index



Circuit Diagram



A/T Gear Position Indicator Circuit Troubleshooting

Symptom: A/T gear position indicator does not indicate, or shift lever position and indicator does not align, or indicator does not illuminate on engine start. DTC P1705 may be indicated.

1. Check for any other DTCs that may be stored in the PCM. Refer to the applicable table in the A/T Diagnostic Trouble Code (DTC) Table.

Is the indicated DTC P1705?

YES - Go to step 2.

NO - Refer to the DTC table that applies to the DTC that is indicated. Follow the diagnostic procedure in the applicable table.

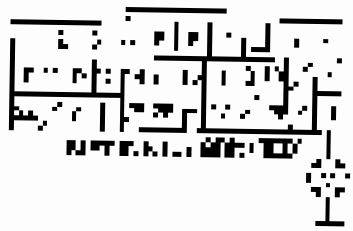
2. Remove the instrument panel. Visually check the connectors at the PCM.

Is there a problem?

YES - Repair as necessary.

NO - Go to step 3.

3. Measure the voltage between PCM connector terminal A31 and body ground.



Is the voltage more than 10 V?

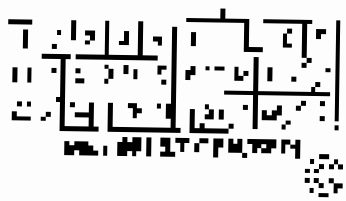
YES - If the vehicle is equipped with a manual transaxle, go to step 4. If the vehicle is equipped with an automatic transaxle, go to step 5.

NO - Go to step 7.

4. Turn the ignition switch to the OFF position.

5. Disconnect the PCM connector C (31P).

6. Measure the resistance between PCM connector terminal C31 and body ground.



Is the resistance more than 10 MΩ?

YES - Replace the PCM. Refer to the PCM Replacement/Programming procedure.

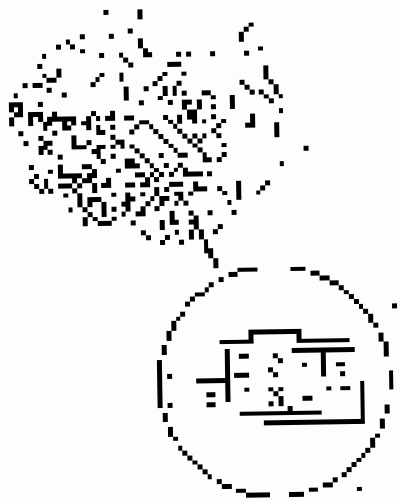
NO - Check for poor connections at the PCM connector C (31P). If the connections are OK, repair the open circuit between the PCM connector C (31P) terminal C31 and the ignition switch.

Transmission Range Switch Test

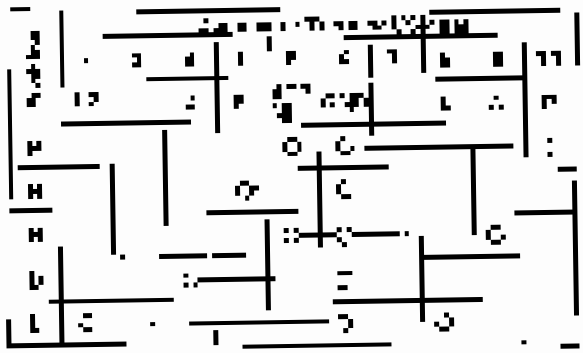
1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]



5. [illegible]

6. [illegible]

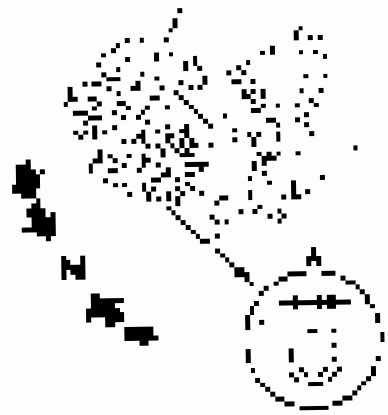
7. [illegible]

Transmission Range Switch Replacement

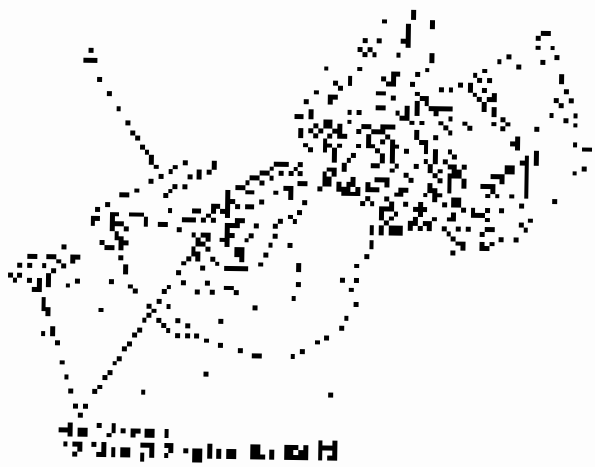
1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]

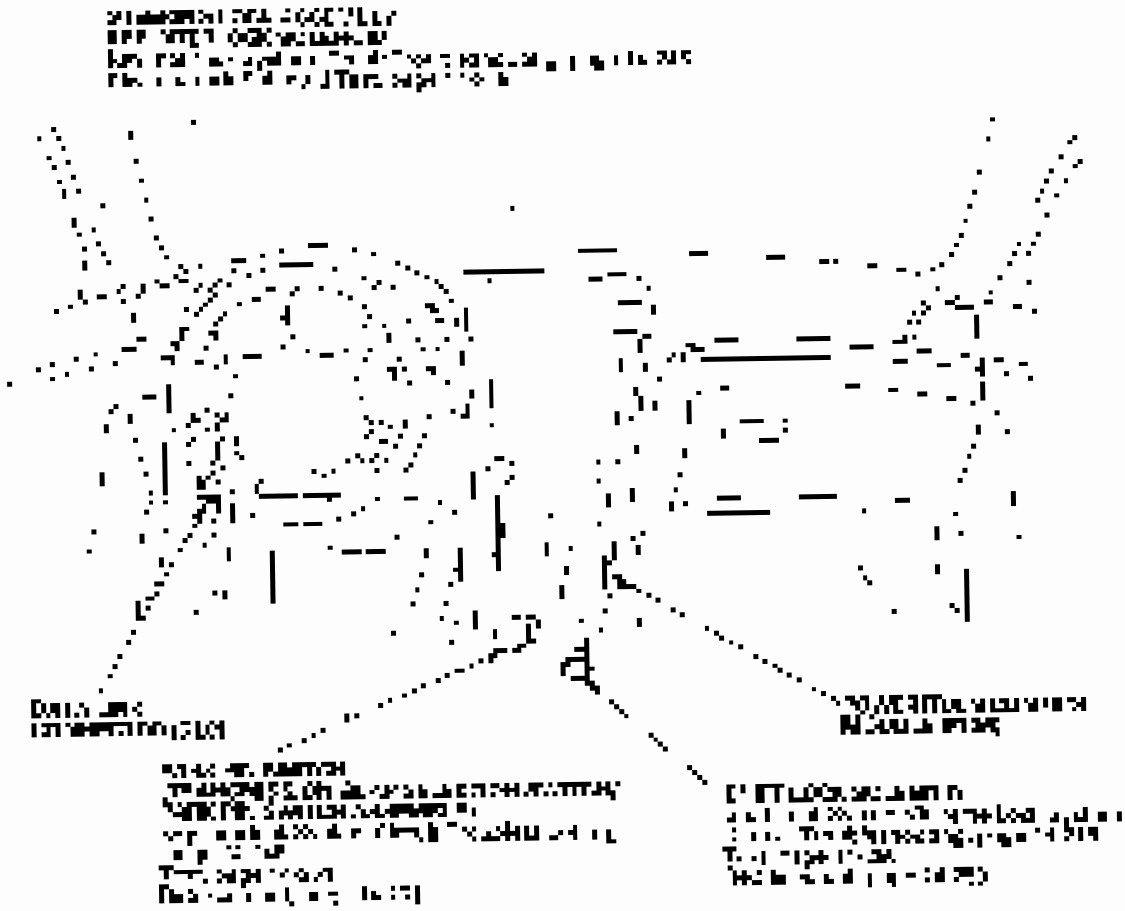
5. [illegible]
6. [illegible]



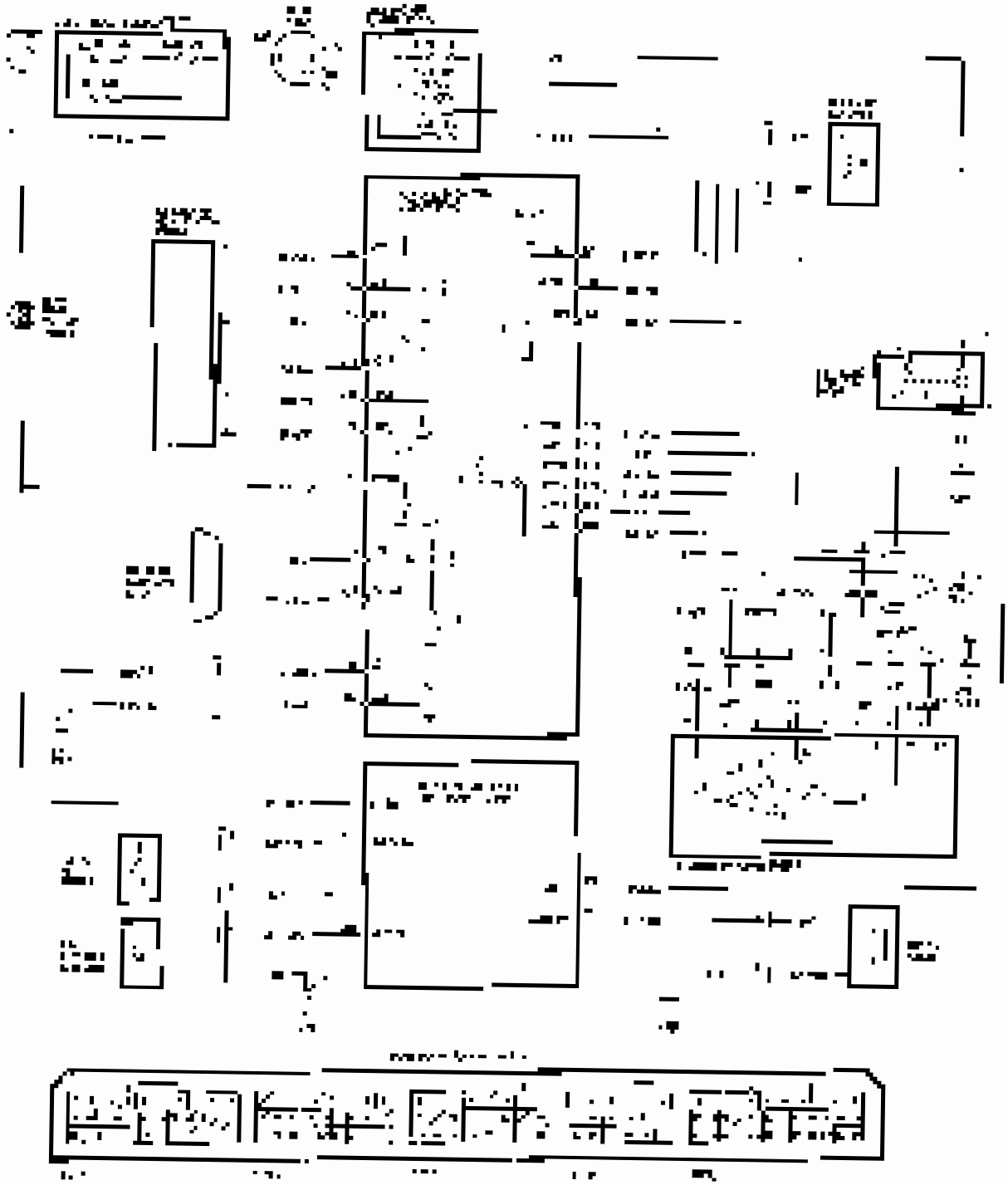
7. [illegible]



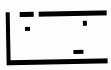
Component Location Index

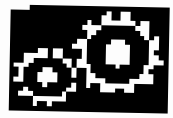


Circuit Diagram



Shift Lock System/Reverse Lock System Circuit Troubleshooting





Key Interlock System Circuit Troubleshooting

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

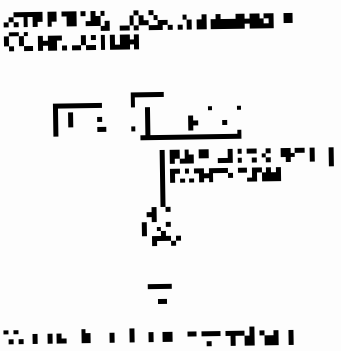
   [illegible]

   YES: [illegible]

   NO: [illegible]

4. [illegible]

5. [illegible]

   [illegible]

   [illegible]

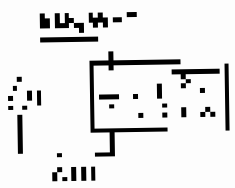
   NO: [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

   [illegible]

10. [illegible]

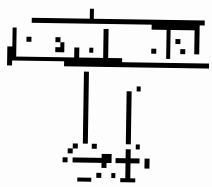
    YES: [illegible]

    NO: [illegible]

Key Interlock Solenoid Test

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

[illegible]



[illegible]

Shift Lock Solenoid Test

1. [illegible]

2. Select SHIFT LOCK ASSEMBLY in [illegible] MODE with [illegible].

3. Connect [illegible] between the Shift Lock Solenoid connector and harness side connector. Check that the [illegible] operates as follows: [illegible] CLEARANCE. When [illegible] between [illegible] and [illegible], the [illegible] SHIFT LOCK.

4. Check that the shift lock [illegible] when the [illegible] between [illegible] and [illegible] is disconnected.

5. If there is no [illegible] check the [illegible] perform [illegible] and then repeat [illegible] page 14-249.

Shift Lock Solenoid Replacement

1. Remove [illegible] (see page 20-27).

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

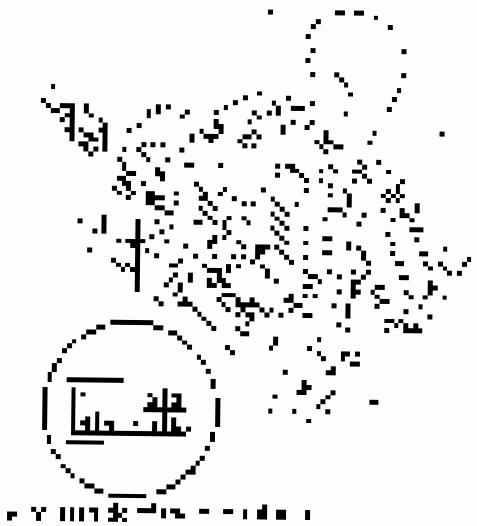
6. [illegible]

7. [illegible] (see page 20-27).

Park Pin Switch Test

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

Park Pin Switch Replacement

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

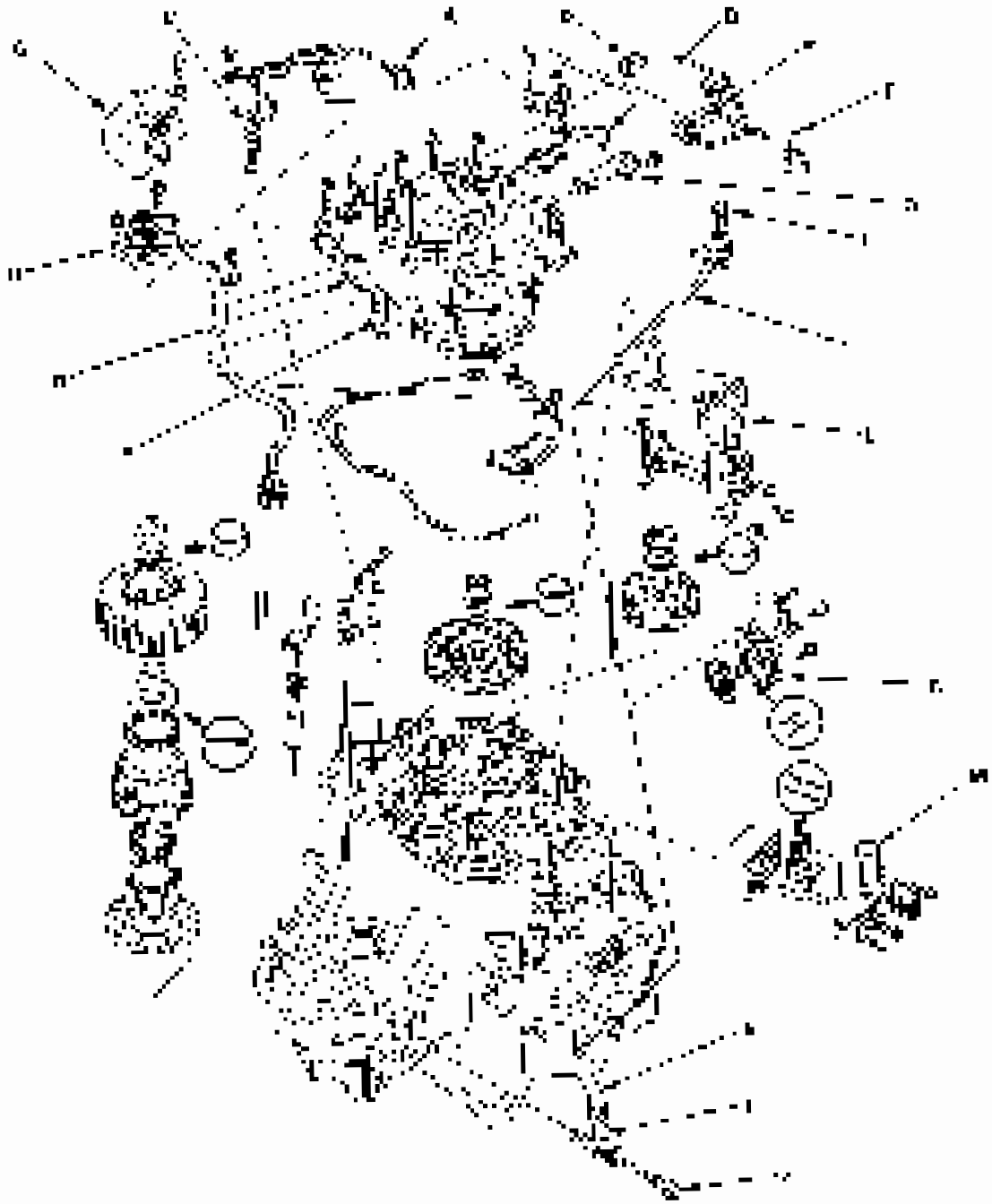
5. [illegible]

6. [illegible]

7. [illegible]

Transmission End Cover

End Cover, 3rd Gear, Idler Gear, and 3rd Clutch Removal



2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

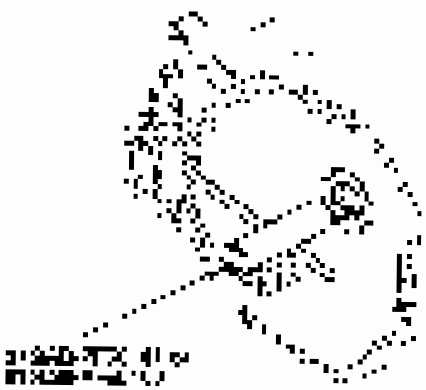
6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]



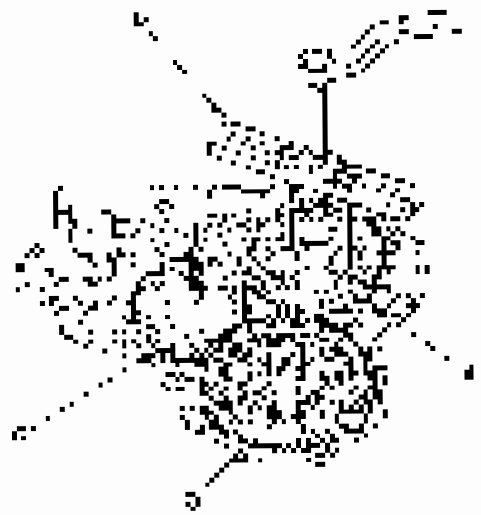
11. [illegible]

12. [illegible]

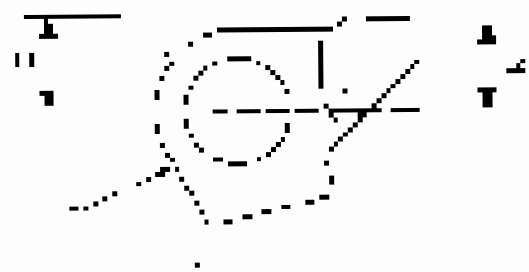
- [illegible]
- [illegible]
- [illegible]

13. [illegible]

End Cover, 3rd Gear, Idler Gear, and 3rd Clutch Removal (cont'd)



Park Lever Stop Inspection and Adjustment



PARK LEVER STOP

Mark	Part Number	L1	L2

Control Shaft Oil Seal Replacement

Special Tools Required

- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

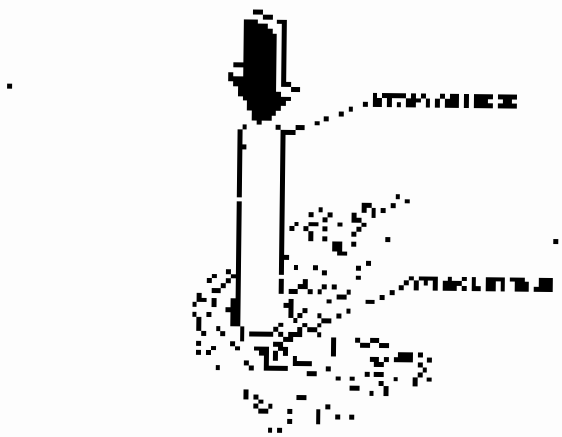
Control Shaft Bearing Replacement

Special Tools Required

- [illegible]
- [illegible]

1. [illegible]

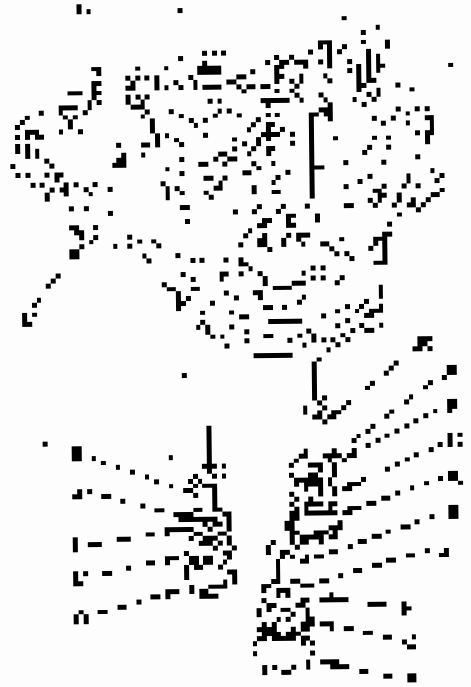
2. [illegible]



3. [illegible]

ATF Feed Pipe Replacement

1. [illegible]



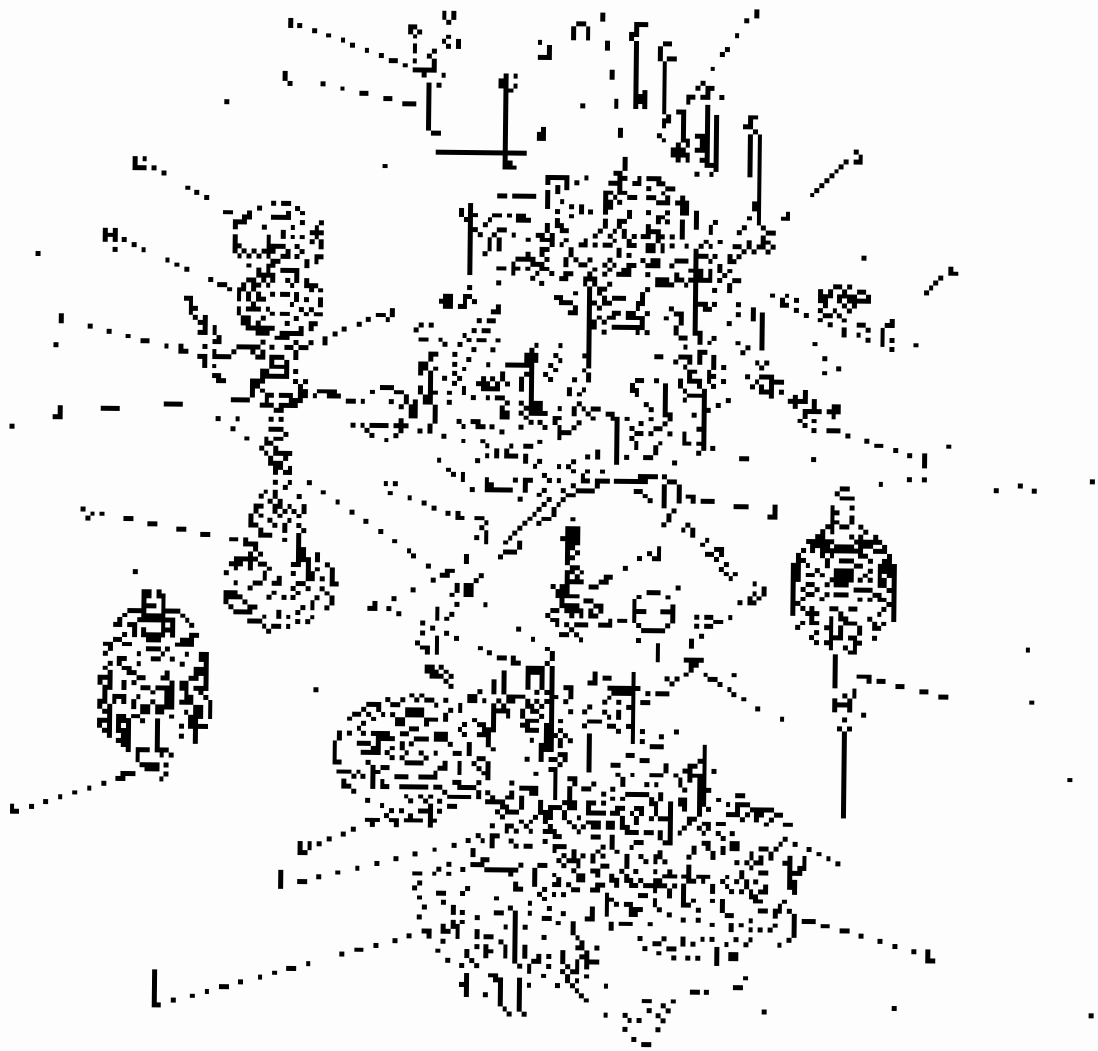
2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

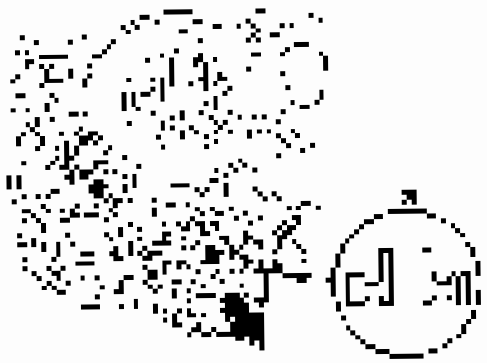
Housing and Shaft Assembly Removal



Housing and Shaft Assembly Removal (cont'd)

4. [illegible]

[illegible]



5. [illegible]

6. [illegible]

NOTE: [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

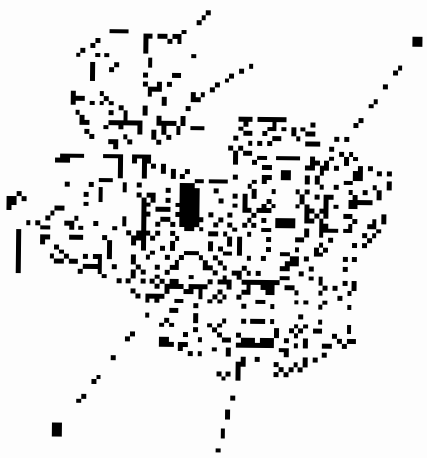
Bearing Removal and Installation

Special Tools Required
- [illegible]
- [illegible]
- [illegible]
- [illegible]

NOTE: Some [illegible]

To [illegible] and secondary shaft bearings (1) and secondary shaft bearings (2) from the transaxle housing, it is necessary to [illegible]

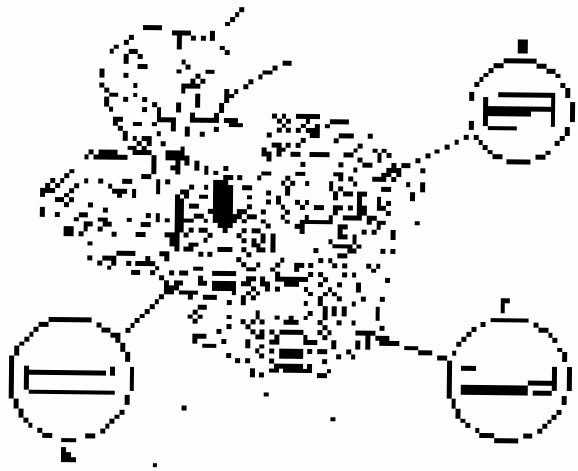
NOTE: [illegible]



3. Install the [illegible]

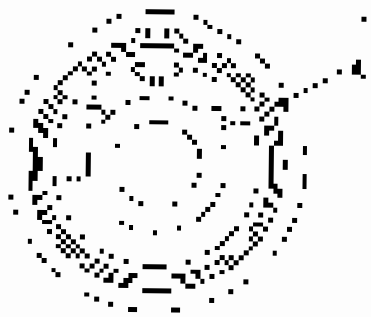
4. Using a [illegible]

4. Using a [illegible] and the bearing [illegible] the bearing [illegible] around it.



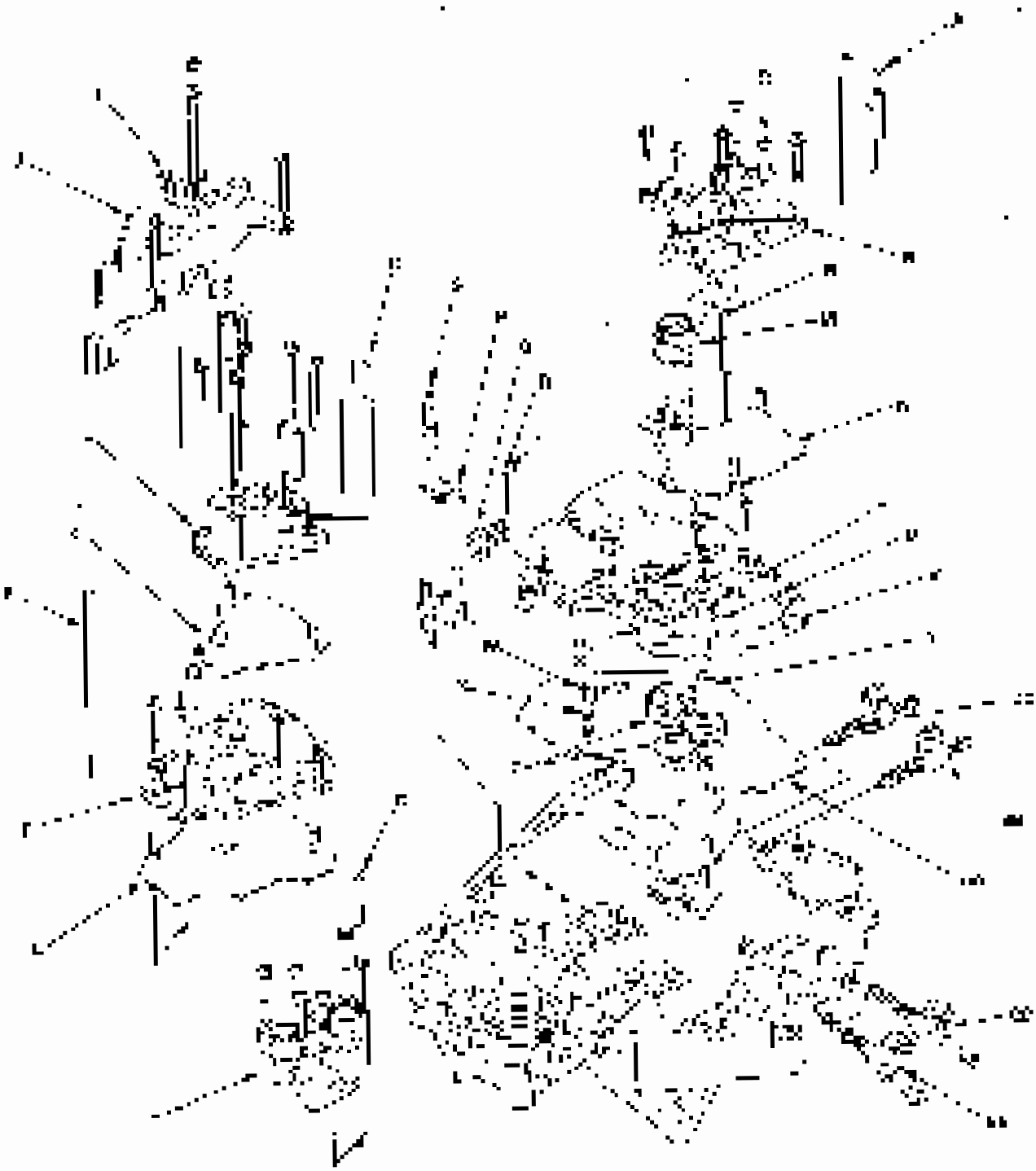
5. After installing the [illegible] bearings:

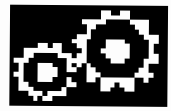
- The [illegible]
- The [illegible]



Valve Body and ATF Strainer Removal

1. Remove the [illegible] body (Reference [illegible] for the procedure).





Valve Body Repair

NOTE: If the valve body assembly is suspected of being the cause of a transmission problem, it is not necessary to disassemble the valve body. Instead, perform the following procedure:

1. Clean the exterior of the valve body with solvent and dry with compressed air.
2. Carefully inspect the valve body for cracks, damaged valves, damaged bores, or any other damage that could cause a transmission problem. Replace the valve body if any damage is found.
3. Inspect the valve springs and compare them to the specifications in the 4R70W Specifications section. Replace any springs that are not within specifications.
4. Install the valve body in the transmission. Refer to the 4R70W Removal and Installation procedure in this section. Tighten the valve body bolts to specification in the proper sequence.

NOTE: The valve body bolts are different lengths. Be sure to install the bolts in the proper locations.

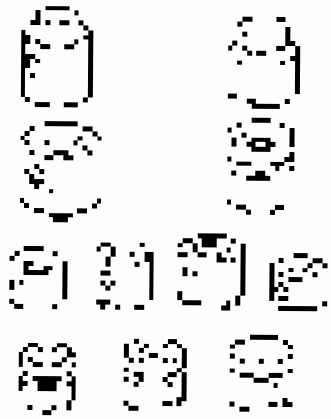
5. Remove the transmission oil pan. Thoroughly clean the oil pan and magnet. Install the oil pan and gasket. Refer to the 4R70W Removal and Installation procedure in this section. Tighten the oil pan bolts to specification.
6. Fill the transmission with ATF. After the engine has been started, the transmission should be checked for proper fluid level. Perform the transmission fluid level check procedure. Refer to the 4R70W Fluid Level Check procedure in this section.

7. Perform the transmission Quick Learn procedure. Refer to the 4R70W Quick Learn procedure in this section. Special parts ATF must be used for the Quick Learn procedure. Using ATF other than the specified ATF may cause transmission damage.

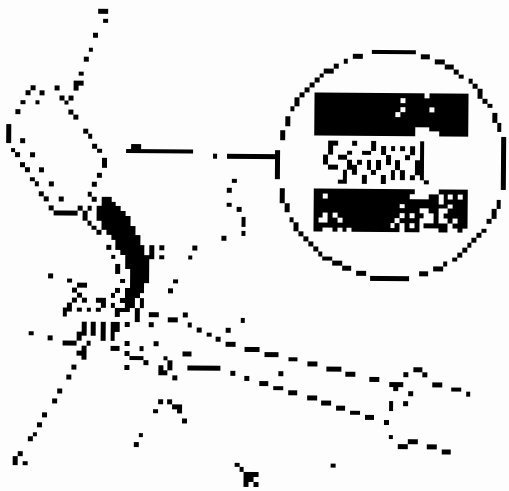
Valve Body Valve Installation

(cont'd from 4AT automatic transaxle)

1. Install the [illegible] valve body [illegible] page 14-264) [illegible] page 14-265), [illegible] page 14-264), [illegible] page 14-264). [illegible] Illustration shows [illegible] shown. Be sure all [illegible] valve body.



2. Install the [illegible] spring (A) in the [illegible] (B). Then [illegible] (C).



Main Valve Body Disassembly, Inspection, and Reassembly

1. [illegible]

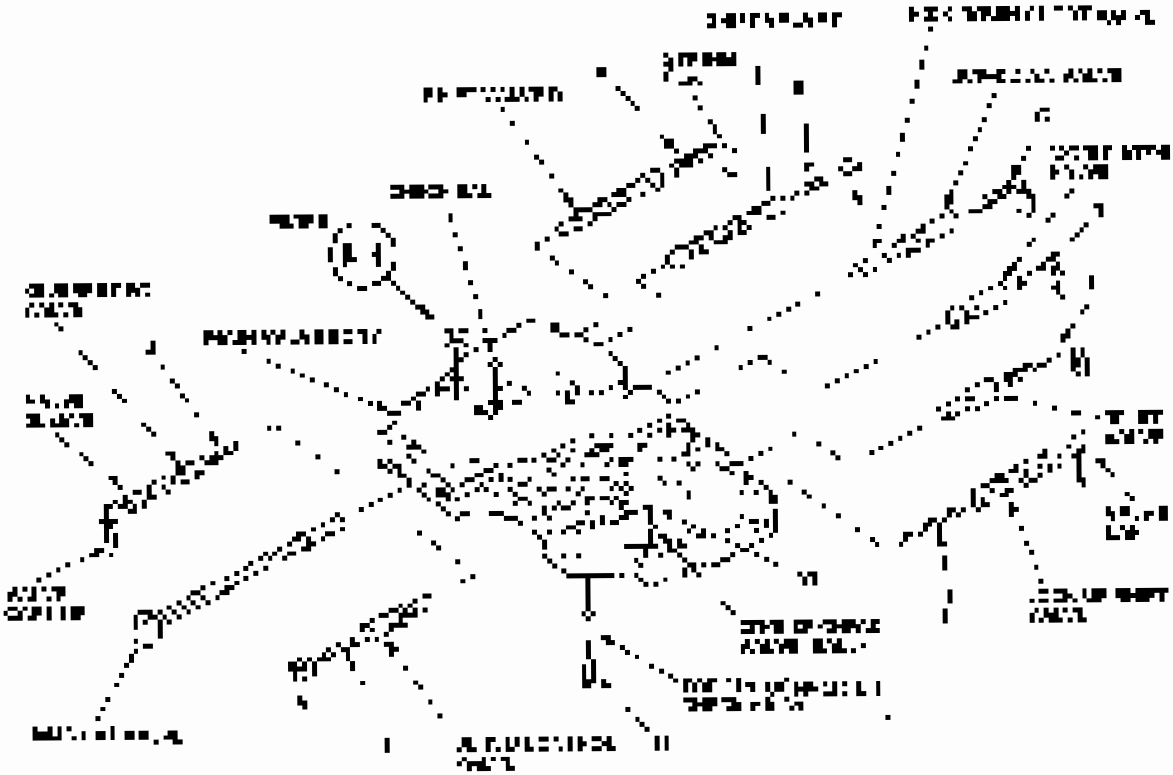
2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

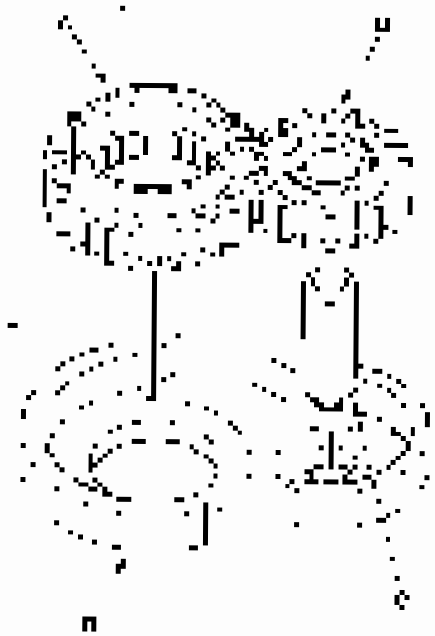
6. [illegible]



Spring	Wire Dia.	Standard Value (Used limit value) Outer Dia.	Free Length	No. of Coils
A	[illegible]	[illegible]	[illegible]	[illegible]
B	[illegible]	[illegible]	[illegible]	[illegible]
C	[illegible]	[illegible]	[illegible]	[illegible]
D	[illegible]	[illegible]	[illegible]	[illegible]
E	[illegible]	[illegible]	[illegible]	[illegible]
F	[illegible]	[illegible]	[illegible]	[illegible]
G	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
I	[illegible]	[illegible]	[illegible]	[illegible]

ATF Pump Inspection

1. [illegible]



2. [illegible]

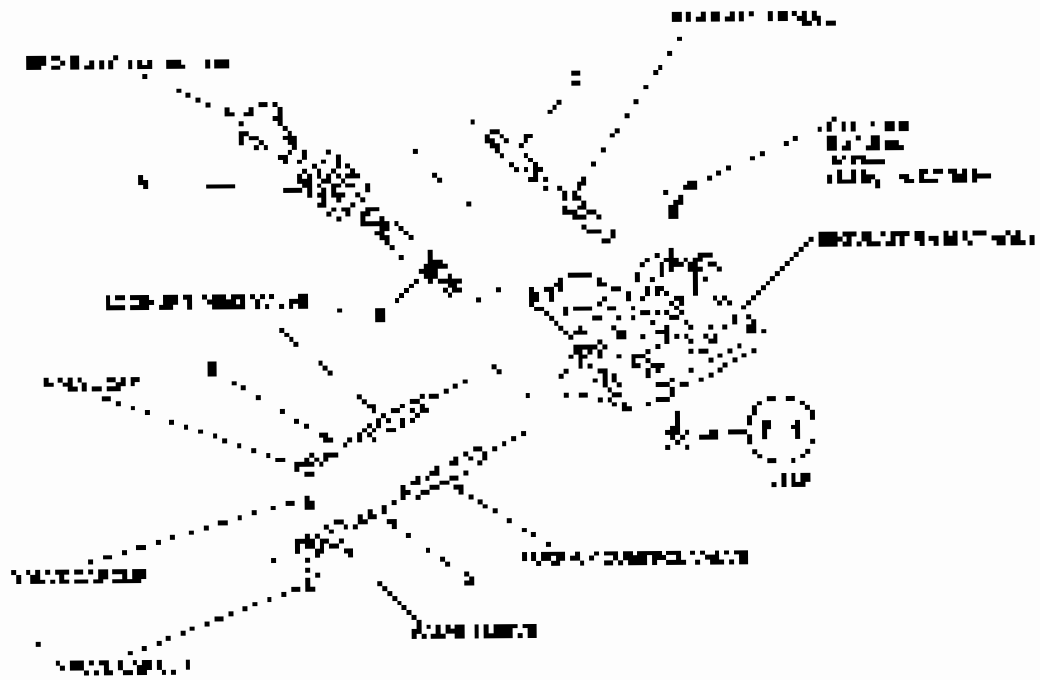
ATF Pump Gears Side Radial Clearance
Standard Value:
ATF Pump Driven Gear
[illegible]
ATF Pump Drive Gear
[illegible]

3. [illegible]

ATF Pump Drive and Driven Gear Thrust Radial Clearance
Standard Value: [illegible]
Service Limit: [illegible]

Regulator Valve Body Disassembly, Inspection, and Reassembly

1. Clean the valve body assembly with solvent and dry with compressed air. Be careful not to damage the valve body gasket surfaces.
2. Inspect the valve body for wear and damage.
3. Remove the accumulator piston cover, then remove the accumulator pistons and springs. (See page 14-268)
4. Remove the solenoid body and the solenoid wire harness as an assembly. Be careful not to damage the wires.
5. Remove the regulator valve spring retainer plate and the spring. The regulator valve may spring out. Check the spring for wear and damage. Check the valve for free movement in the valve body.
6. Remove the pressure relief valve and the spring. Check the valve for free movement in the valve body.
7. Remove the pressure relief valve spring.
8. Remove the screws and the regulator valve body cover. Remove the valve body cover and the gasket. Check the valve body for wear and damage. Check the valve for free movement in the valve body.
9. Install the new gasket and the valve body cover.



Springs

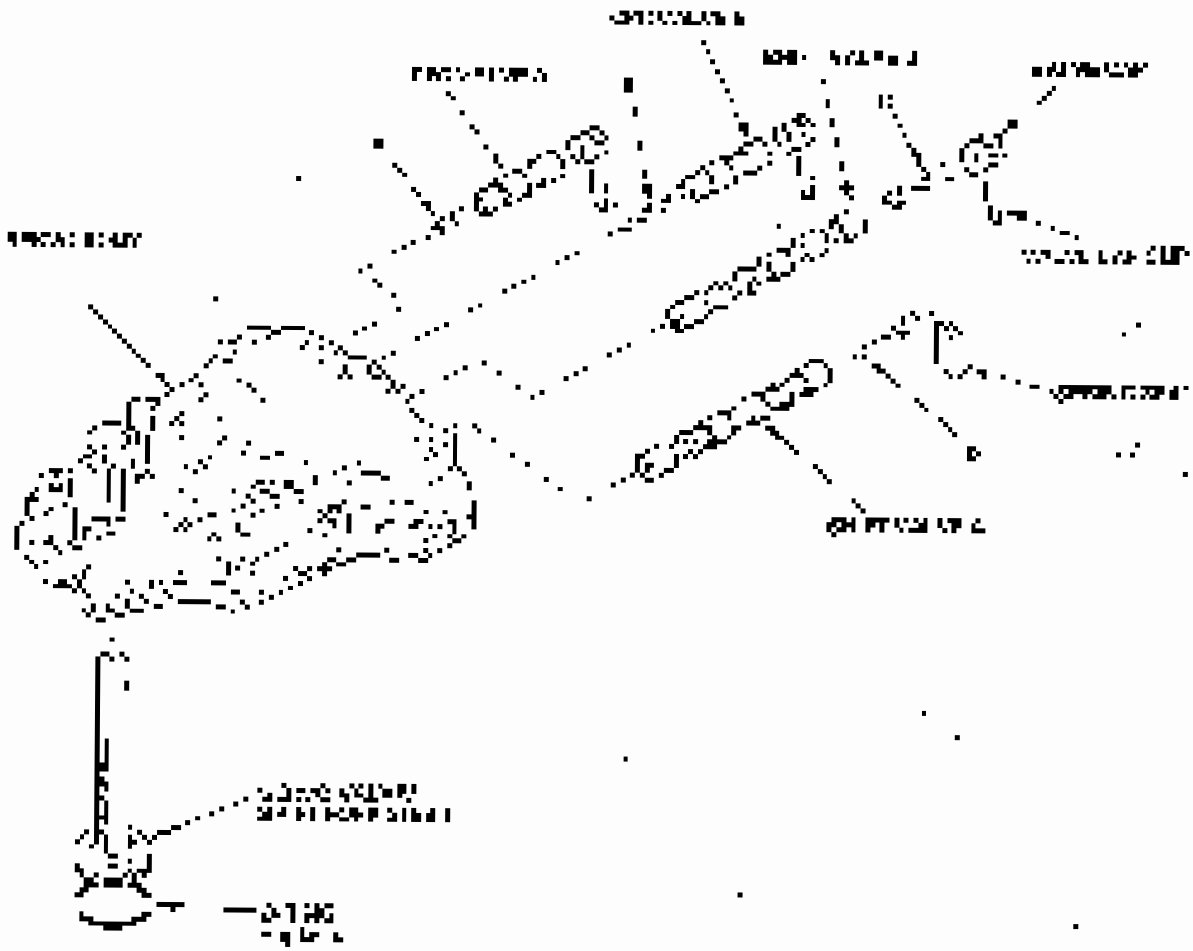
		Standard Free Length mm (in)			Wire Diameter mm (in)
		Wire Dia.	O.D.	Free Length	
A	Accumulator spring	[illegible]	25.4 (1.00)	[illegible]	1.9
B	Regulator valve spring (Inner)	[illegible]	[illegible]	[illegible]	1.8
C	Regulator valve spring (Outer)	1.8 (0.07)	9.4 (0.37)	45.1 (1.78)	1.8
D	Pressure relief valve spring	0.7 (0.03)	9.4 (0.37)	47.1 (1.85)	0.7
E	Solenoid body spring	0.35 (0.01)	6.1 (0.24)	20.8 (0.82)	0.4

Servo Body Disassembly, Inspection, and Reassembly

1. Clean all parts thoroughly in [illegible] and blow dry with compressed air. Inspect all parts for wear or damage.

2. [illegible] Servo Body Disassembly and Inspection Precautions [illegible] on page 14-232.

3. Disassemble the servo body assembly.



Ref. No.	Description	Wire Dia.	Outside Diameter	Free Length	No. of Coils
4	EPC Valve Spring	0.7 (0.028)	6.7 (0.264)	[illegible]	7.3
5	EPC Valve Spring	0.7 (0.028)	6.7 (0.264)	[illegible]	7.3
7	Shift Valve A Spring	1.4 (0.055)	6.3 (0.248)	[illegible]	5.7
11	Shift Valve B Spring	1.0 (0.039)	6.3 (0.248)	[illegible]	9.1

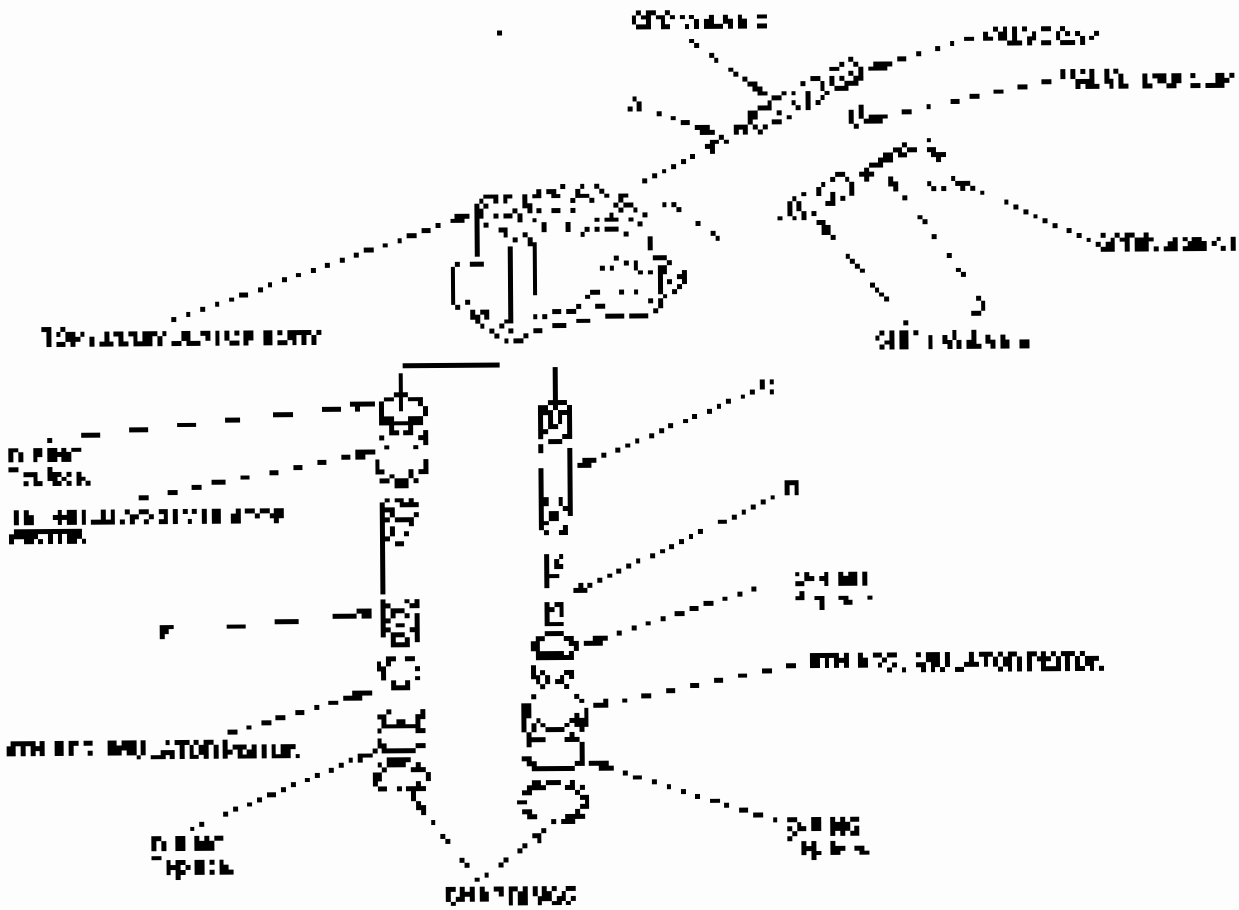
Top Accumulator Body Disassembly, Inspection, and Reassembly

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

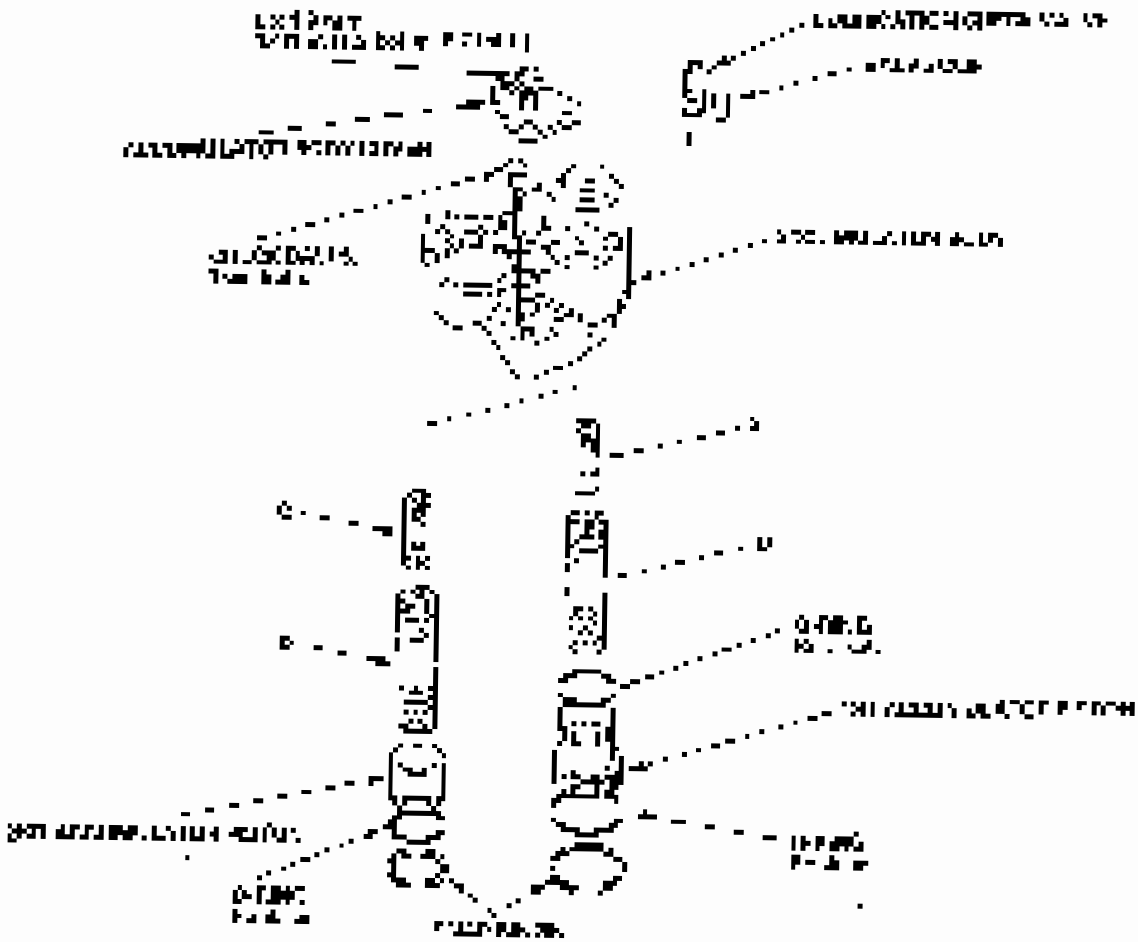


SPRING SPECIFICATIONS

		Standard				
		Wire Dia.	OD	Free Length	No. of Coils
A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Accumulator Body Disassembly, Inspection, and Reassembly

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]



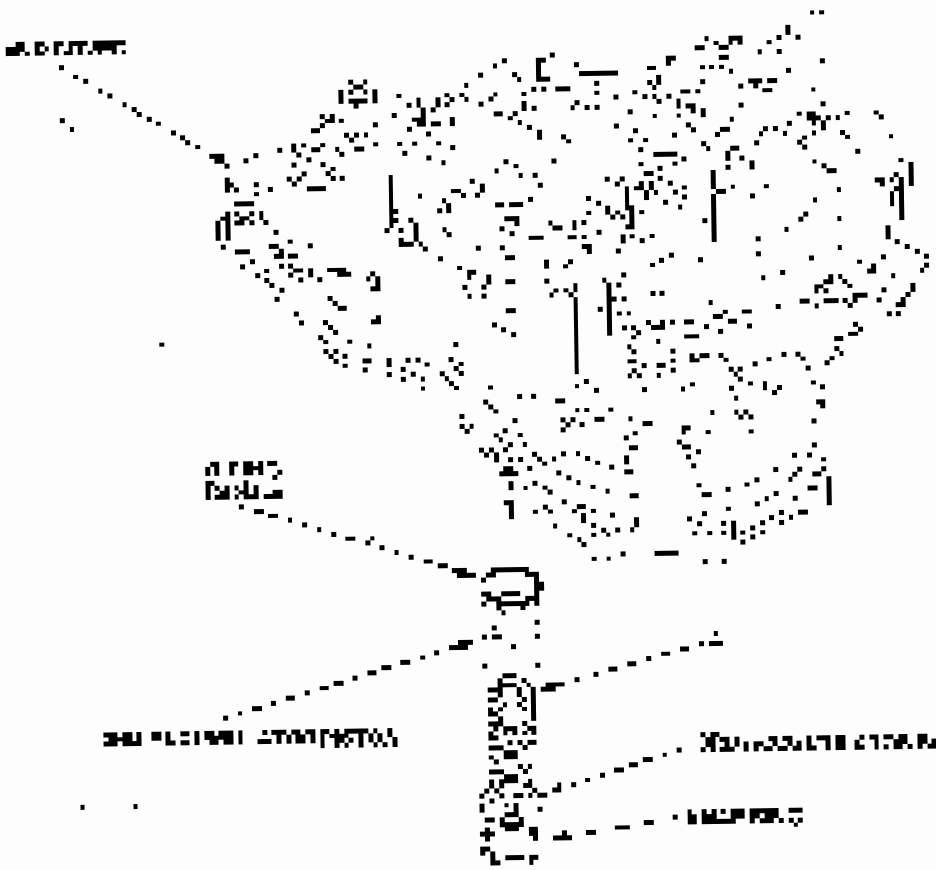
SPRING SPECIFICATIONS

	Springs	Standard (New)			
		Free length	O.D.	Free strength	No. of Coils
A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
D	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

and Accumulator and End Cover Disassembly, Inspection, and Reassembly

1. [illegible]

2. [illegible]

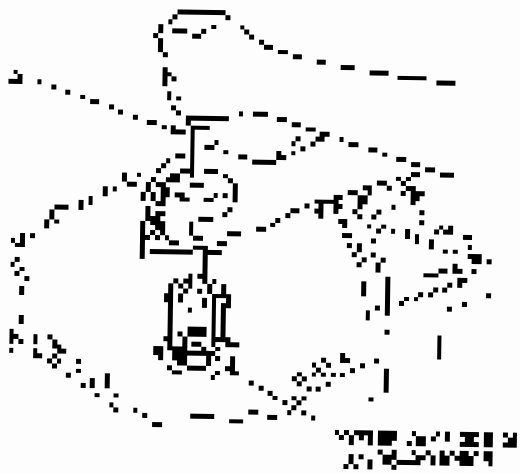


Springs		Standard Wire Diameter mm (in)			
	Free Length	O.D.	Free Length	Number of Coils	
A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

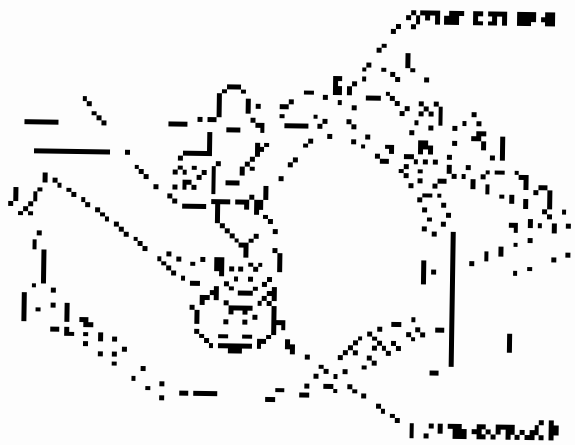
Mainshaft Bearing and Oil Seal Replacement

Special Tools Required
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

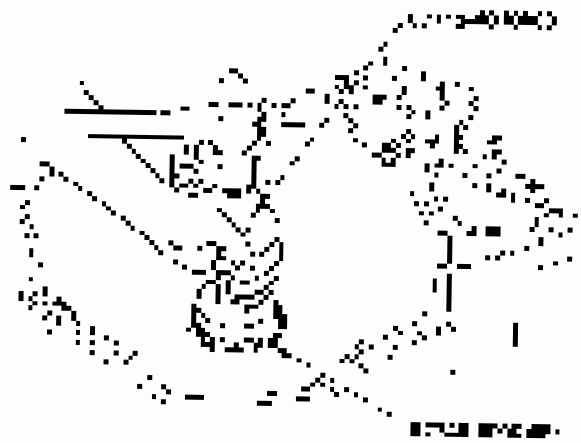
1. [illegible]



2. [illegible]



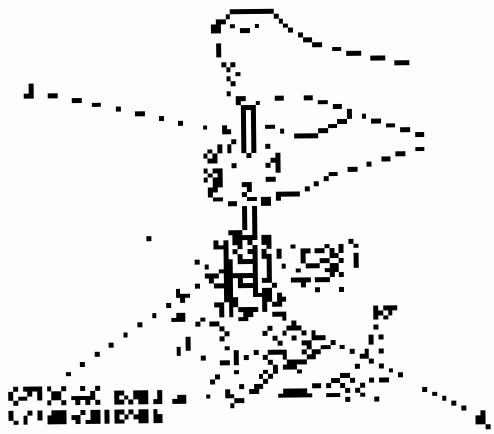
3. [illegible]



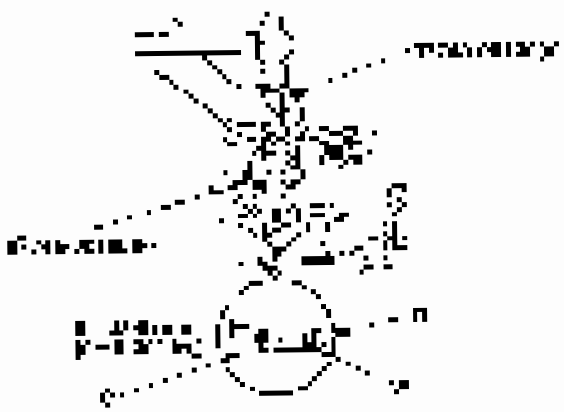
Countershaft Bearing Replacement

Special Tools Required
- Adjustable Bearing Cup Puller
- Driver Handle
- Driver Cup

1. Remove the countershaft bearing cup from the transmission housing using the Adjustable Bearing Cup Puller and Slide Hammer.



2. Install the countershaft bearing cup using the Driver Handle and Driver Cup.

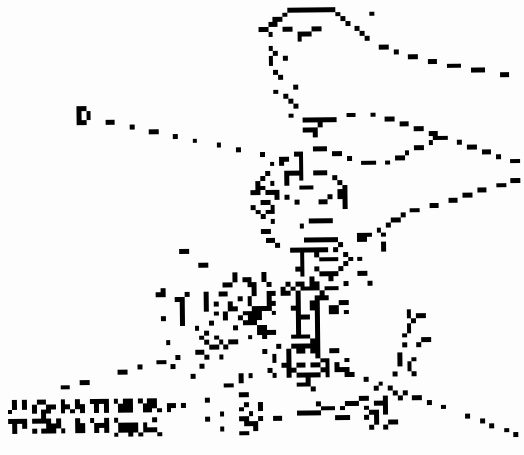


3. Install the new countershaft bearing in the transmission housing.

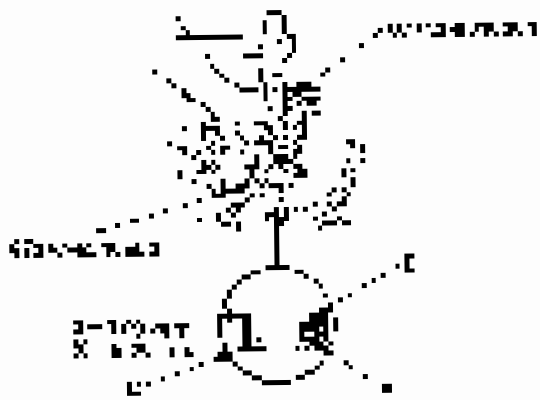
Secondary Shaft Bearing Replacement

Special Tools Required
- Adjustable Bearing Cup Puller
- Slide Hammer
- Driver Handle
- Driver Cup

1. Remove the secondary shaft bearing cup from the transmission housing using the Adjustable Bearing Cup Puller and Slide Hammer.



2. Install the ATF guide.

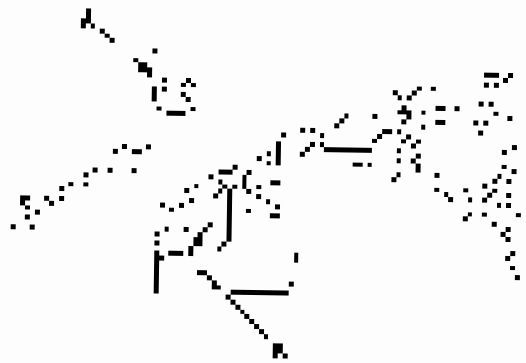


3. Install the secondary shaft bearing cup using the Driver Handle and Driver Cup.

Control Shaft Oil Seal Replacement

Special Tools Required
-
-

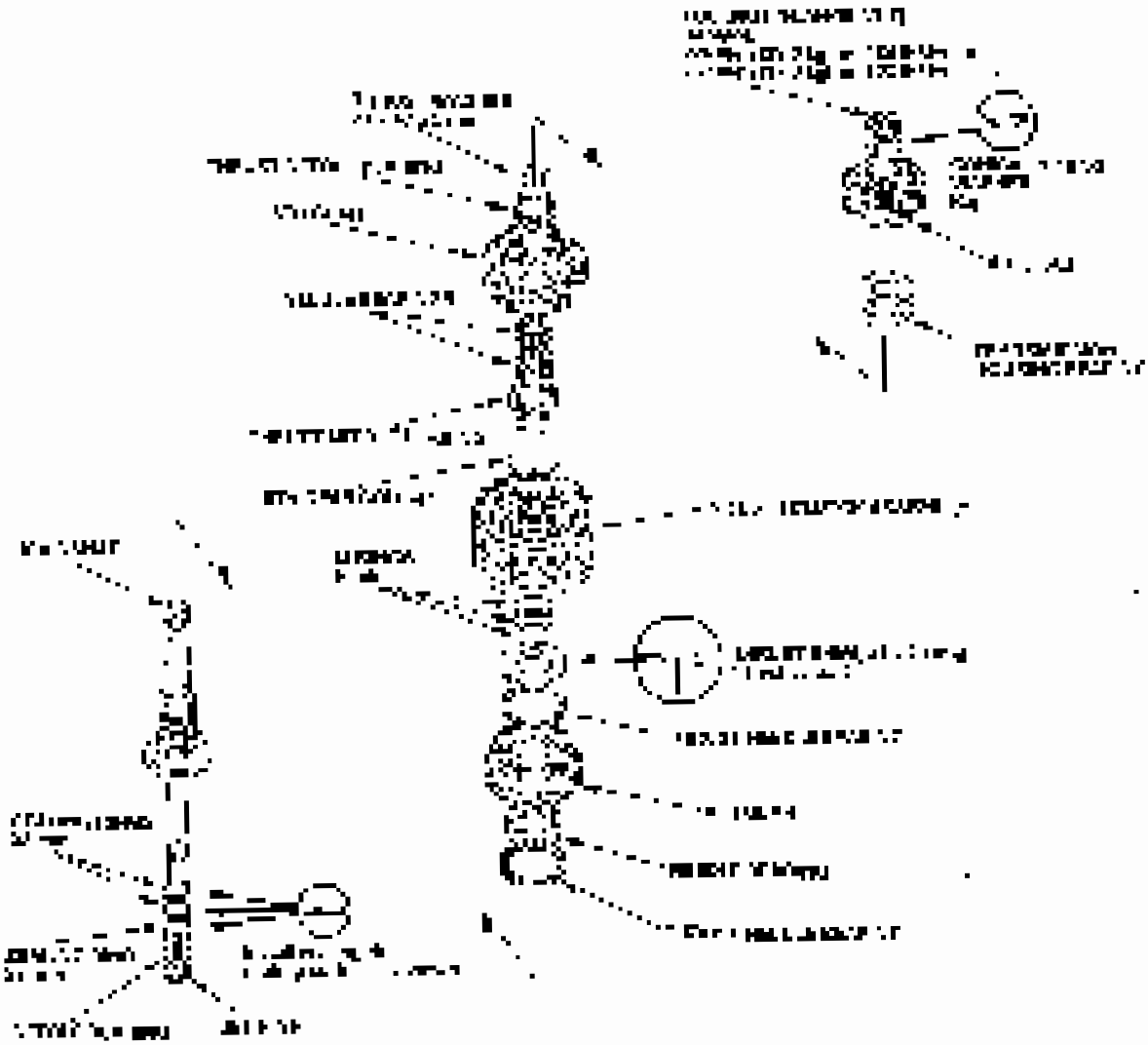
1. [illegible]



2. [illegible]

Mainshaft Disassembly, Inspection, and Reassembly

1. Remove the mainshaft (ATF drive) assembly.



2. Check the bearings for roughness or excessive play (page 14-275).

3. Remove the mainshaft bearing and the mainshaft (ATF drive) gear (page 14-276).

4. Inspect the mainshaft for excessive wear or damage.

5. Check the bearings for excessive wear or damage.

6. Measure the mainshaft runout (page 14-276).

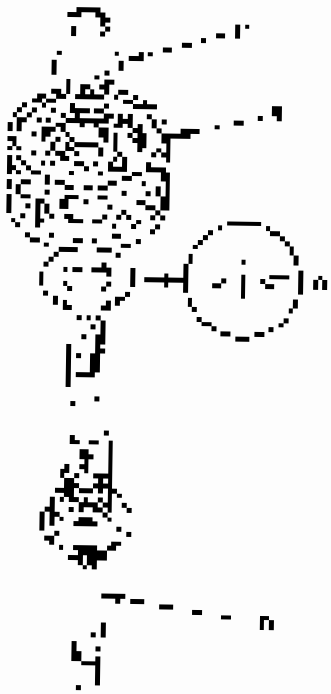
7. Install the mainshaft (ATF drive) gear and the mainshaft bearing (page 14-276).

8. Install the mainshaft (ATF drive) assembly.

4th/5th Clutch Clearance Inspection

1. [illegible]

2. [illegible]



3. [illegible]

Standard [illegible]

4. [illegible]

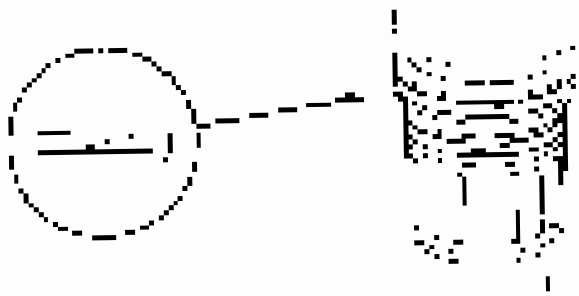
5. [illegible]

(Min. ST SHIM: [illegible] mm)

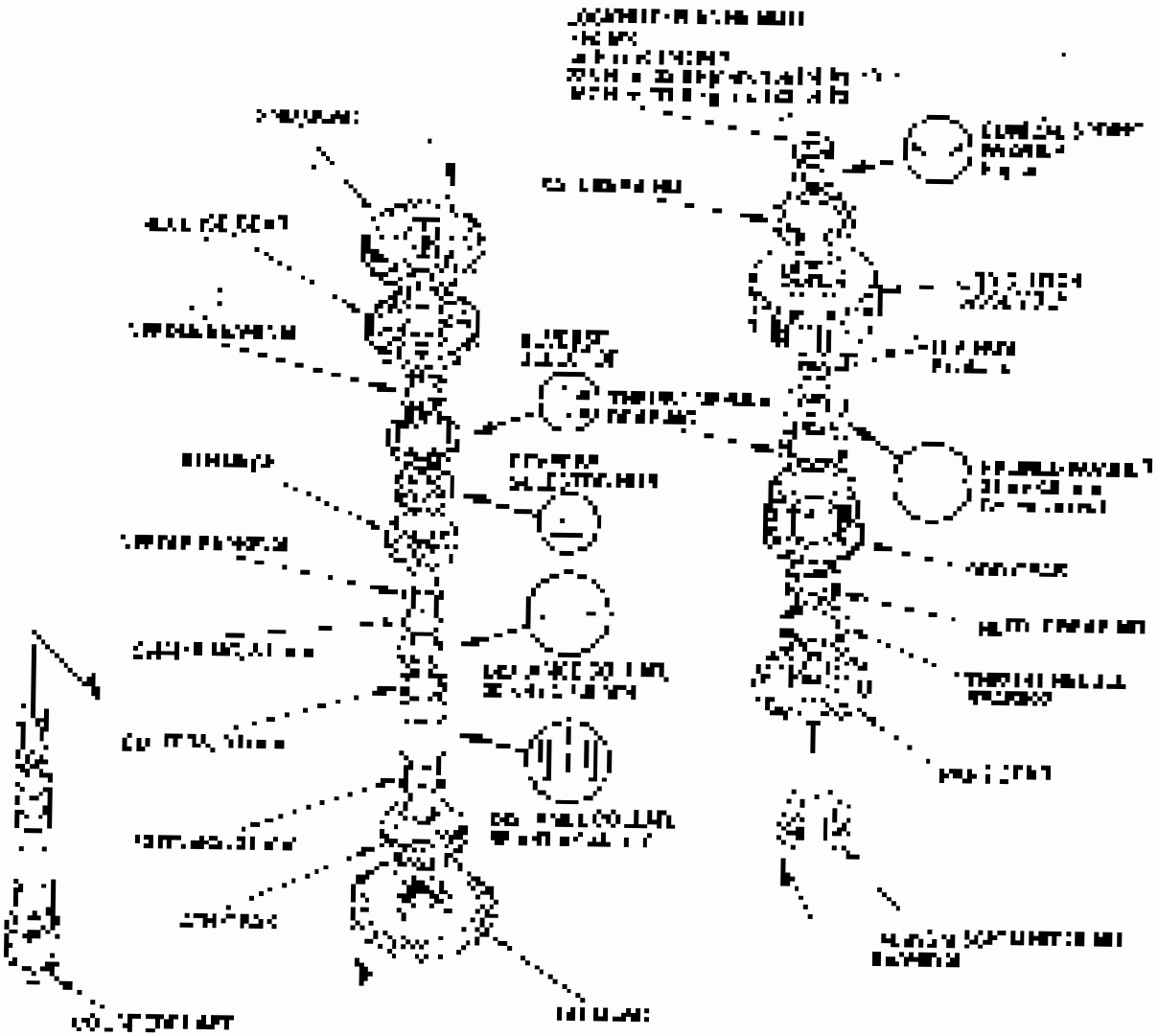
[illegible]	Part Number	Thickness
1	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]
6	[illegible]	[illegible]

6. [illegible]

Mainshaft Sealing Ring Replacement



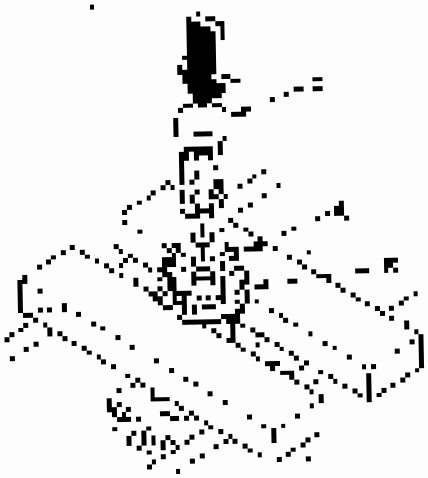
Countershaft Disassembly, Inspection, and Reassembly



1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

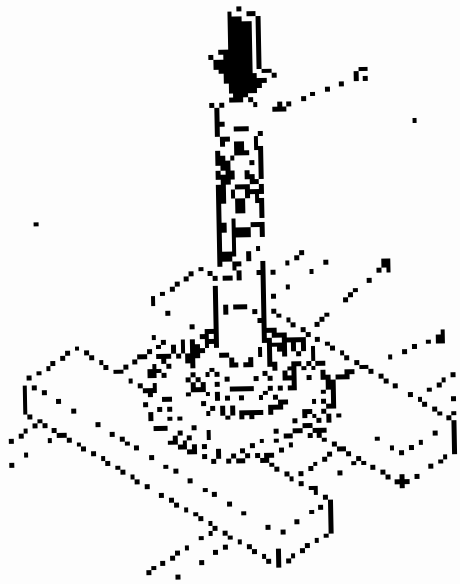
Countershaft Reverse Selector Hub and 4th Gear Removal

1. [illegible]



2. [illegible]

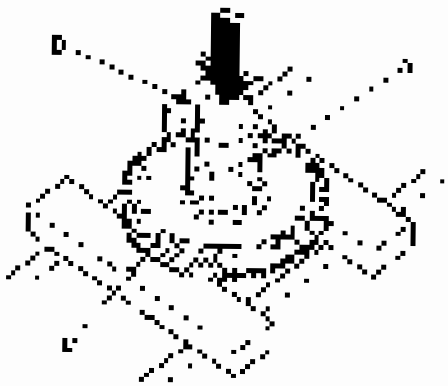
3. [illegible]



Countershaft 4th Gear and Reverse Selector Hub Installation

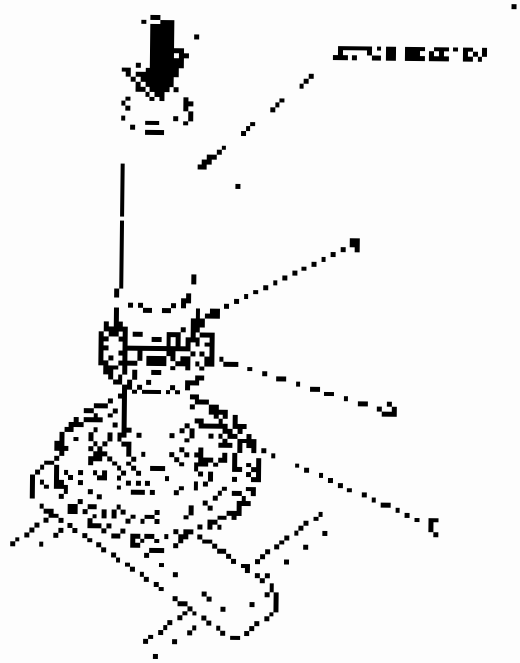
Special Tools Required:
Universal Bearing Puller Plate (J-6637-01)

1. Apply ATF to the parts.
2. Install the snap ring on the countershaft.
3. Set the countershaft reverse gear and synchronizer ring assembly in the universal bearing puller plate. Install the countershaft assembly in the universal bearing puller plate.



4. Using a press, install the reverse synchronizer hub until it contacts the snap ring.

5. Install the 3rd-4th synchronizer sleeve and the reverse synchronizer ring. Align the snap ring gap with a spline of the synchronizer hub.



6. Install the reverse synchronizer hub (J) onto the countershaft. Install a new snap ring in the groove on the countershaft and press on the hub until it contacts the snap ring.

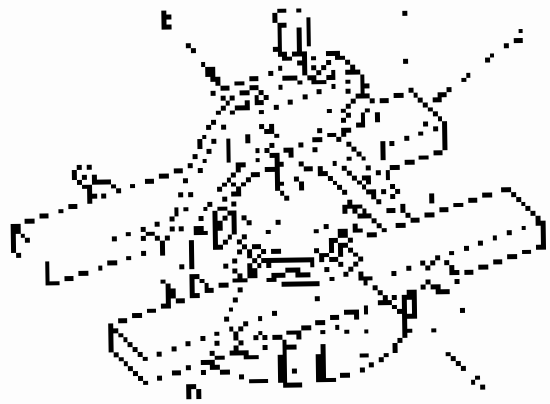
NOTE: Do not reuse the snap ring. Always install a new snap ring.

3rd Clutch Ball Bearing Replacement

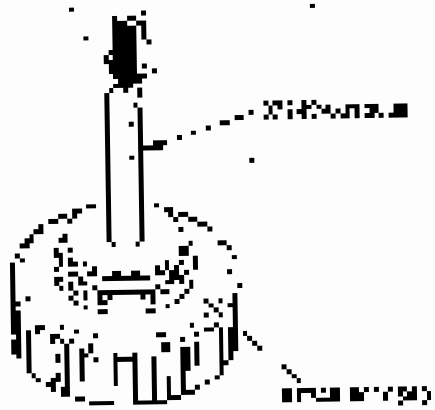
Special Tools Required
- [illegible]
- [illegible]

NOTE: Check the clutch bearing for excessive end play and rough movement. If the bearing is OK, replacement is not necessary.

1. Remove the 3rd clutch ball bearing (A) from the 3rd clutch with a commercially available bearing puller, as shown. Remove the spacer (B) and the 3rd clutch (C).

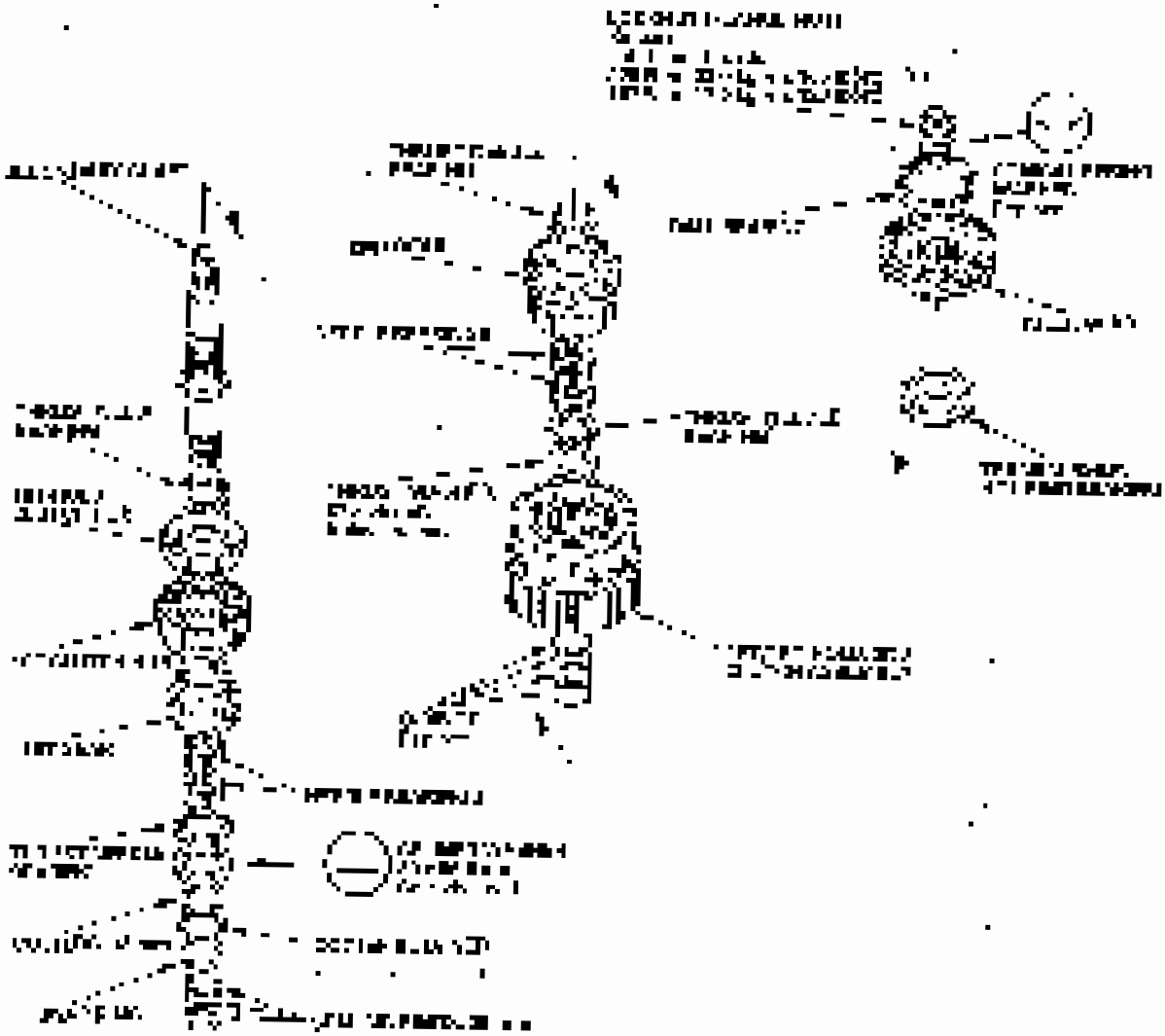


2. Install the special tool on the 3rd clutch [illegible] as shown.



Secondary Shaft Disassembly, Inspection, and Reassembly

1. [illegible]



2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

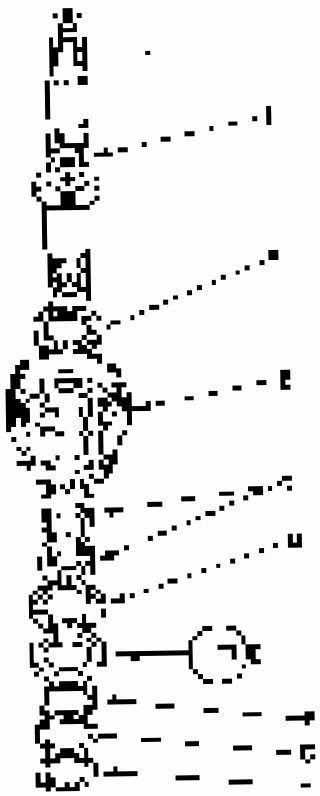
7. [illegible]

8. [illegible]

Secondary Shaft Clearance Inspection

1. [illegible]

2. [illegible]



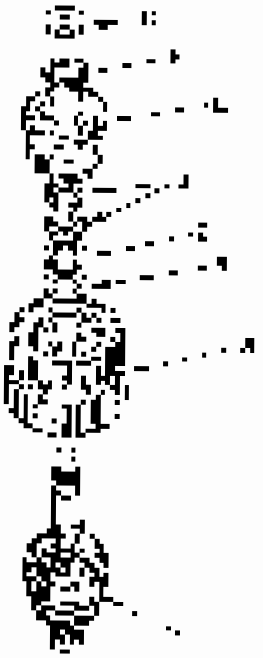
3. [illegible]

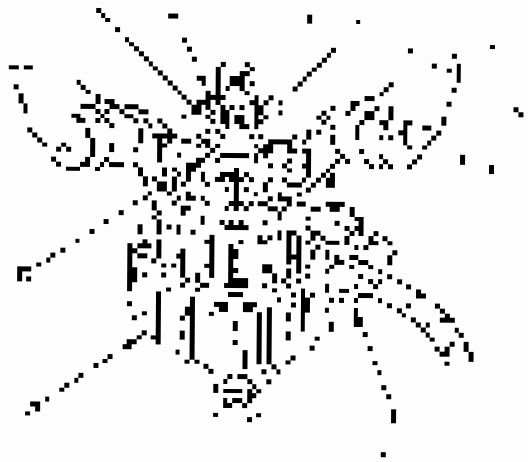
Standard: [illegible]

4. [illegible]

5. [illegible]

No.	Part Number	Thickness
1	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]
6	[illegible]	[illegible]





No.	Part Number	Thickness
1	[illegible]	[illegible]
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3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]
6	[illegible]	[illegible]
7	[illegible]	[illegible]

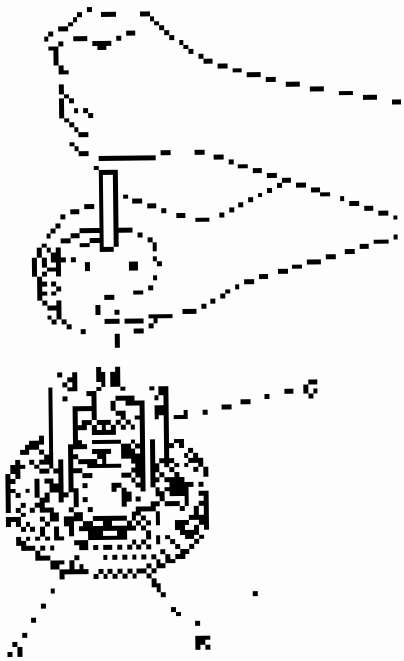
Secondary Shaft Idler Gear Bearing Replacement

Special Tool Required
- [illegible]
- [illegible]

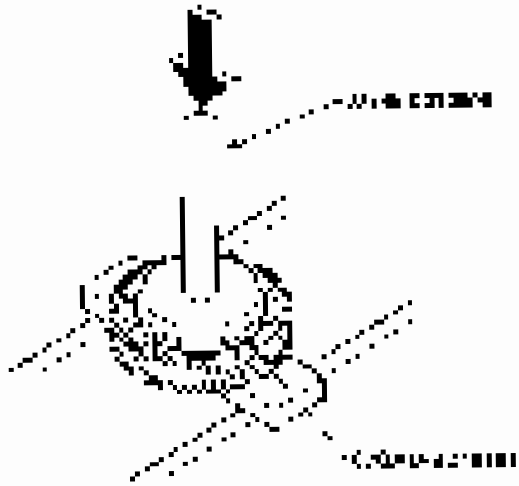
1. [illegible]

2. [illegible]

3. [illegible]

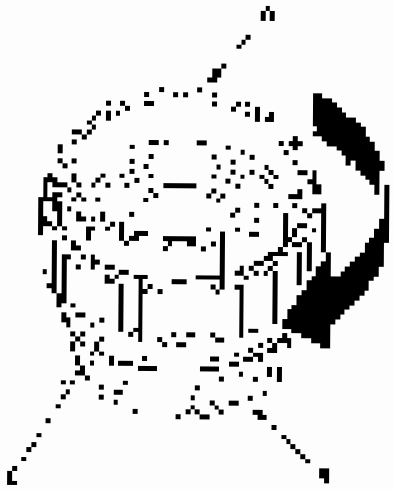


4. [illegible]



1st Gear One-way Clutch Inspection

1. [illegible]

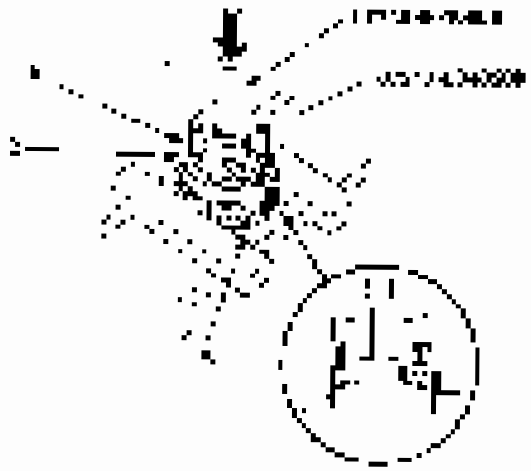


2. [illegible]

1st Clutch Hub Replacement

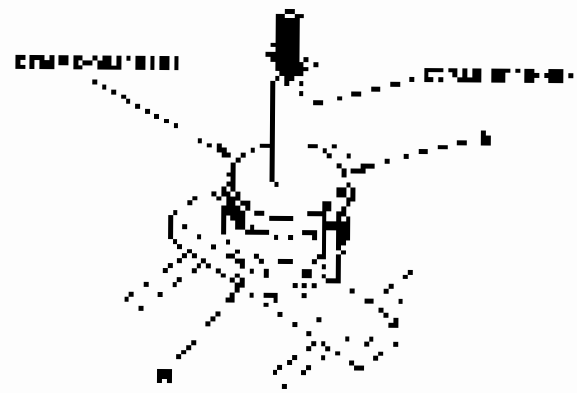
Special Tools Required
- [illegible]
- [illegible]
- [illegible]

1. [illegible]



2. [illegible]

3. [illegible]



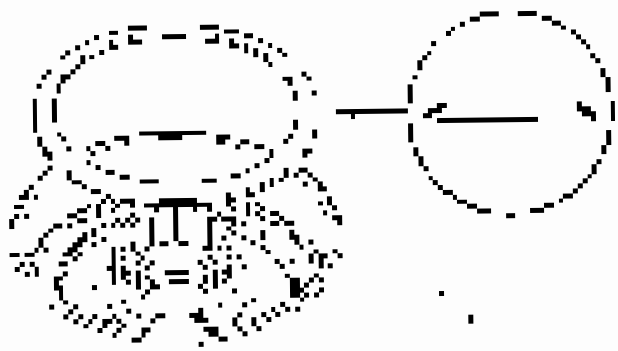
Clutch Disassembly

Special Tools Required

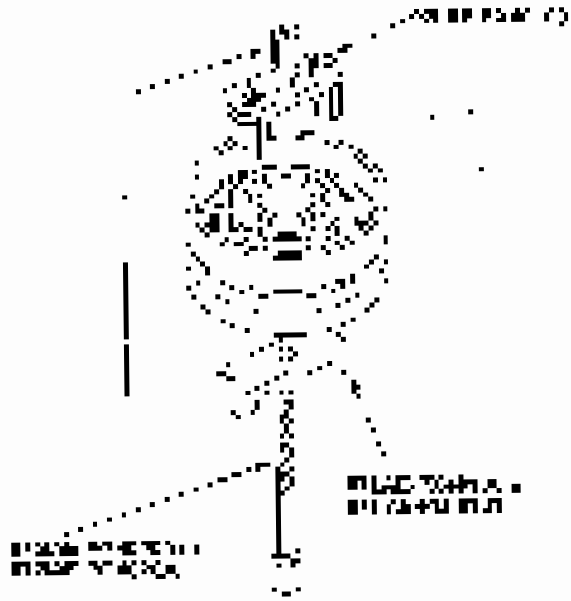
- [illegible]
- [illegible]
- [illegible]

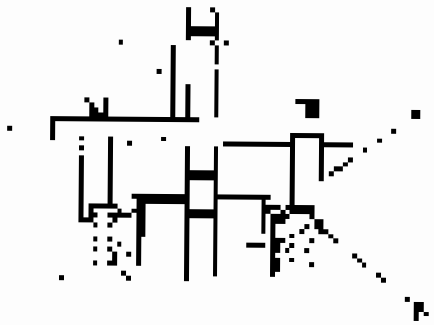
1. [illegible]

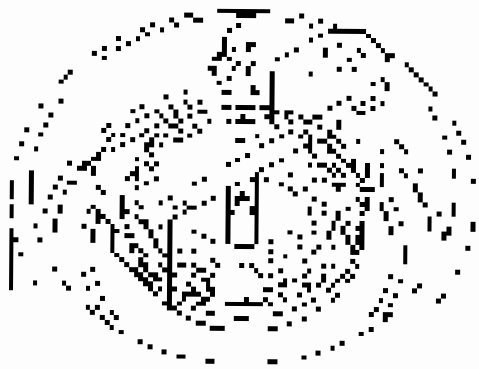
2. [illegible]

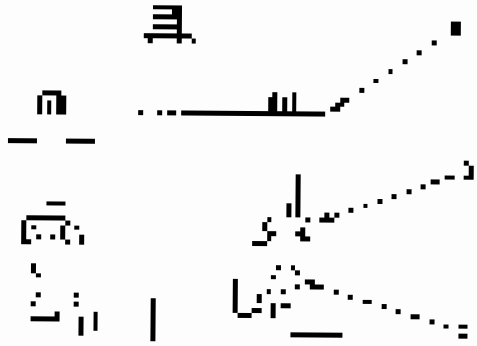


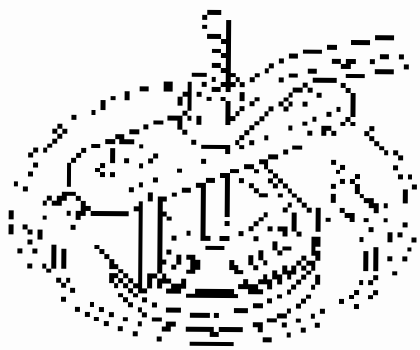
3. [illegible]





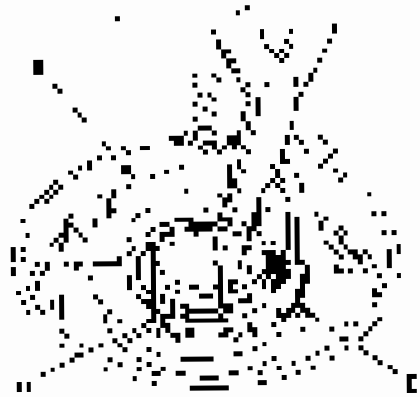




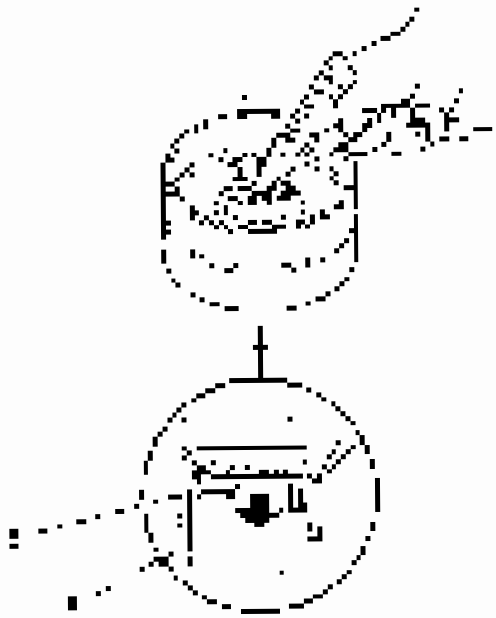


Clutch Disassembly (cont'd)

6. [illegible]



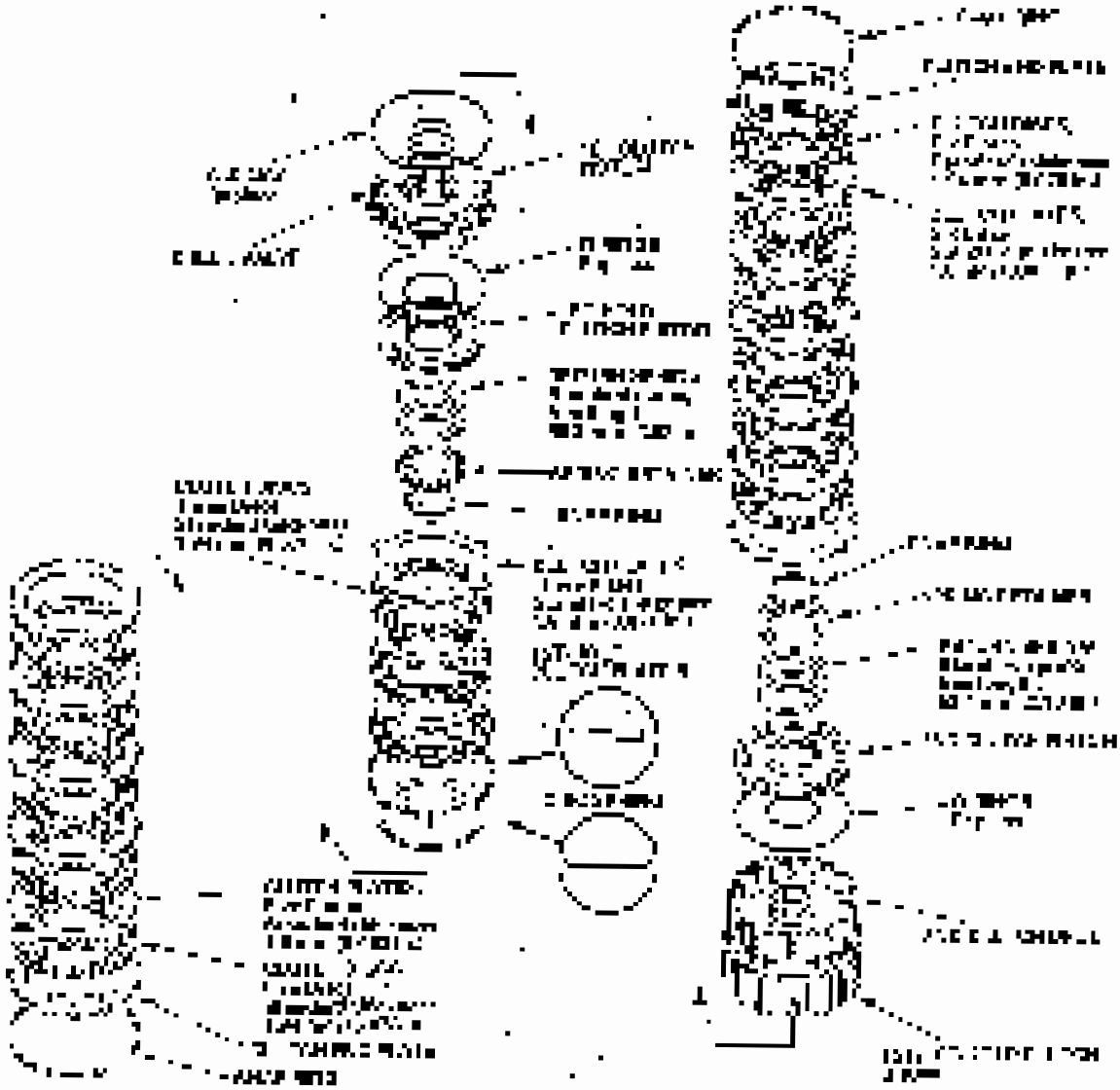
5. [illegible]



Clutch Inspection

Torque-Hold/2-d Clutch

1. [illegible]



2. [illegible]

3. [illegible]

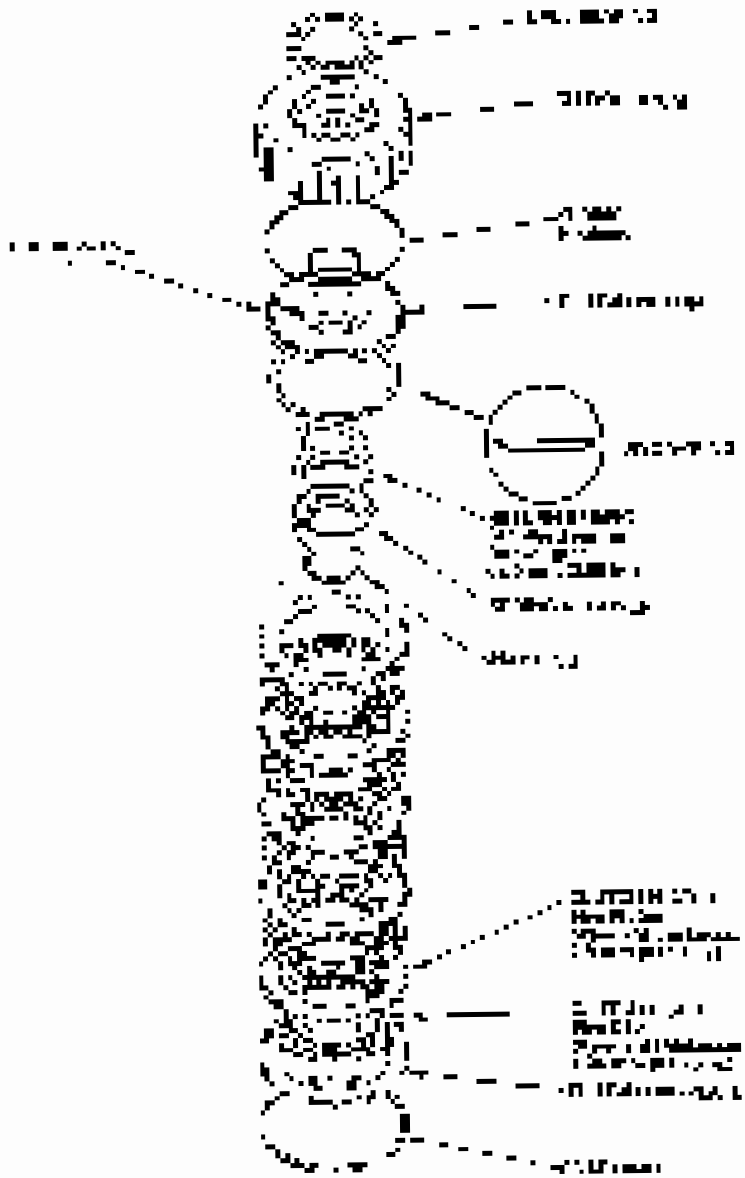
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Clutch Inspection (cont'd)

3rd Clutch

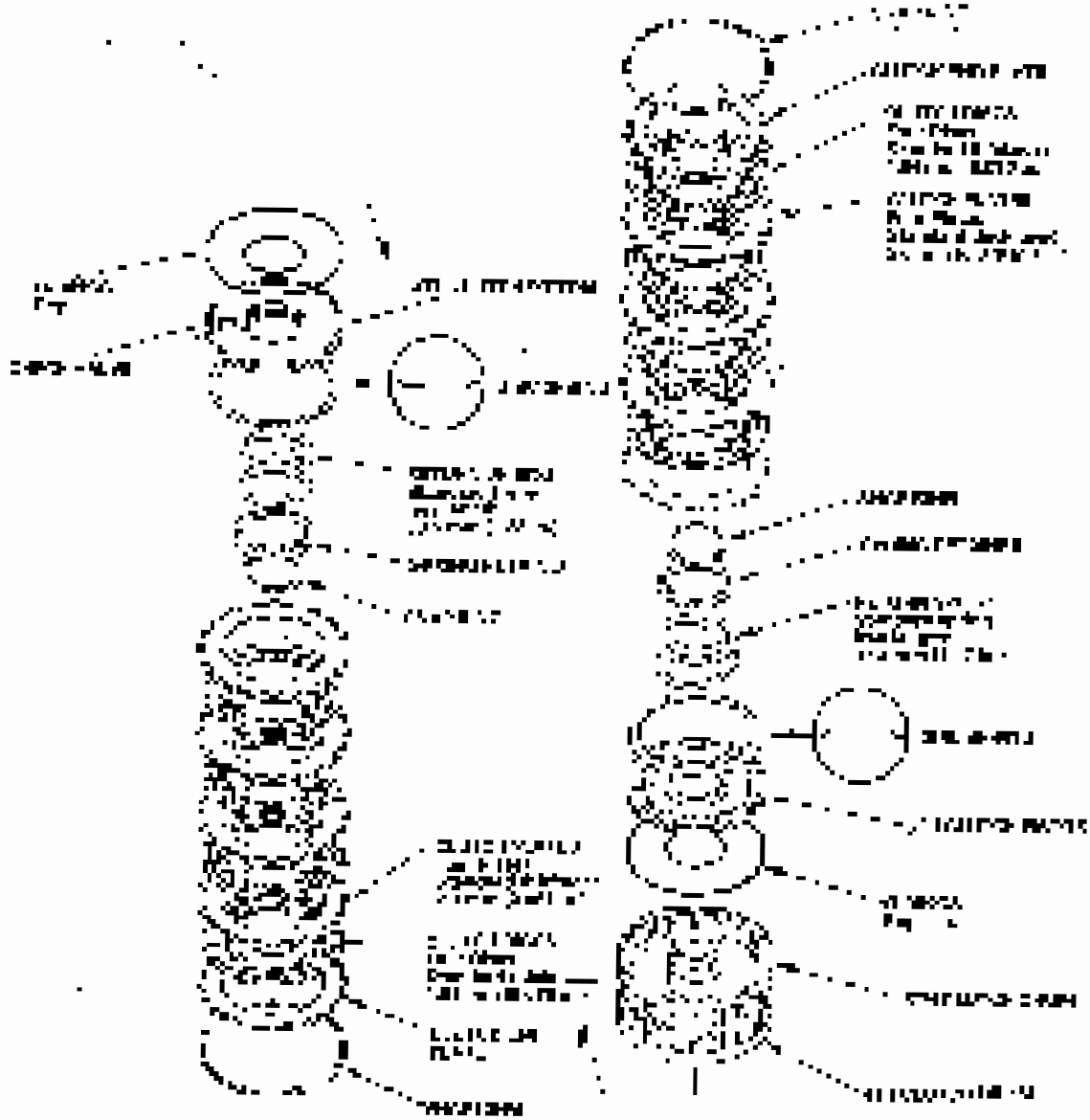
1. [illegible]



2. [illegible]

3. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

4th,5th Clutch



Clutch Reassembly

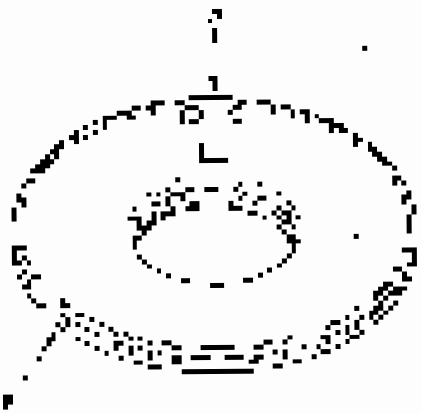
Special Tools Required
- Clutch spring compressor (commercially available)
- Clutch hub and damper assembly driver (commercially available)
- Clutch spring compressor bolt set 07924-PD60000 or 07924-PD60001
- Clutch compressor attachment 07924-PD60101

Reassembly is the reverse of disassembly, noting these points:

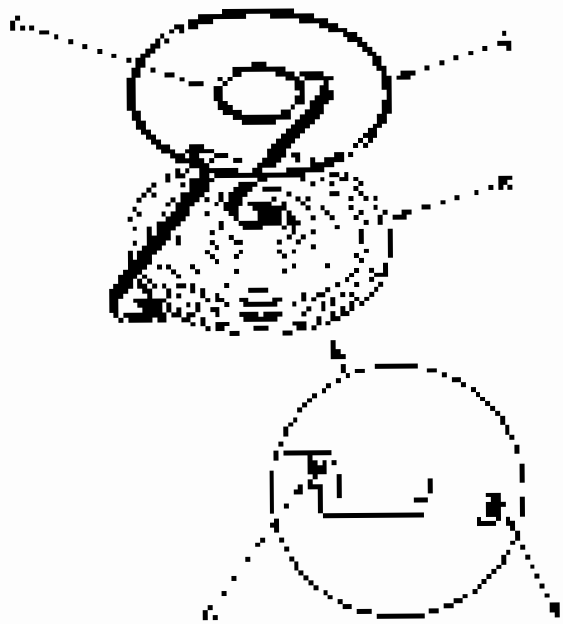
- Install the clutch springs and retainer between the clutch center hub and compression nut.
- Compress the springs.
- Apply a thin coat of grease to the clutch center hub splines.

1. Install the clutch center hub onto the mainshaft with the chamfered side facing out.

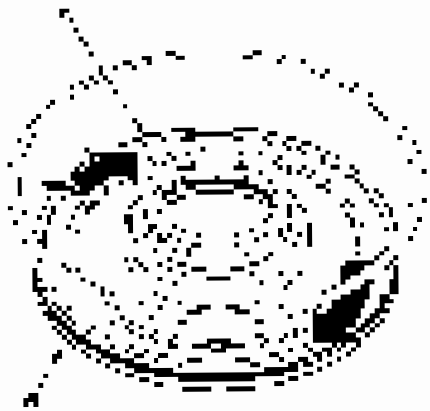
2. Install the thrust washer and the clutch plates and discs. Start with a friction disc and alternate friction discs and plain plates.

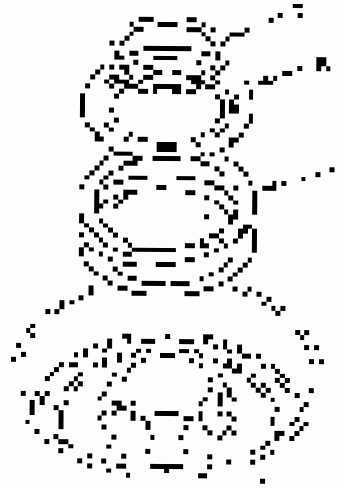


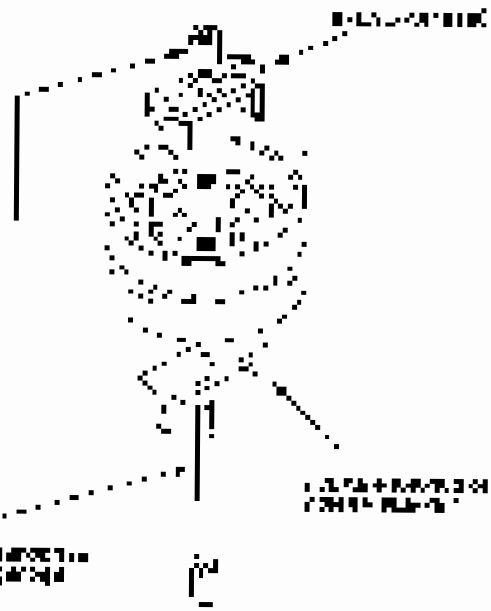
3. Install the clutch hub and damper assembly onto the clutch center hub.



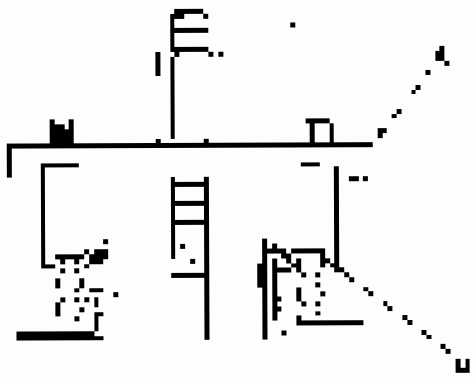
4. Install the plain washer onto the mainshaft. Apply grease to the thrust washer and install it onto the mainshaft.
- Lock the clutch center hub nut by staking it with a blunt chisel.

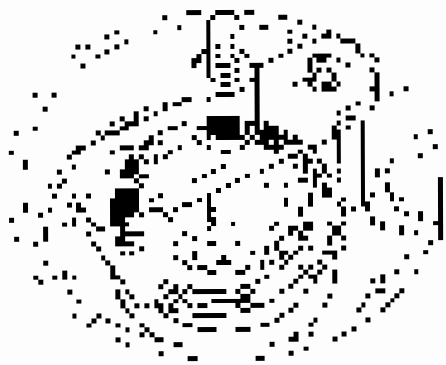


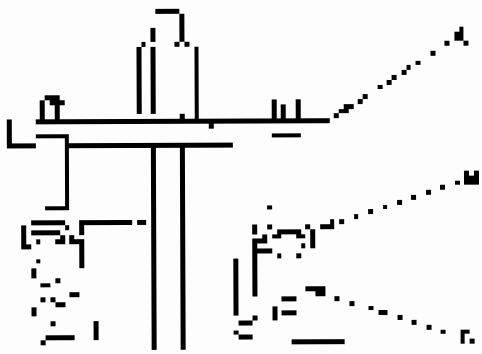


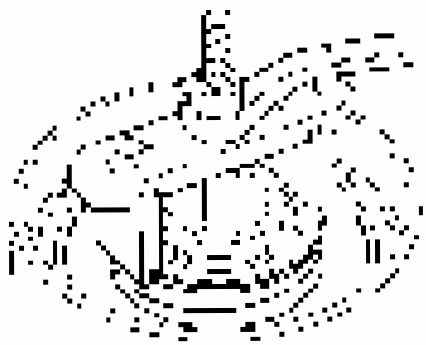


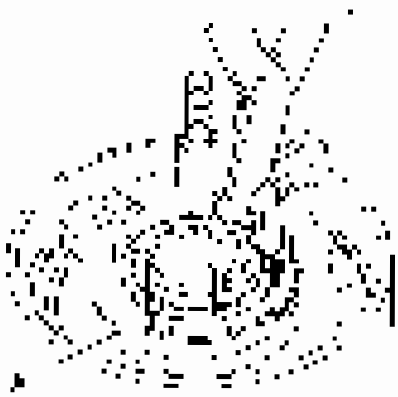
Clutch Reassembly (cont'd)

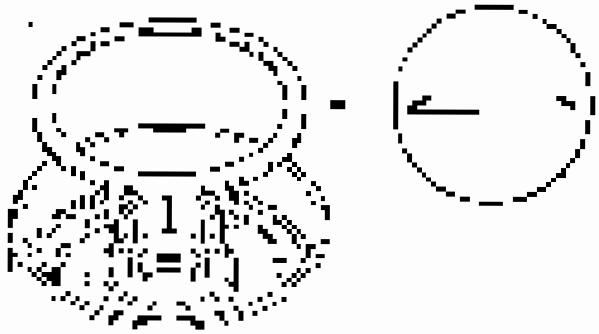


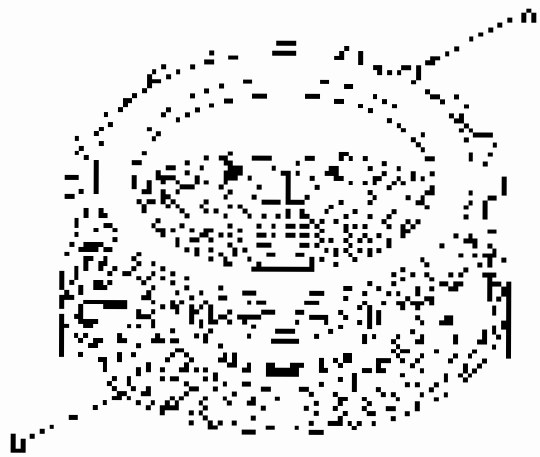




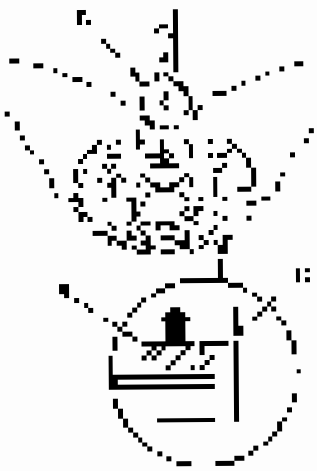


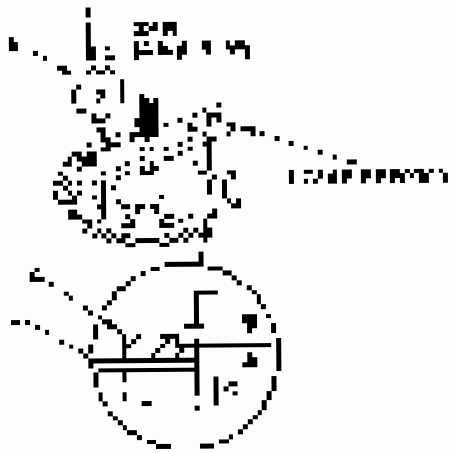






Clutch Reassembly (cont'd)





Clutch End-Play Specifications
Service Limit

1st Clutch	0.1—0.5 mm (0.004—0.020 in)
2nd Clutch	0.1—0.5 mm (0.004—0.020 in)
3rd Clutch	0.1—0.5 mm (0.004—0.020 in)
4th Clutch	0.1—0.5 mm (0.004—0.020 in)
5th Clutch	0.1—0.5 mm (0.004—0.020 in)

[illegible]

Mark	Part Number	Thickness
[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]
6	[illegible]	[illegible]
7	[illegible]	[illegible]
8	[illegible]	[illegible]
9	[illegible]	[illegible]

[illegible]

Mark	Part Number	Thickness
1	[illegible]	[illegible]
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4	[illegible]	[illegible]
5	[illegible]	[illegible]
6	[illegible]	[illegible]
7	[illegible]	[illegible]
8	[illegible]	[illegible]
9	[illegible]	[illegible]

[illegible]

Mark	Part Number	Thickness
[illegible]	[illegible]	[illegible]
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3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]
6	[illegible]	[illegible]
7	[illegible]	[illegible]
8	[illegible]	[illegible]
9	[illegible]	[illegible]
10	[illegible]	[illegible]
11	[illegible]	[illegible]

[illegible]

Mark	Part Number	Thickness
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V	[illegible]	[illegible]
X	[illegible]	[illegible]
Z	[illegible]	[illegible]
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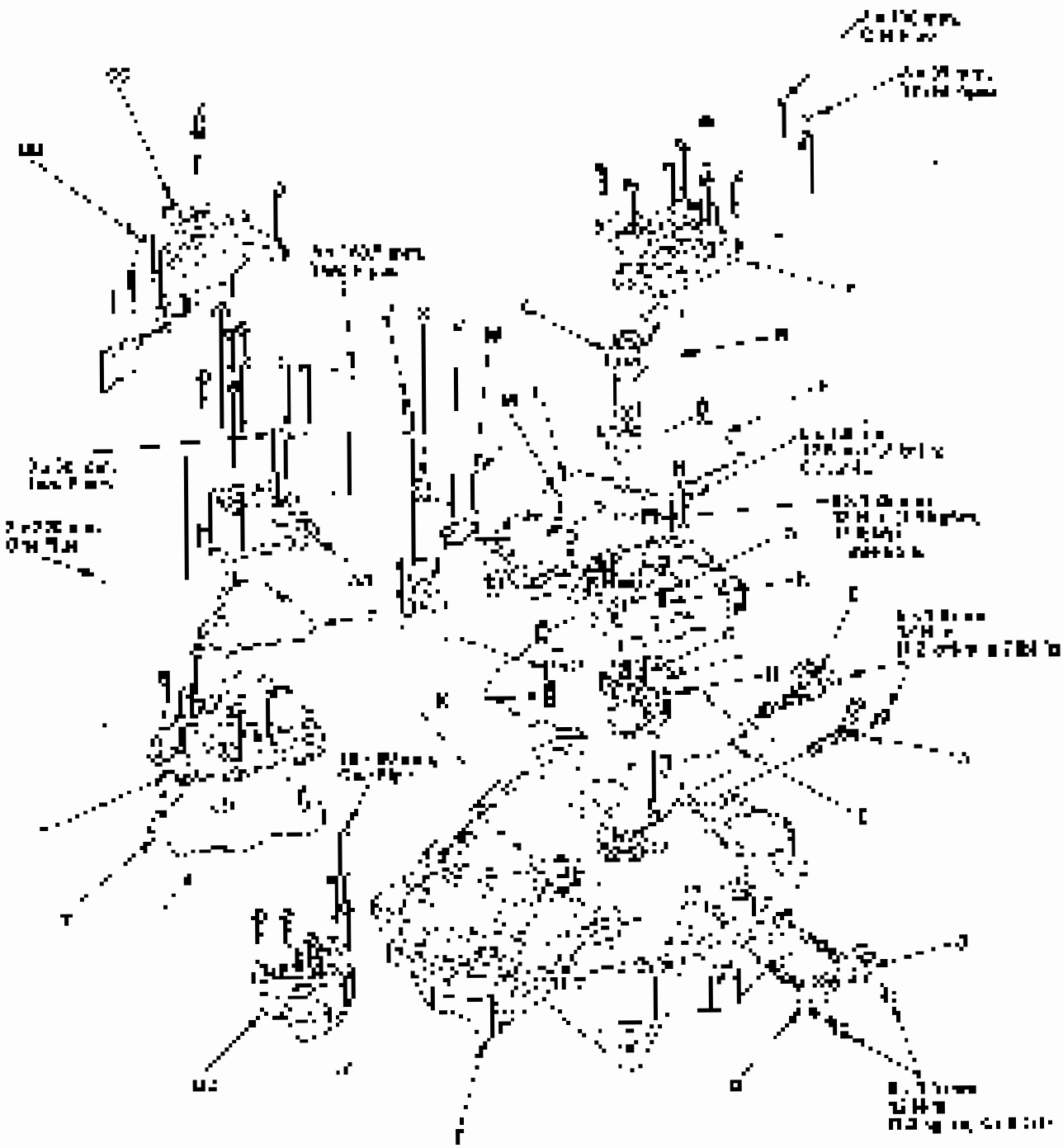
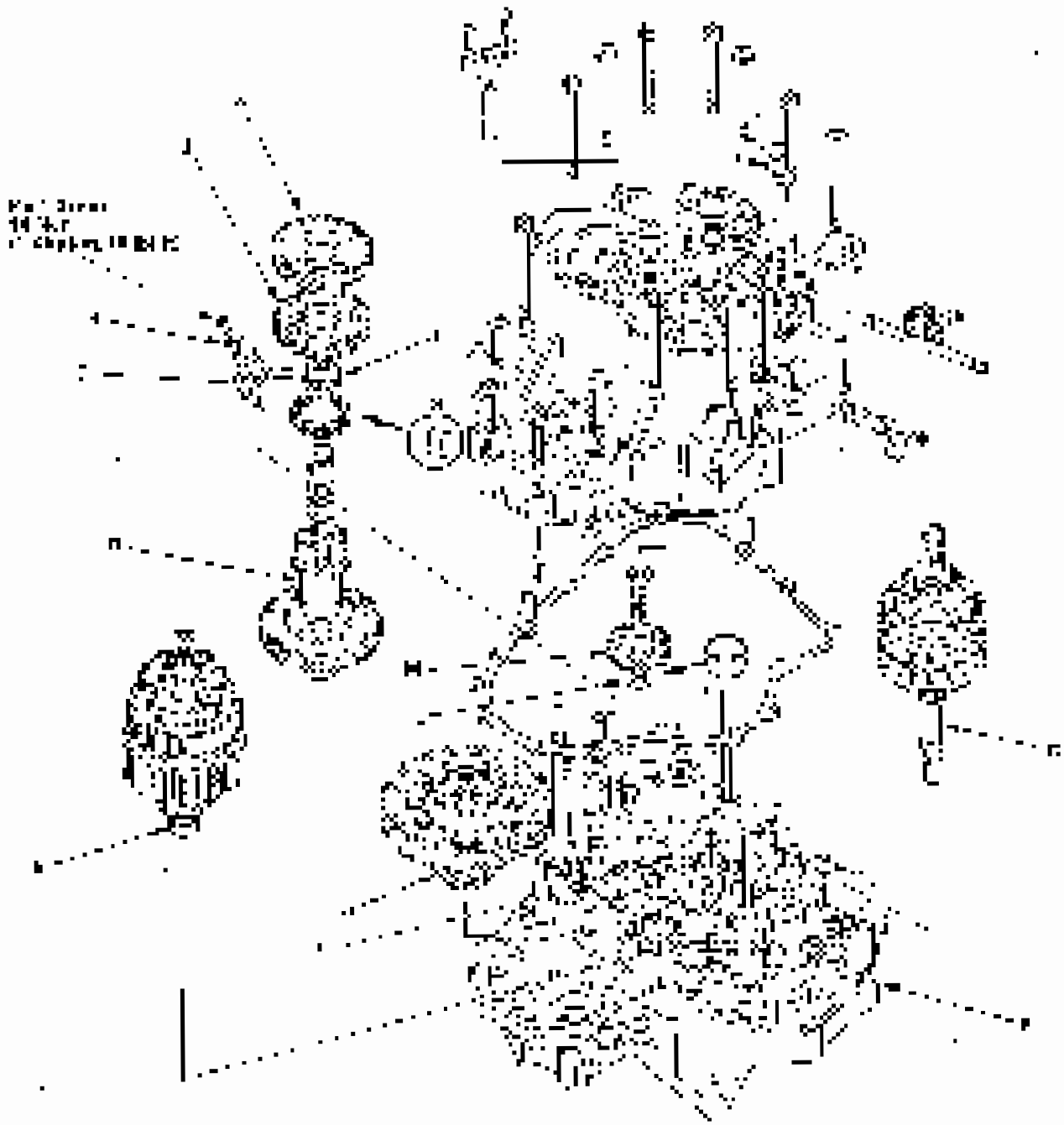
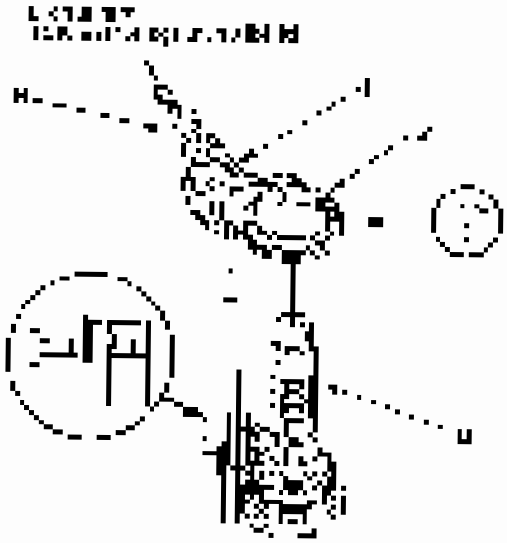
6	[illegible]	[illegible]
7	[illegible]	[illegible]
8	[illegible]	[illegible]
9	[illegible]	[illegible]

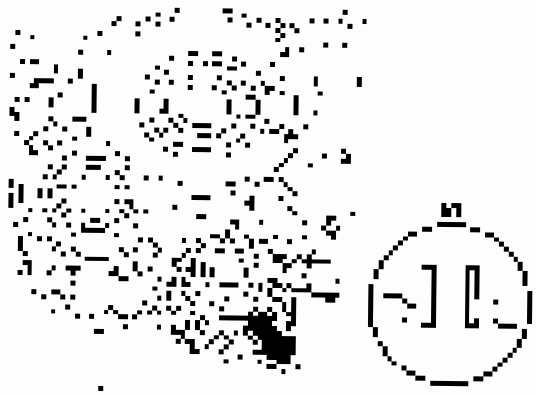
Valve Body and ATF Strainer Installation



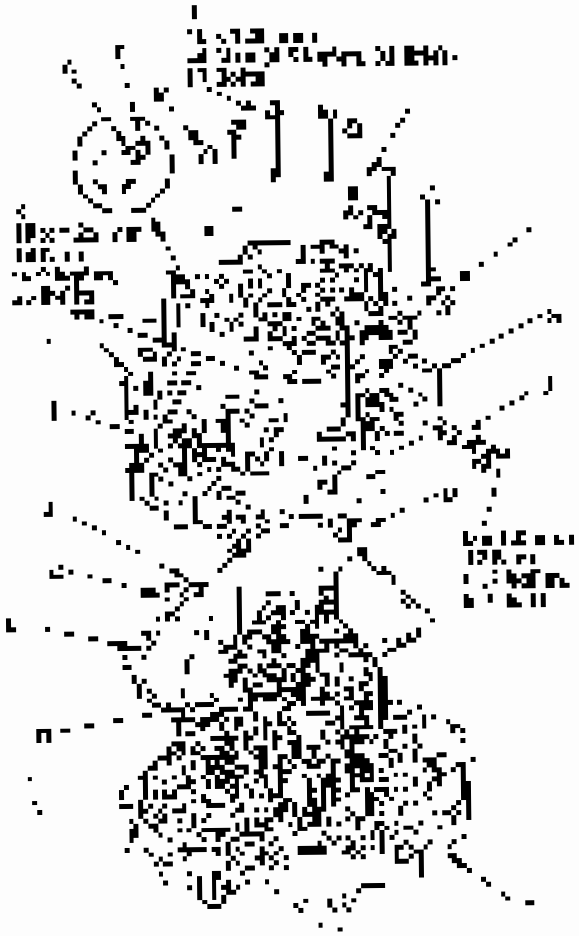
Shaft Assembly and Housing Installation

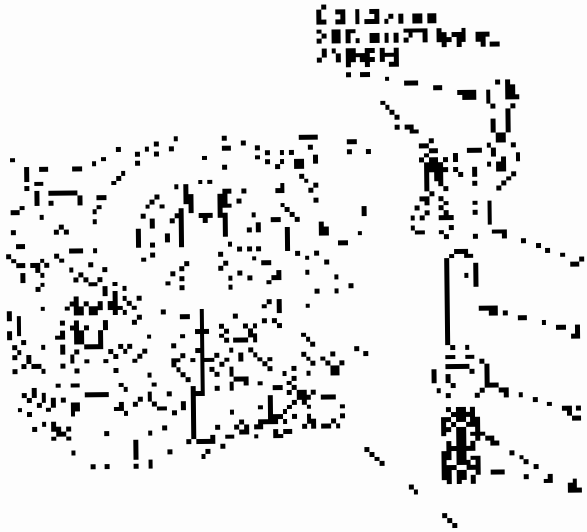






Shaft Assembly and Housing Installation (cont'd)

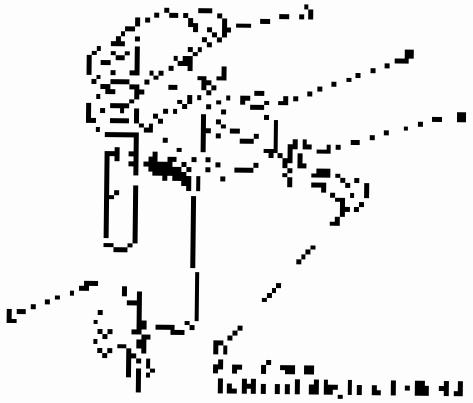




End Cover, 3rd Gear, Idler Gear, and 3rd Clutch Installation

Special Tools Required
- Magnetic Holder
- Dial Indicator Set
- Adjustable Support Plate
- Bearing Installer

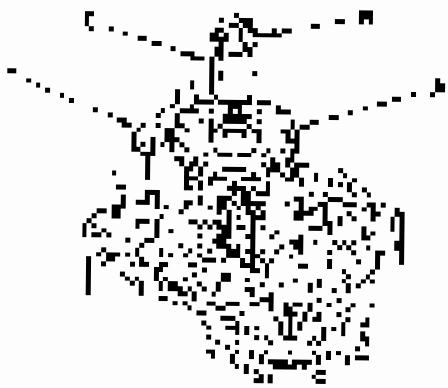
1. Install the parking pawl, parking pawl shaft, and parking pawl spring. Refer to Parking Pawl, Shaft, and Spring Installation in this section.



2. Lubricate the following with ATF:
   - Oil feed hole in the end cover
   - The outside of the bearing outer race in the end cover
   - All of the oil sealing rings

3. Install the 3rd gear, 3rd clutch, and idler gear as an assembly. Refer to Gear Train Installation in this section. Ensure that the oil feed hole aligns with the oil feed hole in the 3rd gear.

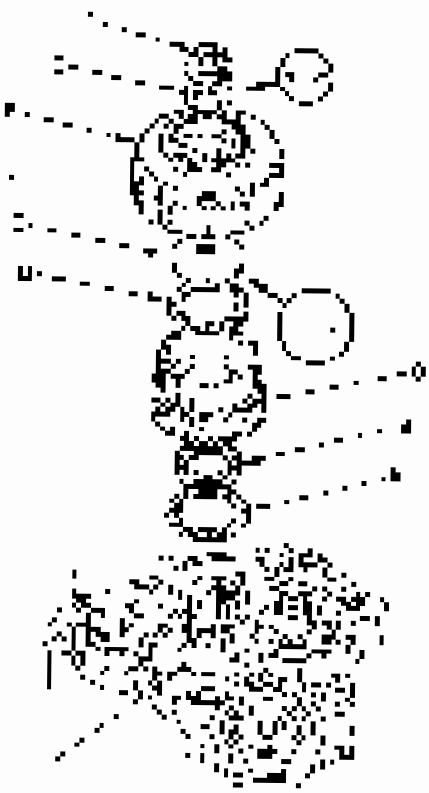
   NOTE:
   - Do not use excessive force.
   - Ensure that the bearing outer race is correctly seated.



4. Remove the bearing installer.

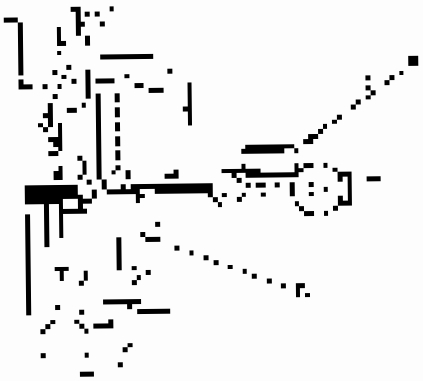
5. Install the bearing outer race in the end cover using the Bearing Installer, Magnet, Dial Indicator Set, and Adjustable Support Plate. Refer to Bearing Outer Race Installation in this section. Tighten the bearing outer race to 25 Nm (18 lb ft).

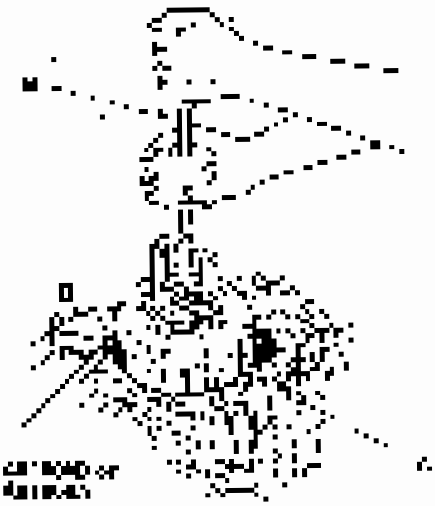
   NOTE: Only remove the bearing outer race if necessary. Do not use excessive force.

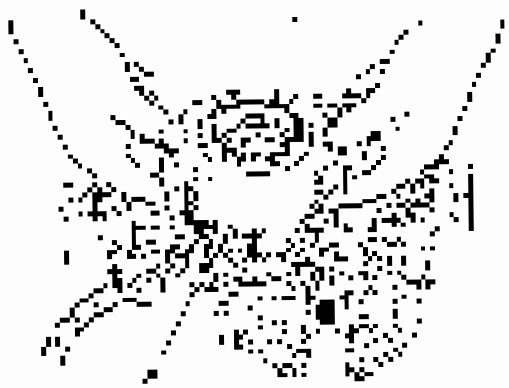


cont'd

End Cover, 3rd Gear, Idler Gear, and 3rd Clutch Installation (cont'd)





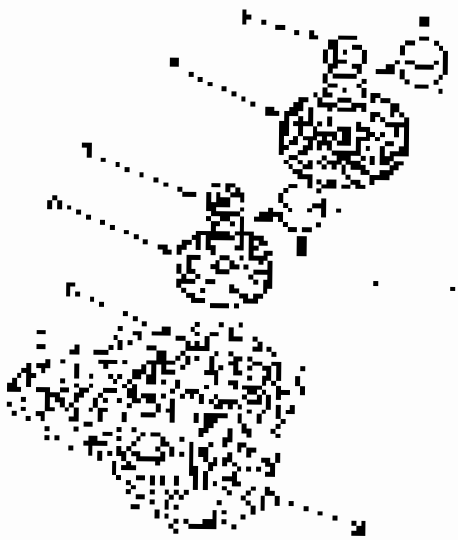


[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

NOTE: [illegible]
Do not use impact wrench.



[illegible]

NOTE:
- [illegible]
- [illegible]

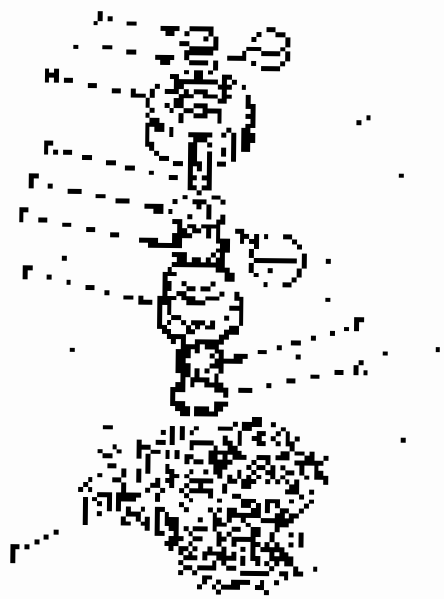
[illegible]

[illegible]

SPUNEDWASHER 21 x 33.5 mm

Mark	Part Number	Dimensions
A	[illegible]	[illegible]
B	[illegible]	[illegible]
C	[illegible]	[illegible]
D	[illegible]	[illegible]

[illegible]



[illegible]

[illegible]

NOTE: [illegible]
Do not use impact wrench.

[illegible]

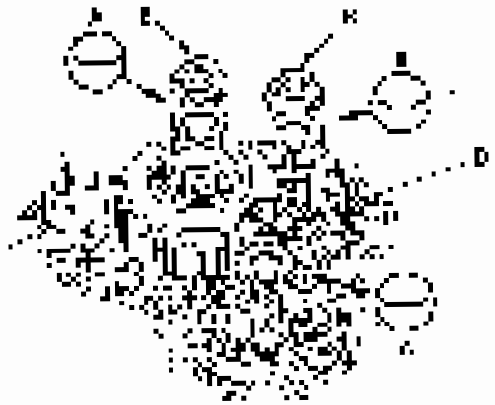
cont'd

End Cover, 3rd Gear, Idler Gear, and 3rd Clutch Installation (cont'd)

20. Remove the old liquid gasket material from the end cover.

21. Apply a continuous bead of liquid gasket to the new gasket, and install the gasket on the end cover.

22. Install the new gasket, aligning the bolt holes in the gasket with the holes in the end cover, and install the new O-ring on the end cover.

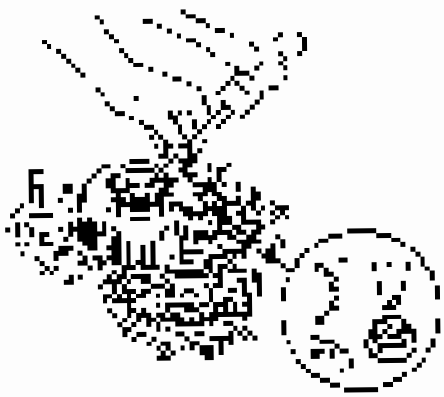


23. Tighten the bolts to the specified torque in the sequence shown.

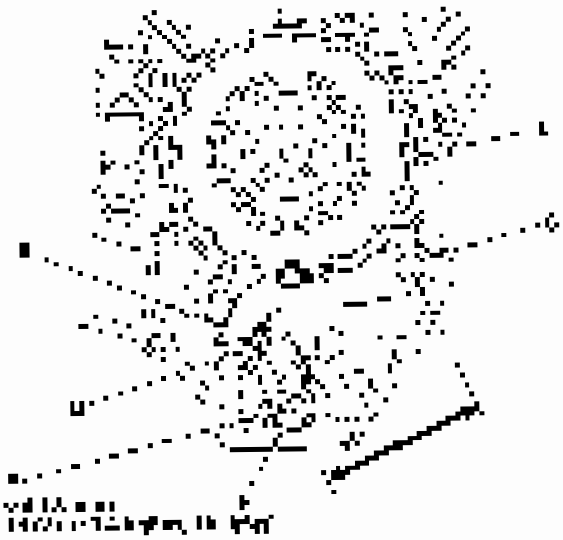
    Torque:
    - 1.5 L engine: 8 N·m (0.8 kgf·m, 6 lbf·ft)
    - 1.6 L engine: 10 N·m (1.0 kgf·m, 7 lbf·ft)

24. Remove the seal installation tool.

25. Install a new seal in the transmission end cover.

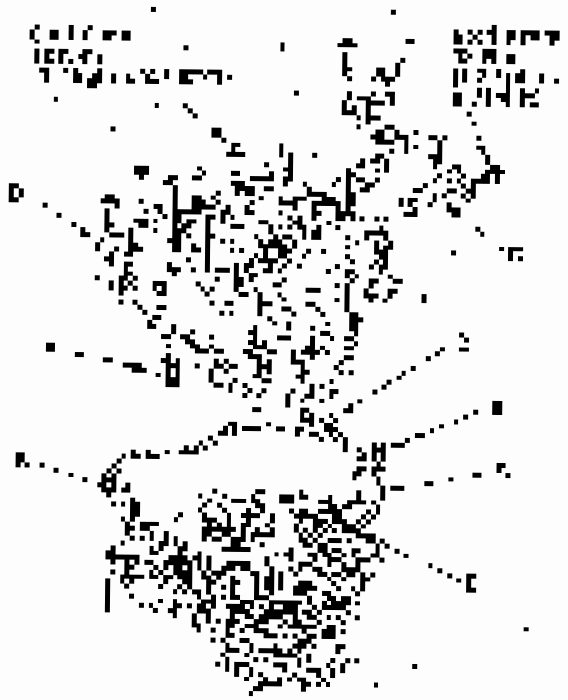


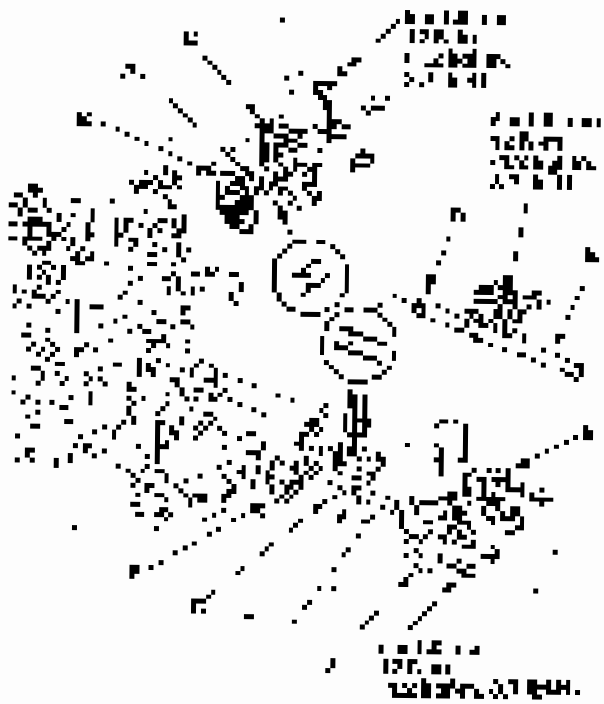
26. Install the end cover in the position shown, and tighten the bolts to the specified torque.



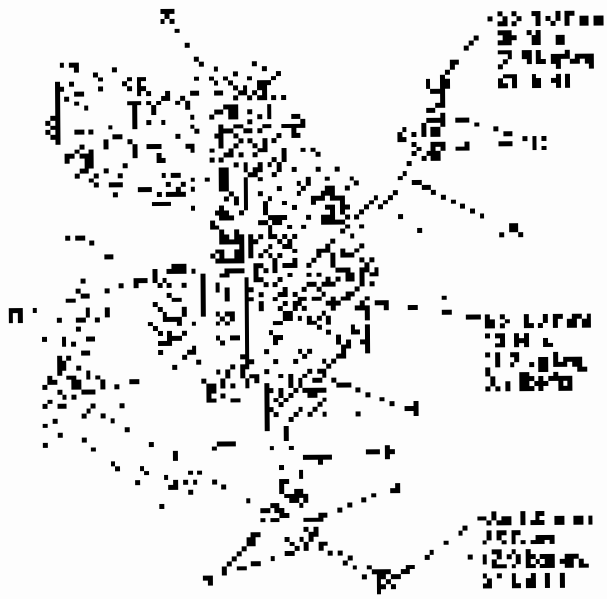
27. Check the end cover clearance by measuring the gap between the gasket surface of the end cover and the transmission case with a feeler gauge.

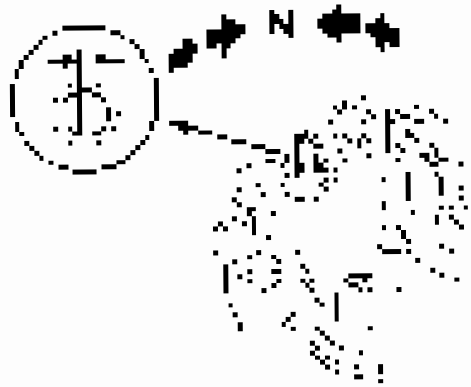
28. Thread the bolts into the end cover and tighten them to the specified torque in the sequence shown.

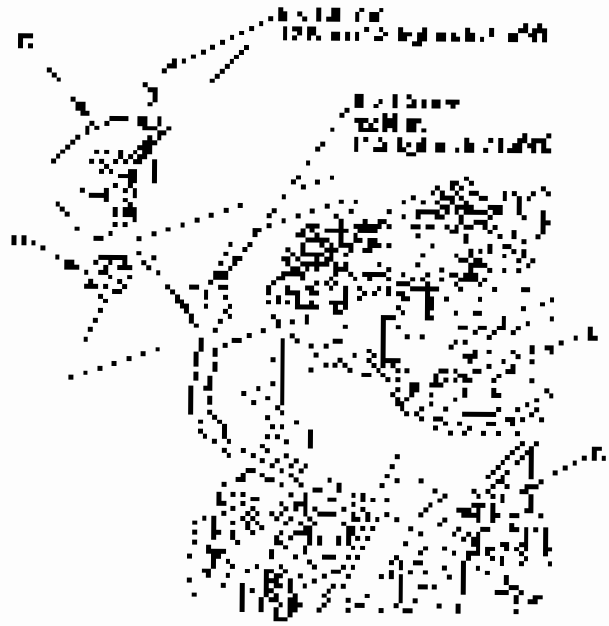




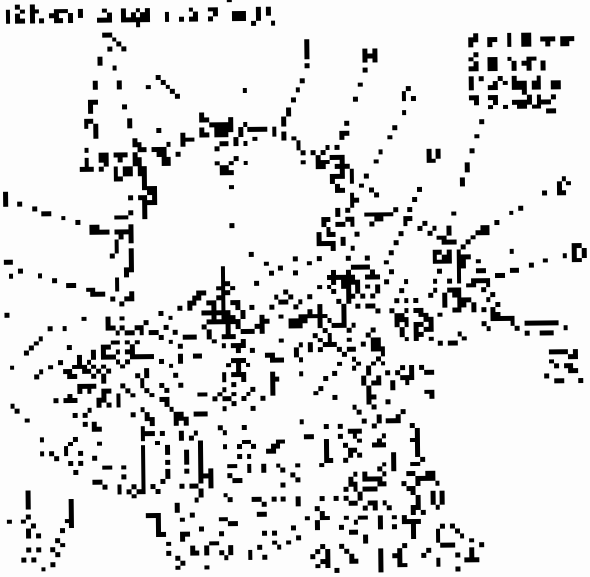
End Cover, 3rd Gear, Idler Gear, and 3rd Clutch Installation (cont'd)



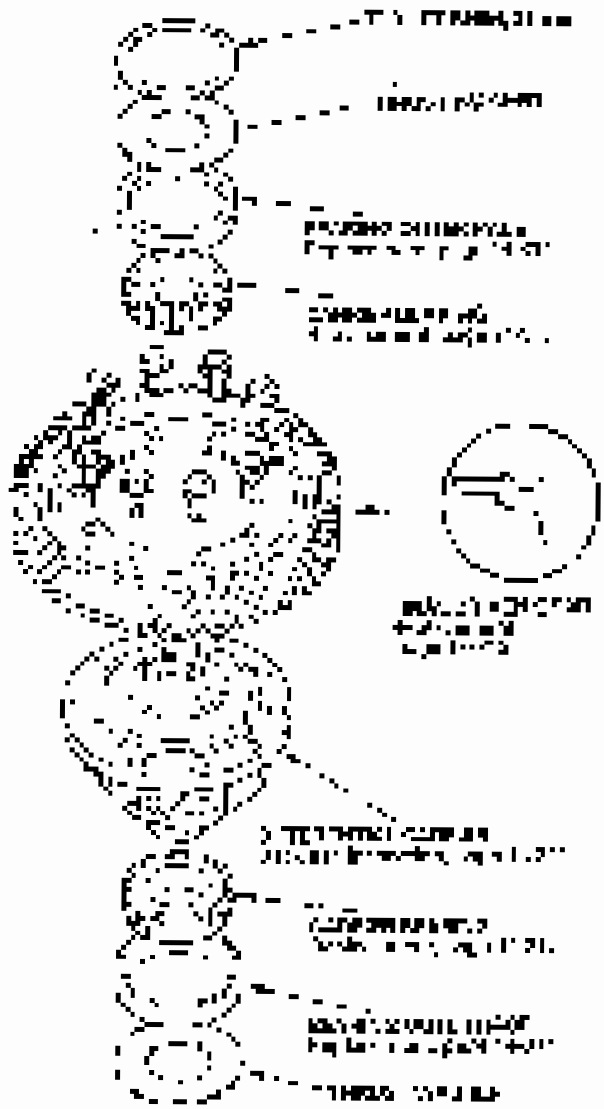




End Cover, 3rd Gear, Idler Gear, and 3rd Clutch Installation (cont'd)

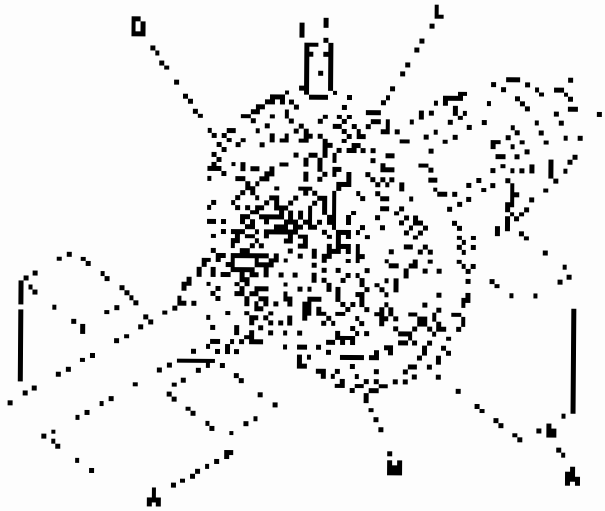


Component Location Index



Backlash Inspection

1. Install the differential case assembly and bearing outer race (transaxle).



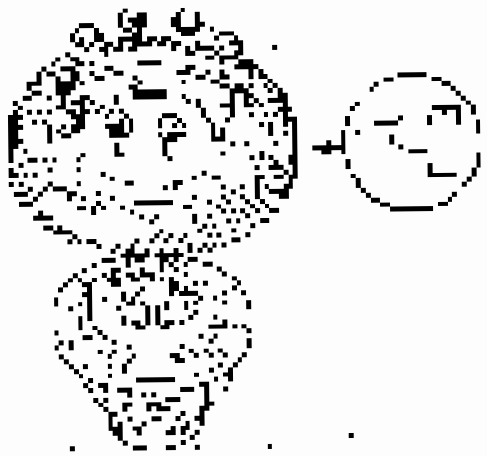
2. Check the backlash of the drive pinion gear. Standard: 0.05 – 0.15 mm (0.002 – 0.006 in)

3. If the backlash is not within specification, replace the differential carrier.

Differential Carrier, Final Driven Gear Replacement

1. [illegible]

NOTE: [illegible]



2. [illegible]

3. Tighten [illegible]

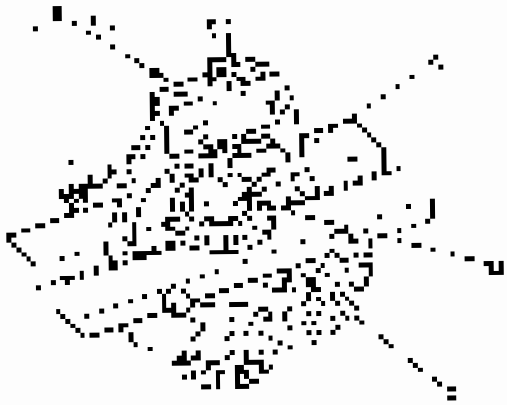
Torque: [illegible]

Carrier Bearing Replacement

Special Tool Required
Attachment [illegible]

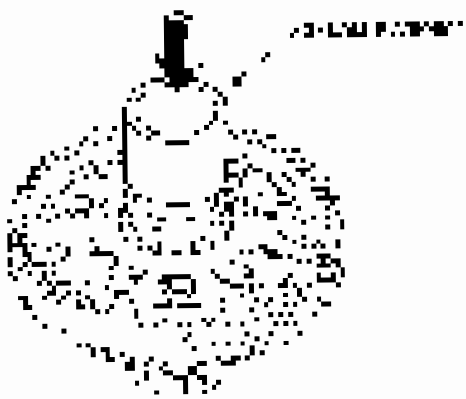
NOTE:
- [illegible]
- [illegible]
- [illegible]

1. [illegible]



2. [illegible]

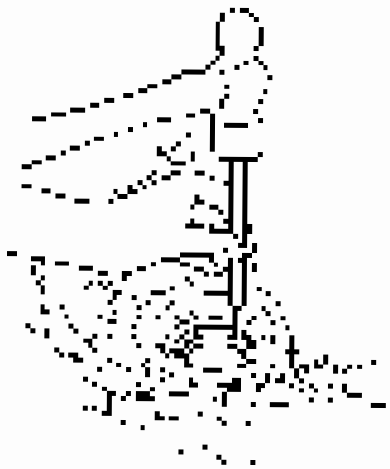
NOTE:
- [illegible]
- [illegible]
- [illegible]



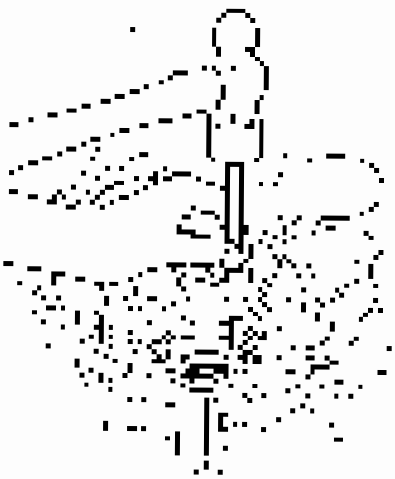
Oil Seal Replacement

Special Tools Required
- [illegible]
- [illegible]
- Oil seal lubricant: [illegible]

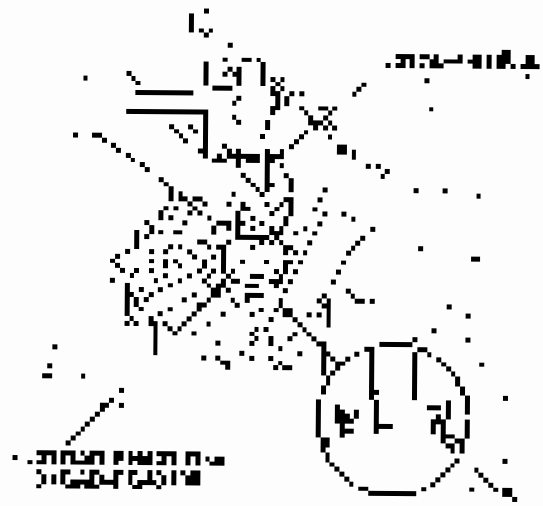
1. [illegible]



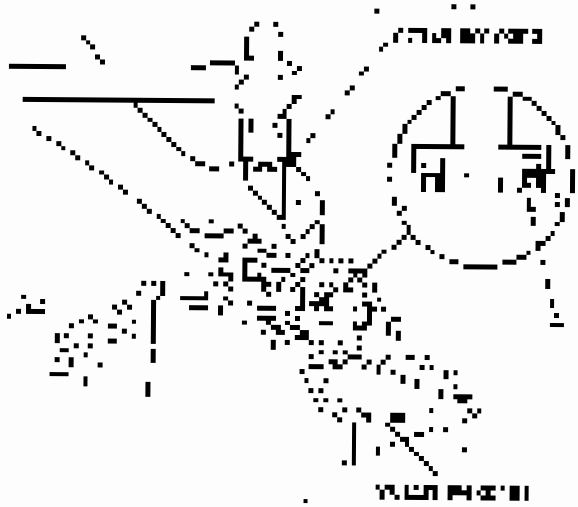
2. [illegible]



3. [illegible]



4. [illegible]



Carrier Bearing Outer Race Replacement

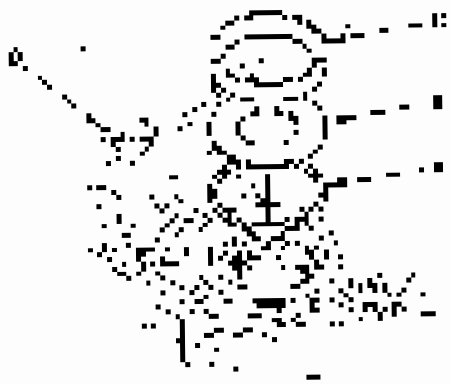
Special Tools Required
- [illegible]
- [illegible]

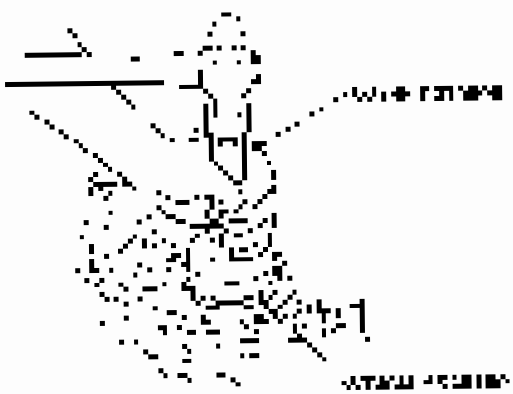
NOTE:
- Replace the bearing with new one if any part is damaged or the bearing is replaced.
- Do not use driver on the [illegible] when removing bearing outer race.
  Adjust preload when reassembling bearing and outer race.
- Check gear mesh and tooth contact.

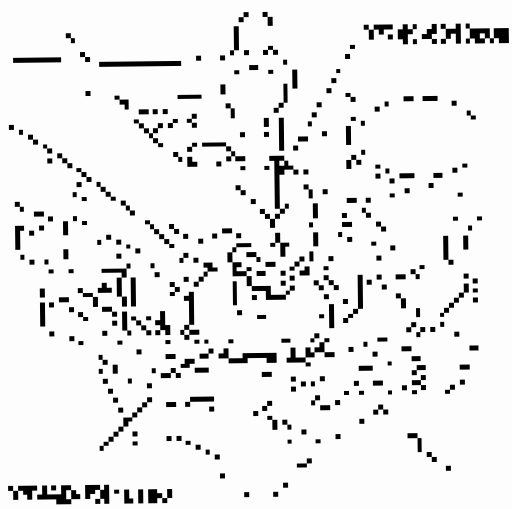
1. [illegible]

2. Remove the bearing outer race from the torque converter housing.

3. Install the [illegible] and drive the bearing outer race evenly into the torque converter housing until it is fully seated.







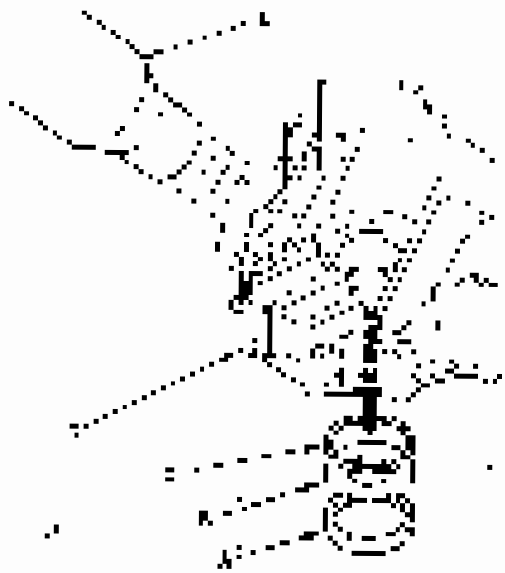
Carrier Bearing Preload Inspection

Special Tool(s) required
- [illegible]
- Attachment [illegible]
- Preload inspection tool [illegible]

NOTE: Prior to removing or replacing any parts, inspect the existing preload. This will establish a baseline and help to determine if the bearing preload is out of specification.

1. [illegible] Install the special tool(s) as shown and tighten the bolts to 20 N·m (15 lb ft). Rotate the flange in both directions at least 2 full revolutions to seat the bearings. Measure the preload with an inch-pound torque wrench. The preload should be 2.3-3.4 N·m (20-30 lb in).

   NOTE: Use the same amount of lubrication that will be used during assembly. Do not rotate the pinion during measurement.

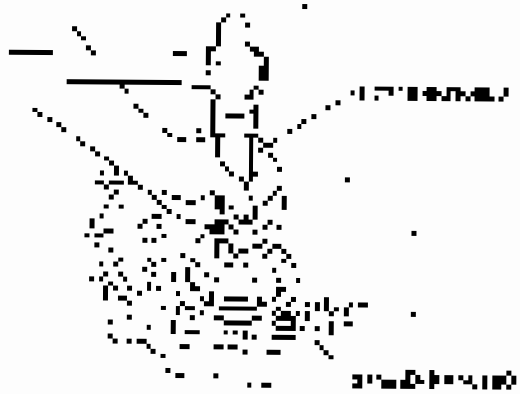


2. [illegible] If the preload is not within specification, remove the special tool(s) and the pinion flange.

3. Remove the collapsible spacer from the pinion shaft and discard.

4. Install the [illegible] new collapsible spacer onto the pinion shaft. Install the pinion flange. Install a new pinion nut. Tighten the pinion nut to 50 N·m (37 lb ft).

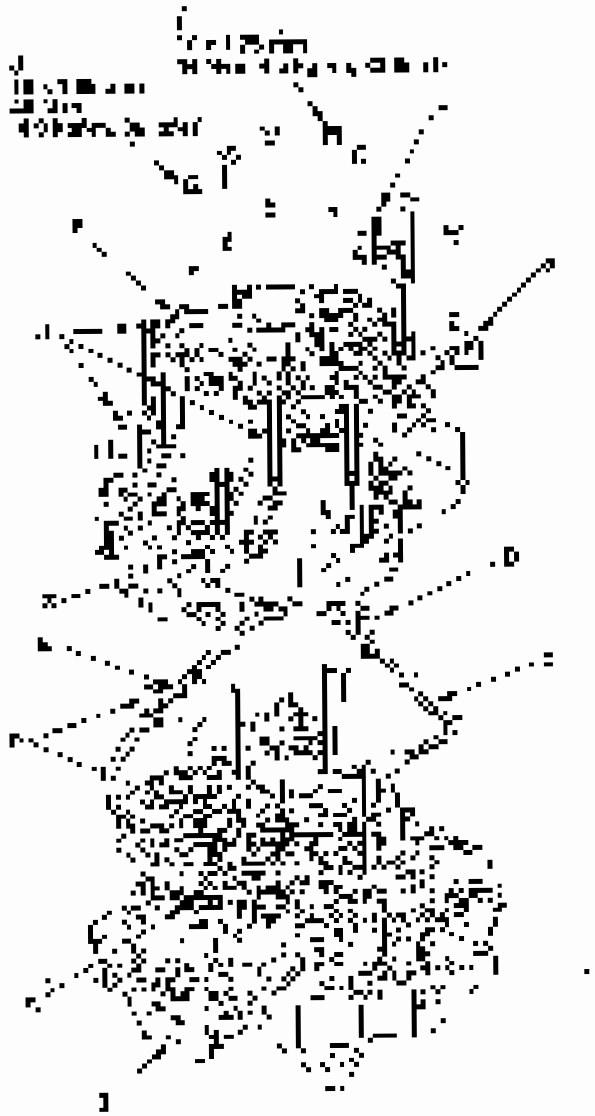
5. Tighten the pinion nut [illegible]



6. Check the preload. If the preload is not within specification, the collapsible spacer must be replaced. Do not reuse the bearings.

Carrier Bearing Preload Inspection (cont'd)

7. Install the drive pinion and carrier assembly into the transaxle case. Install the bearing outer race and the bearing adjuster. Do not install the bearing cap or O-ring.



8. Adjust the bearing preload by turning the bearing adjuster.

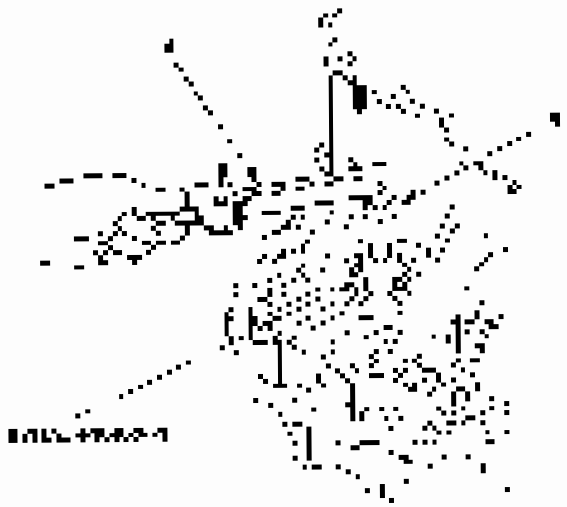
9. Install the transmission housing. To prevent oil leaks, apply liquid gasket to the mating surface of the transmission housing.

10. Tighten the transmission housing bolts to the specified torque. Refer to the Transaxle Assembly section for the torque specifications.

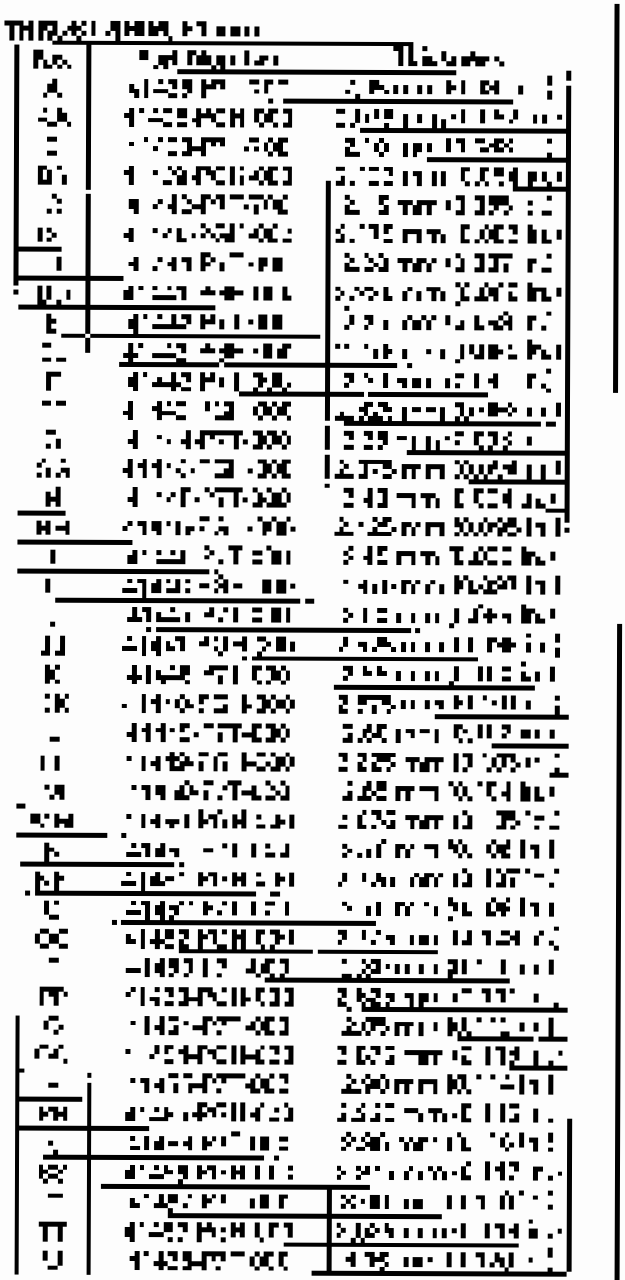
11. Measure the differential rotating torque with the preload adjusting tool.

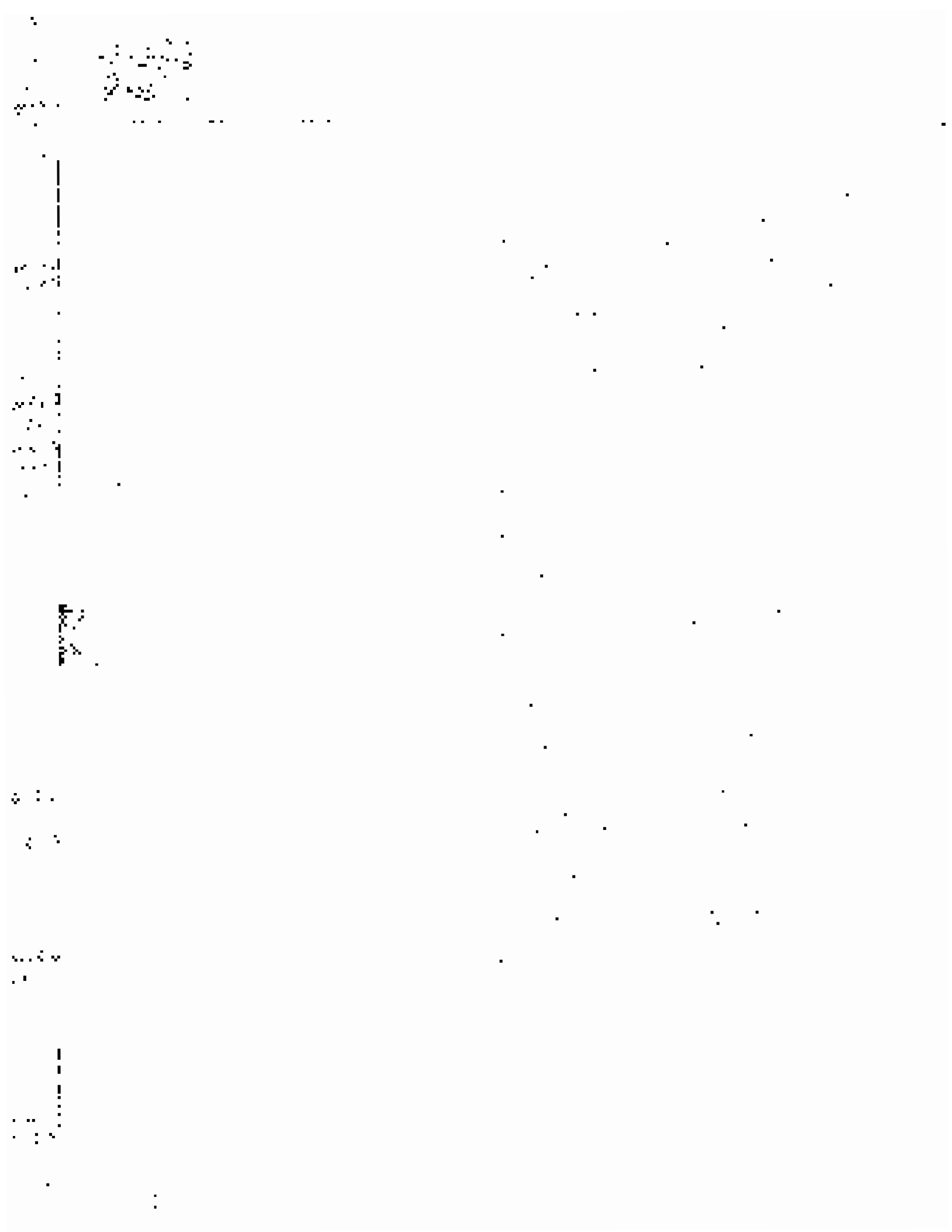
12. Measure the differential rotating torque with the preload adjusting tool. If the measurement is not within the specification, adjust the bearing preload by turning the bearing adjuster.

Standard
New bearing: 2.4 – 4.0 N·m
(25 – 41 kg-cm, 22 – 36 in-lb)
Reused bearing: 2.1 – 3.5 N·m
(21 – 36 kg-cm, 19 – 31 in-lb)



13. When the measurement is not within the specification, remove the differential assembly and check the bearing preload adjusting shim. To increase the bearing preload, decrease the thickness of the shim. To decrease the bearing preload, increase the thickness of the shim. Changing the shim thickness by 0.1 mm (0.004 in) will change the bearing preload by approximately 0.5 N·m (5 kg-cm, 4 in-lb).

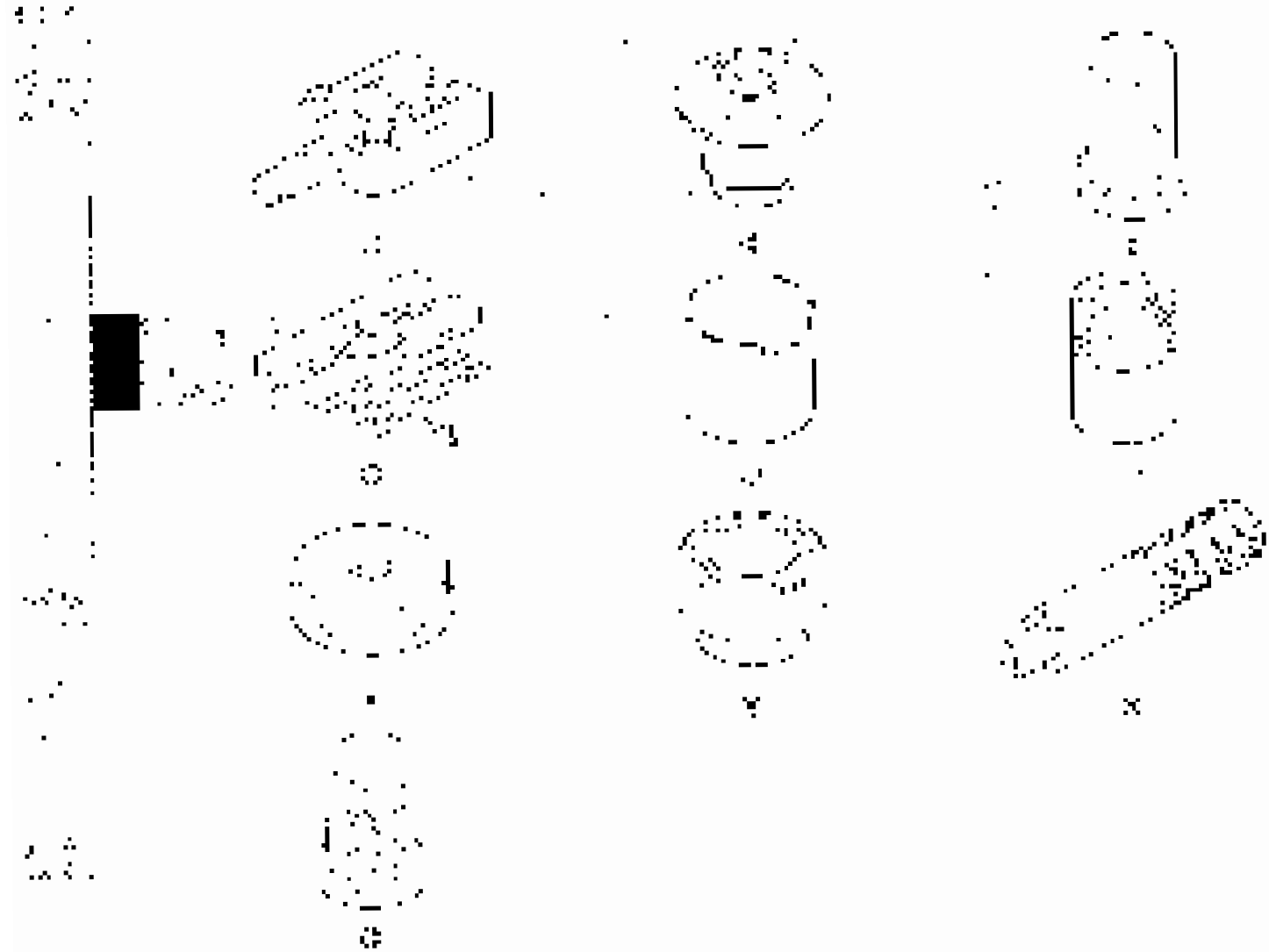


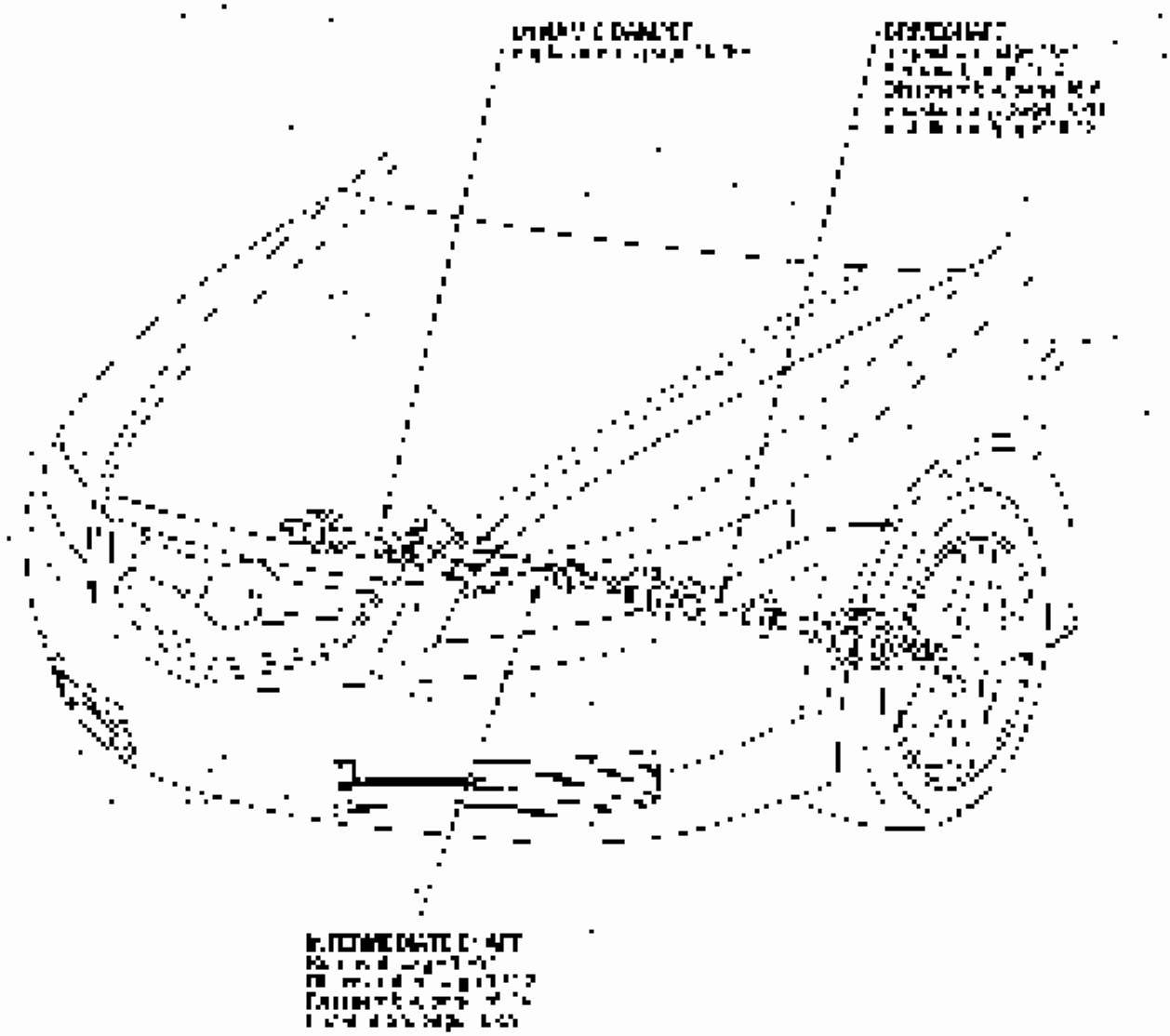


Driveline/Axle

Special Tools

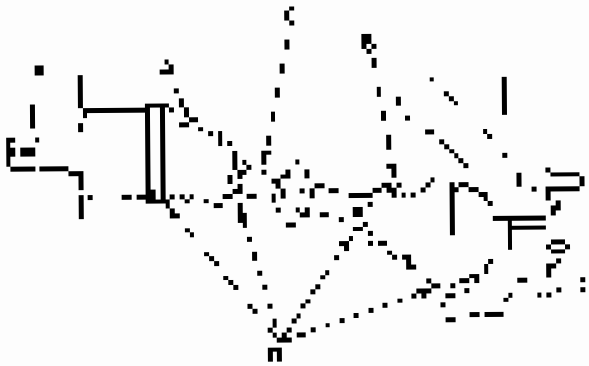
Ref.No.	Tool Number	Description	Qty
A	[illegible]	Ball Joint Remover	1
B	[illegible]	Ball Joint Thread Protector	1
C	[illegible]	CV Seal Driver	1
D	[illegible]	Bearing Driver	1
E	[illegible]	Hub Shaft Puller	1
F	[illegible]	Threaded Rod, M12 x 1.5 mm	1
G	[illegible]	Adapter, 37 x 55 mm	1
H	[illegible]	Adapter, 45 mm I.D.	1
I	[illegible]	Driver	1
J	[illegible]	Driver Handle	1





Driveshaft Inspection

1. [illegible]



2. [illegible]

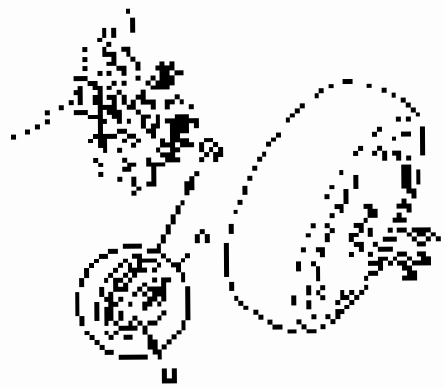
3. [illegible]

Driveshaft Removal

Special Tools Required
- [illegible]
- [illegible]

1. [illegible]

2. [illegible]



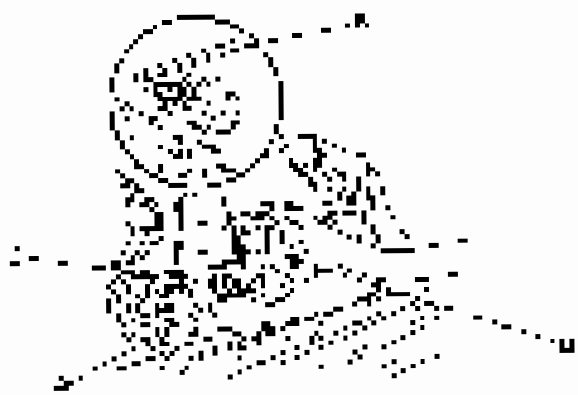
3. [illegible]

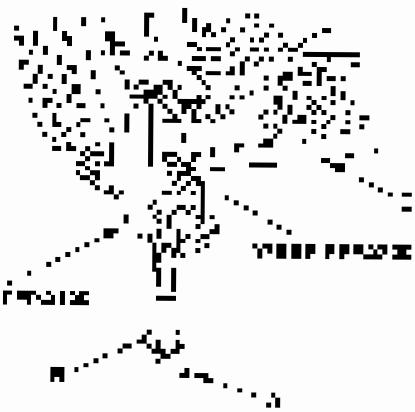
4. [illegible]

- [illegible]
- [illegible]

5. [illegible]

6. [illegible]





Driveshaft Removal (cont'd)

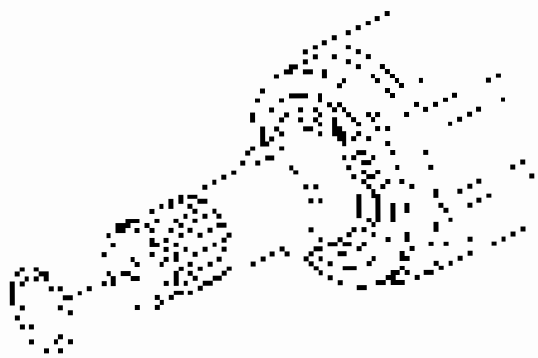
Rear Driveshaft

Driveshaft Disassembly

Special Tools Required

Inboard Joint Side

1. Remove the



Driveshaft Disassembly (cont'd)

5. [illegible]

6. [illegible]

[illegible]

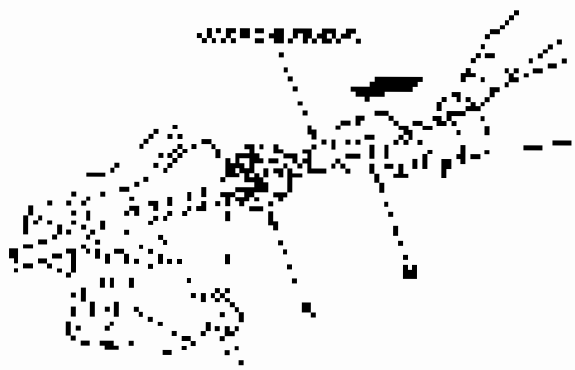
Outboard Joint Side

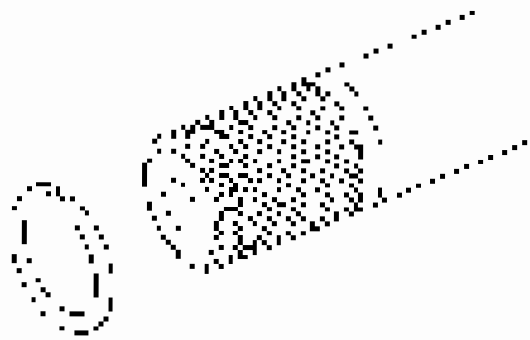
1. [illegible]

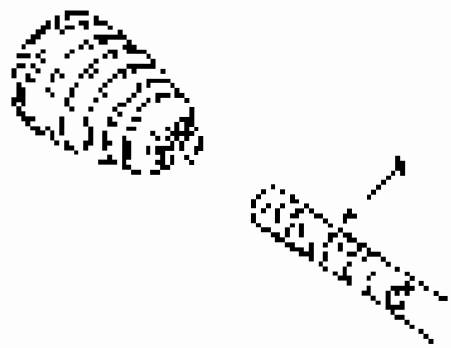
[illegible]

Bar Clamp Type

[illegible]







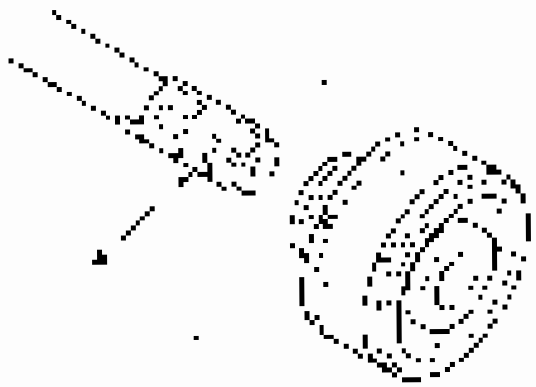
Dynamic Damper Replacement

1. [illegible]

2. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

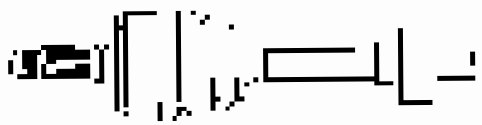
3. [illegible]

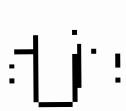


4. [illegible]

5. [illegible]

[illegible]



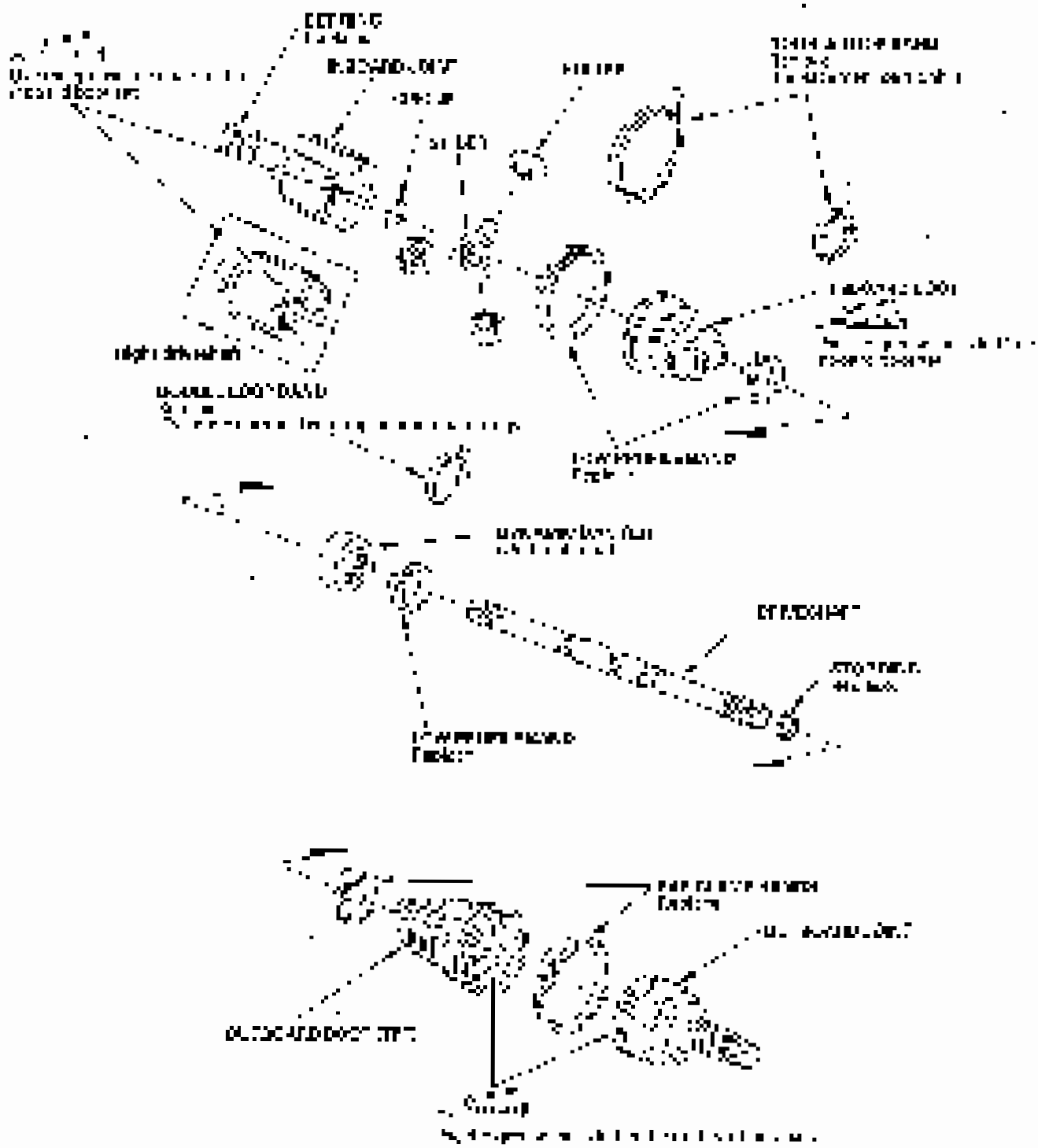


6. [illegible]

7. [illegible]

Driveshaft Reassembly

Exploded View



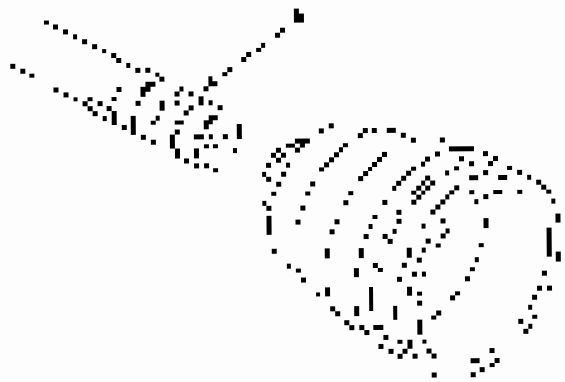
Driveshaft Reassembly (cont'd)

Special Tools Required
- [illegible]
- [illegible]

NOTE: [illegible]

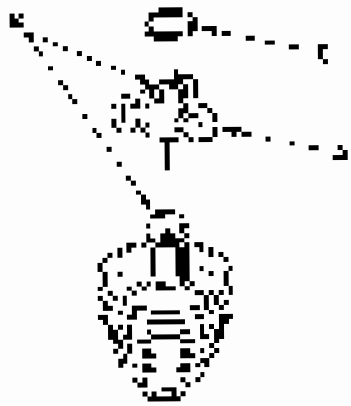
Inboard Joint Side

[illegible]



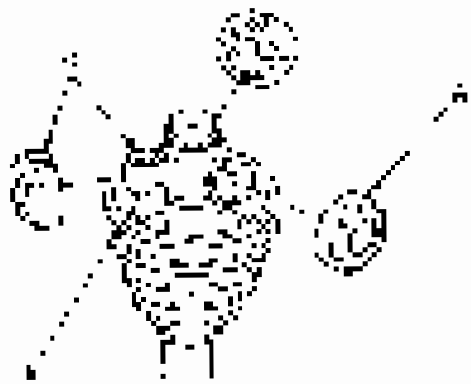
2. [illegible]

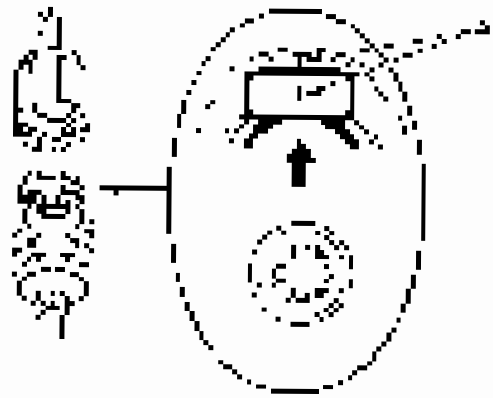
3. [illegible]



4. [illegible]

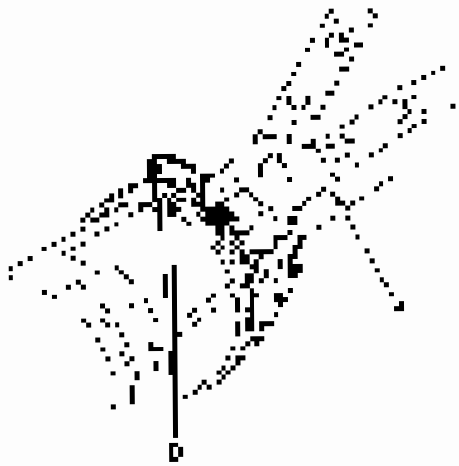
5. [illegible]
   - [illegible]
   - [illegible]





Driveshaft Reassembly (cont'd)

[illegible]

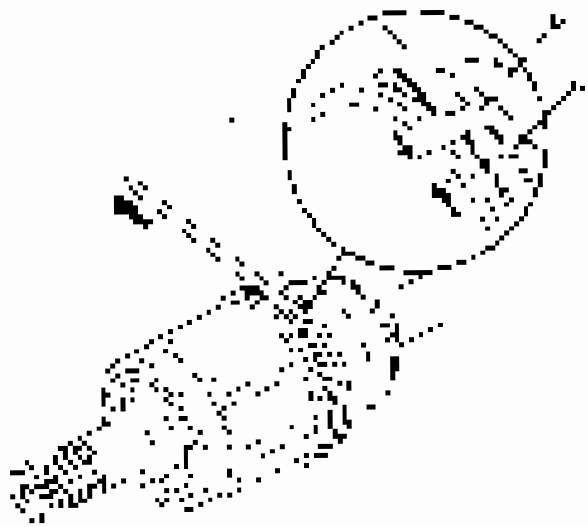


[illegible]

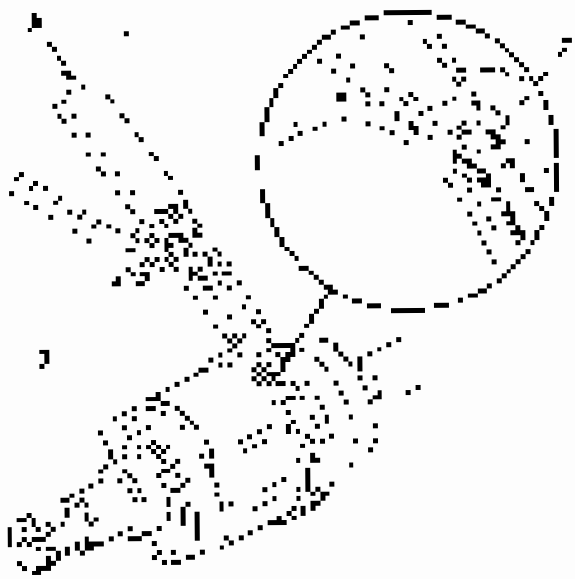
[illegible]

[illegible]

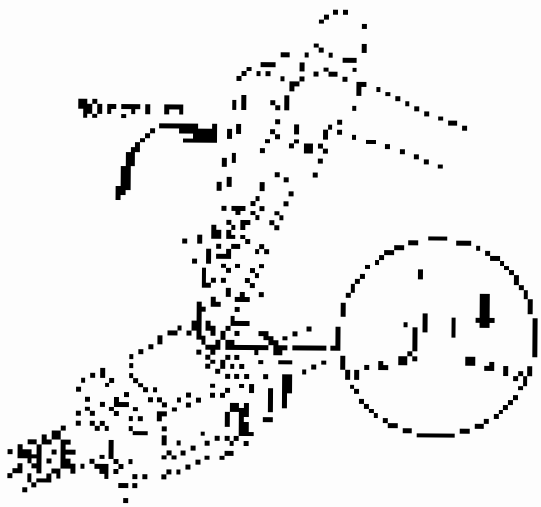
[illegible]

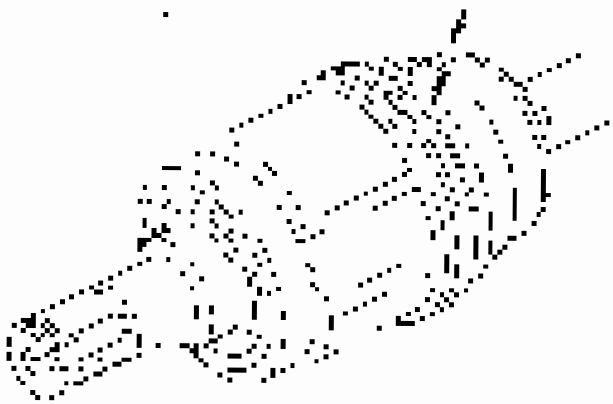


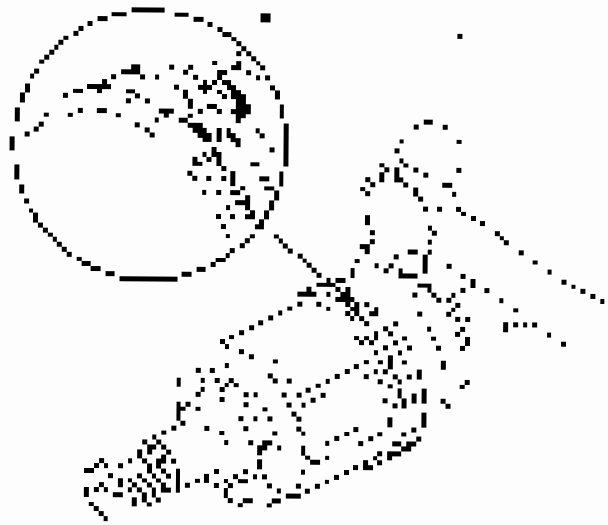
[illegible]

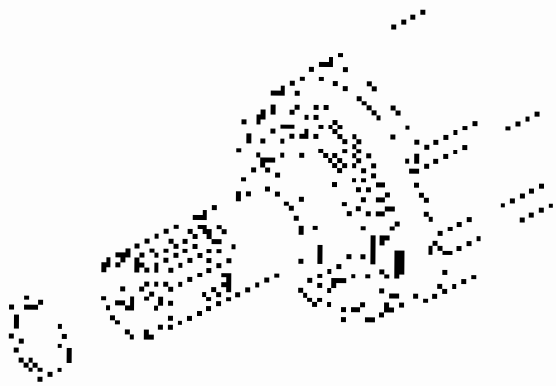


[illegible]





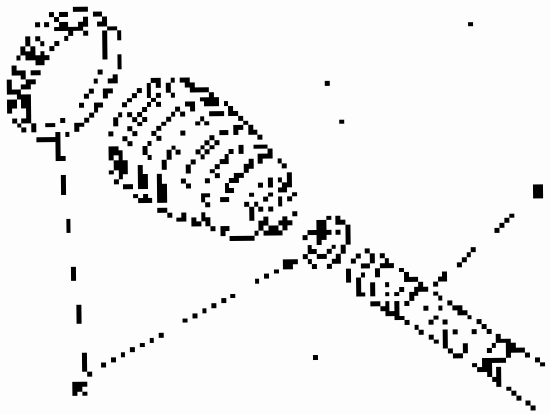




Driveshaft Reassembly (cont'd)

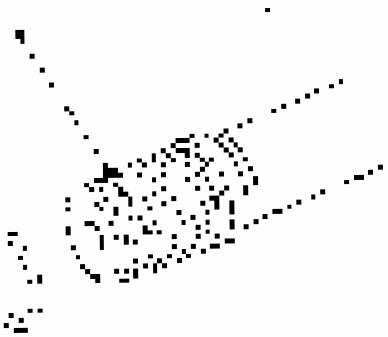
Outboard Joint Side

1. [illegible]

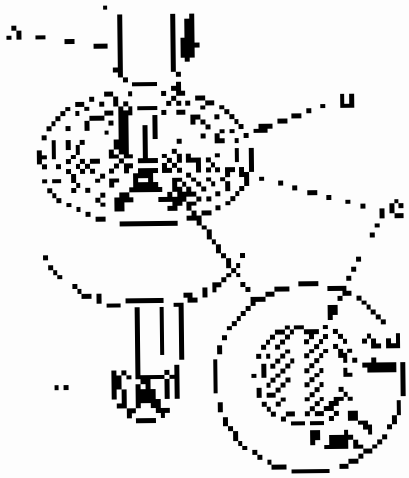


2. [illegible]

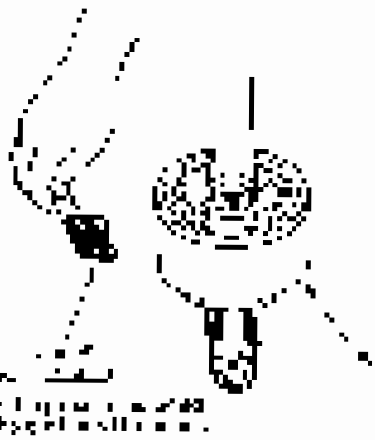
3. [illegible]



4. [illegible]



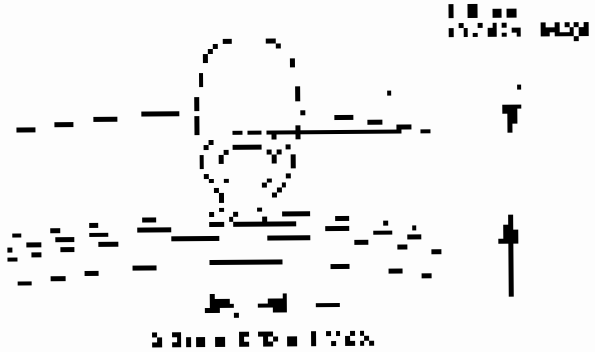
5. [illegible]



Driveshaft Reassembly (cont'd)

[illegible]

[illegible]

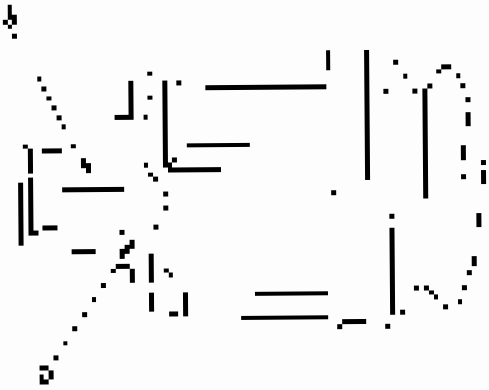


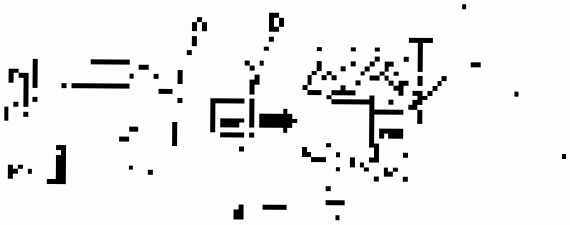
[illegible]

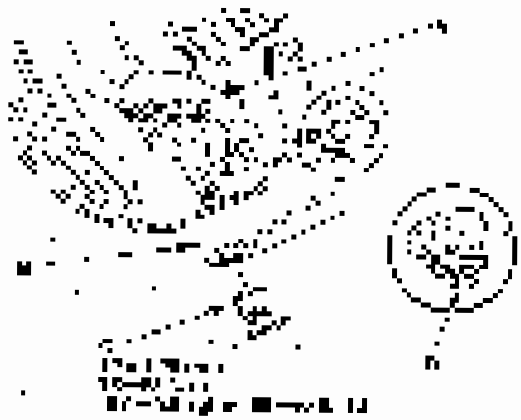
Driveshaft Installation

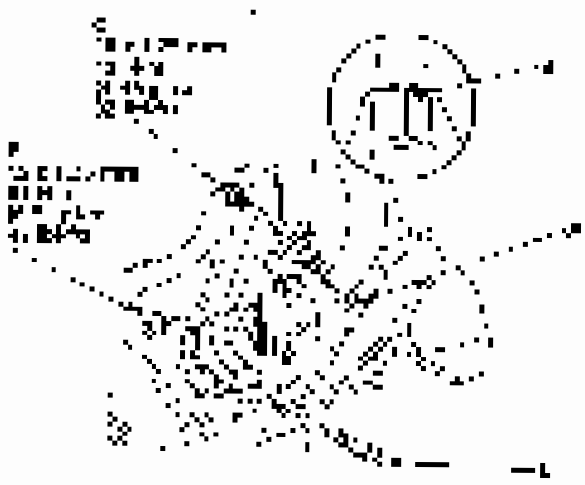
1. [illegible]

2. [illegible]







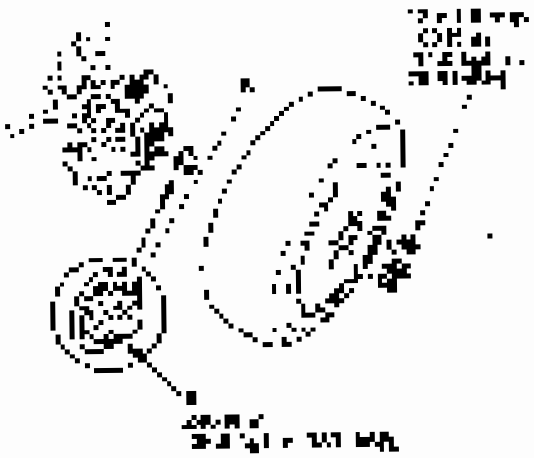


Driveshaft Installation (cont'd)

8. [illegible]

10. [illegible]

11. [illegible]



12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

- [illegible]
- [illegible]

16. [illegible]

Intermediate Shaft Removal

1. [illegible]

   - [illegible]
   - [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

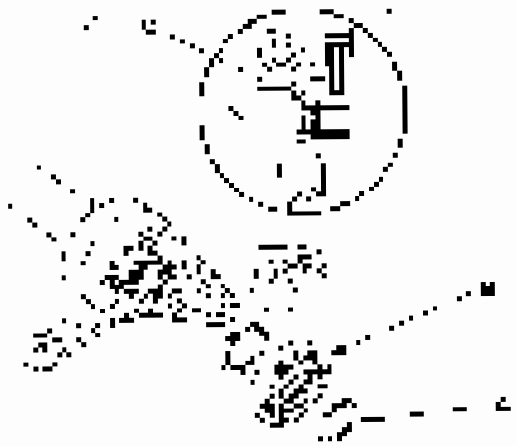
6. [illegible]

Intermediate Shaft Disassembly

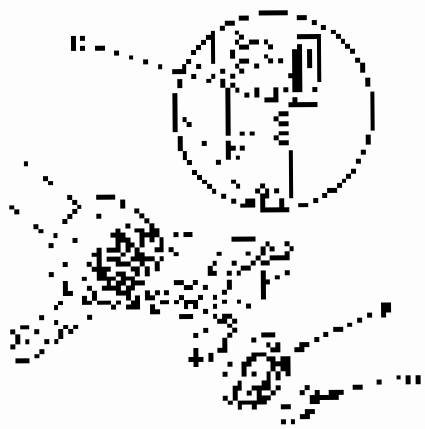
Special Tools Required
- [illegible]

1. [illegible]

M/T model



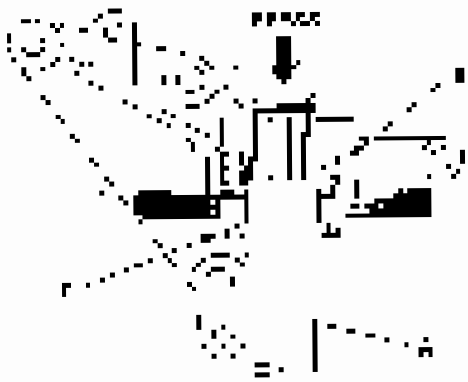
A/T model

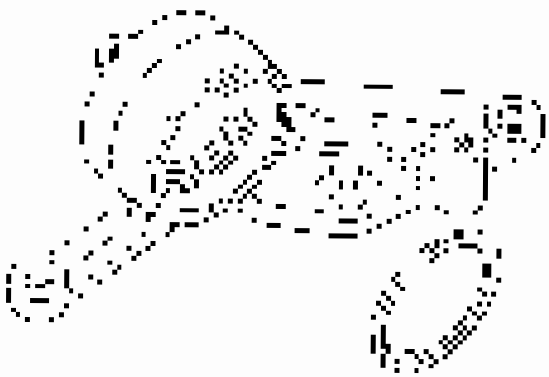


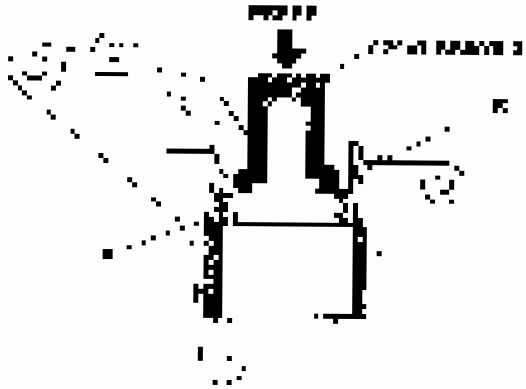
2. [illegible]

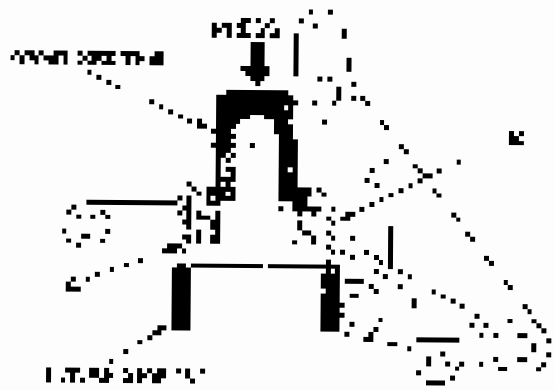
M/T model

A/T model

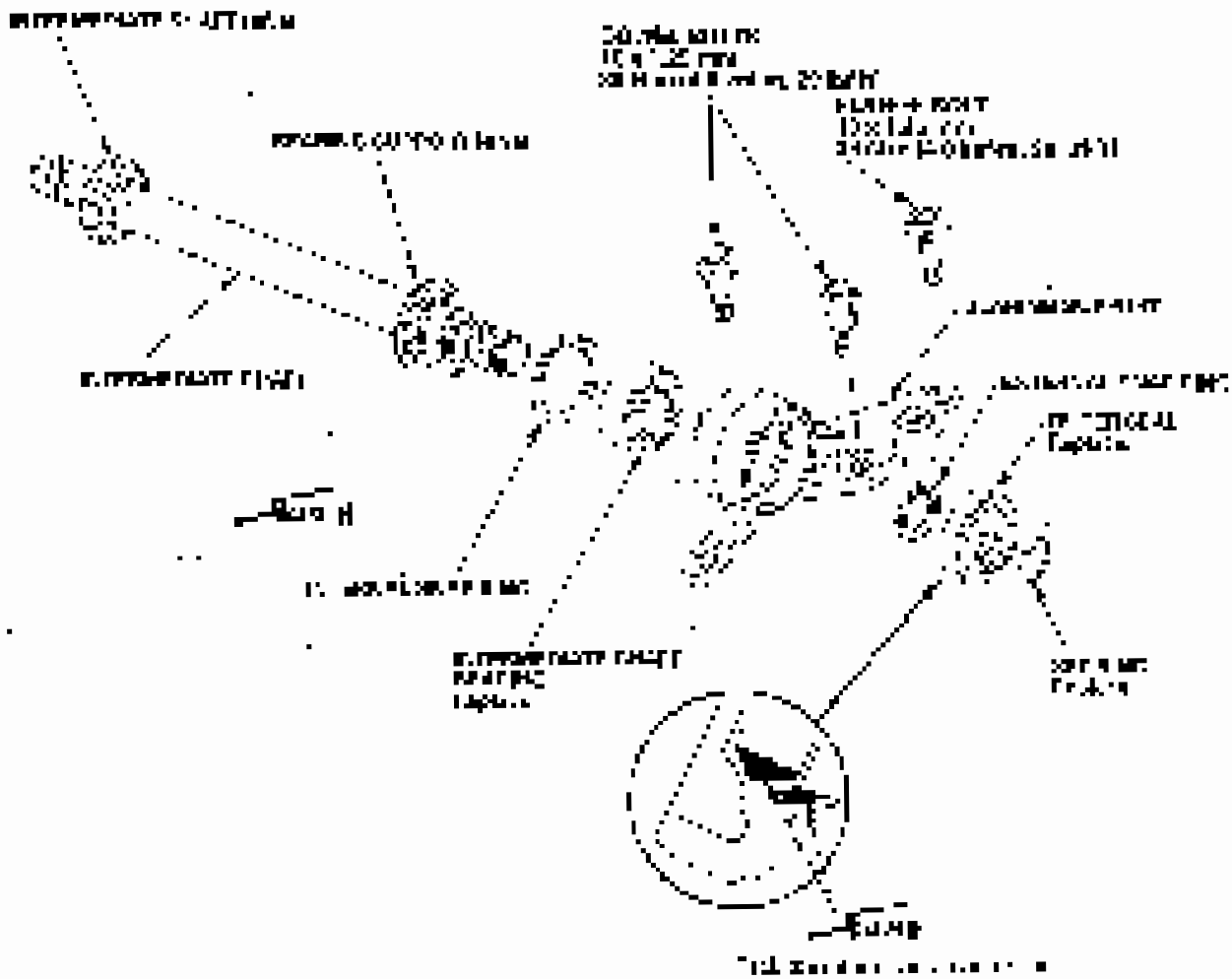






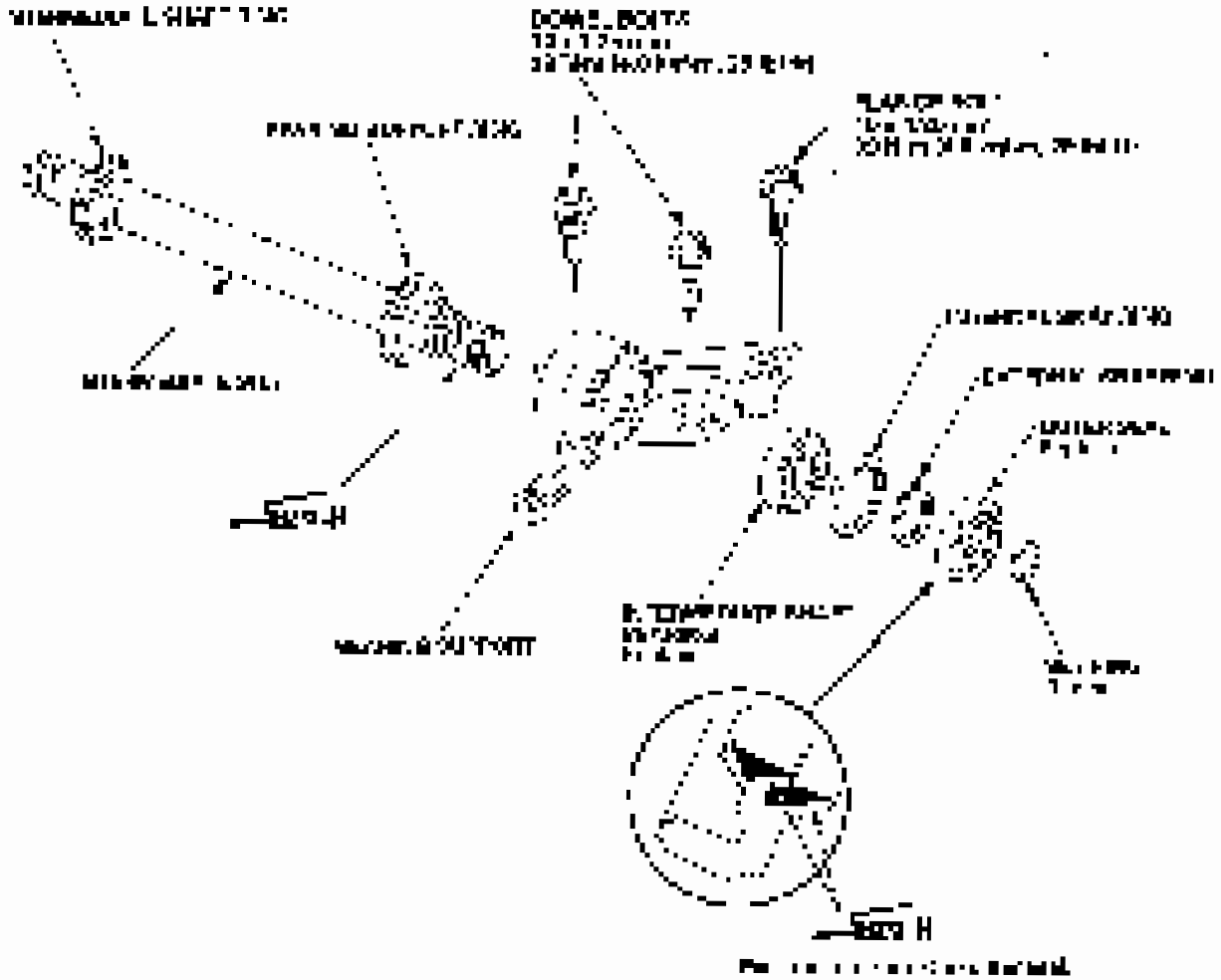


Exploded View



Exploded View

A-Tread:



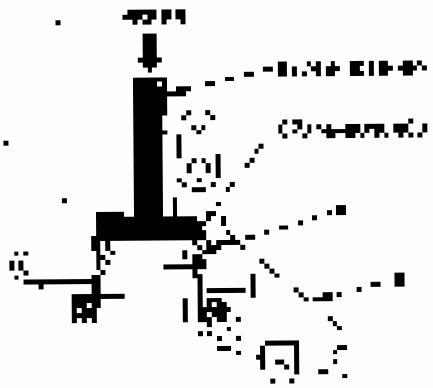
Special Tools required
- [illegible]
- [illegible]
- [illegible]
- [illegible]

NOTE: Refer to the Disposal [illegible] during the procedure.

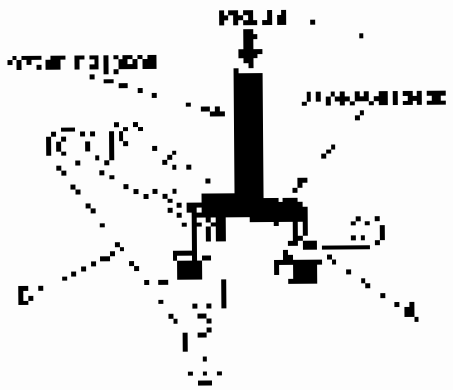
1. [illegible]

2. [illegible]

M/T model:



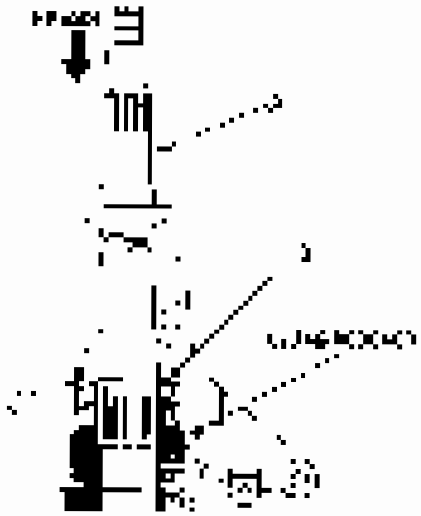
A/T model:

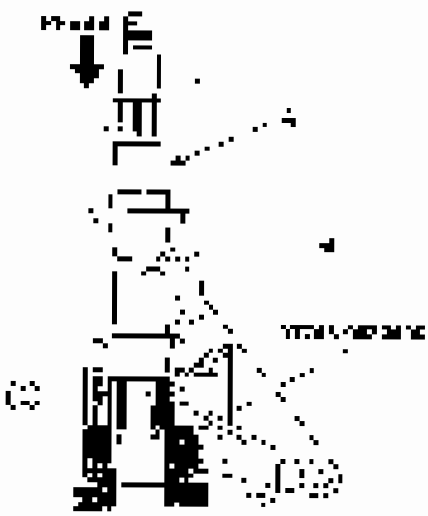


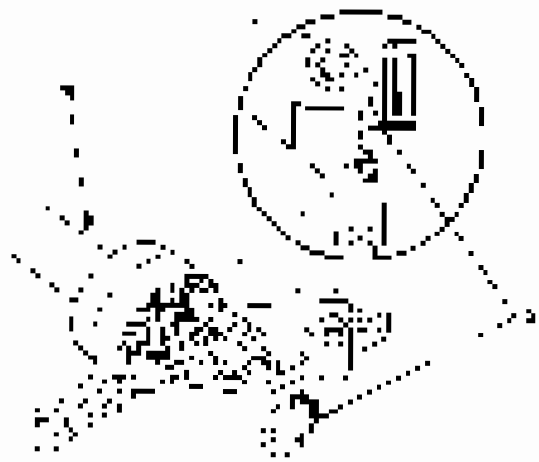
3. [illegible]

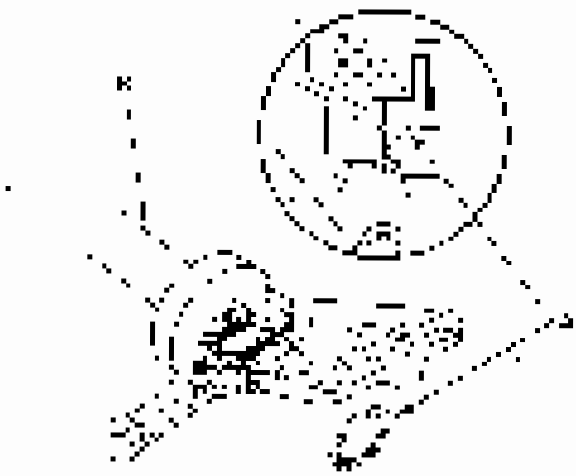
M/T model:

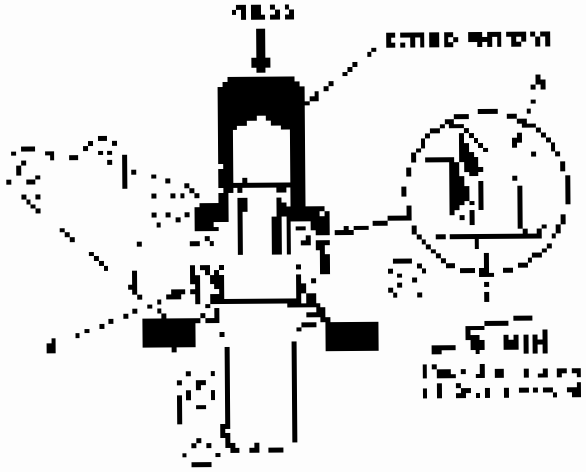
A/T model

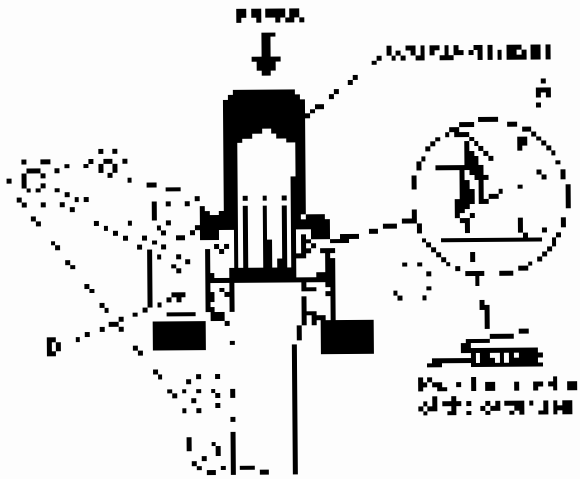




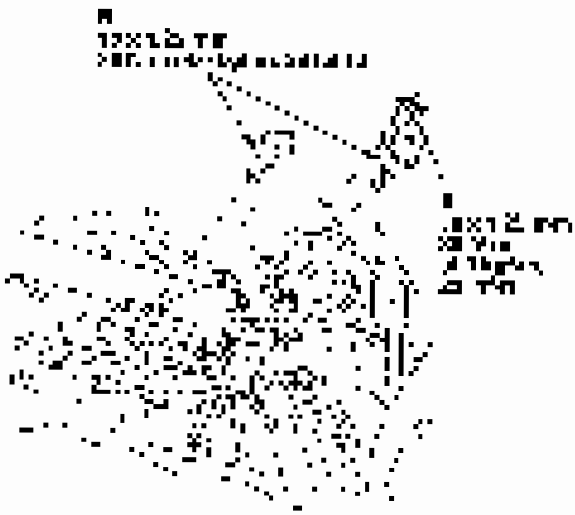








Intermediate Shaft Installation

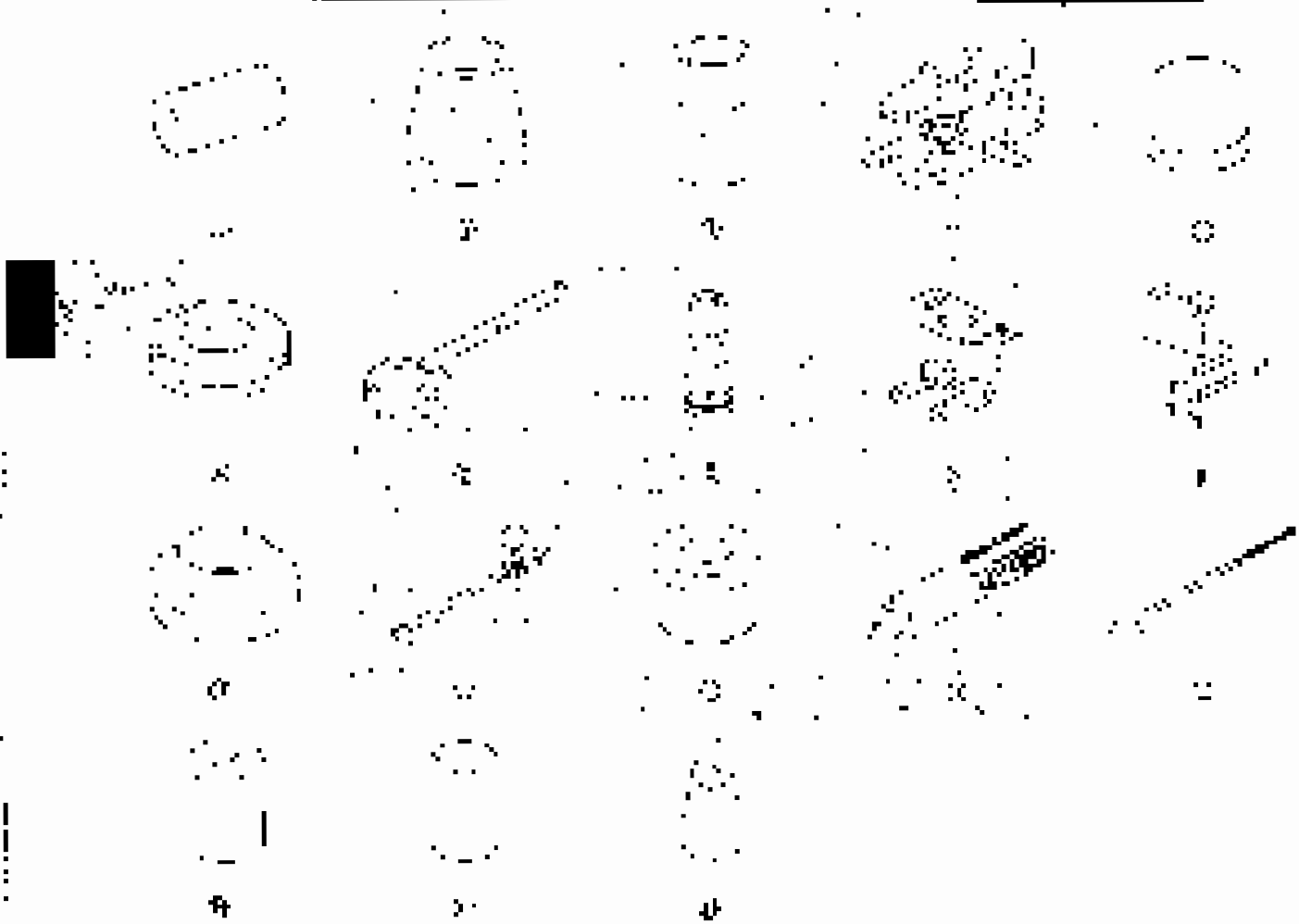


Steering

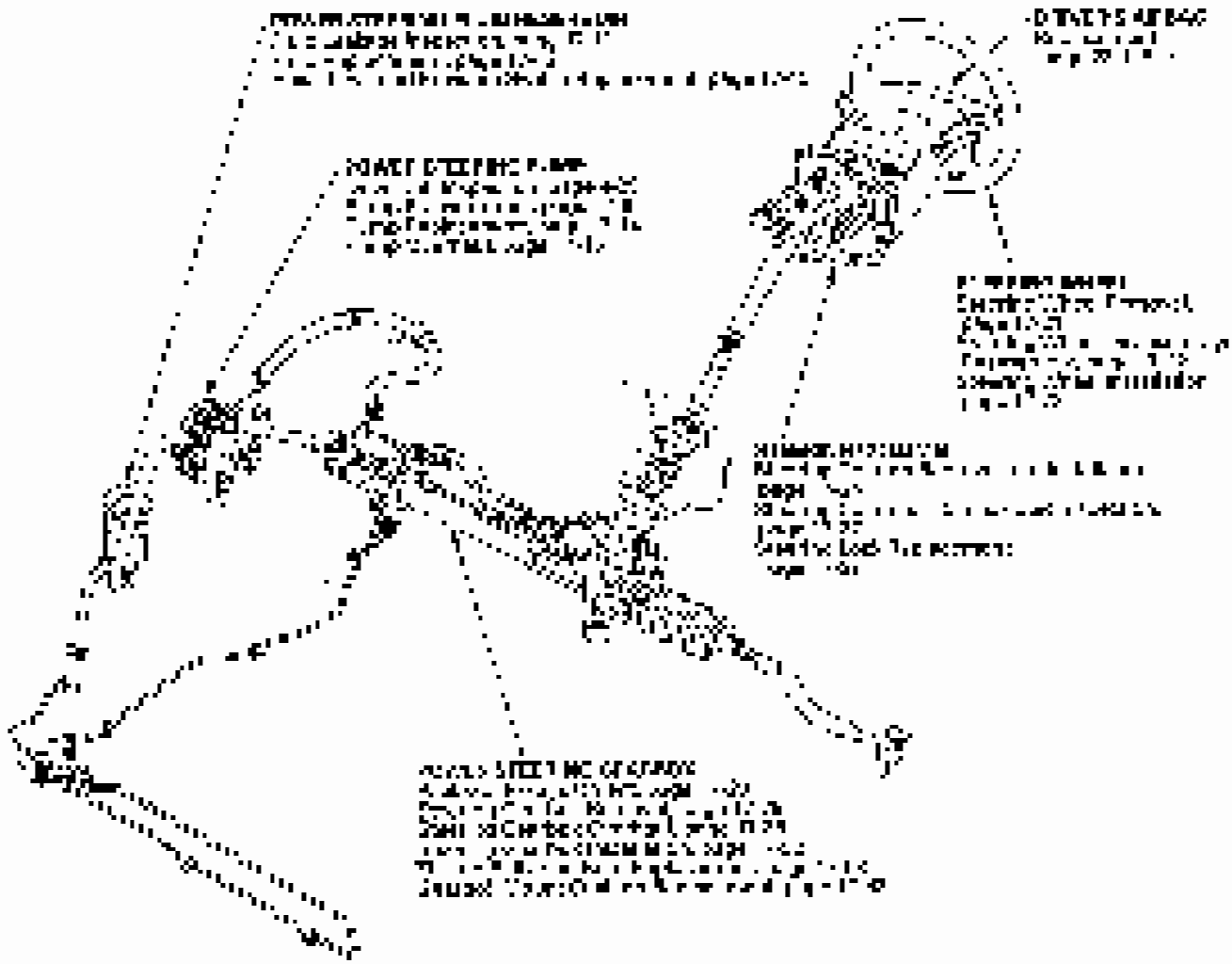
Power Steering

Special Tools

Ref. No.	Tool Number	Description	Qty
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]



Component Location Index



Symptom Troubleshooting Index

Symptom	Procedure	Mechanical
	Troubleshooting system—see page 17-11	• Bottomed suspension • Damaged suspension • Trouble in steering system
	Steering wheel pull—see page 17-20.	Refer to Chassis Suspension Section
Steering wheel does not return smoothly	1 Check tire and wheel pressure—see page 17-20. 2 Check front wheel alignment—see page 17-20. 3 Check for power steering belt slippage—see page 17-20. 4 Check for power steering fluid leaks—see page 17-20. 5 Check steering shaft for binding—see page 17-20.	
Excessive steering effort	1 Check tire and wheel pressure—see page 17-20. 2 Check for power steering belt slippage—see page 17-20. 3 Check for power steering fluid leaks—see page 17-20. 4 Check for binding power steering gear—see page 17-20. 5 Check for binding steering shaft—see page 17-20. 6 Check steering gear adjustment—see page 17-20.	
Steering wheel shakes when driving on rough road	1 Check tire and wheel runout—see page 17-20. 2 Check for power steering belt slippage—see page 17-20. 3 Check for power steering fluid leaks—see page 17-20. 4 Check for binding steering shaft—see page 17-20. 5 Check steering gear adjustment—see page 17-20.	
Steering wheel shakes when braking	1 Check front wheel runout—see page 17-20. 2 Check front wheel balance—see page 17-20. 3 Check front brake—see page 17-20.	
Steering wheel shakes when accelerating	1 Check front wheel runout—see page 17-20. 2 Check front wheel balance—see page 17-20. 3 Check front brake—see page 17-20.	
Steering wheel shakes when turning	1 Check front wheel runout—see page 17-20. 2 Check front wheel balance—see page 17-20. 3 Check front brake—see page 17-20. 4 Check steering gear adjustment—see page 17-20. 5 Check steering shaft for binding—see page 17-20.	

Power steering [illegible] wandering	1. Check for loose [illegible]. Tighten clamp bolts as necessary. 2. Check the steering column shaft [illegible] replace the steering column assembly (See page [illegible]). 3. Check [illegible] adjustment (See page 17-32). 4. Check the power steering pump pulley. (1) [illegible] (See page 17-2[illegible]). (2) [illegible] (See page 17-1[illegible]).	
[illegible] from the power steering system	• Check the fluid level [illegible] to the proper level and check for leaks. • Check the reservoir for leaks. • Check for crushed [illegible] the pipe and hose of the system. • Check the power steering pump mount [illegible].	[illegible] fluid
[illegible] power steering [illegible]	• [illegible] pump at normal operating temperature [illegible] pump pressure [illegible] steering [illegible] normal. • Replace [illegible] pump [illegible] damage (see page 17-[illegible]).	• PS pump [illegible] • Air in the PS fluid
Squealing from the power steering pump	Check the [illegible] (See page 4-[illegible]).	
Fluid leaks from the steering gearbox	• Fluid leaks from the [illegible] (See page 17-38). • Fluid leaks from the [illegible]. Replace the [illegible]. • Fluid leaks from [illegible]. Replace the [illegible]. • Fluid leaks from [illegible] steering [illegible] (See page 17-3[illegible]). • [illegible]	
Fluid leaks from the power steering line	• Fluid leaks from [illegible]. Tighten the connection [illegible]. • Fluid leaks from [illegible] damaged [illegible]. Replace [illegible] line. • Fluid leaks from the pump outlet hose [illegible]. Tighten the fitting [illegible] replace [illegible].	
Fluid leaks from the power steering pump	• Fluid leaks from [illegible]. Replace the [illegible]. • Fluid leaks from the power steering pump housing. Replace the [illegible] power steering pump (See page 17-[illegible]).	
Fluid leaks from the power steering reservoir	• Fluid leaks from around [illegible]. • Fluid leaks from reservoir: Check [illegible].	
Fluid leaks from the power steering pump outlet hose (high pressure)	• [illegible] replace the [illegible]. • [illegible]	
Fluid leaks from the power steering pump inlet hose	Check the hose [illegible] replace [illegible].	
[illegible]		

Symptom Troubleshooting

Hard steering

1. Check the [illegible] (see page 13-5).

   [illegible]

   YES - [illegible]
   NO - [illegible]

2. [illegible] (see page [illegible]).

3. [illegible]

   [illegible]

   YES - Go to step 4.
   NO - Go to step 5.

4. [illegible]

   [illegible]

   YES - Go to step 6.
   NO - Go to step 7.

5. [illegible]

   [illegible]

   YES - Go to step 8.
   NO - Go to step 9.

6. [illegible]

   [illegible]

   YES - Go to step 7.
   NO - Go to step 9.

7. [illegible] (see page [illegible]).

   [illegible]

   YES - Repair is complete.

   NO - Faulty gear case.

8. [illegible]

   [illegible]

   YES - Repair is complete.

   NO - Faulty valve body.

9. [illegible] (see page [illegible]).

10. [illegible] (see page [illegible]).

    [illegible]

    YES - Faulty pump assembly.

    NO - Faulty flow control valve.

11. [illegible] (see page [illegible]).

    [illegible]

    YES - Repair is complete.

    NO - Go to step 12.

12. [illegible]

    [illegible]

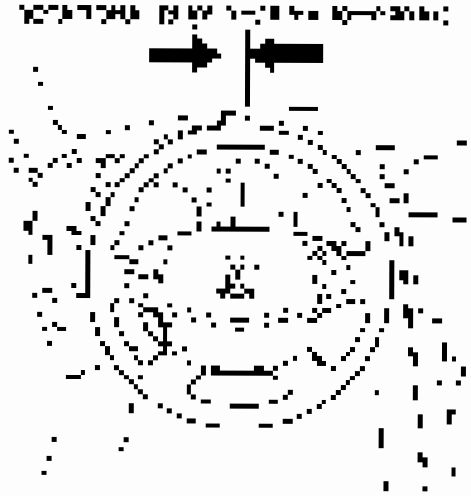
    YES - Repair is complete.

    NO - Faulty valve body.

Steering Wheel Rotational Play Check

1. [illegible]

2. [illegible]
   - [illegible]
   - [illegible]



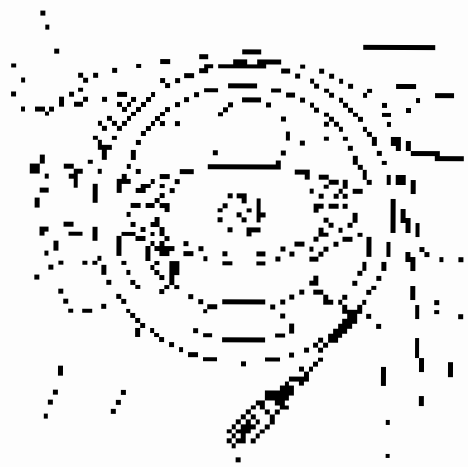
Power Assist Check

NOTE: [illegible]

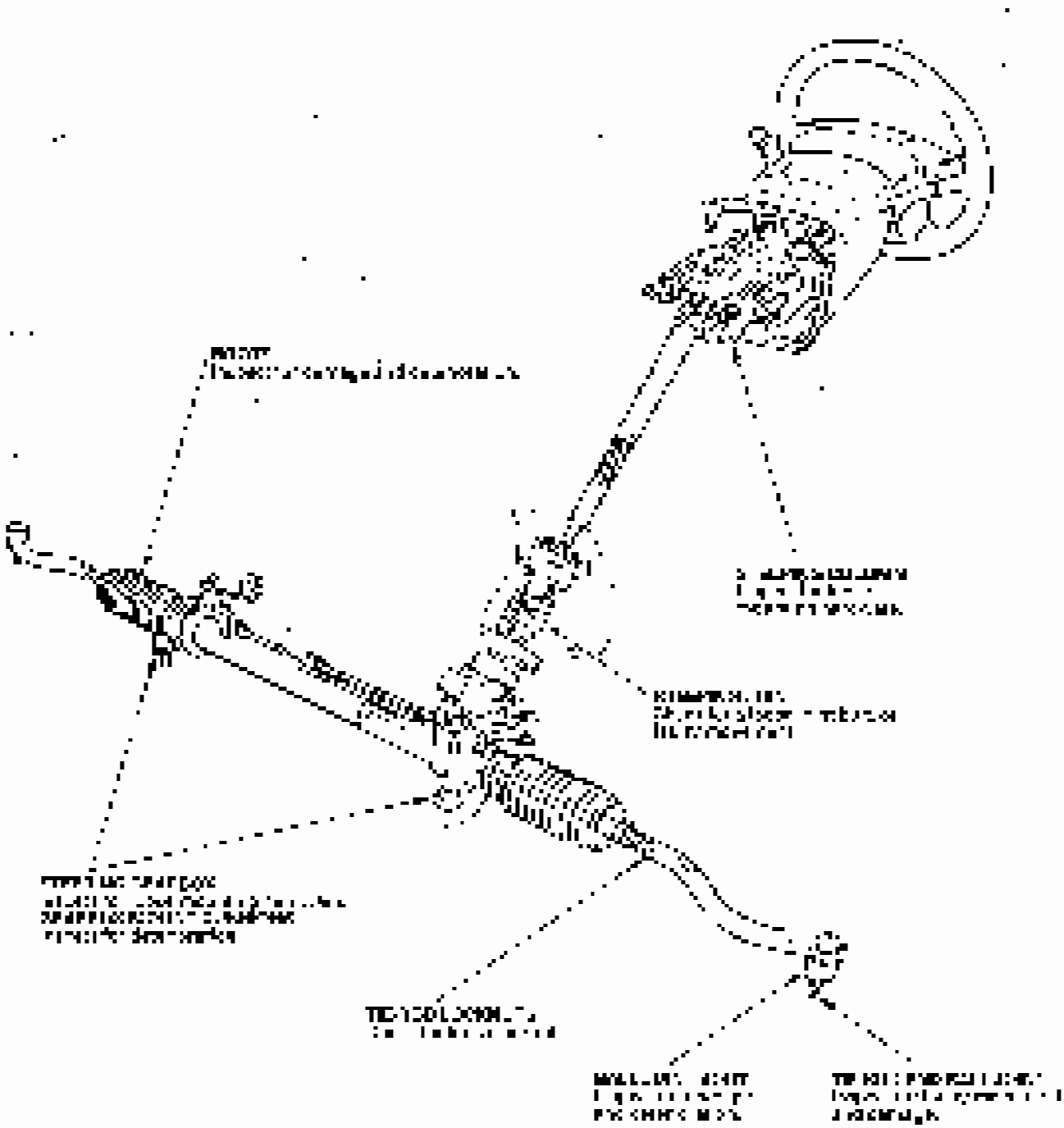
1. [illegible]

2. [illegible]

3. [illegible]
   - [illegible]
   - [illegible]



Steering Linkage and Gearbox Inspection



Pump Pressure Test with T/N 07406-0010001

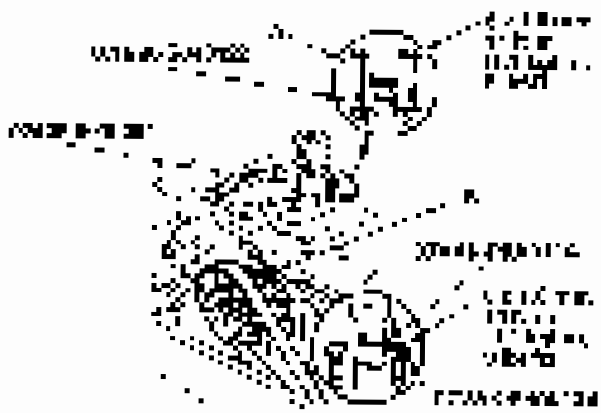
Special Tools Required
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Check the fluid [illegible]
when the fluid is [illegible]

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]
- [illegible]
- [illegible]

11. [illegible]

NOTICE

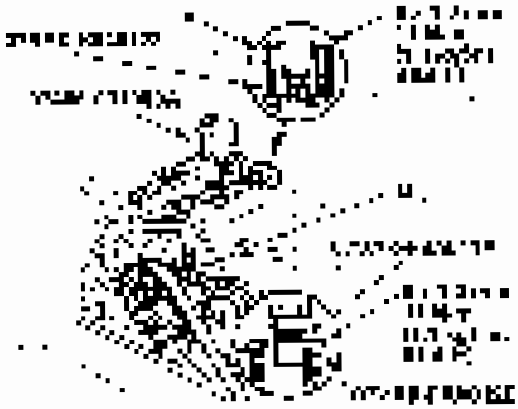
[illegible]

12. [illegible]

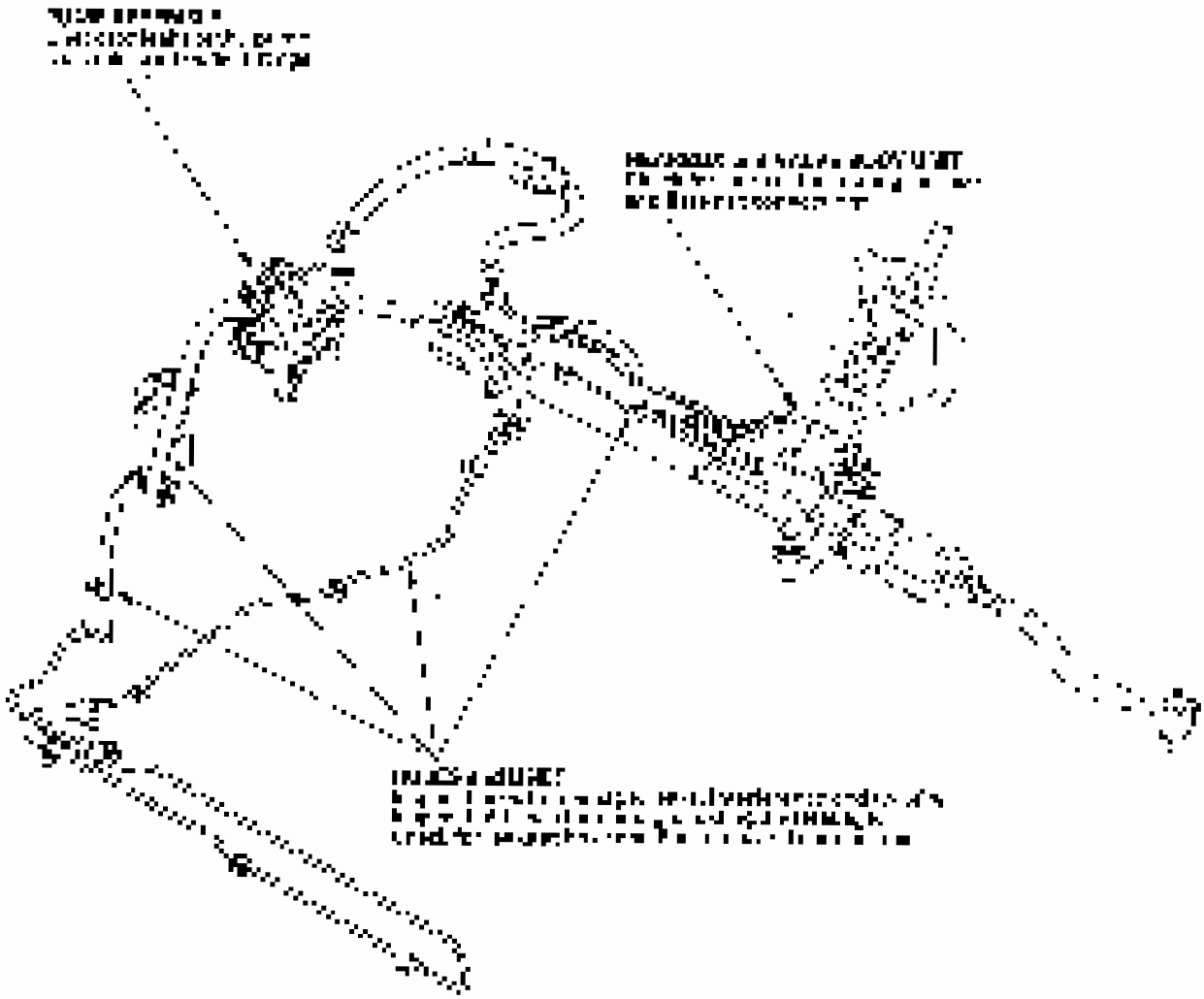
Pump Pressure Test with T/M 07406-0010004

Special Tools Required
-
-
-
-

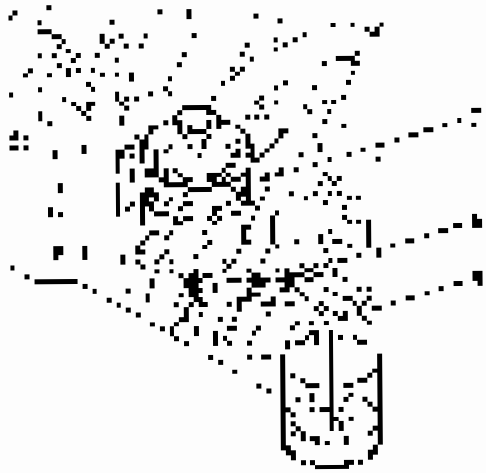
1. Remove the

2. Disconnect the
(see page 17-12).
3. Disconnect the

4. Connect the
5. Install the
6. Fill the

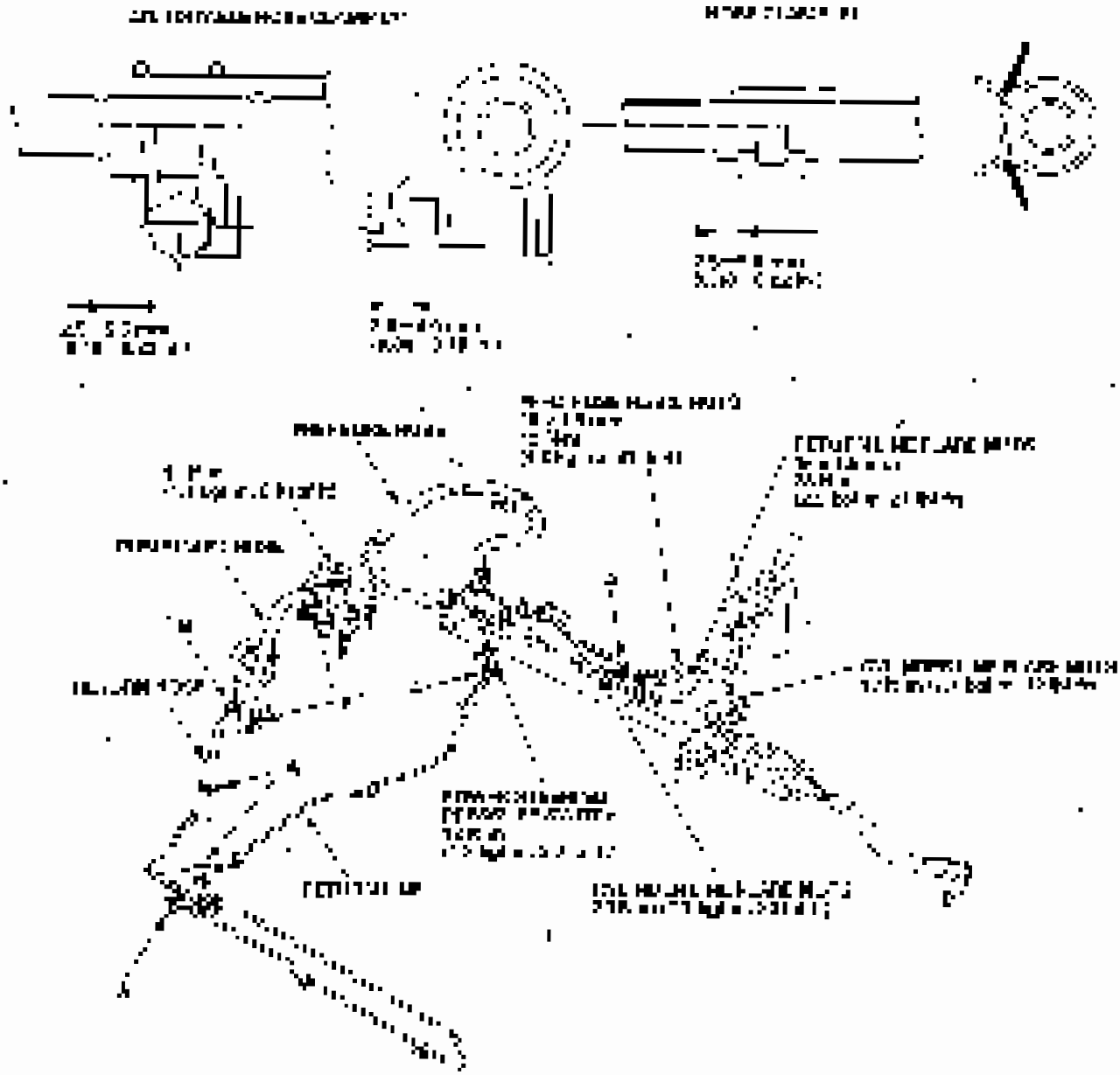
7. Start the
8. Turn the
9. Slowly
CAUTION:
Do not keep the
damage to the
10. Close the
Standard pressure:
1,177 – 1,373 kPa (12 – 14 kgf/cm², 171 – 199 psi)
If the pressure
replace the pump
the pump.



Fluid Replacement



Power Steering Hose, Line, and Pressure Switch Replacement



Pump Replacement

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

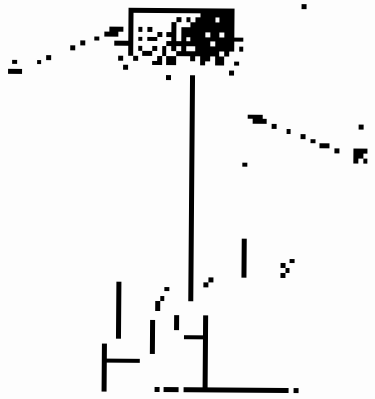
6. [illegible]

7. [illegible]

8. [illegible]

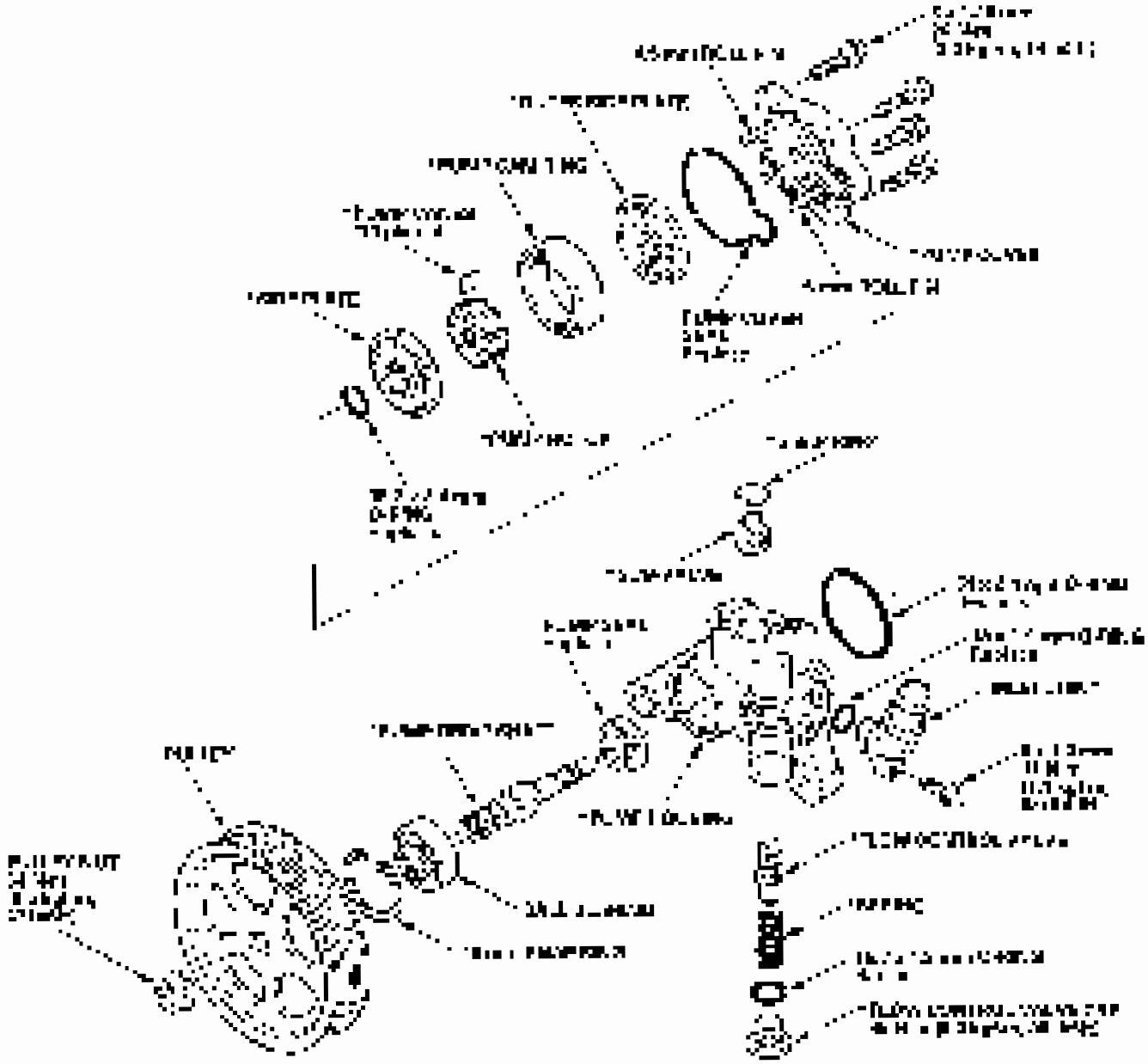
9. [illegible]

10. [illegible]



Pump Overhaul

Exploded View



Special Tools Required
[illegible]

[illegible]

NOTE: [illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

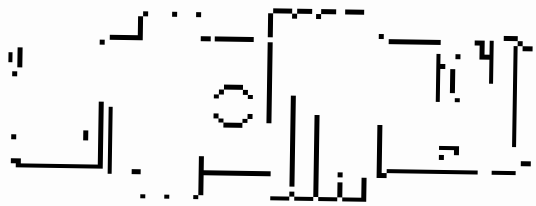
7. [illegible]

8. [illegible]

9. [illegible]

Inspection

10. [illegible]



11. [illegible]

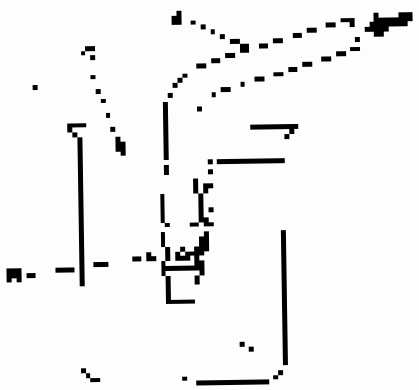
12. [illegible]

[illegible]

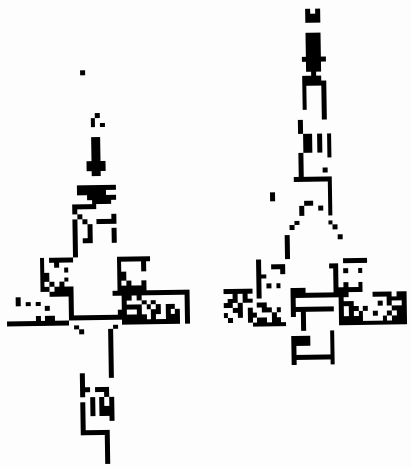
Pump Overhaul (cont'd)

14. [illegible]

- [illegible]
- [illegible]



15. [illegible]

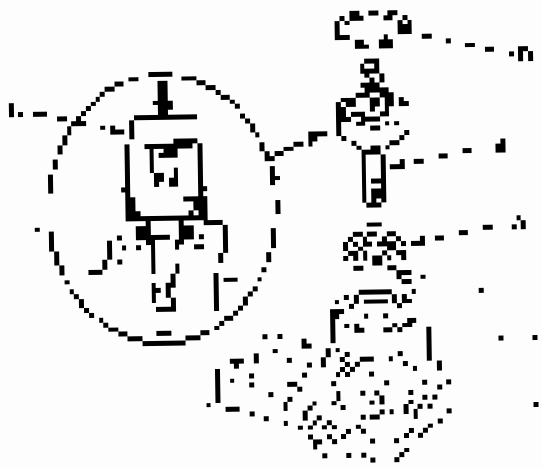


16. [illegible]

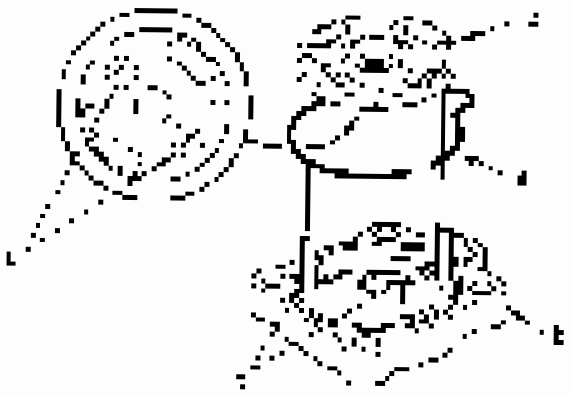
Reassemble

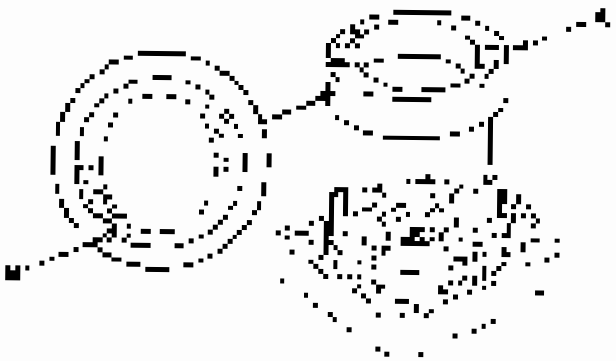
17. [illegible]

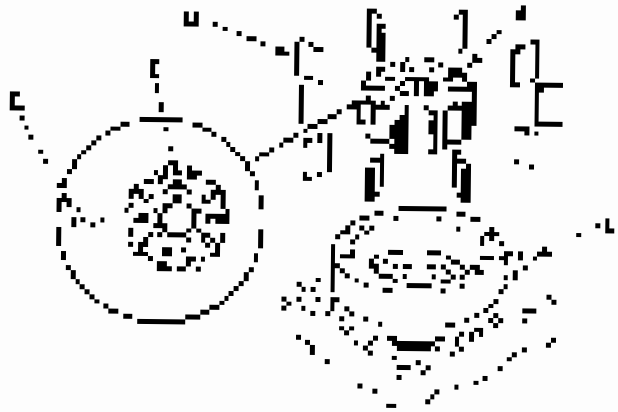
18. [illegible]

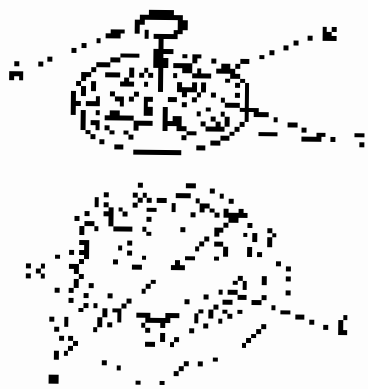


19. [illegible]

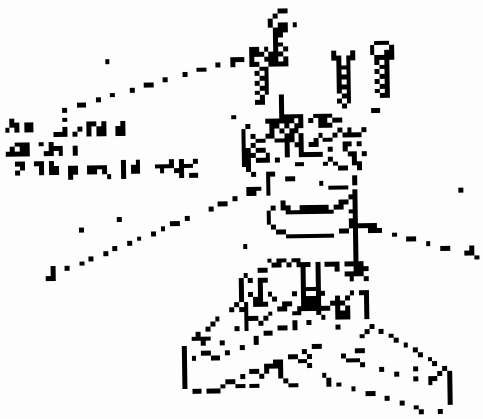








Pump Overhaul (cont'd)



Steering Wheel Removal

[illegible]

[illegible]

2. [illegible]

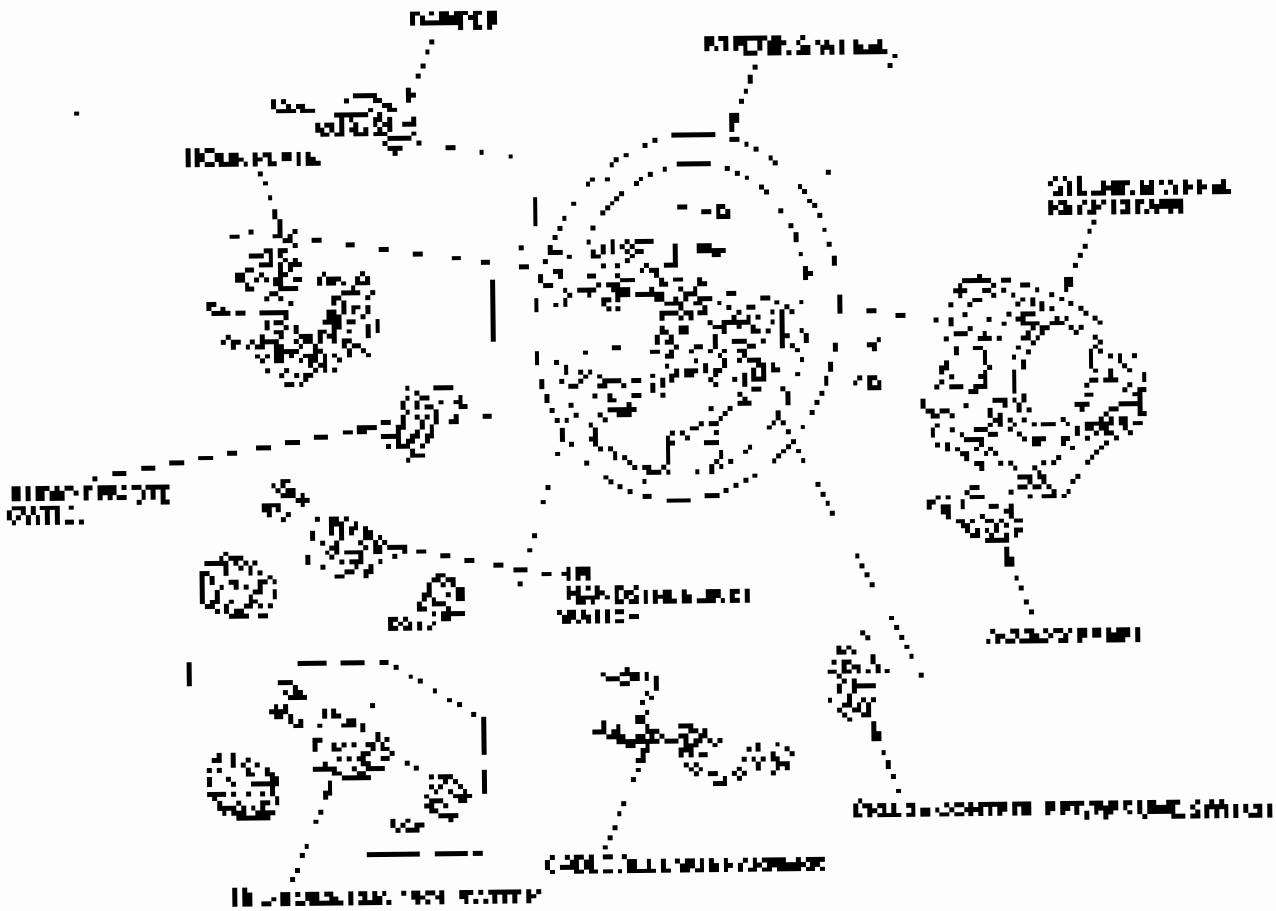
3. [illegible]

4. [illegible]

[illegible]

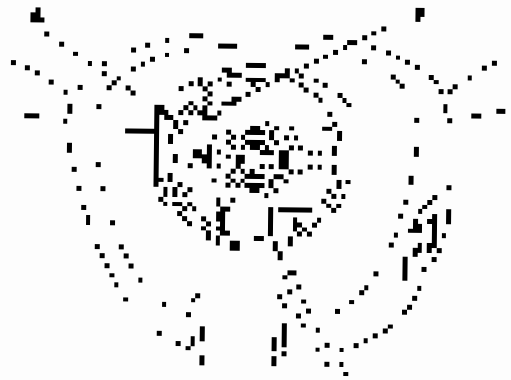
5. [illegible]

Steering Wheel Disassembly/Reassembly



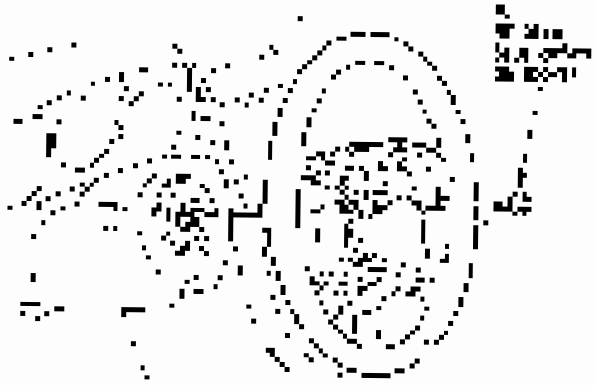
Steering Wheel Installation

1. [illegible]



2. [illegible]

3. [illegible]



a. [illegible]

b. [illegible]

c. [illegible]

Steering Column Removal and Installation

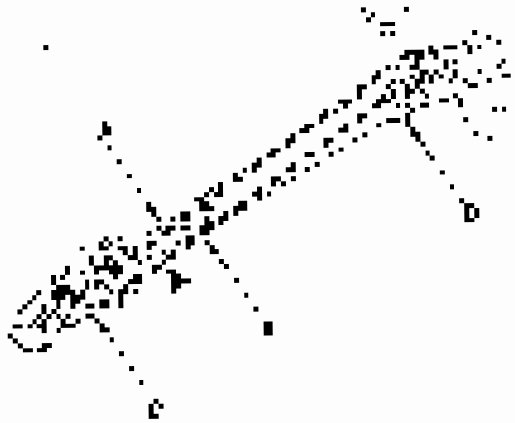
[illegible]

Removal

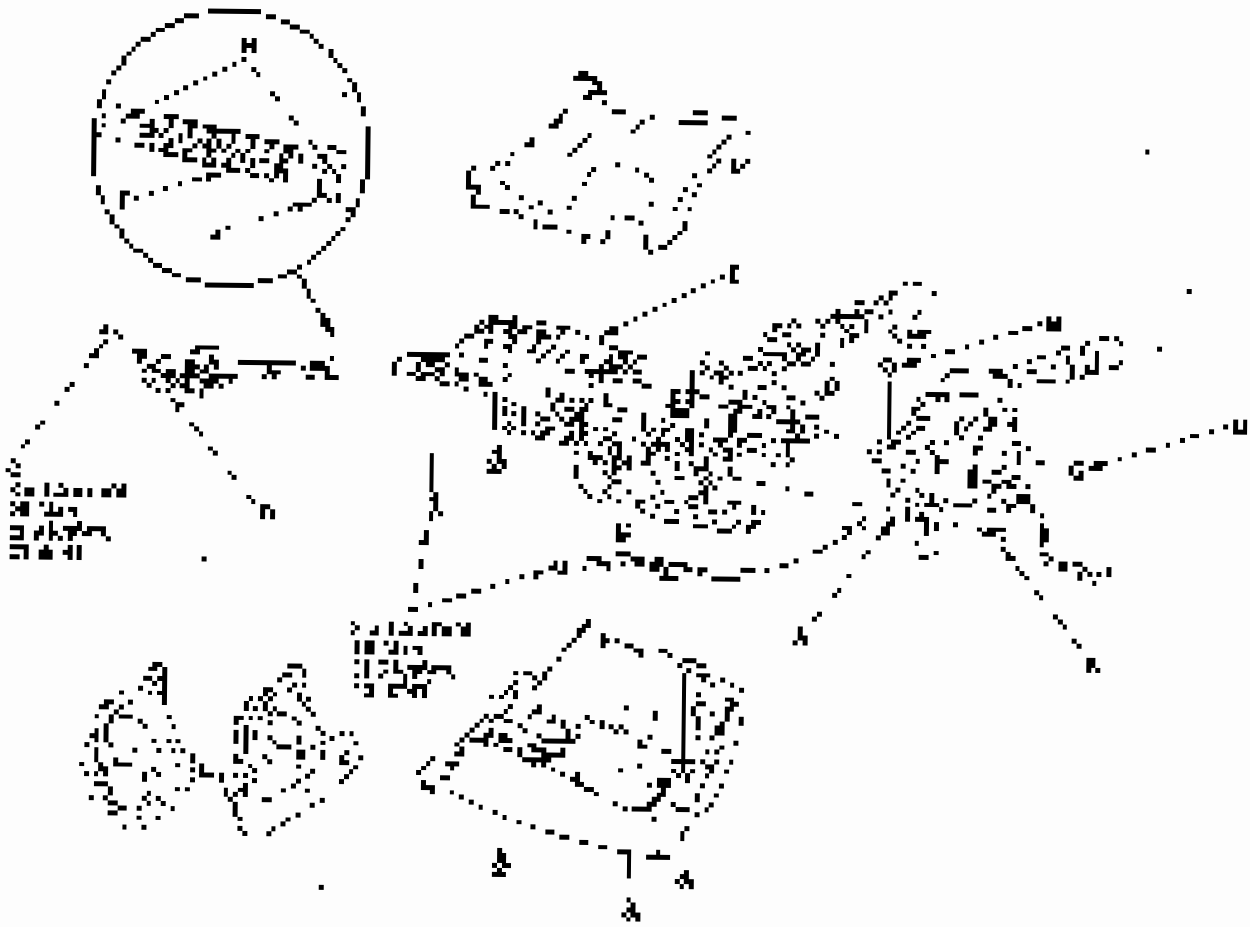
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

6. [illegible]
7. [illegible]

8. [illegible]



9. [illegible]

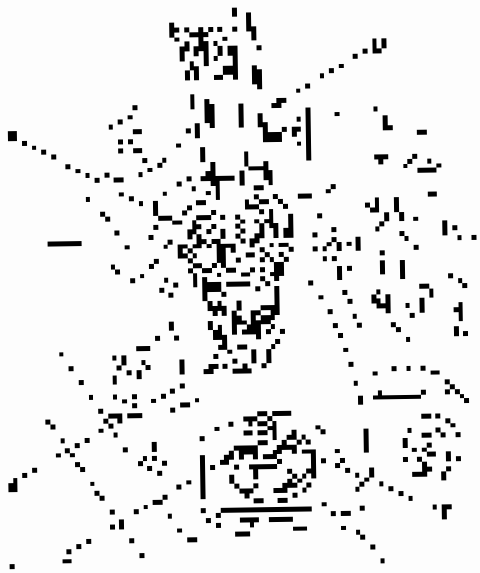


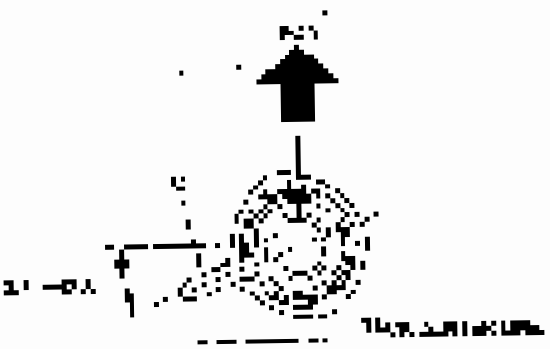
Steering Column Removal and Installation (cont'd)

Installation

1. [illegible]
   - [illegible]
   - [illegible]

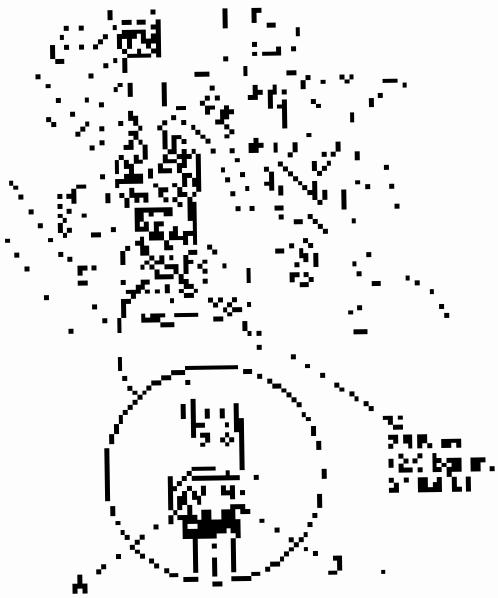
2. [illegible]
   - [illegible]





   - [illegible]

3. [illegible]



4. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

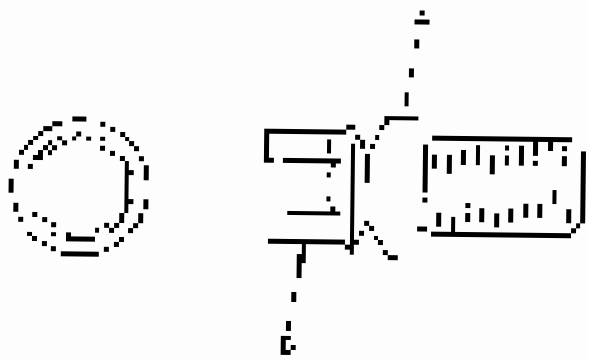
Steering Column/Tilt/Telescopic Inspection

- Check the [illegible] bearing preload by [illegible]. Refer to the appropriate Workshop Manual for the correct procedure and preload specification.
- Check the [illegible] for wear. Replace the [illegible] if excessive wear is found.
- Check the [illegible] for damage. Replace the [illegible] if damaged.
- Check the [illegible] for damage and correct operation. Replace the [illegible] if damaged.

Steering Lock Replacement

1. Remove the [illegible] (refer to page 17-24).
2. Centre punch the [illegible] and drill out the [illegible] using a [illegible] drill bit. Be careful not to damage the [illegible] when drilling the shear bolts.

3. [illegible]
4. Install the new steering lock assembly and [illegible].
5. [illegible]
6. Insert the ignition key and check for correct operation of the steering lock. If the lock is not functioning correctly, [illegible].
7. Tighten the [illegible] to the specified torque setting.



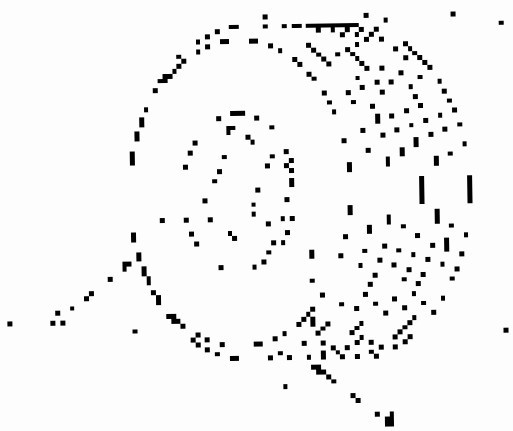
Rack Guide Adjustment

Special Tools Required

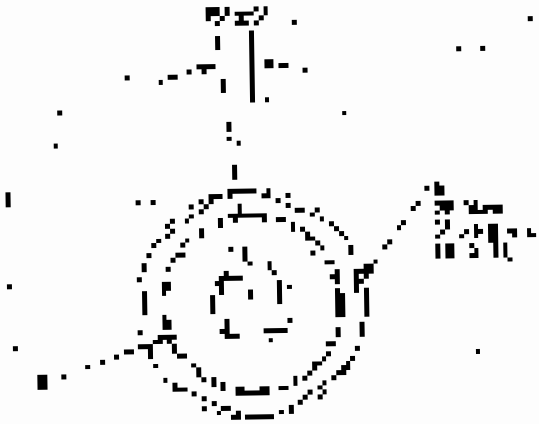
1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]



5. [illegible]

Rack Guide Adjustment [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

Steering Gearbox Removal

Special Tools Required
- [illegible]
- [illegible]
- [illegible]

Note [illegible]
- Carry out a new wheel alignment check after the steering gearbox has been removed and refitted.
- Make sure that you have the necessary instructions before disconnecting any hydraulic pipes.

1. Make sure the [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

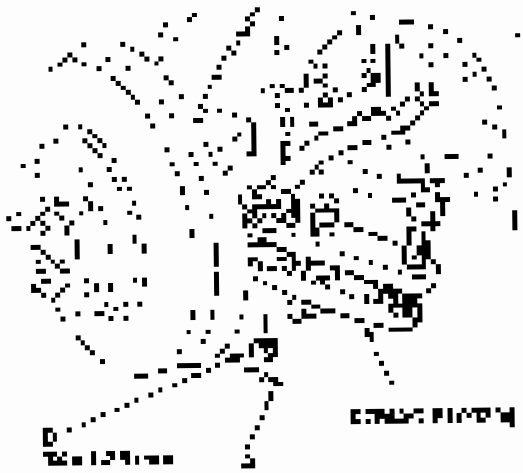
7. [illegible]

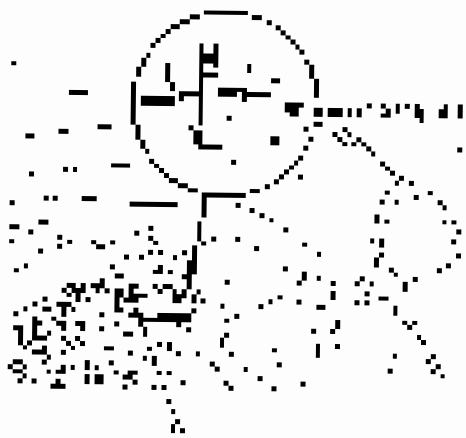
8. [illegible]

9. [illegible]

[illegible]

Steering Gearbox Removal (cont'd)





Steering Gearbox Removal (cont'd)

31 [illegible]

32 [illegible]

33 [illegible]

23. [illegible]

24. [illegible]

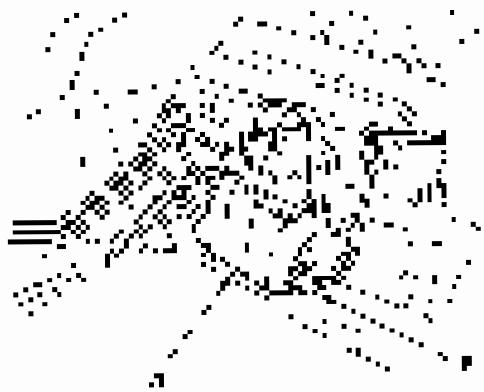
25. [illegible]

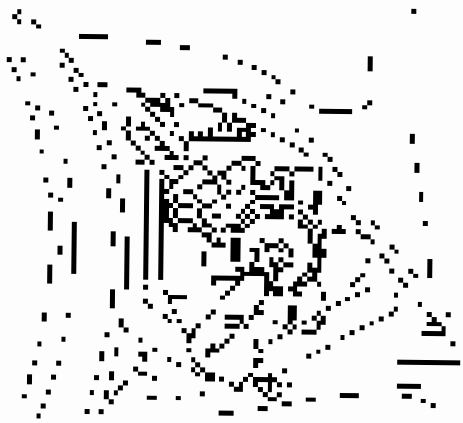
26. [illegible]

27. [illegible]

[illegible]

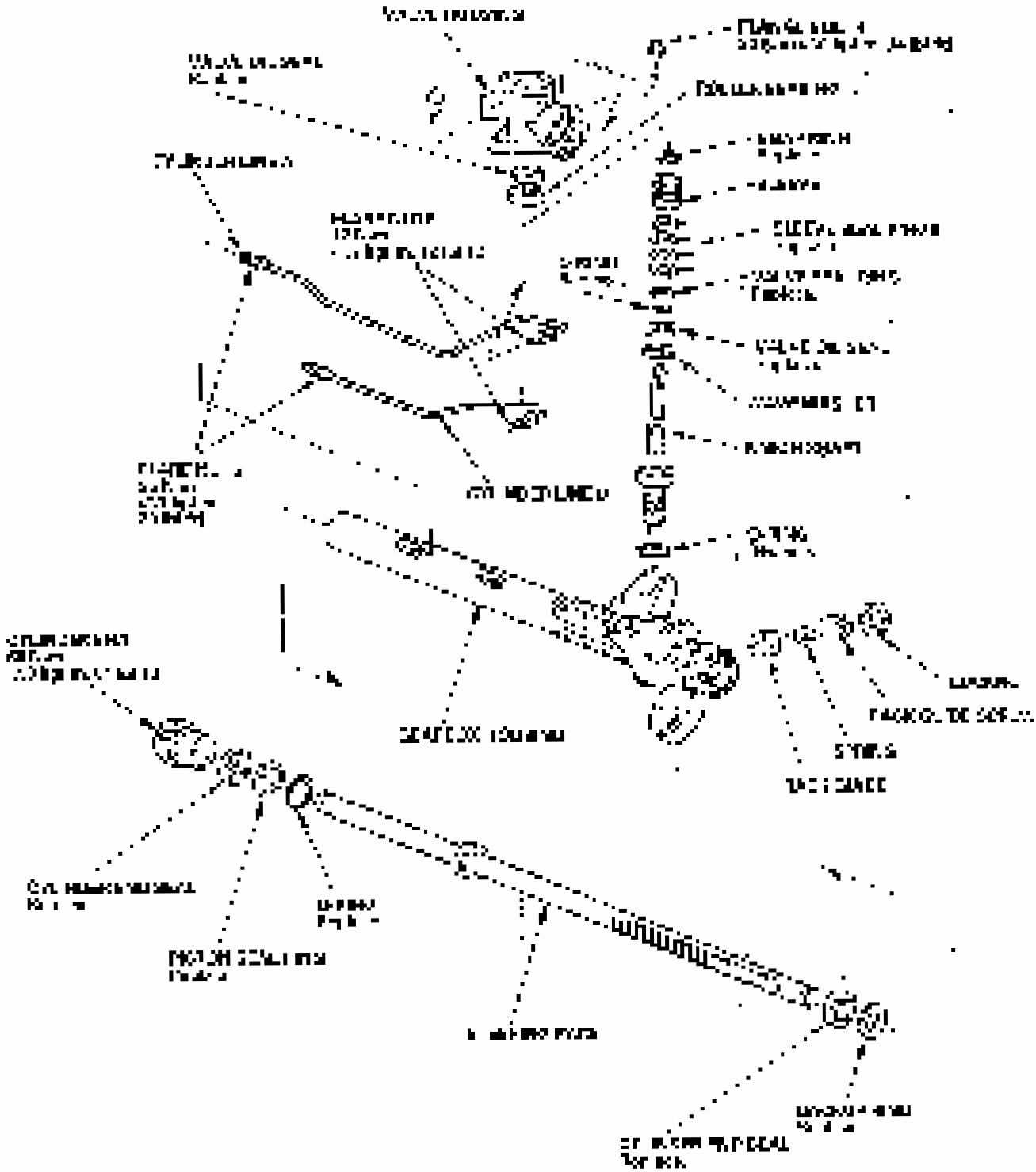
Steering Gearbox Removal (cont'd)





Steering Gearbox Overhaul

Exploded View

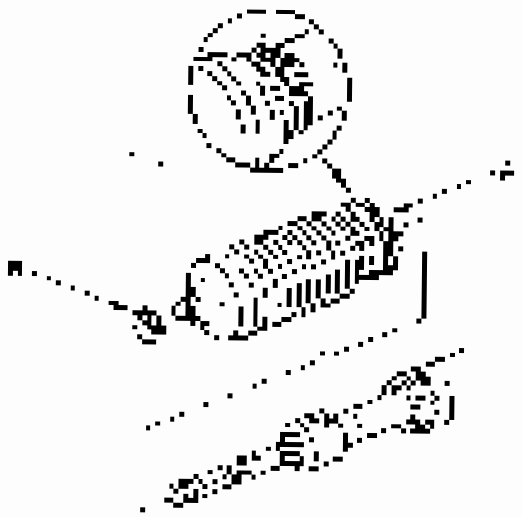


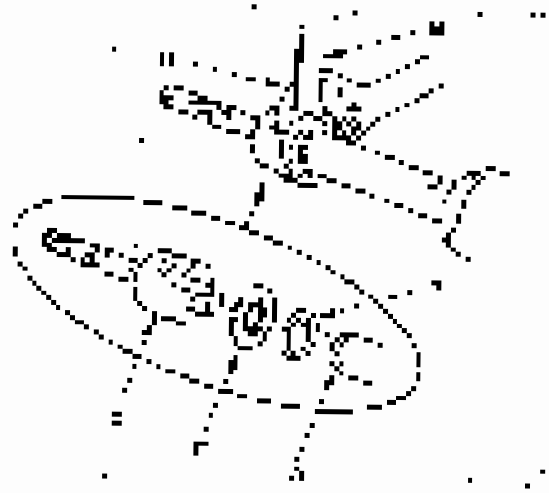
Special Tools Required

NOTE: Follow all procedures

Removal

Disassembly



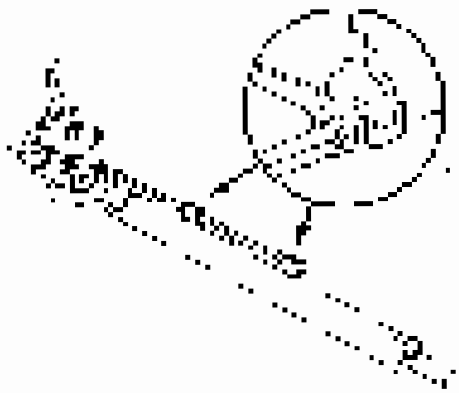


Steering Gearbox Overhaul (cont'd)

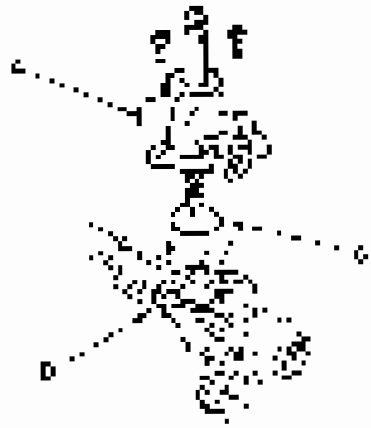
9. [illegible]

10. [illegible]

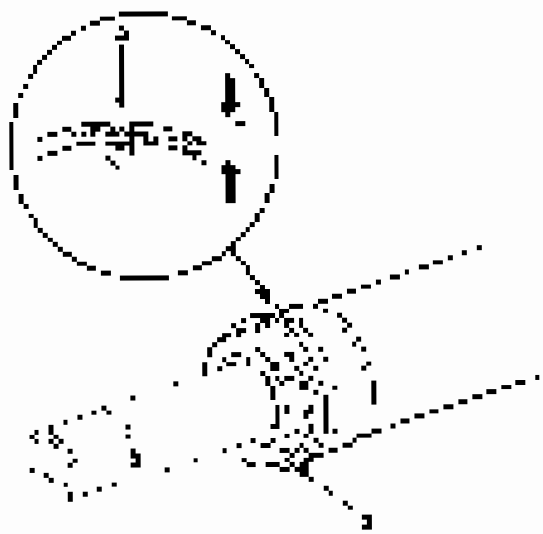
11. [illegible]

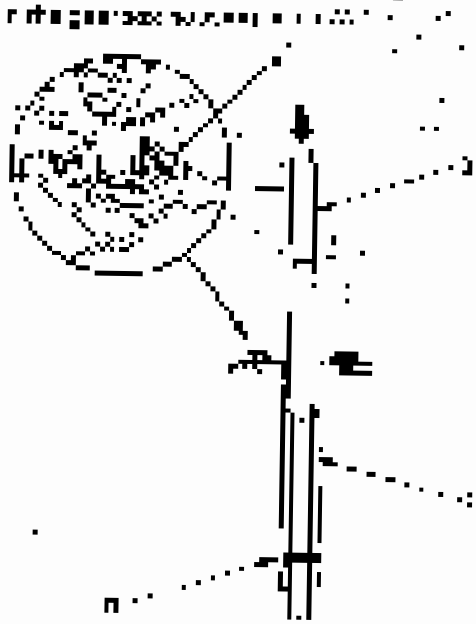


12. [illegible]



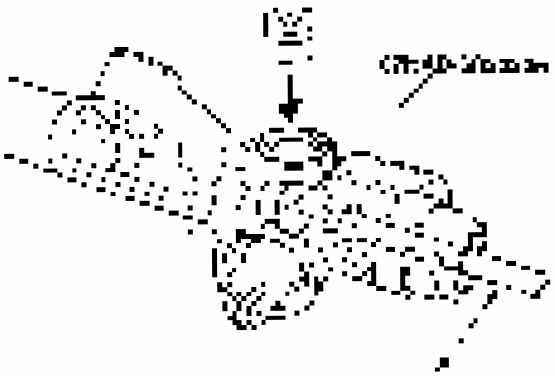
13. [illegible]



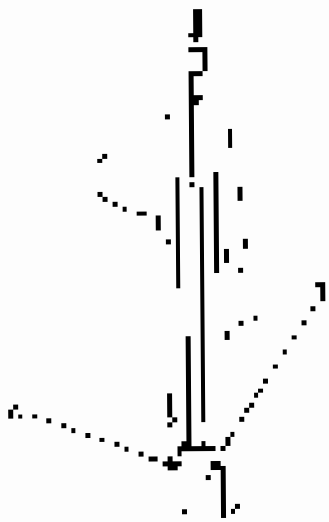


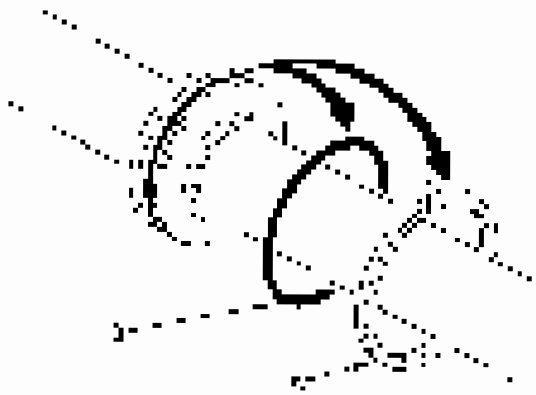
Steering Gearbox Overhaul (cont'd)

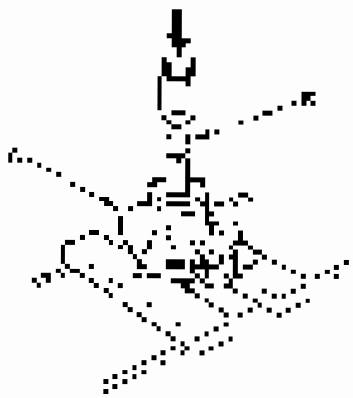
[illegible]

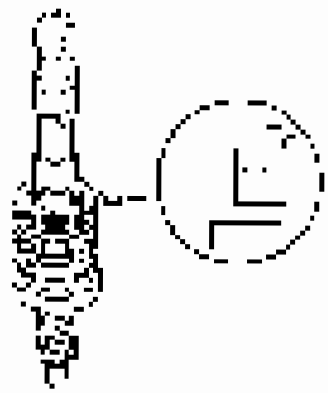


[illegible]





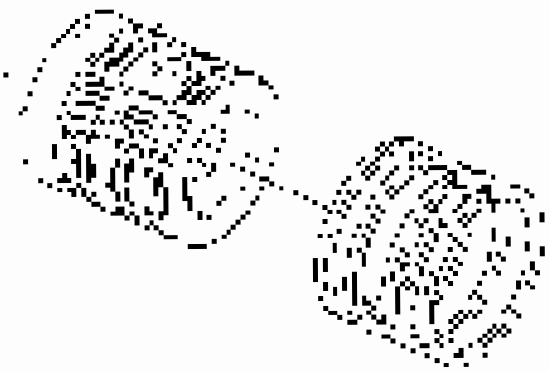




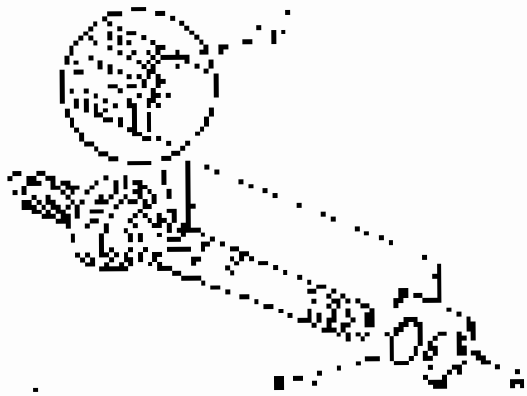
Steering Gearbox Overhaul (cont'd)

19. [illegible]

20. [illegible]

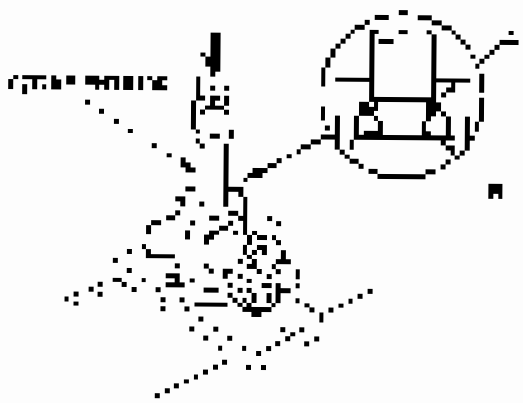


21. [illegible]



22. [illegible]

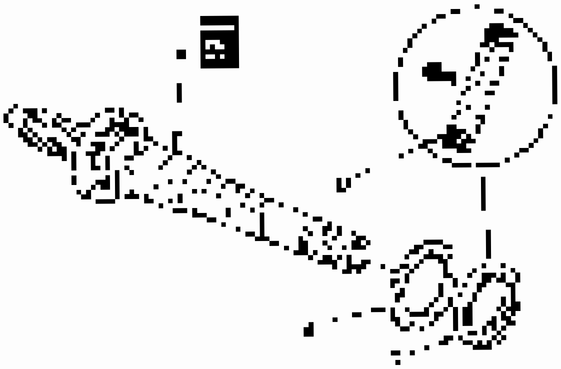
- [illegible]
- [illegible]



Steering Gearbox Overhaul (cont'd)

Reassembly

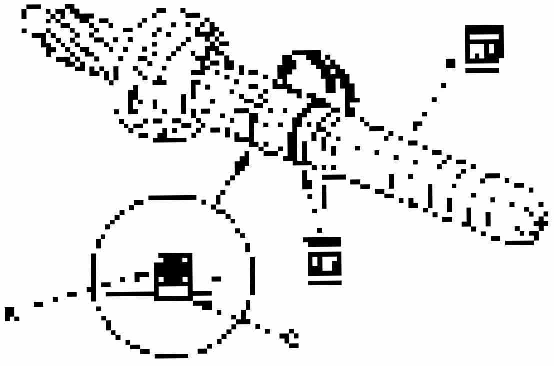
29. Apply [illegible] pinion shaft, and [illegible] with power steering fluid.



30. Install the new washer [illegible]

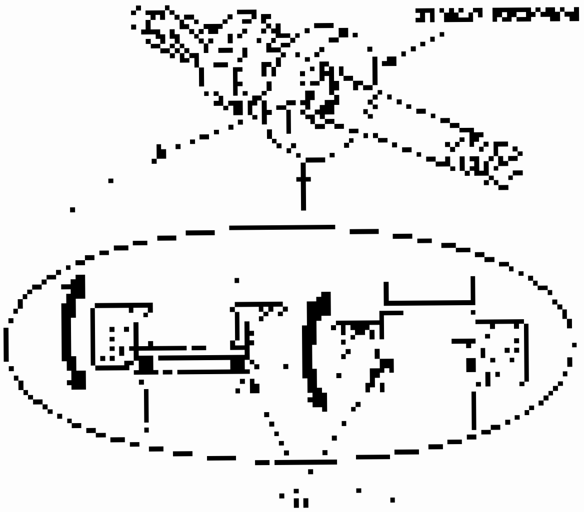
31. Coat the inside surface of the new [illegible] with power steering fluid [illegible]

32. Apply [illegible] power steering fluid.



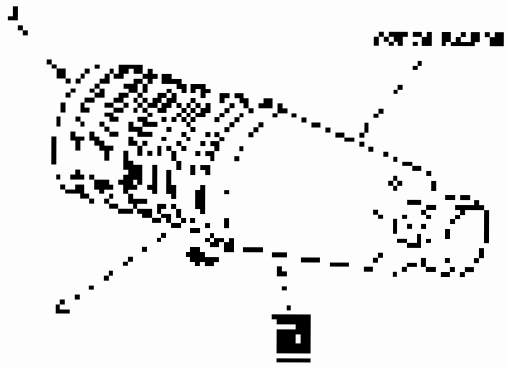
33. [illegible] shaft. [illegible] pinion shaft.

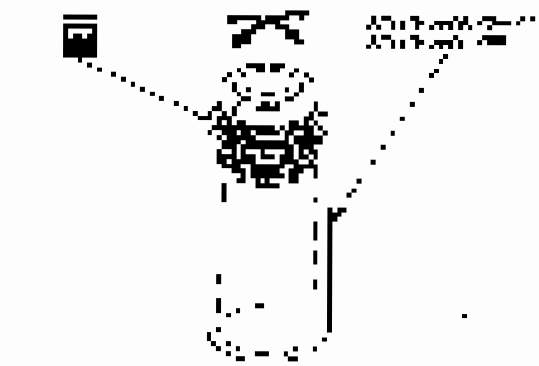
34. Remove the tape and [illegible] power steering fluid [illegible]

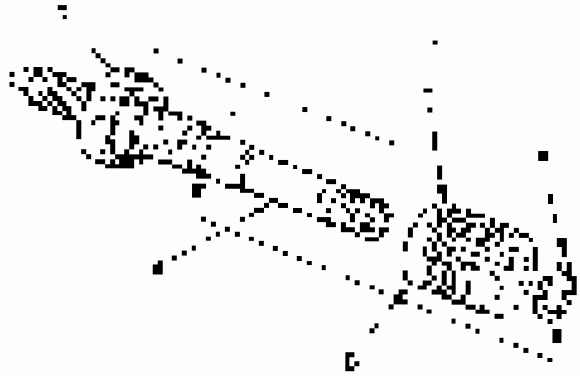


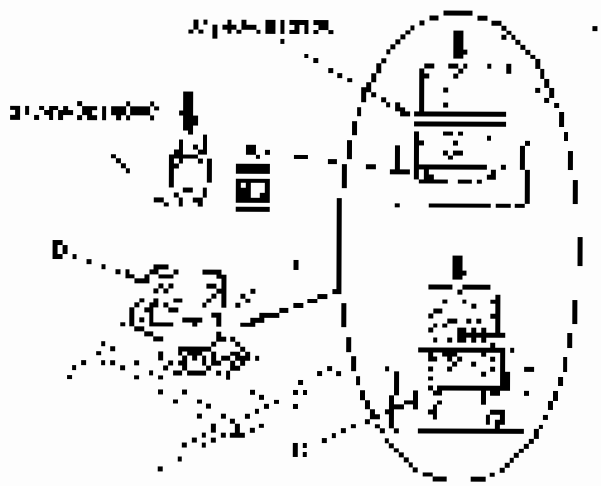
35. [illegible] power steering fluid [illegible] special tool [illegible]

36. [illegible] pinion [illegible] grooves.



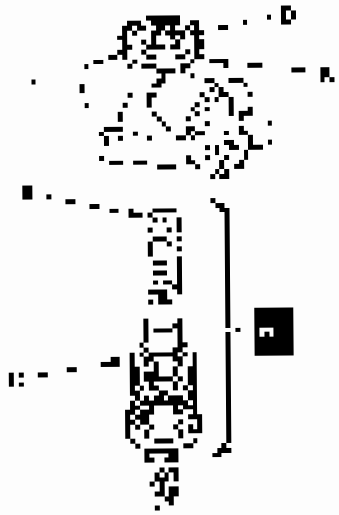






Steering Gearbox Overhaul (cont'd)

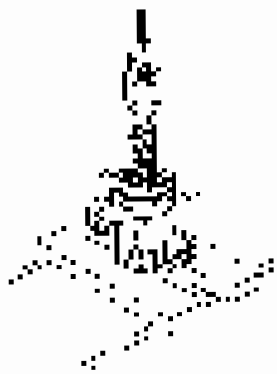
41. Apply [illegible] to the [illegible] and install the [illegible] with a new [illegible].



42. [illegible]

43. Remove [illegible] tape from the [illegible] for [illegible].

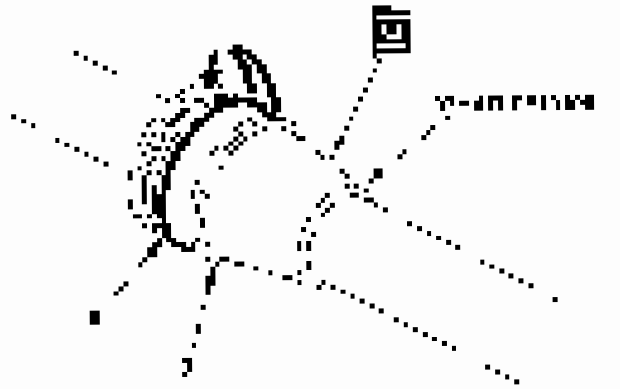
47. [illegible] with [illegible] power. Check that the [illegible] smoothly [illegible].



48. [illegible]

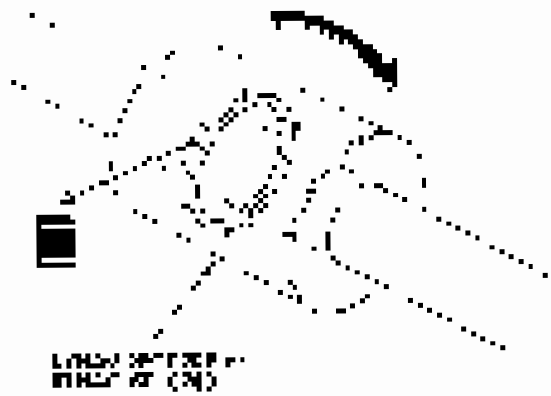
49. Remove [illegible] and install a new [illegible] to the [illegible] with [illegible].

[illegible]
- [illegible]
- [illegible]

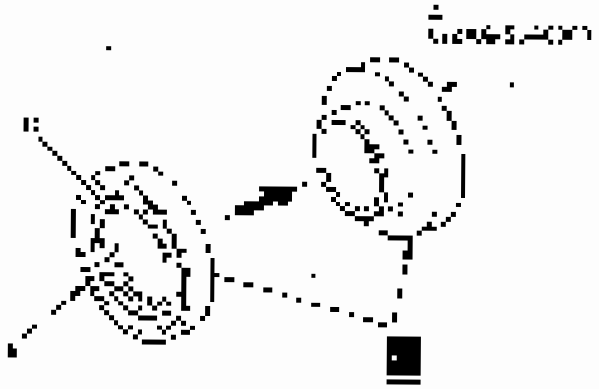


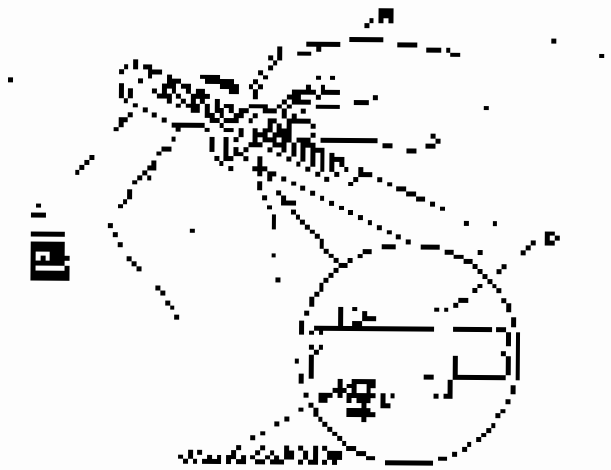
50. Fill the [illegible] with the [illegible] specified in the [illegible].

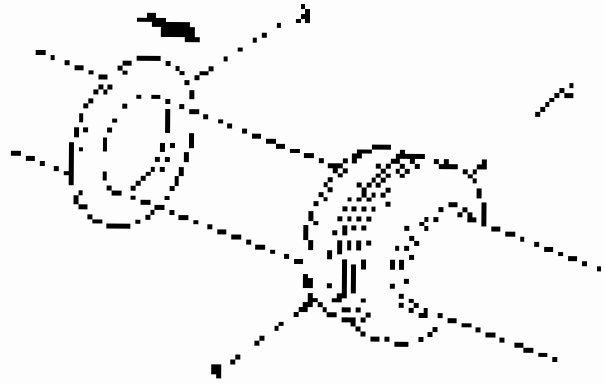
51. Connect [illegible] to the [illegible] and [illegible] with [illegible].

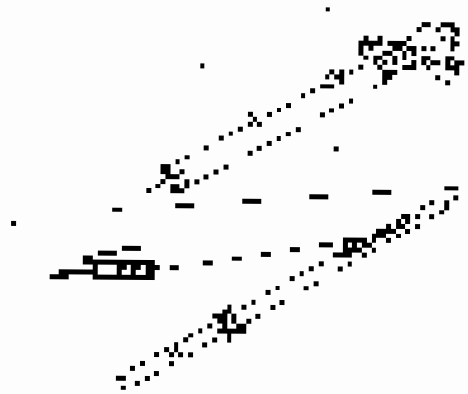


52. [illegible]



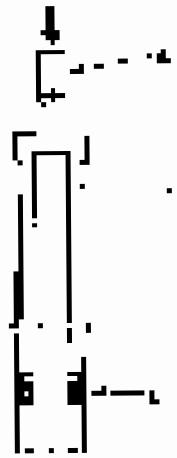






Steering Gearbox Overhaul (cont'd)

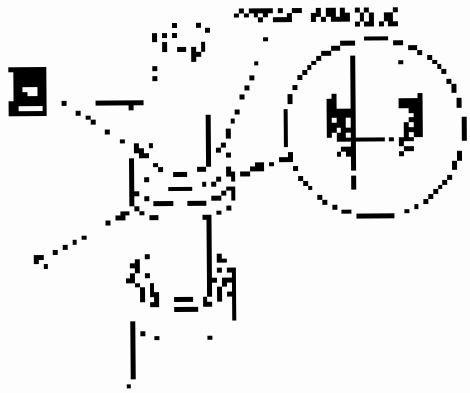
16. [illegible]



17. [illegible]

18. [illegible]

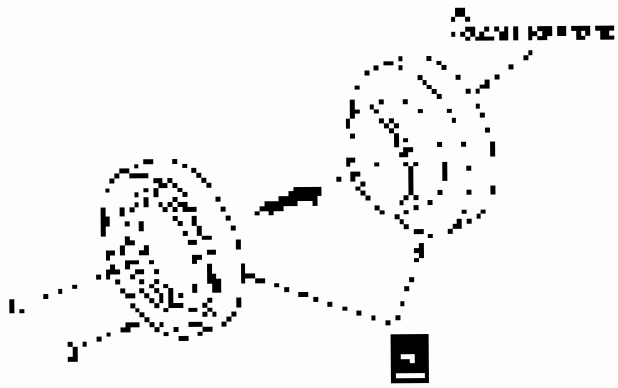
19. [illegible]



20. [illegible]

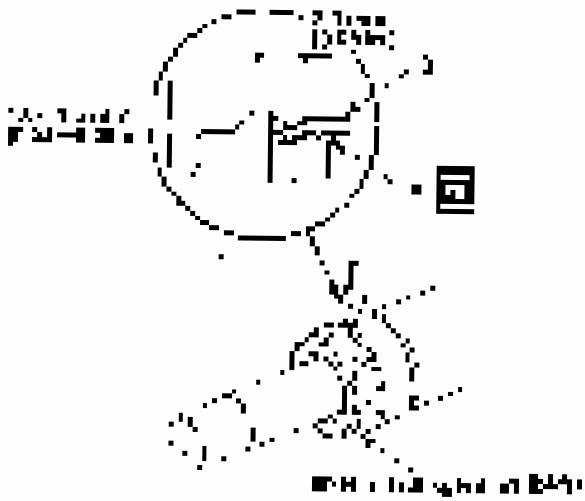
21. [illegible]

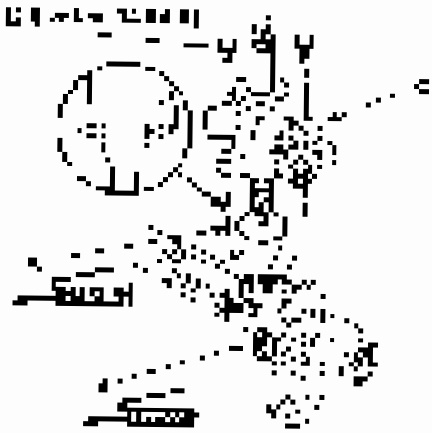
22. [illegible]



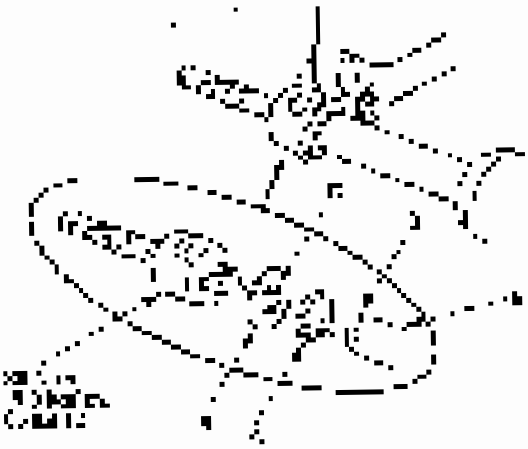
23. [illegible]

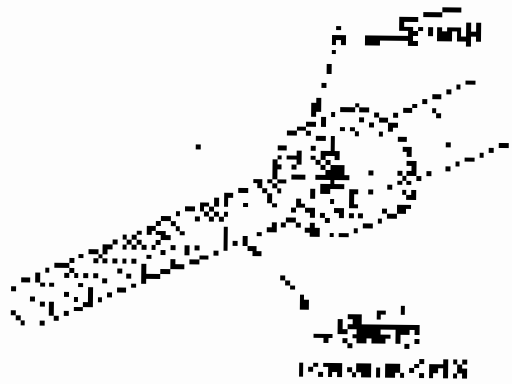
24. [illegible]

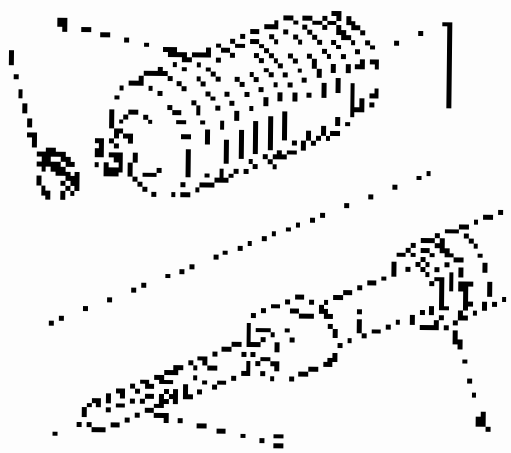


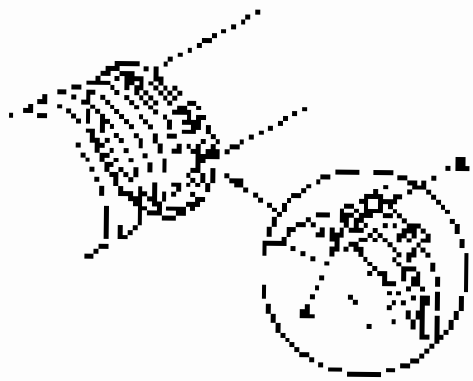


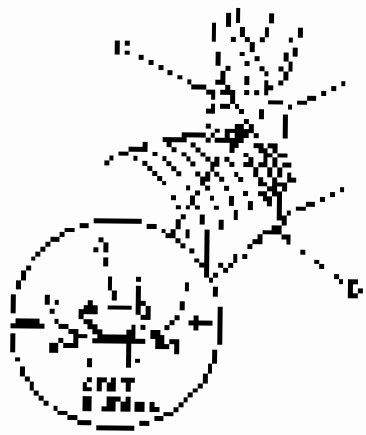
Steering Gearbox Overhaul (cont'd)











Steering Gearbox Installation

Special Tools Required
Steering Gearbox Holder D93L-3504-A
* Alternatively, you can fabricate a holder from 2 pieces of 2 x 4 inch lumber.

1. Secure the steering gearbox in a vise with the steering gearbox holder.

2. Apply a thin bead of silicone sealant to the steering gearbox mounting surface.

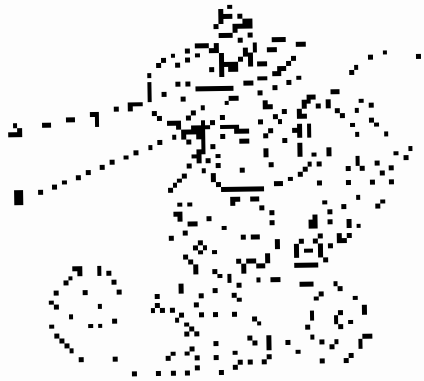
3. Apply a thin bead of silicone sealant to the steering gearbox mounting surface.

4. Carefully install the steering gearbox onto the steering gearbox holder.

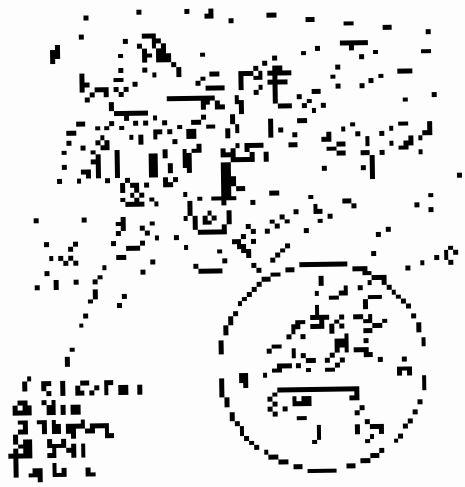
5. Position the steering gearbox in the vise and, as necessary, adjust the vise jaws.

6. Remove the steering gearbox from the vise and, as necessary, remove the steering gearbox holder.

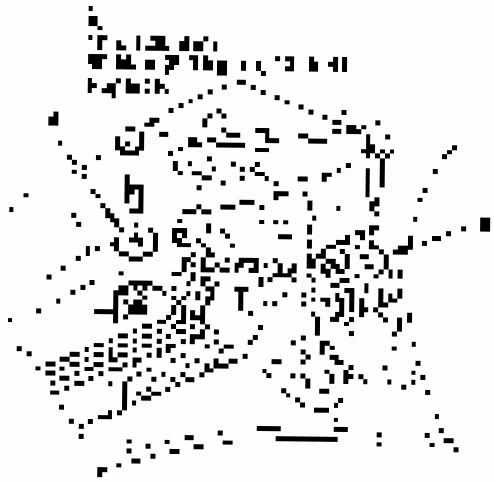
7. Position the steering gearbox in the vehicle and, as necessary, adjust the steering gearbox mounting studs to the proper height.

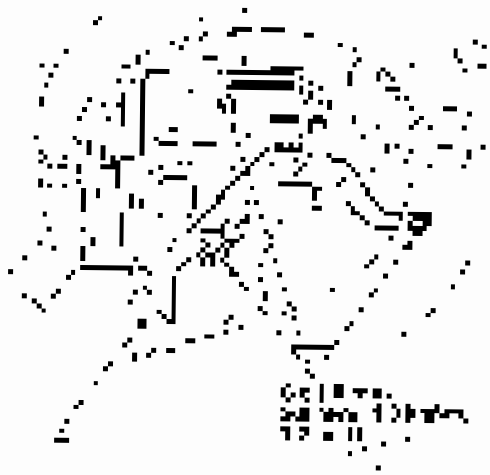


8. Position the steering gearbox in the vehicle and, as necessary, adjust the steering gearbox mounting studs to the proper height.

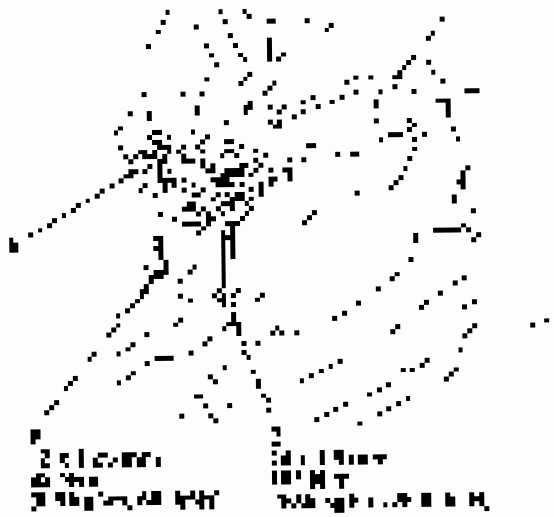


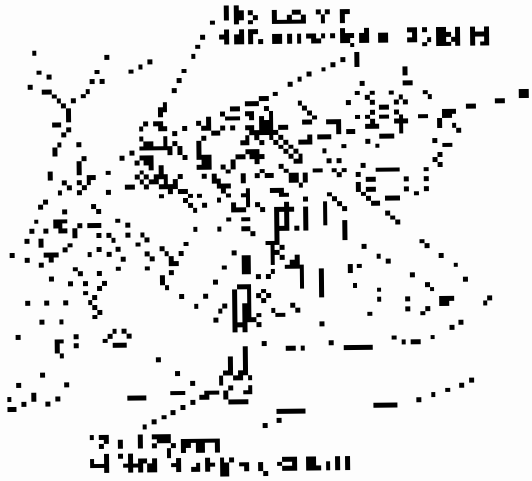
9. Install the steering gearbox mounting nuts and tighten to specification.

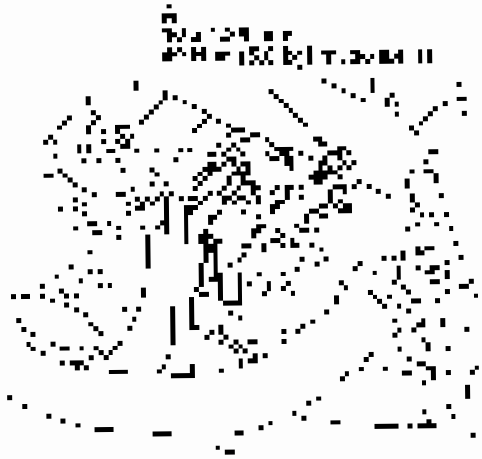




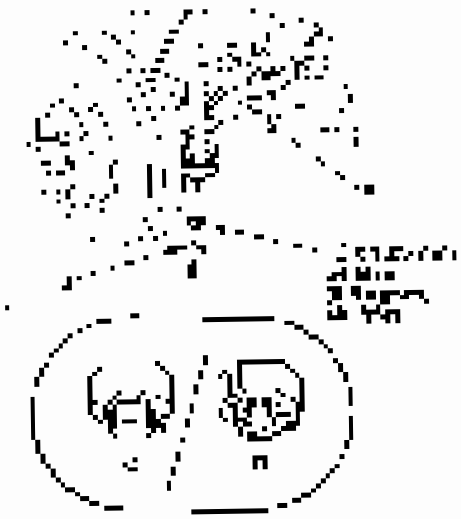
Steering Gearbox Installation (cont'd)

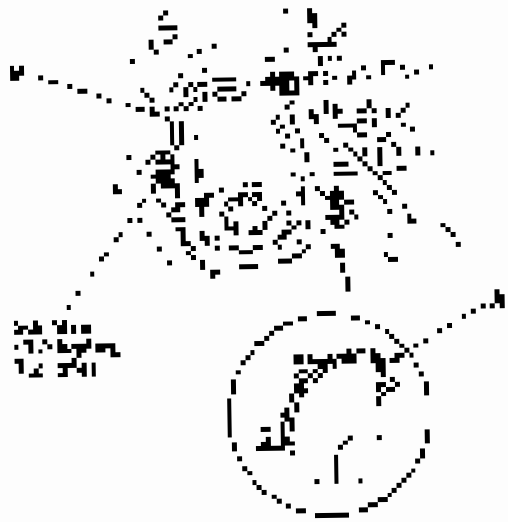


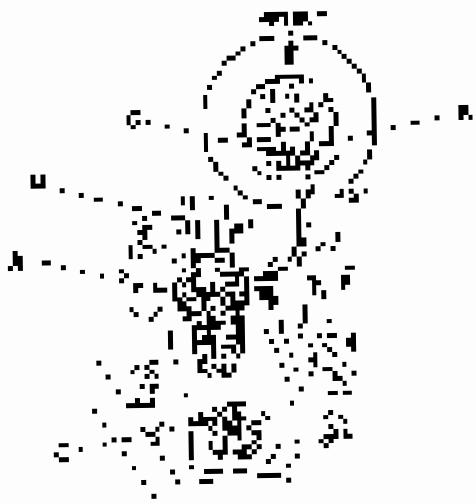


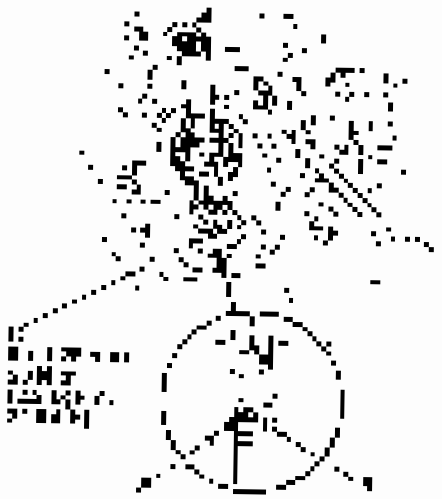


Steering Gearbox Installation (cont'd)









Tie-rod Ball Joint Boot Replacement

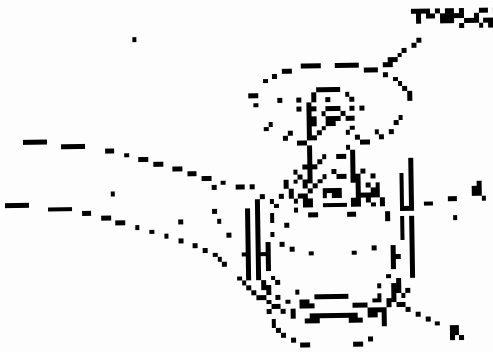
Special Tools Required
Ball joint separator tool number 07965-SA50001

1. Remove the tie-rod ball joint dust seal clip and discard it. Slide the dust seal off the ball joint.
2. Place the ball joint separator tool (A) between the tie-rod end and the lower arm.

3. Tighten the tool nut until the tie-rod ball joint taper pops out of the lower arm.

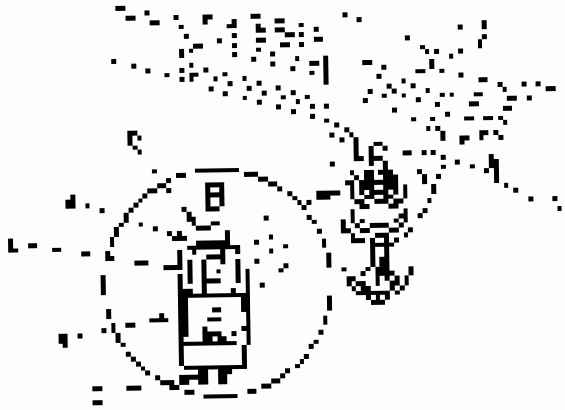
Do not damage the ball joint taper or boot.
- If the taper is damaged, the boot may be cut.
- If the ball joint is reused, mark its position on the lower arm so it can be reinstalled in the same position.

4. Install the new boot. Avoid damaging the ball joint taper or boot seal. Pack the ball joint with grease, then fill the boot with grease. Install the boot and secure it with a new clip.

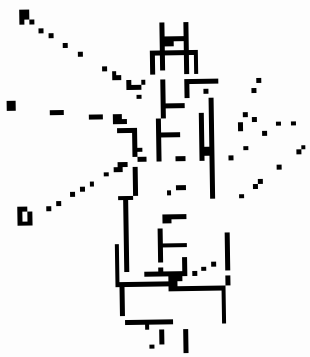


Gearbox Mount Cushion Replacement

1. Remove the steering gearbox (see page 17-54).
2. Mark the position of the mount cushion on the gearbox. Cut the cushion with a utility knife (see page 1-10). Be careful not to damage the gearbox.



3. Apply the specified adhesive to the new mount cushion and gearbox where the cushion will be installed (see page 1-10).
4. Position the cushion on the gearbox. Install the clamp with the tab in the cushion cutout. Tighten the clamp bolt.



5. Install the steering gearbox (see page 17-54).

Suspension

Front and Rear Suspension

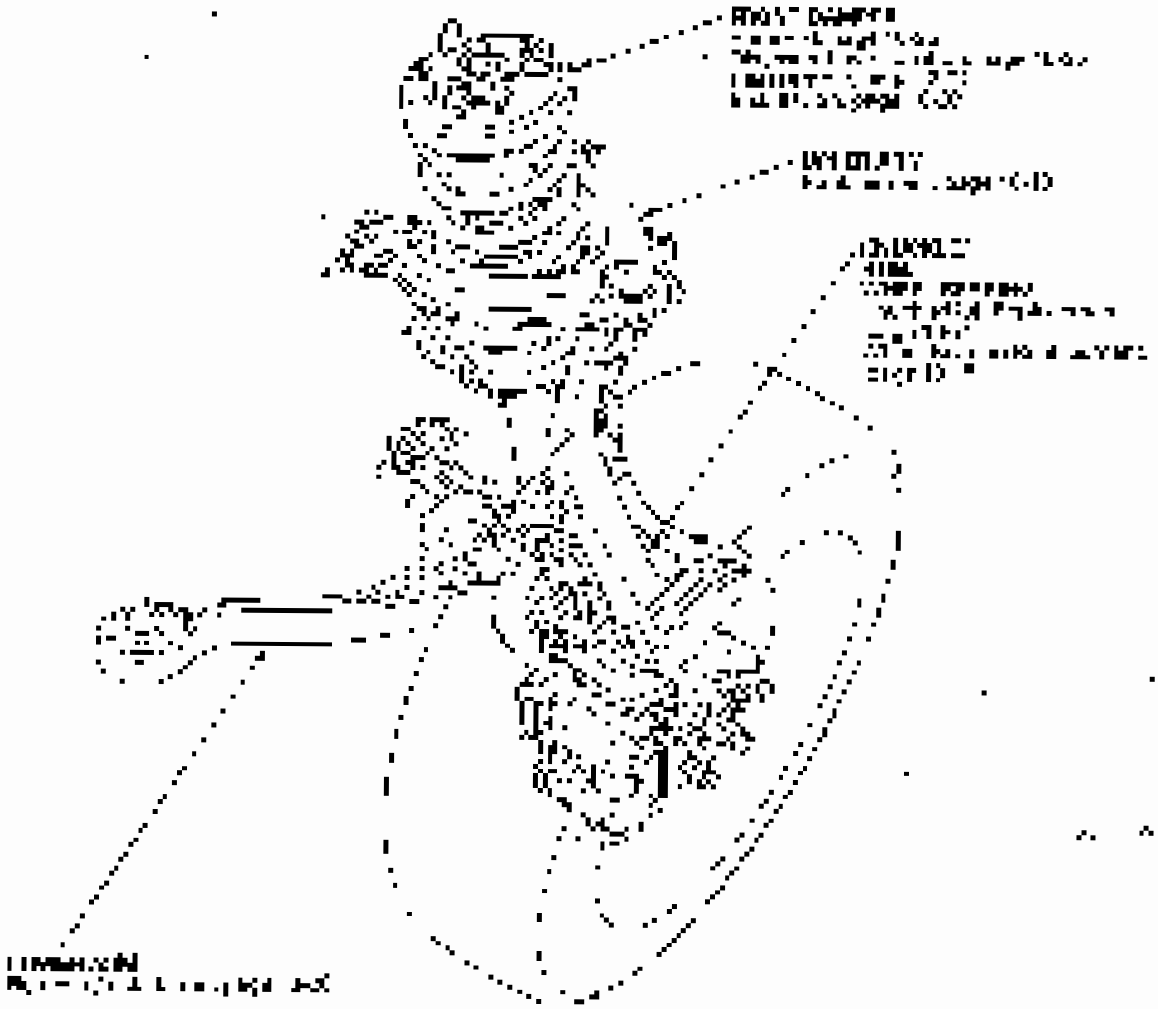
Front Suspension

Rear Suspension

Special Tools

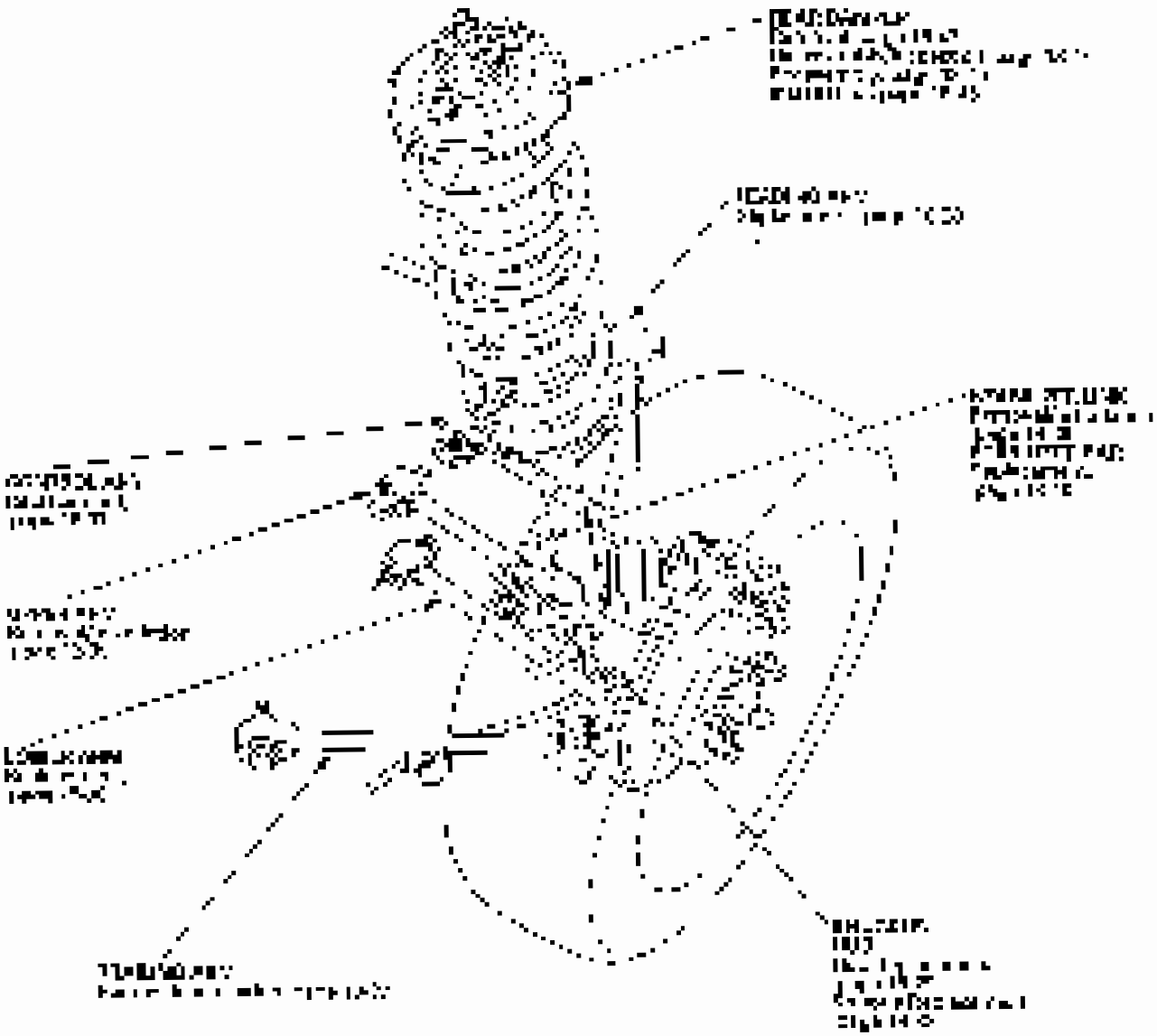
Ref. No.	Tool Number	Description	Qty
a	[illegible]	[illegible]	1
b	[illegible]	[illegible]	1
c	[illegible]	[illegible]	1
d	[illegible]	[illegible]	1
e	[illegible]	[illegible]	1
f	[illegible]	[illegible]	1
g	[illegible]	[illegible]	1
h	[illegible]	[illegible]	1
i	[illegible]	[illegible]	1
j	[illegible]	[illegible]	1
k	[illegible]	[illegible]	1

Component Location Index



Component Location Index (cont'd)

Rear Suspension



Wheel Alignment

[illegible]

Pre-Alignment Checks

[illegible]

1. [illegible]

2. [illegible]

3. Check and inflate wheel [illegible]

   Tire Size [illegible]
   Front/Rear: P225/60R16 97S

   Tire pressure
   Front:
   W/Tires [illegible]: 2.2 kPa (32 kgf/cm², 35 psi)
   W/O Tires [illegible]: 2.2 kPa (2.2 kgf/cm², 32 psi)
   Rear: 220 kPa (2.2 kgf/cm², 32 psi)

4. [illegible]

5. [illegible]

6. [illegible]

Caster Inspection

[illegible]

1. Check the caster angle.

   Caster angle: 2°17' ±30'
   Maximum difference between [illegible]
   [illegible]

2. [illegible]

Wheel Alignment (cont'd)

Camber Inspection

[illegible]

1. Check the camber angle.

   Camber angle
   Front: [illegible]
   Rear: [illegible]
   Maximum difference between the right and left wheels

2. If out of specification, check for loose or worn suspension components.

Front Toe Inspection/Adjustment

[illegible]

- [illegible]

Front wheels (1.5 liter engine)

- [illegible]
- [illegible]

[illegible]

[illegible]

Rear Toe Inspection/Adjustment

[illegible]

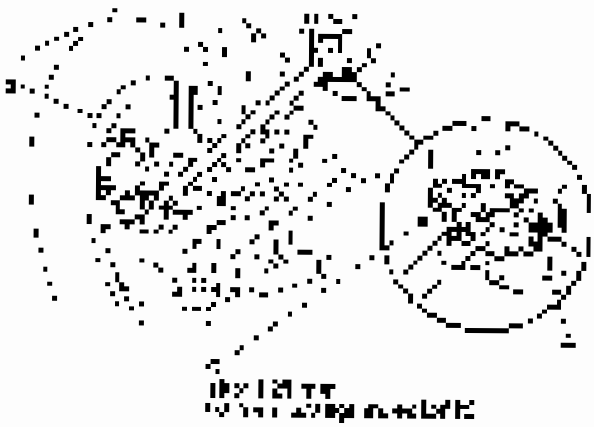
1. [illegible]

2. [illegible]

   [illegible]

   - [illegible]
   - [illegible]

3. [illegible]



4. [illegible]

   NOTE: [illegible]

5. [illegible]

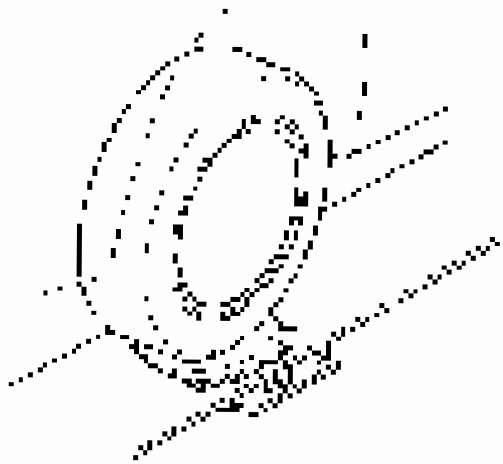
6. [illegible]

Turning Angle Inspection

[illegible]

1. [illegible]

   [illegible]
   [illegible]



2. [illegible]

Wheel Bearing End Play Inspection

1. [illegible]

2. [illegible]

[illegible]

[illegible]

Rear

[illegible]

3. [illegible]

[illegible]

4. [illegible]

5. [illegible]

Wheel Runout Inspection

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

[illegible]

4. [illegible]

[illegible]

5. [illegible]

- [illegible]

Ball Joint Removal

Special Tool(s) Required
- Ball joint remover, 49 mm (1.9 in) (J-35910-A)
- Ball joint thread protector (J-[illegible]-B)
- Ball joint remover (J-[illegible]) (not shown; borrow or rent)

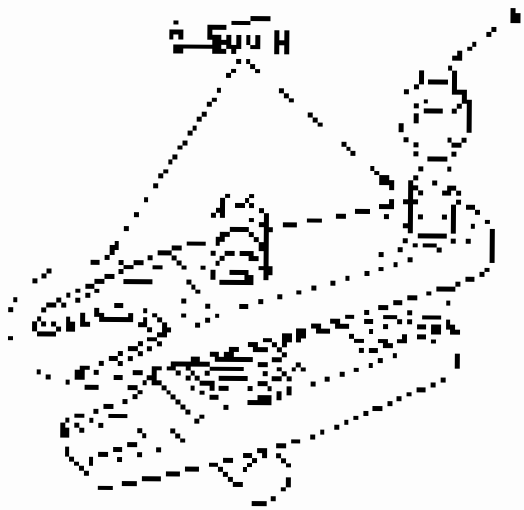
NOTICE

[illegible] ball joint remover should not be used to remove the ball joint from the steering knuckle. The ball joint remover will damage the ball joint seal.

G/MAC SLB0200

1. [illegible] to remove the cotter pin from the ball joint stud. Discard the cotter pin.

2. Apply grease to the ball joint remover threads and the contact surface of the ball joint remover. Install the ball joint remover. Make sure the ball joint remover is not damaged.



3. Loosen the [illegible] ball joint stud from the steering knuckle. Use a suitable hammer to strike the upper control arm sharply, while applying downward pressure to the ball joint remover. Repeat the procedure as necessary until the ball joint stud is loose.

4. Remove the ball joint remover from the steering knuckle. Remove the ball joint from the steering knuckle.

5. Using a suitable [illegible] remove the ball joint nut from the ball joint stud. Remove the ball joint from the steering knuckle.

   NOTE: [illegible]

6. Remove the ball joint remover. Remove the ball joint from the steering knuckle. Remove the ball joint nut from the ball joint stud. Discard the ball joint nut.

Ball Joint Removal (cont'd)

[illegible]

[illegible]

[illegible]

[illegible]

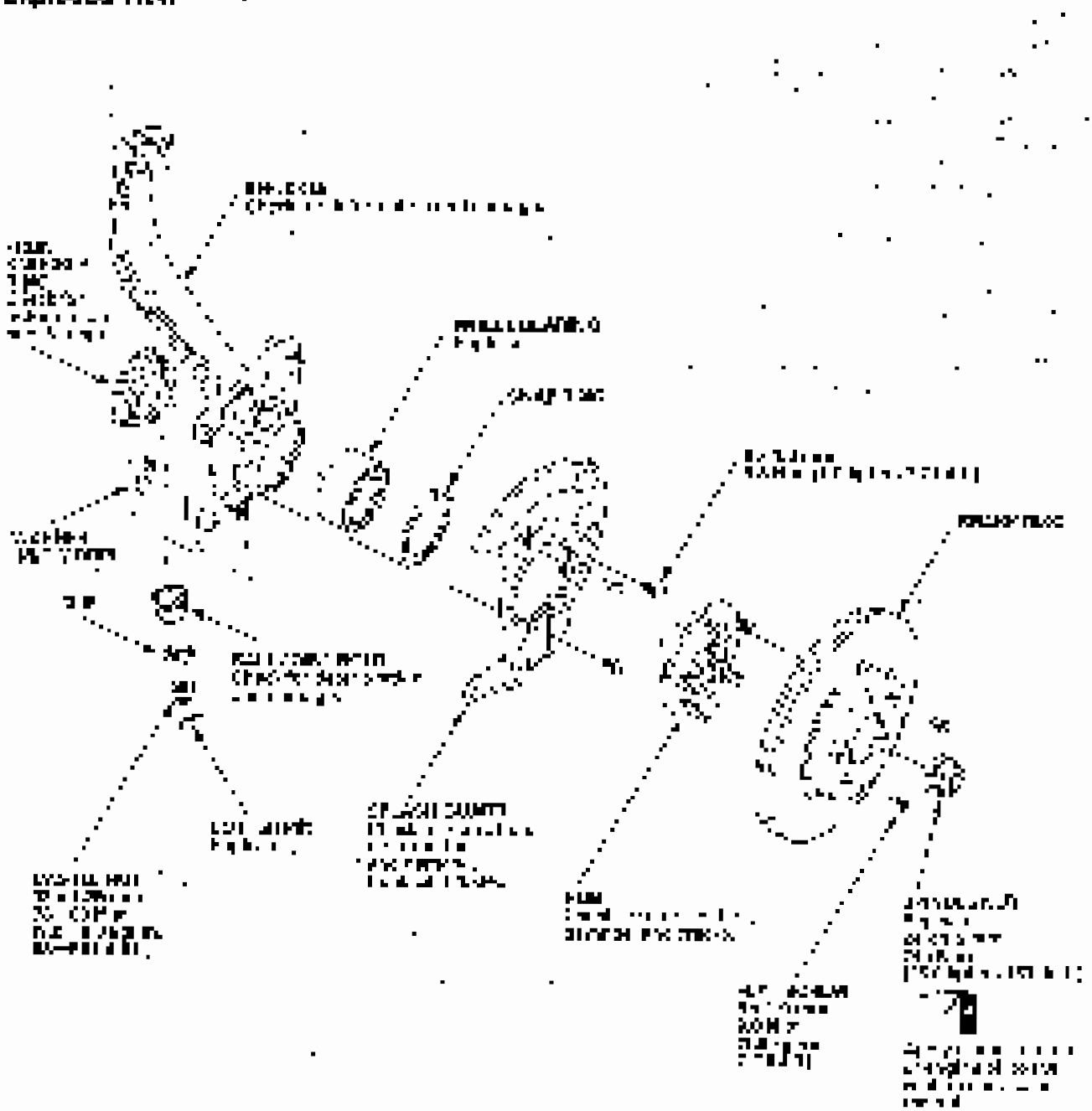
NOTE: [illegible]

[illegible]

NOTE: [illegible]

Knuckle/Hub/Wheel Bearing Replacement

Exploded View



Knuckle/Hub/Wheel Bearing Replacement (cont'd)

Special Tools Required
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Knuckle/Hub Replacement

1. [illegible]

2. [illegible]

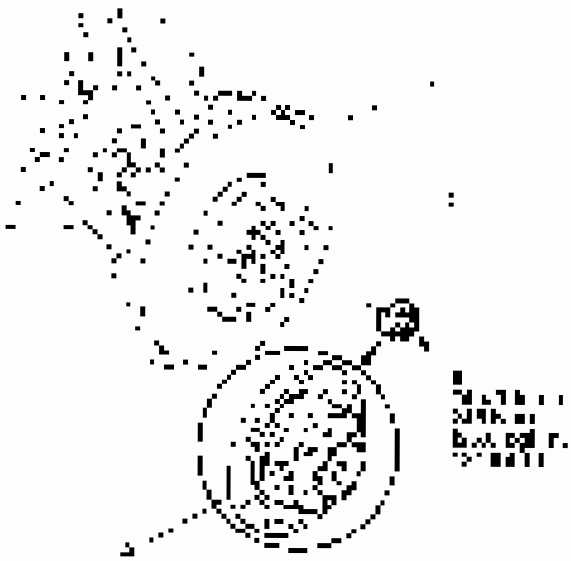
3. [illegible]

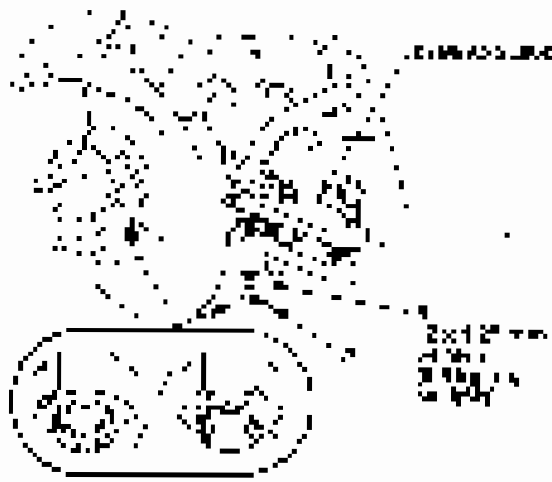
A/T model:

M/T model:

4. [illegible]

5. [illegible]

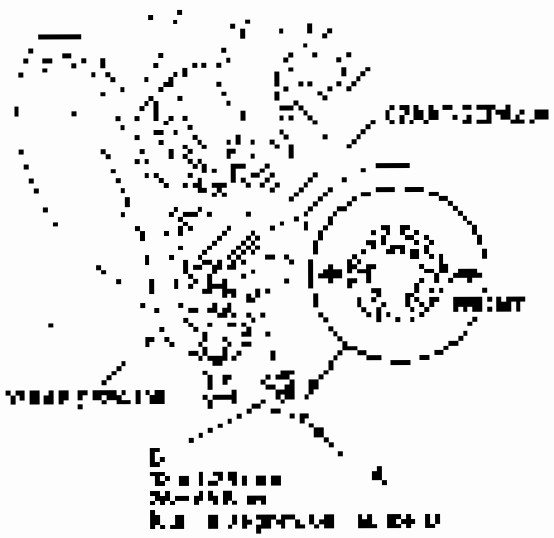




Knuckle/Hub/Wheel Bearing Replacement (cont'd)

11. [illegible]

    Note:
    - [illegible]
    - Be careful not to damage the ball joint boot when removing the knuckle.
    - Do not [illegible]
    - [illegible]

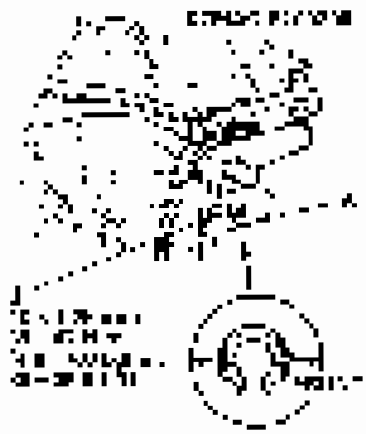


14. Disconnect the [illegible] from the knuckle using the special tool. See page [illegible]

    NOTE: If the [illegible] was removed with the ball joint nut, [illegible]

15. [illegible]

    NOTE: During installation, [illegible]



16. Disconnect the [illegible] from the knuckle using the special tool (see page [illegible])

17. Remove the [illegible]

    NOTE: Do not [illegible]

13. Install the brake shield and the front wheel assembly. Refer to Section 2.

- Check for brake damage due to foreign objects, overheating, scoring or cracking.
- Inspect all mounting hardware for proper torque.
- Bleed the brake system if any hydraulic connections were opened. Refer to the procedure in Section 9. Check the brake fluid level in the master cylinder reservoir.
- Pump the brake pedal several times with the engine off to check for proper operation before driving the vehicle.
- Road test the vehicle in a safe area at low speed. Check for proper brake operation. Check for pulling to one side during braking. Check the brake pedal travel and feel.

Wheel Bearing Replacement

1. Support the front of the vehicle on jackstands. Remove the front wheel and tire assembly. Remove the brake caliper and rotor. Refer to Section 9.

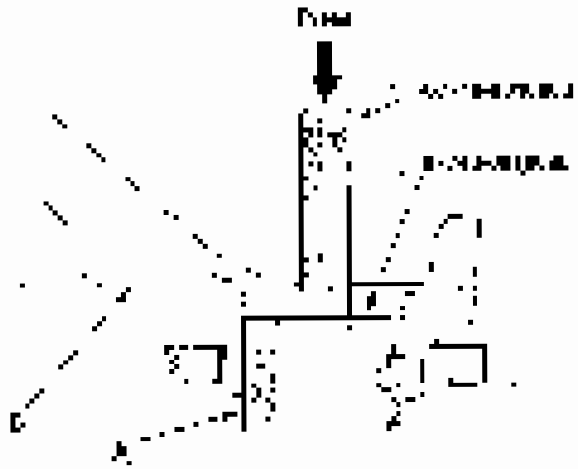
2. Using a hammer and a brass punch, drive the bearing inner race seal out of the steering knuckle.

Knuckle/Hub/Wheel Bearing Replacement (cont'd)

3. [illegible]

4. [illegible]

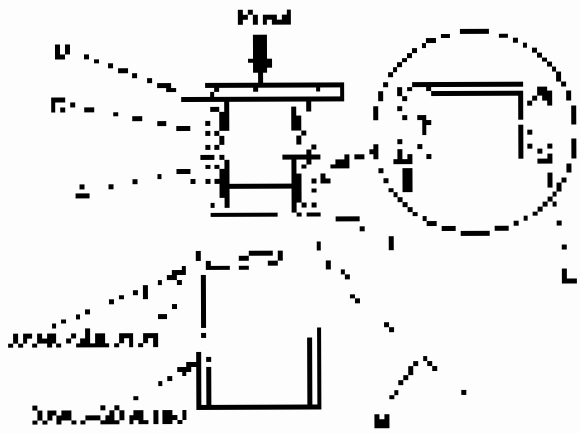
5. [illegible]

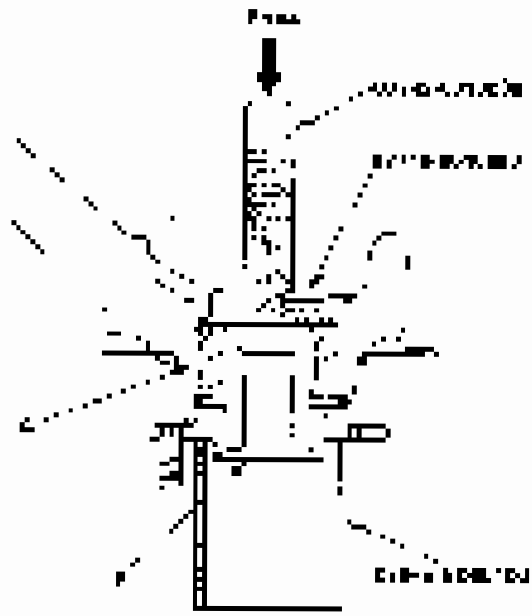


6. [illegible]

7. [illegible]

NOTE:
- [illegible]
- [illegible]
- [illegible]
- [illegible]

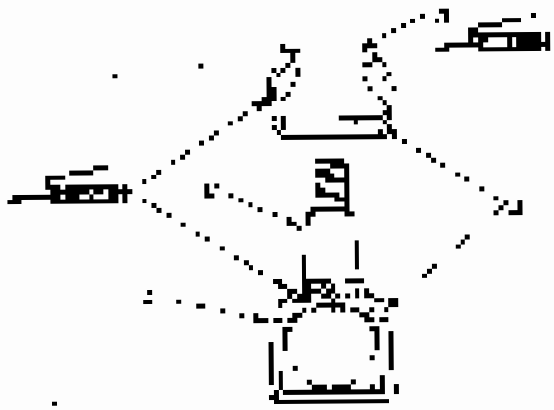



Press

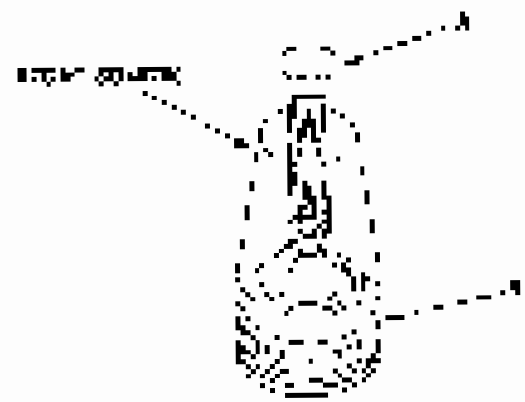
Ball Joint Boot Replacement

Special Tools Required
Ball joint boot clamp pliers 07HAA-SJ30100

1. Remove the knuckle (page 18-17).
2. Position the knuckle in a vise with soft jaws or protect the knuckle with shop towels.



3. Wipe the grease off the ball joint dust seal. Inspect the dust seal for cracks, tears, or damage. If the dust seal is damaged, replace the ball joint.
4. Install the boot clamp on the ball joint dust seal.
5. Adjust the space between the jaws of the ball joint boot clamp pliers until the distance is the above the top of the lower arm. Then crimp the clamp with the pliers and check the position of the boot.



6. Wipe any excess grease off the knuckle and ball joint.

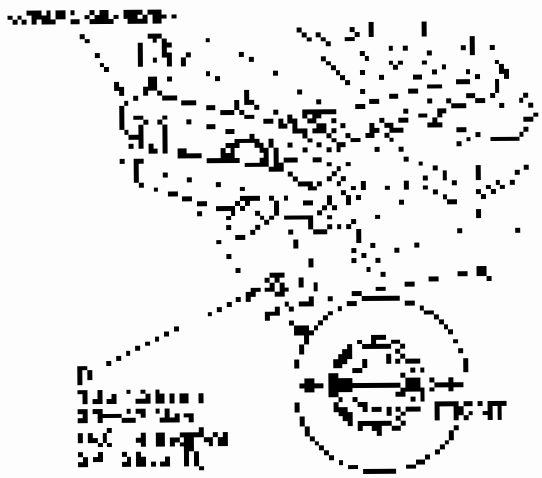
Upper Arm Replacement

Special Tools Required
Ball joint remover, 28 mm 07MAF-SJ40A01

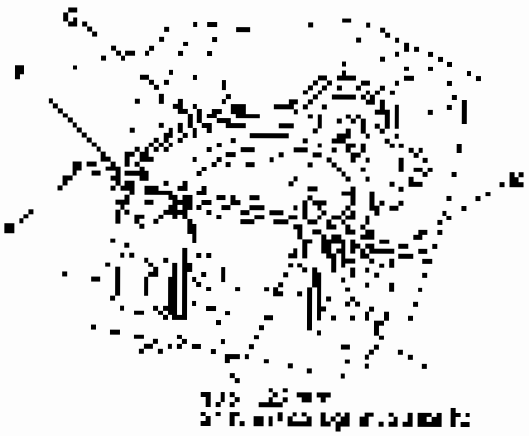
1. Remove the front compression spring (page 18-17).
2. Remove the wheel hub and knuckle (page 18-17).

3. Remove the cotter pin and nut from the upper ball joint.

NOTE: During installation, align the castellations on the nut with the hole in the ball joint stud. Never back off the nut to align the castellations and hole.



4. Disconnect the upper arm from the knuckle by using the ball joint remover.

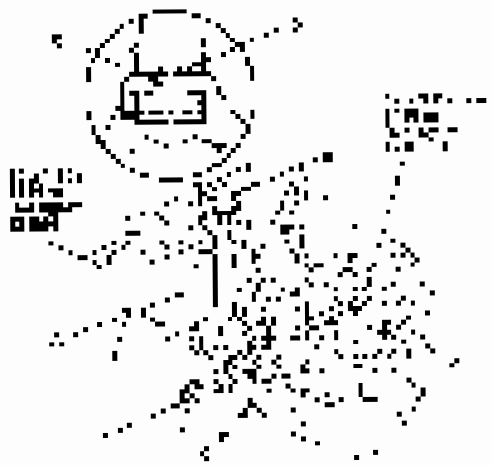


Lower Arm Removal/Installation

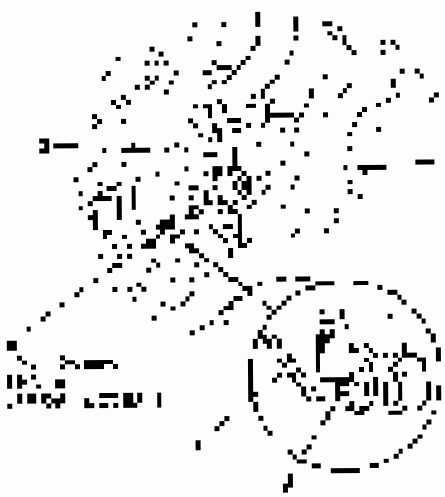
Special Tools required:
- Ball joint remover, commercially available: 57001-1535
- Ball joint remover, commercially available: 57001-1535

1. Apply the parking brake and block the wheels securely to keep the motorcycle in the proper position.
2. Remove the front wheel. (see page 18-2)
3. Remove the cotter pin and castle nut (2) from the ball joint (1) on the lower arm.

NOTE
- Before removing the castle nut, measure the projection of the ball joint above the nut. This will be used as a reference when installing the ball joint.
- Do not loosen the castle nut before removing the ball joint. Loosening the castle nut will make it difficult to remove the ball joint.

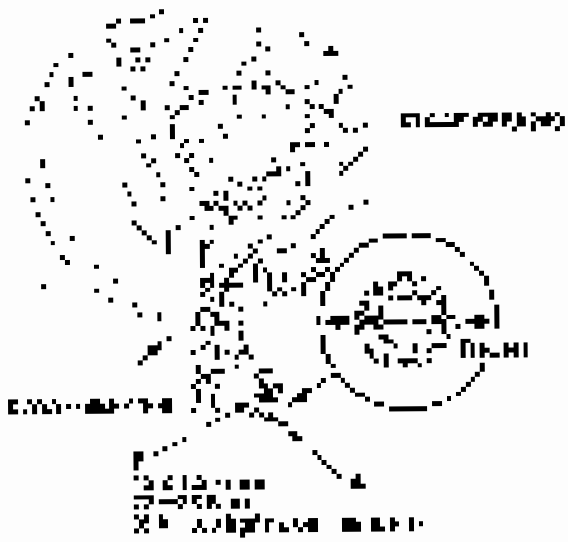


4. Remove the ball joint from the knuckle (3) with the special tool as shown. Do not damage the dust seal.



5. Remove the bolts (4), nuts (5), and lower arm pivot shaft (6).

NOTE
- Before removing the pivot shaft, measure the projection of the pivot shaft from the lower arm. This will be used as a reference when installing the pivot shaft.
- Be careful not to damage the threads on the pivot shaft when removing it.
- Do not lose the collars (7) and dust seals (8) between the lower arm and frame. They will be damaged if left in place.
- Replace the self-locking nuts with new ones.



6. Clean the pivot shaft and apply a thin coat of molybdenum disulfide grease to the pivot shaft.

Stabilizer Link Replacement

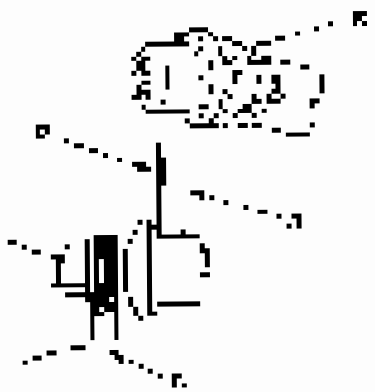
1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

[illegible]



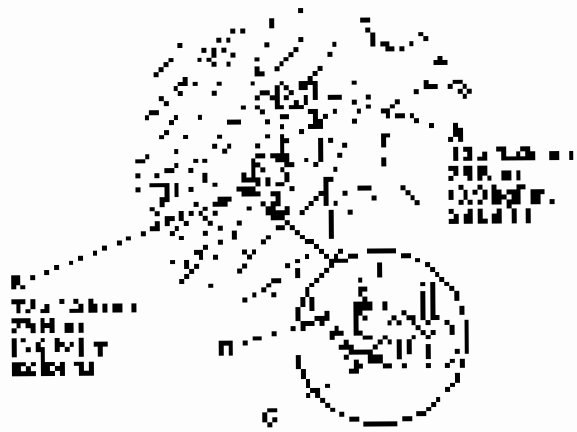
5. [illegible]

6. [illegible]

NOTICE

[illegible]

7. [illegible]



8. [illegible]

9. [illegible]

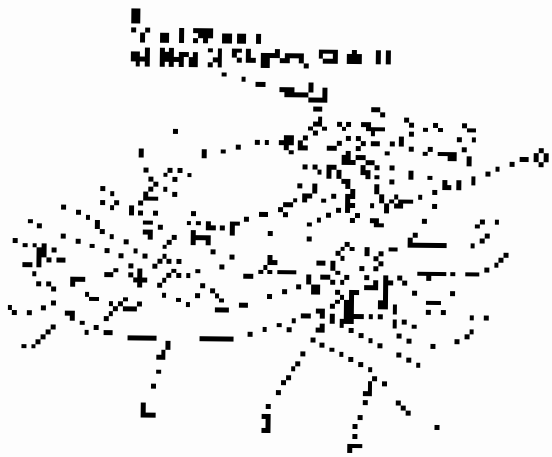
Stabilizer Bar Replacement

1. [illegible]

2. [illegible]

3. [illegible]

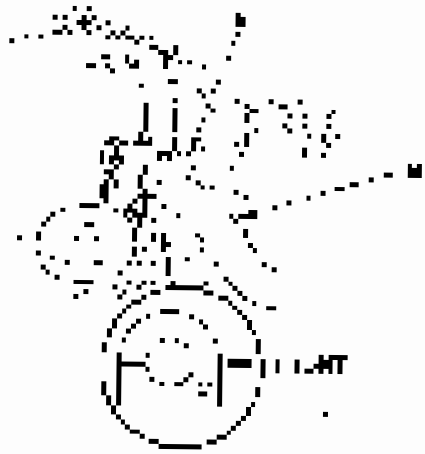
4. [illegible]



5. [illegible]

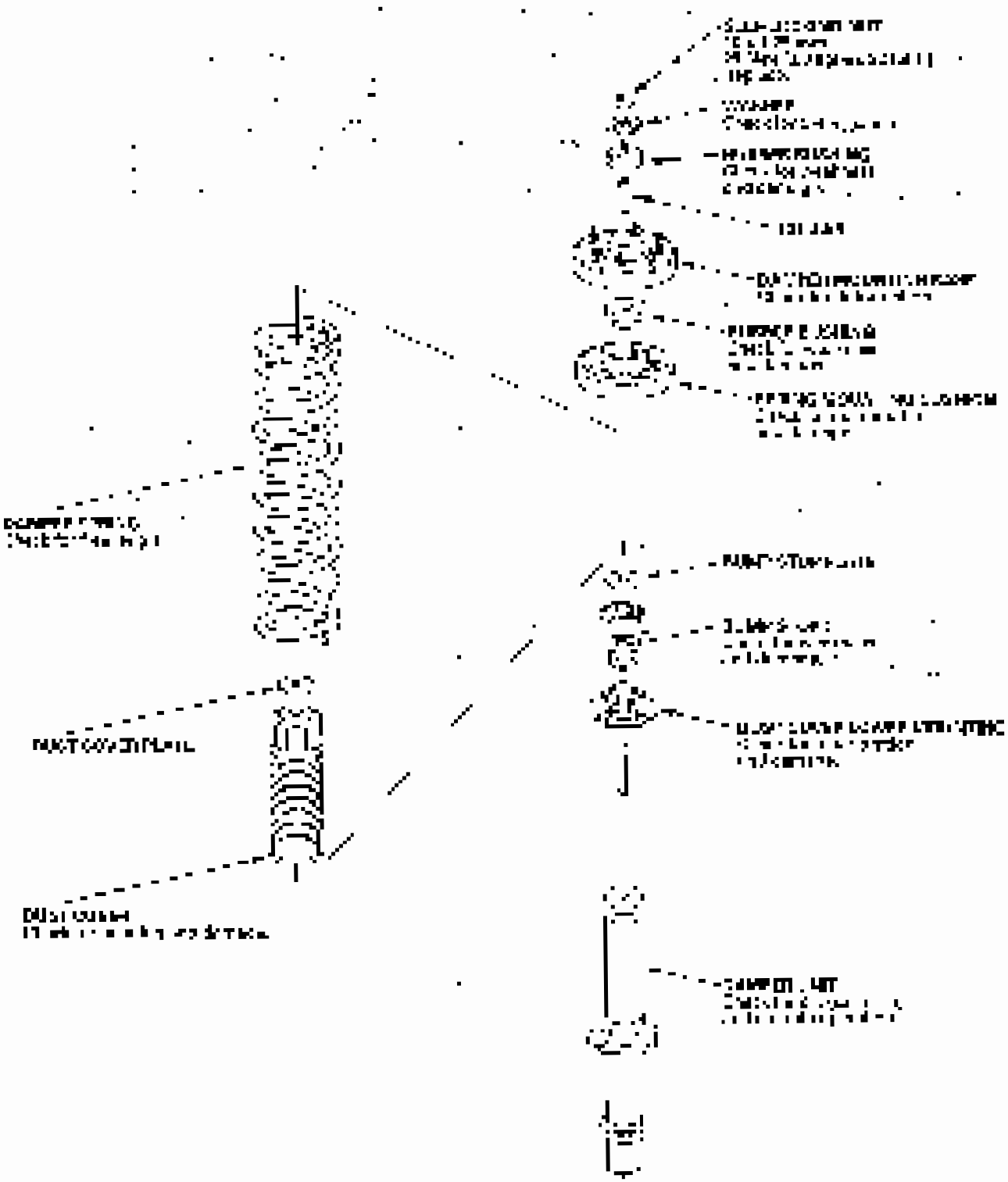
6. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]



Damper/Spring Replacement

Exploded View

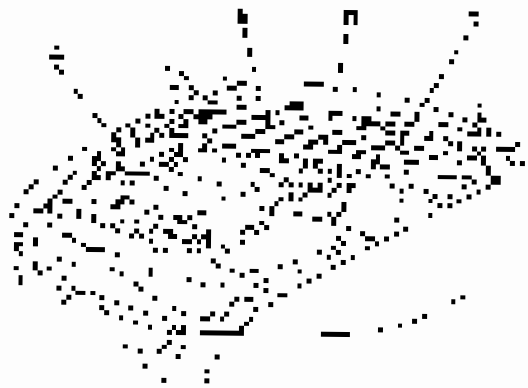


Special Tools Required

[illegible]

Removal

1. [illegible]

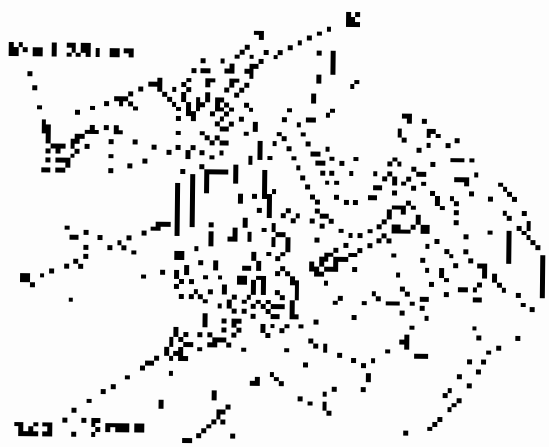


2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

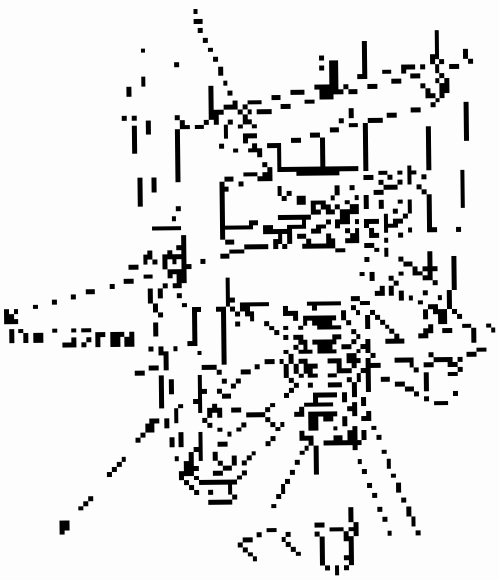


2. [illegible]

Damper/Spring Replacement (cont'd)

Disassembly/Inspection

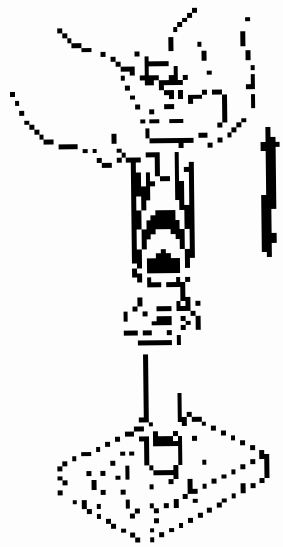
1. [illegible]



2. [illegible]

3. [illegible]

4. [illegible]



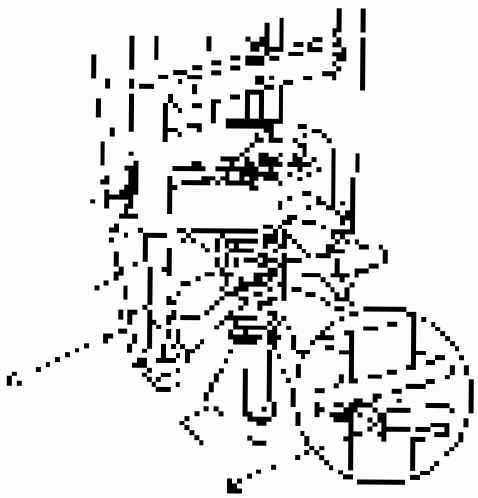
5. [illegible]

Reassembly

NOTE: Refer to the Exploded View as necessary.

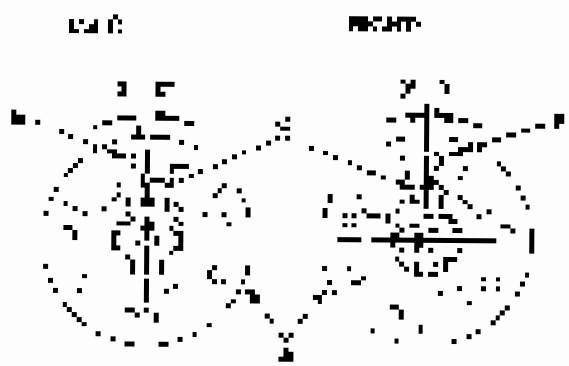
1. [illegible]

2. [illegible]



3. [illegible]

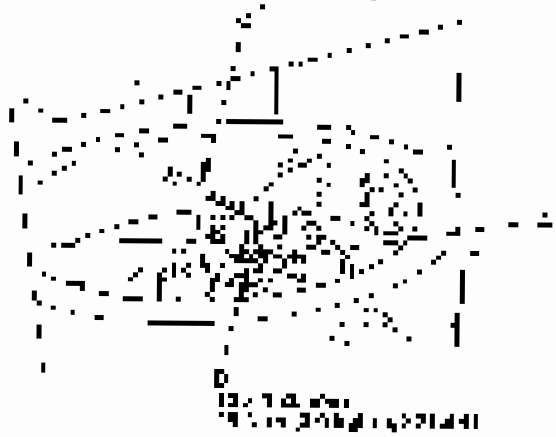
4. [illegible]



5. [illegible]

6. [illegible]

7. [illegible]



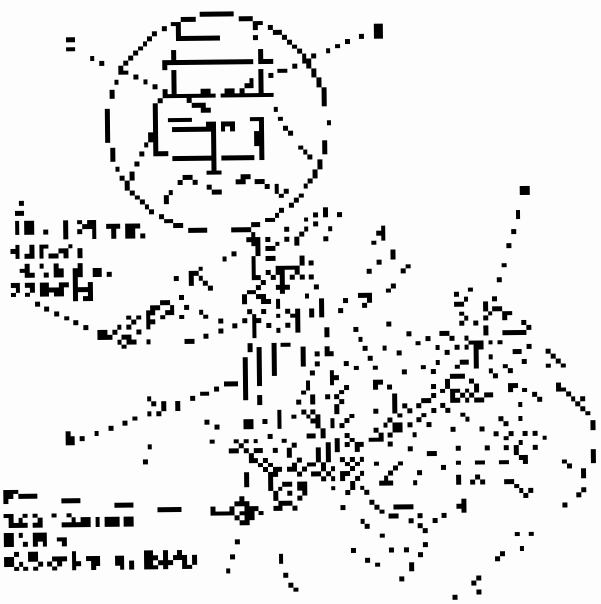
8. [illegible]

Damper/Spring Replacement (cont'd)

Installation

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

NOTE: [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

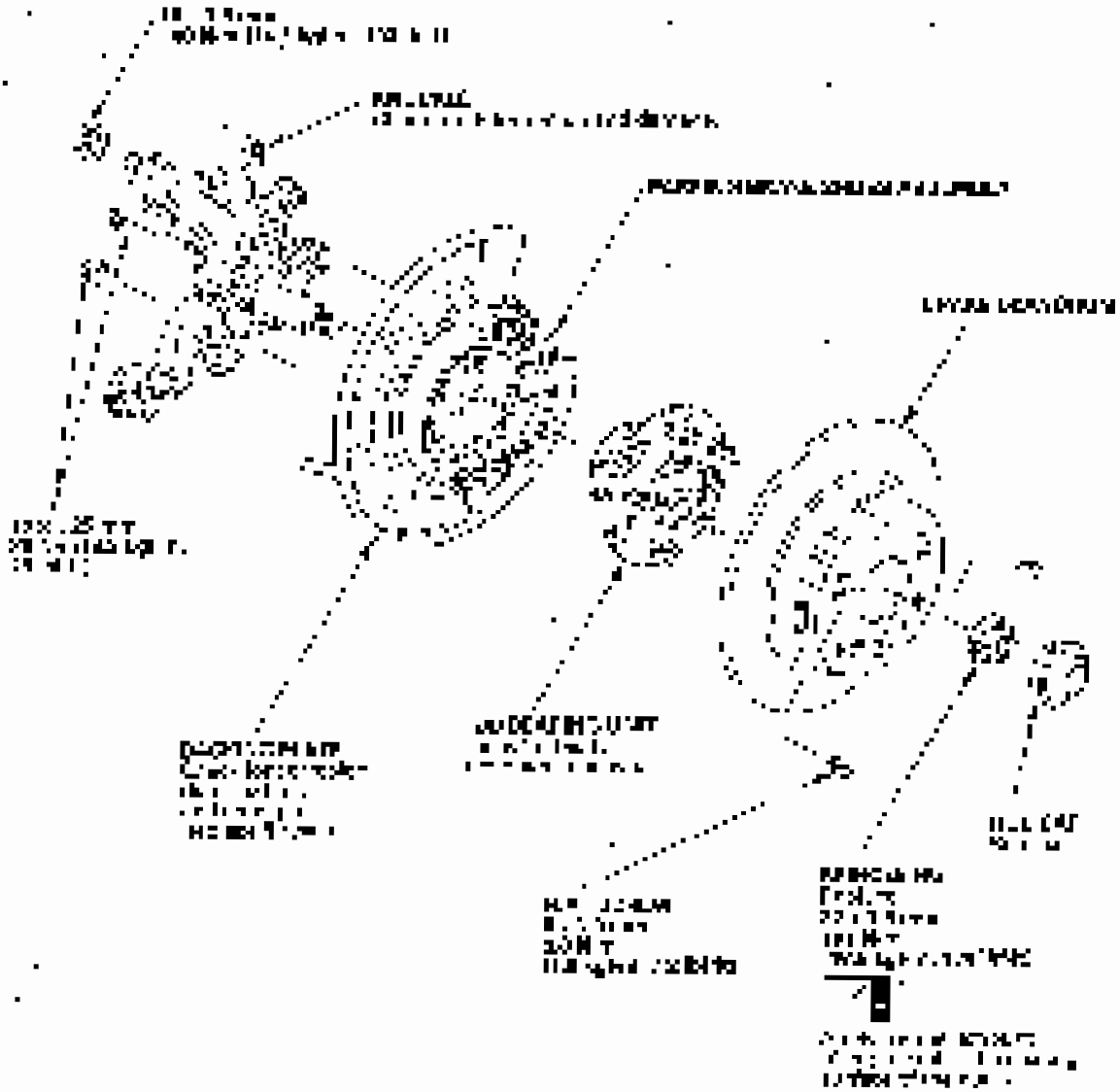
8. [illegible]

9. [illegible]

10. [illegible]

Knuckle/Hub Replacement

Exploded View



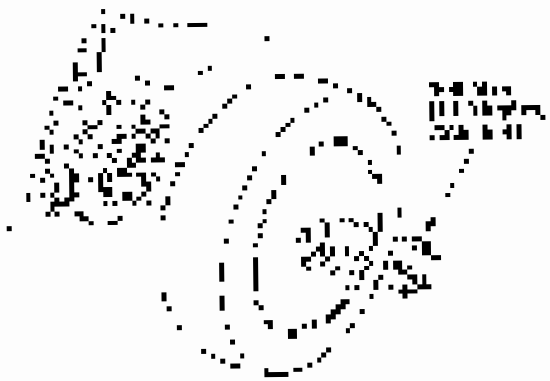
Knuckle/Hub Replacement (cont'd)

Special Tools Required
[illegible]

Hub Replacement

[illegible]

[illegible]



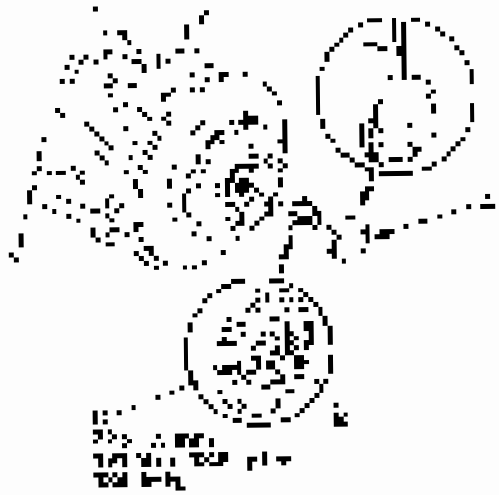
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]



[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

10. [illegible]

11. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Knuckle/Hub Replacement (cont'd)

Knuckle Replacement

1. [illegible]

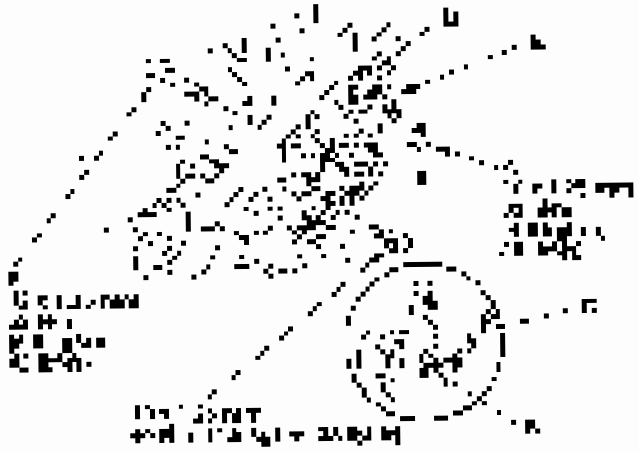
2. [illegible]

3. [illegible]

NOTE: During [illegible] as shown when [illegible]

4. [illegible]

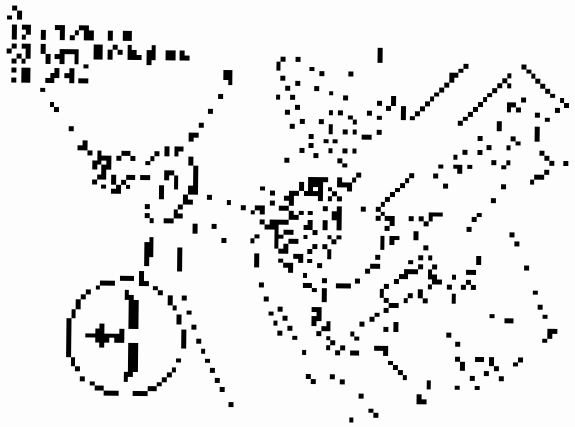
5. [illegible]



6. [illegible]

7. [illegible]

8. [illegible]



9. [illegible]

10. [illegible]

11. [illegible]

Knuckle/Hub Replacement (cont'd)

12. [illegible]

13. [illegible]

14. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Upper Arm Removal/Installation

Special Tools Required

Ball joint remover, 28 mm 07MAC-SD10100

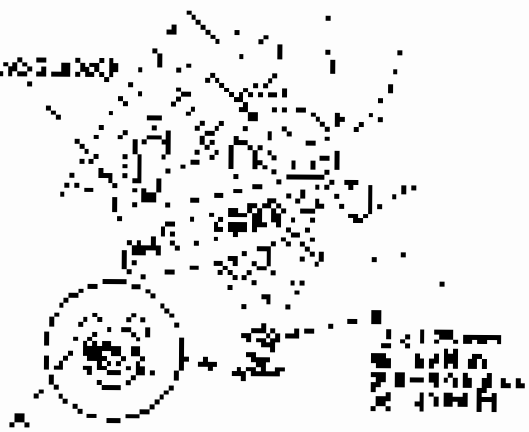
1. Raise the vehicle and support it with safety stands in the proper location (page 1-17).

2. Remove the wheel.

3. Remove the cotter pin and nut from the upper ball joint, then separate the ball joint from the steering knuckle using the special tool.

4. Remove the upper ball joint bolt and nut, then remove the upper arm.

NOTE: Discard the upper ball joint bolt and nut.



5. Check the upper ball joint for play and damage (page 18-34).

6. Install the upper arm in the reverse order of removal, and note the following:

- Tighten the upper ball joint nut to the specified torque.
- Install a new cotter pin.

7. Adjust the toe-in (page 18-4).

8. Bleed the brake system (page 19-3).

9. Install the wheel.

10. Lower the vehicle and tighten the wheel nuts to the specified torque.

11. Check the front wheel alignment (page 18-4).

12. Test-drive the vehicle and check for proper brake operation.

(cont'd)

Upper Arm Removal/Installation (cont'd)

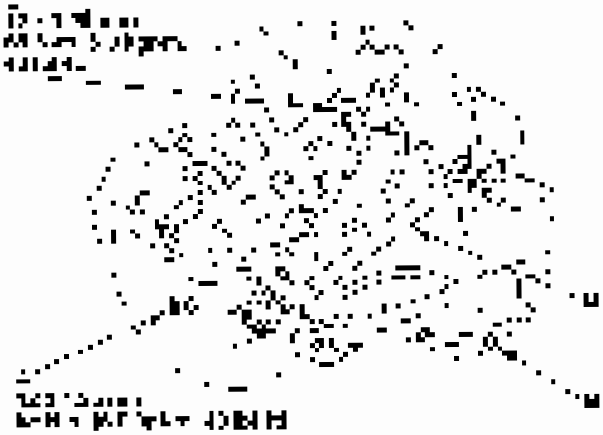
6. Install the [illegible] bolts and nuts:
   - Make sure the cam washers are installed with the [illegible] facing the body.
   - Tighten all mounting hardware to the specified torque values.
   - Check the toe and camber angles and adjust if necessary (see page [illegible]).
   - Tighten the cam bolt and nut to the specified torque value.
   - Check the wheel alignment and adjust if necessary (see page [illegible]).

Lower Arm Replacement

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

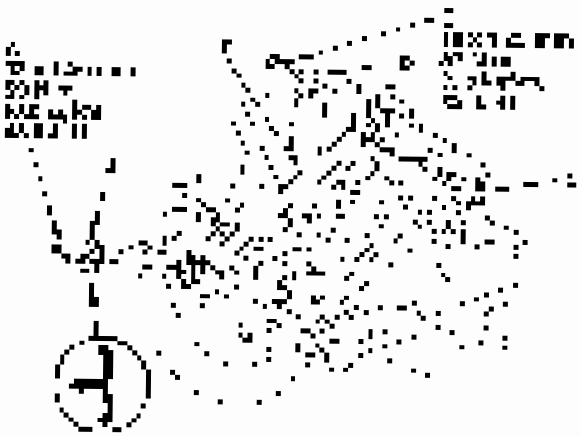
5. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

Control Arm Replacement

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

5. [illegible]

6. [illegible]

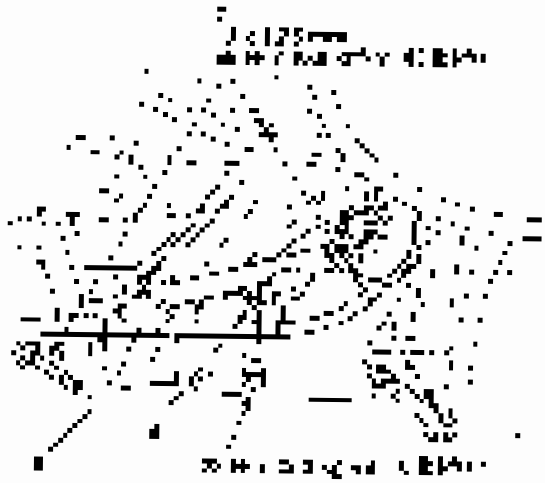
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

Trailing Arm Removal/Installation

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

5. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

Leading Arm Replacement

1. [illegible]

2. [illegible]

3. [illegible]

[illegible]

4. [illegible]

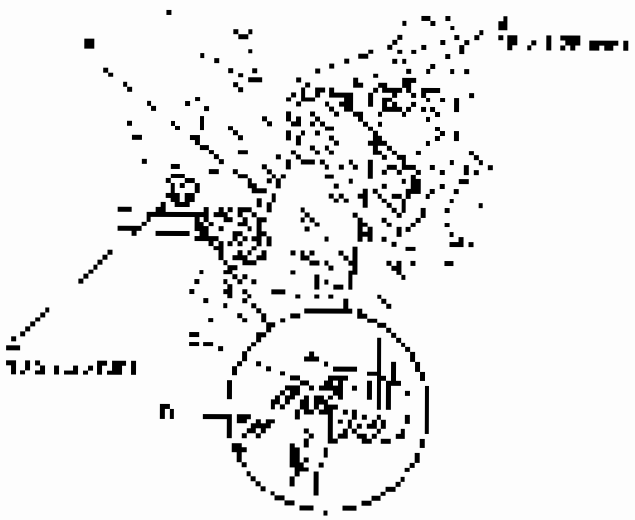
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

Stabilizer Link Removal/Installation

1. [illegible]

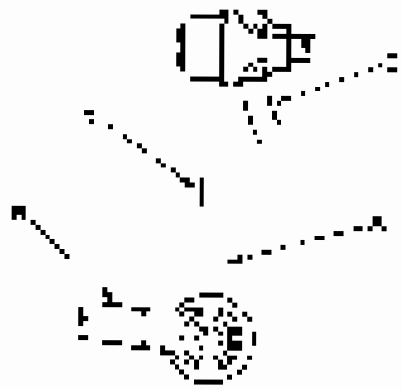
2. [illegible]

3. [illegible]



4. [illegible]

   NOTE: [illegible]

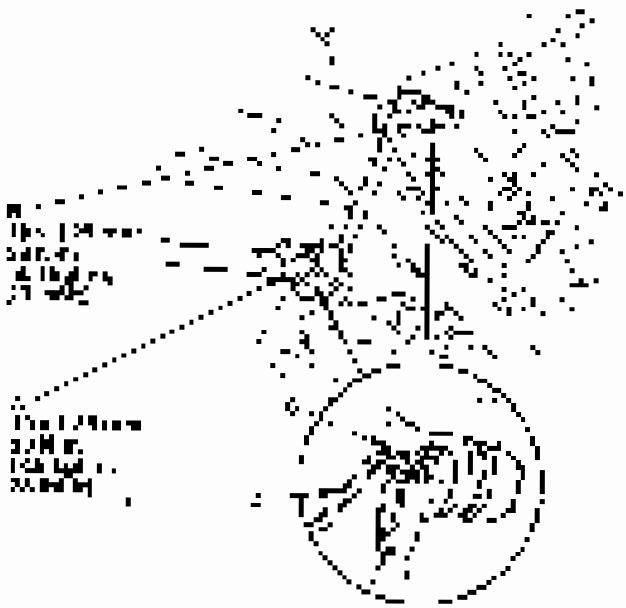


5. [illegible]

   NOTE: [illegible]

6. [illegible]

7. [illegible]



8. [illegible]

9. [illegible]

Stabilizer Bar Replacement

1. [illegible]
2. [illegible]
3. [illegible]

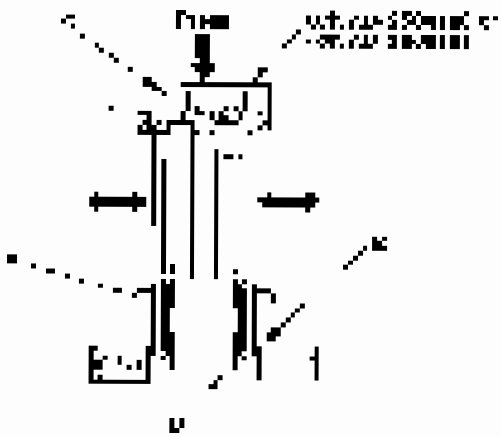
4. [illegible]

5. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

Knuckle Bushing Replacement

Special Tools Required
Bushing Driver Set (07965-SD90100) or equivalent
Driver (07749-0010000)

1. Position the knuckle bushing driver set as shown in the illustration, then press out the bushing.



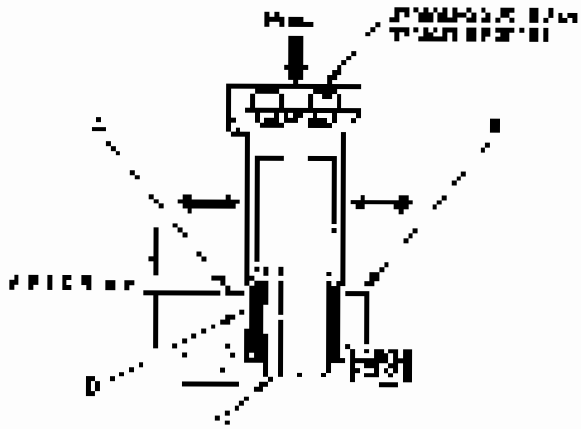
2. Install a new bushing in the knuckle as shown in the illustration, then press in the bushing.

3. Ream the bushing to the specified dimension.

4. Remove any burrs from the bushing and knuckle with crocus cloth.

NOTE: Be careful not to damage the bushing or the knuckle when removing burrs.

5. Position the knuckle bushing driver set as shown in the illustration, then press in the bushing.



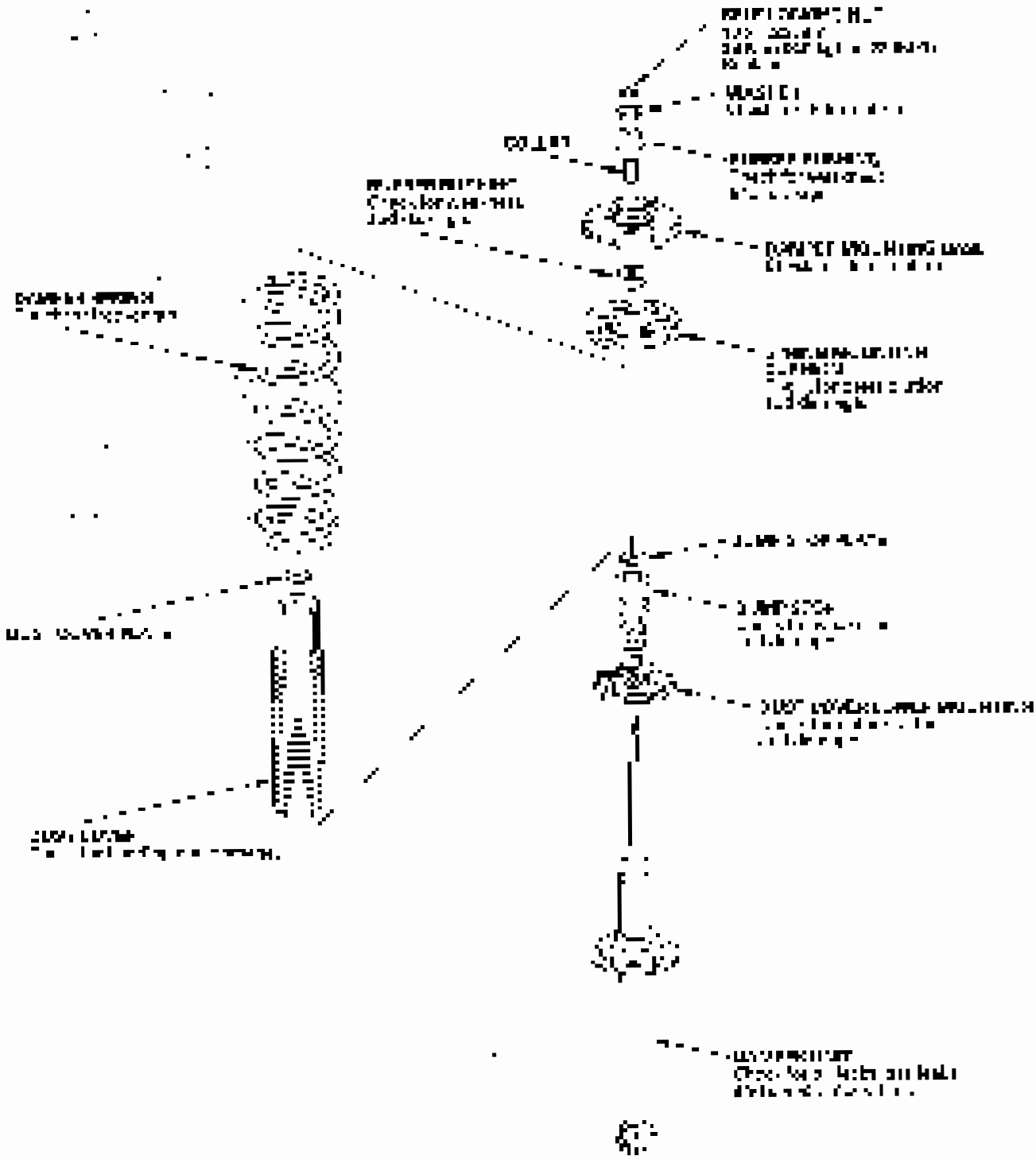
6. Adjust the specified toe-in (see page 18-4) by turning the outer tie-rod ends.

7. Install the wheel and tighten the lug nuts to the specified torque (see page 18-3).

8. Inspect the front wheel alignment after replacing the knuckle (see page 18-4).

Damper/Spring Replacement

Exploded View



Special Tool Required

Removal

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

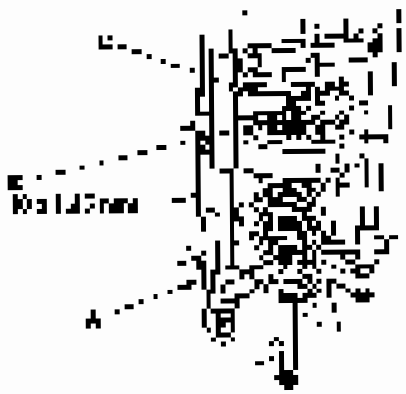
5. [illegible]

6. [illegible]

Damper/Spring Replacement (cont'd)

Disassembly/Inspection

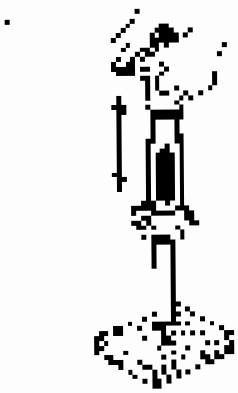
1. [illegible] compression spring in a commercially available coil spring compressor tool [illegible] the manufacturer's instructions. Install the tool as shown, with the [illegible] compression spring and the [illegible]



2. [illegible] compression spring [illegible] compression, then disassemble the damper [illegible]

3. [illegible]

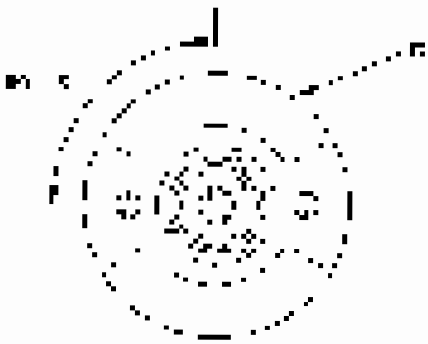
4. Compress the damper [illegible] and check for smooth operation [illegible]. Do not remove the [illegible] the damper shaft [illegible] compression [illegible] rebound [illegible] should be replaced.



5. Check for [illegible] during operation.

Reassembly

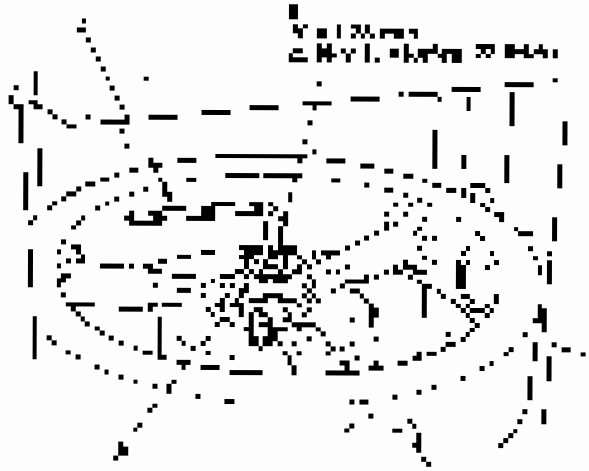
1. Install all parts removed in the following procedure. Be sure to replace the gaskets by new ones. Apply grease to the lip of the oil seal and to the sliding surface of the oil seal collar. Apply grease to the O-ring.



2. Install the compressor assembly on the crankcase and tighten the mounting bolts to the specified torque.

3. Connect the suction hose to the compressor.

4. Install the compressor pulley and belt. Adjust the belt tension.



5. Install the compressor clutch and tighten the mounting bolt to the specified torque.

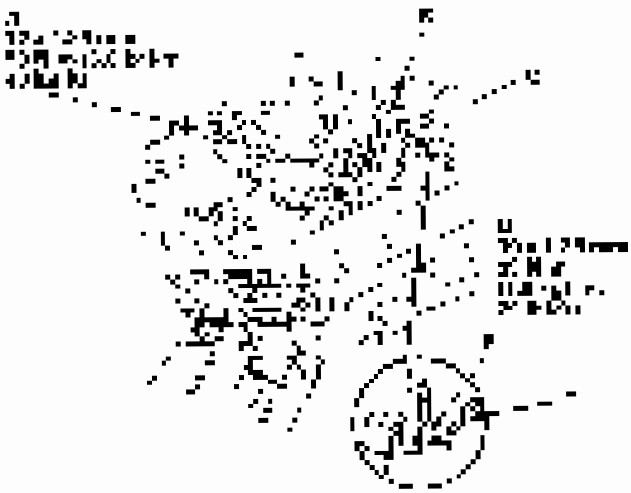
Damper/Spring Replacement (cont'd)

Installation

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

5. [illegible]

6. [illegible]

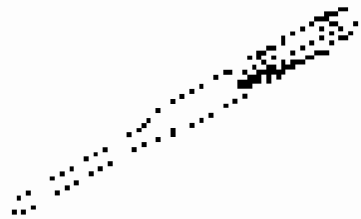
7. [illegible]

8. [illegible]

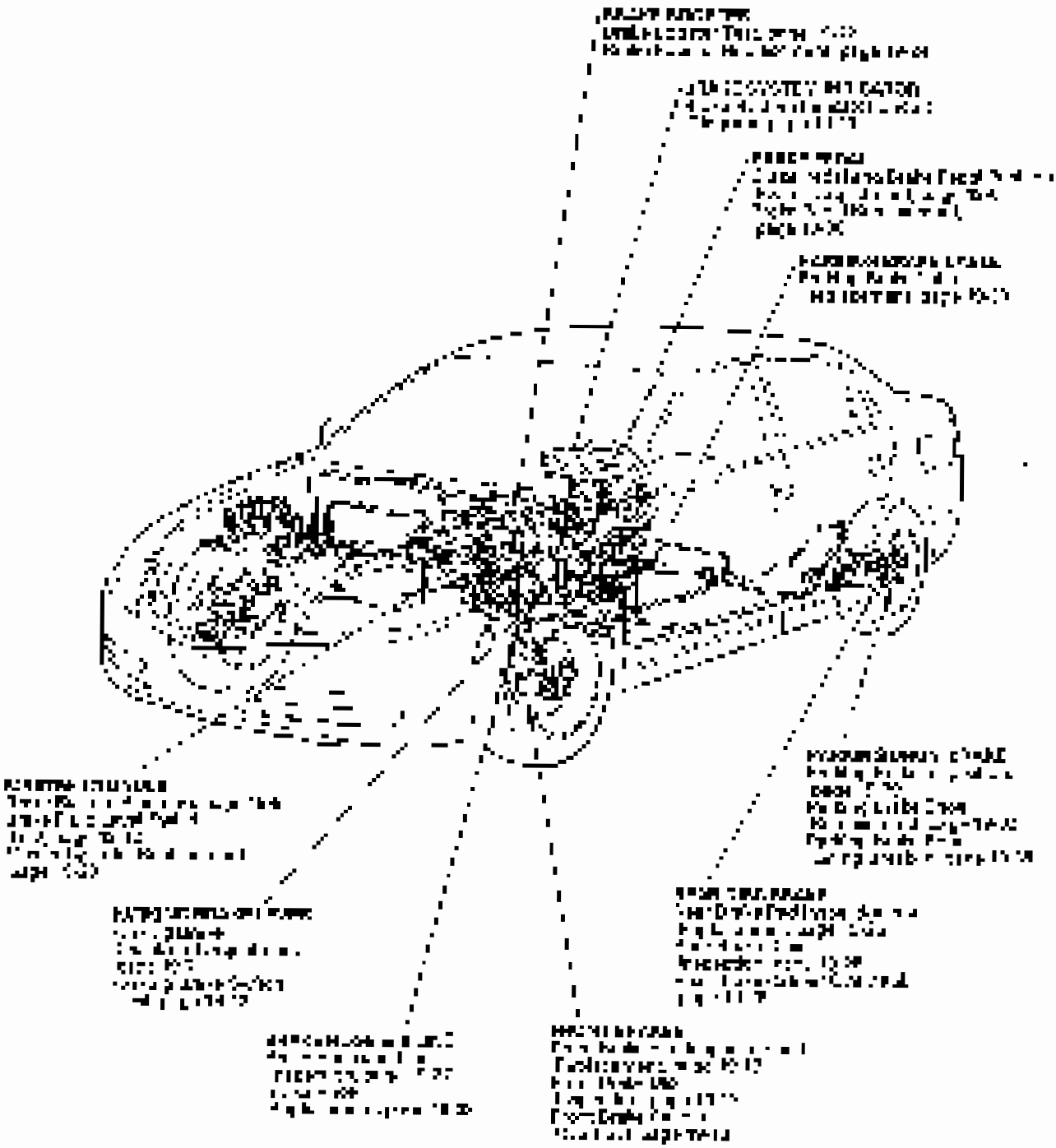
Brakes

Special Tools

Part No.	Tool Number	Description	Use
1)	[illegible]	Brembo Brake Caliper Piston [illegible]	
2)	[illegible]	Brake Caliper Seal Driver	



Component Location Index



Brake System Inspection and Test

Component Inspection

Component	Procedure	Standard for
Master Cylinder	[illegible]	[illegible]
Brake Hoses	[illegible]	[illegible]
Caliper	[illegible]	[illegible]
VSA Hydraulic Control Unit	[illegible]	

Brake System Test

Perform pedal stroke test after bleeding

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

Rapid brake pedal wear, pulsation, vibration felt in steering wheel or brake pedal

1. [illegible]

2. [illegible]

   YES - Go to step 3.

   NO - [illegible]

3. [illegible]

   YES - Go to step 4.

   NO - [illegible]

4. [illegible]

   YES - Go to step 5.

   NO - [illegible]

5. [illegible]

   YES - [illegible]

   NO - [illegible]

6. [illegible]

   YES - [illegible]

   NO - Test complete. [illegible]

Brake Pedal and Brake Pedal Position Switch Adjustment

Pedal Height

1. [illegible]

3. [illegible]

Standard pedal height [illegible]
M/T: [illegible]
A/T: [illegible]

4. [illegible]

[illegible]

5. [illegible]

6. [illegible]

Parking Brake Check and Adjustment

Pedal Free Play

1. With the engine off, depress the brake pedal [illegible] and measure the pedal free play by pushing the pedal by hand.

   Pedal free play: [illegible] (0.8 in.)

2. If the pedal free play is not within the specification, adjust the brake pedal free play. See page [illegible], then check the brake pedal free play after adjusting.

Check

1. Pull the parking brake lever [illegible] and [illegible] and lightly apply the parking brake. The parking brake lever should be locked [illegible].

   Lever position: [illegible]

2. Adjust the parking brake if the lever is not in the proper position.

(0.8 in.)

NOTE: When parking brake lever is [illegible] the 2nd notch, the parking brake is fully released. If the lever is [illegible] the parking brake is not fully released. Adjust the parking brake lever.

After installing new parking brake shoes, [illegible] see page [illegible].

Parking Brake Check and Adjustment (cont'd)

Minor Adjustment

1. Make sure the rear wheels are clean and dry, then check the shoe clearance (see page 19-7).
2. Release the parking brake completely.
3. Remove the rear wheels and brake drums (see page 19-7).
4. Remove the slots in the backing plates.
5. Fully release the parking brake lever.
6. Tighten the adjusting nut (pull the cable toward the rear of the car) until the rear wheels start to drag slightly when turned forward.

7. Fully release the parking brake lever. Make sure the rear wheels turn freely with no drag. If they don't, loosen the adjusting nut until they do.
8. Install the slots in the backing plates and reinstall the rear wheels.

Major Adjustment (to be done when replacing parking brake shoes and any time fitting surfaces break-in)

1. Remove the rear wheels and brake drums (see page 19-7).
2. Release the parking brake completely.
3. Remove the slots in the backing plates.
4. Remove the brake shoes (see page 19-7).
5. Back off the adjusting nut (pull the cable toward the front of the car) until the rear wheels turn freely with no drag.

6. Reinstall the brake shoes.
7. Temporarily reinstall the drums.

8. Turn the adjusting nut (pull the cable toward the front of the car) until the rear wheels start to drag slightly when turned forward. Then back off the adjusting nut just enough to eliminate the drag.
9. Go to the minor adjustment procedure.
10. Install the rear wheels.
11. Reinstall the rear brake drums (see page 19-7).

Brake System Bleeding

NOTE:

- Do not reuse brake fluid that has been drained from the system. Do NOT add brake fluid to a container that already contains used fluid. Use only new brake fluid from a sealed container.
- Make sure no dirt or moisture gets into the system when you service it. Dirt and moisture can cause brake failure.
- Do not spill brake fluid on painted surfaces. It can damage the paint. Wash any spilled fluid off immediately with water.
- The master cylinder must be completely bled of air. Air trapped in the master cylinder will cause poor brake performance and brake failure. Bleed the master cylinder first, then bleed each brake caliper. Add brake fluid as required.
- Most of the time the ABS does not need to be bled. If the brake lever or pedal is spongy, bleed the system as described below. If the problem persists, have the ABS checked by your dealer. The ABS must be bled if the hydraulic unit has been removed.

1. Make sure the reservoir is filled with brake fluid to the upper level line. Install the reservoir cap.

2. Attach a bleed hose to the bleed valve and submerge the other end in a container of brake fluid.

3. Slowly pump the brake lever or pedal until there is no air in the system. Then apply pressure and hold it.

4. Loosen the bleed valve and drain the fluid. Tighten the bleed valve, then release the brake lever or pedal. Repeat this step until there is no air in the system. Then go to the next caliper.

NOTE:

- Check and add brake fluid to the reservoir as you bleed the system.
- Do not let the reservoir run dry. Air will enter the system and you will have to bleed it again.

- Repeat the procedure for each caliper in the following order:

Front Left → Front Right → Rear Left → Rear Right

FRONT

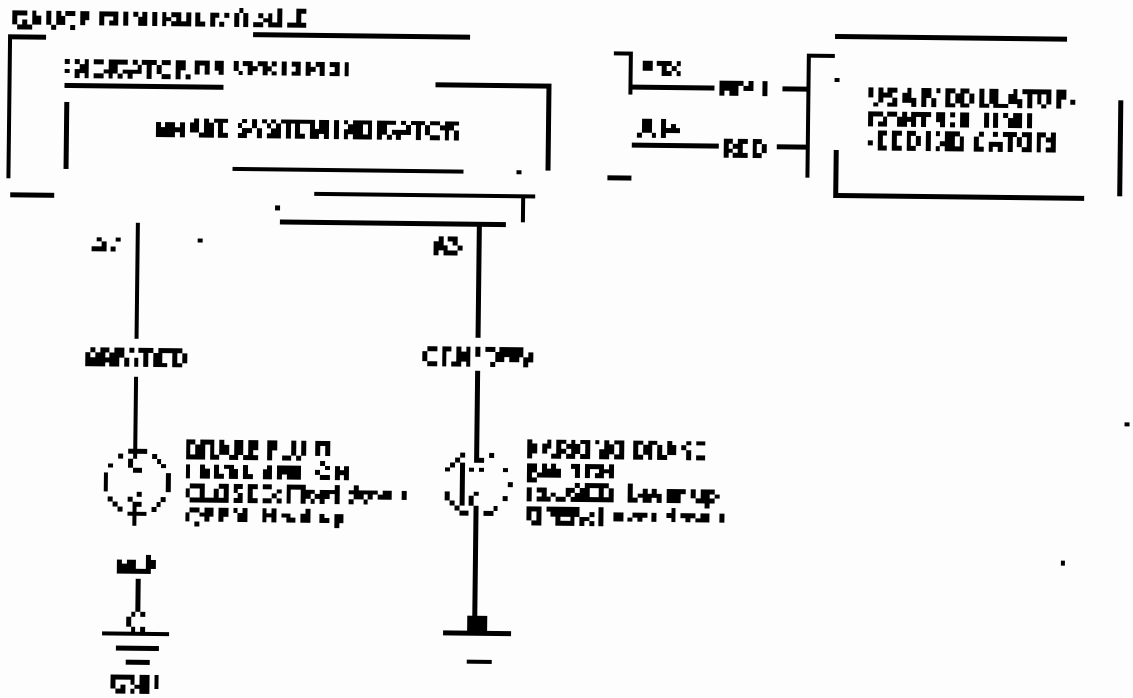
ATF Hose

Brake System Bleeding (cont'd)

REAR

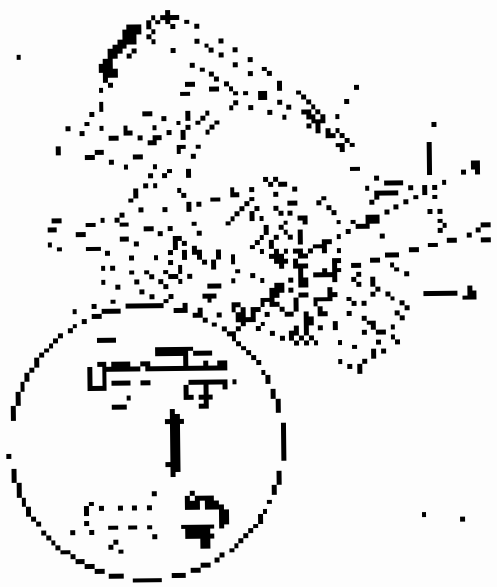
19-10

Brake System Indicator Circuit Diagram



Parking Brake Switch Test

1. [illegible]
2. [illegible]



3. [illegible]
   - [illegible]
   - [illegible]

Brake Fluid Level Switch Test

[illegible]

- [illegible]

Front Brake Pad Inspection and Replacement

Special Tools Required
•Brake Caliper Piston Compressor
07HAC-PD6A010
•Pin Puller 3.5 mm 07JAF-SH20100

⚠CAUTION

•Improper installation of brake pad may result in improper operation of brake and reduction in braking performance, leading to serious injury.
•Always install new brake pads.
•Clean brake system components with brake cleaner or alcohol. Never use petroleum based solvent such as gasoline.

Inspection

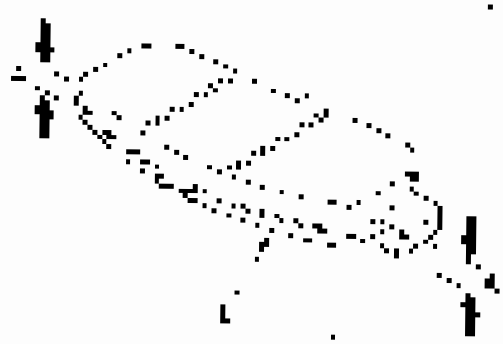
NOTE: If you are using high performance brake pads, refer to their recommendations for inspection, maintenance and replacement. Some high performance brake pads require different inspection and maintenance procedures.

1. Raise the front of the vehicle, and support it with safety stands (see page 1-17). Remove the front wheels (see section 18 for 4WD models).

2. Check the brake pad thickness [illegible].

Brake pad thickness
Standard
Outboard: 10.0 mm (0.39 in)
Inboard: 10.0 mm (0.39 in)
Service limit: 1.0 mm (0.04 in)

4WD model



Mid-mounted brake caliper type

4. Remove the brake pads [illegible]

Front Brake Pad Inspection and Replacement (cont'd)

Replacement: (VT model)

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

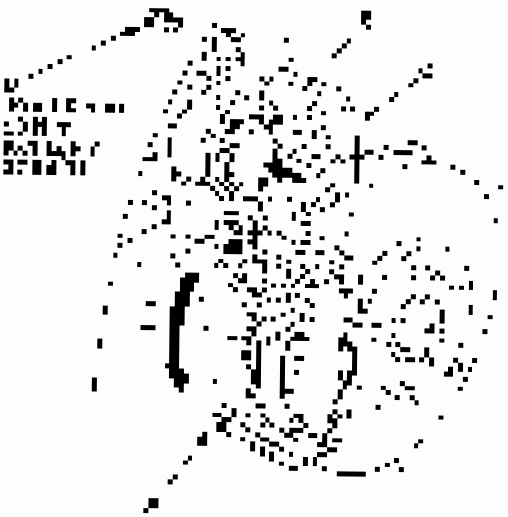
6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]



Replacement: M/T models (4-piston caliper type)

Front Brake Pad Inspection and Replacement (cont'd)

7. Push in the caliber piston with a C-clamp as shown. While holding the lower pad spring and caliber, remove the upper pad.

8. Remove the lower pad.

9. Apply molybdenum disulfide grease to the pad pin and the inside of the pad pin holes in the caliber bracket. Coat the pad pin with silicone grease to prevent rust and corrosion.

10. Install the lower pad and the upper pad with the pad spring. Install the caliber and torque the caliber mounting bolts to 23 lb-ft (31 N·m). Install the wheel and torque the lug nuts to 80 lb-ft (108 N·m).

11. Pump the brake pedal several times to seat the pads against the rotor, then check the fluid level.

12. Test drive the vehicle and check for proper brake operation.

Front Brake Rotor Inspection and Replacement

1. Remove the caliber and support it with a piece of wire. Do not let the caliber hang by the brake hose.

2. Remove the wheel.

3. Remove the hub cap, grease cap, cotter pin, nut lock, nut and washer.

4. Pull the hub and rotor assembly off the spindle. Be careful not to drop the outer wheel bearing.

5. Clean the rotor with brake cleaner and inspect it for scoring, cracks, heat spots and warpage. If necessary, have the rotor machined or replaced.

6. Measure the rotor thickness with a micrometer. Take measurements at several points around the rotor. If the thickness is less than the minimum thickness specification, replace the rotor.

7. Install the rotor and the outer wheel bearing. Install the washer, nut, nut lock, grease cap, cotter pin and hub cap.

8. Install the caliber and torque the caliber mounting bolts to 23 lb-ft (31 N·m).

9. Install the wheel and torque the lug nuts to 80 lb-ft (108 N·m).

Front Brake Disc Inspection

Runout

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

   [illegible]

6. [illegible]

   [illegible]

   NOTE:
   - [illegible]
   - [illegible]

Thickness and Parallelism

1. [illegible]

2. [illegible]

3. [illegible]

   Brake disc thickness:
   A/Trucco:
   Standard: [illegible]
   Minimum tolerance limit: [illegible]
   [illegible]:
   Standard: [illegible]
   Minimum tolerance limit: [illegible]
   Disc parallelism limit: [illegible]

   NOTE: [illegible]

4. [illegible]

5. [illegible]

Front Brake Caliper Overhaul

⚠CAUTION

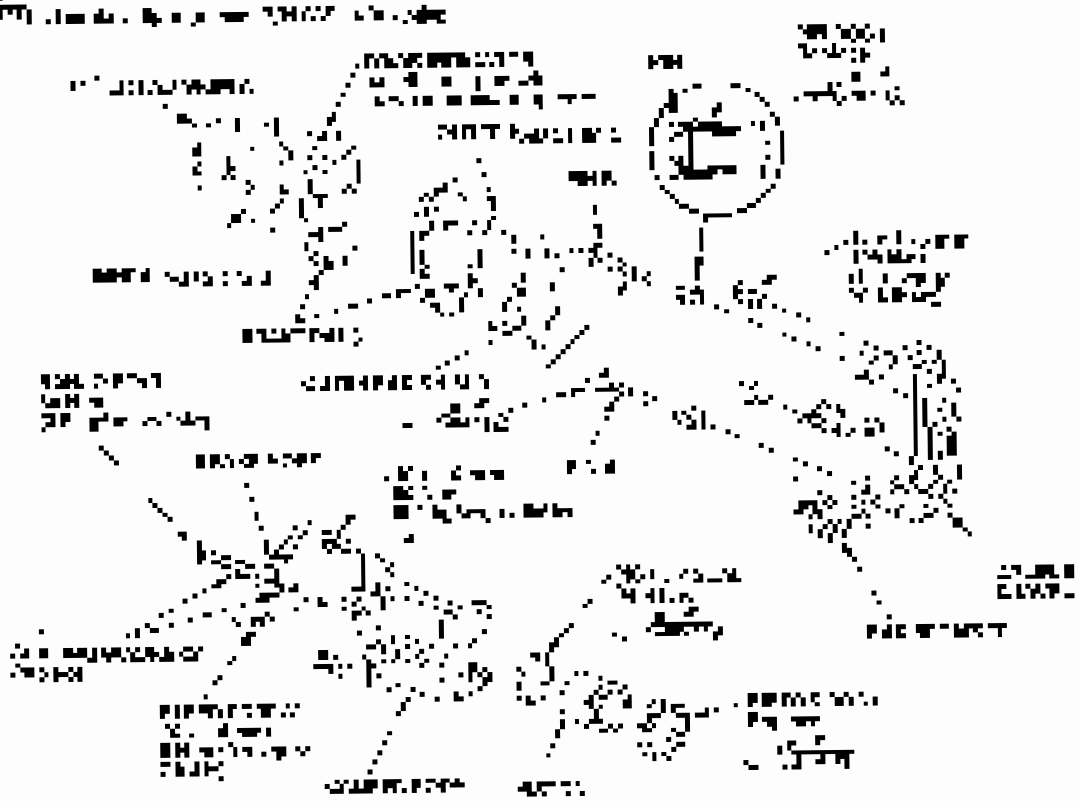
- [illegible]
- [illegible]

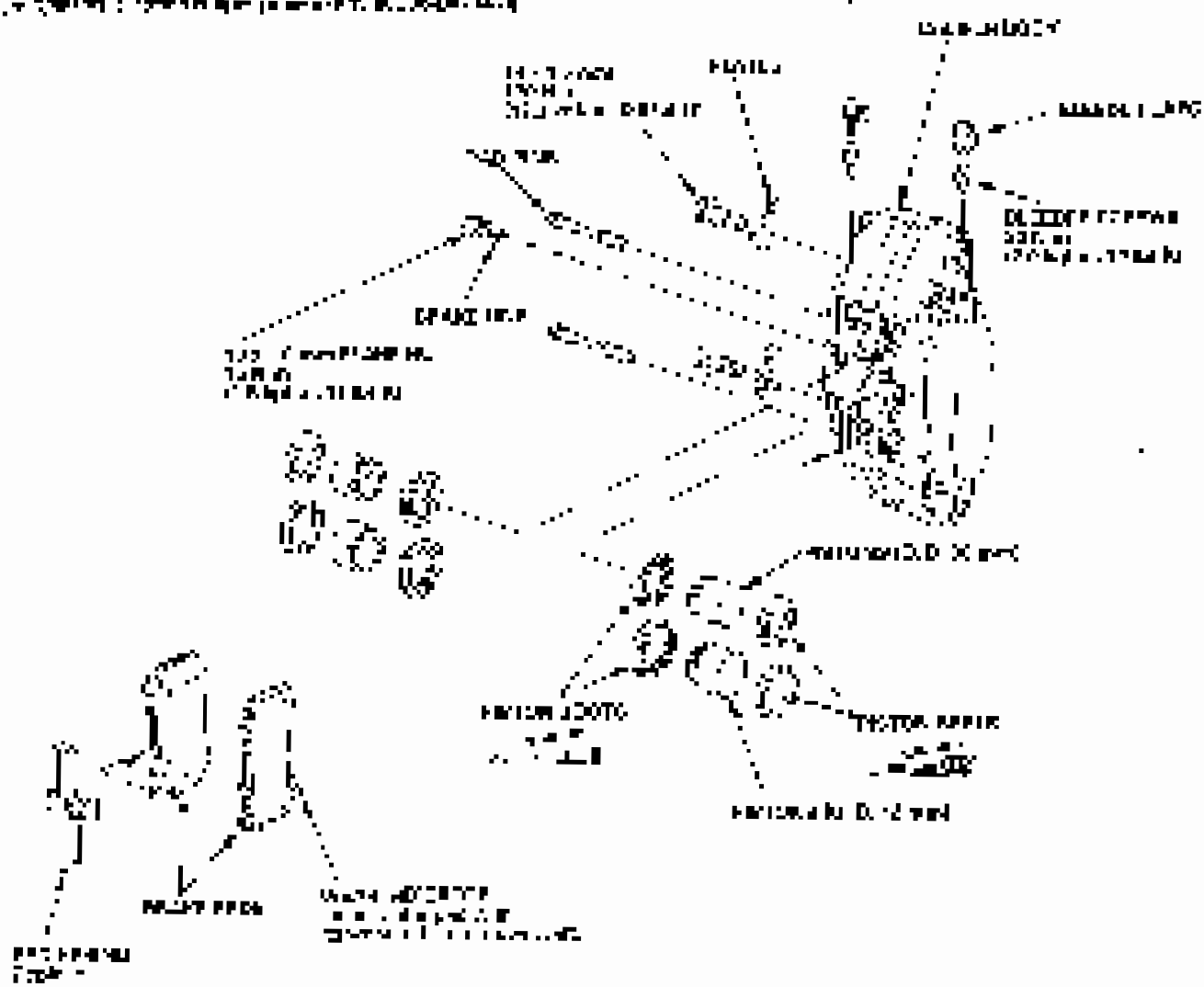
[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

ATV models

- [illegible]





Master Cylinder Replacement

1. [illegible]
2. [illegible]

4. [illegible]

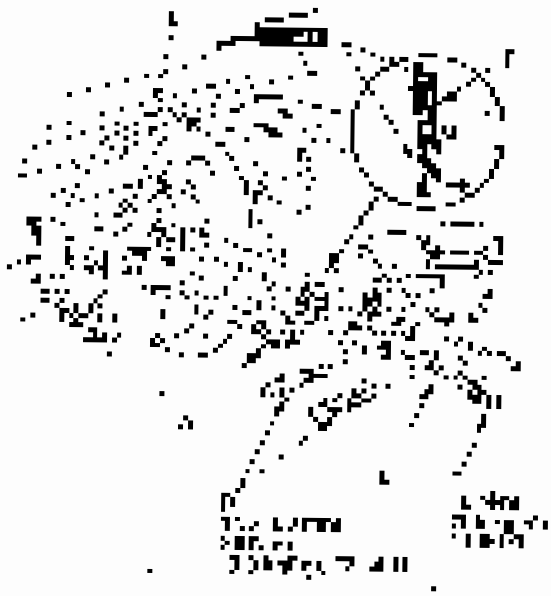
4. [illegible]

4. [illegible]

5. With the ignition key removed, remove the seat heater (A).

7. Remove the [illegible] and brake [illegible] from the [illegible] by pulling [illegible].

8. Disconnect the [illegible] connectors (B).



9. [illegible] the [illegible] from the [illegible] by pulling [illegible].

NOTE: Do not [illegible] the [illegible] damage the [illegible] the [illegible] [illegible].

10. Remove the [illegible] from the [illegible].

11. [illegible] the [illegible] from the [illegible] by pulling [illegible].

3. Remove the [illegible] from the [illegible].

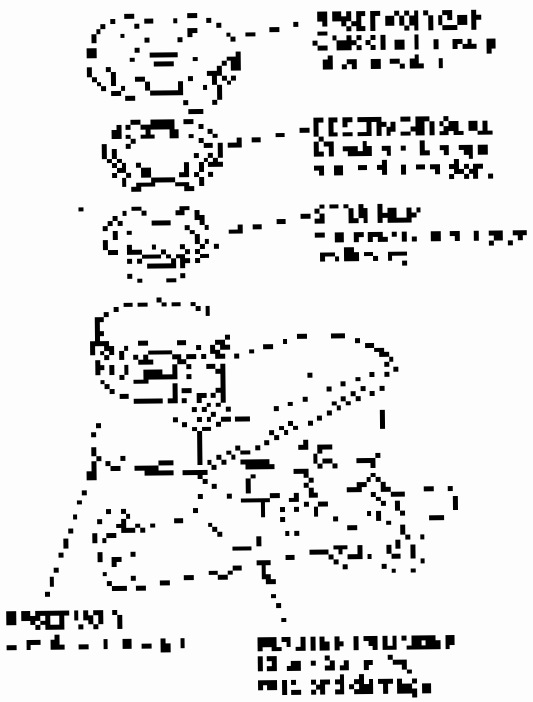
4. Install the removed parts in the reverse order of removal and note the following.

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Master Cylinder Inspection

NOTE:

- [illegible]
- [illegible]
- [illegible]



Brake Booster Test

Functional Test:

1. [illegible]

2. [illegible]

3. [illegible]

Leak Test

1. [illegible]

2. [illegible]

4. [illegible]

5. [illegible]

8. [illegible]

11. [illegible]

- [illegible]
- [illegible]

Brake Booster Replacement

1. Remove the master cylinder from the booster (see page 19-22).

2. Disconnect the vacuum hose (A) from the booster check valve.

3. Remove the [illegible] (A).

4. Remove the primary and secondary brake lines (A) from the proportioning valve (B).

5. Remove the [illegible] and disconnect the [illegible] (see page 19-[illegible]).

6. Remove the booster mounting nuts (A).

1. Remove the [illegible]

NOTICE

- [illegible]
- [illegible]

2. [illegible]

- [illegible]
- [illegible]
- [illegible]

Rear Brake Pad Inspection and Replacement

⚠CAUTION

[illegible]

Inspection

1. [illegible]
2. [illegible]

Brake pad thickness
Standard: [illegible]
Service limit: [illegible]

3. [illegible]

Replacement

[illegible]

1. [illegible]
2. [illegible]

3. [illegible]
4. [illegible]

2. Remove the pad retaining pin.

3. Clean the caliper [illegible] with a wire brush and [illegible].

4. Check the [illegible] for damage, corrosion.

5. Install the pad retaining pin.

6. Apply [illegible] grease [illegible] to the pad retaining pin. Do not get any lubricant on the [illegible]. Install the pad retaining pin [illegible] and tighten it to [illegible] N·m (in-lb).

7. Install the [illegible] and pad retaining pin [illegible] and tighten it to [illegible] N·m (in-lb).

NOTE: [illegible]

8. Repeat the procedure for the other pad.

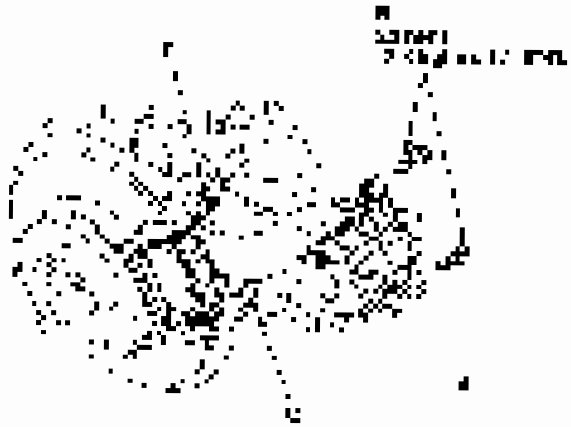
9. Fill the brake reservoir with [illegible] and install the cap.

10. Pump the brake pedal [illegible] to make sure the brakes work before moving the vehicle.

11. Install the [illegible] and [illegible] on the [illegible] and tighten the [illegible] to [illegible] N·m (ft-lb).
Make sure the [illegible] is positioned [illegible] and the [illegible] is not [illegible].

12. Remove the [illegible] and lower the vehicle to the ground. Tighten the [illegible] to [illegible] N·m (ft-lb).

13. Install the [illegible] and [illegible].



14. Install the [illegible] and tighten the [illegible] to [illegible] N·m (ft-lb).

15. Install the [illegible] and tighten the [illegible] to [illegible] N·m (ft-lb).

16. Apply the brake pedal several times to make sure the brakes work [illegible] before moving the vehicle.

NOTE: [illegible]

17. Refer to the [illegible] for [illegible] the [illegible] and [illegible] if necessary.

Rear Brake Disc Inspection

Runout

1. [illegible] (see page 19-25).
2. Remove the [illegible].
3. Inspect the [illegible] for damage [illegible].
4. Install a suitable [illegible] and dial indicator [illegible].

   Brake disc runout limit:
   Standard: [illegible] (0.08 mm [0.003 in])

   Replace if beyond limit.

5. [illegible] and measure the [illegible] from the outer edge of the [illegible].
6. [illegible] (see page 19-25). [illegible] the [illegible] with the [illegible] and measuring [illegible] and specified for this operation.

   After installing: Bleed the brake system.

   NOTE:
   - Pitted [illegible] (see page 19-25).
   - [illegible] (see page 19-25).

Thickness and parallelism

1. Remove the [illegible] (see page 19-25).
2. Remove the [illegible].
3. [illegible] (see page 19-25).

   Brake disc thickness:
   Standard: [illegible] (0.28 mm [0.011 in])
   Wear limit: [illegible] (0.28 mm [0.011 in])
   Brake disc thickness variation:
   Within the specified limit.

   Replace if beyond limit. Refer to [illegible] for [illegible].

4. [illegible] with the [illegible] and a micrometer [illegible] at [illegible] (see page 19-25).

   NOTE: [illegible] (see page 19-25).

Rear Brake Caliper Overhaul

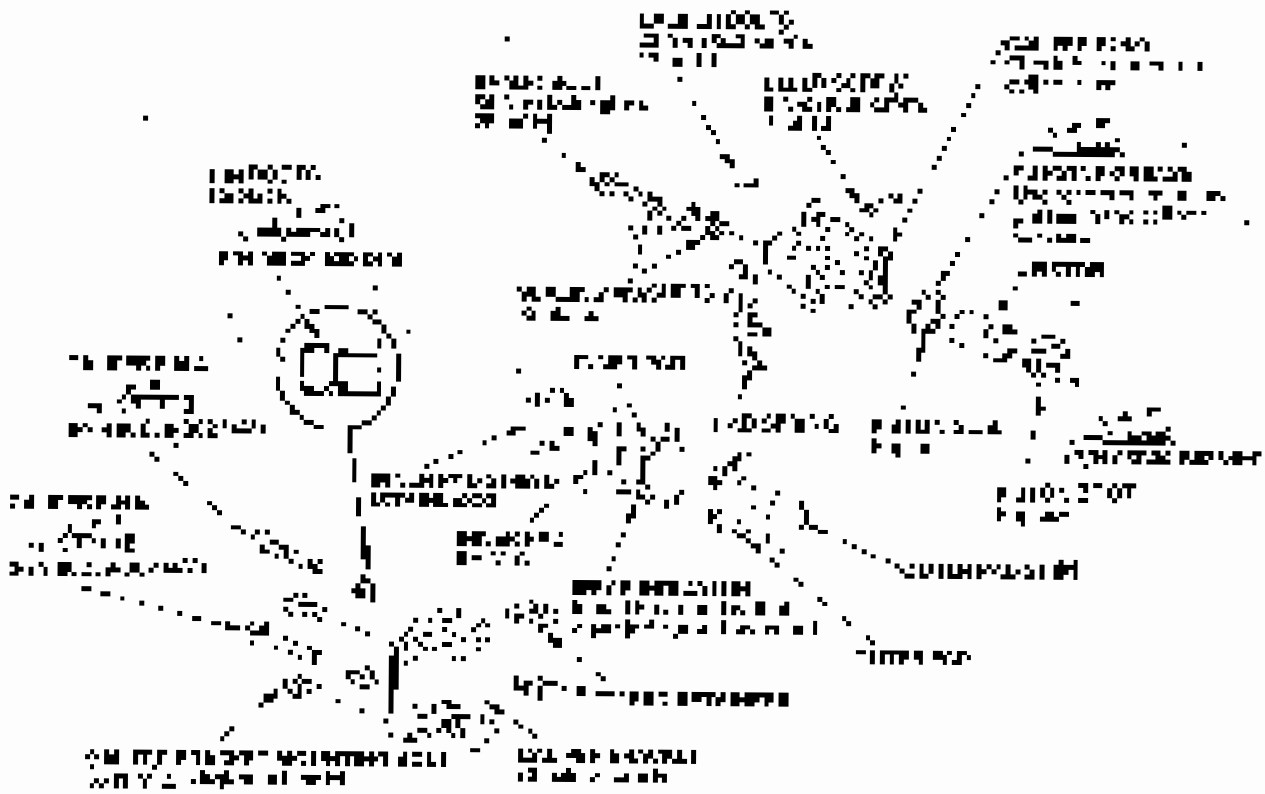
ACAUTION

- [illegible]
- [illegible]
- [illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]



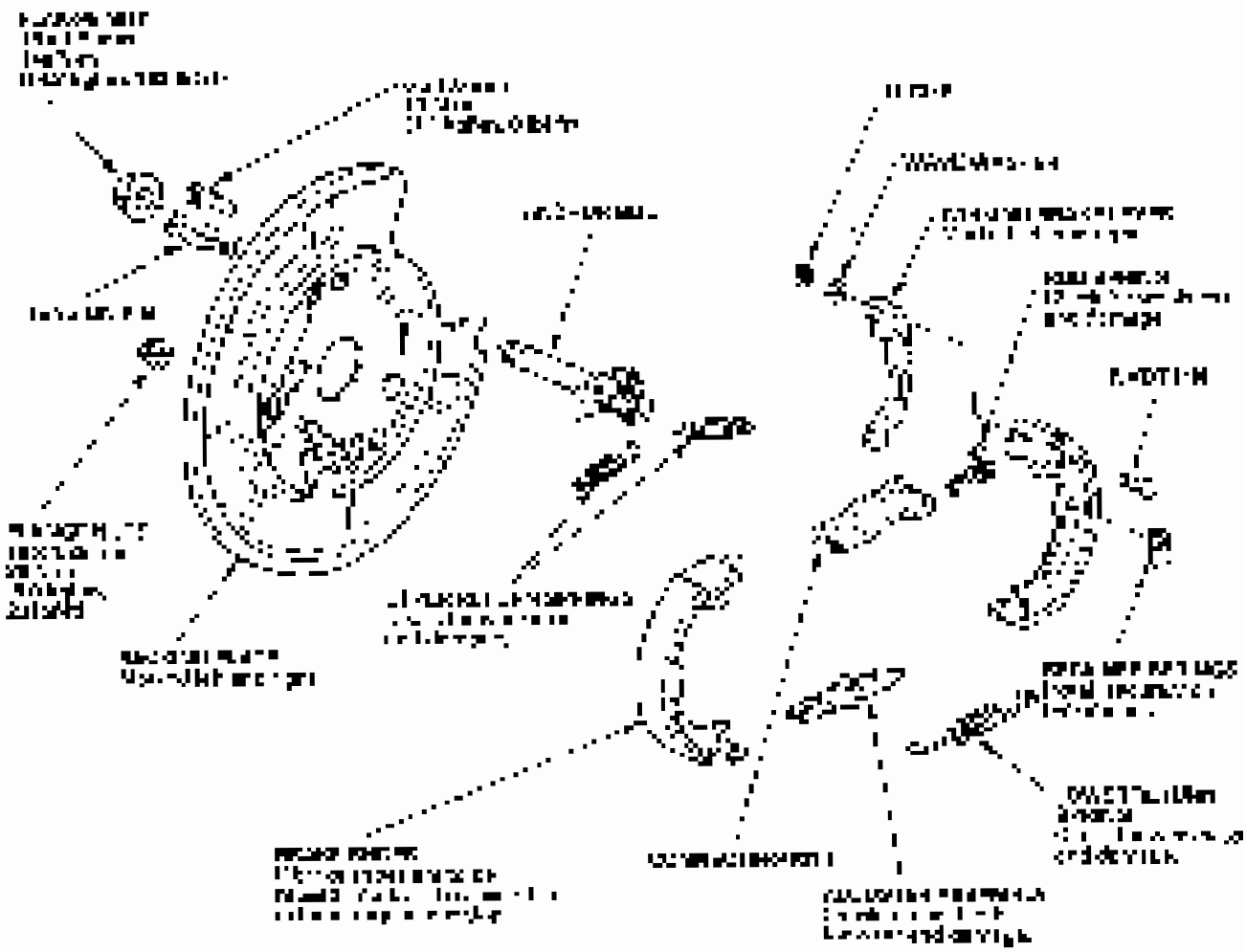
Parking Brake Inspection

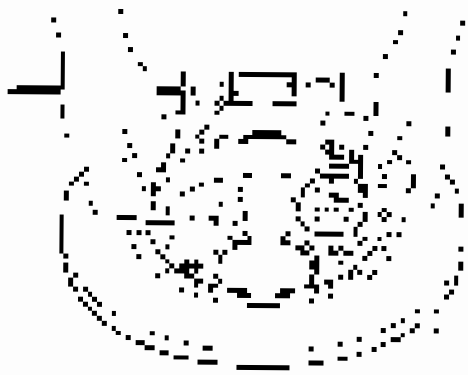
⚠CAUTION

[illegible]

1. [illegible]

2. [illegible]





Parking Brake Shoe Replacement

⚠CAUTION

[illegible]

Disassembly

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

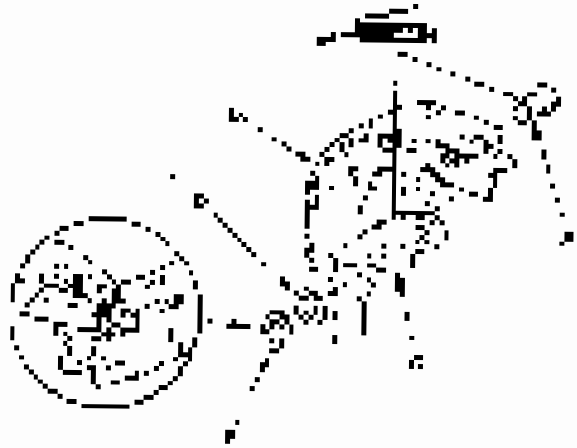
7. [illegible]

4. [illegible]

5. [illegible]

Reassembly

1. [illegible]



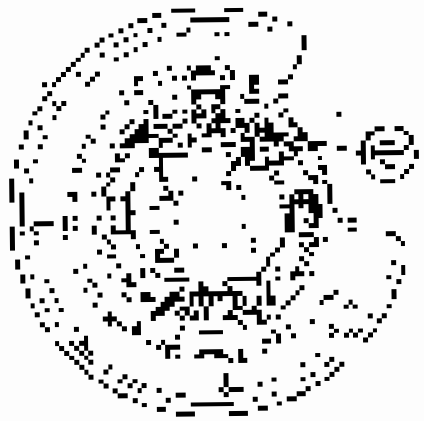
2. [illegible]

- [illegible]
- [illegible]

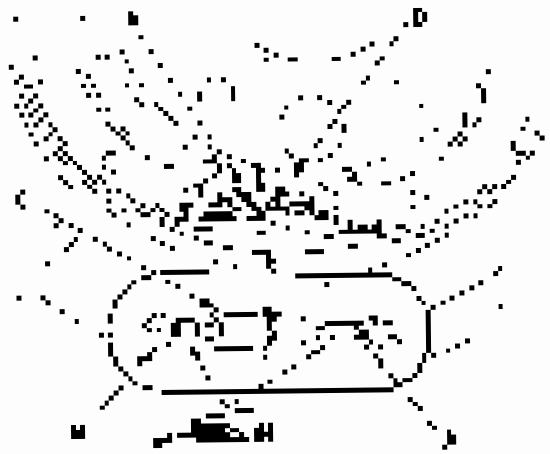
3. [illegible]

Parking Brake Shoe Replacement (cont'd)

4. [illegible]



5. [illegible]



6. [illegible]

7. [illegible]

8. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

Parking Brake Shoe Lining Break-in

NOTE: [illegible]

⚠ WARNING

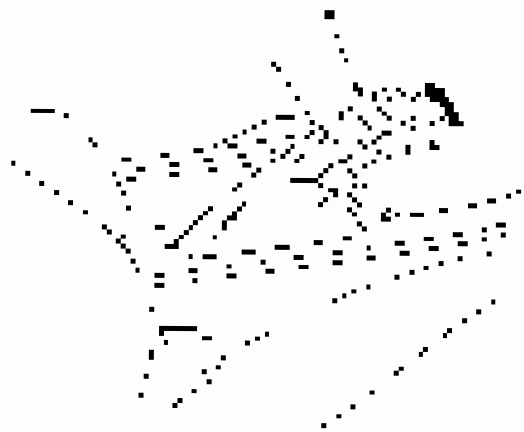
[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]



5. [illegible]

6. [illegible]

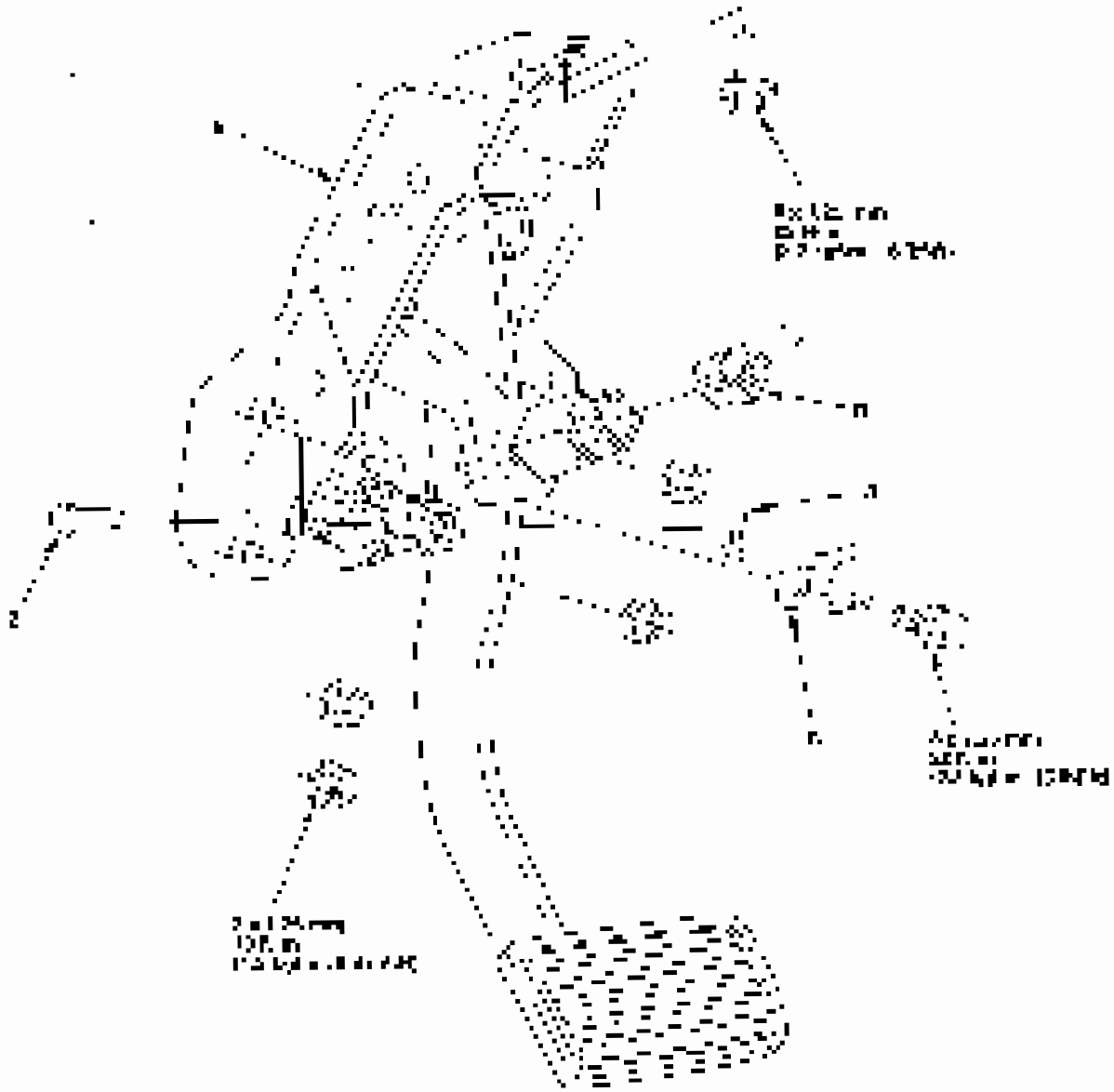
7. [illegible]

8. [illegible]

9. [illegible]

Brake Pedal Replacement

1. Remove the left [illegible]



2. Remove the [illegible]

3. Disconnect the [illegible]

4. Remove the [illegible]

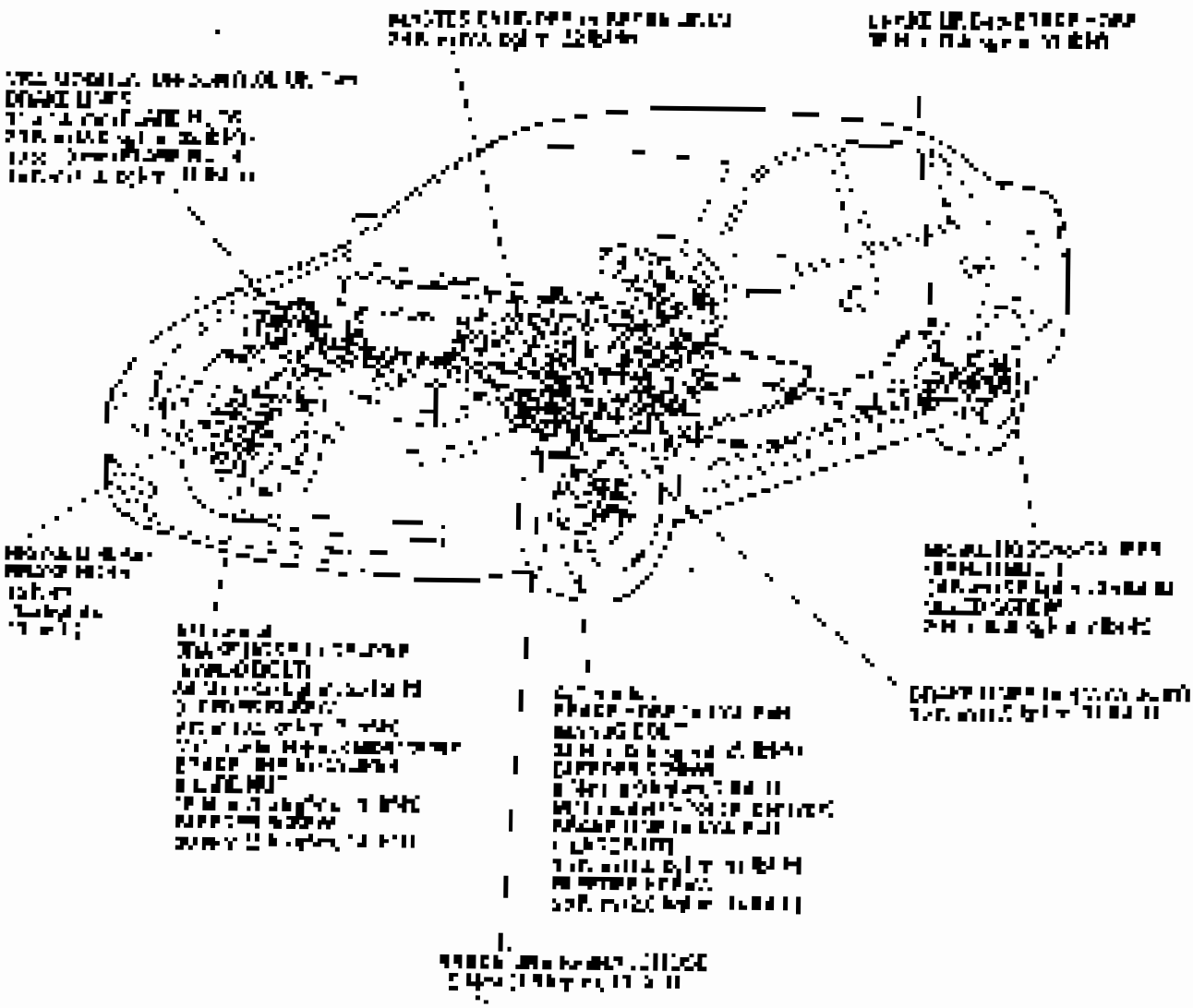
5. [illegible]

6. [illegible]

Brake Hose and Line Inspection

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

NOTE: [illegible]



Brake Hose Replacement

NOTE:
- Always replace brake hose as a complete assembly. Never attempt to repair a damaged hose.
- Replace gaskets whenever a union bolt is removed.
- Do not allow brake fluid to remain on painted surfaces. Brake fluid will damage paint. Immediately wash any fluid off with water.
- Thoroughly inspect the hose and connections as described in the inspection section before installation.

1. Replace the brake hose (A) if it is damaged or leaking.

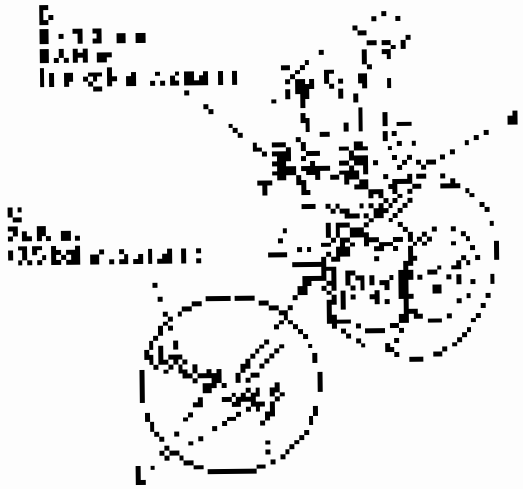
2. Remove the brake hose bracket (B) from the strut (C) and the lower arm (D).

3. Remove the union bolt (E) and the two sealing washers (F) from the brake hose (A).

4. Remove the brake hose (A) and the two sealing washers (F) from the caliper (G).

5. Remove the clip (H) from the brake hose (A).

6. Install the brake hose (A) to the caliper (G) with the two new sealing washers (F) and the union bolt (E). Tighten the union bolt (E) to the specified torque.



7. Install the brake hose (A) to the strut (C) with the clip (H).

8. Install the brake hose bracket (B) to the lower arm (D) with the bolt (I).

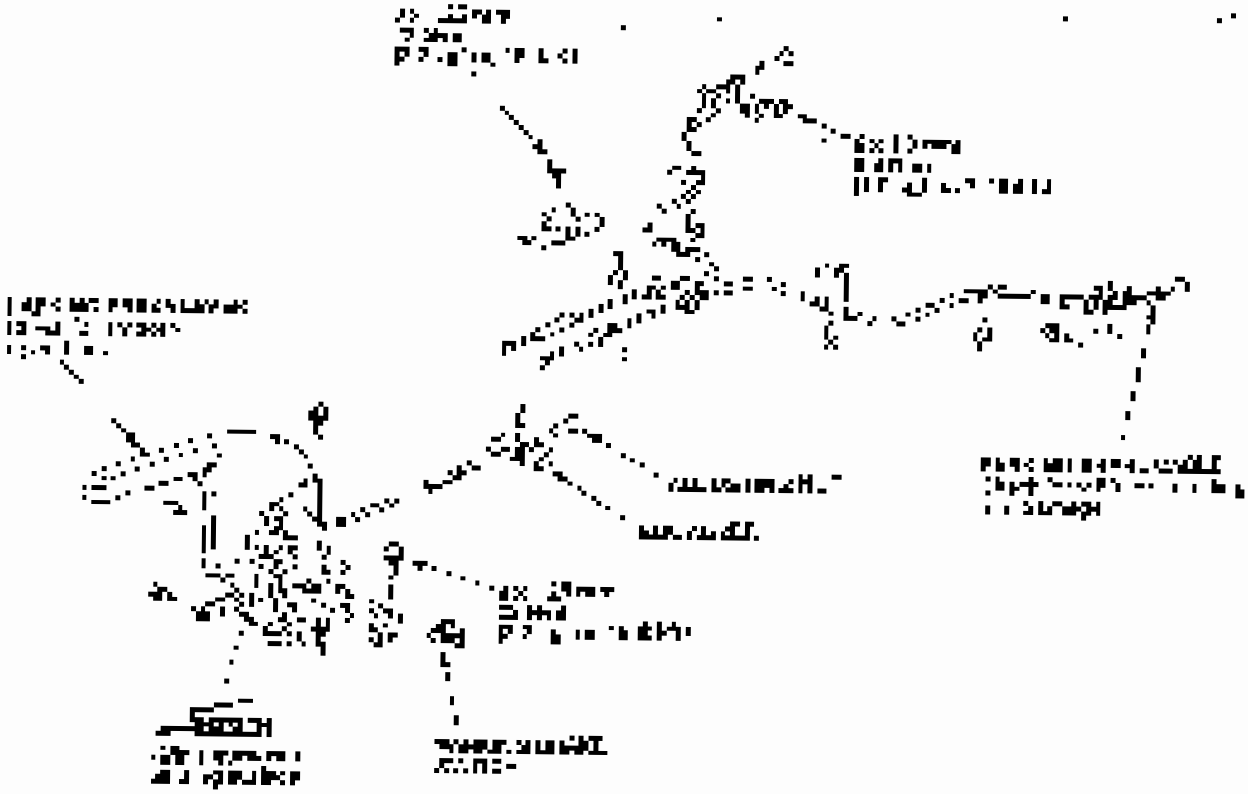
9. Bleed the brake system. See page 19-6.

NOTE: After bleeding the brake system:

- Check the brake hose and connections for fluid leaks and tighten if necessary.
- Check the brake hose and connections for interference with other parts.

Parking Brake Cable Replacement

Exploded View



Parking Brake Cable Replacement (cont'd)

Replacement

NOTE: The parking brake cable must be replaced if it is damaged. The cable is not serviceable and must be replaced if it binds or is kinked. Apply a small amount of multipurpose grease to the cable at the points where it contacts the guides.

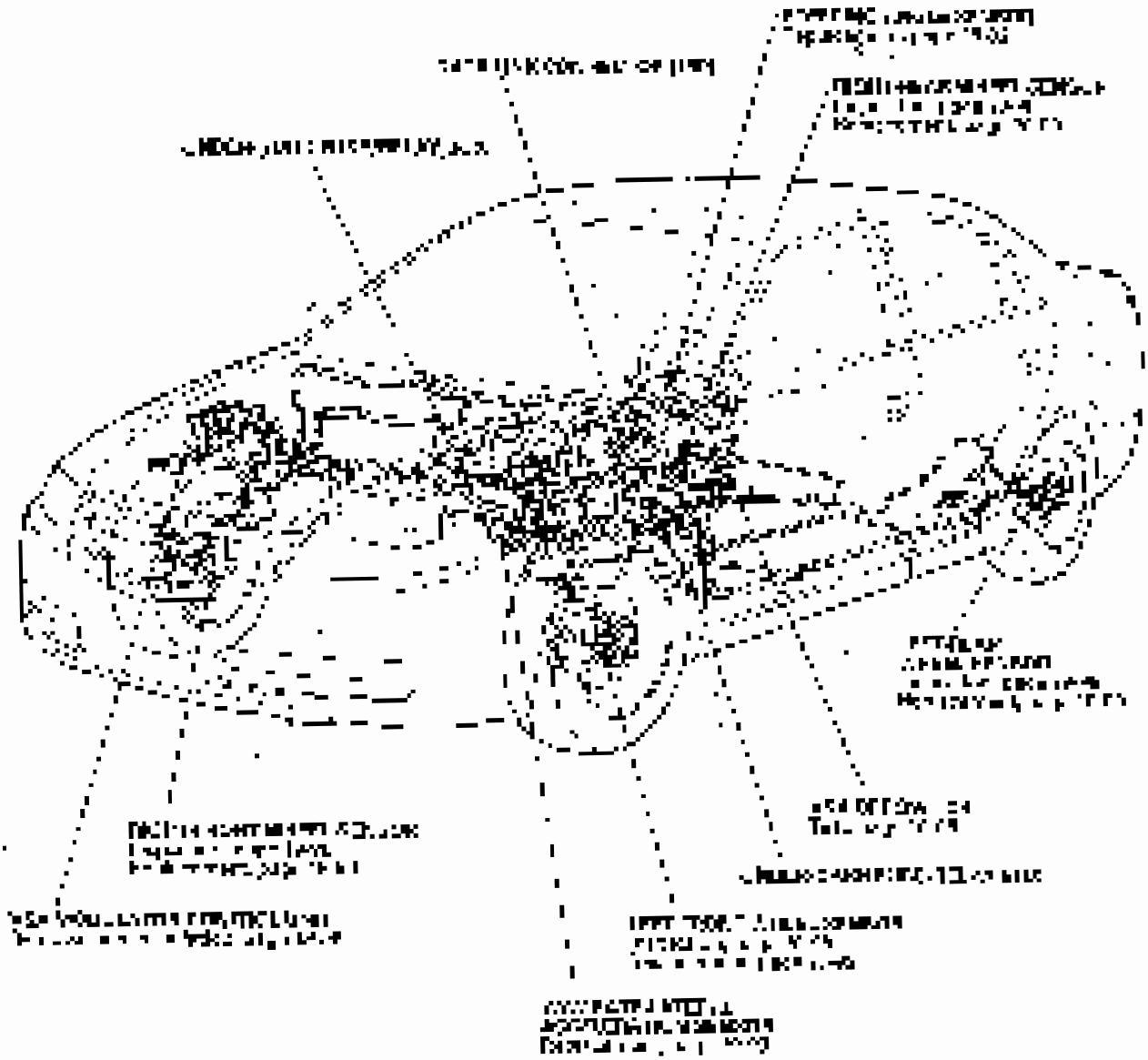
1. Remove the rear parking brake shoes and the parking brake lever assembly (see page 19-32).

2. Remove the parking brake cable clip and the parking brake cable from the backing plate, and remove the parking brake cable from the parking brake lever.

3. Install the new parking brake cable in the reverse order of removal, and adjust the parking brake (see page 19-39). Apply a small amount of multipurpose grease to the parking brake cable guides.

Brakes

Component Location Index



General Troubleshooting Information

System Indicators

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

ABS/VSA Indicator

- [illegible]
- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]

[illegible]

- [illegible]
  - DTC [illegible]
    [illegible]
  - DTC [illegible]
    [illegible]
  - [illegible]
    [illegible]
  - DTC [illegible]
    [illegible]

(cont'd)

General Troubleshooting Information (cont'd)

Diagnostic Trouble Code (DTC)

- [illegible]
- [illegible]
- [illegible]

Self-Diagnosis

- [illegible]
  - [illegible]
  - [illegible]
- [illegible]

Kickback

[illegible]

Pump Motor

- [illegible]
- [illegible]

Brake Fluid Replacement/Air Bleeding

[illegible]

How to Troubleshoot DTCs

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

How to Retrieve DTCs

1. [illegible]

2. [illegible]

How to Clear DTCs

NOTE: [illegible]

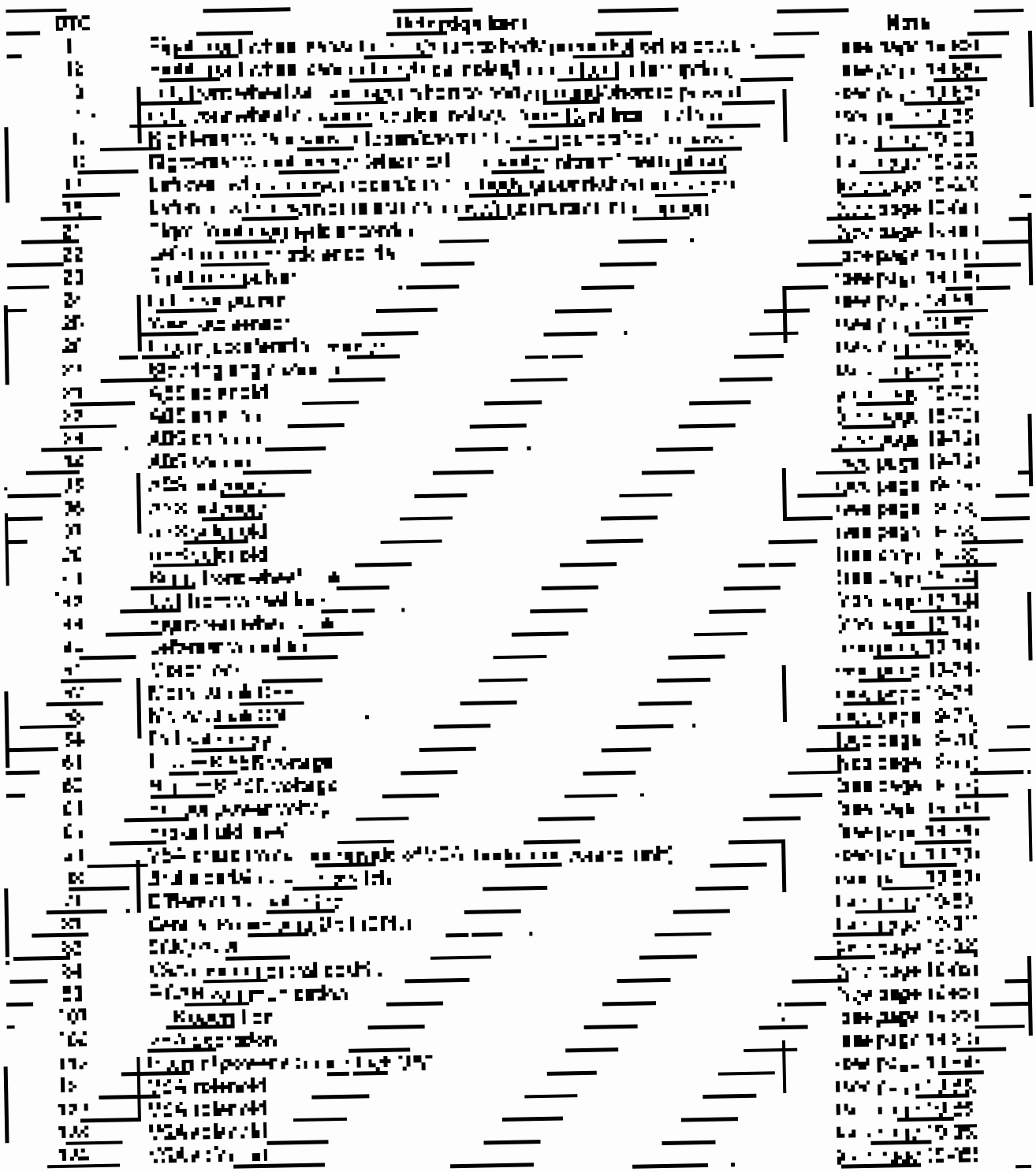
1. [illegible]

2. [illegible]

   NOTE: [illegible]

3. [illegible]

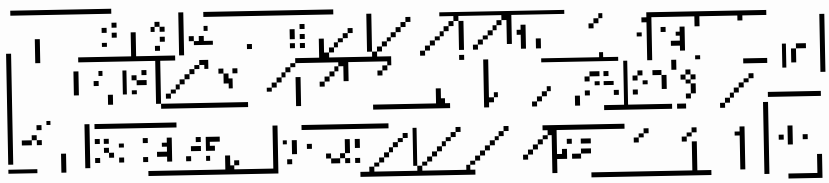
DTC Troubleshooting Index



Symptom Troubleshooting Index

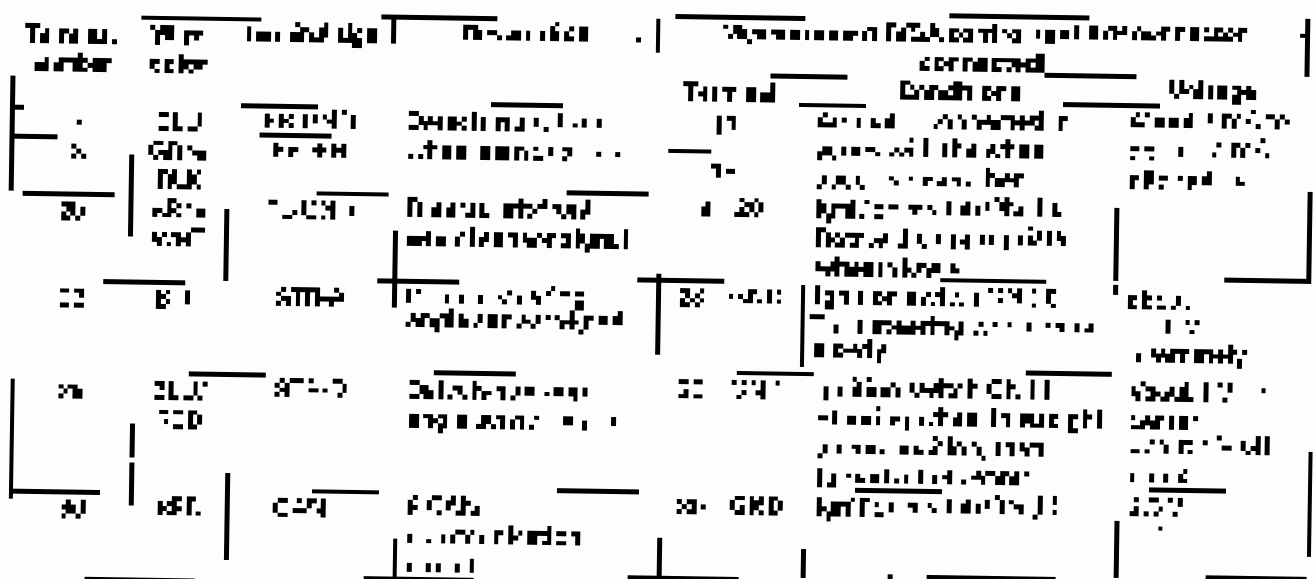
System Description

VSA Control Unit Inputs and Outputs for ADP Connector (connector attached to the VSA control unit. Blank probe line terminals when testing in this table.)



Terminal number	Wire color	Terminal designation	Description	Measurement (KOEO conditions) with ADP connector connected		
				Terminal	Condition	Voltage
1	WH	SPOUT	[illegible]	11 GND	[illegible]	[illegible]
2	YEL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	RED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	BLK/WHT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	BRN/YEL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	BLU/WHT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	BLK	[illegible]	[illegible]	11 GND	[illegible]	Battery voltage
12	RED/WHT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	GRY/RED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

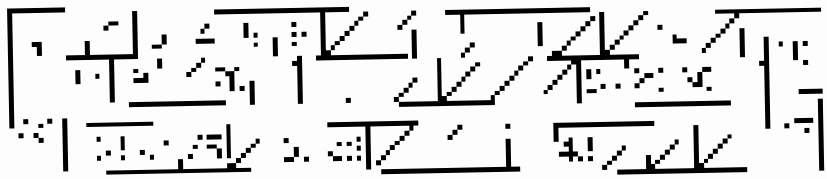


Terminal number	Wire color	Terminal name	Description	Measurement (ECM connector connected)		
				Terminal	Condition	Voltage
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	BLU/WHT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	BLU/RED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

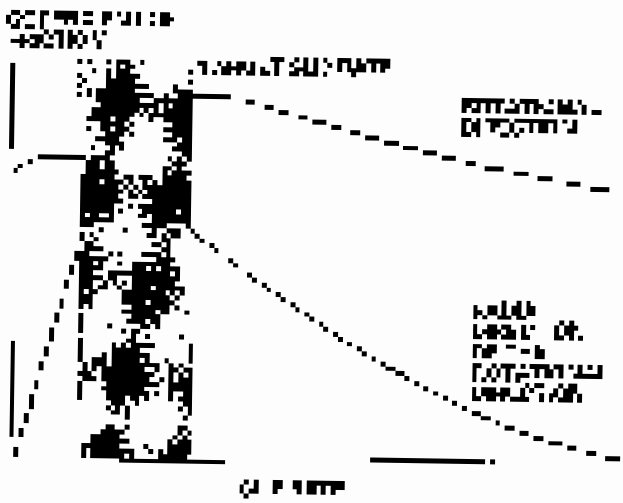
[illegible]

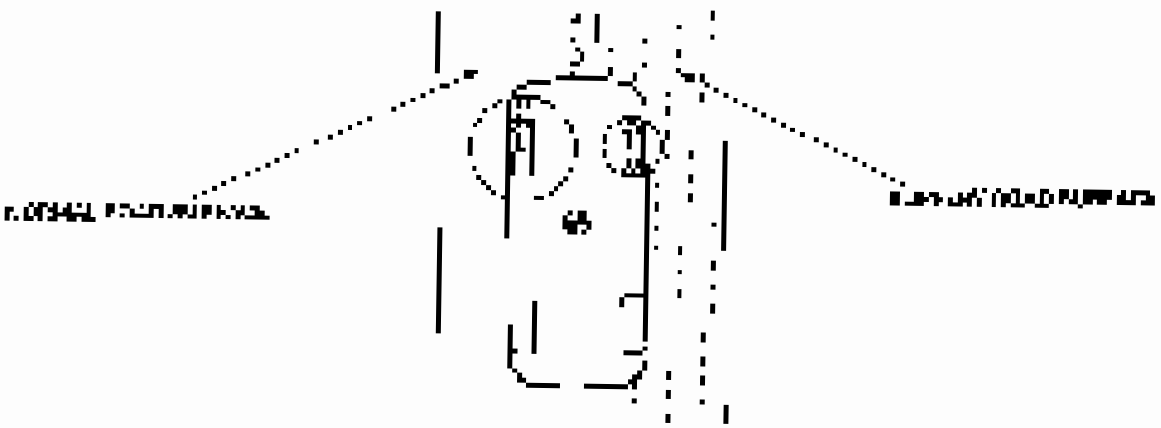
System Description (cont'd)

VSA Control Unit Inputs and Outputs for 4WP Drivetrain (cont'd)

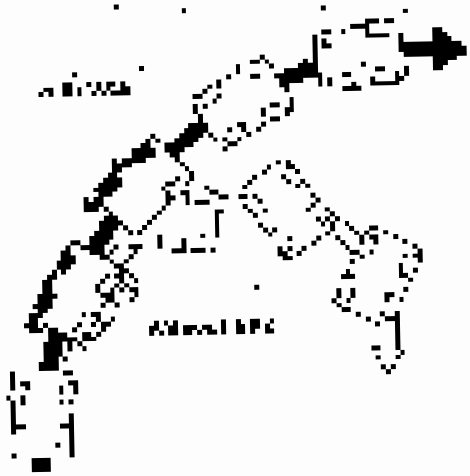


Terminal number	Wire color	Terminal designation	Description	Measurement (VSA control unit 4WP connector)		
				Terminal	Condition	Voltage
47	BLK	Ground	Ground for the VSA control unit	32 (GND)	Constant	0 V
48	YEL/BLK	Switched power	Switched power for the VSA control unit	32 (GND)	Ignition switch ON (II)	10 – 14 V
54	BLU/RED	Output	Output for VSA OFF indicator light	31 (GND)	Ignition switch ON (II), VSA OFF button pushed in	Above 2.0 V
55	BLK	Input	Input for VSA OFF button signal	31 (GND)	Ignition switch ON (II), VSA OFF button pushed in	Above 2.0 V
56	YEL/BLU	Output	Output for VSA OFF indicator light	31 (GND)	Ignition switch ON (II), VSA OFF button pushed in	Above 2.0 V
58	BLK/YEL	Input	Input for brake fluid level switch signal	32 (GND)	Ignition switch ON (II)	Below 1.0 V
62	GRN/BLK	Output	Output for VSA system indicator light	31 (GND)	Ignition switch ON (II), VSA system indicator light ON	Below 1.0 V
67	BLK	Ground	Ground for the VSA control unit	32 (GND)	Constant	0 V

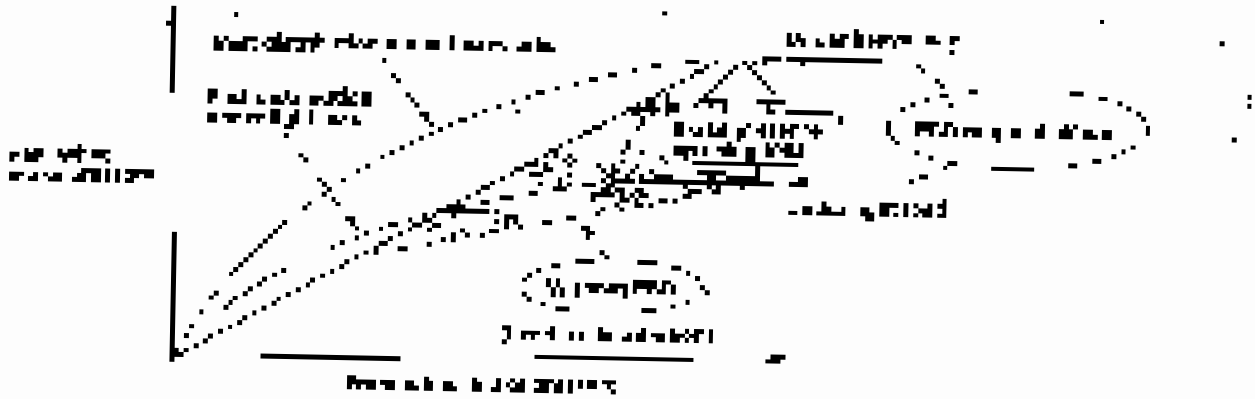




System Description (cont'd)



Electronic Stress Distribution (ESD)



Thermal Bonding

Flow Working

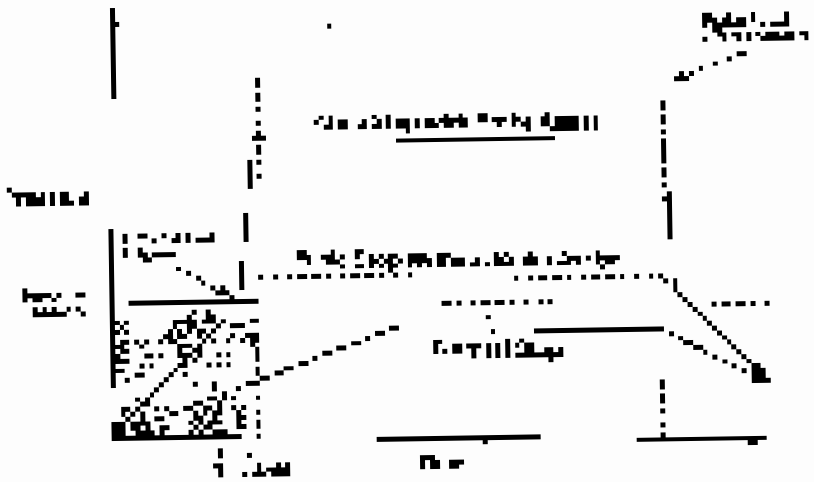
System Description (cont'd)

Brake Assist

[illegible]

[illegible]

[illegible]



Normal Braking
[illegible]

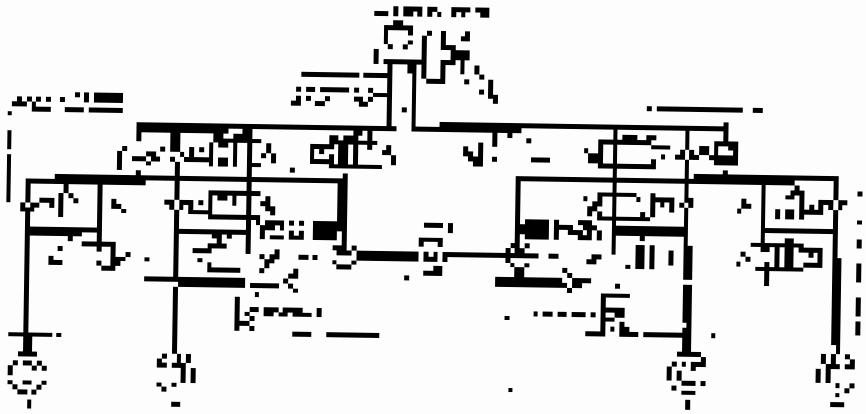
Panic Braking
[illegible]

Modulator Unit

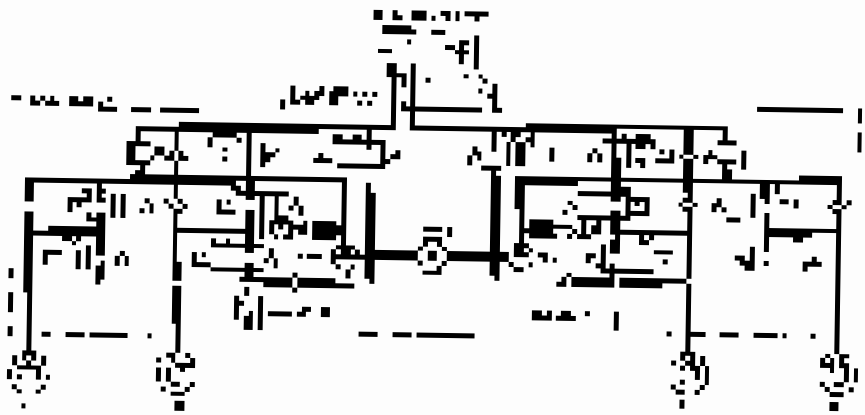
[illegible]

ABS Control

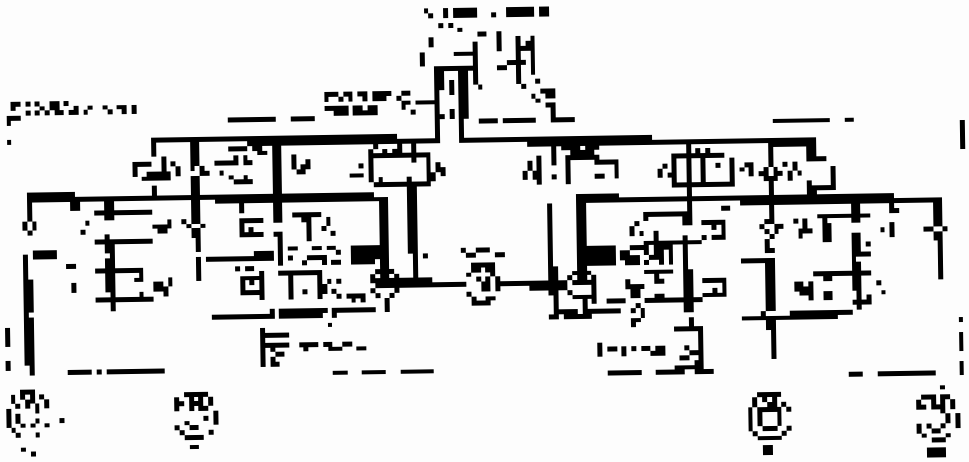
[illegible]

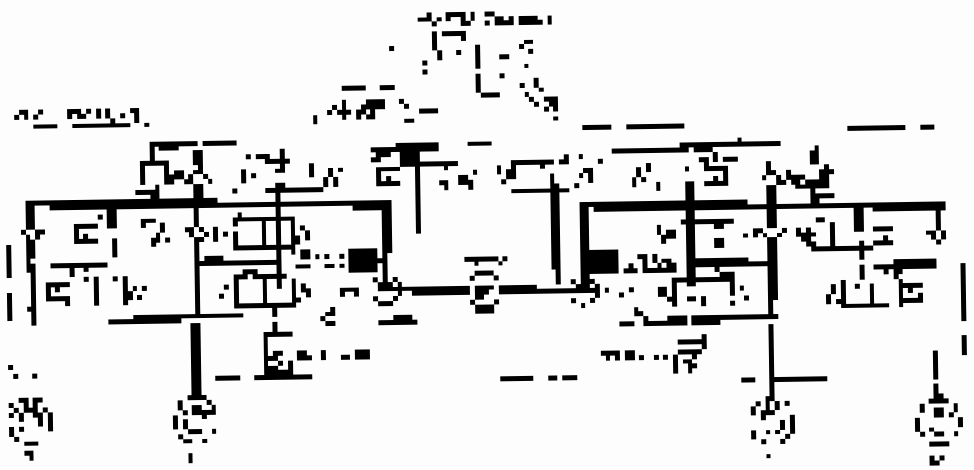


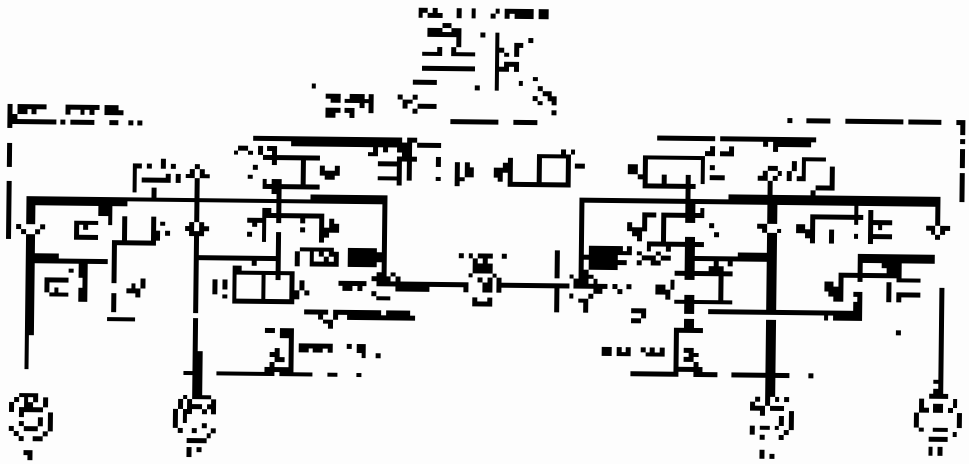
[illegible]

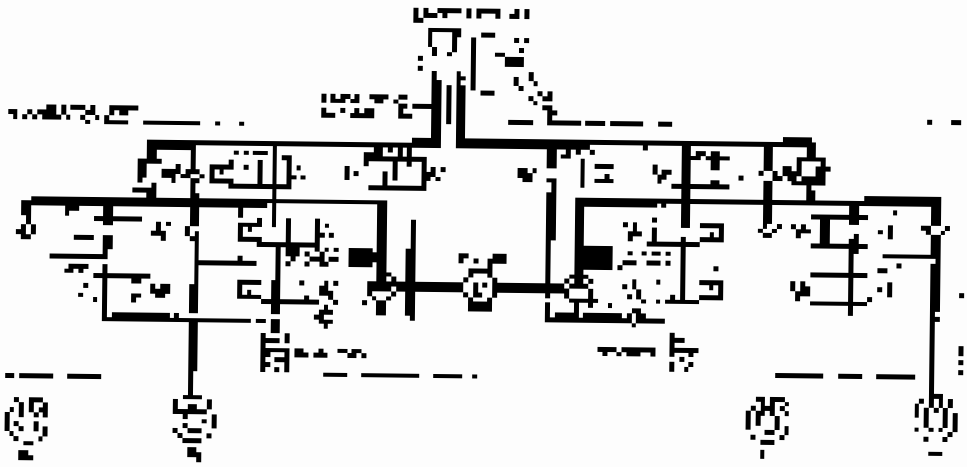


System Description (cont'd)



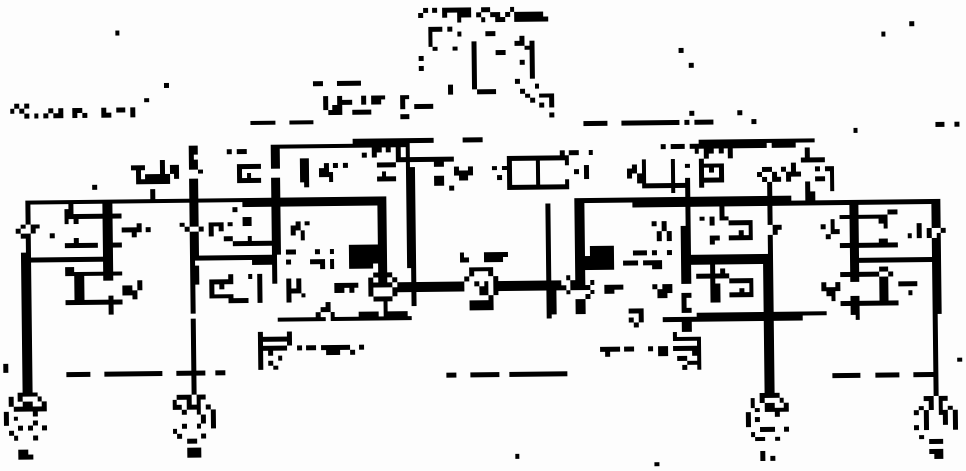


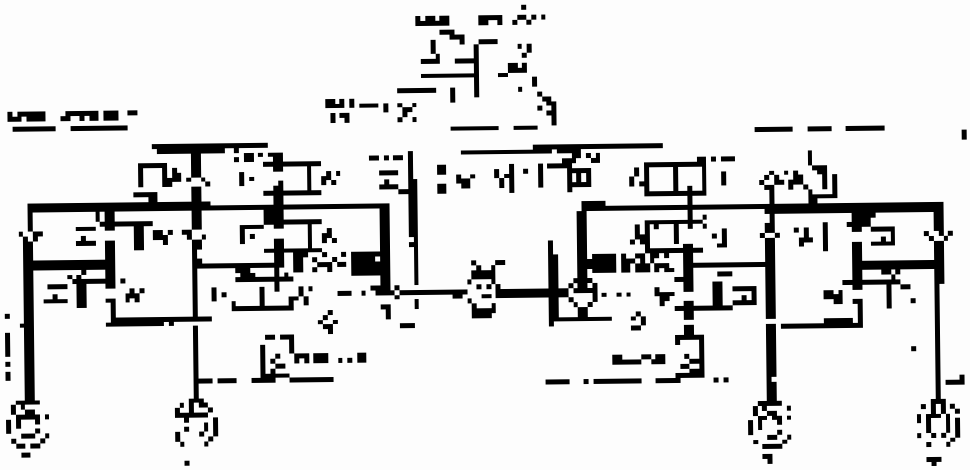


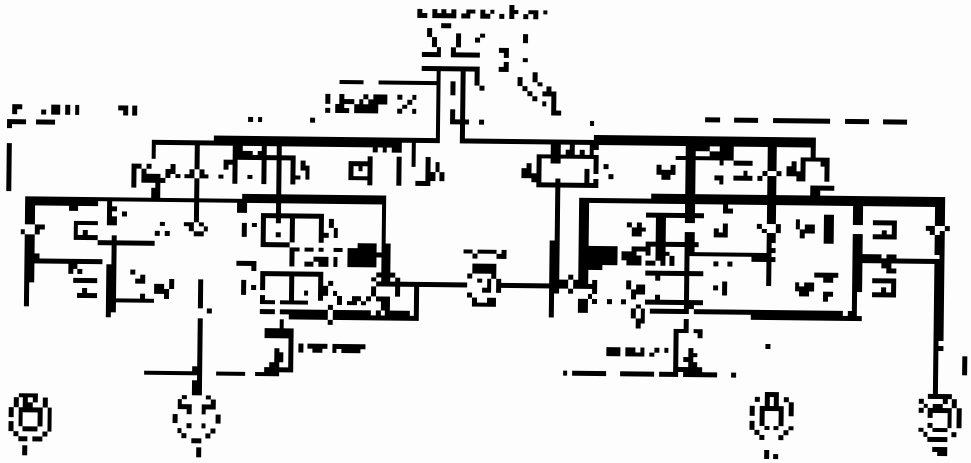


System Description (cont'd)

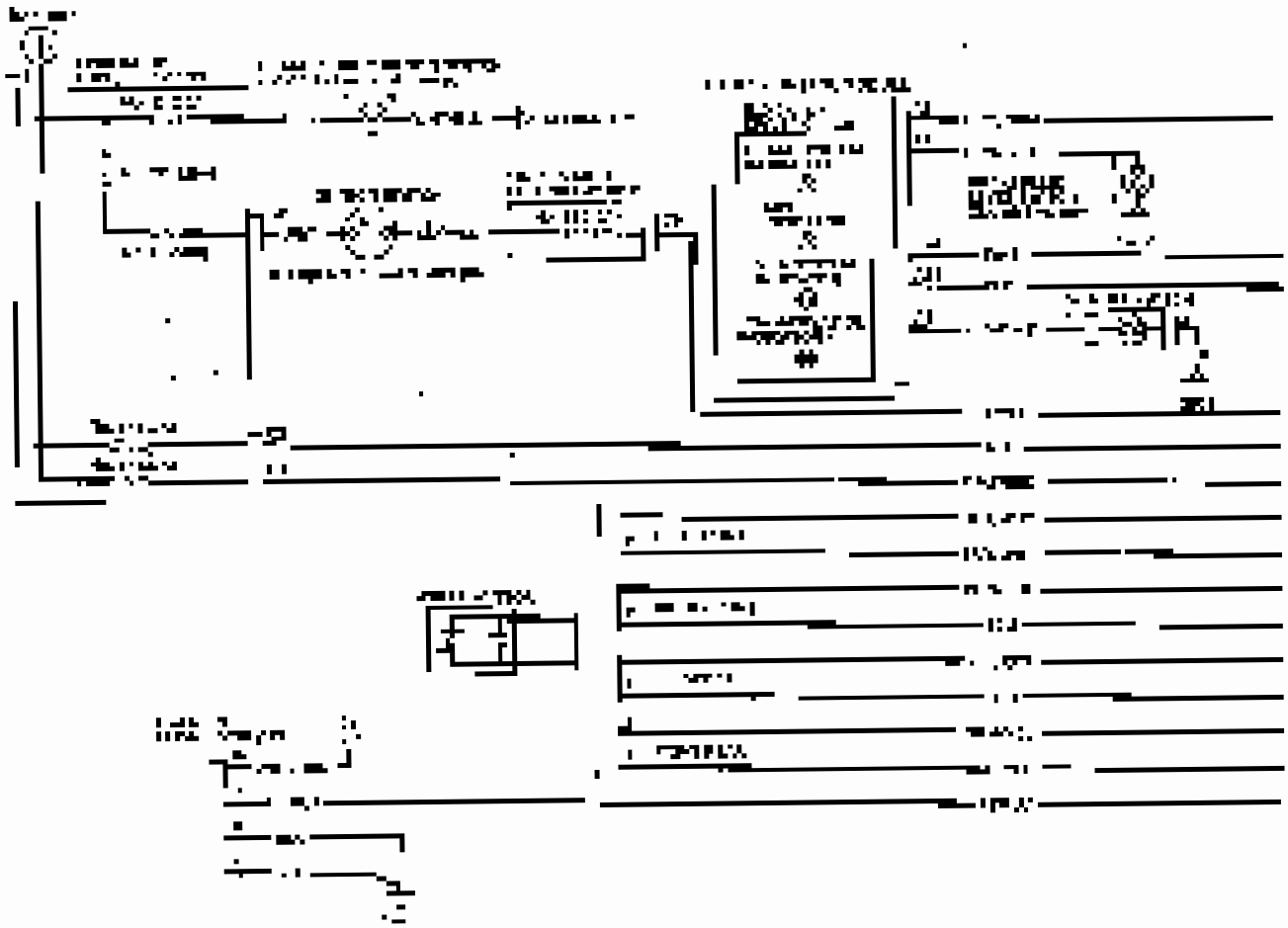
VSA Control

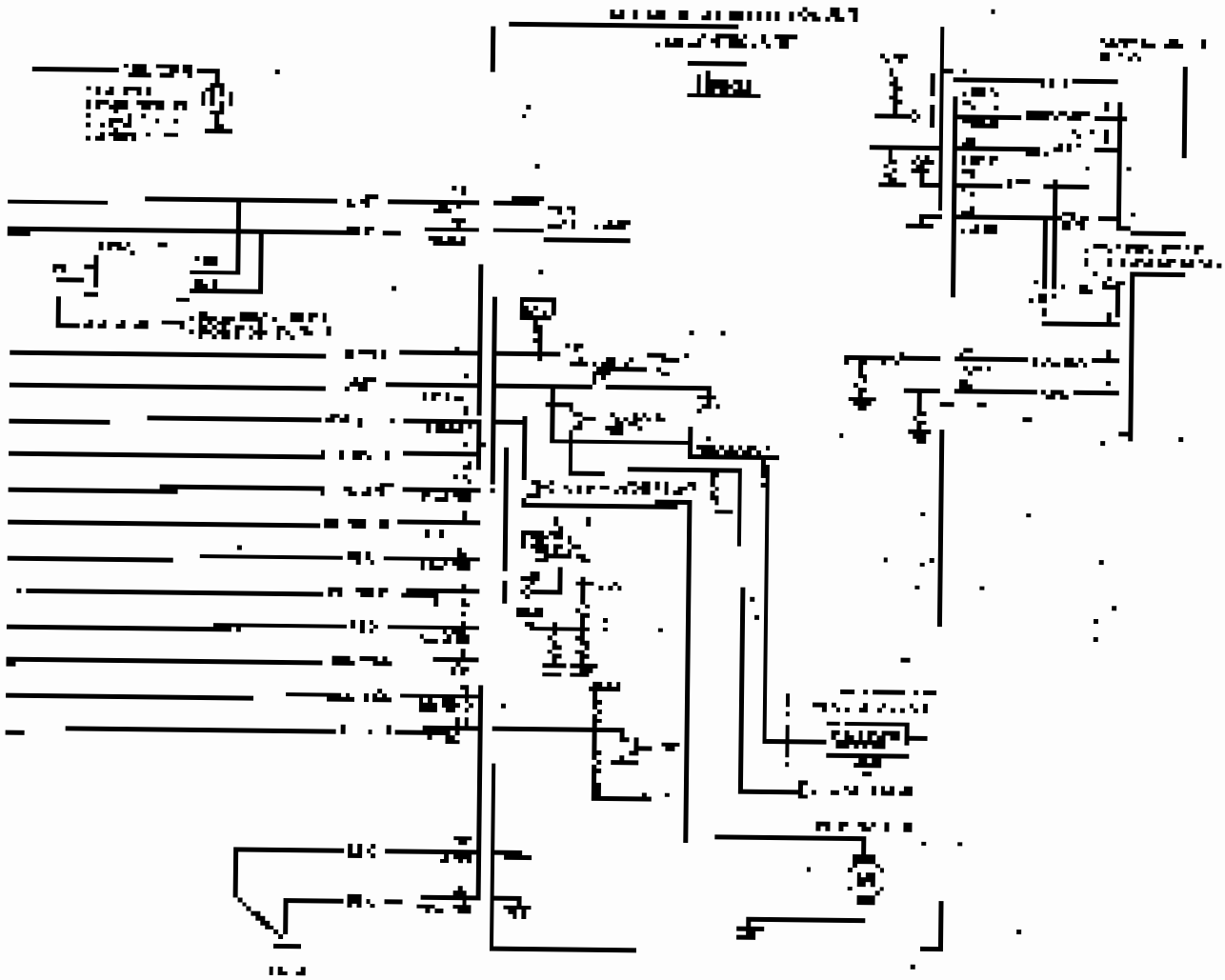




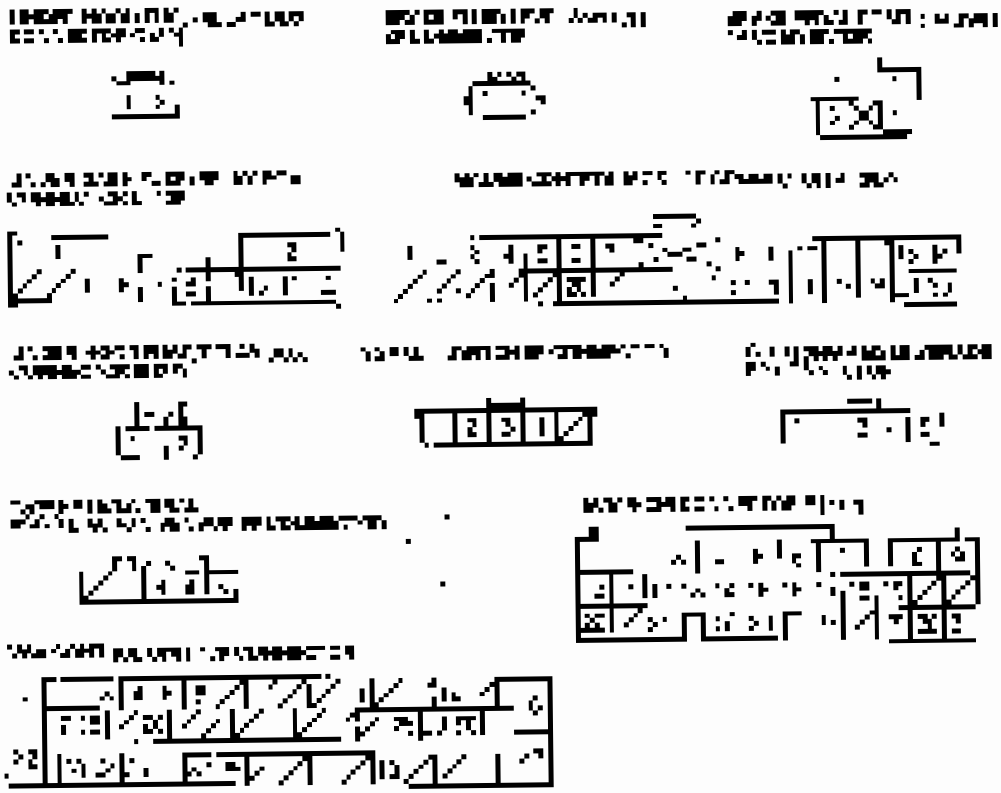


Circuit Diagram





Circuit Diagram (cont'd)



DTC 11, 13, 15, 17: Wiper Motor Short to Power/Short to Body Ground/Open

(See page 2A-2)

2. [illegible] DTC.

3. [illegible]

4. [illegible]

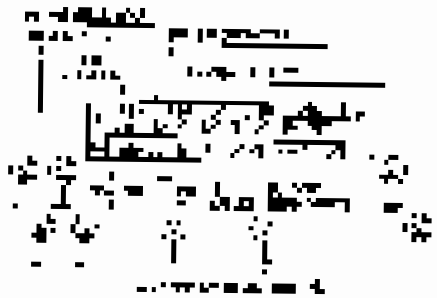
Connector/Circuit/Specification Inspection?
YES: Go to step 5.
NO: [illegible]

5. [illegible]

6. [illegible]

7. Measure the resistance between the appropriate terminals of the wiper motor connector and body ground.

Unit	Appropriate Terminal	
	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]



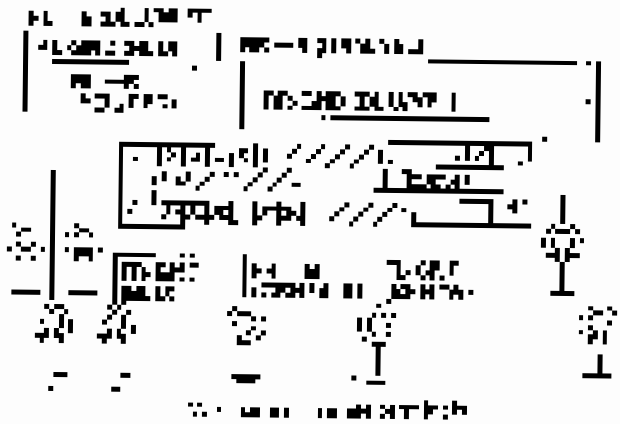
Specification: [illegible]
YES: Replace the [illegible] with a new one. Then go to step 8.
NO: Go to step 9.

8. [illegible]

9. Check for continuity between the appropriate terminals of the wiper motor connector and the appropriate terminals of the [illegible] connector.

Unit	Appropriate Terminal	
	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Specification: [illegible]



Specification: [illegible]

[illegible]

YES: [illegible]

NO: Go to step 10.

[illegible]

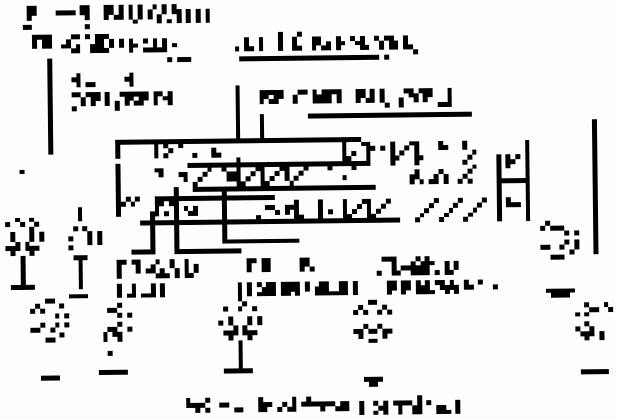
DTC Troubleshooting (cont'd)

11. [illegible]

12. Check for open in the harness wire between the appropriate VSA modulator-control unit connector terminal and the VSA modulator-control unit 14-pin connector terminal.

DTC	Appropriate terminal	
	[illegible]	
13 Left front	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
2 Right rear	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

VSA modulator-control unit 14P connector



VSA modulator-control unit

Is the connection OK?

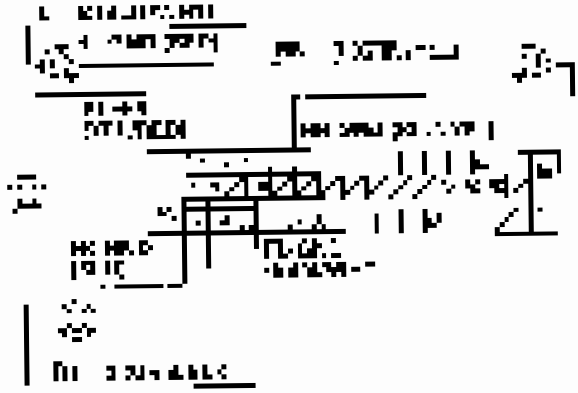
YES — [illegible]

NO — Repair the open in the wire between the appropriate terminal and the VSA modulator-control unit 14-pin connector terminal.

13. Check for open and short in the harness wire between the appropriate VSA modulator-control unit 14-pin connector terminal and the appropriate wheel speed sensor 2P connector terminal.

DTC	Appropriate terminal	
	[illegible]	
13 Left front	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
2 Right rear	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

VSA modulator-control unit 14P connector

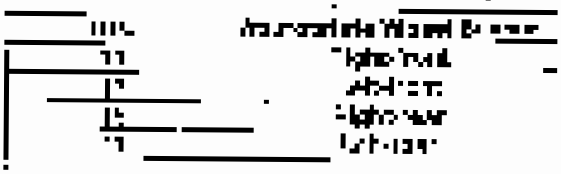


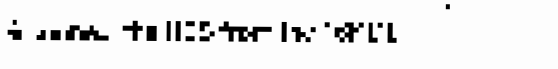
[illegible]

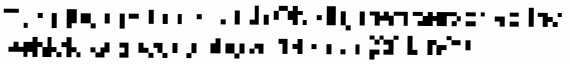
Is the connection OK?

YES — [illegible]

NO — Repair the open or short in the wire between the appropriate terminal and the wheel speed sensor 2P connector terminal.







DTC Troubleshooting (cont'd)

5. [illegible]

		Other Terminals		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

NO – Repair short circuit in the wire between the appropriate wheel sensor and the other wheel sensor. ■

NO – Go to step 6.

3. Check for [illegible] appropriate wheel sensor by the appropriate wheel sensor [illegible]

[illegible]	Appropriate Wheel Sensor
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Does the [illegible]

YES – [illegible] ■

NO – Replace the original wheel sensor. [illegible] page 3-22. ■

DTC 21, 22: Right [illegible]

DTC 23, 24: Front [illegible]

1. [illegible]
2. [illegible]
3. Cycle the ignition switch [illegible]
4. Turn [illegible]

Does the [illegible]

NO – [illegible]

5. Check the [illegible] appropriate wheel sensor [illegible] page 19-67.

[illegible]	Appropriate Decoder Pulse
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

YES – [illegible] ■

NO – [illegible] ■

2. [illegible] page 13-45).

3. Disconnect the [illegible] ECM.

4. Switch the ignition switch to ON (II), and DTT.

5. [illegible]

   Is the voltage between the [illegible] and body ground 9 V or more?

   YES: Replace the [illegible] ECM connector is clean and tight. If the connector is clean and tight, replace the [illegible] ECM.

   NO: Repair the [illegible] page 19-37).

DTC 26: [illegible]

1. [illegible] page 19-37.

2. Disconnect the [illegible].

3. Turn the ignition switch to [illegible] Apply

4. [illegible]

5. [illegible]

   Is the [illegible]

   YES: Go to the [illegible] DTC.

   NO: [illegible]

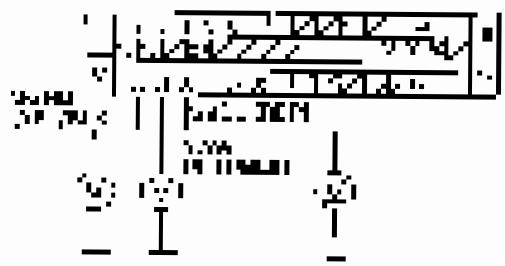
6. [illegible] Apply [illegible] DTC.

7. Disconnect the [illegible] and [illegible] connector assembly side and [illegible] connector assembly side.

8. Turn the ignition switch to [illegible]

9. [illegible] connector [illegible] connector and [illegible] connector. Measure the [illegible] connector terminal and body ground.

[illegible]



[illegible]

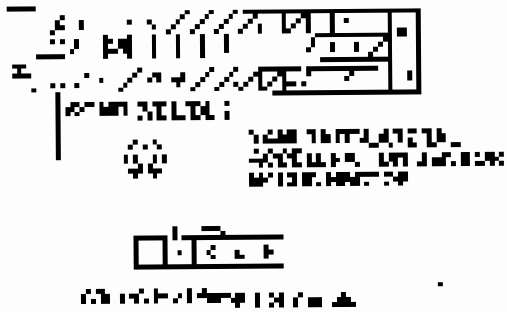
Is there [illegible]

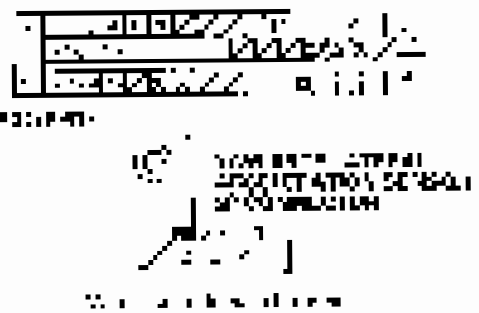
YES: Repair the [illegible] connector is clean and tight. If the connector is clean and tight, replace the [illegible] ECM.

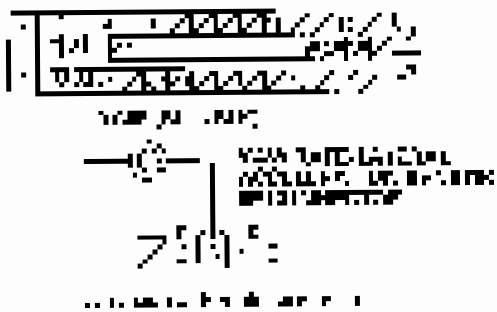
NO: Go to step 10.

(cont'd)

DTC Troubleshooting (cont'd)







DTC 26: [illegible] Acceleration Sensor

[illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

   [illegible]

   YES: [illegible]

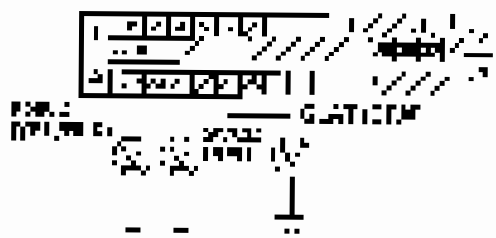
   NO: Go to step 6.

6. [illegible]

7. [illegible]

8. [illegible]

   [illegible]



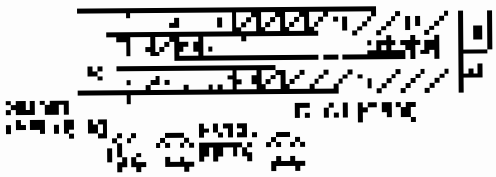
   [illegible]

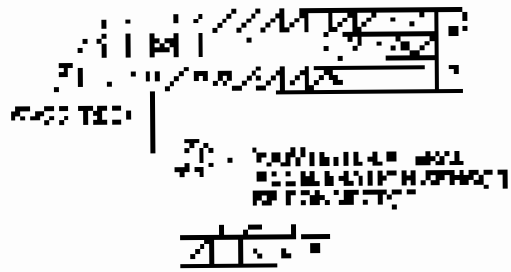
   YES: [illegible]

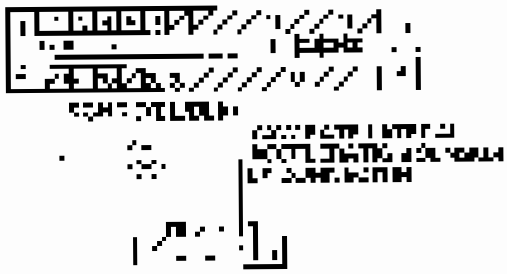
   NO: [illegible]

Next [illegible]

DTC Troubleshooting (cont'd)

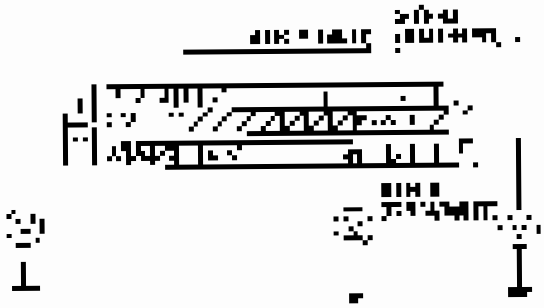


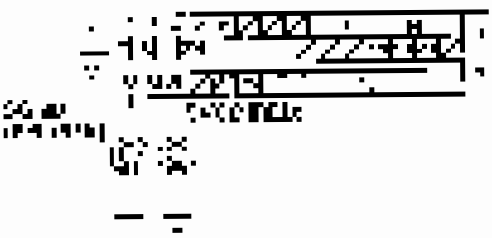


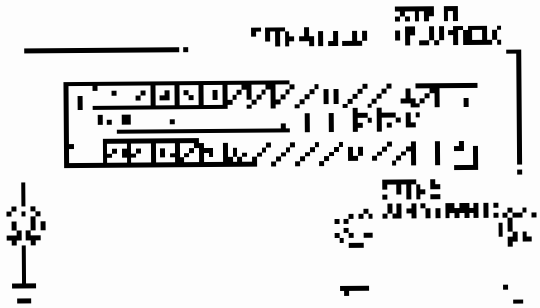


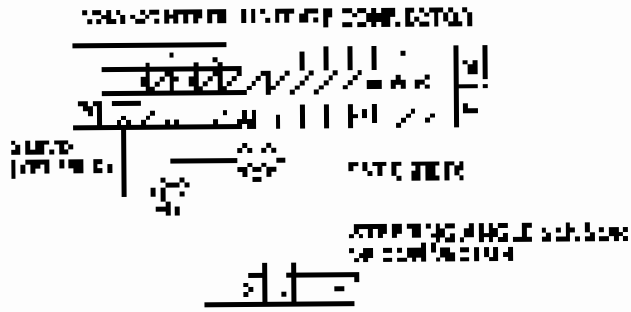
DTC 22: Steering Angle Sensor

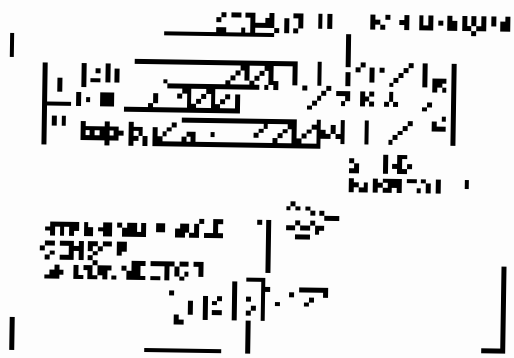
DTC Troubleshooting (cont'd)











DTC 91, 92, 93, 94, 95, 96, 97, 98 Retrieval

DTC Troubleshooting (cont'd)

DTC 41, 42, 43, 46: Wheel Lock

1. Clear the DTC (see page 19-15).
2. Drive the vehicle more than 20 mph (32 km/h).
3. Check for DTC 41, 42, 43, 46 (see page 19-15).

   Is the same DTC indicated?

4. Inspect the installation of the wheel speed sensor (see page 19-76).

   Is the sensor installed properly?

   YES — Go to step 5.

   NO — Reinstall the sensor properly.

5. Check for intermittent contact in the wheel speed sensor connector and the pulser gear (see page 19-76).

   Is there any problem?

   YES — Repair or replace as necessary.

   NO — Replace the VSA modulator-control unit (see page 19-77).

DTC 51: Motor Lock

DTC 52: Motor Short Circuit

1. Clear the DTC (see page 19-15).
2. Drive the vehicle more than 20 mph (32 km/h).
3. Check for DTC 51, 52 (see page 19-15).

   Is the same DTC indicated?

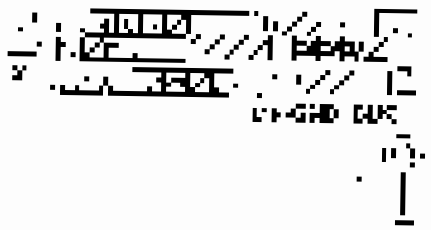
4. Inspect the VSA modulator-control unit connector.
5. Disconnect the VSA modulator-control unit connector.
6. Measure the voltage between the specified terminal and body ground.

   VSA MODULATOR-CONTROL UNIT CONNECTOR

   Is there battery voltage?

   YES — Go to step 7.

   NO — Repair open in wire between the VSA modulator-control unit and the [illegible] (see page 19-77).



DTC Troubleshooting (cont'd)

10. Clear the DTC [illegible] with the HDS (see page [illegible]).

- Turn the ignition switch OFF, then [illegible] [illegible]

11. Test-drive the vehicle.

Does the ABS and VSA [illegible] DTC [illegible] indicated?

YES – Check for loose [illegible] connector terminals [illegible] Replace the VSA modulator-control unit (see page [illegible]). ■

NO – The system is OK at this time. ■

DTC [illegible]: [illegible] Relay

Check [illegible] [illegible] DTC [illegible] (see page 19-45).

1. [illegible] HDS [illegible] DLC.

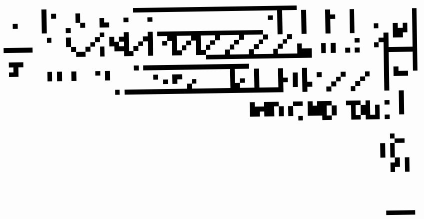
3. Turn the ignition switch [illegible] [illegible]

4. [illegible]

5. Disconnect the [illegible] 47P connector.

- Check for continuity between the VSA [illegible] unit 47P connector terminal No. [illegible] and body ground.

VSA MODULATOR-CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

Is there continuity?

YES – Go to step 7.

NO – Repair open in the wire between the VSA [illegible] unit and body ground (G[illegible]).

7. Reconnect the VSA [illegible] unit 47P connector.

D. [illegible]

8. [illegible]

9. [illegible]

[illegible]

NOTE: [illegible]

NO [illegible]

DTC 81, 82 [illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

[illegible]

NO [illegible]

NO [illegible]

7. [illegible]

[illegible]

YES [illegible]

NO [illegible]

DTC Troubleshooting (cont'd)

DTC 44: Sensor Power Voltage

4. Check for DTC 44 (refer to page 19-67).

5. Disconnect the 10P connector from the VSA modulator-control unit.

6. Turn the ignition switch ON (II).

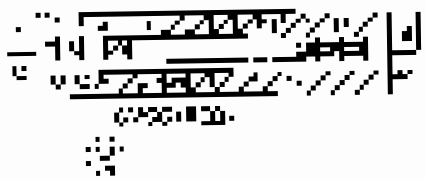
7. Measure the voltage between the terminals listed below.

8. Turn the ignition switch OFF.

9. Reconnect the connector.

10. Measure the voltage between the terminals listed below and chassis ground.

Connector terminal side of female connector



Voltage should be as specified.

NOTE: If you have a hard time finding the terminals, refer to the terminal identification on the next page.

NO Go to step 11.

5. Check for open in wire between the VSA modulator-control unit and the ABS/TCS control unit.

Connector terminal side of female connector

Continuity should be as specified.

Is there continuity?

YES: The wire harness is open between the VSA modulator-control unit and the ABS/TCS control unit, or poor contact in the VSA modulator-control unit or ABS/TCS control unit connector. Repair as necessary.

Replace the VSA modulator-control unit with a known good one, and recheck.

4. Check for DTC 44 (refer to page 19-67).

11. Check for short in wire.

Connect the VSA modulator-control unit 10P connector.

Measure the voltage between the terminals listed below.

Voltage should be as specified.

Is there voltage?

YES: Repair short in wire between the VSA modulator-control unit and the ABS/TCS control unit.

Replace the VSA modulator-control unit with a known good one, and recheck.

DTC 65 [illegible]

1. Check the [illegible]

   Were you directed here by a DTC?

   YES — Go to step 2.

   NO — [illegible] ■

2. Disconnect the [illegible] assembly connector from the [illegible] and install a test harness between the PCM and the [illegible]

3. Check for [illegible] between terminal [illegible] of the [illegible] and ground.

   Were you directed here by DTC 64?

   YES — Go to step 4.

   NO — Go to step 5.

4. [illegible]

   Is there [illegible]?

   YES — Repair the [illegible] between the [illegible] and the [illegible] connector. Replace the [illegible] if necessary. Test the system. ■

   NO — Go to step 5.

5. Check [illegible]

   Is there [illegible]?

   YES — Replace the [illegible] assembly. Test the system. ■

   NO — Replace the [illegible] assembly. Test the system. ■

DTC 66 (VSA Pressure Sensor) Inside of VSA Modulator Out of [illegible]

1. Observe DTC [illegible] on page [illegible].

2. [illegible]

3. [illegible]

4. Test drive the vehicle.

   Does the ABS [illegible] come on and DTC 66 [illegible]?

   YES — Go to step 5.

   NO — [illegible]

5. Disconnect the VSA [illegible] connector. Turn the ignition switch ON. Start the engine. Idle for 1 minute.

   Is there [illegible]?

   YES — Go to step 6.

   NO — [illegible]

6. Check the VSA [illegible] assembly connector terminals for [illegible] on page 19-[illegible].

   Is there [illegible]?

   YES — [illegible]

   NO — Go to step 7.

7. [illegible]

   Is there [illegible]?

   YES — Go to step 8.

   NO — [illegible]

8. Test drive the vehicle.

   Does the ABS [illegible] come on and DTC 66 [illegible]?

   YES — Check for [illegible] and repair if necessary. Replace the [illegible] assembly. Test the system. ■

   NO — [illegible] ■

DTC Troubleshooting (cont'd)

DTC 28: Brake Pedal Position Switch

1. Check for other DTCs in the PGM-FI system

   Are other DTCs stored?

   YES: Go to applicable troubleshooting table in DTC list.

   NO: Go to step 2.

2. Check for intermittent problem (see page 19-10)

   Is the problem found?

   YES: Go to step 3.

   NO: Check for intermittent problem (see page 19-10)

3. Check brake pedal position switch signal

4. Check for DTC 28 (see the DTC list)

5. Turn the ignition switch OFF, wait at least 10 seconds

6. Test the brake pedal position switch

   Connect the 3P connector to the brake pedal position switch. Start the engine.

   Is the indicator on?

   NO: Replace the brake pedal position switch

7. Test the brake pedal position switch (see page 19-10)

   Is the problem found?

   YES:
   - Intermittent failure, system is OK at this time.
   - Check for poor connection at the VSA modulator-control unit 31P connector (see page 19-96).

   NO: Replace the VSA modulator-control unit

DTC 71: Damper Pressure

1. Check for DTC 28 (see page 19-29)

2. Turn the ignition switch OFF, wait at least 10 seconds.

3. Turn the ignition switch ON (II), then check the brake light operation.

4. Test the brake light switch

   Do the brake lights come on?

   YES: Go to step 5.

   NO: Inspect the brake light switch circuit (see page 22-xx)

5. Check for intermittent problem (see page 19-10)

   Is the problem found?

   YES: Go to step 6.

   NO: Intermittent failure, system is OK at this time.

6. With the ignition switch OFF, disconnect the 31P connector from the VSA modulator-control unit. Start the engine, and let it idle for 1 minute.

   Is the indicator on?

   YES: Replace the VSA modulator-control unit

   NO: Check for poor connection at the VSA modulator-control unit 31P connector (see page 19-96).

DTC [illegible]

1. [illegible]

[illegible]

YES–[illegible]

NO–[illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

[illegible]

YES–[illegible]

NO–[illegible]

6. [illegible]

7. [illegible]

8. [illegible]

[illegible]

[illegible]

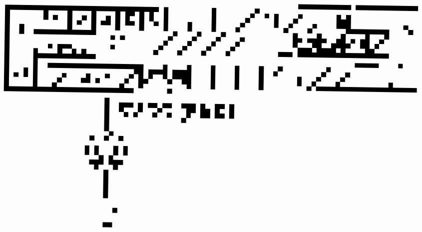
[illegible]

YES–[illegible]

NO–[illegible]

9. [illegible]

[illegible]



[illegible]

[illegible]

YES–[illegible]

NO–[illegible]

DTC Troubleshooting (cont'd)

DTC B2 (B1A0/Y2V

1. Check for DTC

Is DTC B2 indicated?

YES - Go to step 2.

NO - Go to step 3.

2. Check for intermittent problem (see page 19-66).

3. Replace the VSA control unit.

4. Check for DTC

Does VSA control unit indicate DTC B2?

YES - Go to step 5.

NO - Intermittent problem

5. Check for DTC

Is DTC B2 indicated?

YES - Replace the VSA control unit.

NO - Go to step 6.

6. Check for DTC

Does the VSA control unit indicate DTC B2?

YES - Go to step 7.

NO - Go to step 8.

7. Check for DTC

Does the VSA control unit indicate DTC B2?

YES - Replace the VSA control unit.

NO - Check for poor connection at the VSA control unit connector. If connection is good, replace the VSA control unit.

8. Check for DTC

9. Turn the ignition switch OFF.

10. Check for DTC

Is DTC B2 indicated?

YES - Go to the applicable DTC and do the troubleshooting. If no DTC is indicated, replace the VSA control unit (see page 19-62).

NO - Intermittent problem

DTC B4 (B1A1/Y2W) or DTC B5 (B1A2/Y2X)

1. Check for DTC

Is DTC B4 or B5 indicated?

YES - Go to step 2.

NO - Intermittent problem

2. Disconnect the VSA control unit connector.

3. Turn the ignition switch ON (II).

4. Check for DTC

Does the VSA control unit indicate DTC B4 or B5?

YES - Go to step 5.

NO - Intermittent problem

5. Check for DTC

Is DTC B4 or B5 indicated?

YES - Replace the VSA control unit.

NO - Go to step 6.

6. Check for DTC

Does the VSA control unit indicate DTC B4 or B5?

YES - Go to step 7.

NO - Go to step 8.

7. Check for DTC

Does the VSA control unit indicate DTC B4 or B5?

YES - Replace the VSA control unit.

NO - Check for poor connection at the VSA control unit connector. If connection is good, replace the VSA control unit.

8. Check for DTC

Is DTC B4 or B5 indicated?

YES - Go to the applicable DTC and do the troubleshooting. If no DTC is indicated, replace the VSA control unit (see page 19-62).

NO - Intermittent problem

DTC B0, F (CAN Communication)

1. Check the DTC for the applicable ECU (see page 19-24).

2. Check for any other DTCs (see page 19-24).

Is any other DTC indicated?

YES — Go to applicable DTC.

NO — Intermittent failure, faulty CAN communication line or ECU (refer to Intermittent Failures, page 19-10).

3. Check for DTCs in the ABS/VSA ECU.

Is DTC 28 indicated?

YES — Check and repair the ABS/VSA ECU (see page 19-83).

NO — Replace the ECU that indicated the DTC (see page 19-24).

DTC 107: ACG Operation

DTC 108: VSA Operation

NOTE: The ABS/VSA indicator will come on when the ignition switch is turned ON (II), and will go off after the engine is started. If it does not, the ABS/VSA control unit has detected a problem.

1. Check the DTC (see page 19-24).

2. Clear the DTC (see page 19-24).

3. Start the engine, and drive the vehicle at 10 mph (16 km/h) or more for at least 1 minute.

4. Is DTC 107 or 108 indicated?

YES — Check and repair the ABS/VSA control unit or CAN communication line (see page 19-24). If the problem is not found, replace the ABS/VSA control unit (see page 19-84).

NO — Intermittent failure, faulty ABS/VSA control unit or CAN communication line (refer to Intermittent Failures, page 19-10).

DTC Troubleshooting (cont'd)

DTC 112: [illegible]

[illegible]

1. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

2. [illegible]

3. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

5. [illegible]

   [illegible]

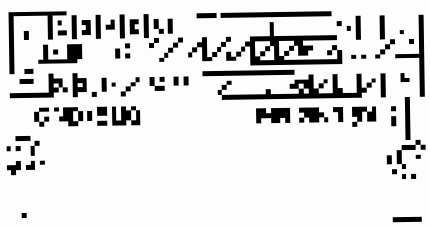
   YES - [illegible]

   NO - [illegible]

6. [illegible]

7. [illegible]

   [illegible]



   [illegible]

   YES - [illegible]

   NO - [illegible]

DTC 121, 122, 125, 126 VSA Solenoid

1. [illegible] DTC diagnostic [illegible]
2. [illegible]
3. Turn the ignition switch OFF (LOCK) (0).
4. Turn the ignition switch ON (II).

   Is the VSA indicator [illegible] DTC 121, 122, 125, 126?

   YES — [illegible] Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the [illegible] Refer to [illegible] page 19-34, and test the [illegible]

   NO — Intermittent failure, refer to [illegible] Troubleshooting Index

ABS Indicator does not come on

1. Turn the ignition switch OFF (LOCK) (0), and disconnect the ABS modulator.

   Does the ABS indicator [illegible] seconds?

   YES — The wiring is OK. Go to the [illegible]

   NO — Go to step 2.

2. Apply battery voltage to the [illegible]

   Does the ABS indicator [illegible]?

   YES — Go to step 3.

   NO — Check for poor [illegible] If the wiring and connectors are OK, [illegible]

3. Turn the ignition switch OFF.
4. Disconnect the [illegible] connector from the modulator.
5. Turn the ignition switch ON (II).

   Does the VSA indicator [illegible]?

   YES — Go to step 6.

   NO — [illegible] Troubleshooting Index

6. Turn the ignition switch OFF.
7. Check for poor [illegible] If the wiring and connectors are OK, [illegible] page 19-66

8. Turn the ignition switch ON (II).

   Does the ABS indicator [illegible]?

   YES — Replace the [illegible] Test the system. If the ABS indicator [illegible] page 19-34

   NO — Check for poor [illegible] If the wiring and connectors are OK, [illegible] page 22-232

Symptom Troubleshooting (cont'd)

ABS indicator does not go off, and no DTCs are stored

1. Check the No. [illegible] fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES—Reinstall the fuse, and go to step 2.

   NO—Replace the fuse, and recheck. If the fuse blows, check for a short [illegible] circuit. [illegible] the VSA modulator-control unit [illegible] page 19-[illegible]).

2. Check the No. [illegible] fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES—Reinstall the fuse, and go to step 3.

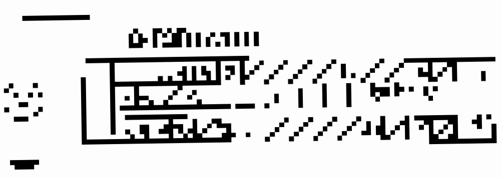
   NO—Replace the fuse, and recheck. If the fuse blows, check for a short to ground in the [illegible] circuit. [illegible] replace the VSA modulator-control unit [illegible] page 19-[illegible]).

3. Turn the ignition switch OFF.

4. Disconnect the VSA control unit 47P connector.

5. Measure the voltage between the VSA control unit 47P connector terminal No. [illegible] and body ground.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

Is there battery voltage?

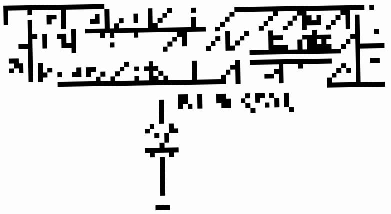
YES—Go to step 6.

NO—Repair open in the wire between the No. [illegible] fuse and the VSA control unit.

6. Turn the ignition switch ON (II).

7. Measure the voltage between the VSA control unit 47P connector terminal No. 33 and body ground.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES—Go to step 8.

NO—Repair open in the wire between the No. [illegible] fuse and the VSA control unit.

8. Turn the ignition switch OFF.

9. Check for continuity between the VSA control unit 47P connector terminals [illegible] and body ground.

VSA CONTROL UNIT 47P CONNECTOR

Wire side of female terminals

Is there continuity?

YES—Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit (see page 19-95), and recheck.

NO—Repair open in the wire between the VSA control unit and body ground (G[illegible]).

Brake system (Intelligent diagnosis) (Check brake operation with parking brake)

1. [illegible]

   Does [illegible]?

   YES: [illegible]

   NO: Go to step 3.

2. [illegible] page.

   [illegible]

   YES: [illegible]

   NO: Replace [illegible]

3. Turn the ignition switch OFF.

4. Turn the ignition switch ON.

5. Turn the parking brake switch ON.

   Does the brake system malfunction warning lamp illuminate?

   YES: Go to step 6.

   NO: Check the power supply circuit for the brake system control module. If the circuit is normal, replace the brake system control module. After completing the replacement, go to step 6.

6. Apply the parking brake.

   Does the brake system malfunction warning lamp illuminate?

   YES: The system is normal.

   NO: Go to step 7.

7. Turn the ignition switch OFF.

8. Disconnect the connector from the wheel speed sensor.

9. Turn the ignition switch ON.

10. Measure the voltage between the connector terminal on the wheel speed sensor harness side and body ground.

    Is the voltage 0 V?

    YES: Replace the wheel speed sensor. Refer to "On-vehicle Inspection" in this section.

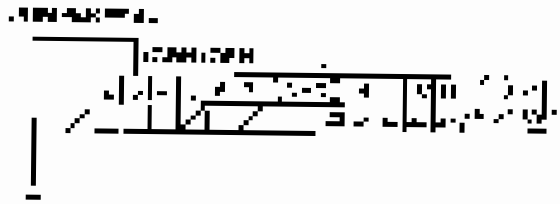
    NO: Go to step 11.

11. Turn the ignition switch OFF.

12. Remove the [illegible] connector.

13. Connect the [illegible] connector (A10) terminal No. 3 and body ground with a jumper wire.

    Caution: Incorrect connection may damage the [illegible].



    Is the [illegible]?

14. [illegible]

    Does the [illegible]?

    YES: Replace the wheel speed sensor. Refer to "On-vehicle Inspection" in this section.

    NO: Repair the harness between the gauge [illegible] and the [illegible].

Symptom Troubleshooting (cont'd)

Brake system indicator does not go off

1. Turn the ignition switch to LOCK (0).
2. Remove and reinstall the fuse.

   Does the brake system indicator come on when you turn the ignition switch to ON (II)?

   YES - The current is OK. ■

   NO - Go to step 3.

3. Check the brake fluid level (see page 14-7).

   Is the level OK?

   YES - Go to step 4.

   NO - Add brake fluid to the proper level. ■

4. Check the ABS indicator.

   Does the ABS indicator go off?

   YES - Check the brake fluid level (see page 14-7). If the level is OK, the brake system is OK. ■

   NO - Check the ABS indicator (see page 19-7). ■

- Check the brake fluid level (see page 14-7). If the level is OK, the brake system is OK. ■
- Check the brake fluid level (see page 14-7). If the level is OK, the brake system is OK. ■
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- Check the brake fluid level (see page 14-7). If the level is OK, the brake system is OK. ■

VSA indicator does not come on

1. [illegible] indicator does not come on, check the VSA indicator.

   Does the VSA indicator come on when you turn the ignition switch to ON (II)?

   YES - Go to step 2.

   NO - Go to step 3.

2. Apply the parking brake.

   Does the VSA indicator go off?

   YES - Go to step 3.

   NO - Have your dealer inspect the VSA system. ■

3. [illegible] indicator.

4. Check the VSA indicator.

5. Turn the ignition switch to LOCK (0).

   Does the VSA indicator come on?

   YES - Go to step 6.

   NO - Check the VSA indicator (see page 19-7). If the indicator is OK, the VSA system is OK. ■

6. Turn the ignition switch to ON (II).

7. Select the [illegible] mode.

   Does the VSA indicator come on?

   YES - Replace the brake pressure control unit (see page 19-21). ■

   NO - Go to step 8.

8. [illegible] (see page 22-252). ■

VSA Indicator does not go off, and no DTCs are stored

1. Check the VSA [illegible]

[illegible]

2. Check the VSA [illegible]

NO: [illegible]

3. Check the VSA [illegible]

YES: [illegible]

4. [illegible]

5. Measure the voltage between the VSA unit [illegible]

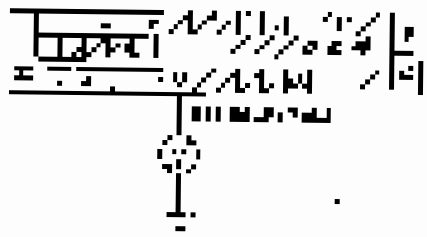
[illegible]

YES: [illegible]

NO: [illegible]

6. Turn the ignition switch [illegible]

7. Measure the voltage between the [illegible]



[illegible]

YES: [illegible]

NO: [illegible]

8. [illegible]

9. Check for poor [illegible]

[illegible]

YES: [illegible]

[illegible]

Symptom Troubleshooting (cont'd)

VSA activation indicator does not come on

1. Turn the ignition switch to ON (II), and press the VSA button. Does it beep?

   YES - The system is OK.

   NO - Go to step 2.

2. Apply battery voltage to the

   Does the system now operate normally?

   YES - Replace the

   NO - Test the

3. Test the

4. Test the

5. Turn the ignition switch to ON (II).

   Does the VSA activation indicator come on?

   YES - Replace the

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).

7. Disconnect the

8. Check for

   Is there

   YES - Repair the

   NO - Replace the

VSA activation indicator does not go off, and no DTCs are stored

1. Turn the ignition switch to ON (II), and watch the VSA indicator.

   Does the indicator come on?

   YES - Go to step 2.

   NO - Go to the appropriate

2. Turn the ignition switch to

3. Check for

   Is there

   YES - Replace the

   NO - Go to step 4.

4. Check the

   Does the

   YES - Replace the

   NO - Go to step 5.

5. Check the

6. Disconnect the

7. Check for

8. Check the

   Does the

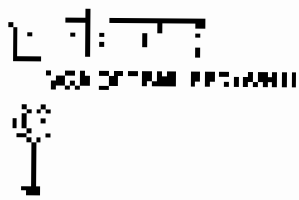
   YES - The

   NO - Go to

9. Test the

10 Check for continuity between the VSA OFF switch 21 connector (engine harness side) and body ground.

VSA OFF switch connector



VSA OFF switch connector

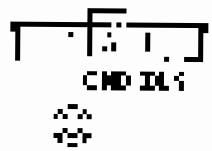
Is there continuity?

YES - Repair open in body harness between the VSA OFF switch and body ground.

NO - Go to step 11.

11 Check for continuity between the VSA OFF switch 21 connector (engine harness side) and body ground.

VSA OFF switch connector



Is there continuity?

YES - Replace the VSA OFF switch.

NO - Repair open in body harness between the VSA OFF switch and body ground.

12 Substitute a known-good [illegible] and recheck.

Is the problem solved?

13 Substitute a known-good VSC control module and recheck.

Is the problem solved?

YES - The original VSC control module is faulty.

NO - Check for intermittent problems. If no intermittent problems are found, replace the VSC control module.

Steering Angle Sensor Replacement

NOTE: Do not disassemble the steering angle sensor kit unless the new kit is going to be installed. Once the steering angle sensor is disassembled, it cannot be reused.

1. Remove the [illegible] (see page 17-21) and the [illegible] (see page 17-30).
2. Remove the [illegible] (see page 17-30).
3. Disconnect the combination light connector [illegible] and remove the bolt (1).

4. Disconnect the connector from the steering angle sensor (2).
5. Install the steering angle sensor in the reverse order of removal.

NOTE: Do not reuse the steering angle sensor. Install a new one every time it is removed.

6. Perform the [illegible] (see page 19-24).

Yaw Rate-Lateral Acceleration Sensor Replacement

VSA Sensor Neutral Position Memorization

NOTE: Do not perform this procedure if you are replacing the steering wheel.

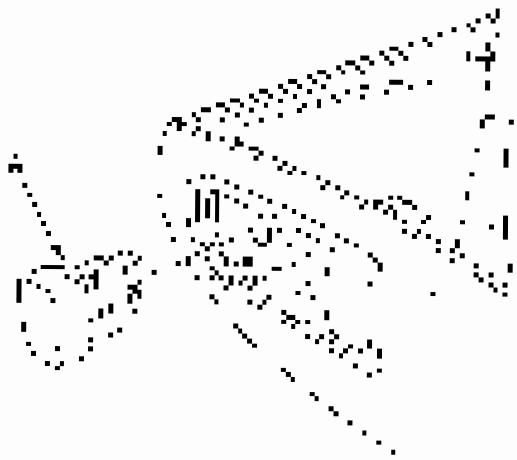
1. Park the vehicle on a flat and level surface.
2. With the ignition switch OFF, connect a scan tool to the 16P data link connector (DLC) located under the instrument panel on the driver's side of the dashboard.

3. Start the engine and let it idle.
4. Turn the steering wheel all the way to the left, then all the way to the right.
5. Use the scan tool to select VSA service mode.
6. Select the VSA sensor neutral position memorization mode.
7. Slowly turn the steering wheel to the left and right, and center it.
8. Use the scan tool to confirm that the VSA sensor neutral position memorization is complete.
9. When the memorization is complete, VSA indicator will turn off. If the indicator does not turn off, memorization has failed.
10. Turn the ignition switch OFF, and disconnect the scan tool from the 16P DLC.

VSA Off Switch Test

1. [illegible]

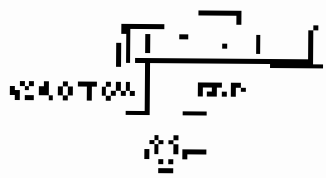
2. [illegible]



3. [illegible]

4. [illegible]

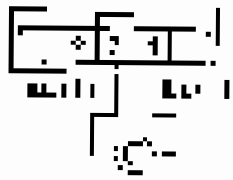
[illegible]



[illegible]

5. [illegible]

[illegible]



[illegible]

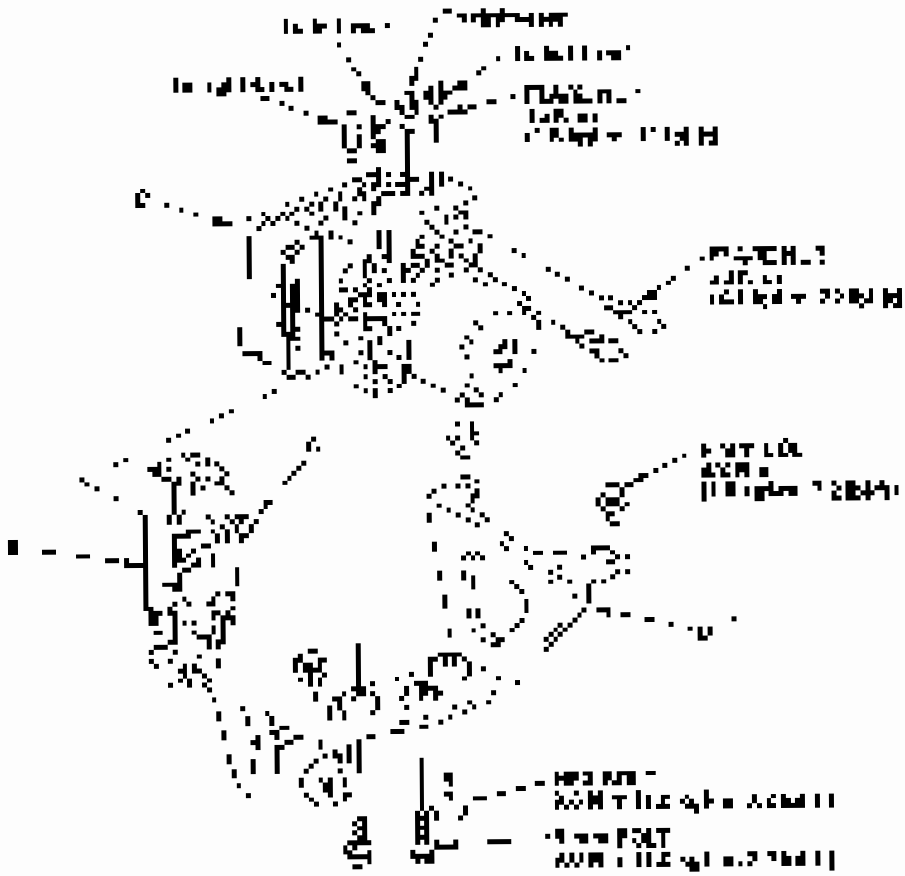
VSA Modulator-Control Unit Removal and Installation

NOTE:

- Do not apply the VSA modulator-control unit to any other vehicle. Parts from [illegible] cannot be interchanged.
- Do not [illegible]
- To prevent [illegible] disconnect the battery ground cable and remove the [illegible] before you begin this procedure.

Removal

1. [illegible]



2. [illegible]

3. [illegible]

4. [illegible]

Installation

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]

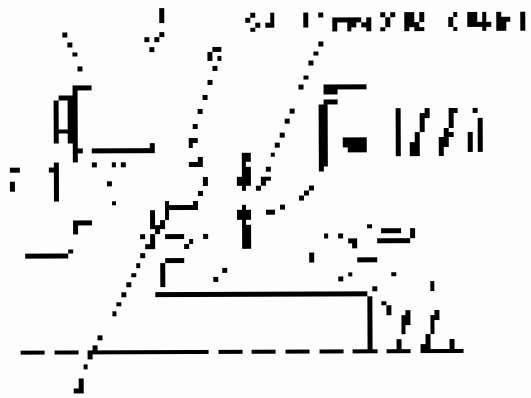
Wheel Sensor Inspection

1. [illegible]

2. [illegible]

Front

Rear



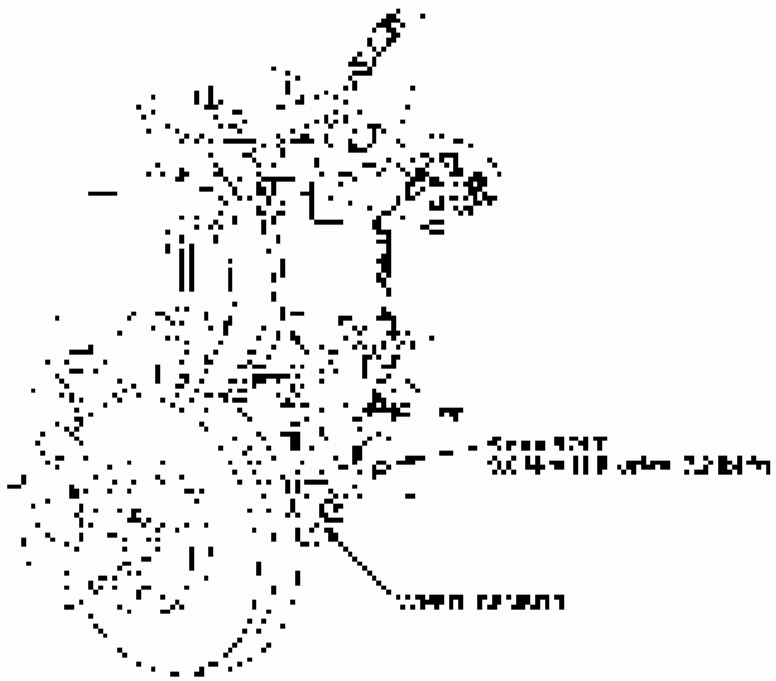
1. [illegible]

Standard:
Front: 0.5 [illegible]
Rear: 0.7 [illegible]

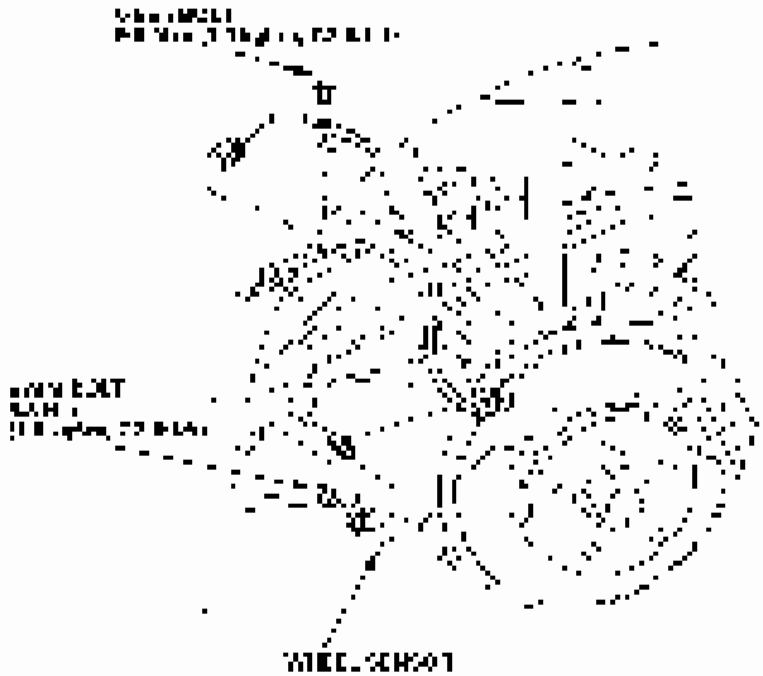
Wheel Sensor Replacement

NOTE: [illegible]

Front



Rear



SUPPLEMENTAL RESTRAINT SYSTEM (SRS) [Body maintenance required]

The Acura TL SRS includes a driver's airbag in the steering wheel hub, a passenger's airbag in the dashboard above the glove box, seat belt tensioners, and a driver's and passenger's knee bolster. The SRS is designed to inflate in a moderate to severe frontal collision to help reduce the driver's and front passenger's chance of serious injury. The SRS consists of the following components: driver's airbag module, passenger's airbag module, seat belt tensioners, knee bolster, SRS indicator, SRS unit, impact sensors, and wiring harness.

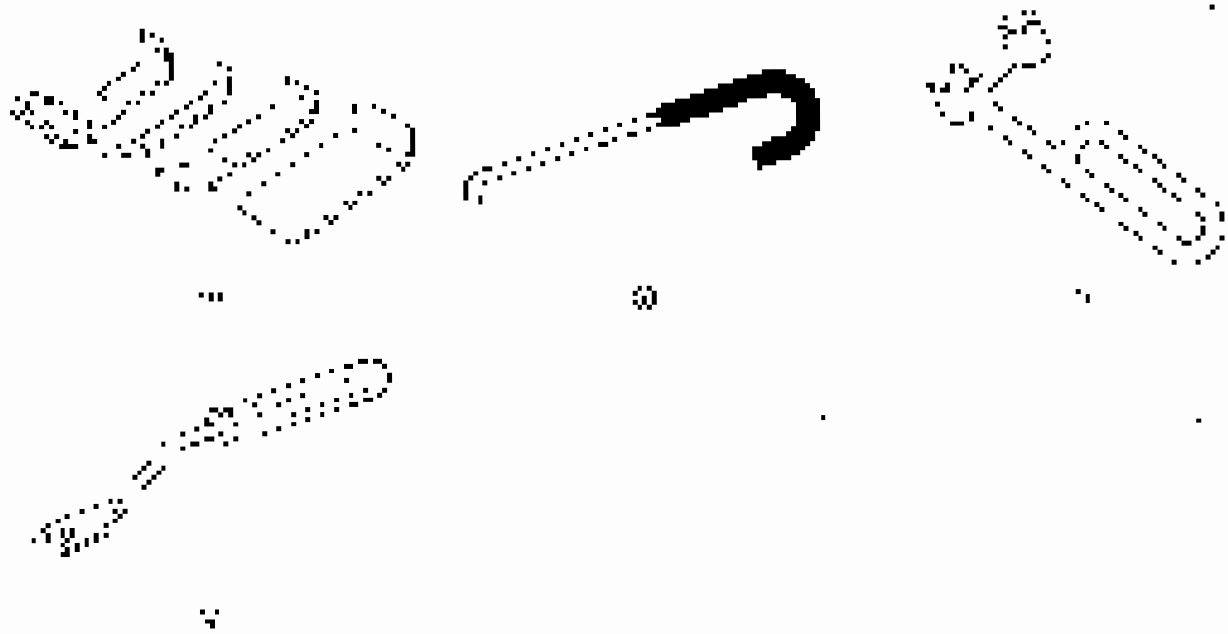
- To avoid serious injury from SRS inoperation, avoid modifying any SRS component or wiring. Have all SRS service work performed by an authorized Acura dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could cause serious injury or death by activating the SRS unintentionally or rendering the SRS inoperative.
- Do not attempt to repair the SRS unit. It must be replaced if it has been dropped or damaged in a collision. Do not attempt to modify any SRS component, including the steering wheel, dashboard, seat belt tensioners, or wiring harness. Modifications can cause SRS failure, which could result in serious injury.
- SRS components and wiring harnesses are painted yellow for easy identification. Do not use electrical test equipment on any SRS circuit. Do not use any SRS part from another vehicle. When replacing SRS parts, use new parts.

Body

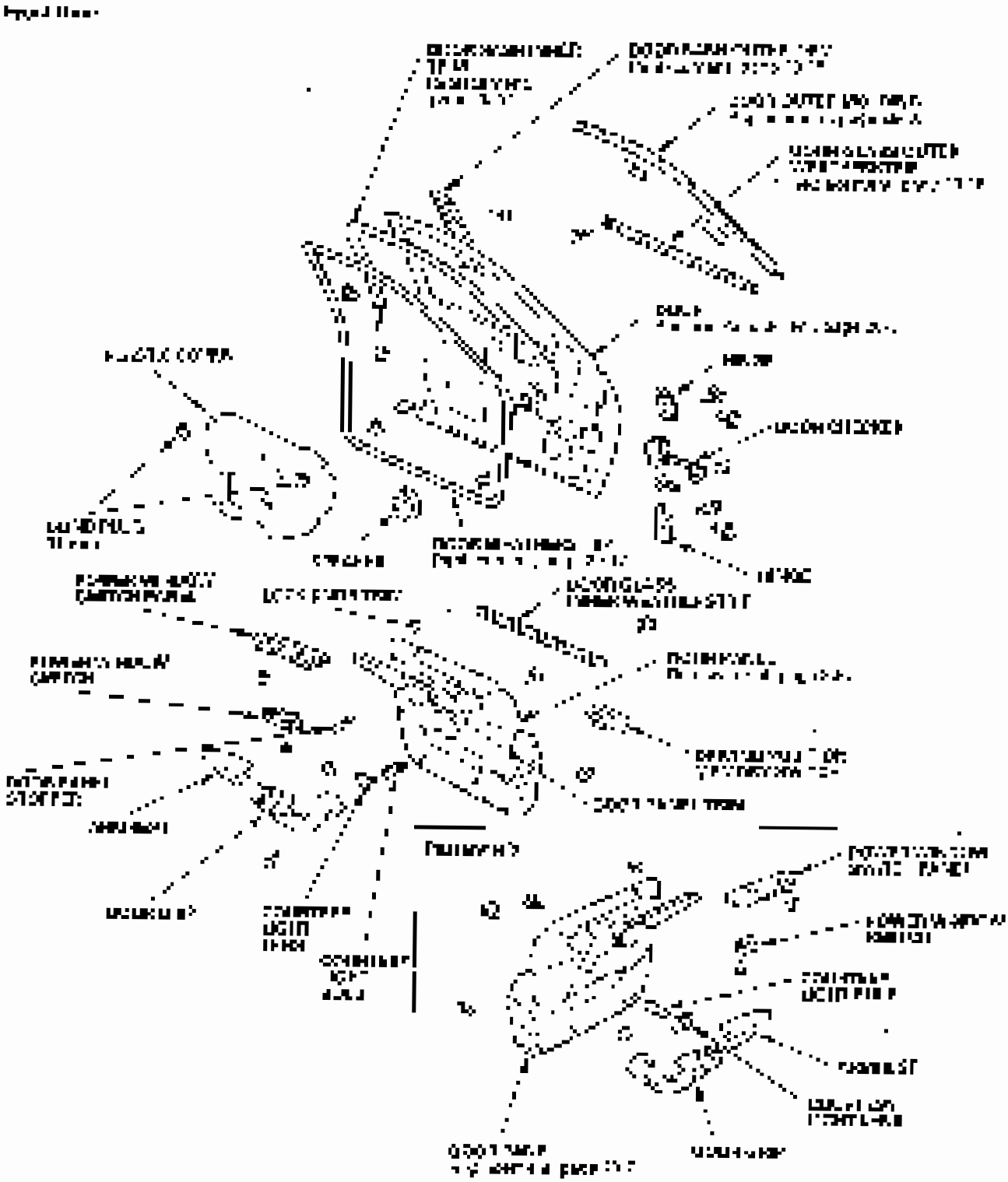
Body

Special Tools

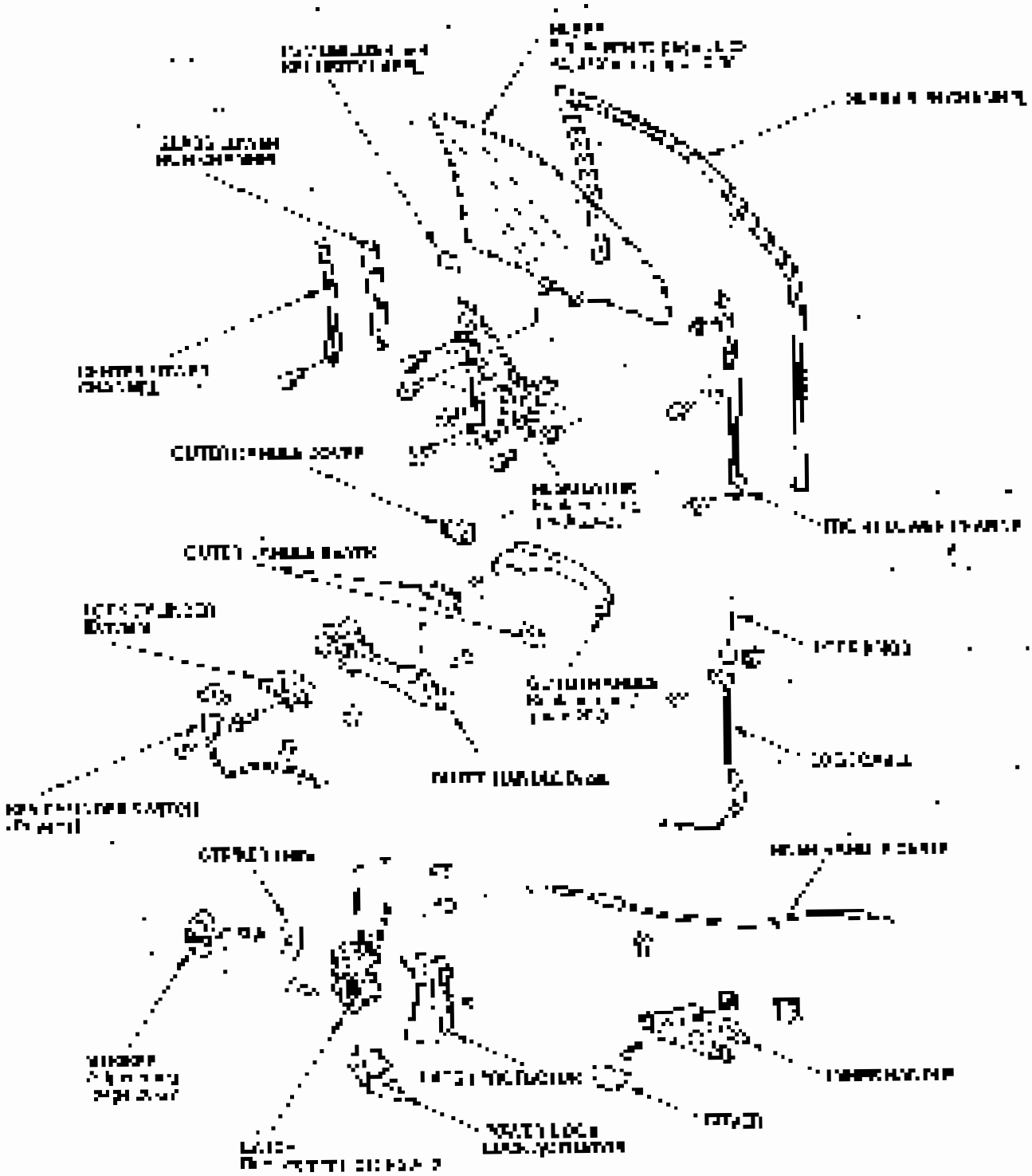
Ref.No.	[illegible]	Description	Qty
[illegible]	[illegible]	[illegible]	[illegible]

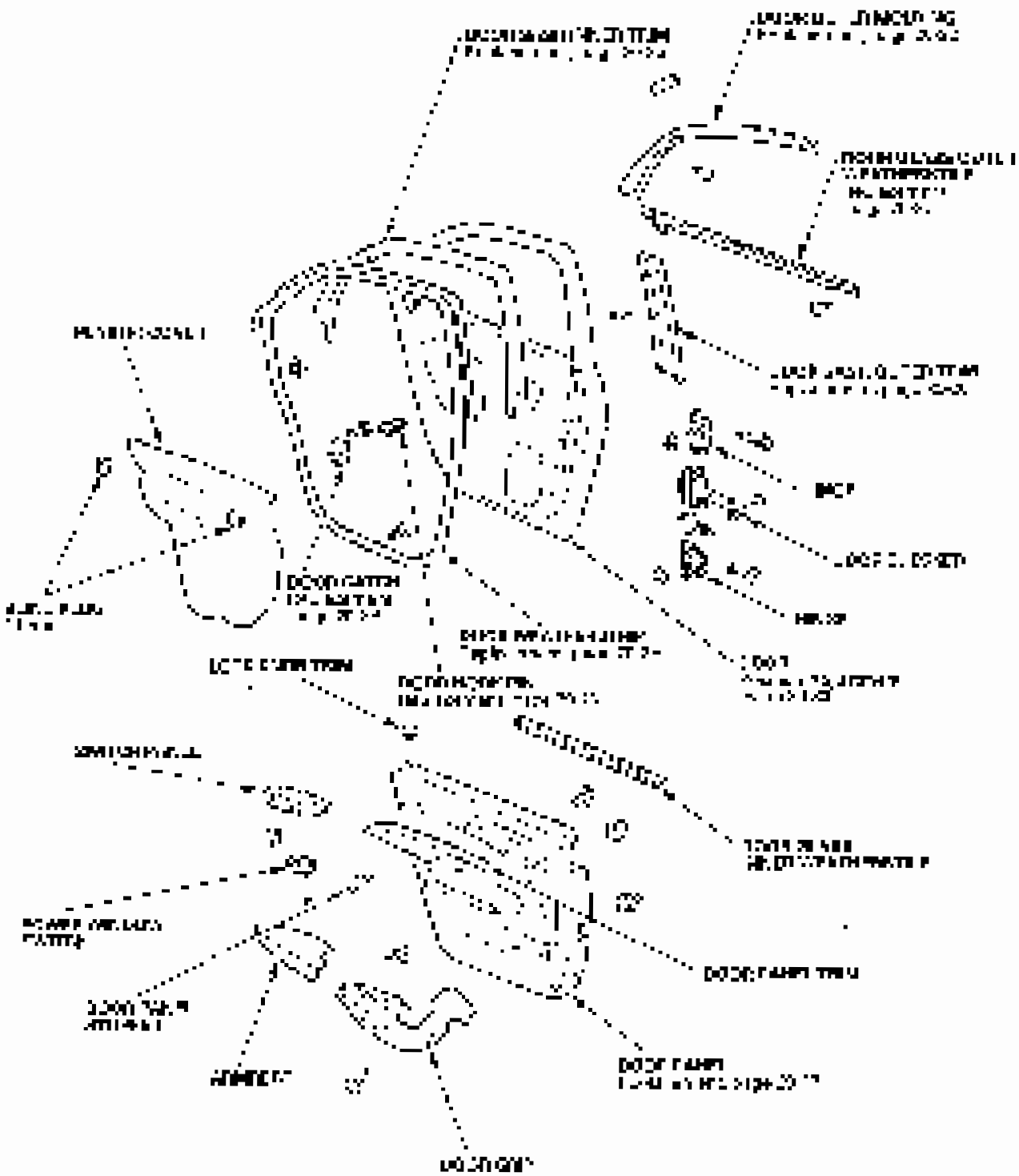


Component Location Index

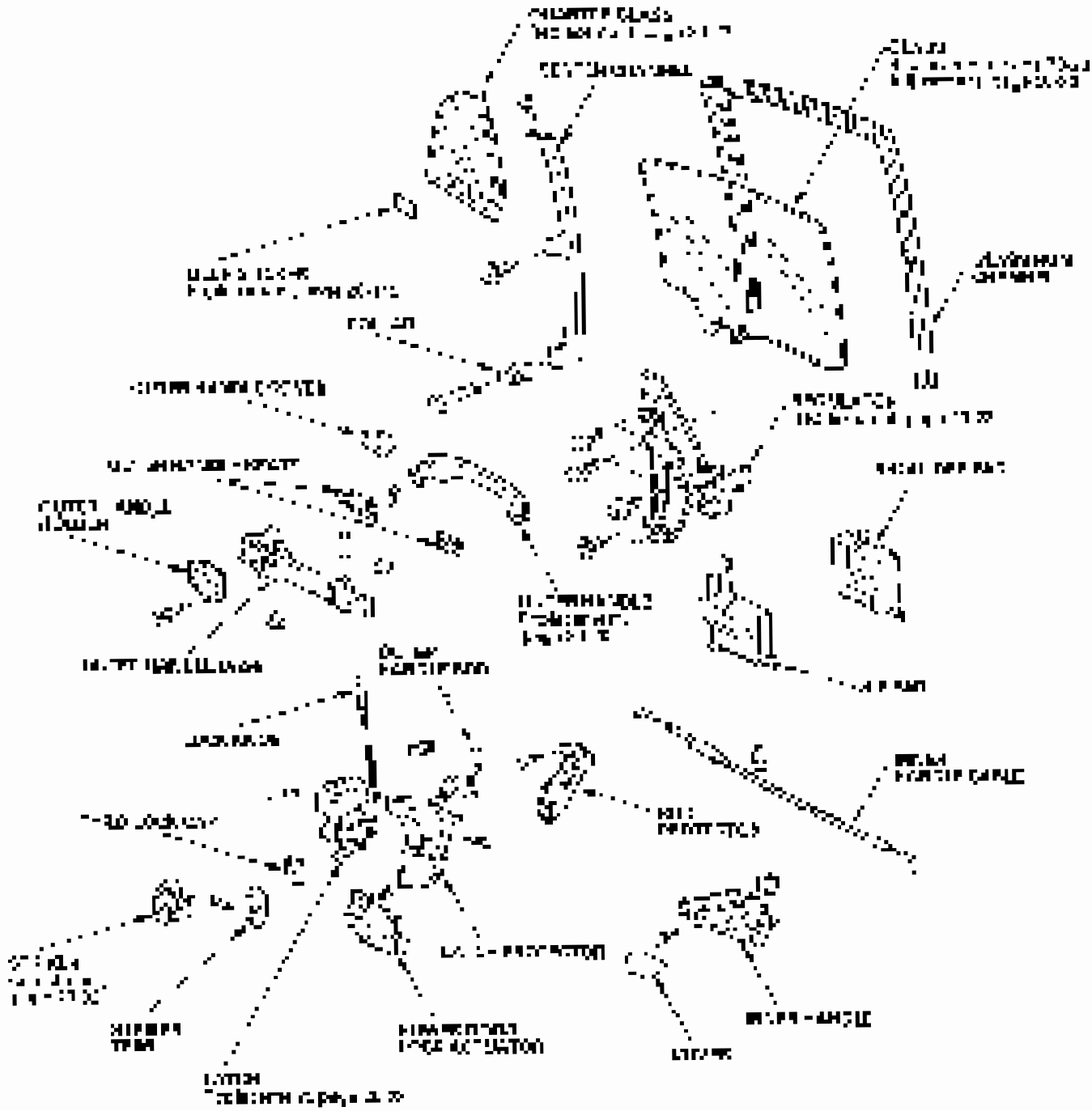


Component Location Index (cont'd)





Component Location Index (cont'd)



Front Door Panel Removal/Installation

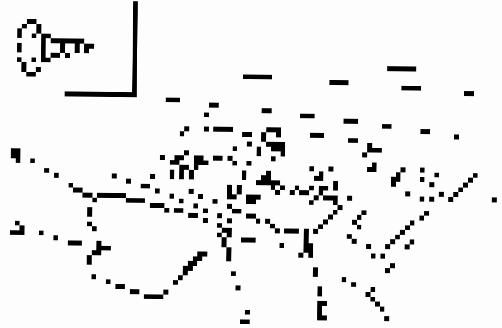
Special Tools Required
KTC trim tool set [illegible]
• Trim pad [illegible], commercially available

NOTE: [illegible] damage [illegible] components.

1. [illegible] door glass fully.

2. [illegible] (A) [illegible] plastic [illegible] (B) [illegible], then remove the [illegible] screws (D) securing the inner handle (E).

Fastener Locations
[illegible]: Screw, 2

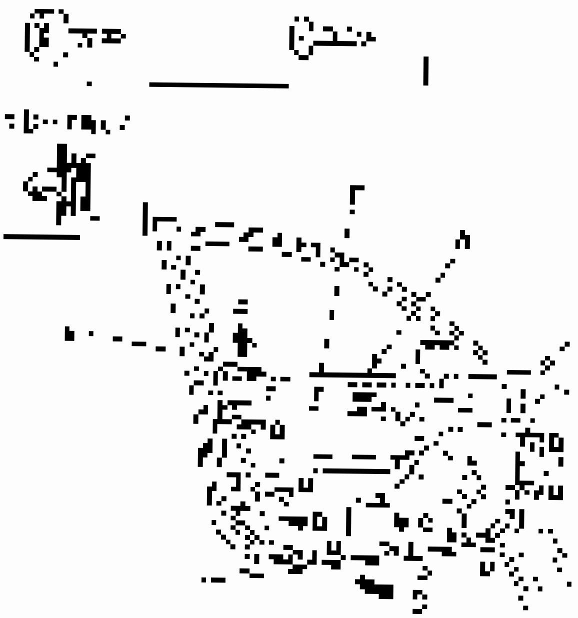


3. Remove the door panel (A) with as little [illegible] possible [illegible] bending [illegible].

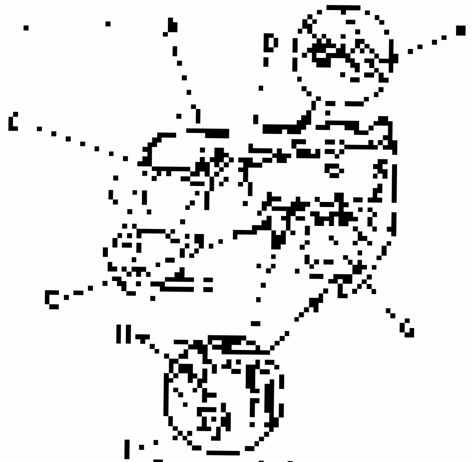
-1 Remove the screws [illegible] and screws (C) from the door panel.
-2 [illegible] with a commercially available [illegible] tool.
-3 Starting at the rear, pull the door panel outward, [illegible] the clips (D).

NOTE: [illegible] door panel. Do not pull the door panel [illegible] or it will be damaged.

Fastener Locations
[illegible]: Clip, [illegible] [illegible]: Screw, [illegible]



4. While [illegible] the door panel (A), [illegible] power window switch connector [illegible] connector (F) [illegible] passenger's door) and [illegible] door [illegible] passenger's door [illegible] quarter turn.



Passenger's door

(cont'd)

Front Door Panel Removal/Installation (cont'd)

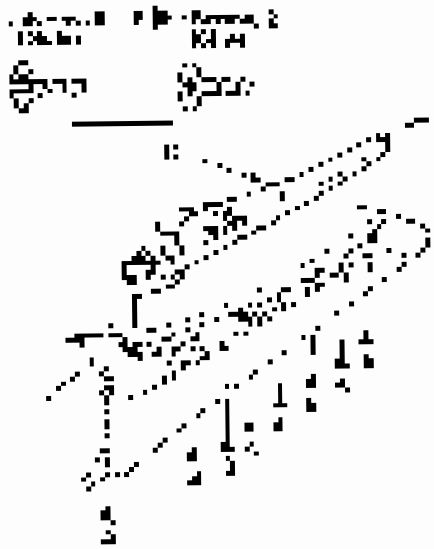
5. [illegible]

6. [illegible]

7. [illegible]

1. [illegible]
2. [illegible]

8. [illegible]



9. [illegible]

10. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Front Door Outer Handle Replacement

[illegible]

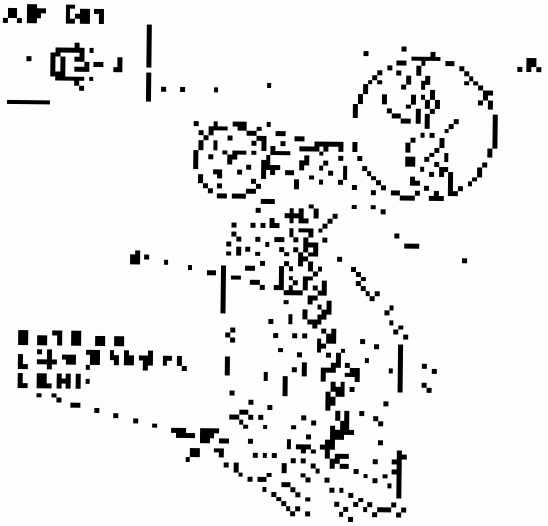
1. [illegible]

   - [illegible]
   - [illegible]

2. [illegible]

3. [illegible]

   [illegible]



4. [illegible]

5. [illegible]

   [illegible]
   - [illegible]
   - [illegible]

   [illegible]

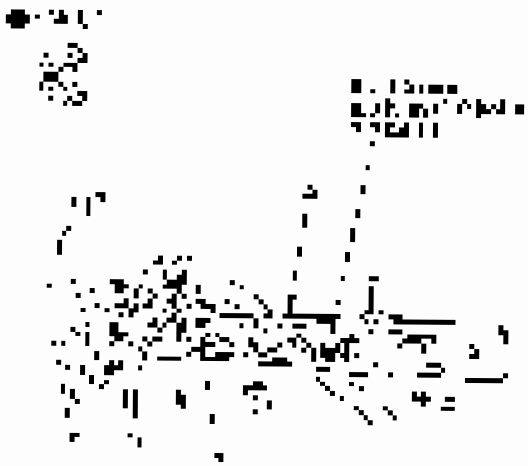
[illegible]

Front Door Outer Handle Replacement (cont'd)

11. [illegible]

12. [illegible]

[illegible]



13. [illegible]

14. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Front Door Latch Replacement

[illegible]

1. [illegible]

2. [illegible]

   - [illegible] page 20-11
   - [illegible] page 20-13
   - [illegible] page 20-8

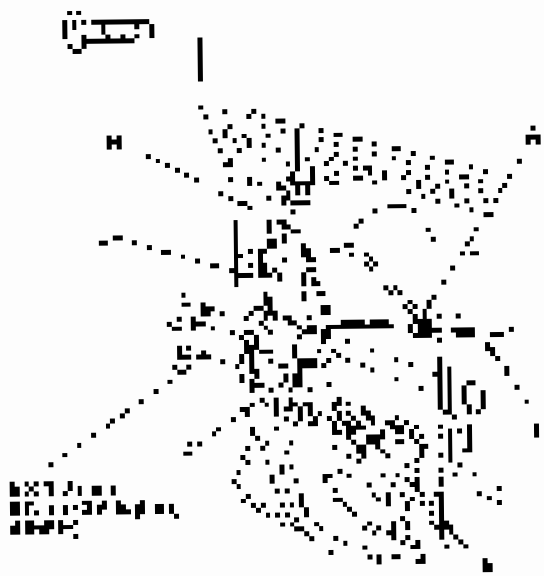
3. [illegible] page 23-6

4. [illegible]

Power Locks

[illegible]

5. [illegible]



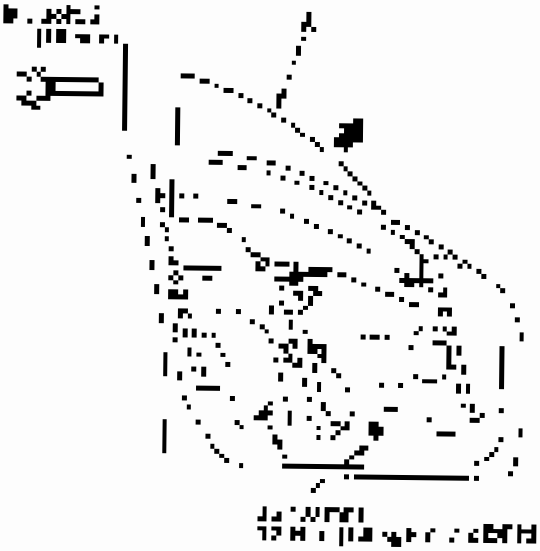
6. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

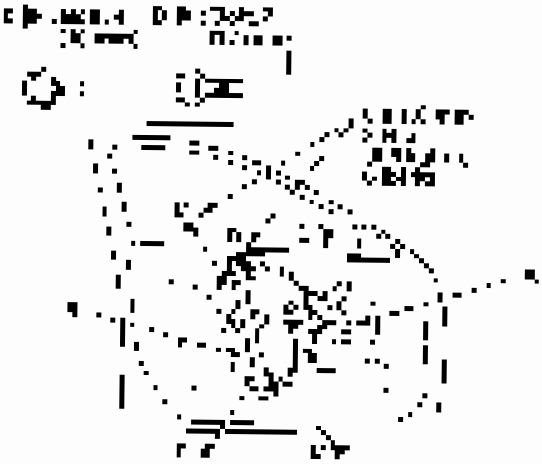
Front Door Glass and Regulator Replacement

NOTE: Take precautions to prevent paint damage.

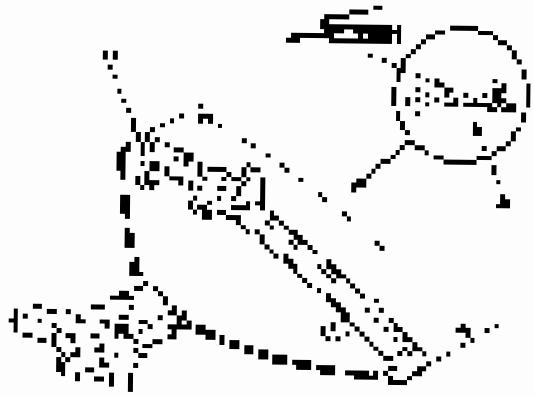
1. Remove the front door:
   - Door panel (see page 20-11)
   - Inside weatherstrip (see page 20-12)
2. Open the window glass all the way and remove the bolts through the service holes in the door, then remove it from the regulator by pulling it straight up through the weatherstrip. Be careful not to scratch the door or inside weatherstrip.



3. Disconnect the power window switch connector from the regulator (4).



4. Remove the two bolts and the rear guide roller bolt, then remove the regulator through the service hole in the door.
5. Assemble the regulator and glass in the reverse order of removal, and note these items:



- Apply multipurpose grease to the sliding and rotating parts of the regulator.
- Make sure the glass is installed between the glass weatherstrip lips when the glass is closed.
- Adjust the position of the glass (see page 20-10).
- Install the power window switch connector (see page 20-10). Connect the negative cable to the battery, and check the power window operation.
- After installing the door panel, make sure the plastic cover is installed properly and sealed around the edges. Also make sure the weatherstrip is not damaged.
- Make sure the power door lock switch and power window switch operate properly.

Front Door Sash Inner Trim Replacement

NOTE: The illustration is typical for the door.

1. [illegible]
2. Remove the [illegible] (see page [illegible]).
3. [illegible] of the door sash inner trim, and remove it.

Passenger's side:

4. Remove the door sash inner trim:
   - Pull out the clip.
   - Slide the door sash inner trim toward the door and remove it from the door sash, and remove the clips from the door sash inner trim.

Driver's side:

5. Install the removed parts in the reverse order of removal, and note the following:
   - Replace any bent or damaged clips.
   - Tighten the [illegible] securely.

Front Door Sash Outer Trim Replacement

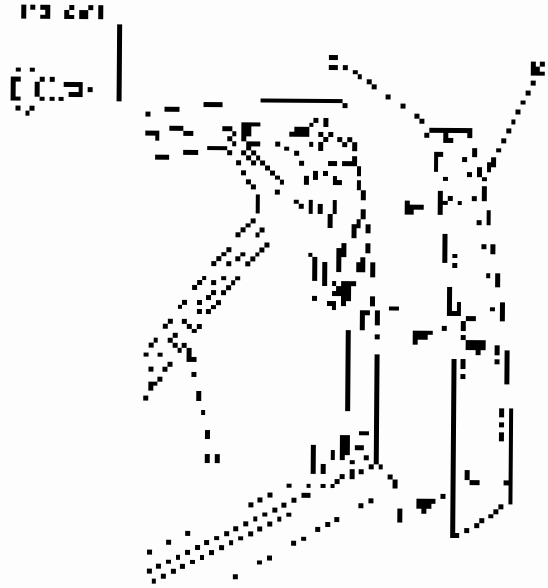
NOTE: [illegible]

- [illegible]

2. [illegible] (page 20-14)

3. [illegible] with a flat-tip screwdriver and remove the trim. Pull the trim [illegible] to remove it from the door.

Pull direction



4. [illegible]

Front Door Glass Outer Weatherstrip Replacement

Special Tools Required
KTC [illegible]

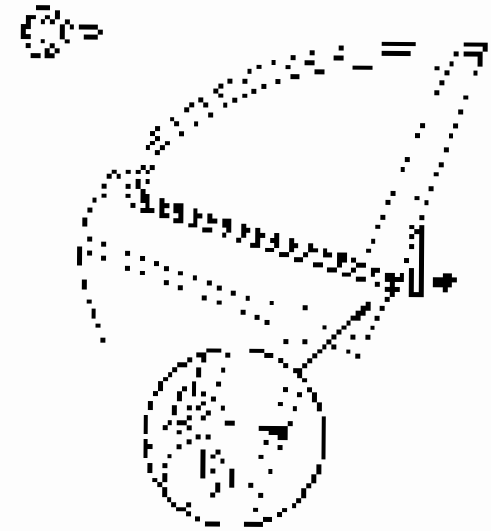
NOTE:
- The door glass outer weatherstrip can be replaced [illegible]
- Be careful not to scratch the paint.
- Take care not to damage the door.
- [illegible]

1. Remove the:
   - Door panel (page 20-[illegible])
   - Power mirror (see page 20-[illegible])

2. Remove the [illegible] (page 20-[illegible])

3. Remove the [illegible] from the top of the door.

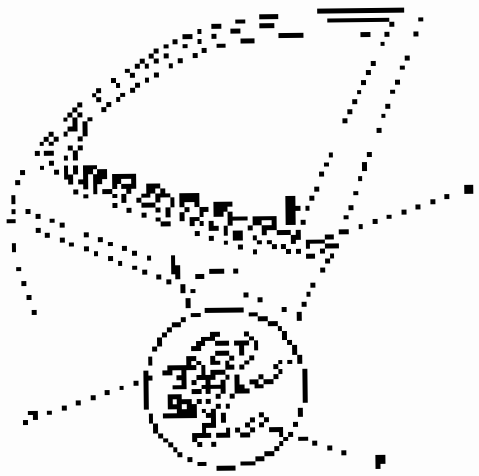
Pull direction



cont'd

Front Door Glass Outer Weatherstrip Replacement (cont'd)

4. [illegible]



5. [illegible]

Front Door Outer Molding Replacement

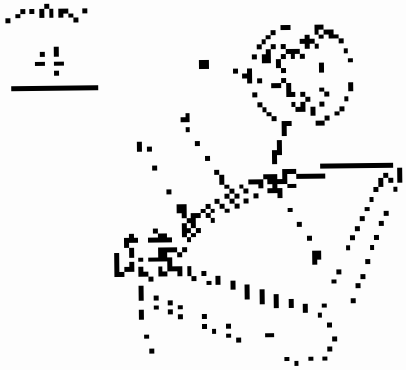
Special Tools Required
KTC-V-[illegible] or equivalent

Note:
- [illegible]
- Replace all removed parts.
- Follow recommended torque and sequence.
- Use the appropriate service kit (e.g., KTC) or equivalent to avoid damage to [illegible] components.

1. Remove the power door lock switch panel. Disconnect the connector, and remove the door trim panel. Peel off the [illegible] and remove the [illegible] (see page 20-[illegible]).

2. Remove the [illegible]:

   a. [illegible]
   b. With a screwdriver or a [illegible] adjacent to the [illegible] to release the [illegible] clips. Be careful not to damage the [illegible].



3. Remove the [illegible] from the door panel by pulling it in the direction of the arrow. Be careful not to damage the [illegible].

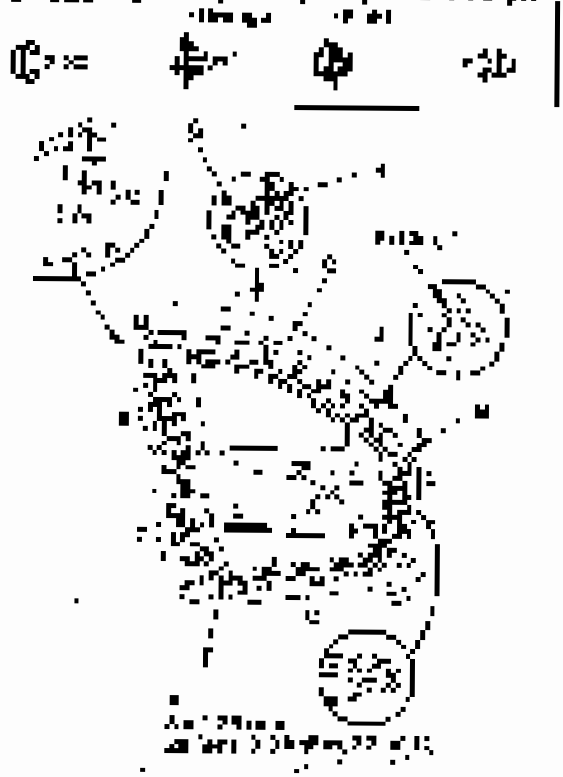
4. Install the [illegible]:

   - Clean all the [illegible] with [illegible].
   - Install the [illegible] to the door panel as shown.
   - Tighten the [illegible] in the sequence shown, starting with the [illegible] of the [illegible] first.

Front Door Weatherstrip Replacement

- [illegible]
- [illegible]
- [illegible]

1. [illegible]



2. [illegible]

4. [illegible]

- [illegible]
- [illegible]
  [illegible]
- [illegible]

Rear Door Panel Removal/ Installation

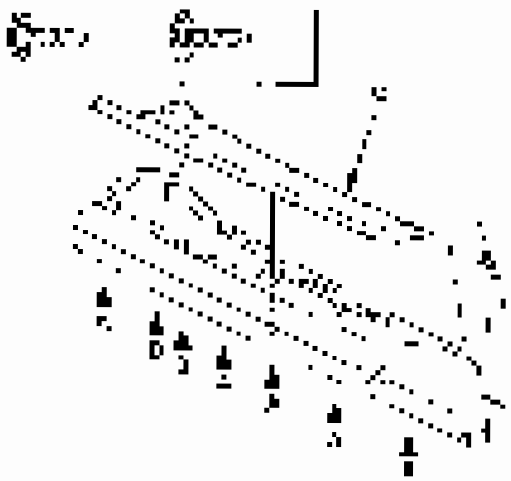
Special Tools Required
- [illegible]
- [illegible]

Note: [illegible]

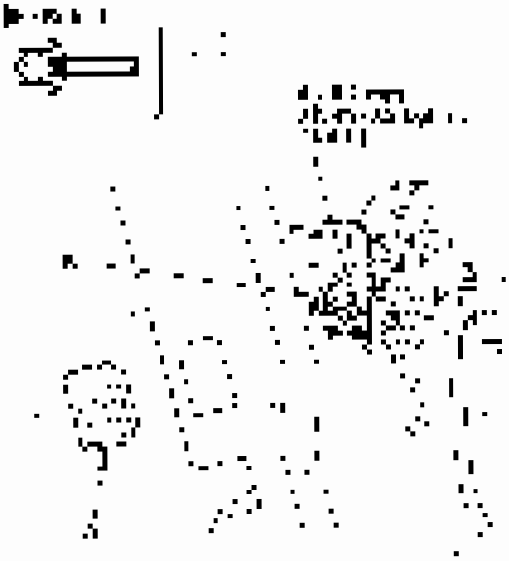
1. [illegible]

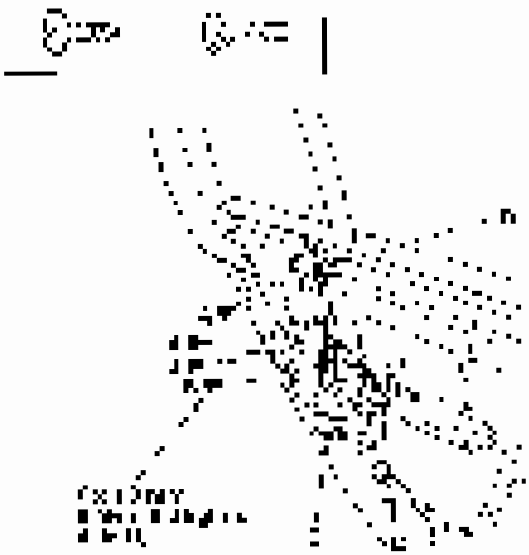
2. [illegible]

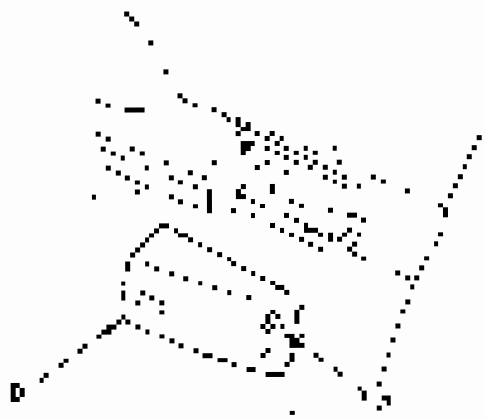
Rear Door Panel Removal/Installation (cont'd)



Rear Door Outer Handle Replacement

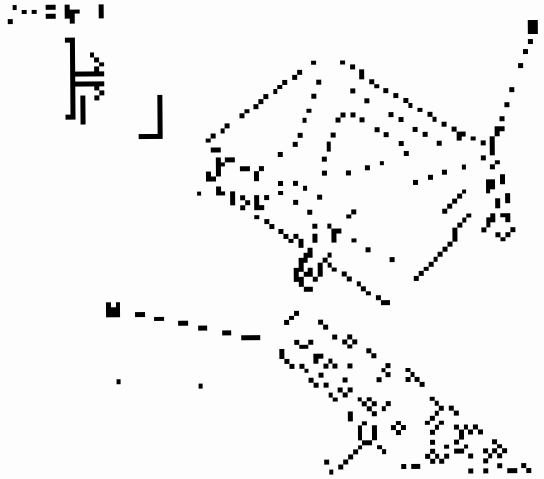




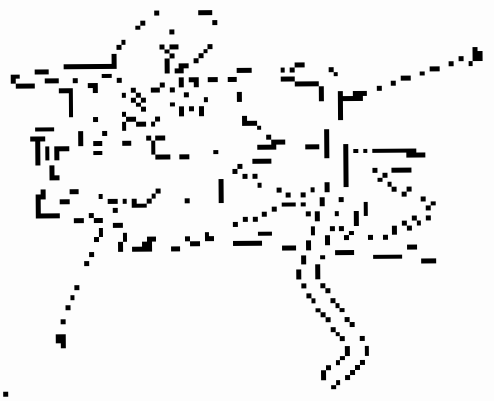


Rear Door Outer Handle Replacement (cont'd)

11. [illegible]



12. [illegible]



13. [illegible]

- [illegible]
- [illegible]

Rear Door Latch Replacement

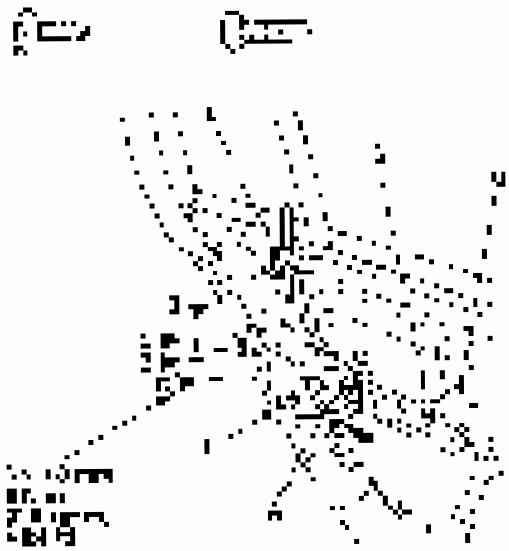
NOTE: [illegible]

1. [illegible]

- [illegible]
- [illegible]
- [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

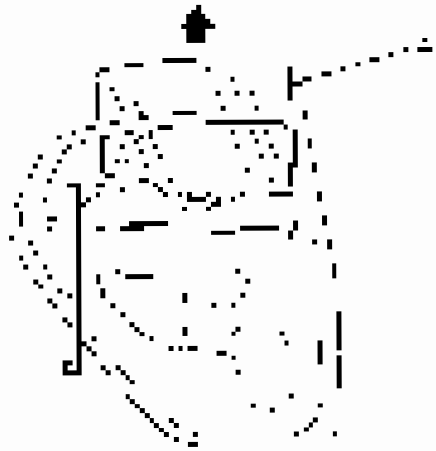
Rear Door Glass and Regulator Replacement

Rear Door Glass and Regulator Replacement (cont'd)

4. [illegible]

5. [illegible]

6. [illegible]



Rear Door Sash Inner Trim Replacement

Rear Door Sash Inner Trim Replacement (cont'd)

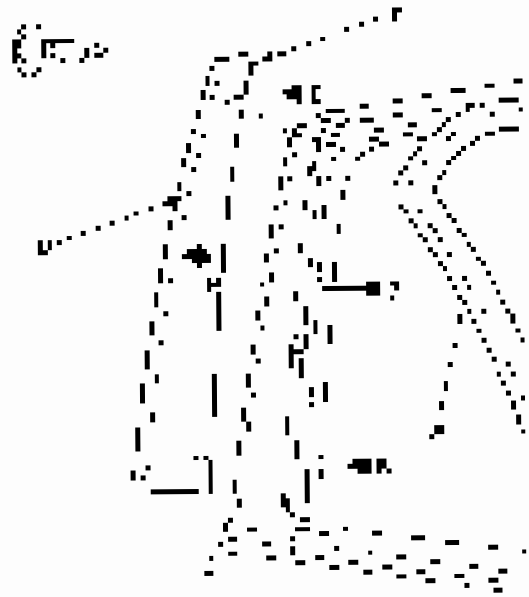
4. [illegible]

5. [illegible]

Rear Door Sash Outer Trim Replacement

NOTE: [illegible]

1. [illegible]
2. [illegible]
3. [illegible]



4. [illegible]

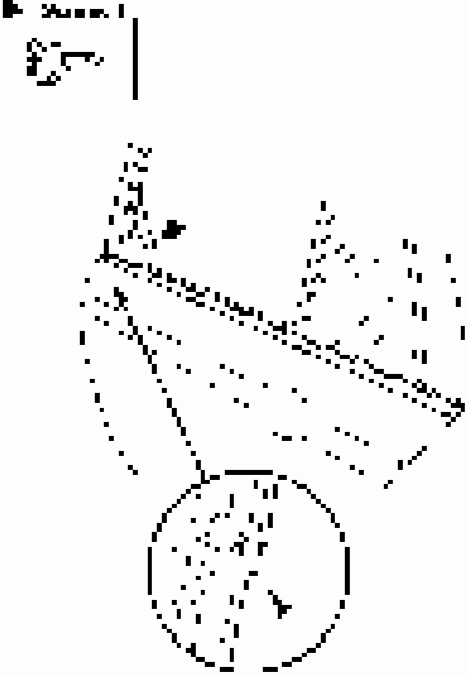
Rear Door Glass Outer Weatherstrip Replacement

[illegible]

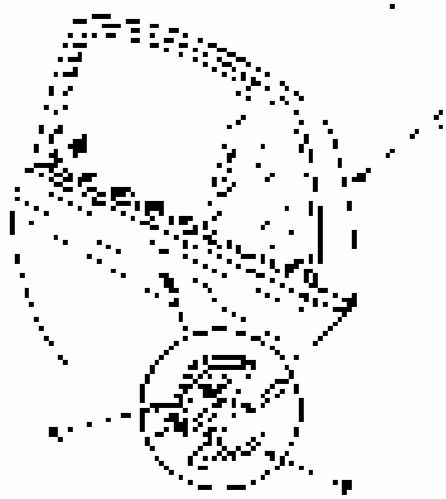
- [illegible]
- Put on gloves to avoid injury.
- Take care not to scratch the door.

1. [illegible] (see page 20-17)
2. [illegible] (see page 20-24)
3. Remove the rear door inner panel from the door. (see page 20-17)

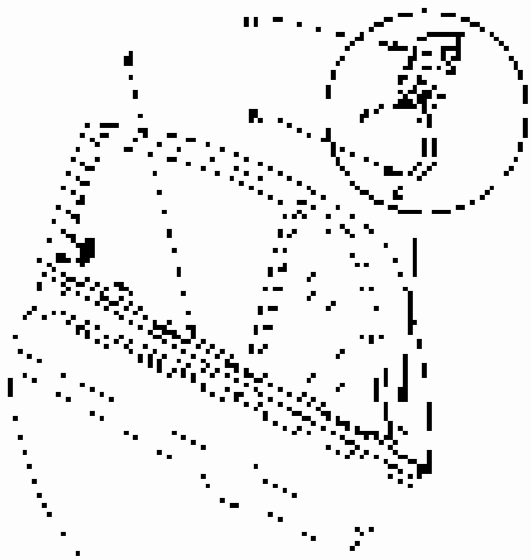
Tension cord
Weatherstrip



4. Starting at the [illegible], pull the weatherstrip upward to remove it from the door.



5. [illegible]



6. Install in the reverse order of removal.

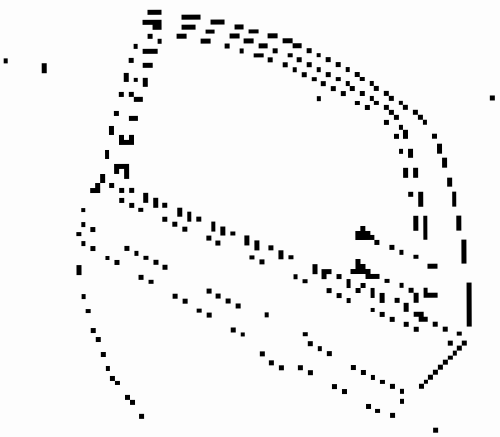
Rear Door Outer Molding Replacement

Special Tools Required

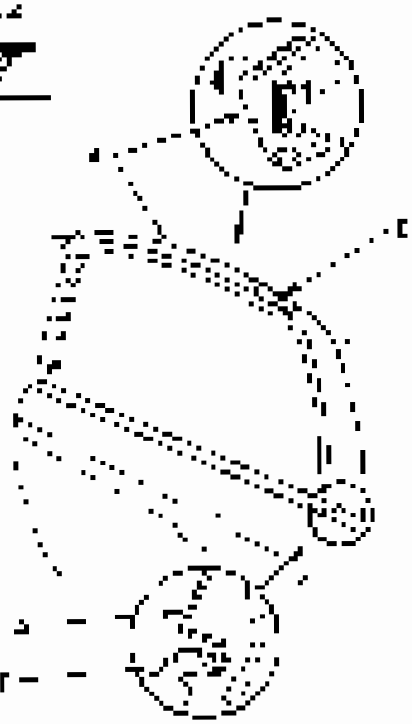
NOTE
- Use a new clip when installing the outer molding.
- Be careful not to damage the body paint.
- Do not reuse the removed clip.
- Use the appropriate special tool from the ATC if removal and installation damage the molding or clips.

1. Remove the quarter trim panel. See page 20-27.

2. Remove the screw.



3. Pry out the clip with the appropriate tool from the ATC. Remove the molding.



4. Apply the specified sealant to the upper edge of the door outer molding. Attach the edge of the door outer molding to the door panel. Apply masking tape to the molding to hold it in place until the sealant dries.

5. Install the clips. Remove the masking tape.

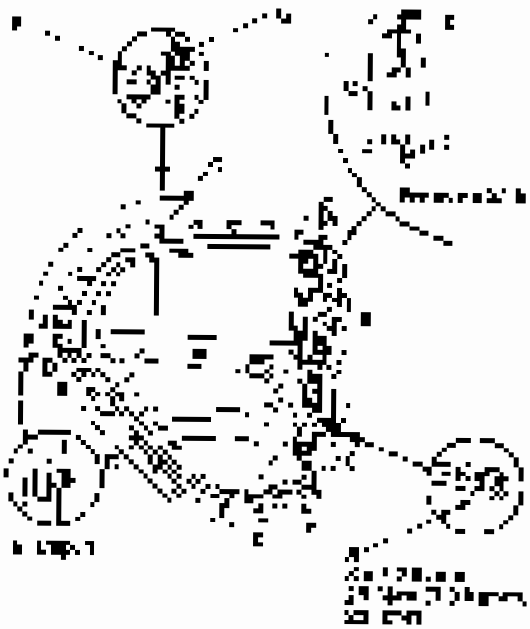
6. Install the following in the reverse order of removal:
   - Quarter trim panel
   - Weatherstrip. Apply specified sealant to the weatherstrip installation groove. See page 20-31.
   - Weatherstrip. Apply specified sealant to the door outer molding installation groove. See page 20-31.

Rear Door Weatherstrip Replacement

NOTE:
- [illegible]
- [illegible]

1. [illegible]

[illegible]



2. [illegible]

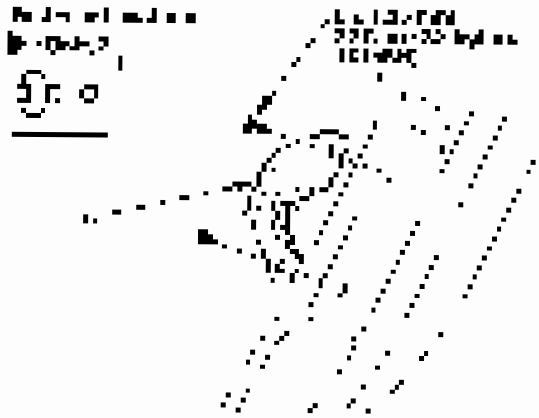
3. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Rear Door Hook, Pin and Catch Replacement

1. [illegible]

2. [illegible]



3. [illegible]

Front and Rear Door Glass Adjustment

Note:

- [illegible]
- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

   - [illegible]
   - [illegible]

3. [illegible]

Front door

Rear door

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

8. [illegible]

Front and Rear Door Position Adjustment

[illegible]

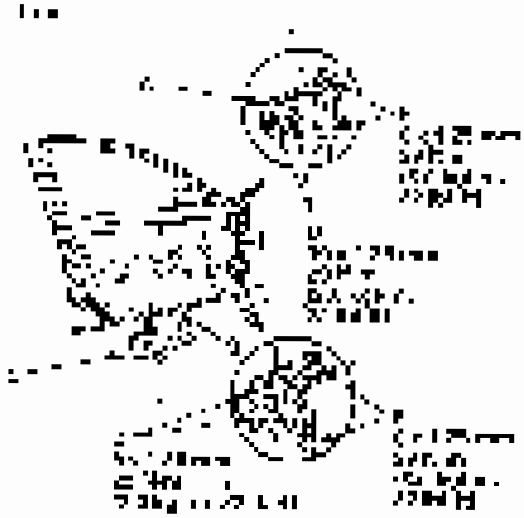
NOTE: [illegible]

1. [illegible]

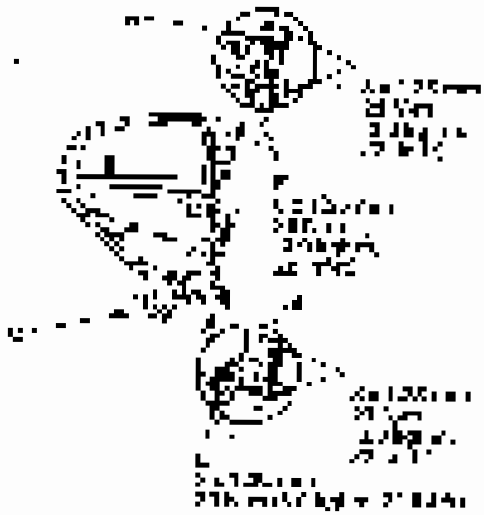
2. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

Front door



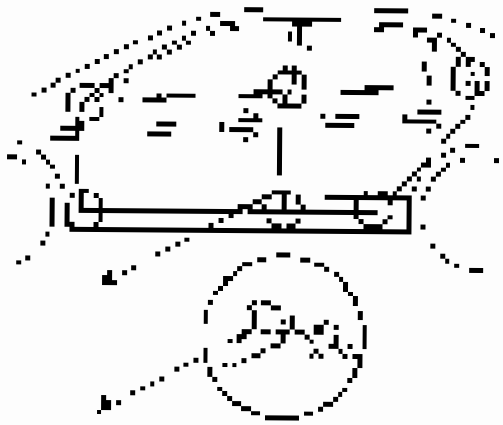
Rear door



3. [illegible]

Front and Rear Door Position Adjustment (cont'd)

4. Make sure the [illegible] engagement provides the proper [illegible] and that the door is [illegible] from the latch at the keep.



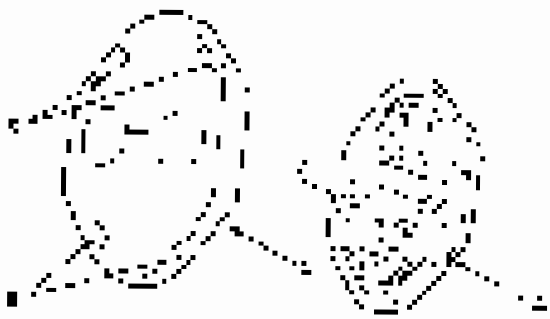
5. Apply [illegible] to the striker engagement bolts and install to keep.

6. Check [illegible] page 20-XX

Front and Rear Door Striker Adjustment

[illegible] the striker vertically to [illegible] the striker. [illegible] adjustment [illegible].

1. Take out the [illegible] Torx [illegible] and [illegible] the striker.



2. [illegible] the striker [illegible] and [illegible] the body and striker.

3. Tighten the striker [illegible].

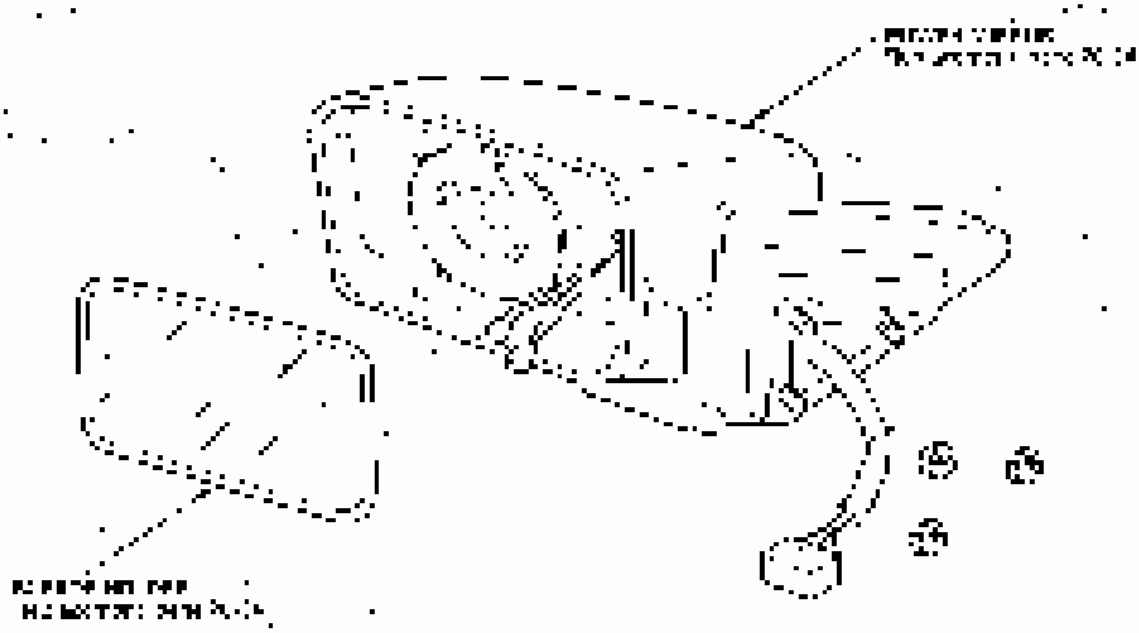
4. [illegible] the striker [illegible] the striker [illegible] the striker [illegible] the striker [illegible] the striker [illegible].

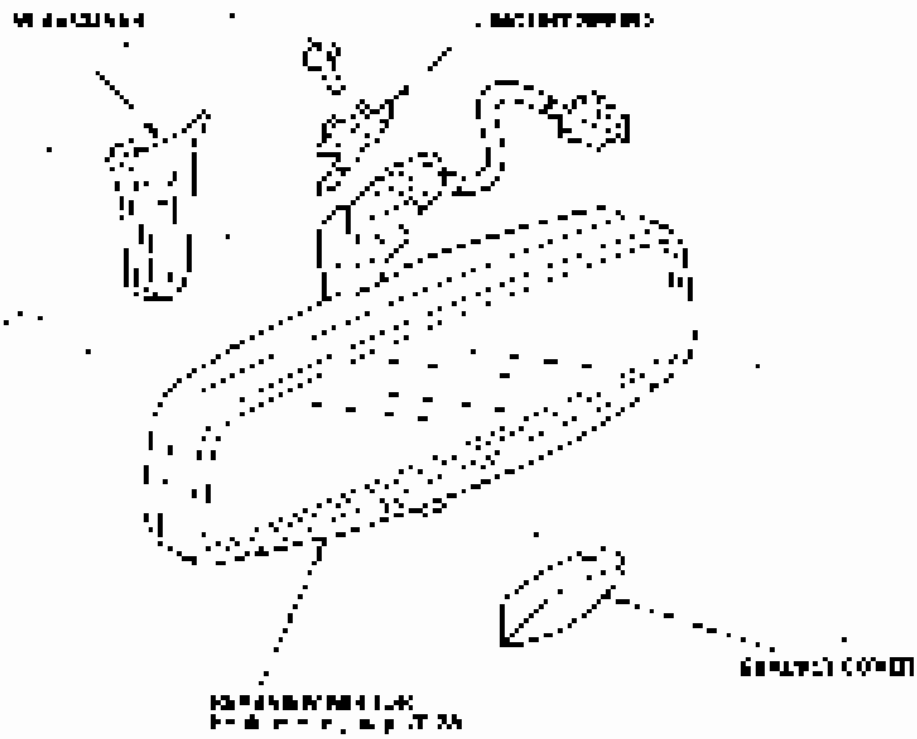
5. [illegible] the striker [illegible].

6. Tighten the striker [illegible].

7. [illegible] the striker [illegible] the striker [illegible] the striker [illegible] the striker [illegible] the striker [illegible] the striker [illegible] the striker [illegible].

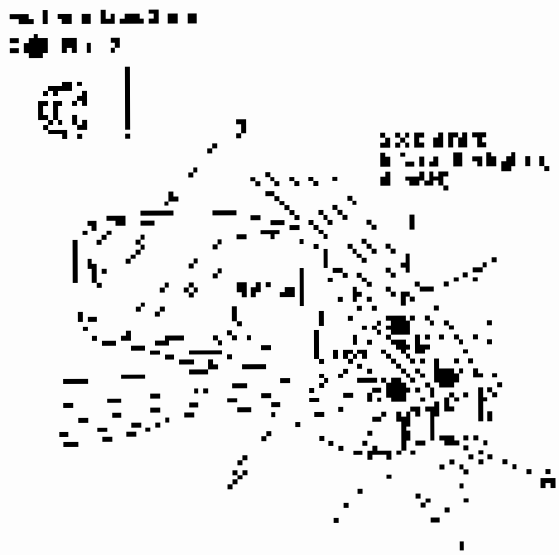
Component Location Index





Power Mirror Replacement

1. [illegible]
2. [illegible]
3. [illegible]

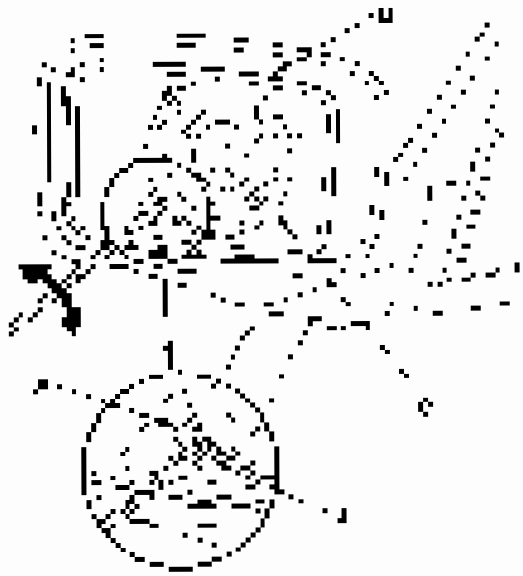


4. [illegible]

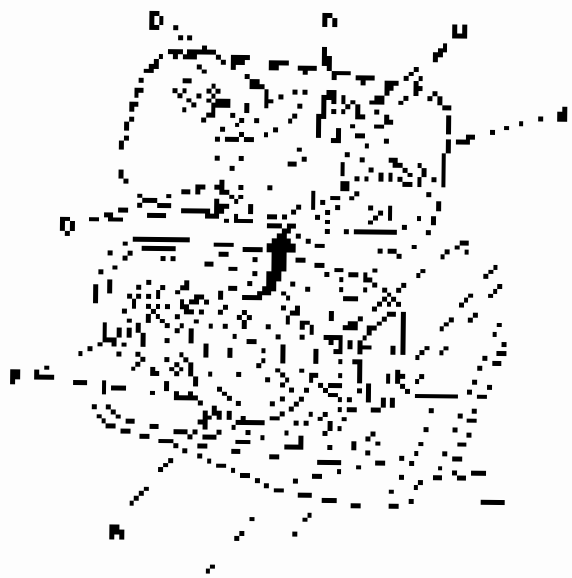
5. [illegible]

Mirror Holder Replacement

1. [illegible]
2. [illegible]



3. [illegible]
4. [illegible]



Rearview Mirror Replacement

Rearview Mirror Replacement (cont'd)

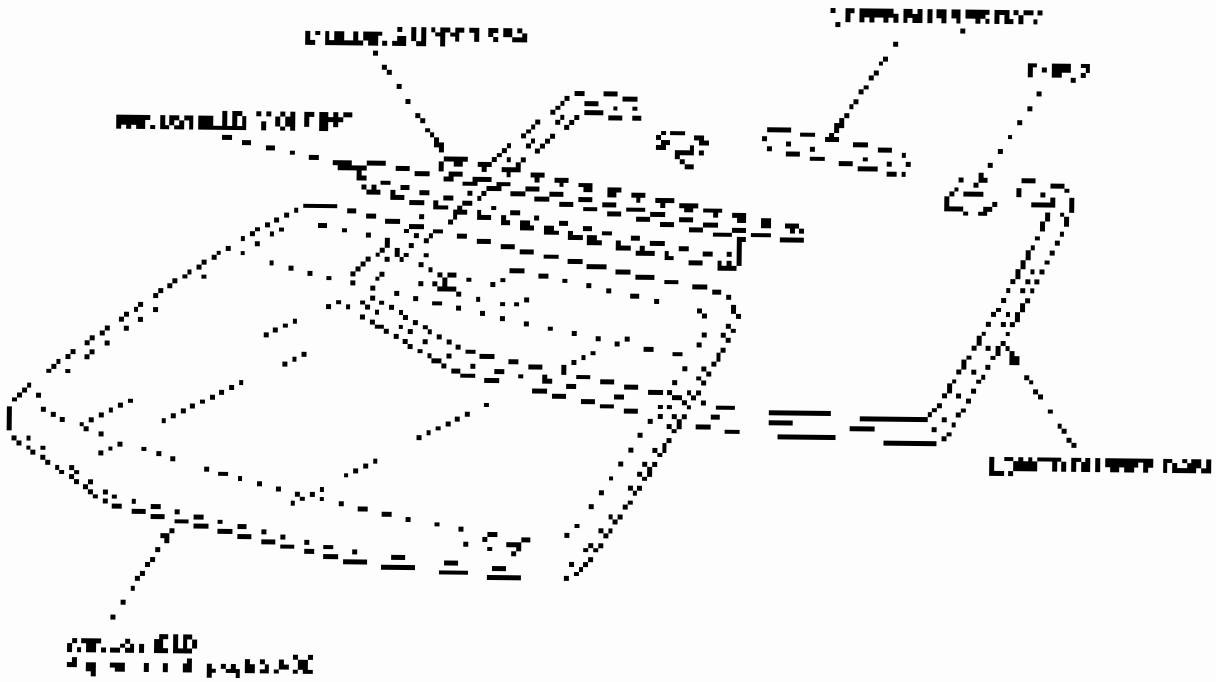
4. [illegible]

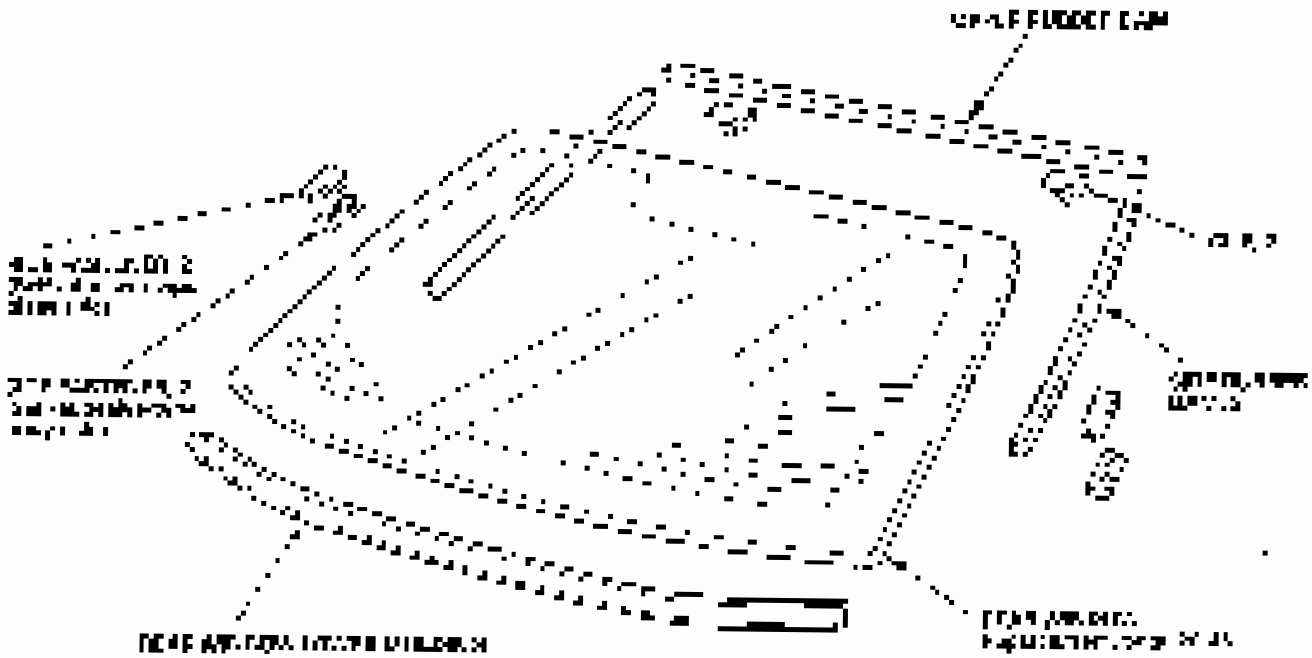
5. [illegible]

6. [illegible]

7. [illegible]

Component Location Index



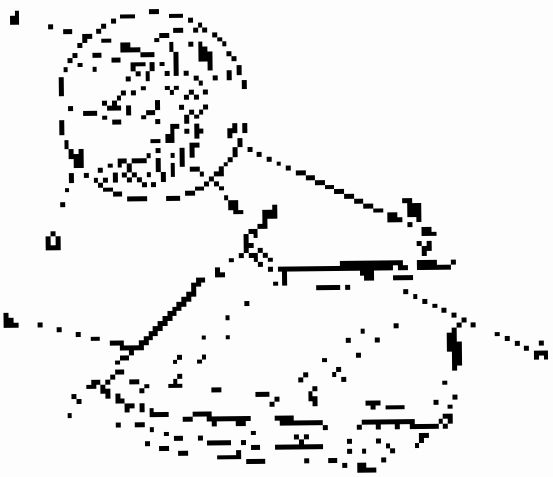


Windshield Replacement

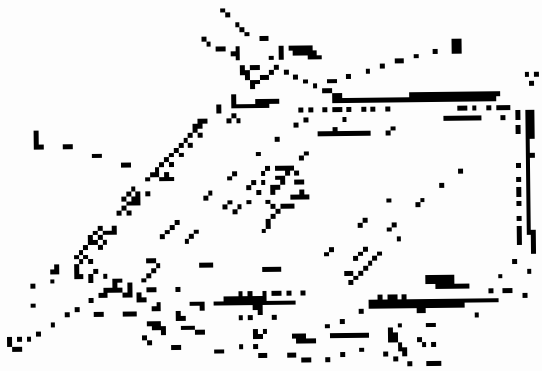
Note:

- [illegible]
- [illegible]
- [illegible]

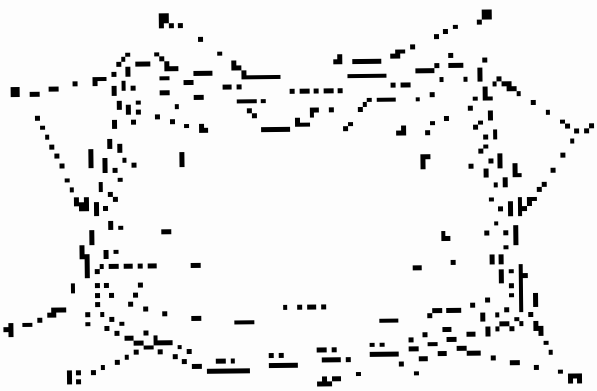
1. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
2. [illegible]



3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]



[illegible]



7. [illegible]

- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]

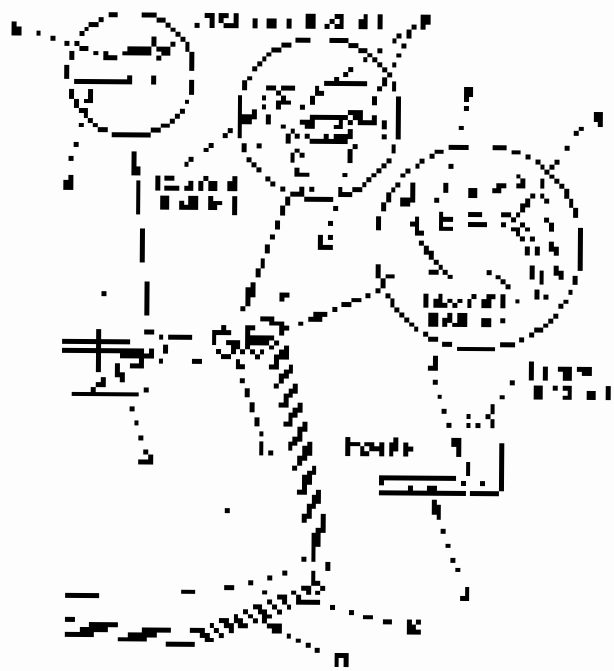
[illegible]

[illegible]

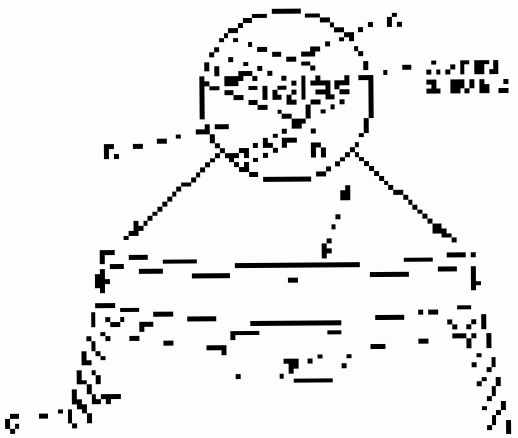
[illegible]

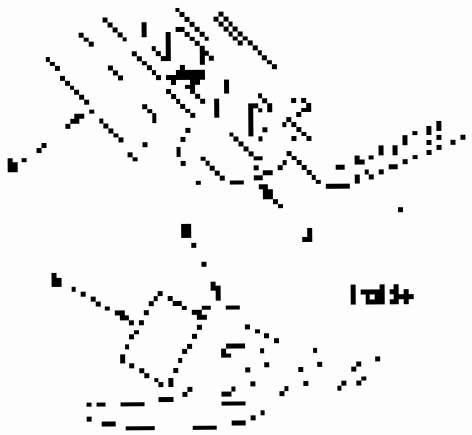
- [illegible]
- [illegible]

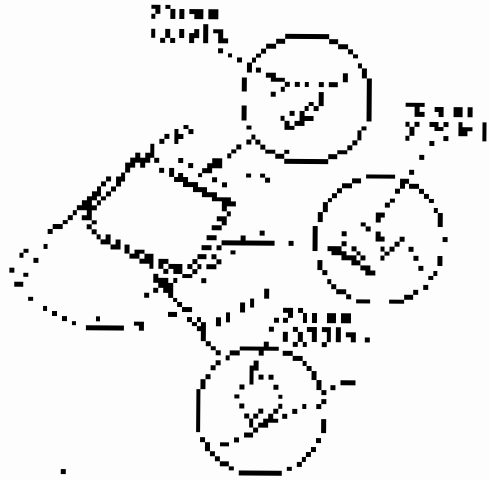
Adhesive tape A: [illegible]
Adhesive tape B: [illegible]

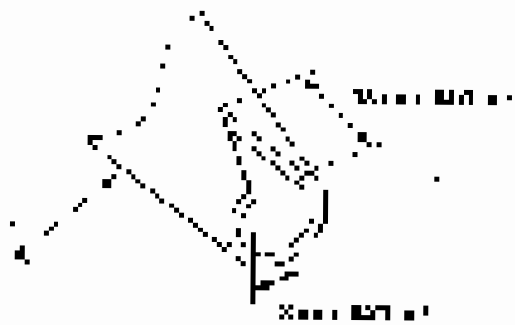


Windshield Replacement (cont'd)









Windshield Replacement (cont'd)

15. [illegible]

16. [illegible]

17. [illegible]

18. [illegible]

- [illegible]
- [illegible]

19. [illegible]

- [illegible]
- [illegible]

Rear Window Replacement

NOTE:
- [illegible]
- [illegible]
- [illegible]
- [illegible]

1. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

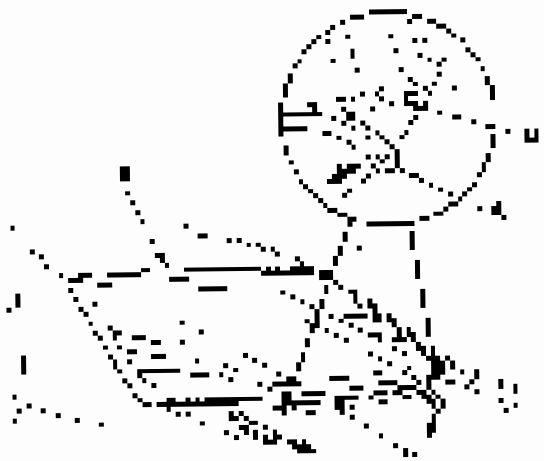
[illegible]

5. [illegible]

cont'd

Rear Window Replacement (cont'd)

1. [illegible]



2. [illegible]

Continued

4. Carefully [illegible]

5. With a [illegible]

- [illegible]
- [illegible]

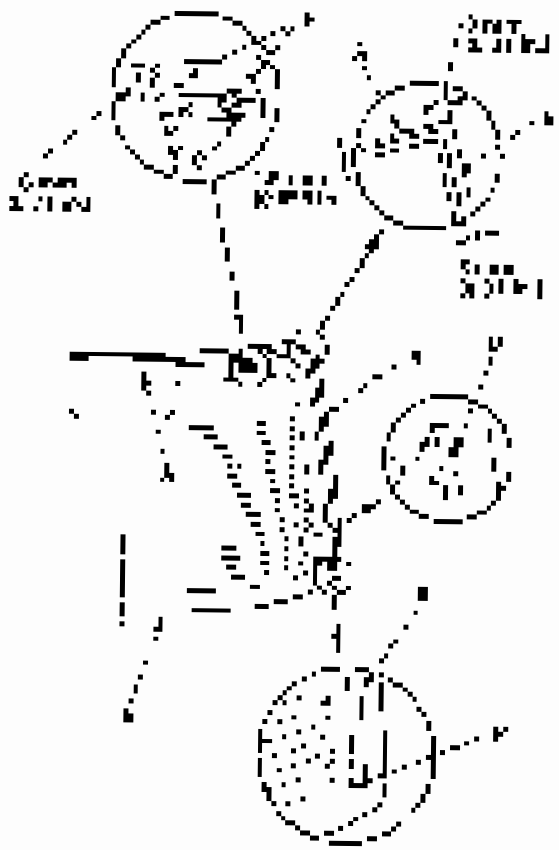
6. [illegible]

7. [illegible]

12 [illegible]

- [illegible]
- [illegible]
- [illegible]

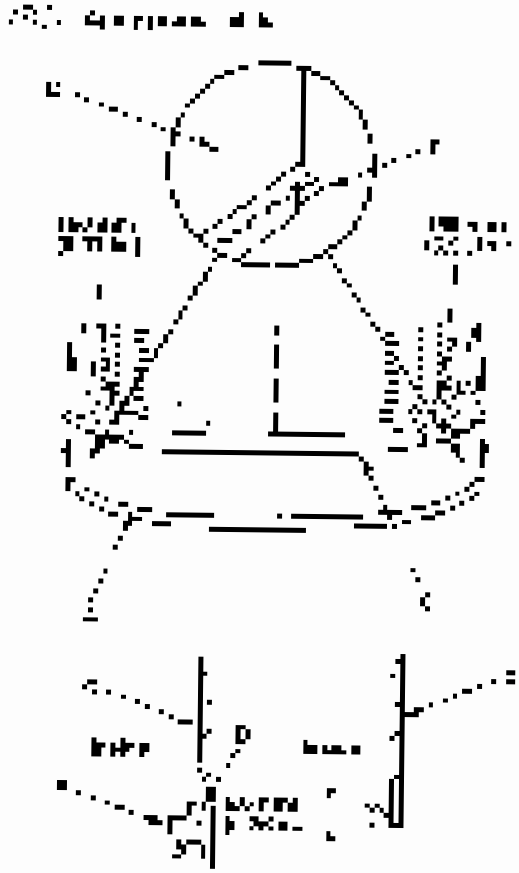
Adhesive type A: [illegible]
Adhesive type B: [illegible]
Adhesive type C: [illegible]



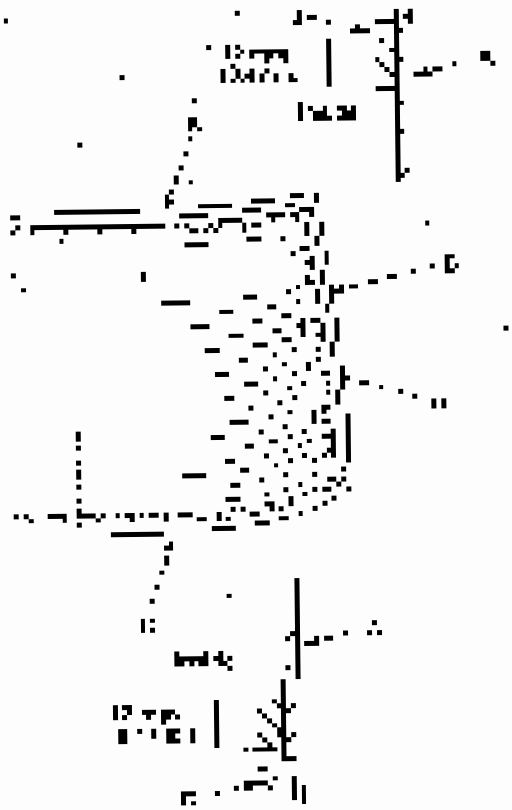
13 [illegible]

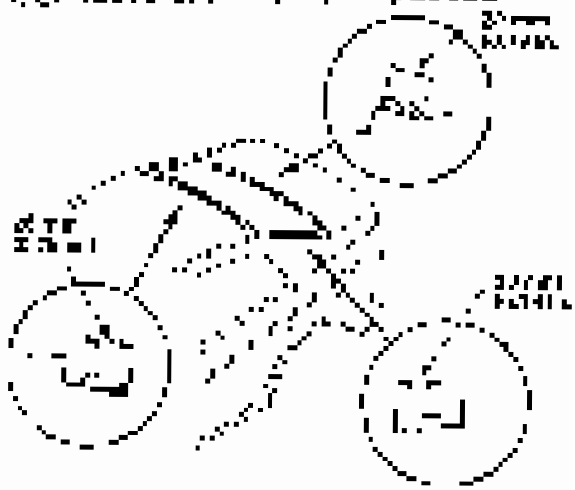
- [illegible]
- [illegible]

Adhesive type B: [illegible]



Rear Window Replacement (cont'd)





cont'd

Rear Window Replacement (cont'd)

21. [illegible]

22. [illegible]

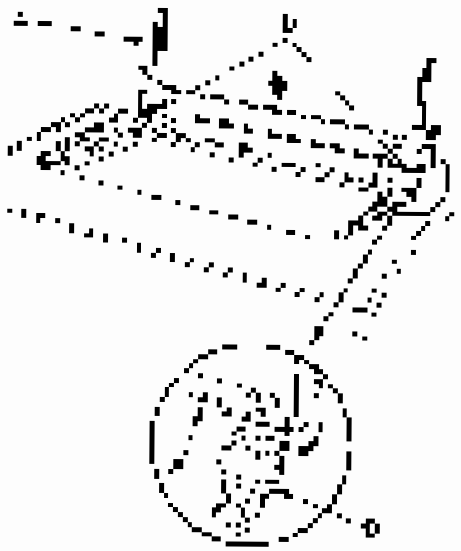
23. [illegible]

24. [illegible]

    NOTE: [illegible]
    - [illegible]
    - [illegible]

Sunshade Replacement

4. [illegible]

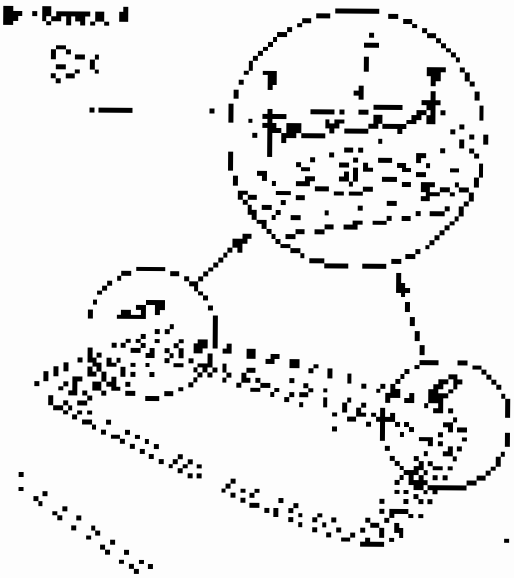


5. [illegible]

6. [illegible]

1. [illegible]

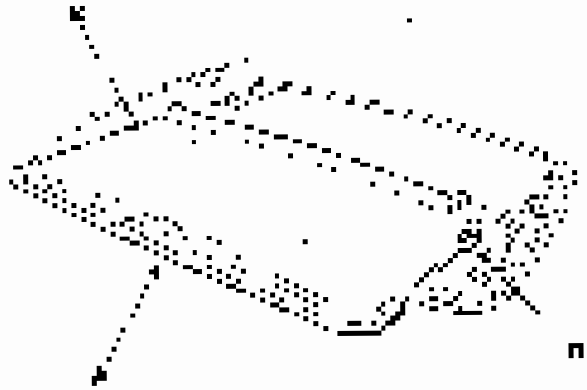
2. [illegible]



3. [illegible]

Sunshade Replacement (cont'd)

4. [illegible]



5. [illegible]

6. [illegible]

   - [illegible]
   - [illegible]

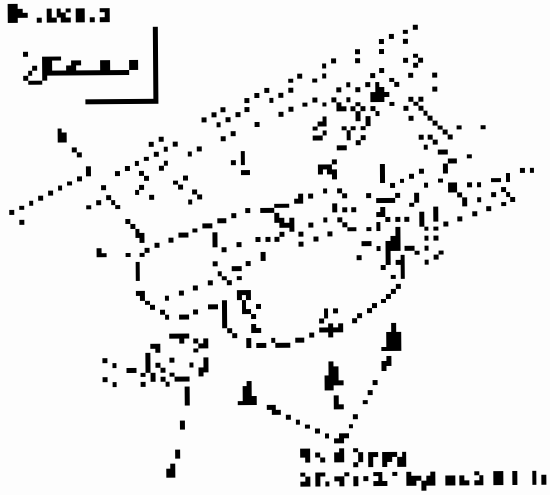
7. [illegible]

8. [illegible]

Motor Replacement

1. [illegible]

2. [illegible]



3. [illegible]

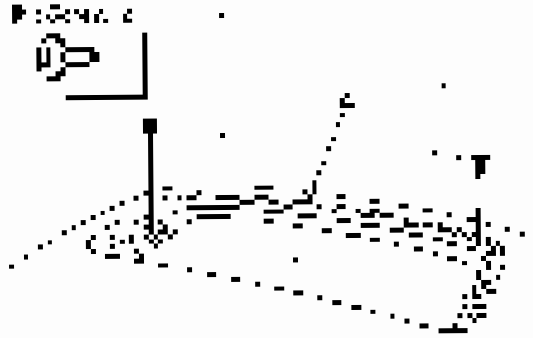
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

Glass Height Adjustment

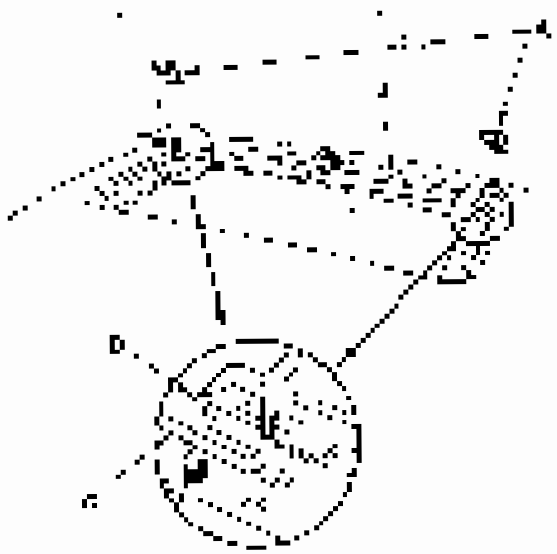
Glass Replacement

Wind Deflector Replacement

1. Close the glass roof panel.
2. Remove the wind deflector mounting bolts (A).



3. Remove the wind deflector (B) from the front of the roof panel. Then remove the wind deflector (B) from the rear of the roof panel by pulling it upward.

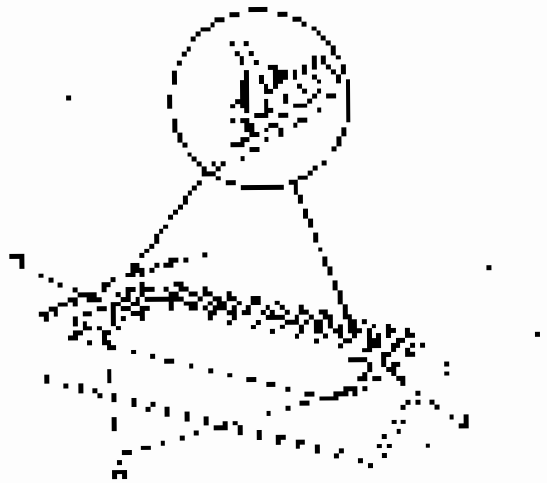


4. Install the wind deflector in the reverse order of removal.
5. After replacement, check the wind deflector for proper operation.

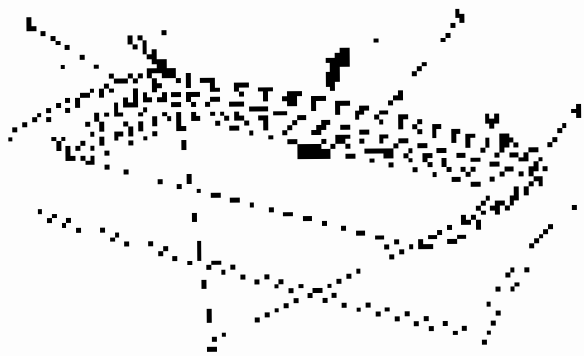
Drain Channel Replacement

Special Tools Required
Tube and Hose Set (Snap-On EAMV1000A) or equivalent

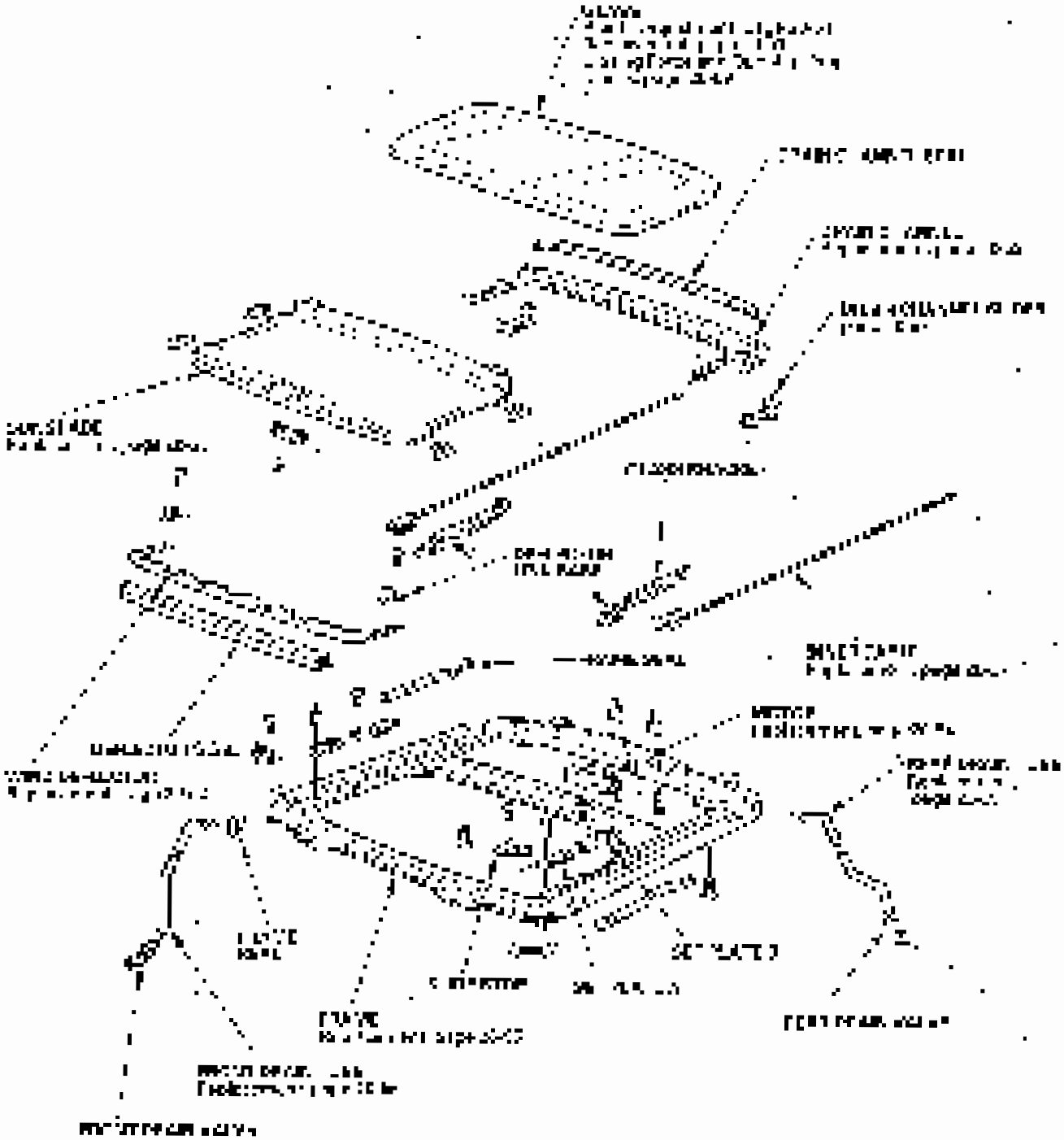
1. Remove the headliner. (See page 20-51)
2. Remove the front and rear drain channel. To remove the front drain channel, remove the clip (A) from the guide pin (B) and remove the drain channel. To remove the rear drain channel, disengage the guide pin (C) from the roof panel and remove the drain channel.



3. Turn the drain channel (D) upside down and remove the front drain channel (E) and rear drain channel (F).



Component Location Index



Moonroof

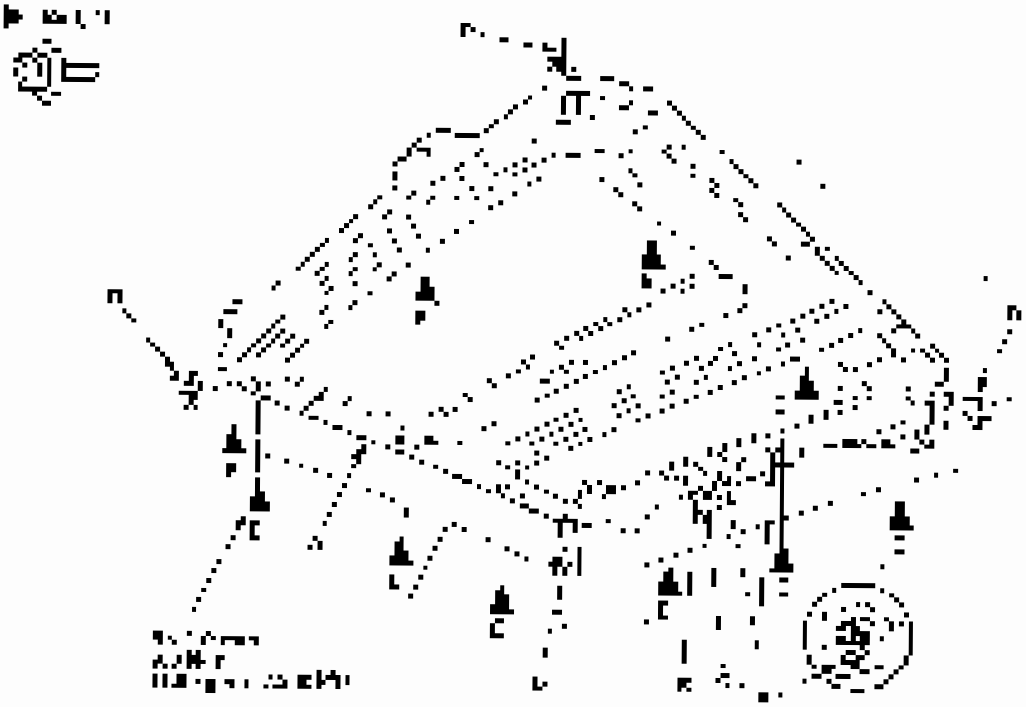
Symptom Troubleshooting Index

Symptom	Diagnostic Procedure	Remarks
[illegible]	1. [illegible] 2. [illegible] 3. [illegible] 4. [illegible]	
[illegible]	[illegible]	
[illegible]	1. [illegible] 2. [illegible] 3. [illegible]	
[illegible]	1. [illegible] 2. [illegible] 3. [illegible] 4. [illegible]	
[illegible]	1. [illegible] 2. [illegible] 3. [illegible] 4. [illegible]	
[illegible]	1. [illegible] 2. [illegible]	
[illegible]	1. [illegible]	
[illegible]	1. [illegible]	
[illegible]	1. [illegible]	

Frame and Drain Tube Replacement

1. Remove the door trim panel.
   - Front door trim panel on page 20-70.
   - Rear door trim panel on page 20-71.
   - Door inner weatherstrip on page 20-73.
2. Remove the door glass. Refer to Door glass in this group.
   1) Lower the door glass to the position where the bolts (2) can be seen through the service hole in the door inner panel.
   2) While supporting the door glass, remove the bolts (2) and then remove the door glass through the door opening. Be careful not to damage the inside and outer belt weatherstrips.

Removal sequence



Frame and Drain Tube Replacement (cont'd)

3. [illegible]

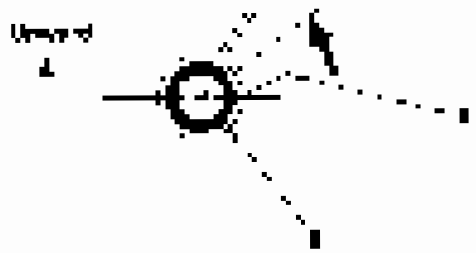
4. [illegible]

- [illegible]
- [illegible]
- [illegible]

[illegible]

5. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]



6. [illegible]

Inner Cable Replacement

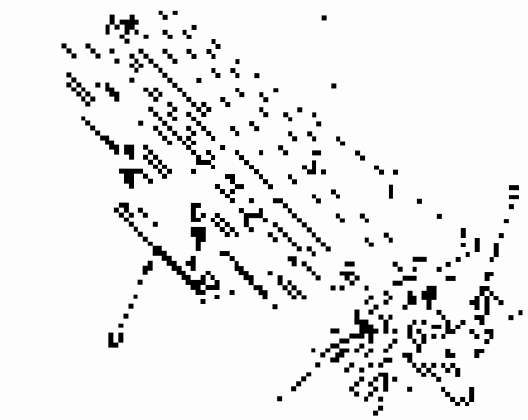
1. [illegible]

2. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

3. [illegible]

   [illegible]



4. [illegible]

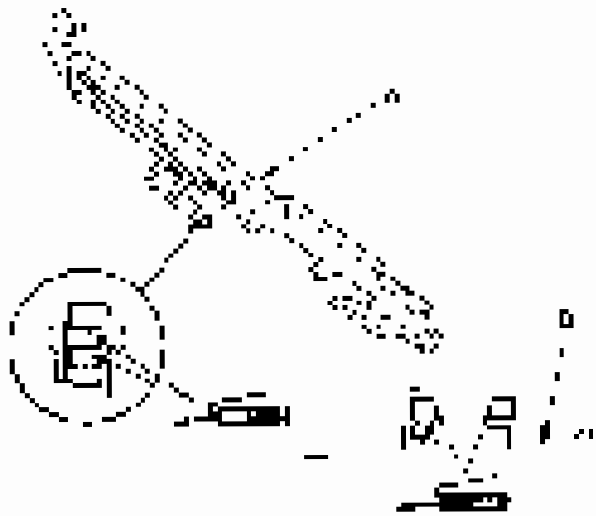
5. [illegible]

Inner Cable Replacement (cont'd)

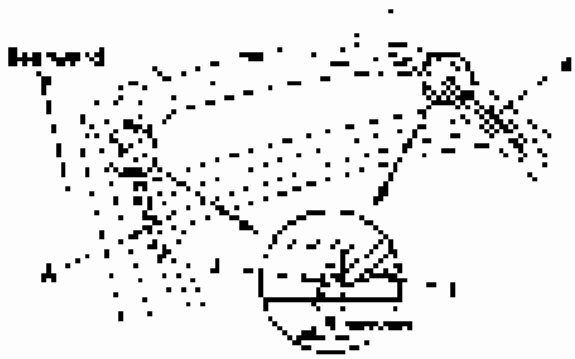
6. [illegible]

7. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]



Closing Force and Opening Drag Check

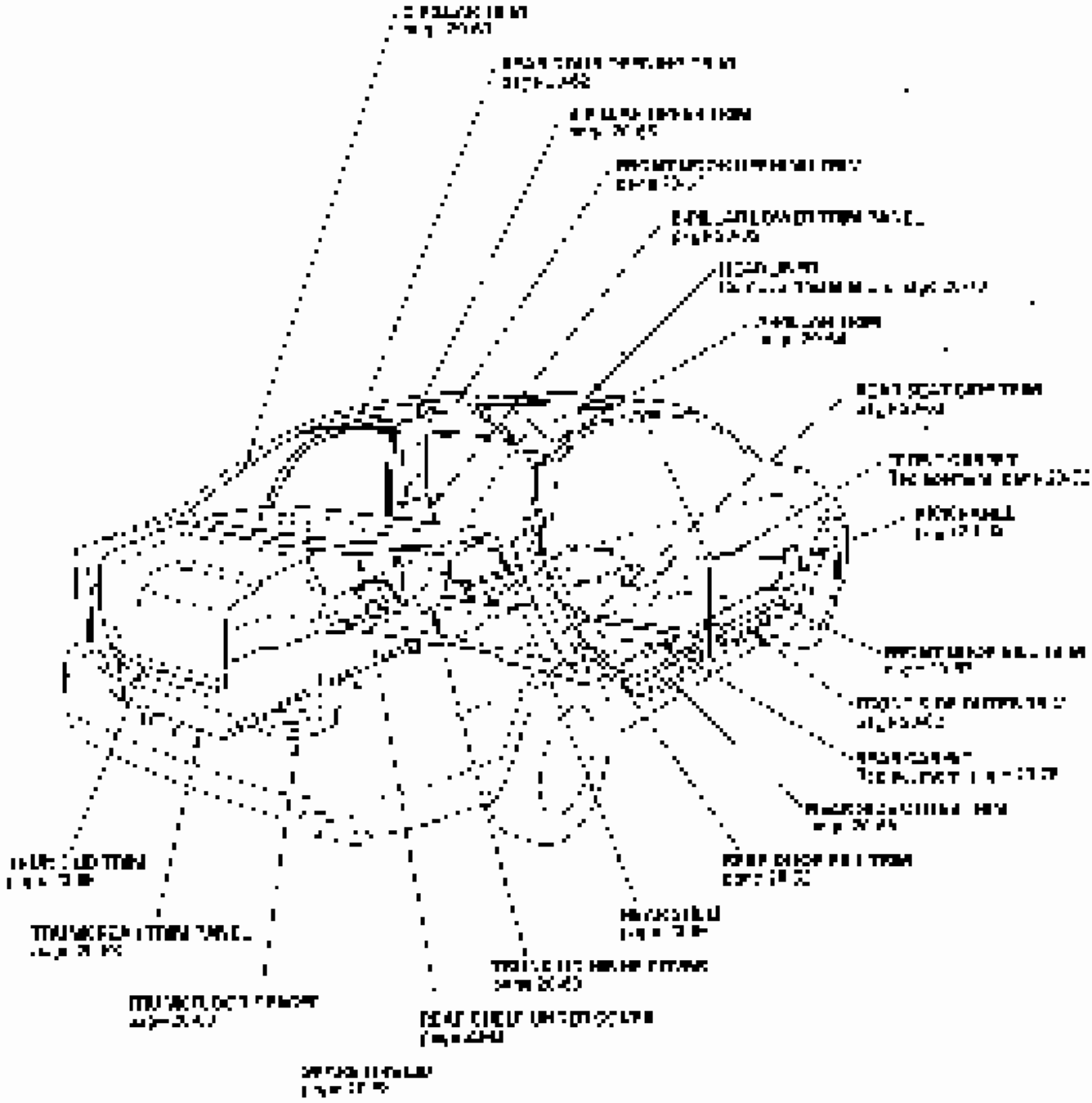


Closing Force and Opening Drag Check (cont'd)

4. [illegible]

5. [illegible]
   - [illegible]
   - For broken or damaged [illegible]
   - [illegible]
   - [illegible]
6. Do the [illegible] program and check [illegible] page 20-37 when [illegible]

Component Location Index



Trim Removal/Installation - Door Area

[illegible]

[illegible] Review the SRS components and cautions (see page [illegible]) and precautions (see page 23-10) before performing repair procedures.

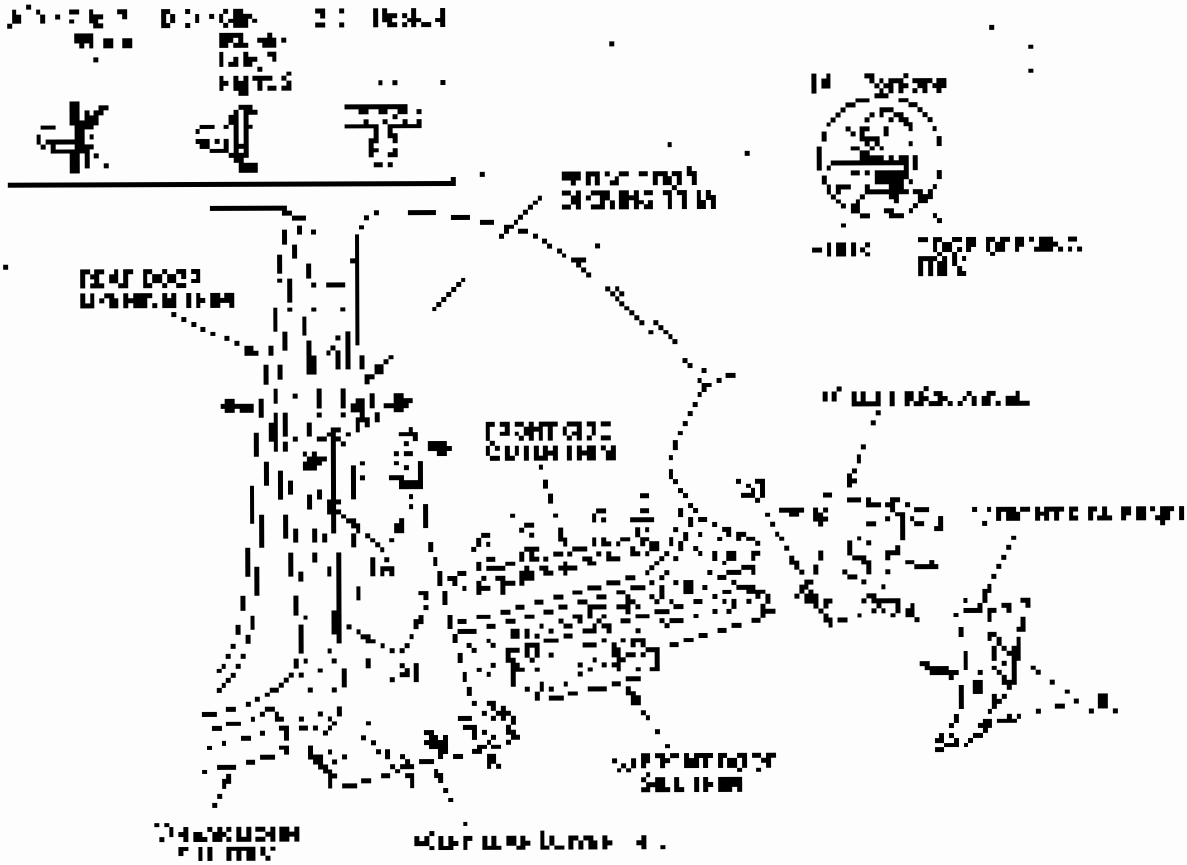
Front Door Skin Area

NOTE:
- [illegible]
- [illegible]
- [illegible]

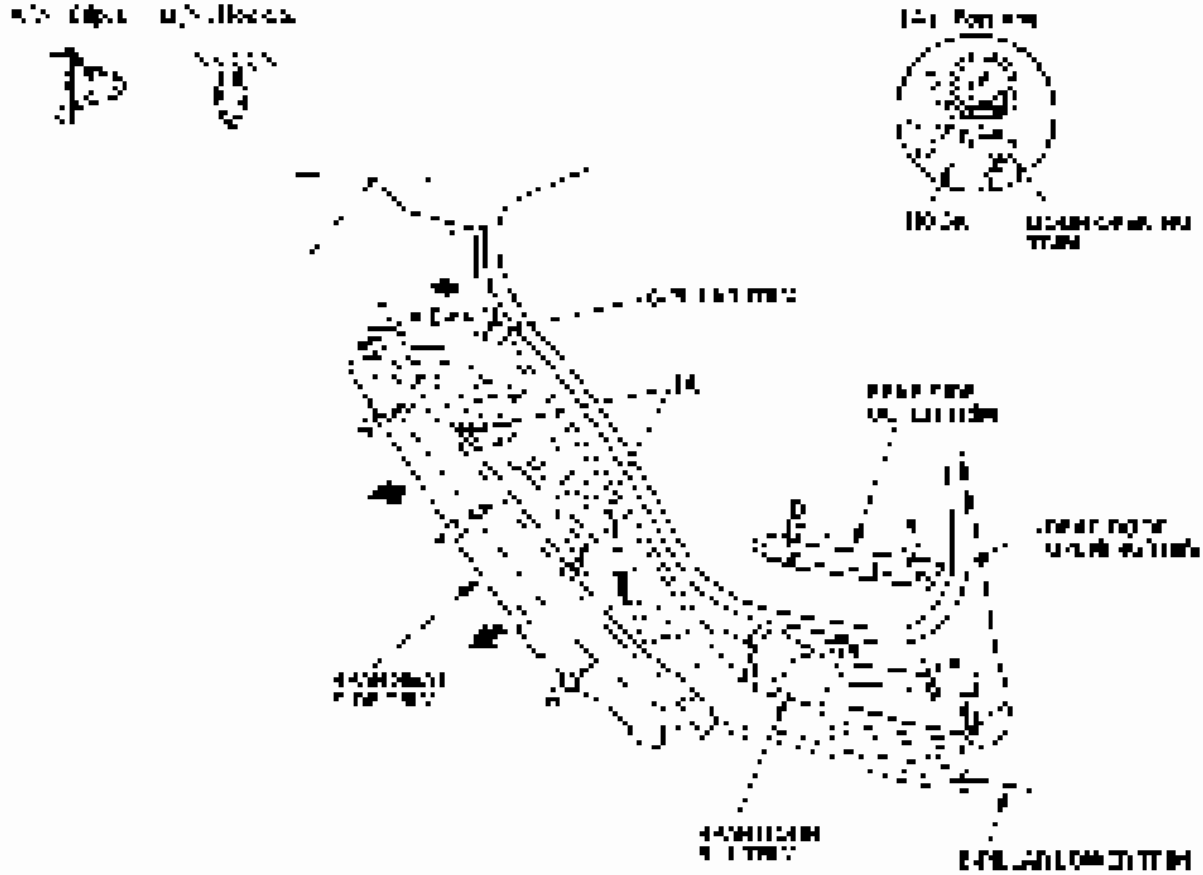
1. [illegible] (see page [illegible])
2. [illegible]
3. [illegible]

- [illegible]
- [illegible]

[illegible]



Rear Door Sill Area



Trim Removal/Installation - Door Area (cont'd)

Applies to: Area

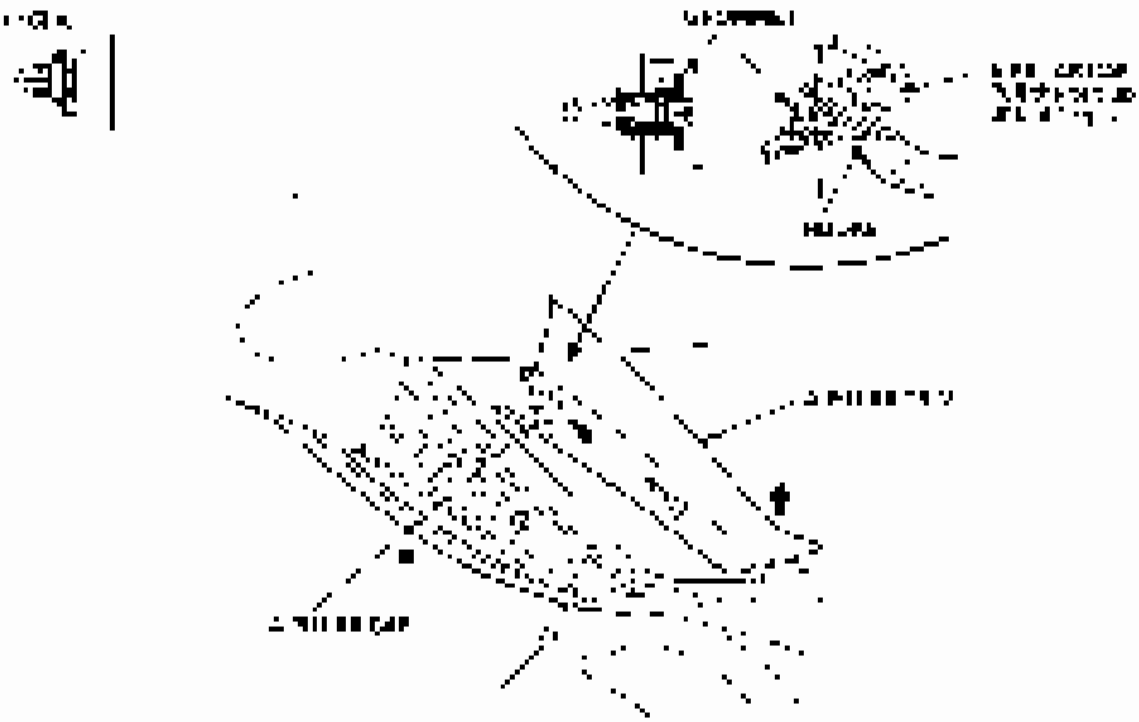
NOTE:
- Wear gloves to avoid cuts and scratches.
- Use a protective cover on the tool tip to prevent damage to the trim and painted surfaces.
- Tape or cover sharp edges to prevent injury and damage.

1. Remove the front door speaker.

2. Remove the front door [illegible]

- If the vehicle is equipped with side airbags, be sure to read the precautions and procedures in the SRS section before doing any work. Improper service could cause SRS failure, which could result in serious injury. See page 23-125 and replace with new ones if necessary.
- If the vehicle is equipped with curtain airbags, be sure to read the precautions and procedures in the SRS section before doing any work. Improper service could cause SRS failure, which could result in serious injury. See page 23-125 and replace with new ones if necessary.
- Make sure the airbag wire harness is routed correctly. See page [illegible]
- Push the clips and remove the door trim panel.

Front door:



Bucket Upper Area

NOTE
- [illegible]
- [illegible]
- [illegible]

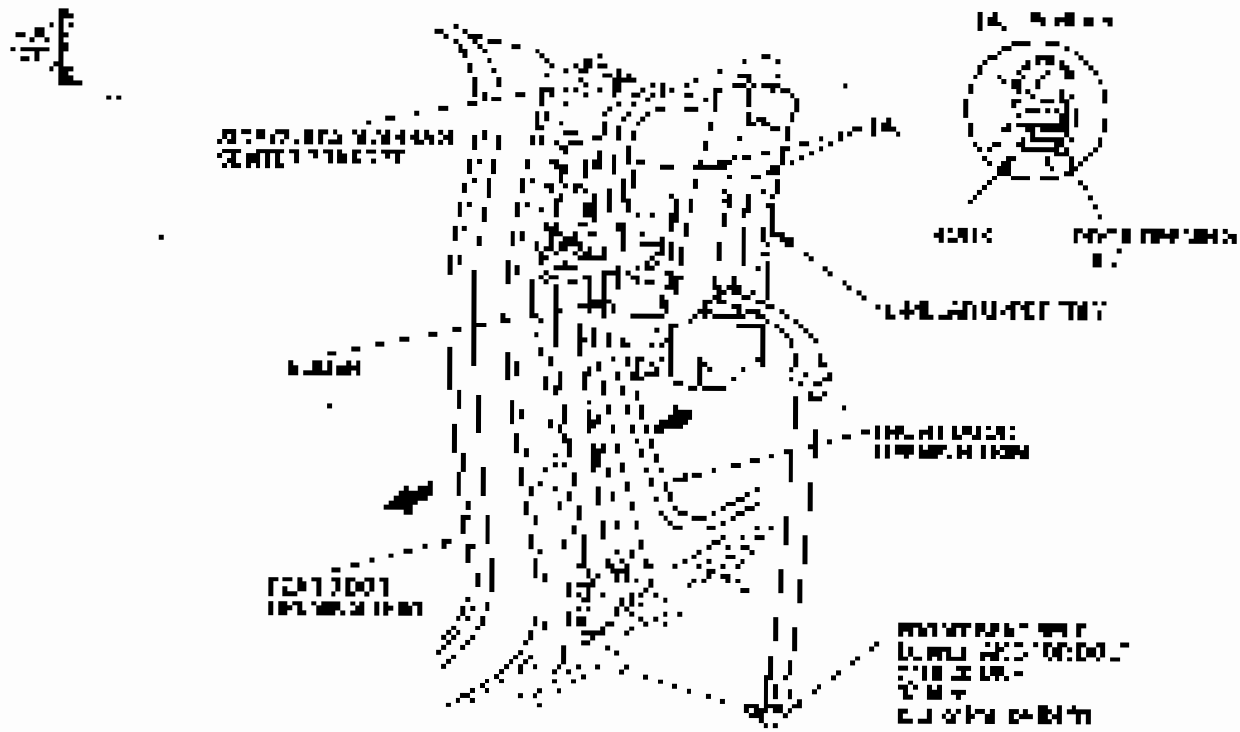
1. [illegible]

   - [illegible]
   - [illegible]

2. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

[illegible]



Trim Removal/Installation - Rear Shelf Area

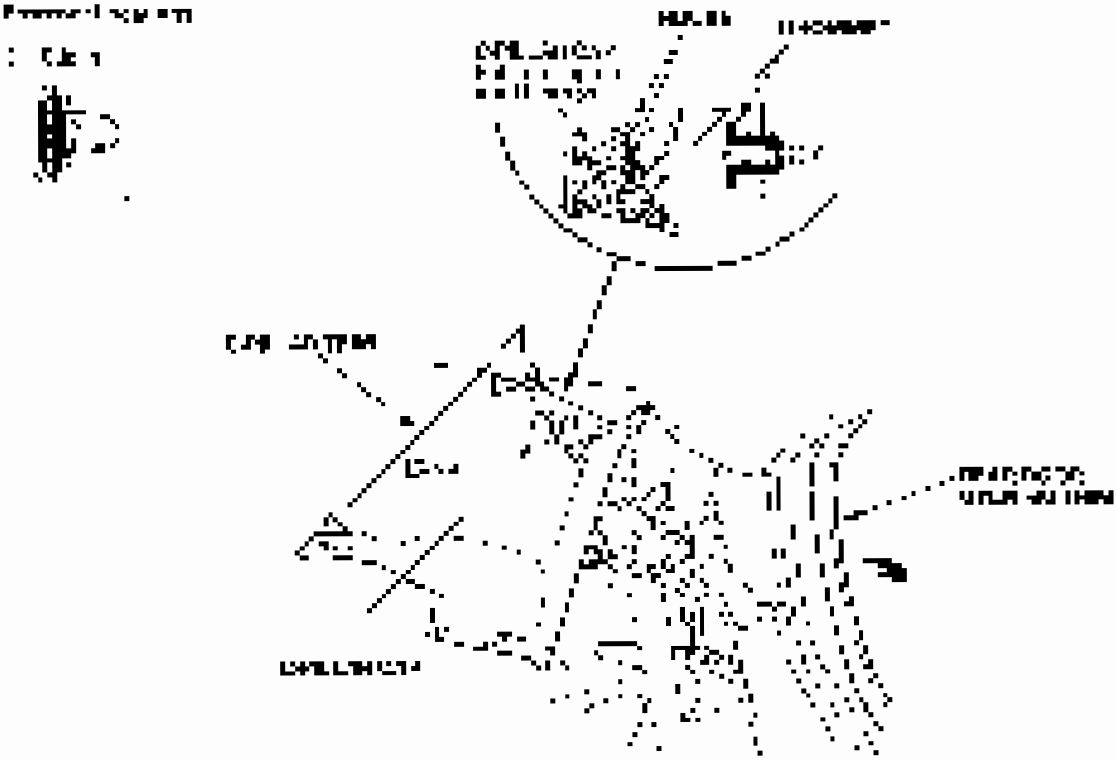
C pillar Area

NOTE:
- [illegible]
- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]



Rear Shelf Area

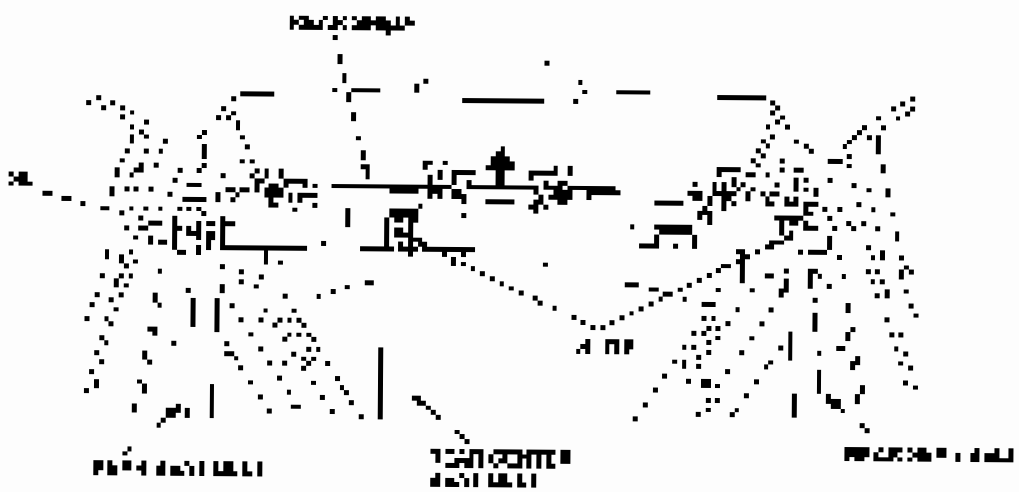
[illegible]

[illegible]

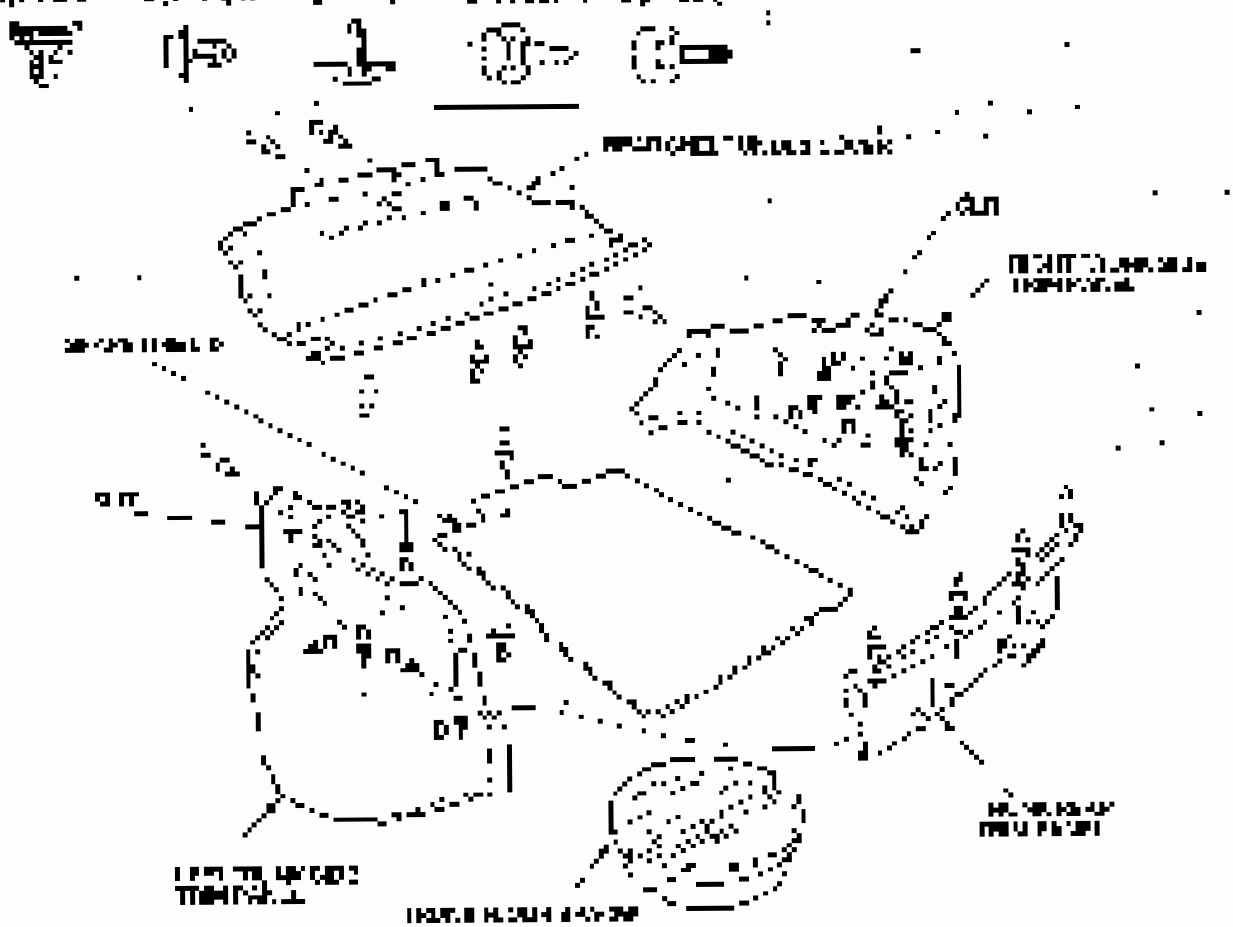
1. [illegible]

2. [illegible]

3. [illegible]



Trim Removal/Installation - Trunk Area



Trim Removal/Installation - Trunk Lid

NOTE:

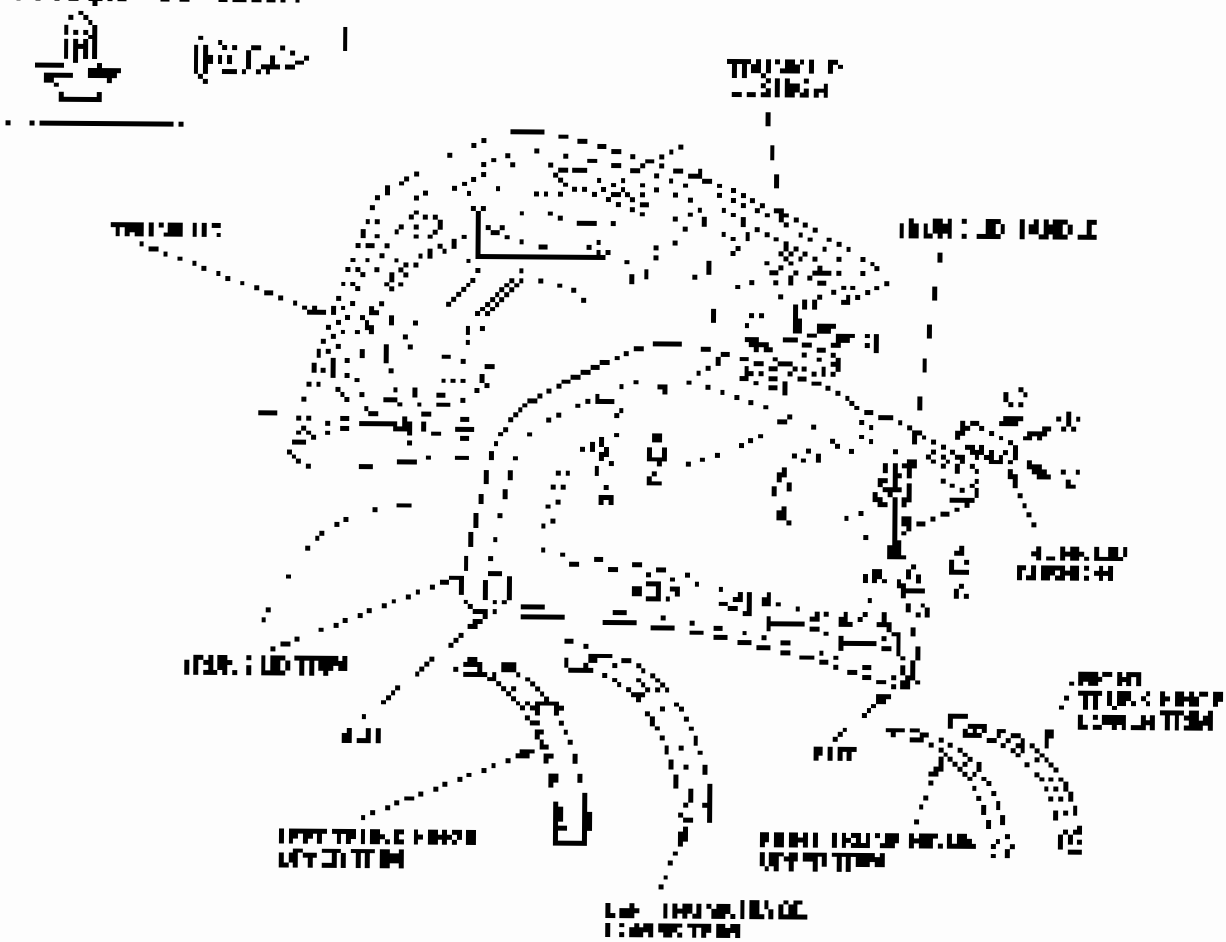
- [illegible]
- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

[illegible]



Headliner Removal/Installation

Special Tools Required
KTC[illegible]

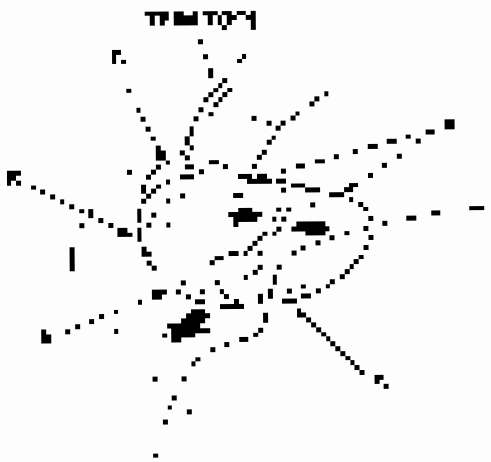
SRS components are located in this area. Review the SRS component locations (page 23- [illegible]) and the precautions and procedures (page 23- [illegible]) before performing repair or service.

Notes:
- Use the appropriate service manual for KTC [illegible], vehicle damage, [illegible] personal injury.
- Take extra care when removing the [illegible].
- Do not bend or damage the [illegible] when removing and installing [illegible].

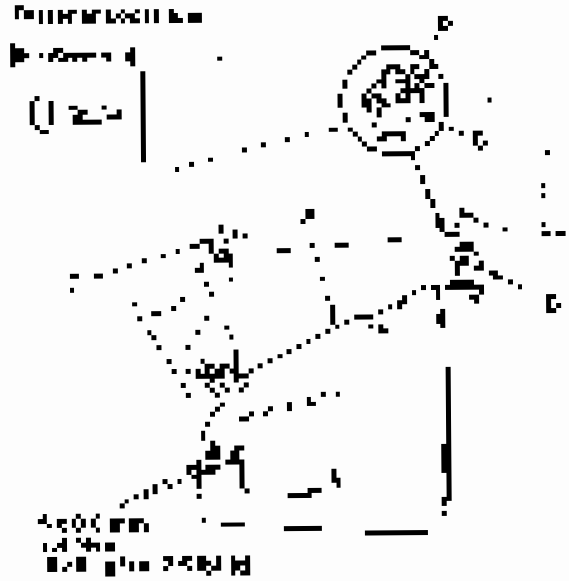
Removal Steps:

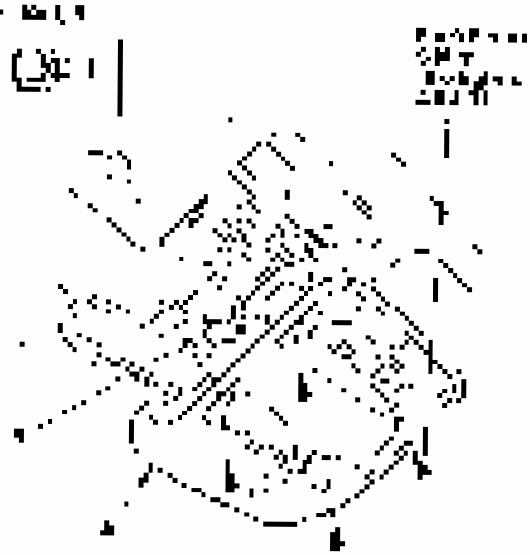
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

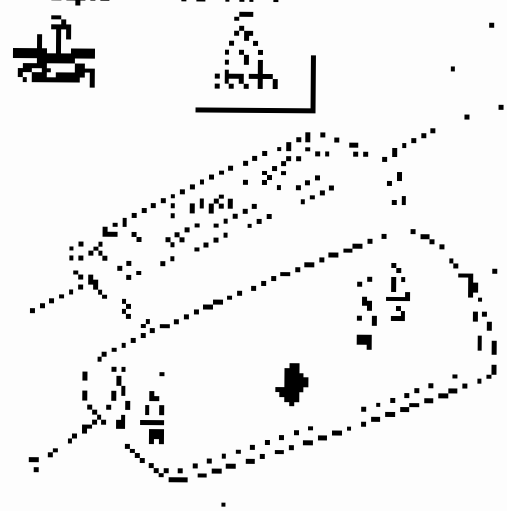
1. [illegible]



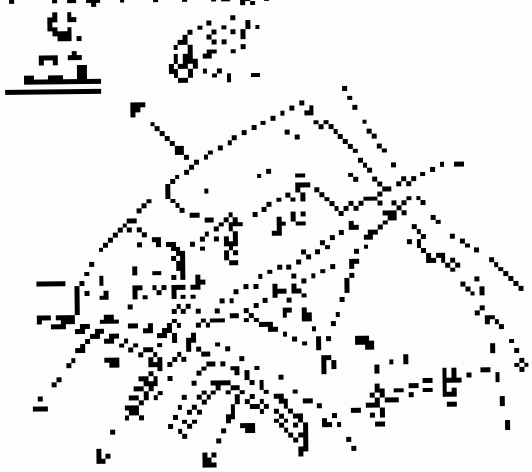
2. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]







Headliner Removal/Installation (cont'd)



Front Carpet Replacement

Special Tools Required
KTC or equivalent

NOTE:
- Wear protective gloves and eye protection.
- Use the appropriate tool from the KTC or equivalent when necessary to remove plastic clips.
- Take care not to damage the surface of the interior parts.
- Be careful not to scratch the surface of the interior parts with metal parts.

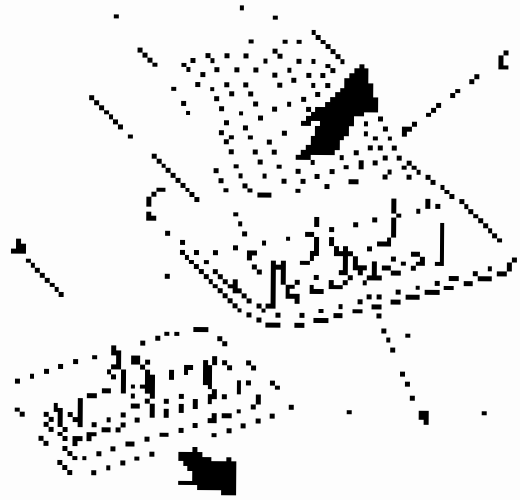
1. Remove the front floor carpet.
   - Remove the front seat (see page 20-100).
   - Remove the front seat belt assembly (see page 20-121).
   - Remove the front door scuff plate (see page 20-124).
   - Remove the front pillar garnish (see page 20-124).
   - Remove the center pillar garnish (see page 20-124).
   - Remove the rear pillar garnish (see page 20-125).
   - Remove the rear seat belt assembly (see page 20-123).
   - Remove the rear seat (see page 20-100).
   - Remove the rear pillar garnish (see page 20-125).
   - Remove the rear side trim panel assembly (see page 20-125).
   - Remove the front floor console assembly (see page 20-122).

2. Disconnect the negative (-) cable from the battery, and wait at least 90 seconds before beginning work.

3. Remove the front floor carpet.

   - Remove the rear floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the rear floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).
   - Remove the front floor carpet (see page 20-126).

A. Using the special tool, remove the clip.



B. Remove the front floor carpet.

NOTE:

Front Carpet Replacement (cont'd)

Rear Carpet Replacement

- Trunk mat
- Trunk side trim panel
- Rear seat belt
- Rear seat cushion
- Rear seat back
- Rear side trim panel
- Rear parcel shelf
- Rear speaker
- Rear window defogger connector
- Rear window defogger relay
- Rear window defogger grid
- Rear wiper motor
- Rear wiper arm
- Rear wiper blade
- Rear window glass
- Rear window molding
- Rear bumper
- Rear combination light
- Rear license plate light
- Rear license plate
- Rear spoiler
- Rear carpet

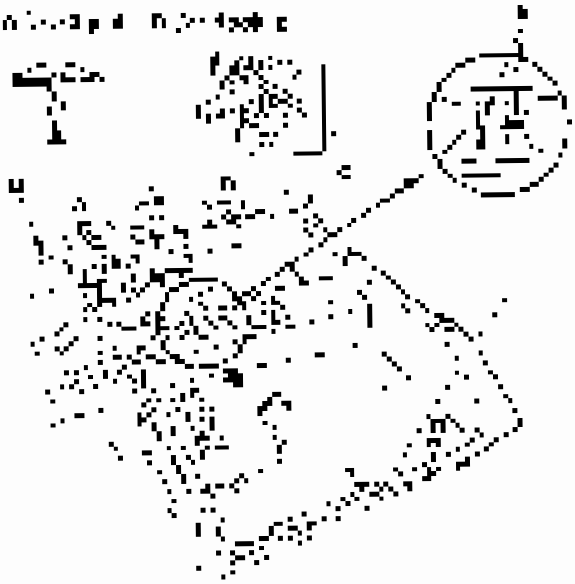
1. Remove the rear seat cushion and rear seat back.
2. Remove the rear side trim panel.
3. Remove the rear parcel shelf.
4. Remove the rear seat belt.
5. Remove the trunk side trim panel.
6. Remove the trunk mat.
7. Remove the rear carpet.

- Be careful not to damage the body.
- Be careful not to damage the wiring harness.
- Do not remove the rear carpet with the fuel tank filler neck and the rear bumper installed.

1. Install the rear carpet.
2. Install the trunk mat.
3. Install the trunk side trim panel.
4. Install the rear seat belt.
5. Install the rear parcel shelf.
6. Install the rear side trim panel.
7. Install the rear seat back.
8. Install the rear seat cushion.

- Be careful not to damage the body.
- Be careful not to damage the wiring harness.
- Do not remove the rear carpet with the fuel tank filler neck and the rear bumper installed.

Rear Bumper Replacement (cont'd)



Center Console Rear Section Removal/Installation

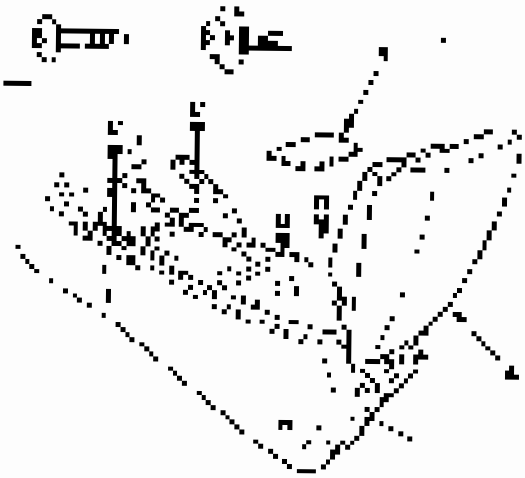
Special tool(s) required
[illegible] SOJAT2014

NOTE:
- Use fender cover to avoid damaging the vehicle when working to avoid damaging painted surfaces.
- Take care not to scratch the [illegible] when removing and installing parts.

1. SET [illegible] to LOCK position. Disconnect the negative cable from the battery, then wait at least 3 minutes.

2. Remove the [illegible] using a flat-tip screwdriver wrapped with protective tape.

3. Open the [illegible] and remove the [illegible] screws and [illegible].

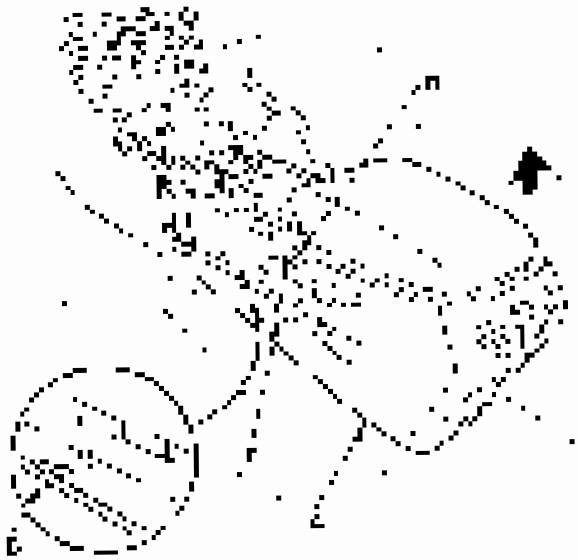


4. Slide the center console rearward to release the [illegible] and remove it.

Install

Center Console Rear Section Removal/Installation (cont'd)

- [illegible]



6. [illegible]

Center Console Panel Removal/ Installation

Special Tools Required
[illegible]

NOTE
- [illegible]
- [illegible]

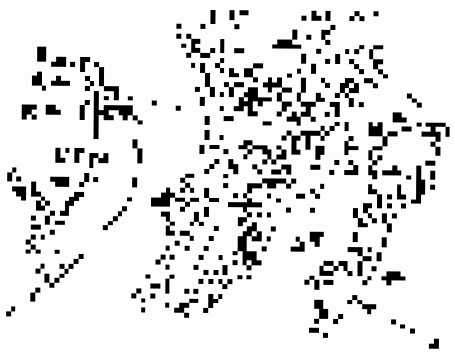
1. [illegible]

2. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

3. [illegible]

4. [illegible]



- [illegible]
- [illegible]
- [illegible]

Center Console Rear Cover Replacement

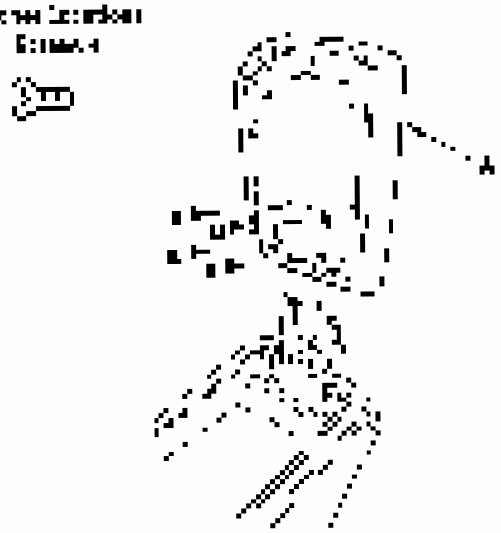
Special Tools Required
<illegible>

NOTE:
- Take care not to scratch the vehicle.
- Use a suitable protective cloth to protect the vehicle from damage.

1. Remove the <illegible> (page <illegible>)

2. <illegible>

Passenger Side
Rear Direction



3. <illegible>

Passenger Side

4. <illegible>

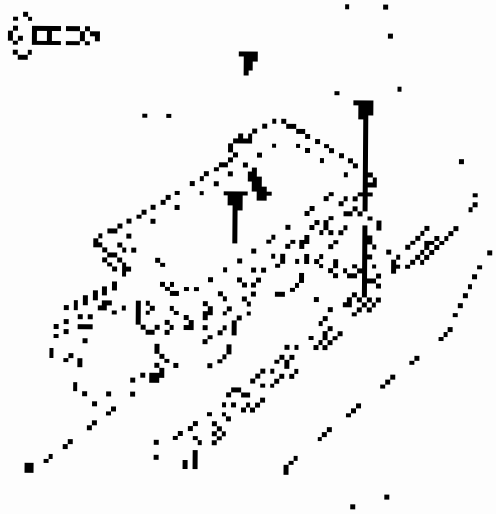
5. <illegible>

6. <illegible>

7. <illegible>

- Replace any damaged clips.
- Make sure the cover is properly installed.

Center Console Beverage Holder Replacement



Center Console Hinge Replacement

Instrument Panel Removal/ Installation

Special Tools Required
KTC [illegible]

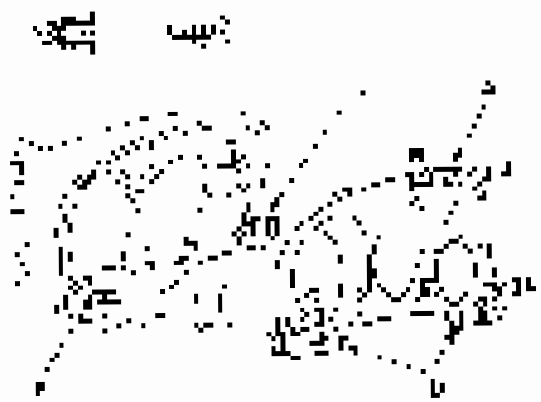
Note:
- [illegible]
- Use [illegible] to avoid damage when prying [illegible]

1. [illegible]

2. [illegible]

   1. Disconnect the negative (-) battery cable and wait for at least 90 seconds before beginning work.
   2. Remove the steering wheel pad. (See Steering Wheel Pad Removal/Installation in Steering.)
   3. Disconnect the connectors from the [illegible] control switch. (See Combination Switch Removal/Installation in Steering.)

   Instrument panel area
   A [illegible] B [illegible]



3. Install the panel in the reverse order of removal. If equipped with [illegible] be sure to [illegible] to avoid damage after prying [illegible]

Driver's Dashboard Lower Cover Removal/Installation

Special Tools Required
KTC [illegible]

Note:
- [illegible]
- Use the appropriate tool from [illegible] to avoid damage after prying [illegible]

1. Adjust the seat [illegible]

2. Disconnect the negative (-) battery cable and wait for at least 90 seconds before beginning work. (See Precaution in Supplemental Restraint System (SRS) [illegible])

   Passenger's side area
   A [illegible] B [illegible]

3. Remove the VSA OFF switch connector (if equipped) from the switch. (See Vehicle Stability Assist (VSA) System [illegible])

4. Remove the screws [illegible] and remove the lower cover by pulling toward you. Be careful not to damage the [illegible].

Driver's Dashboard Under Cover Removal/Installation

NOTE: The illustration is viewed from the driver's seat.

1. Remove the driver's dashboard under cover (2).
   a) Carefully pull out the cover in the direction of the arrow.
   b) Pull the cover assembly in the direction of the arrow to remove it from the holders (2).

Required Tool(s):

- Hand tool

2. Install in the reverse order of removal.

Upper Panel Removal/Installation

Special Tools Required:
Body repair plate 2.3/2.5/3.0/3.5 DC

NOTE: Before you remove the upper panel, remove the windshield and rear windshield.

1. Position a protective cloth (1) to the upper panel (2).

2. Using a hacksaw blade (1), cut the upper panel (2) at the welded portion (3) in the direction of the arrow. Be careful not to damage the roof panel (4) and the inner panel (5) when you cut the upper panel.

Required Tool(s):

- Hacksaw blade

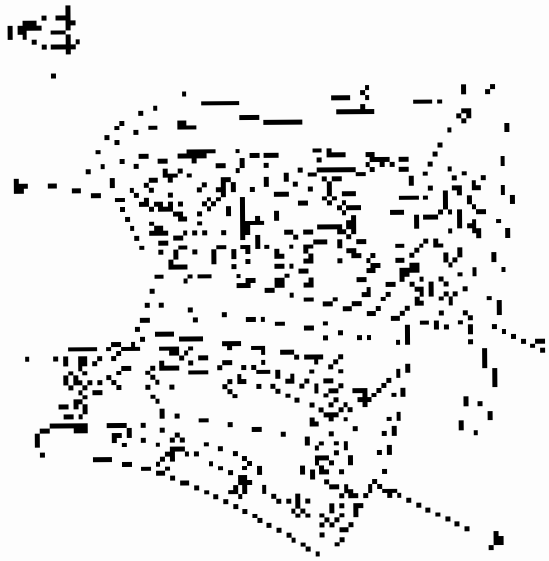
3. Remove the upper panel (1) from the roof panel (2) and the inner panel (3) using a chisel (4).

Glove Box Housing Removal/Installation

NOTE: Take care not to damage the surface of the instrument panel.

1. To prevent the airbag system from deploying unexpectedly during service work, disconnect the negative cable from the battery, then wait at least 3 minutes before beginning work. (See appropriate page.)

Airbag System
▽ Ref. to 20



3. Replace the removed parts in the reverse order of removal.

4. After installation, check that the airbag system warning light operates correctly.

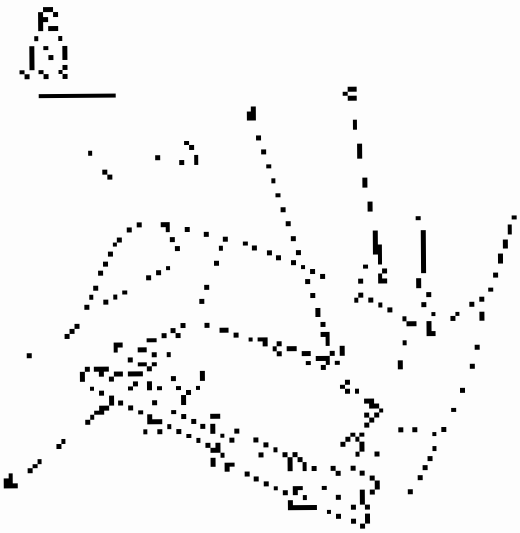
Passenger's Dashboard Under Cover Removal/Installation

NOTE: Take care not to damage the surface of the instrument panel.

1. Remove the passenger's dashboard lower cover. (See page 20-84.)

- Glove box housing
- Instrument panel lower cover (See page 20-84.)

Passenger's Dashboard Lower Cover
▽ Ref. to 20



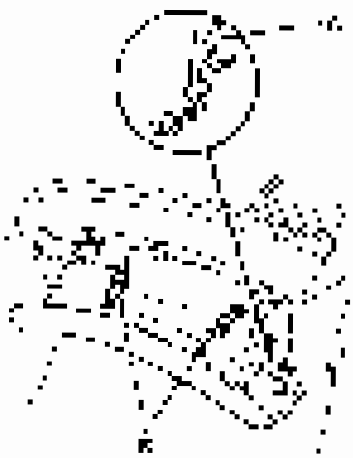
2. Install the removed parts in the reverse order of removal.

Glove Box Removal/Installation

SRS component locations (see page 24-[illegible]).
SRS component locations (see page 24-[illegible]).
precautions and procedures (see page 24-[illegible]).
before beginning repair procedures.

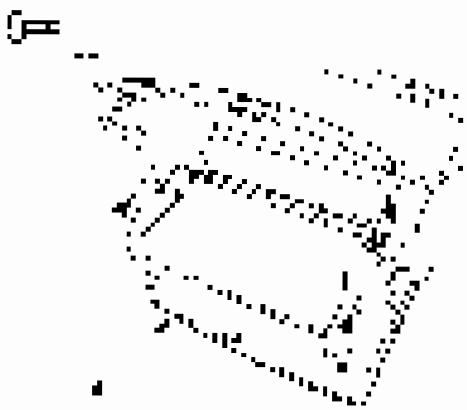
NOTE: Take care not to scratch the passenger's side
instrument panel.

1. Open the front passenger's side door and remove the
kick panel trim cover (see page 20-[illegible]).



2. Remove the screws and the glove box from the
instrument panel (see page 20-[illegible]).

Tightening torque:
■ Screws



3. Install the glove box in the reverse order of
removal.

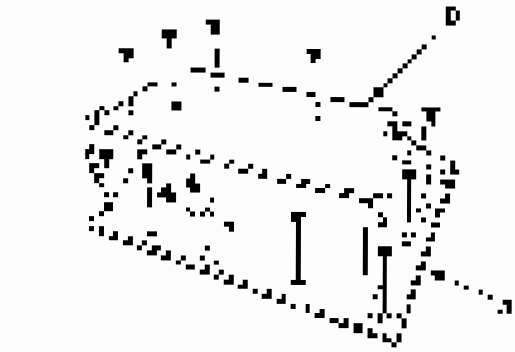
Glove Box Lock Cylinder Replacement

NOTE: Take care not to scratch the glove box.

1. [illegible] (see page 20-[illegible]).

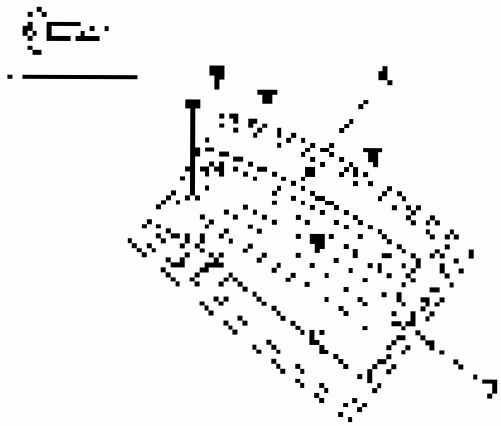
2. Remove the glove box lock cylinder retaining clip with
the [illegible] (see page 20-[illegible]).

Tightening torque:
■ Screws



3. Remove the glove box lock cylinder from the glove box
(see page 20-[illegible]).

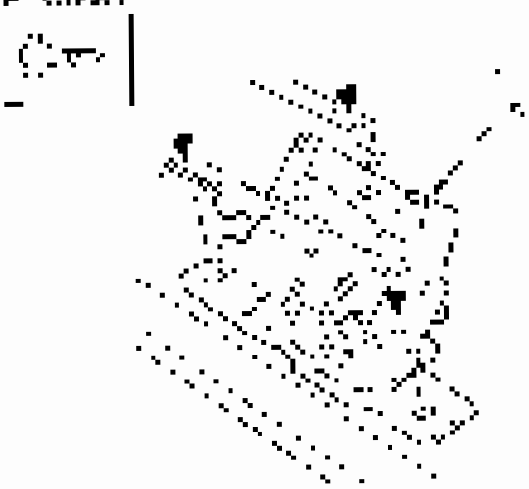
Tightening torque:
■ [illegible]



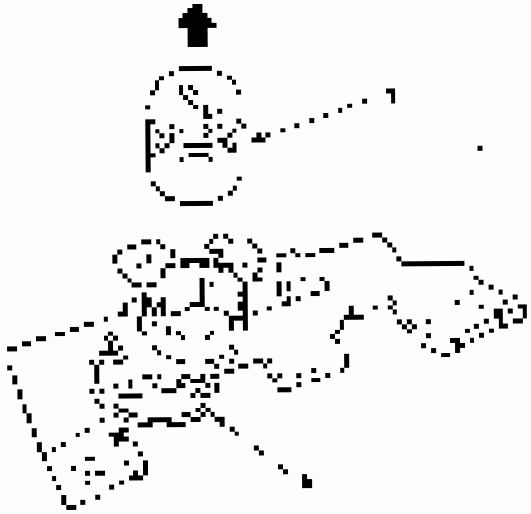
Glove Box Lock Cylinder Replacement (cont'd)

4. [illegible]

5. [illegible]



6. [illegible]



7. [illegible]

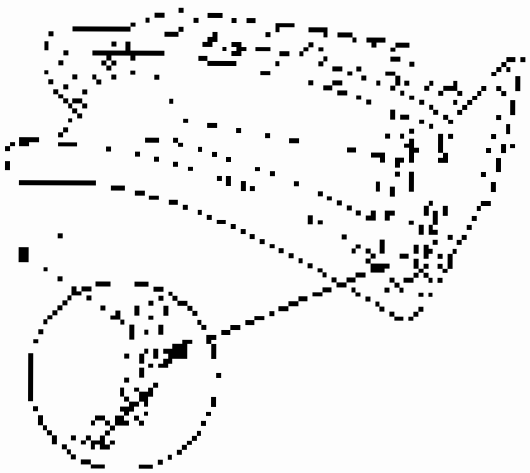
8. [illegible]

Glove Box Damper Replacement

NOTE: [illegible]

[illegible]

1. [illegible]



2. [illegible]

1. [illegible]

2. [illegible]

Passenger's Dashboard Trim Removal/Installation

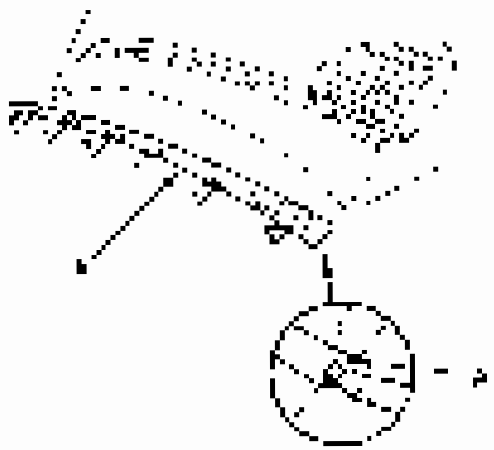
Special Tools Required
- Driver handle, 07749-0010000

NOTE:
- Take care not to scratch the dashboard and trim panels.
- Use the appropriate size trim tool to pry the trim clips and fasteners.
- Be careful not to damage the clips.

1. Pry open the outside edge of the passenger's dashboard side trim cover slightly to release the clips, then remove the trim.

Trim tool location

Dashboard



2. Install the remaining trim in the same manner.

Dashboard Side Vent Removal/Installation

Driver's

NOTE:
- Take care not to scratch the dashboard and trim panels.
- Pry only at the points where indicated.

1. Remove the [illegible] (see page 23-52).

2. Push on the [illegible] and pry the side vent [illegible] the dashboard. Be careful not to damage the [illegible] and [illegible] when removing the side vent. Pry between the side vent and the dashboard at the [illegible] (see page 20-87).

Trim tool location

[illegible] clips

3. Remove the [illegible] in the same manner. To install, reverse the [illegible] procedure.

Dashboard Removal/Installation

Passenger's

1. Remove the [illegible] (page 23-[illegible]).
2. Remove the screws (A). Then pull the upper [illegible] panel toward you (B) to release the [illegible] clips, and remove the [illegible] panel.

Driver's

[illegible]

3. [illegible]

Special Tools Required
[illegible]

2.5 liter: page 23-[illegible]
3.5: page 23-[illegible] and the [illegible] page 23-[illegible] before [illegible]

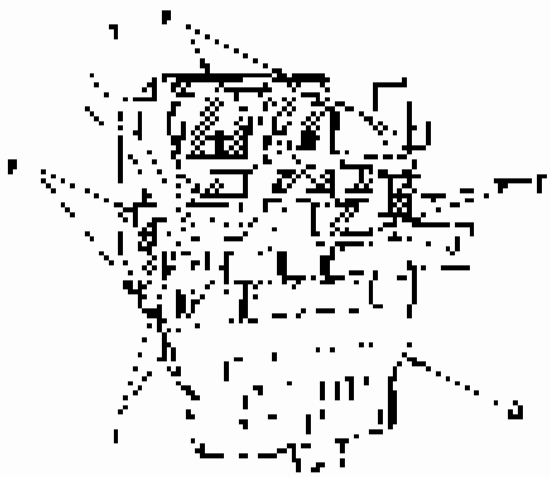
Notes:
- [illegible]
- [illegible] installing the dashboard.
- [illegible] panel.
- [illegible]

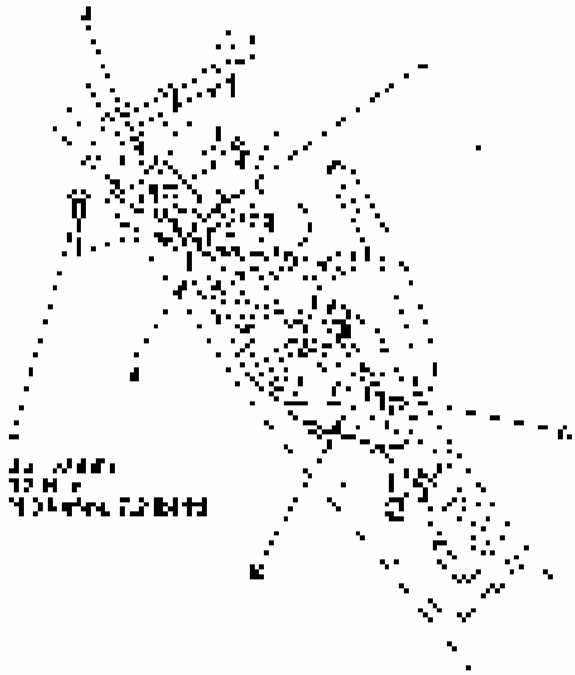
1. [illegible] the [illegible] panel (page 20-[illegible]).

2. Disconnect the [illegible] from the [illegible] (page 23-[illegible]).

3. Remove the [illegible]:
   - [illegible] (page 20-[illegible])
   - [illegible] (page 20-[illegible])
   - [illegible] (page 20-[illegible])
   - [illegible] (page 20-[illegible])
   - [illegible] (page 20-[illegible])
   - [illegible] (page 20-[illegible])
   - [illegible] (page 20-[illegible])
   - Steering column [illegible] (page 17-[illegible])
   - [illegible] (page 14-[illegible])

Dashboard Removal/Installation (cont'd)





Dashboard Removal/Installation (cont'd)

[illegible]

11. [illegible]

[illegible]

12. [illegible]

13. [illegible]

14. [illegible]

[illegible]

15. [illegible]

1. [illegible]

[illegible]

2. [illegible]

[illegible]

[illegible]

[illegible]

16. Carefully remove the dashboard through the front door opening.

[illegible]

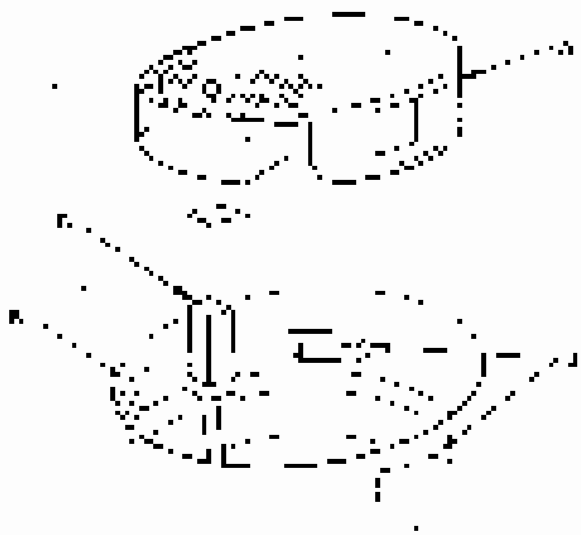
17. [illegible]

- To install, reverse the procedure for removal. Be sure to align the [illegible] with the [illegible] and tighten the [illegible] to specification.
- [illegible]
- Apply liquid thread sealant to the [illegible] before installing.
- [illegible]
- [illegible]
- Route the [illegible]
- [illegible]
- Check the [illegible] for proper operation.
- [illegible]

Steering Hanger Beam Replacement

NOTE: Some [illegible]

1. [illegible]
2. [illegible]
   - Passenger's Air Bag Module (see page 23-237)
   - Driver's Air Bag Module (see page 23-197)
   - Center Speaker (see page 23-421)
3. Remove the screws (A) and bolts (B), and the steering hanger beam (C).



4. [illegible]

5. [illegible]
   - [illegible]
   - [illegible]

[illegible]

Steering Hanger Beam Replacement (cont'd)

4. Remove the bolts and nuts securing the dashboard lower beam to the steering hanger beam and the body.

5. Remove the bolts securing the steering hanger beam to the body.

Passenger's side

6. Install in the reverse order of removal and note the following:

- Make sure the dashboard side harness is properly routed.
- Make sure the connectors are plugged in securely.

Dashboard Upper Panel Removal/ Installation

SRS components are located in this area. Review the SRS component locations (page 24-10) and the precautions and procedures (page 24-11) before performing repair operations.

Protect the steering wheel, instrument panel and seats.

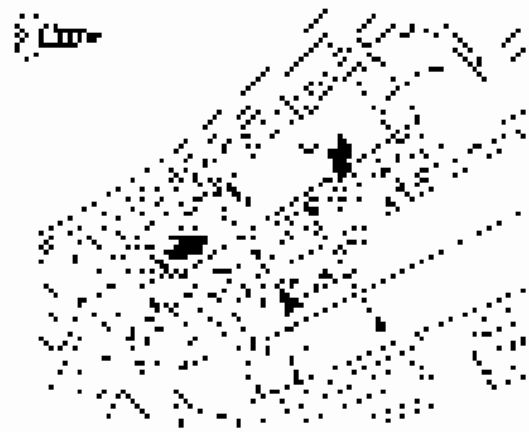
1. Remove the dashboard (see page 20-95).

2. Remove the following from the dashboard lower panel:

- Passenger's side lower cover (page 20-104)
- Driver's side lower cover (page 20-104)
- Instrument panel wire harness (page 20-105)
- Driver's side knee bolster (page 20-104)
- Main fuse box (page 21-23)
- Glove box assembly (page 20-104)
- Center beam assembly (page 20-105)

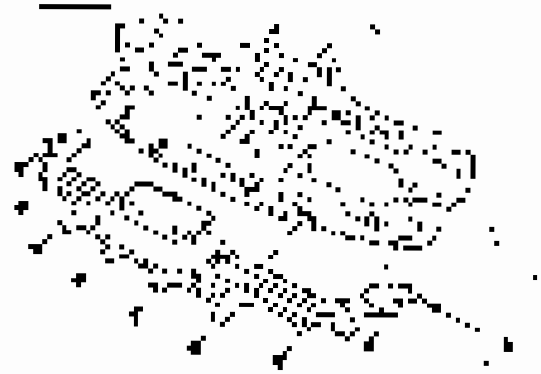
3. Remove the screws securing the upper panel, then disconnect the connectors and remove the upper panel.

Passenger's side

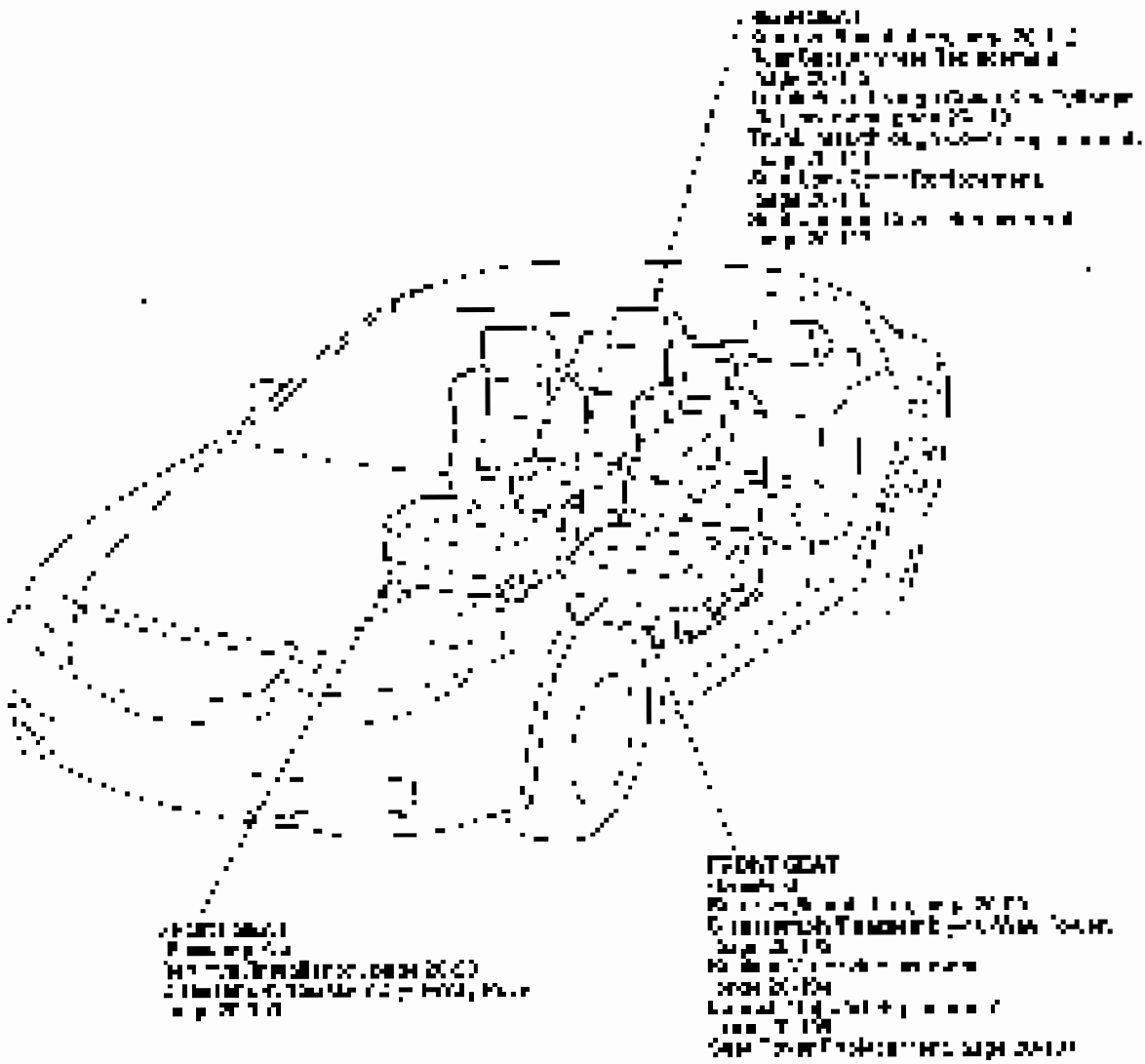


4. Remove the screws and bolts:

- Passenger's side (page 20-104)
- Driver's side (page 20-104)



Component Location Index



Front Seat Removal/Installation

Special Tools Required
KTC [illegible] or [illegible]

From [illegible] SRS components are [illegible]
[illegible] Before the SRS components [illegible] wait [illegible]
[illegible] and remove [illegible] procedure [illegible] page [illegible]
[illegible] to [illegible] prevent [illegible] from [illegible]

NOTE:
- Use the appropriate seat cover to prevent [illegible] from [illegible] and damage [illegible]
- Take care not to scratch the [illegible]
- Be very careful to protect your hands
- When [illegible] and the ignition is turned [illegible] to the [illegible]

1. Make sure [illegible] the front wheels [illegible] straight [illegible] the steering wheel [illegible] the ignition switch [illegible]

2. Tilt the steering wheel [illegible] to its highest [illegible] and then install [illegible]

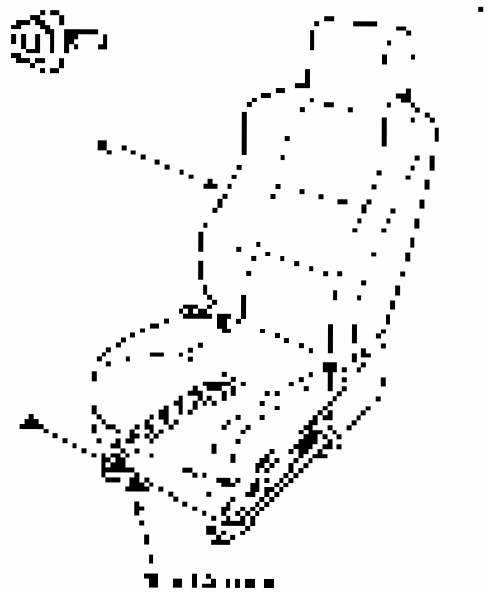
3. Slide the seat all the way forward, and remove the [illegible] cover from the back of the seat. Open the [illegible] cover, disconnect the [illegible] connector, and then [illegible]

4. [illegible] the [illegible] cover, and then [illegible] the [illegible] bolts and [illegible] the front [illegible]

5. Pull [illegible] the seat [illegible] the [illegible] connector [illegible] the [illegible] cable [illegible] the [illegible] battery [illegible] and [illegible] the [illegible] cable [illegible] the [illegible]

6. Remove the [illegible] the seat [illegible]

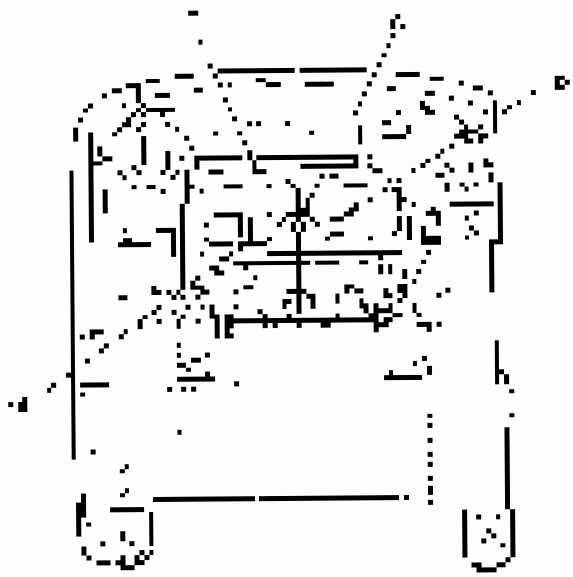
Front [illegible]
[illegible]



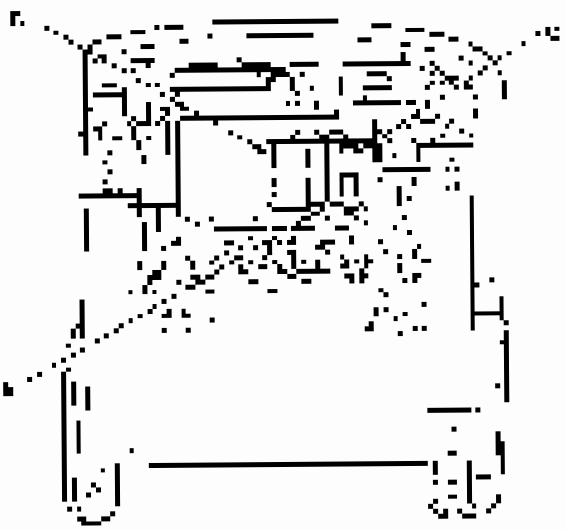
Front Seat Removal/Installation (cont'd)

1. [illegible]

4-way power seat



10-way power seat



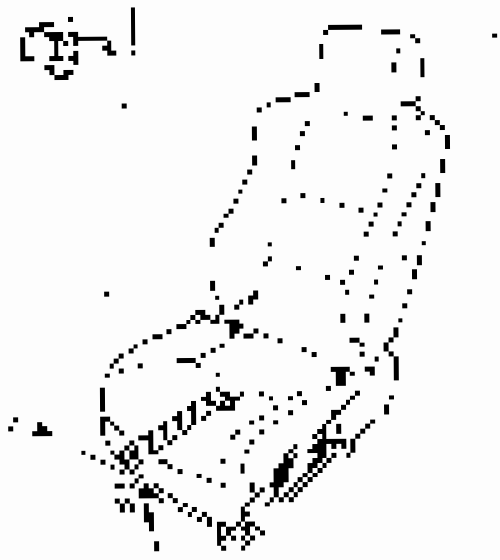
3. [illegible]

4. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]



[illegible]

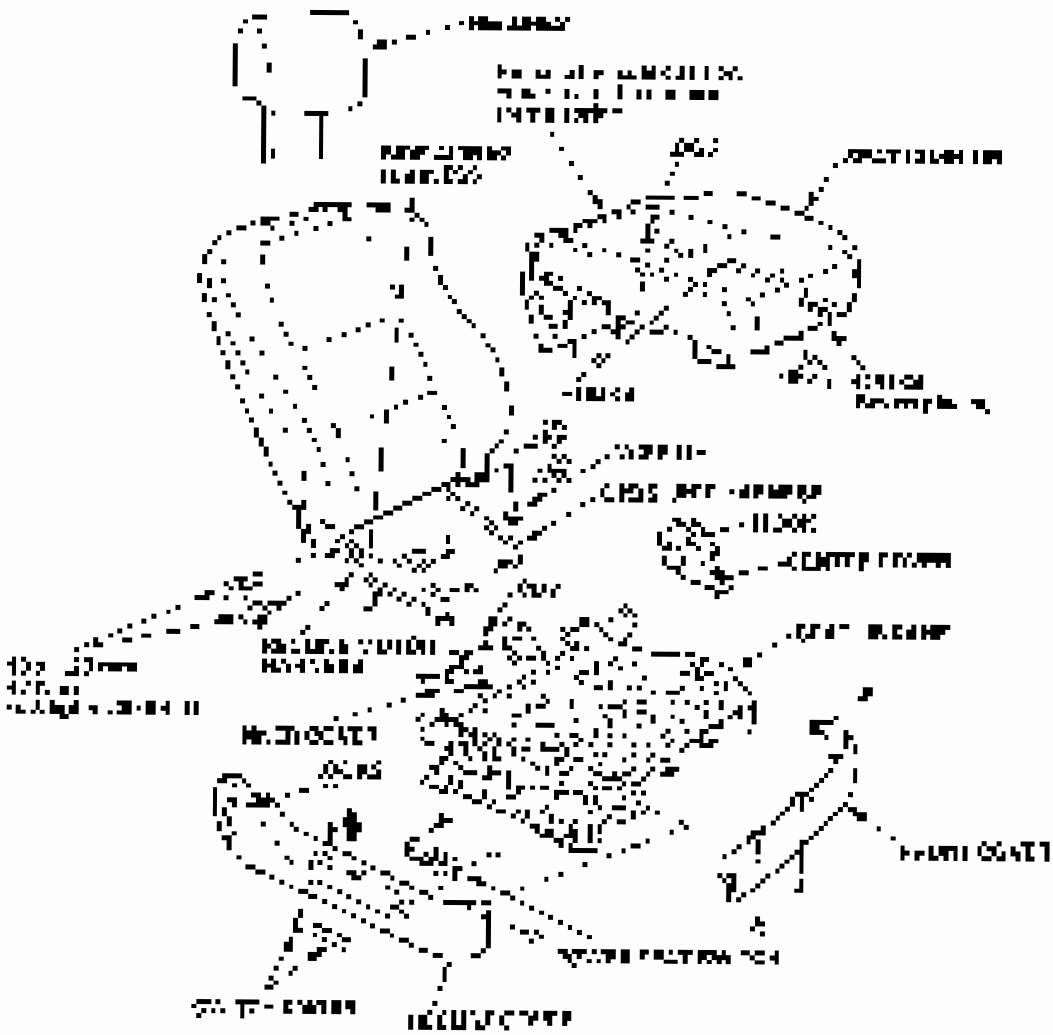
Front Seat Disassembly/Reassembly - 4-Way Power

[illegible]

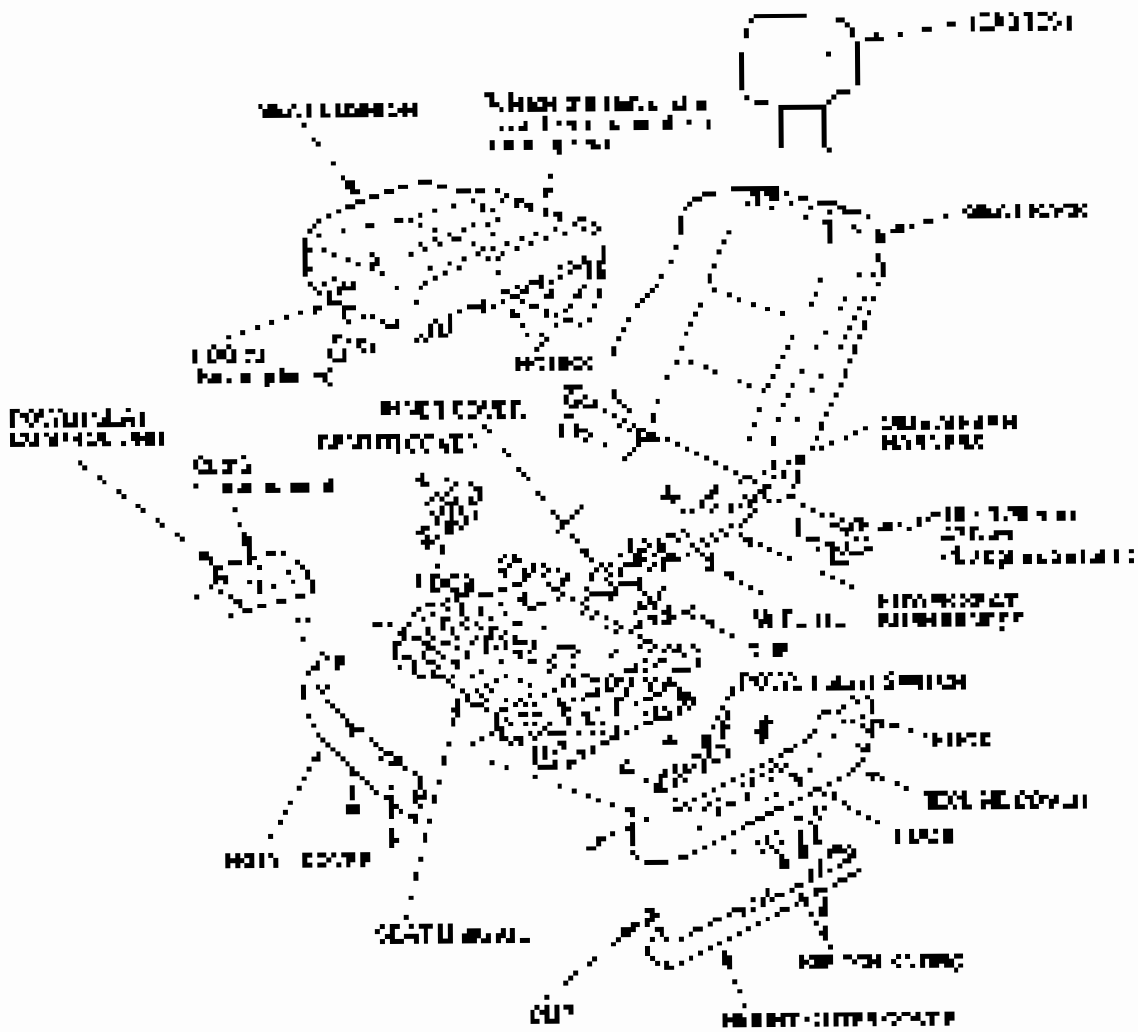
[illegible]

NOTE:

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

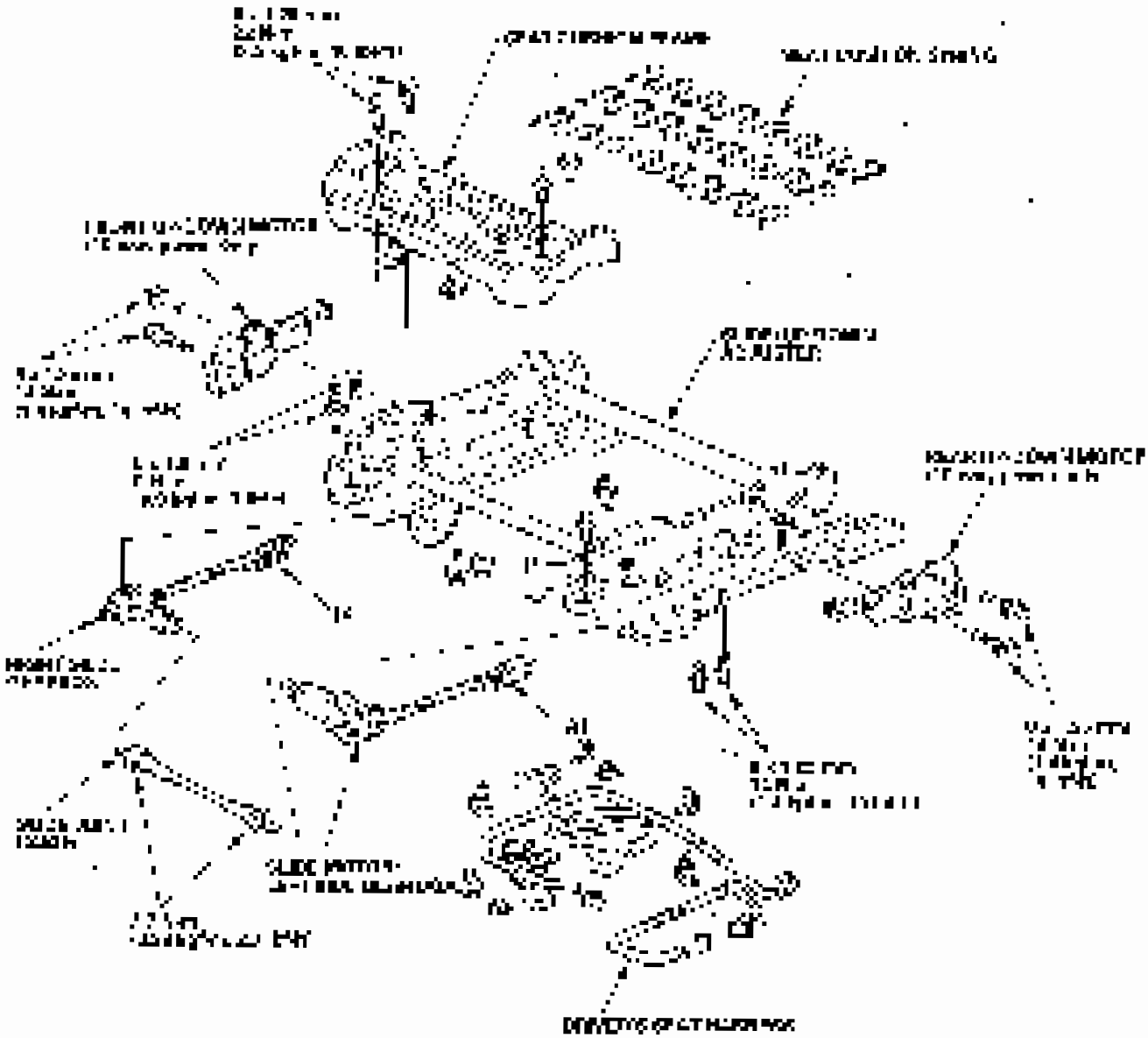


Front Seat Disassembly/Reassembly - 10-Way Power



Front Seat Linkage Disassembly/Reassembly - 10-Way/4-Way Power

- [illegible]
- [illegible]
- [illegible]
  Apply [illegible] where [illegible] are shown per [illegible].
- [illegible]



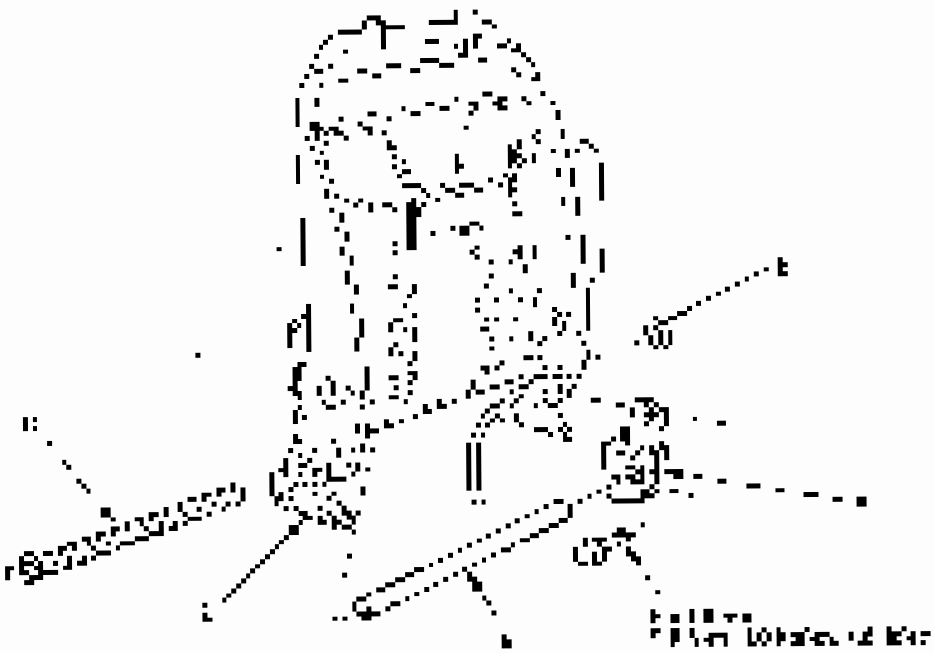
Front Seat Reclining Motor Replacement

10-Way/14-Way Power Seat

[illegible]

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
   1. [illegible]
   2. [illegible]
   3. [illegible]
   4. [illegible]



4. [illegible]
   - [illegible]
   - [illegible]

Front Seat Lumber Support Replacement

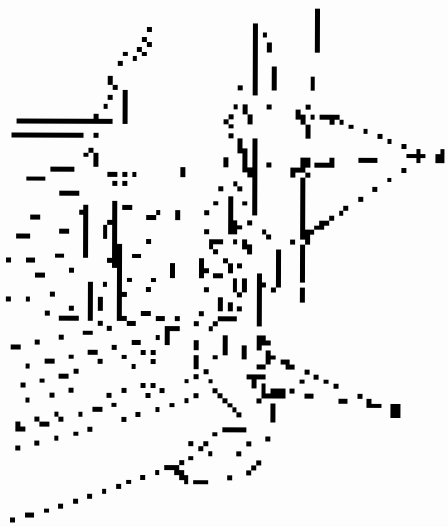
For Some Models: Driver's seat

SRS components are located in this area. Review the SRS component locations and the precautions and procedures before performing maintenance.

NOTE:
- [illegible]
- [illegible]
- [illegible]

1. [illegible]

2. Release the hooks (A) and remove (1).



3. [illegible]

[illegible]

4. [illegible]

[illegible]

Front Seat Lumbar Support Replacement (cont'd)

3. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

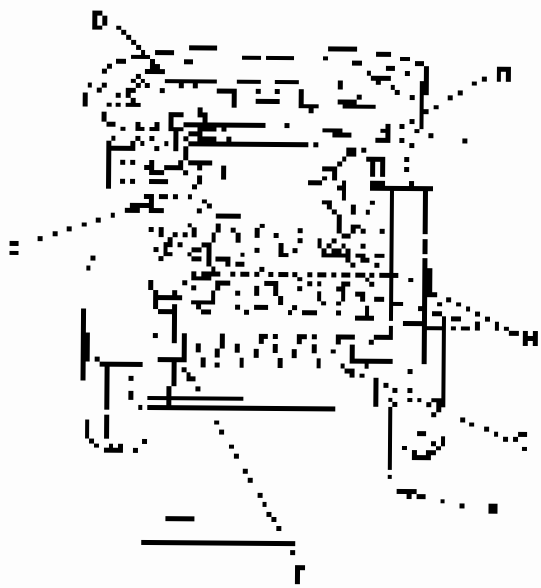
Front Seat Cover Replacement

[illegible]

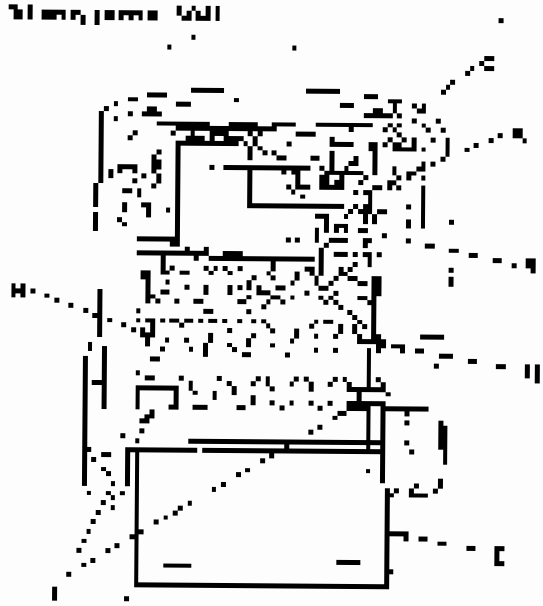
NOTE:
- [illegible]
- Put on gloves to protect your hands.

Seatback Cover

1. [illegible]
2. [illegible]
3. [illegible]
   4-way power seat:



[illegible]



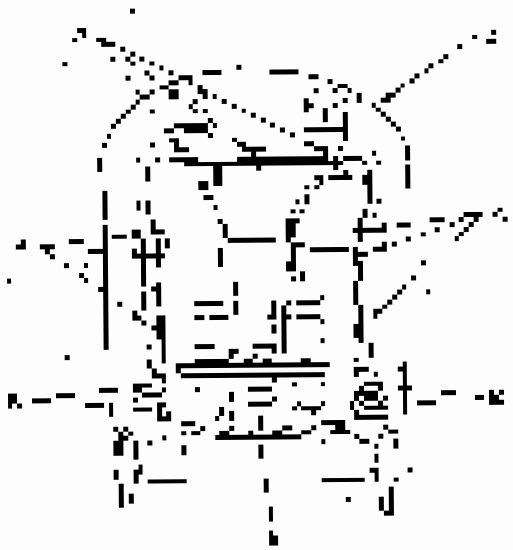
4. [illegible]

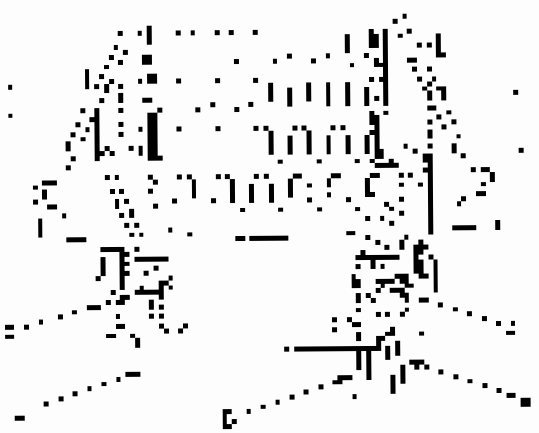
- [illegible]
- [illegible]

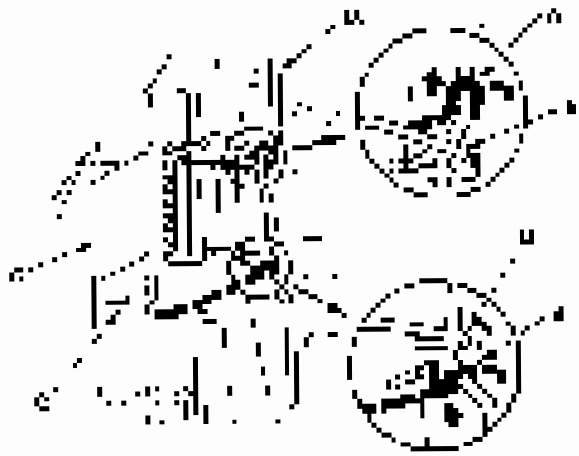
5. [illegible]

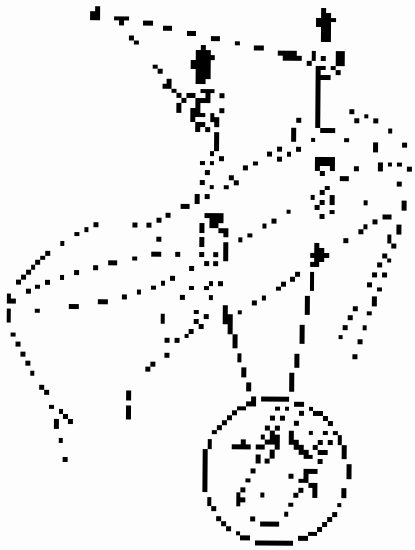
cont'd

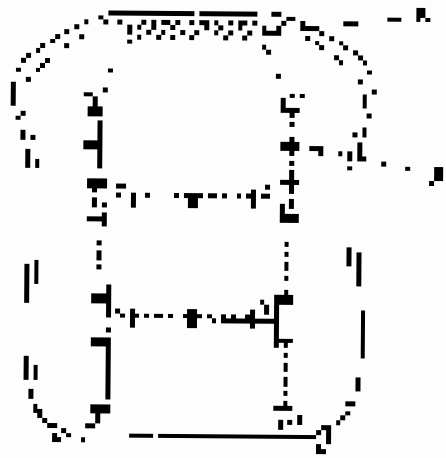
Front Seat Cover Replacement (cont'd)

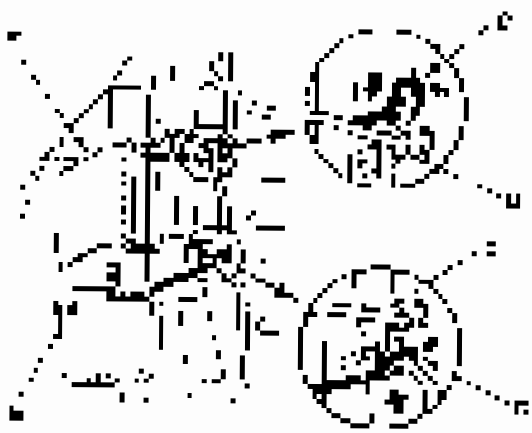












cont'd

Front Seat Cover Replacement (cont'd)

Seat Cushion Cover

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

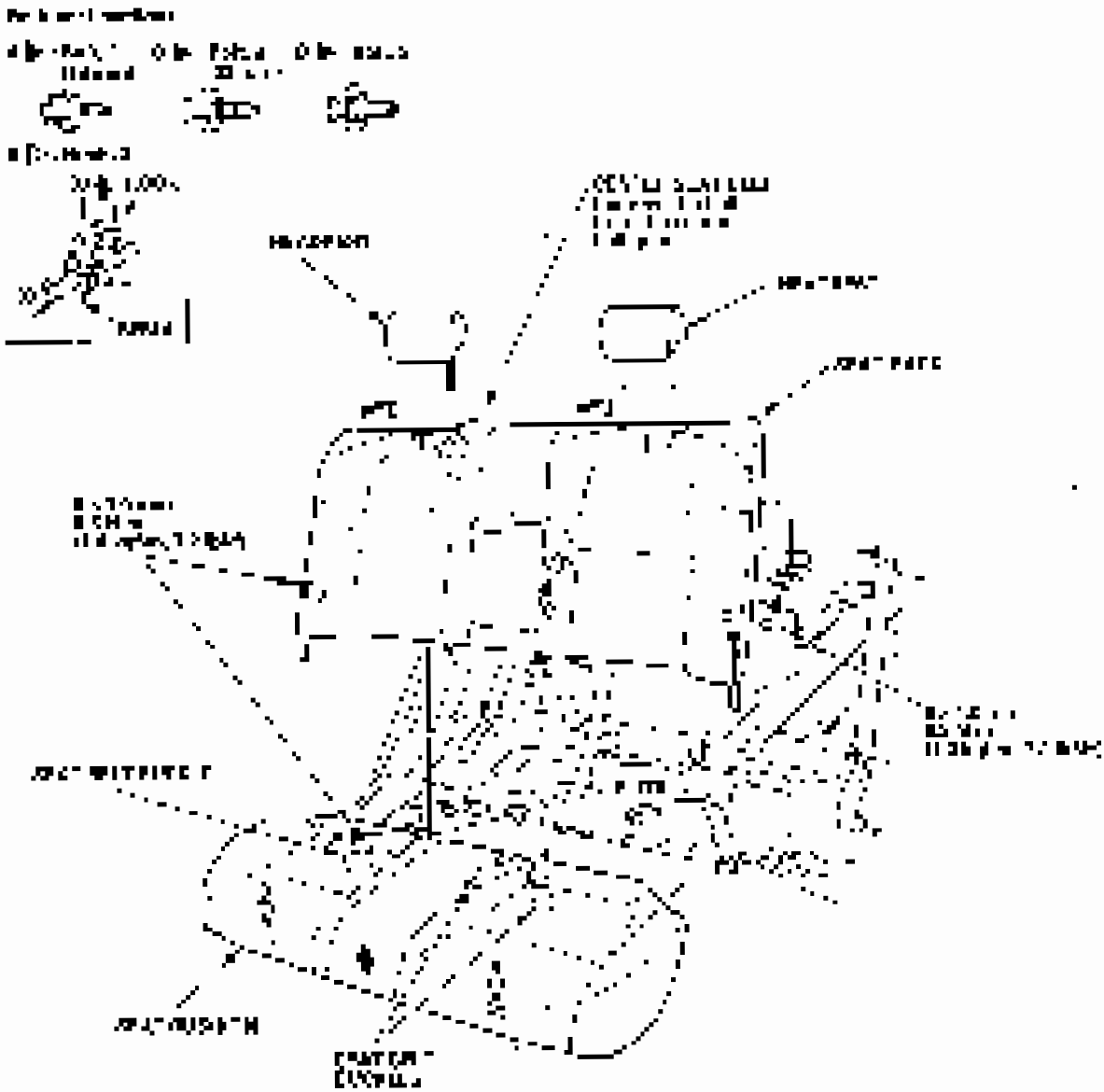
5. [illegible]

6. [illegible]

Rear Seat Removal/Installation

NOTE: [illegible]

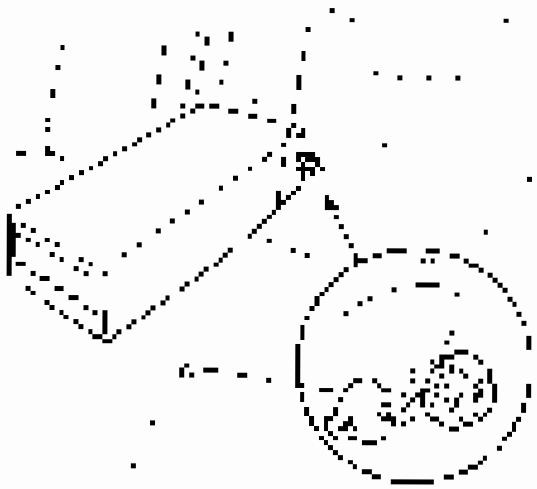
1. [illegible]
2. [illegible]
3. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]



Rear Seat Armrest Replacement

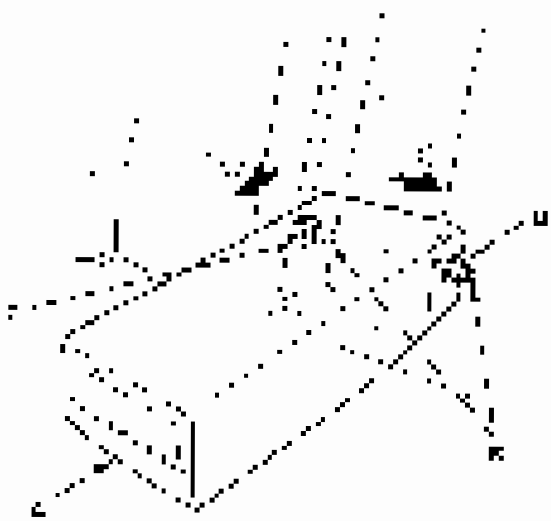
NOTE: Take care to avoid damaging the seat cover during removal and installation.

1. Remove the upper trim (the shape of the part varies depending on the seat).



2. Remove the armrest.

   1) Slide the armrest to the rear to release the front hooks from the seat.
   2) Remove the armrest while pulling it forward, and then pull the armrest cable out of the armrest. Disconnect the cable from the armrest switch (for B-type seat) or the armrest.



3. Install the armrest in the reverse order of removal.

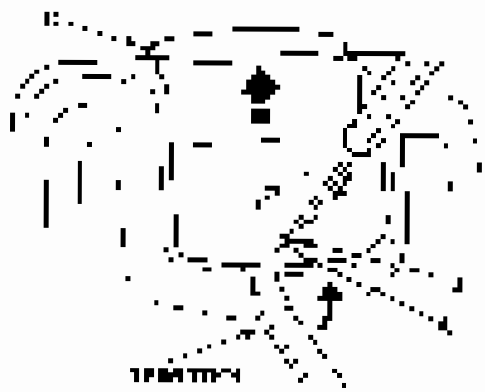
Trunk Pass-through Cover Key Cylinder Replacement

Special Tools Required
KTC driver set (J-35641-2014)

NOTE:
- Do not apply excessive force when using the KTC driver set (J-35641-2014). Doing so may damage the trim cover.
- Be careful not to damage the trim cover.

1. Using a flat-tip screwdriver, pry out the key cylinder cover in the direction of the arrow (1) to remove it.

2. Remove the mounting nut (2) from the key cylinder, and then remove the key cylinder (3) from the trunk pass-through cover.



3. Install the key cylinder in the reverse order of removal.

Trunk Pass-Through Cover Key Cylinder Replacement (cont'd)

4. [illegible]

5. [illegible]

6. [illegible]

- [illegible]
- [illegible]

Trunk Pass-through Cover Replacement

[illegible]

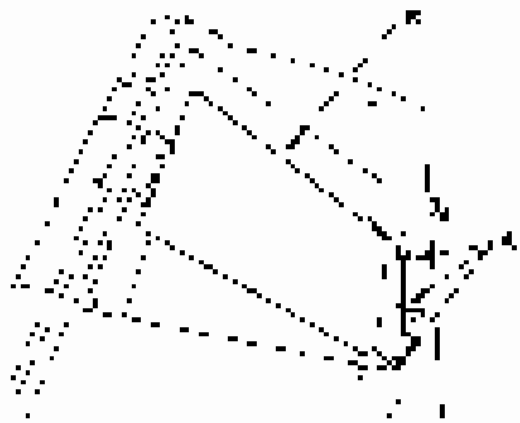
1. [illegible]

2. [illegible]

[illegible]

[illegible]

3. [illegible]



Rear Seat-back Cover Replacement

4. Install the head protector mounting bolt and the rear seat-back cover retainer, and then tighten them.

- Tighten the head protector mounting bolt to the specified torque and then apply the specified sealant to the bolt head.
- Replace the head protector mounting bolt with a new one whenever it is removed.

Note

- [illegible]
- [illegible]

1. Remove the seat-back cover. (page 20-112)

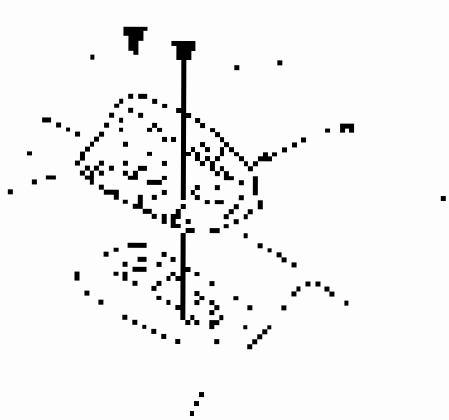
2. Remove the rear belt.

- [illegible]
- [illegible]
- [illegible]

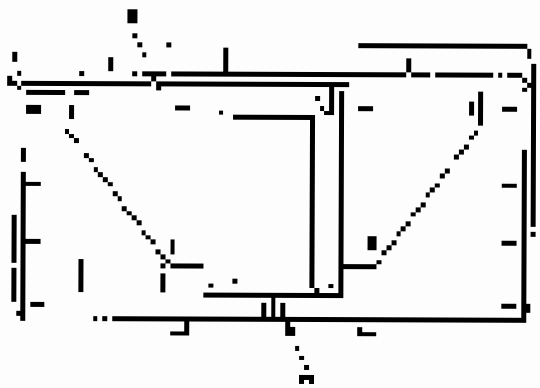
3. Remove the rear seat-back cover retainer and the rear belt. (page 20-112)

Tightening Sequence

[illegible]

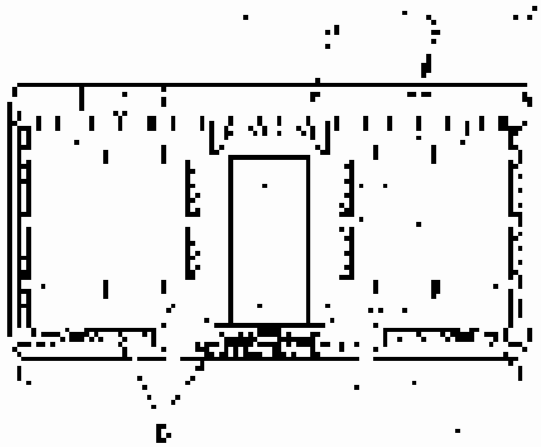


4. Release the tabs and the claws, and then remove the rear seat-back cover.

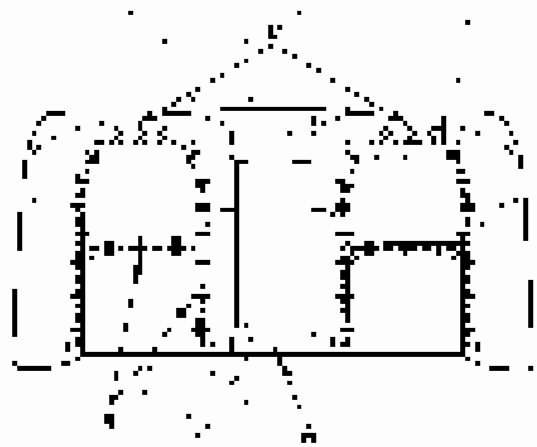


Rear Seat-back Cover Replacement (cont'd)

5. [illegible]



6. [illegible]



7. [illegible]

8. [illegible]

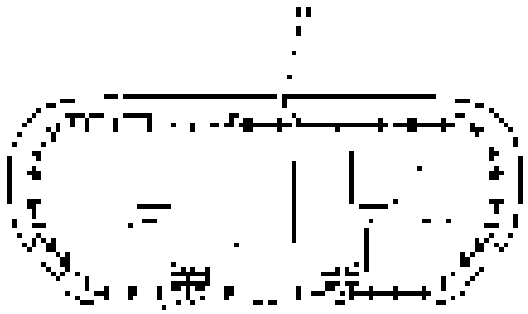
9. [illegible]

- [illegible]
- [illegible]

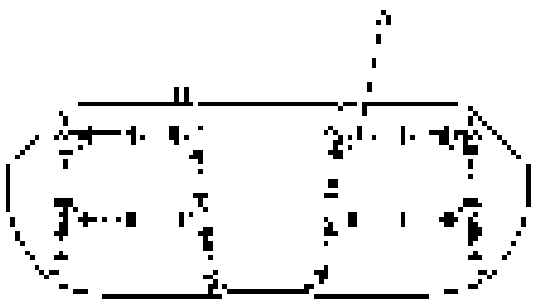
Rear Seat Cushion Cover Replacement

1. Remove the rear seat cushion (see page 20-[illegible]).

2. Release all the clips and remove the rear seat cushion cover.



3. Pull back the edge of the seat cushion cover at the rear inboard side, then release the clips and remove the rear seat cushion cover.

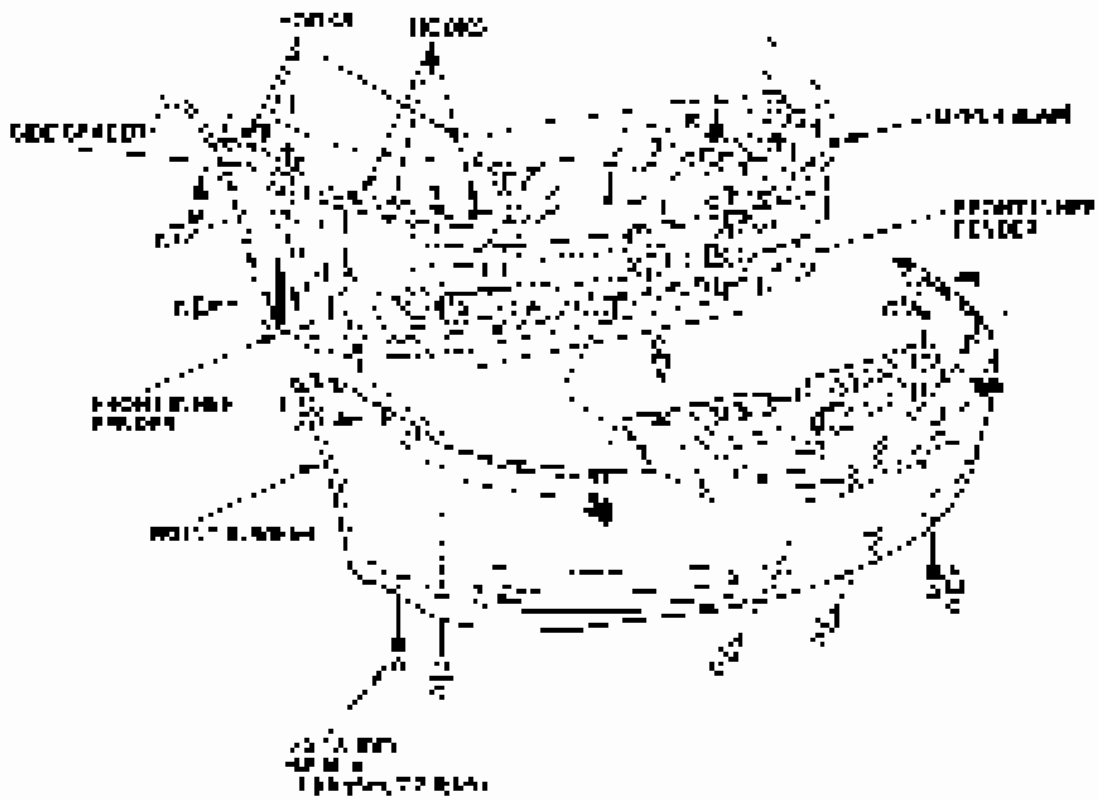


4. Install the cover in the reverse order of removal, and note these items:

- Take care not to damage the [illegible]
- [illegible]

Bumpers

Front Bumper Removal/Installation



Rear Bumper Removal/Installation

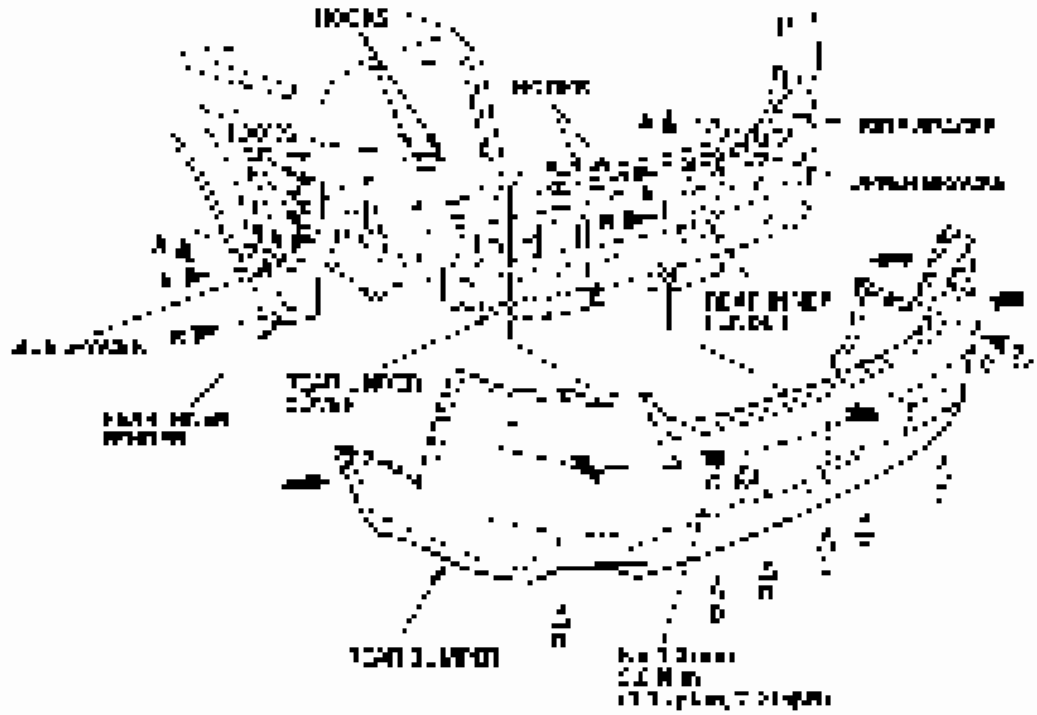
Special Tools Required
Mo

NOTE:
- Have an assistant help you when removing and installing the rear bumper.
- Take care not to scratch the rear bumper and body.
- Put on gloves to avoid injuries.
- Use the accessory socket from the ITC tool set to avoid damage when you loosen or tighten the

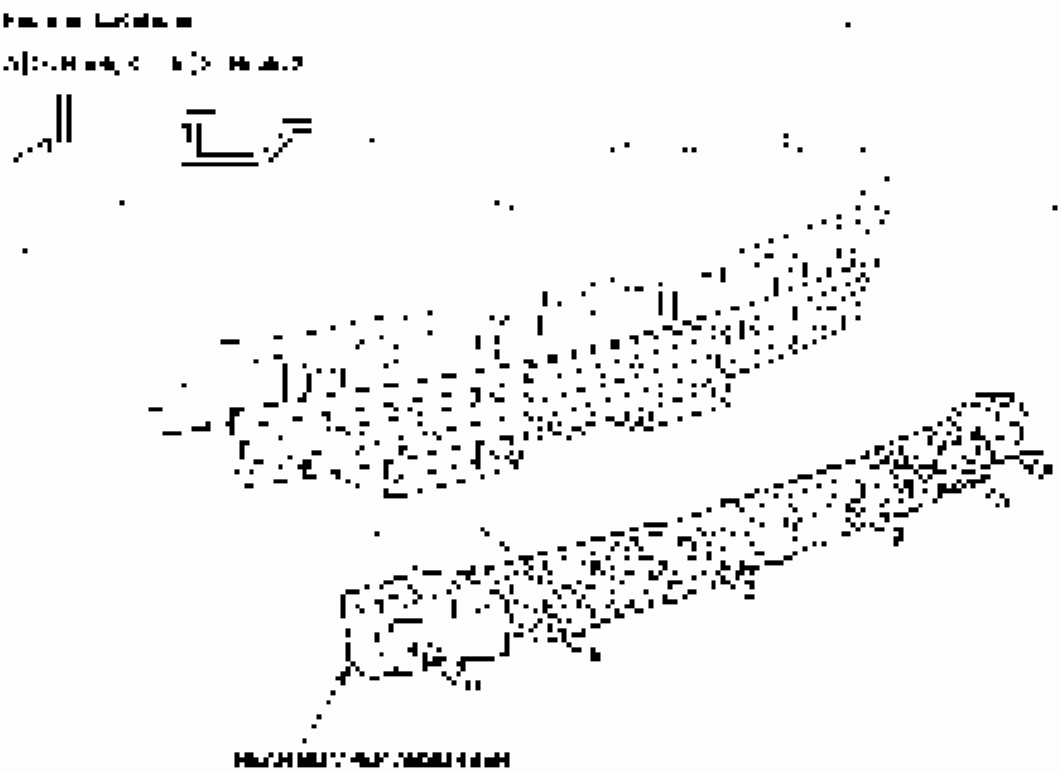
1. Remove the rear bumper:

Bolt/screw type

Qty · Thread size · Length · Remarks



2. Remove the rear bumper absorber assembly.



3. Install the bumper in the reverse order of removal and note the following:

- When installing the rear bumper, engage the front side of the absorber assembly with the body side first, and then push the rear side of the absorber assembly.
- Replace any damaged clips.
- Perform a visual check after installation is complete.

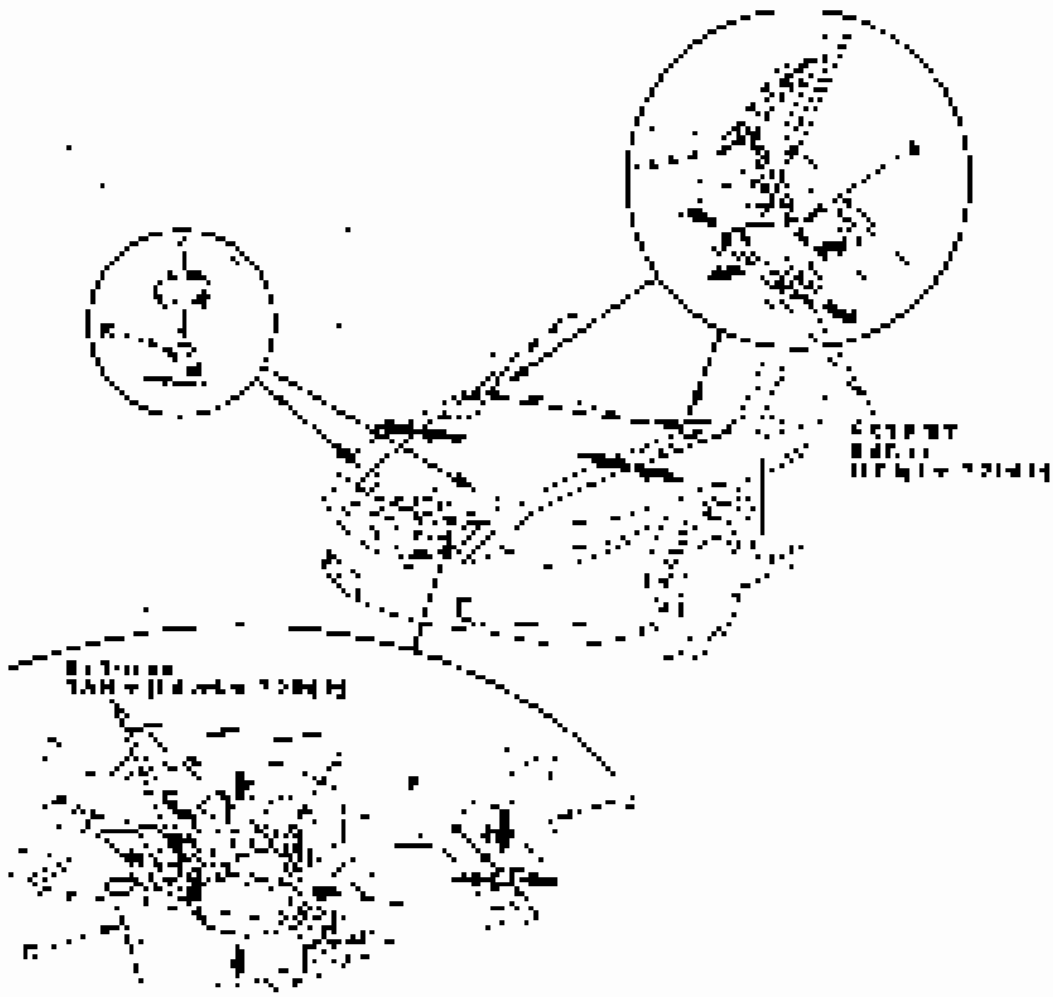
Adjustment

1. [illegible]

2. [illegible]

3. [illegible]

   - [illegible]
   - [illegible]



4. [illegible]

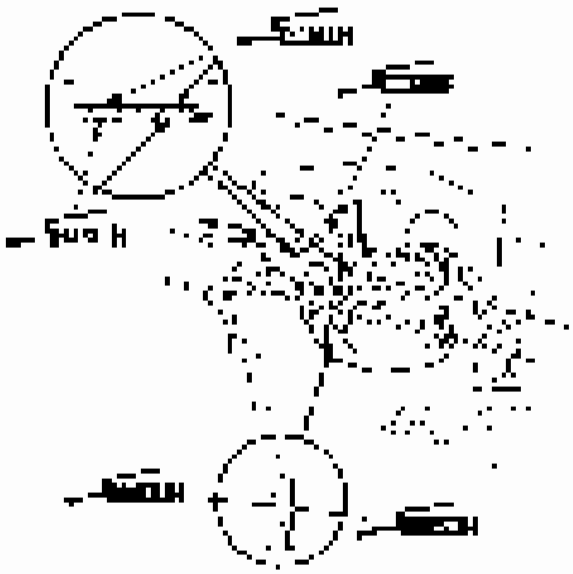
5. [illegible]

Hood Support Strut Replacement

1. [illegible]

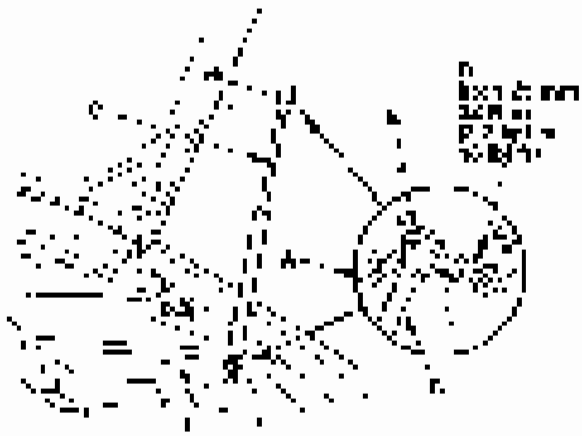
2. Apply sealer to the hood hinge mounting bolts and around the hinges and hood as shown.

3. [illegible]



4. [illegible]

1. [illegible]



2. [illegible]

Hood

Hood Seat Replacement

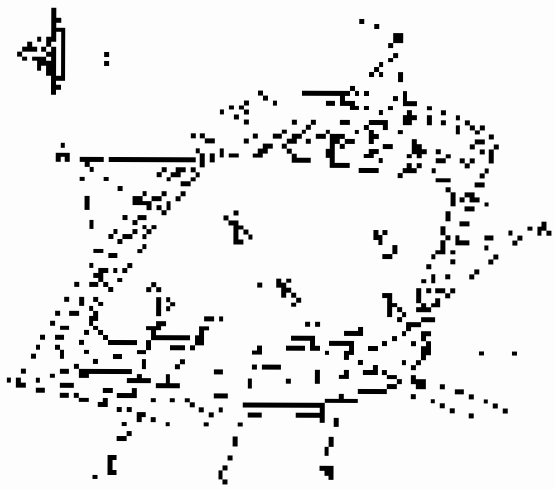
1. [illegible]

2. [illegible]

- [illegible]
- [illegible]

Hood Insulator Replacement

1. [illegible]



2. [illegible]

- [illegible]
- [illegible]

Trunk Lid

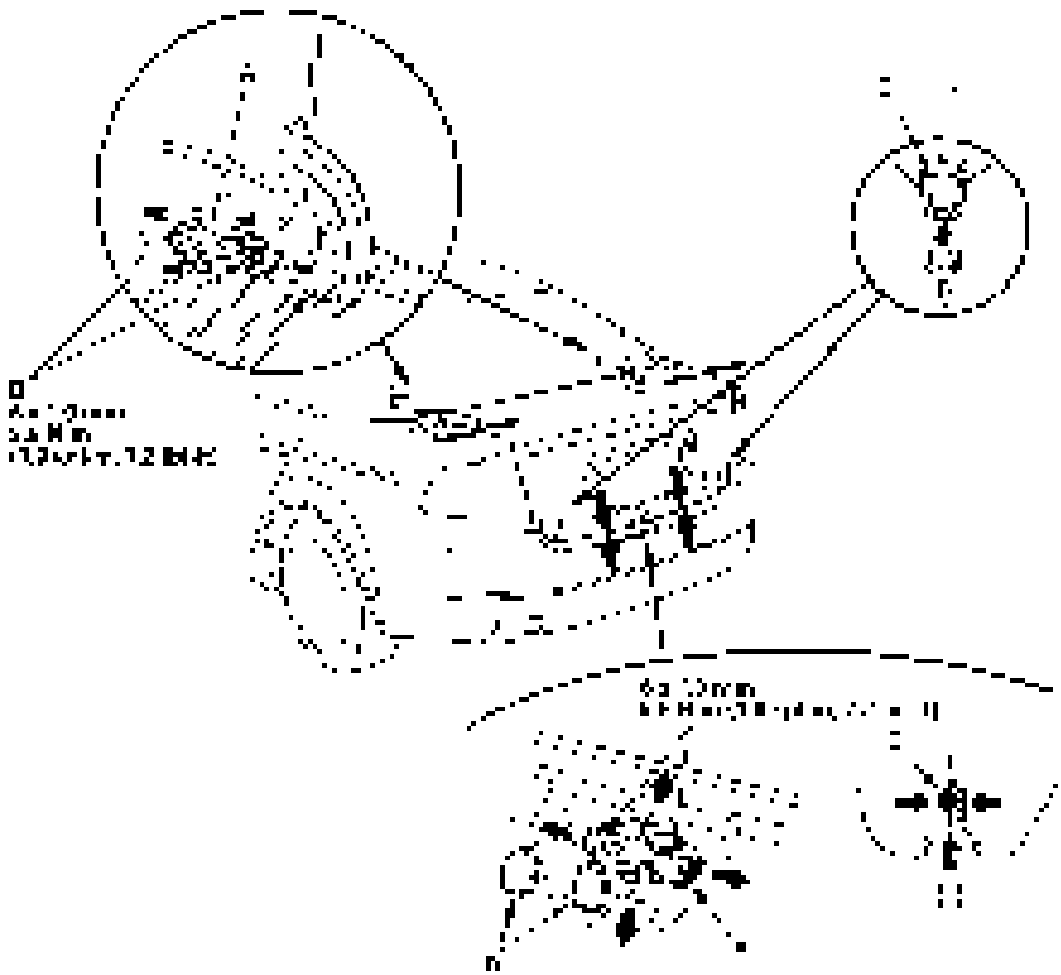
Adjustment

1. [illegible]

2. [illegible]

3. Adjust the trunk lid alignment in the following sequence.

   - Adjust the trunk lid to the right and left direction by loosening the hinge mounting bolts (A) and moving the trunk lid.
   - Adjust the trunk lid to the front and rear direction by loosening the hinge mounting bolts (B) and moving the trunk lid.
   - Adjust the height of the trunk lid by loosening the striker mounting bolts (C) and moving the striker.
   - Adjust the trunk lid lock position by loosening the striker mounting bolts (C) and moving the striker.



4. Tighten the striker mounting bolts.

5. [illegible]

6. [illegible]

Trunk Lid Torsion Bar Replacement

[illegible]

1. [illegible]

2. [illegible]

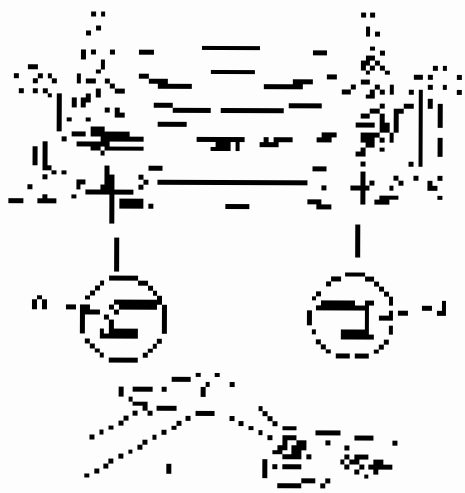
3. Remove the torsion bar [illegible] from the body.

4. [illegible]

- The ends of the torsion bars are identical and can be installed on either side.
- Adjust the torsion bar tension as required. Refer to the torsion bar adjustment.
- Install the [illegible] and tighten the bolts to the specified torque.

[illegible]

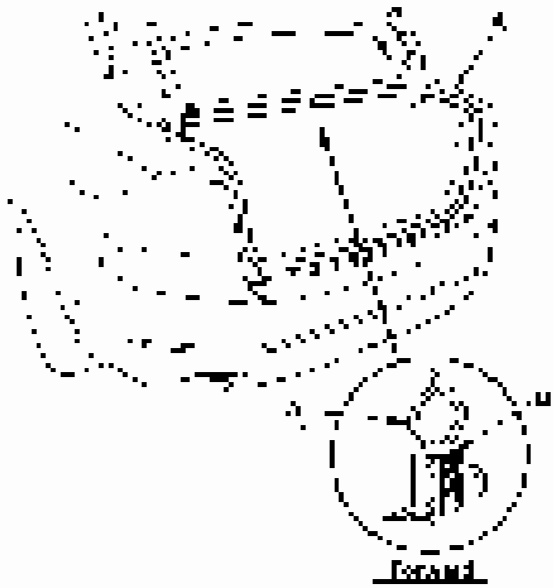
- Make sure the [illegible] is properly installed in the recess.



[illegible]

Trunk Lid Weatherstrip Replacement

1. [illegible]



2. [illegible]

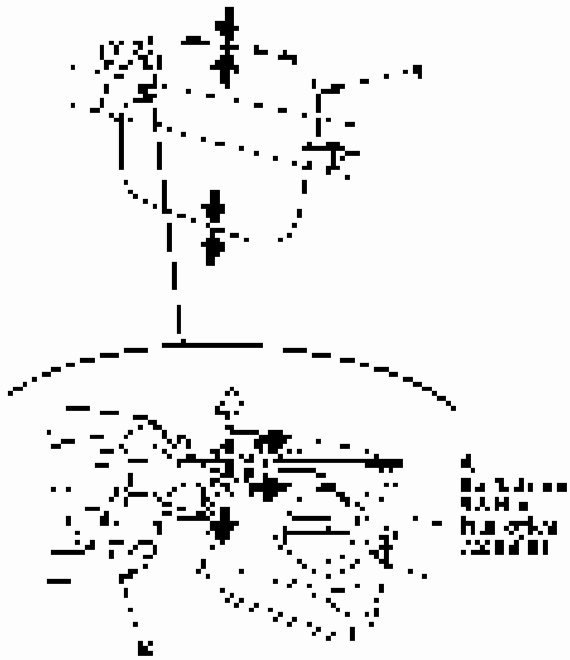
   Sealant Caradhe P/N 08731-8304 or equivalent

3. [illegible]

4. [illegible]

Adjustment

1. Slightly loosen the hinge mounting bolts.



2. Adjust the fuel fill door to the proper position by moving it lightly by hand, and then tighten the hinge mounting bolts to the specified torque.

3. Check the fuel fill door for proper operation.

4. Check that the fuel fill door opens properly and that the door latch and striker mate properly. If not, adjust the striker.

5. Apply multipurpose grease to the sliding and rotating portions of the hinge.

6. Apply body sealant to the hinge mounting bolts and around the hinge.

Hood Molding Replacement

Front Grille Replacement

Front Grille Lower Molding Replacement

1. [illegible]

2. [illegible]

3. [illegible]

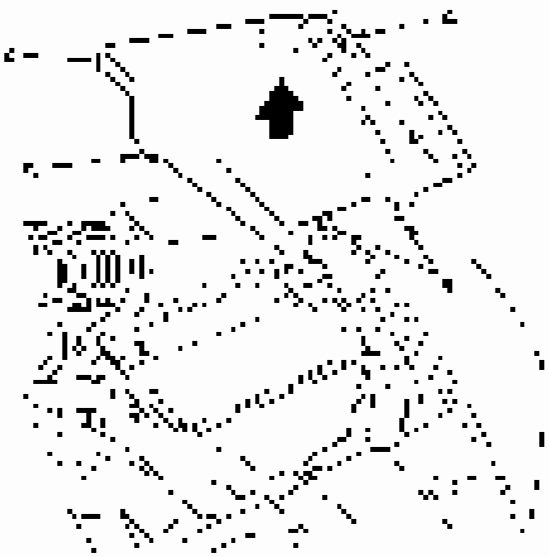
Front Bulkhead Cover Replacement

Special Tools Required
[illegible]

Notice
- [illegible]
- Take care not to scratch the front bulkhead cover and hood.

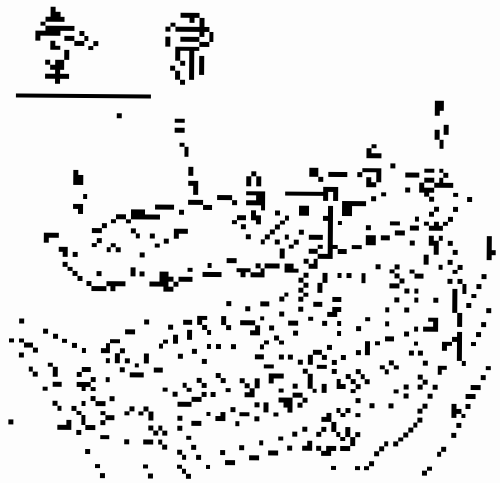
1. [illegible]

2. [illegible]



Front Fender Trim Replacement

2. [illegible]



3. [illegible]

- [illegible]
- [illegible]

NOTE: [illegible]

1. [illegible]

- [illegible]
  - [illegible]
  - [illegible]
- [illegible]
  [illegible]
  [illegible]
  [illegible]

2. [illegible]

[illegible]

3. [illegible]

- [illegible]
- [illegible]

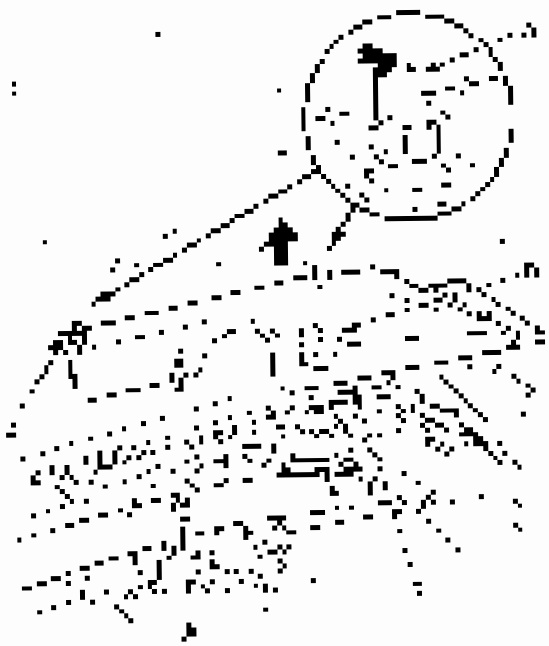
Cowl Cover Replacement

NOTE:

- Take care not to scratch the cowl cover when removing it.

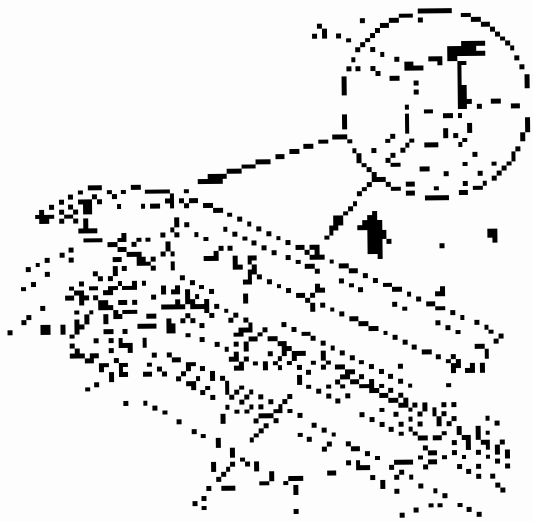
1. Remove the windshield wiper arms. (See page 20-128)

2. Release the hooks and remove the cowl cover. (See page 20-128)



3. Remove the weatherstrip from the cowl cover.

4. Install the weatherstrip to the cowl cover. (See page 20-128)



5. Install the cowl cover. (See page 20-128)

NOTE:

- Be careful not to damage the paint.

Roof Molding Replacement

Special Tools Required
[illegible]

NOTE:
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Molding Replacement

1. [illegible]

2. [illegible]

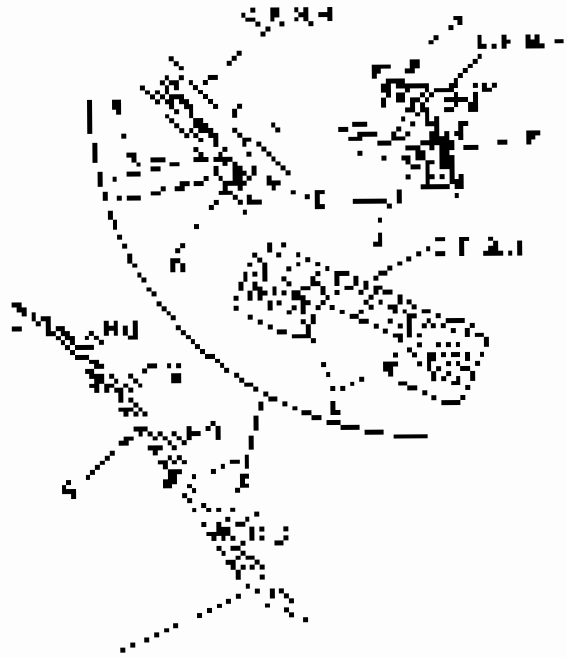
   [illegible]

   [illegible]

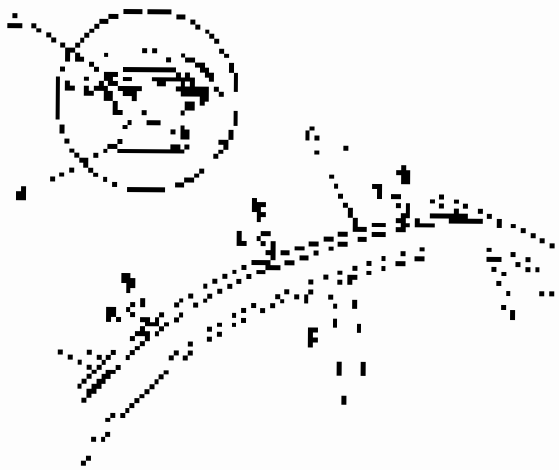
3. [illegible]

   1. [illegible]
   2. [illegible]
   3. [illegible]

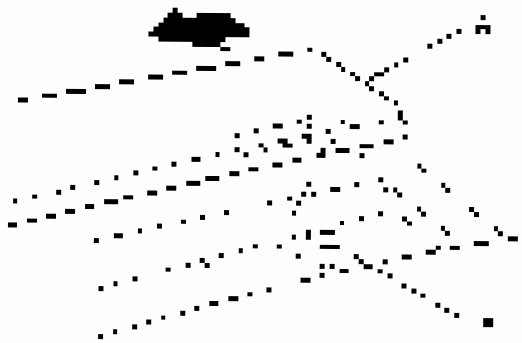
   [illegible]



1. [illegible]



2. [illegible]

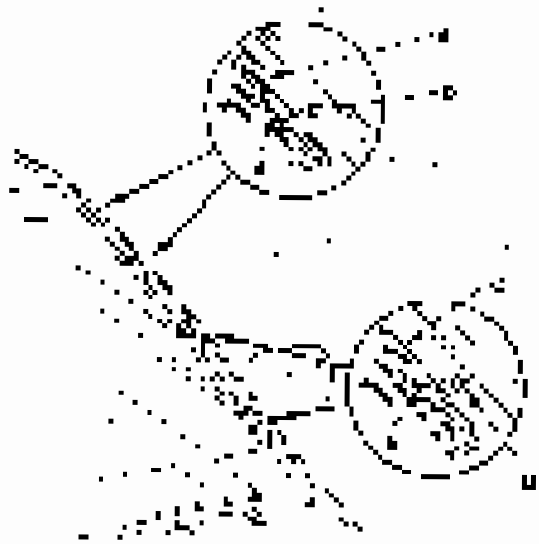


3. [illegible]

- [illegible]

Retainer Replacement

1. [illegible]



2. [illegible]

Front Side Sill Panel Replacement

NOTE: [illegible]

1. [illegible]

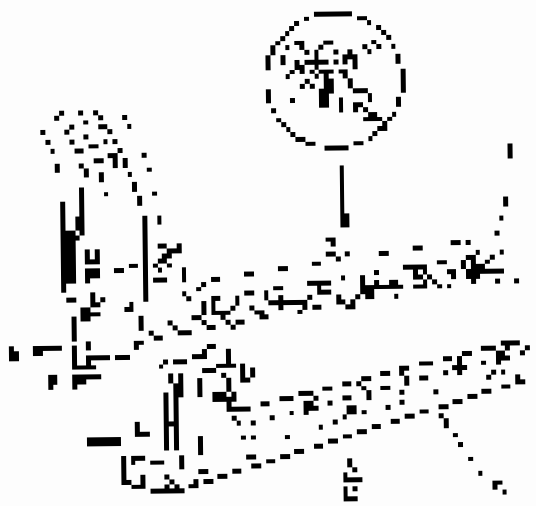
   [illegible]

   3. [illegible]

   4. [illegible]

   [illegible]

   [illegible]

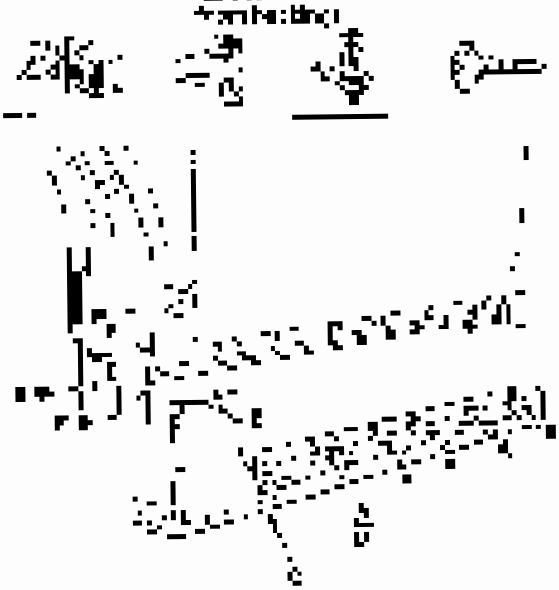


5. [illegible]

6. [illegible]

   [illegible]

   [illegible]



7. [illegible]

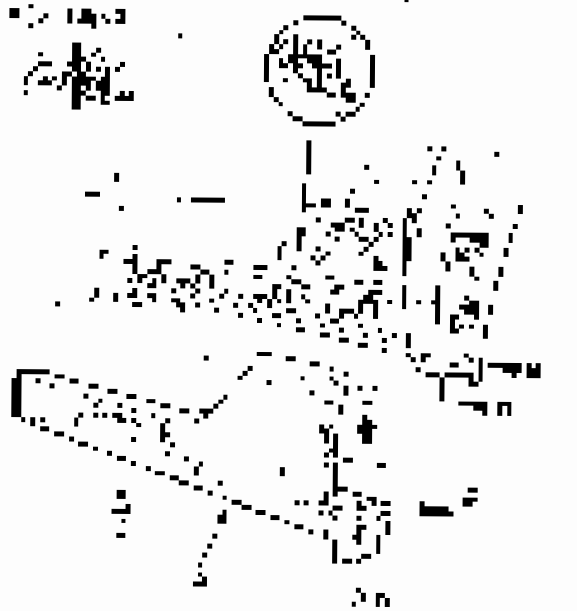
8. [illegible]

Rear Side Sill Panel Replacement

1. Disconnect the negative battery cable.
2. Remove the rear seat cushion (page 20-[illegible]).
   - On the passenger's side, disconnect the connector from the seat belt tensioner.
3. Remove the rear door sill trim.
4. Remove the rear seat belt lower anchor bolt and the seat belt buckle bolt (page 20-[illegible]).
   - Tighten the bolts to the specified torque.

Passenger's side

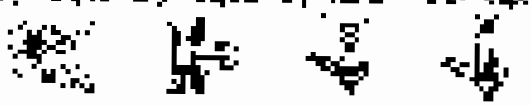
Driver's side



5. Remove the rear pillar from the body (page 20-[illegible]).

6. Remove the rear door opening trim.
7. Remove the rear door sill trim (page 20-[illegible]).

Passenger's side



Driver's side

8. Weld the new rear pillar to the body (page 20-[illegible]).
   - Apply the specified sealer to the welded areas.
9. Install the parts in the reverse order of removal.

Rear License Trim Replacement

NOTE: Parts given for illustration purpose only.

1. Remove the trunk lid trim. Refer to page 20-137.

2. Remove the rear license trim (1) by releasing the clips (2) with a flat-tip screwdriver (3).

Tool(s) required:

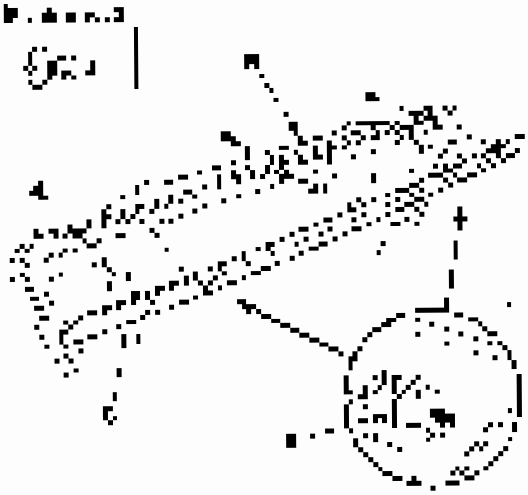
- Hand

3. Remove the rear license trim (1) by releasing the clips (2) with a flat-tip screwdriver (3).

Tool(s) required:

4. Remove the rear license trim (1) by releasing the clips (2) with a flat-tip screwdriver (3).

Tool(s) required:



5. Install in the reverse order of removal and note the following items:

- Replace any damaged clips.
- Make sure the wiring harness is properly plugged in (if equipped).
- Check for proper operation of the lights.

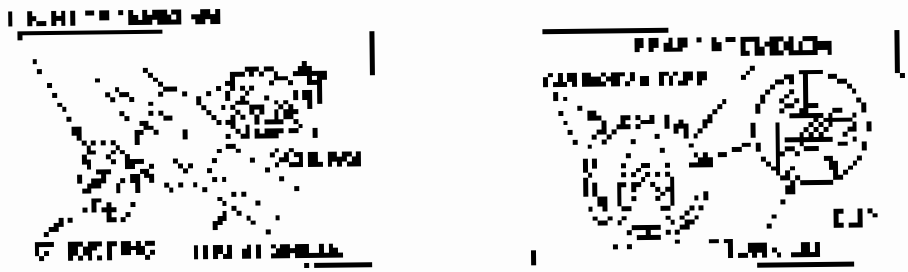
Rear Diverter Cover Replacement

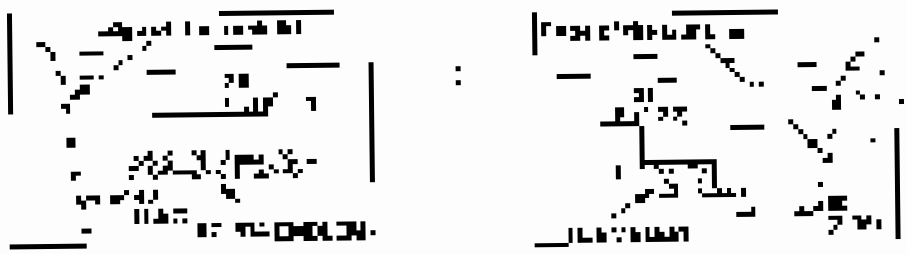
1. [illegible]

2. [illegible]

- [illegible]
- [illegible]

Emblem/Sticker Replacement

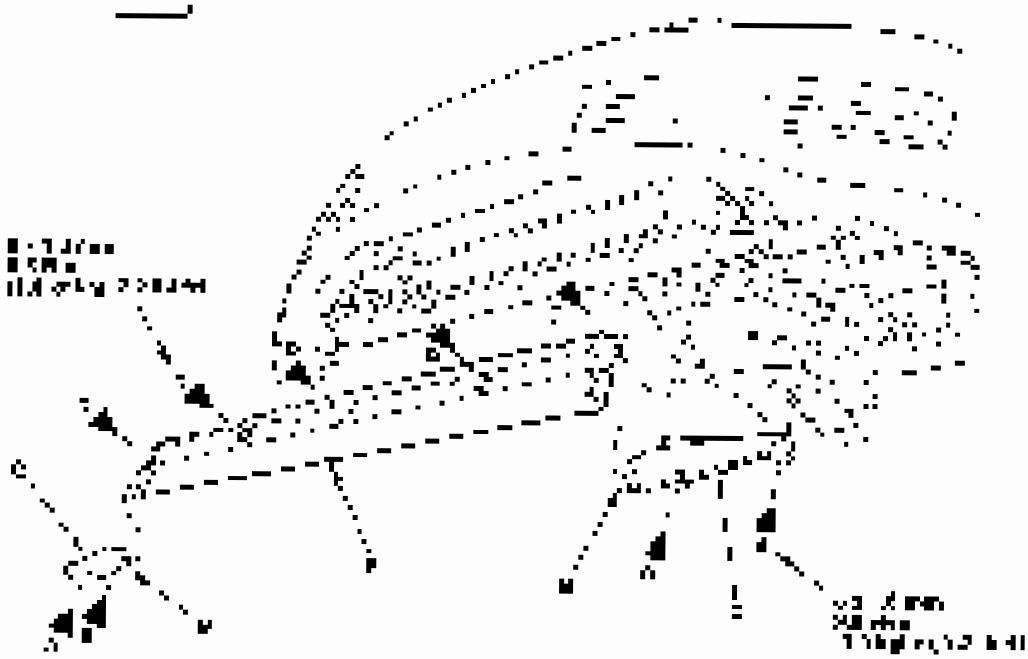




Front Strake Replacement

NOTE:

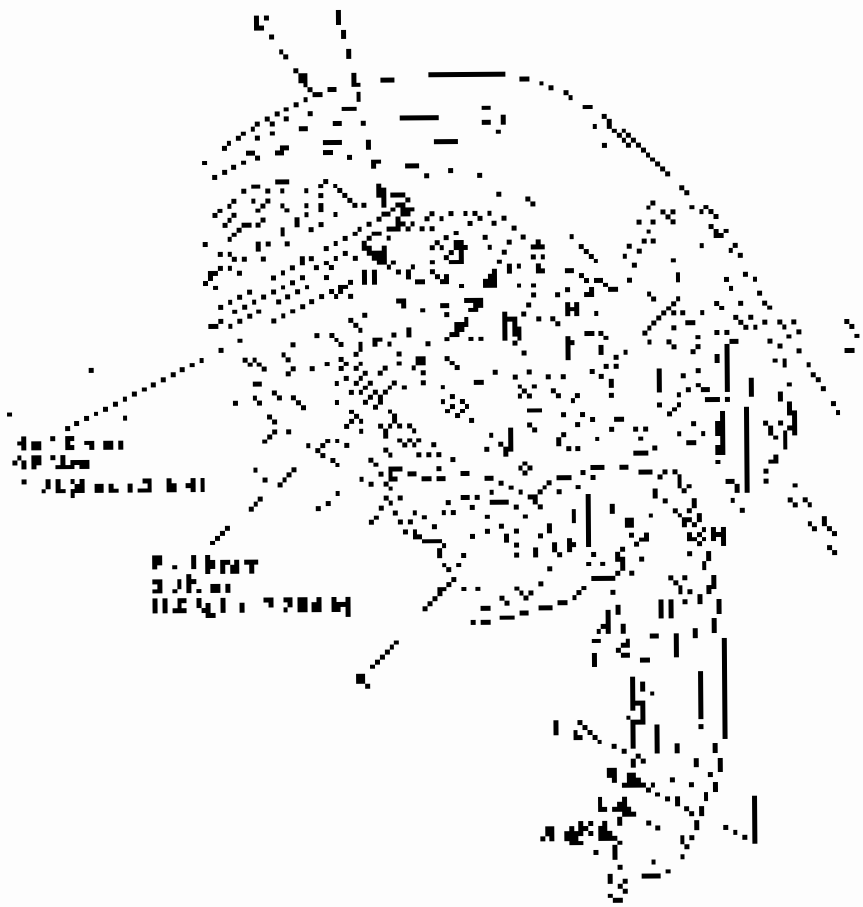
1.



2.

3.

Front Inner Fender Replacement



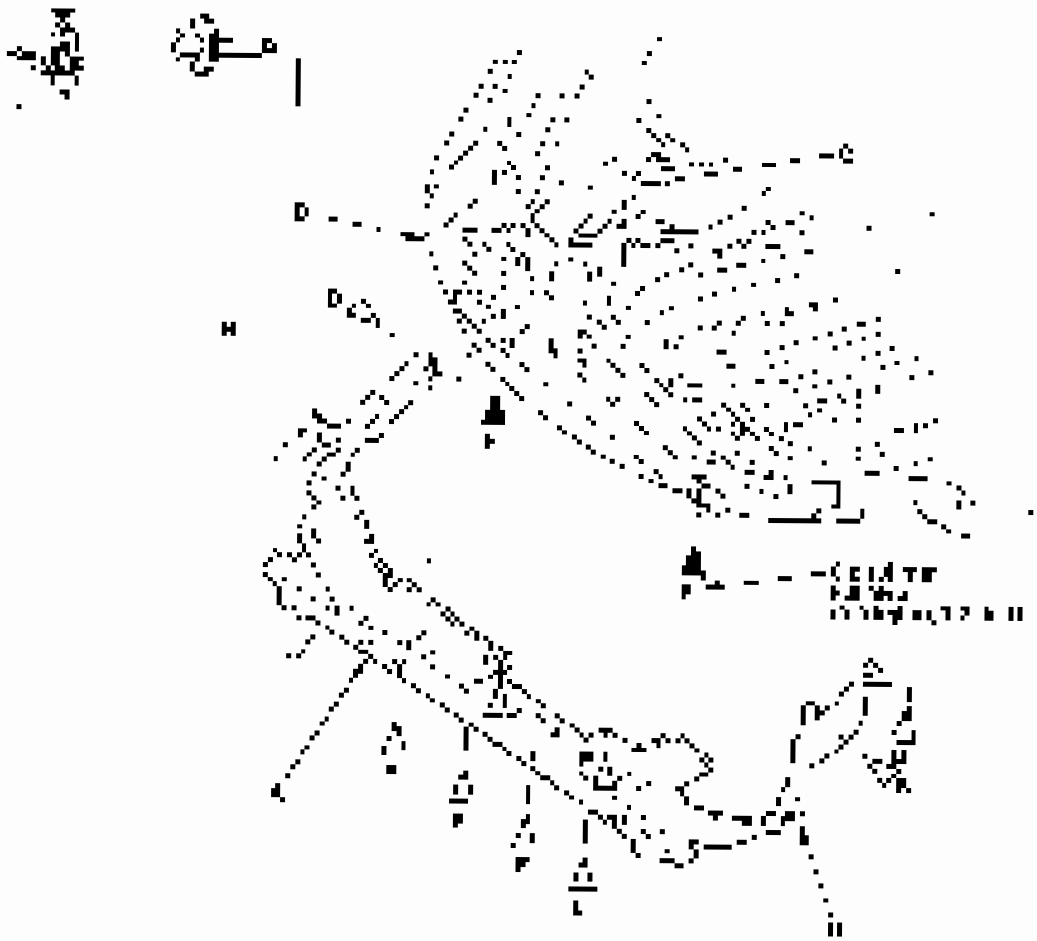
Splash Shield Replacement

NOTE: [illegible]

Removal and Installation (LX, EX)

1. [illegible]
2. [illegible]
3. [illegible]

Tightening torque:



2. [illegible]

- [illegible]
  [illegible]

Front Fender Fairing Replacement

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

Fuel Pipe Protector Replacement

1. [illegible]

[illegible]

[illegible]

2. [illegible]

- [illegible]
- [illegible]

Rear Inner Fender Replacement

NOTE: Take your time and be careful.

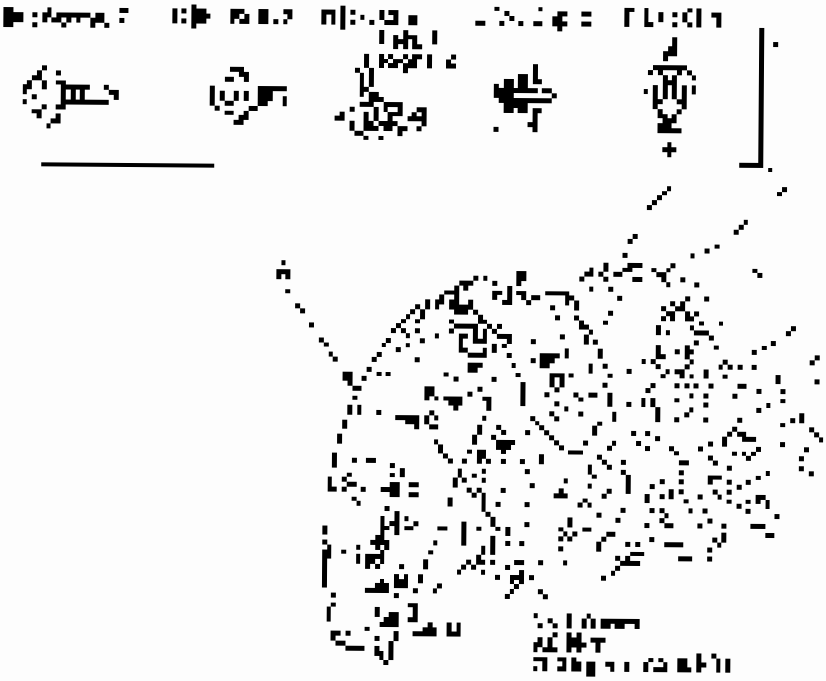
1. Remove the rear bumper. (See page 20-144.)

2. Remove the rear wheel well trim.

   - Remove the screws and the rear wheel well trim.
   - Remove the bolts and the rear wheel well trim.
   - Pull out the rear wheel well trim.

   NOTE: Left side shown, right side is similar.

3. Remove the rear inner fender.



4. Install the rear inner fender in the reverse order of removal, and note the following:

   - Replace any damaged clips.
   - Install the clips and the plastic rivets securely.

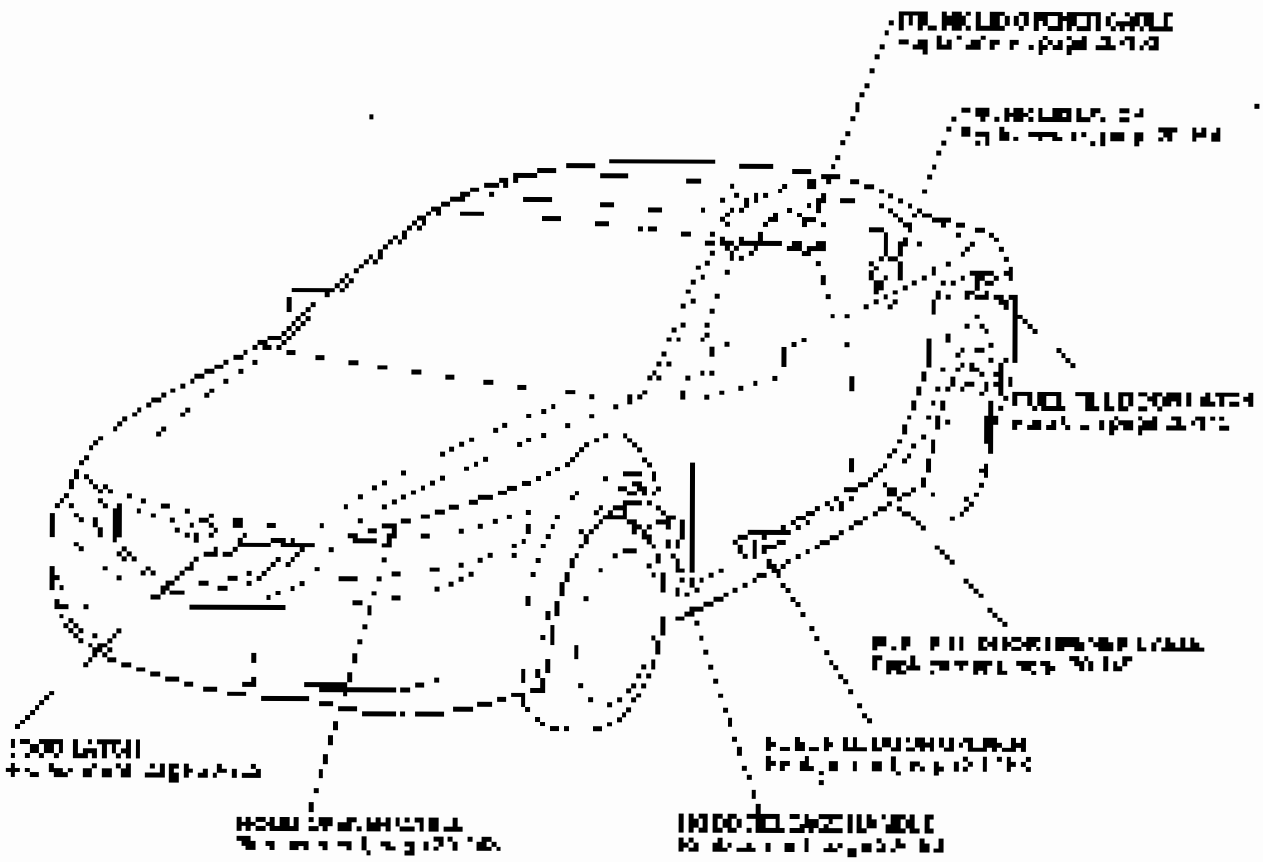
Rear Air Outlet Replacement

1. [illegible]

2. [illegible]

3. [illegible]

Component Location Index



Hood Opener Cable Replacement

NOTE:
- Wear gloves to protect your hands.
- Take care not to damage the body and wing panels.

1. Remove the following items:
   - Right [illegible] (see page 20-130)
   - [illegible] (see page 20-130)
   - [illegible] (see page 20-[illegible])
   - [illegible] (see page 20-[illegible])
   - [illegible] (see page 20-[illegible])
   - [illegible] (see page 20-[illegible])
2. Disconnect the hood opener cable [illegible] (see page 20-152).

[illegible]

Body side

3. [illegible] (see page [illegible]) [illegible] from the hood opener cable. Remove the hood opener cable from the vehicle. [illegible]
4. Install the cable in the reverse order of removal, and make sure it is not damaged or kinked.

Fuel Fill Door Opener Cable Replacement

[illegible] opener cable. Remove the [illegible] opener handle (see page 20-[illegible]) and the [illegible] (see page 20-[illegible]) before removing the opener cable.

NOTE:
- Put on gloves to avoid [illegible].
- Take care not to [illegible].

Disconnect the cable from the shaft of the [illegible]:

- [illegible] (see page 3-[illegible])
- [illegible] (see page 20-[illegible])
- [illegible] (see page 20-[illegible])
- [illegible] (see page 20-[illegible])
- [illegible] (see page 20-[illegible])
- [illegible] (see page 20-[illegible])
- [illegible] (see page 20-[illegible])
- [illegible] (see page 20-[illegible])
- [illegible] (see page 20-[illegible])

2. [illegible]

3. [illegible] (see page 20-[illegible])

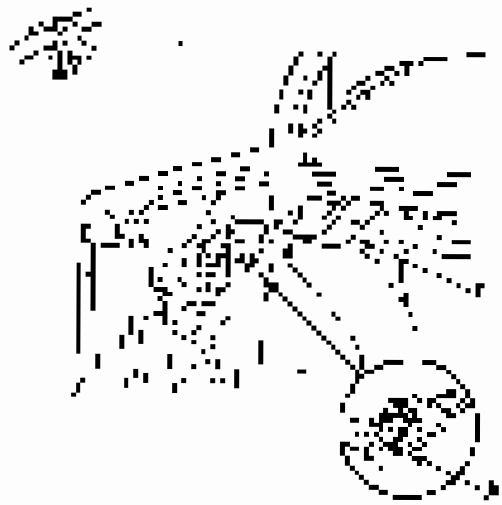
[illegible]

[illegible]

4. [illegible]

[illegible]

[illegible]

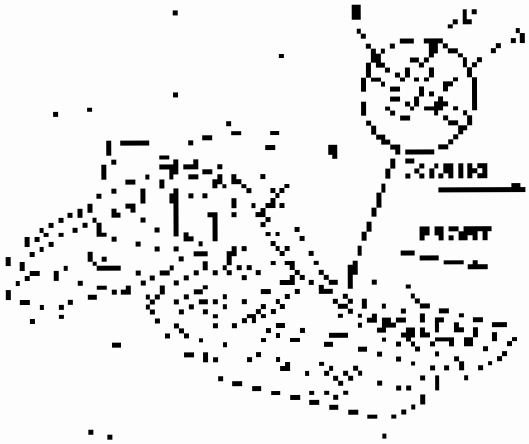


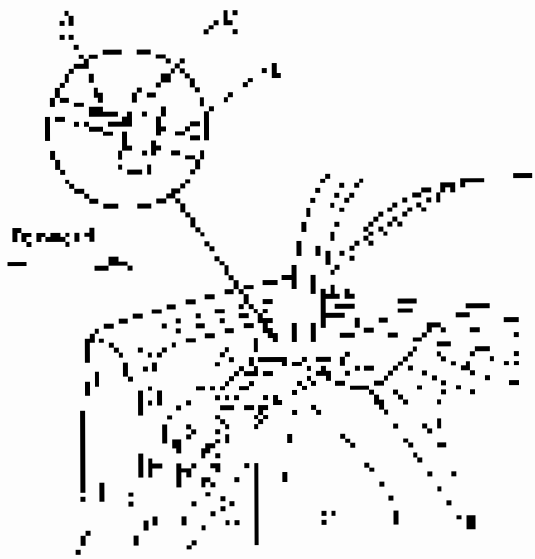
5. [illegible] (see page 20-[illegible])

6. [illegible] cable. Take care not to [illegible]

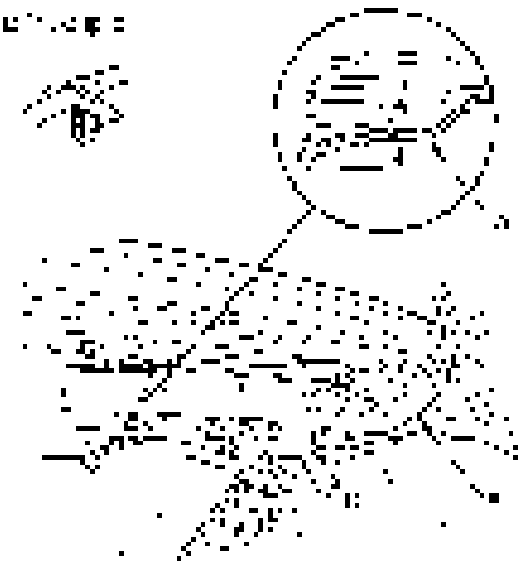
[illegible]

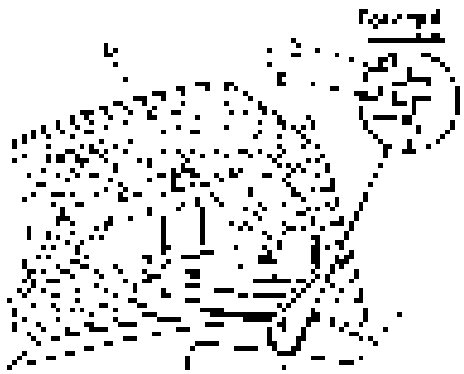
Fuel Fill Door Opener Cable Replacement (cont'd)

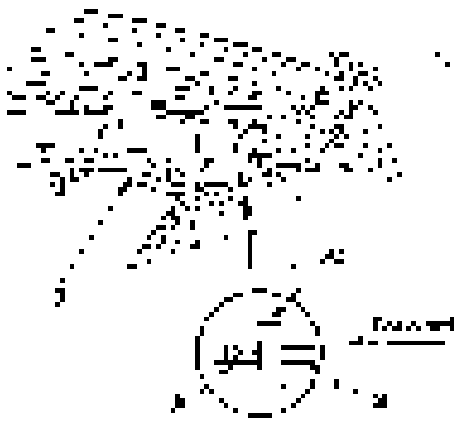




Trunk Lid Opener Cable Replacement







Hood Latch Replacement

1. [illegible]

2. [illegible]

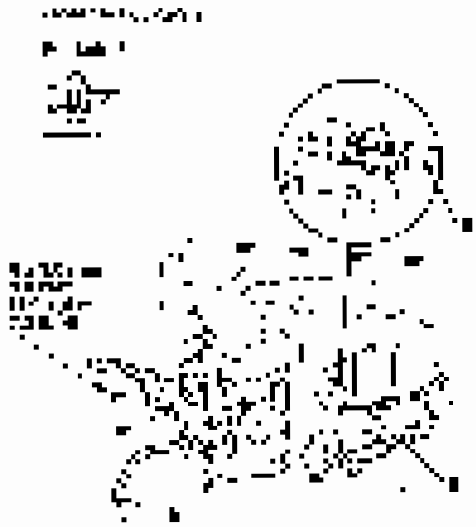
[illegible]

[illegible]

3. [illegible]

4. [illegible]

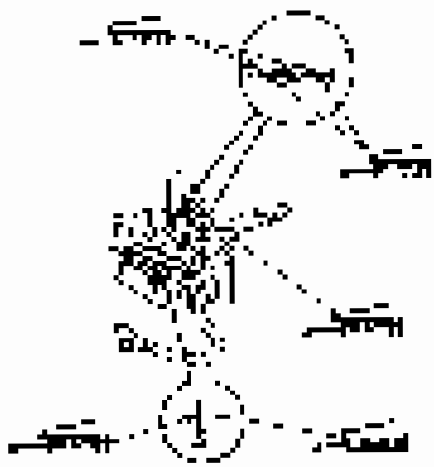
[illegible]



5. [illegible]

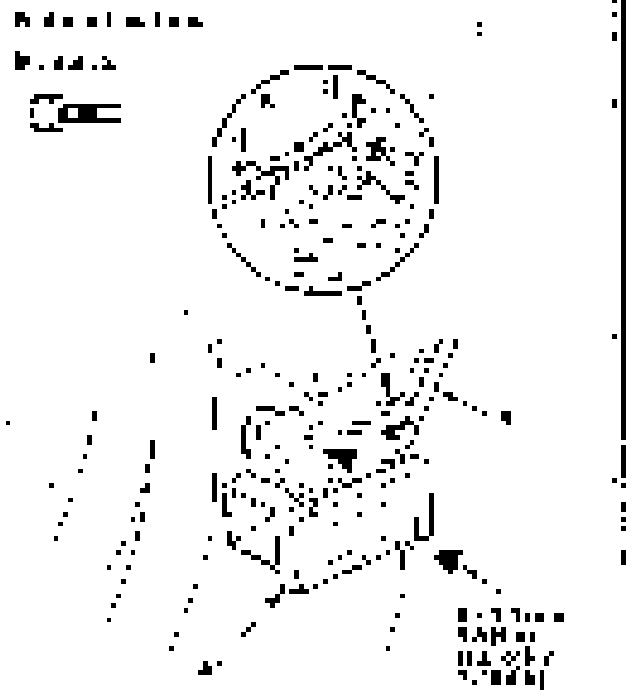
6. [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]



Hood Release Handle Replacement

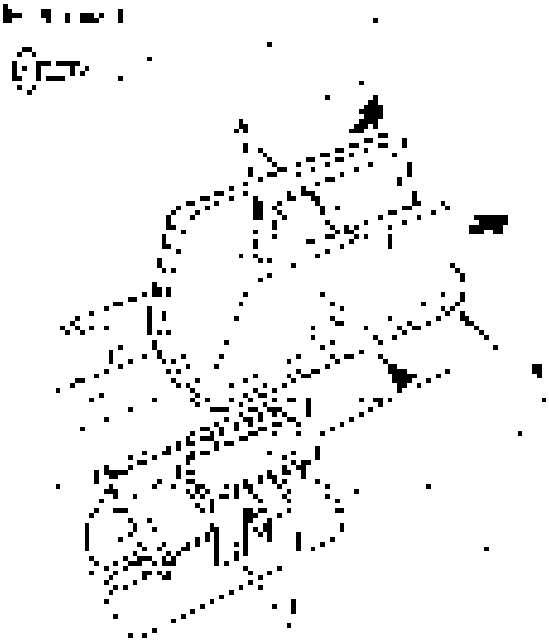
1. Remove the [illegible] (see page [illegible]).
2. Remove the [illegible] from the hood release handle bracket.



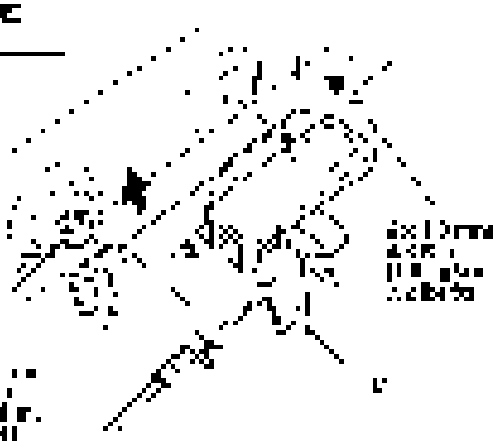
3. Disconnect the hood opener cable (1) from the hood release handle. Take care not to kink the cable.
4. [illegible] the hood release handle bracket from the [illegible] body.
   - Be careful not to damage the body panel.
   - Clean off any old sealer.

Front Fill Door Opener Replacement

1. Remove the [illegible] (see page [illegible]).
2. Disconnect the [illegible] from the front fill door opener (1).



3. Remove the [illegible].



4. [illegible] the front fill door opener (1) from the [illegible].

cont'd

Fuel Fill Door Opener Replacement (cont'd)

5. Disconnect the fuel fill door opener cable (1) from the release lever (2). See Fuel Door Release Lever Replacement in this section.

6. Install the opener in the reverse order of removal, and note these items:

- Make sure the opener cable is connected properly.
- Make sure the fuel fill door opens properly and seats correctly.

Trunk Lid Latch Replacement

- Be careful not to damage the paint or body panels during this procedure. Cover the body panels with fender covers to protect them.

Remove the following:

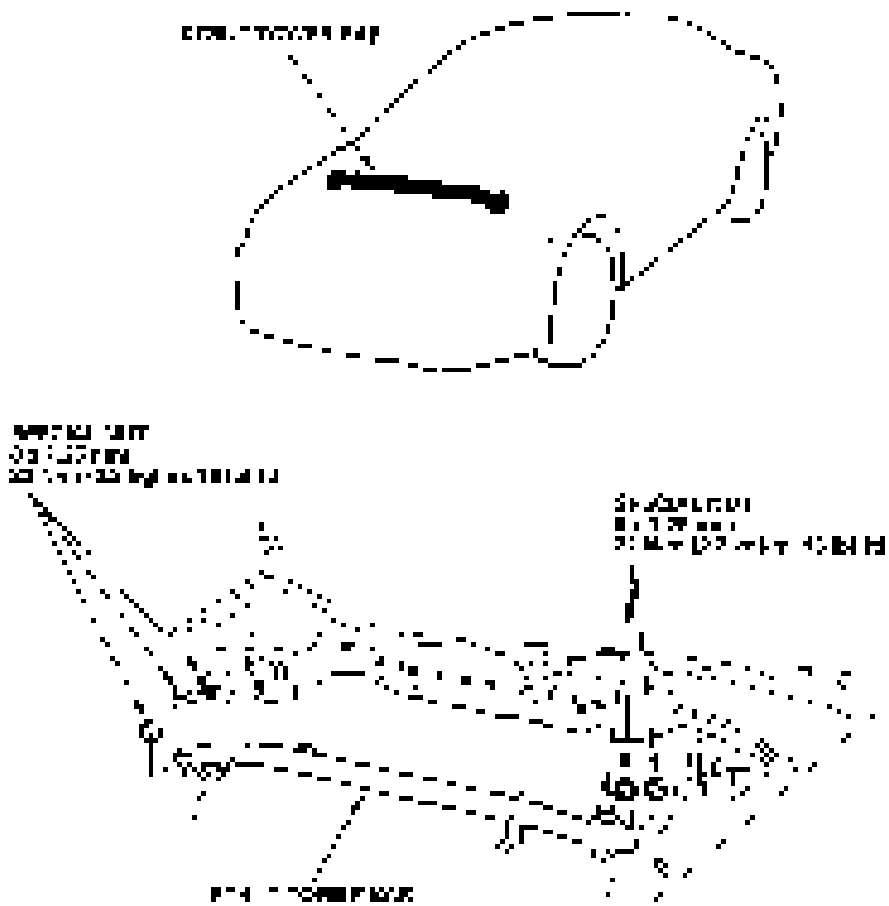
Trunk lid

5. Remove the latch from the trunk lid (1) and (2) (Torx screws).

6. Install the latch in the reverse order of removal, and note these items:

- Make sure the latch is connected properly and adjusted correctly.
- Make sure the trunk lid opens properly and seats correctly.

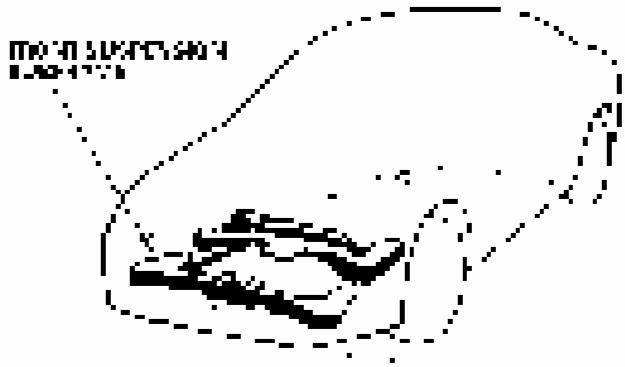
Frame Stiffener Replacement

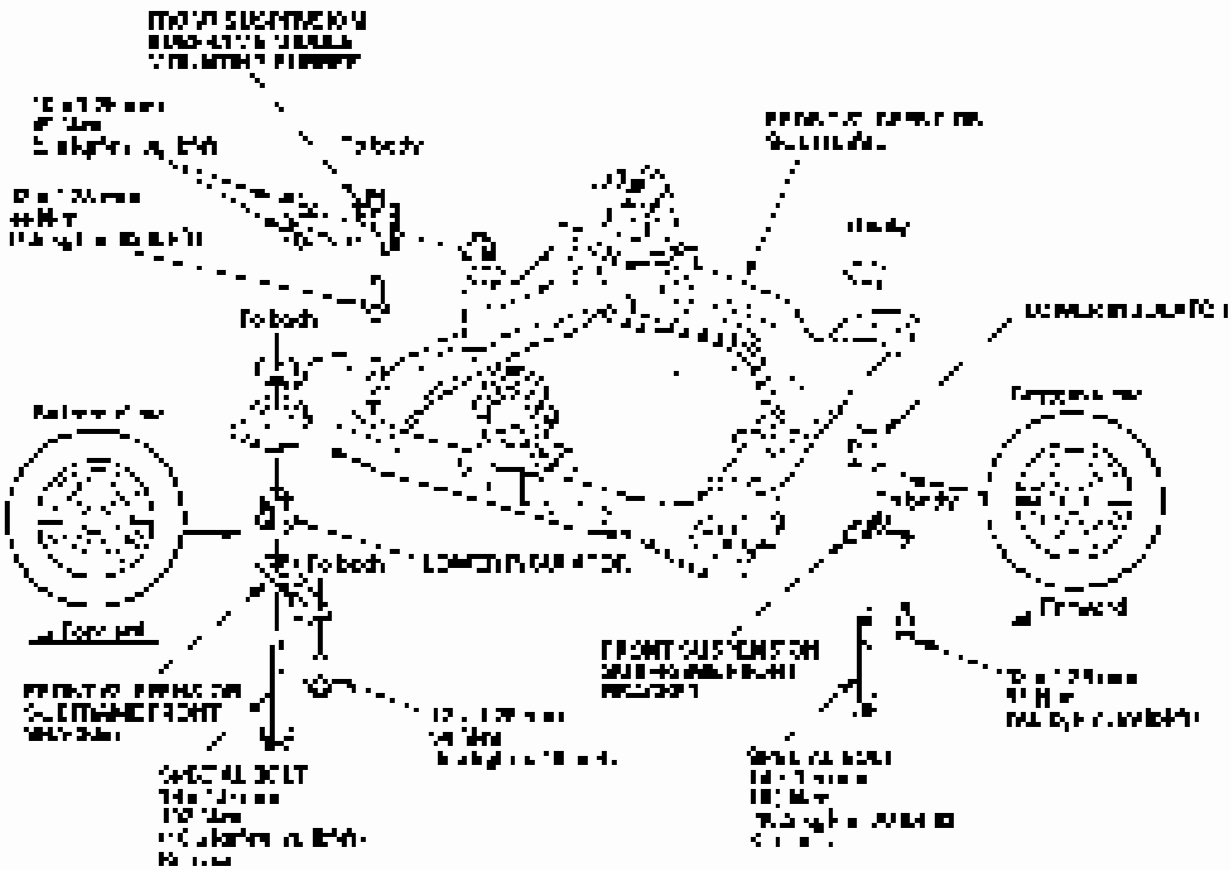


Subframe Replacement

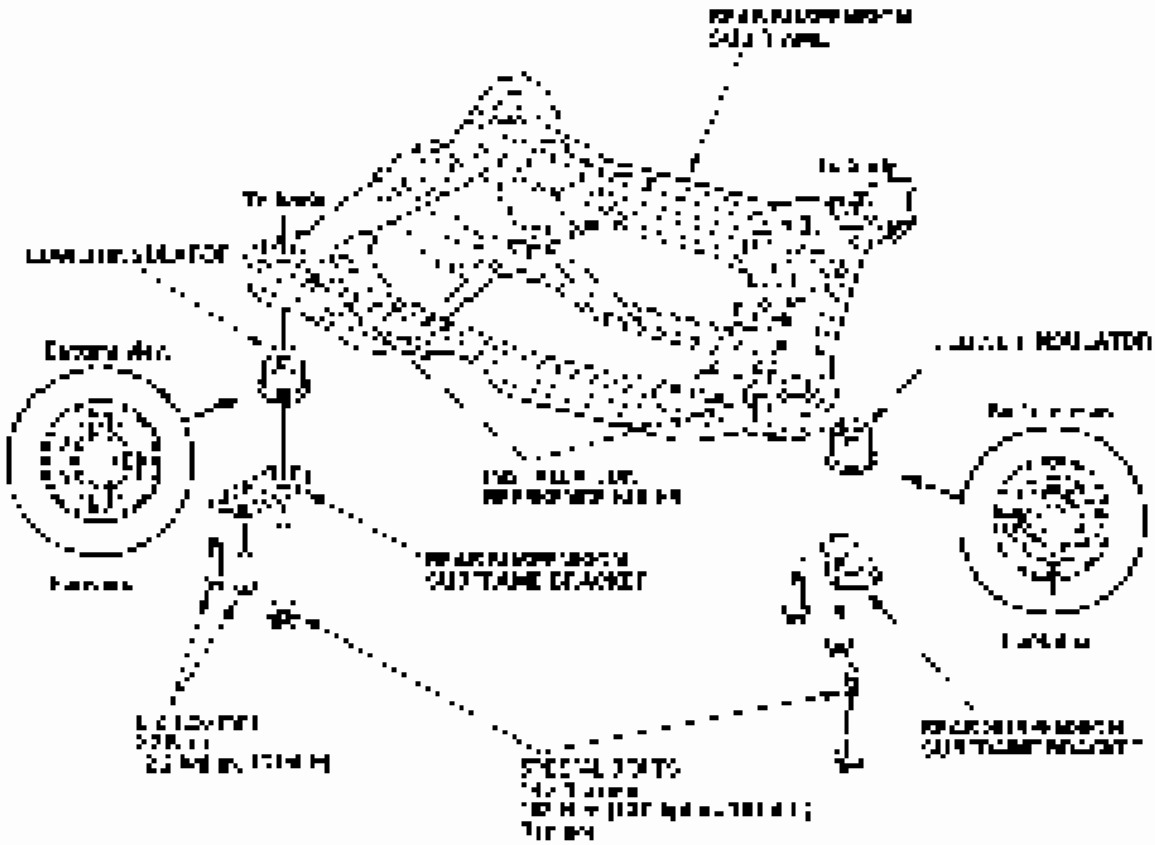
From Subframe Torque

Abbreviated procedure. Use detailed procedure before beginning work.



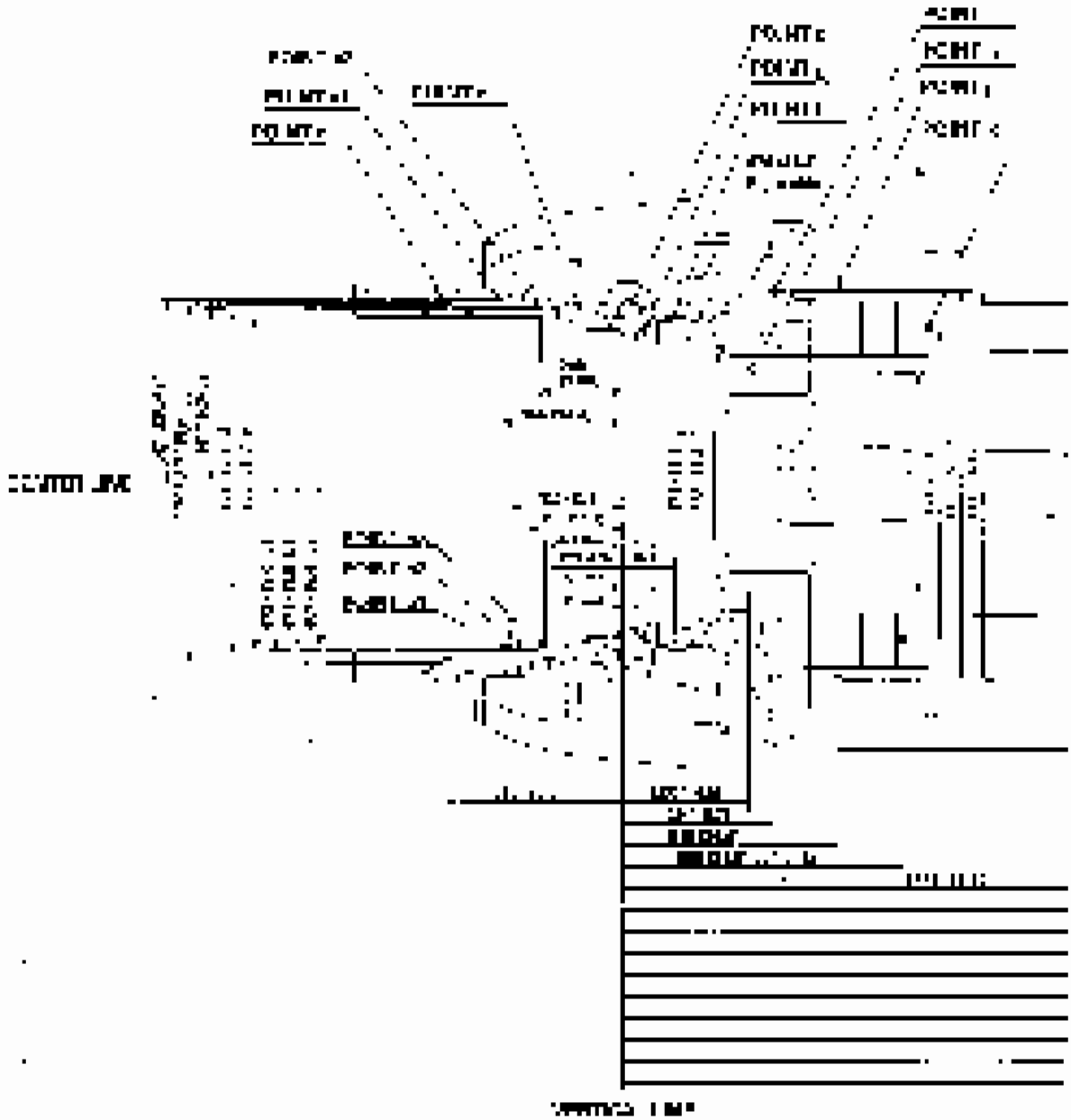


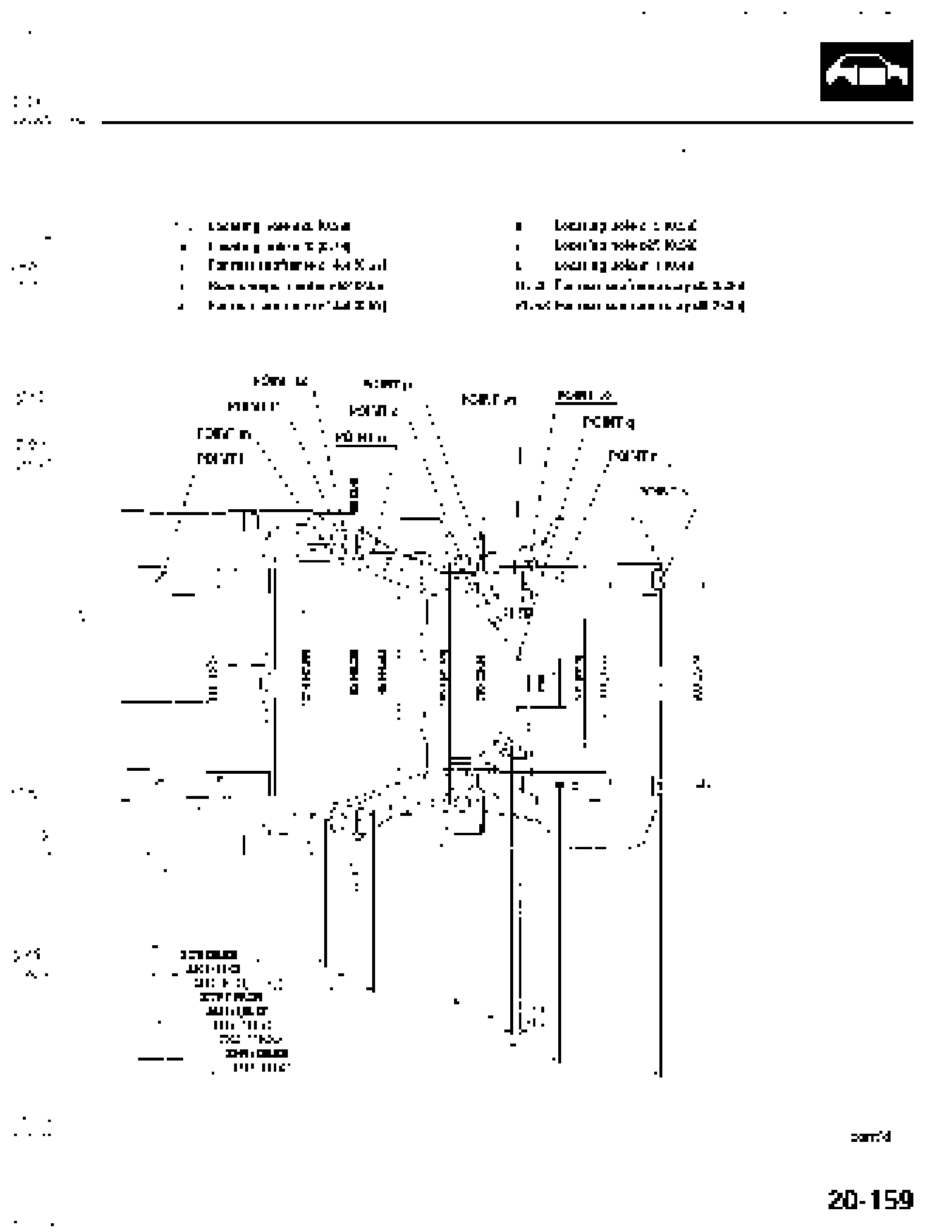
Rear Subframe Torques



Frame Repair Chart

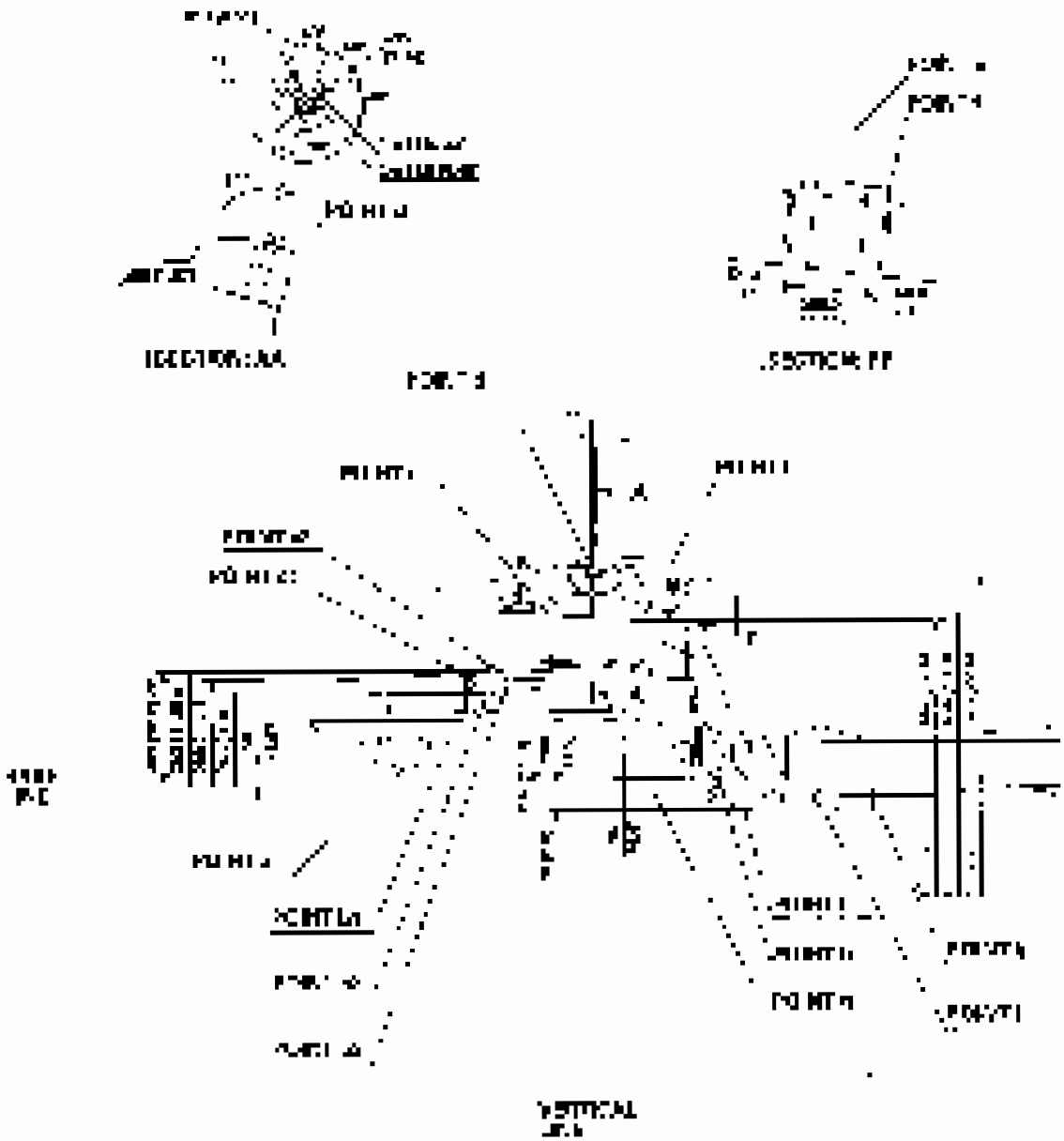
Top View

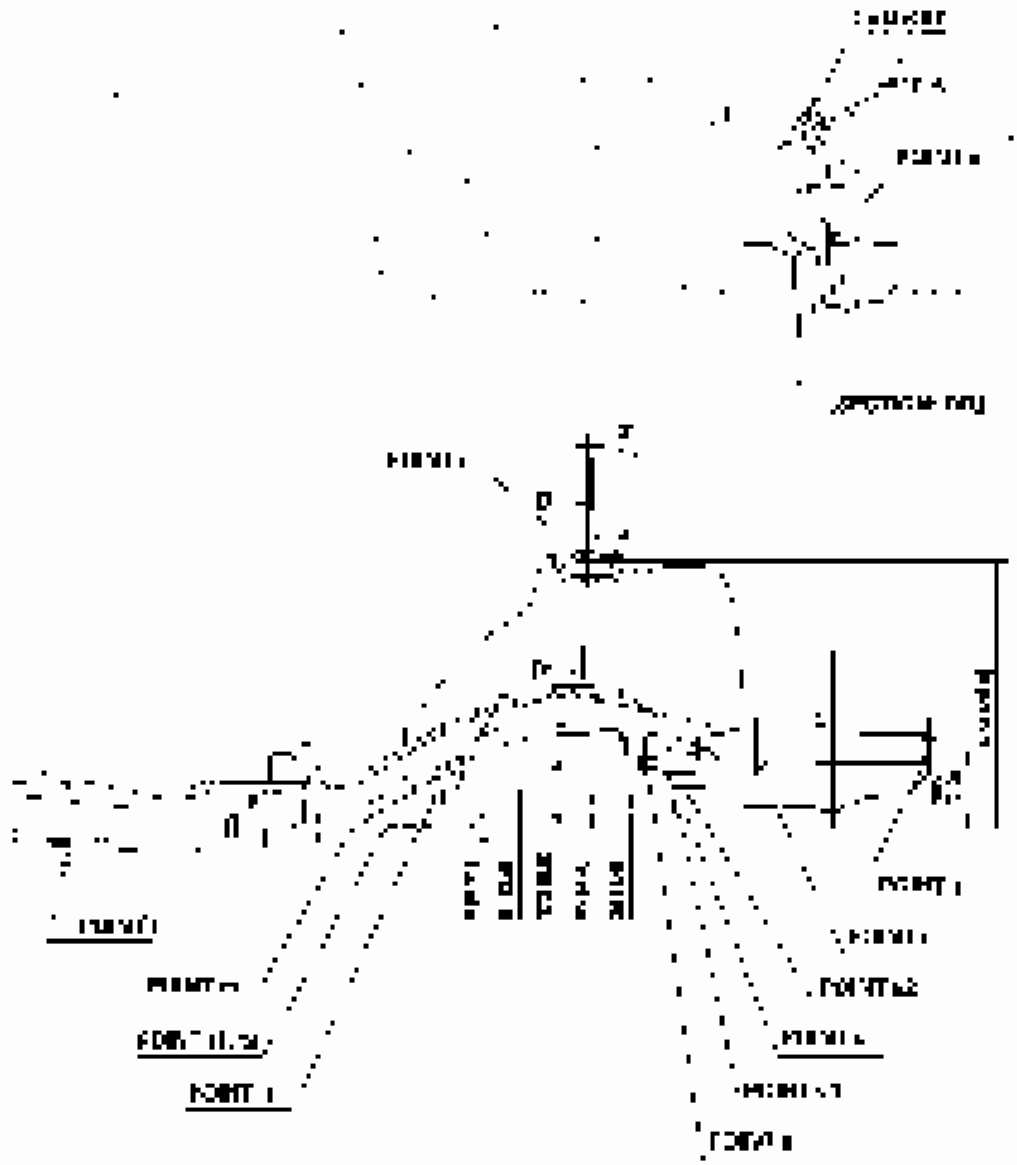




Frame Repair Chart (cont'd)

Side View





SUPPLEMENTAL RESTRAINT SYSTEM (SRS) HVAC maintenance required

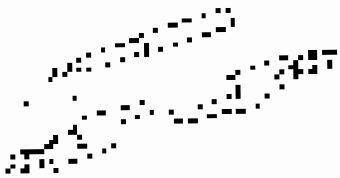
- [illegible]
- [illegible]
- [illegible]
- [illegible]

HVAC (Heating, Ventilation, and Air Conditioning)

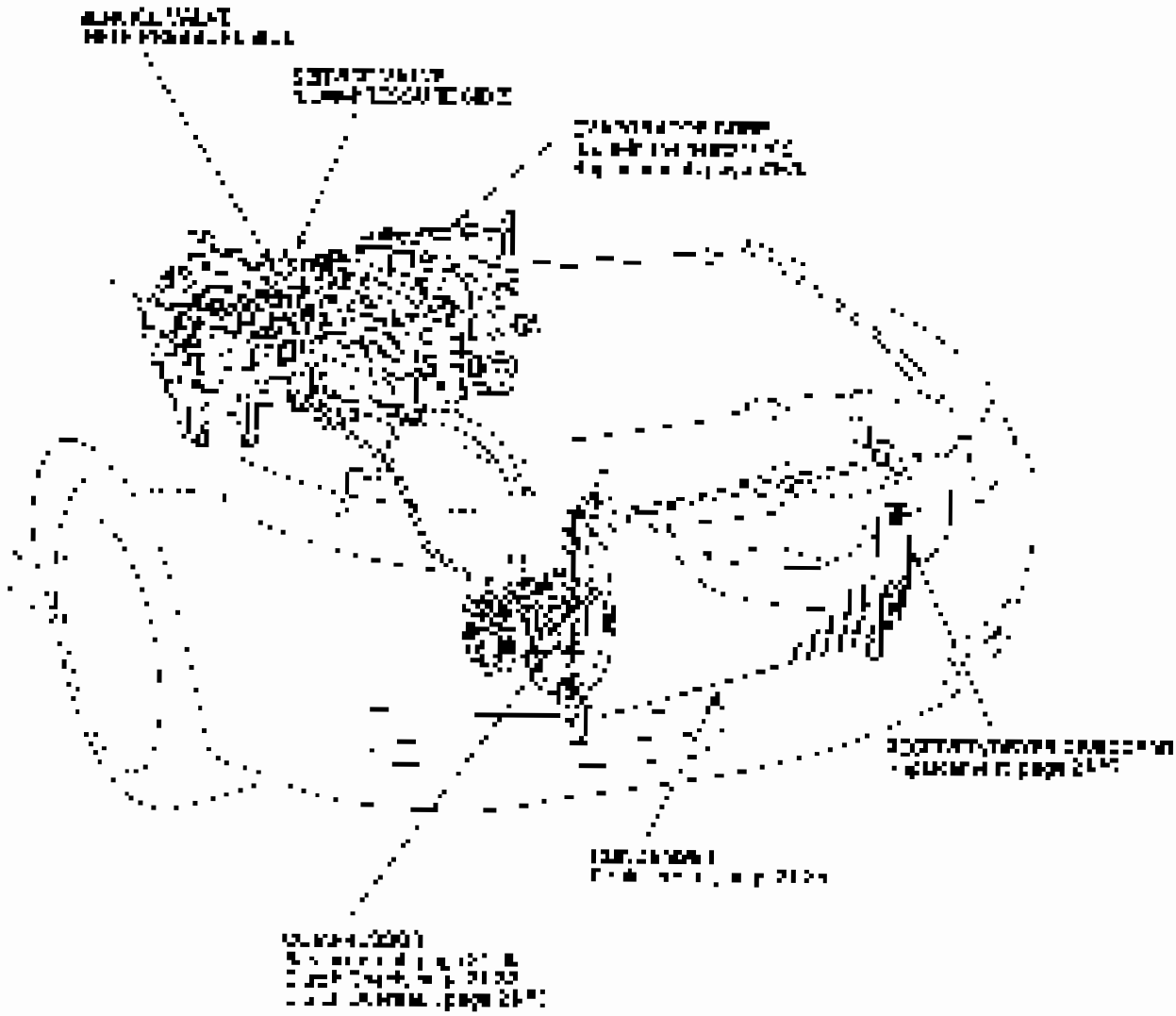
Climate Control

Special Tools

Ref No.	Tool Number	Description	Qty
1.	[illegible]	[illegible]	[illegible]



Component Location Index



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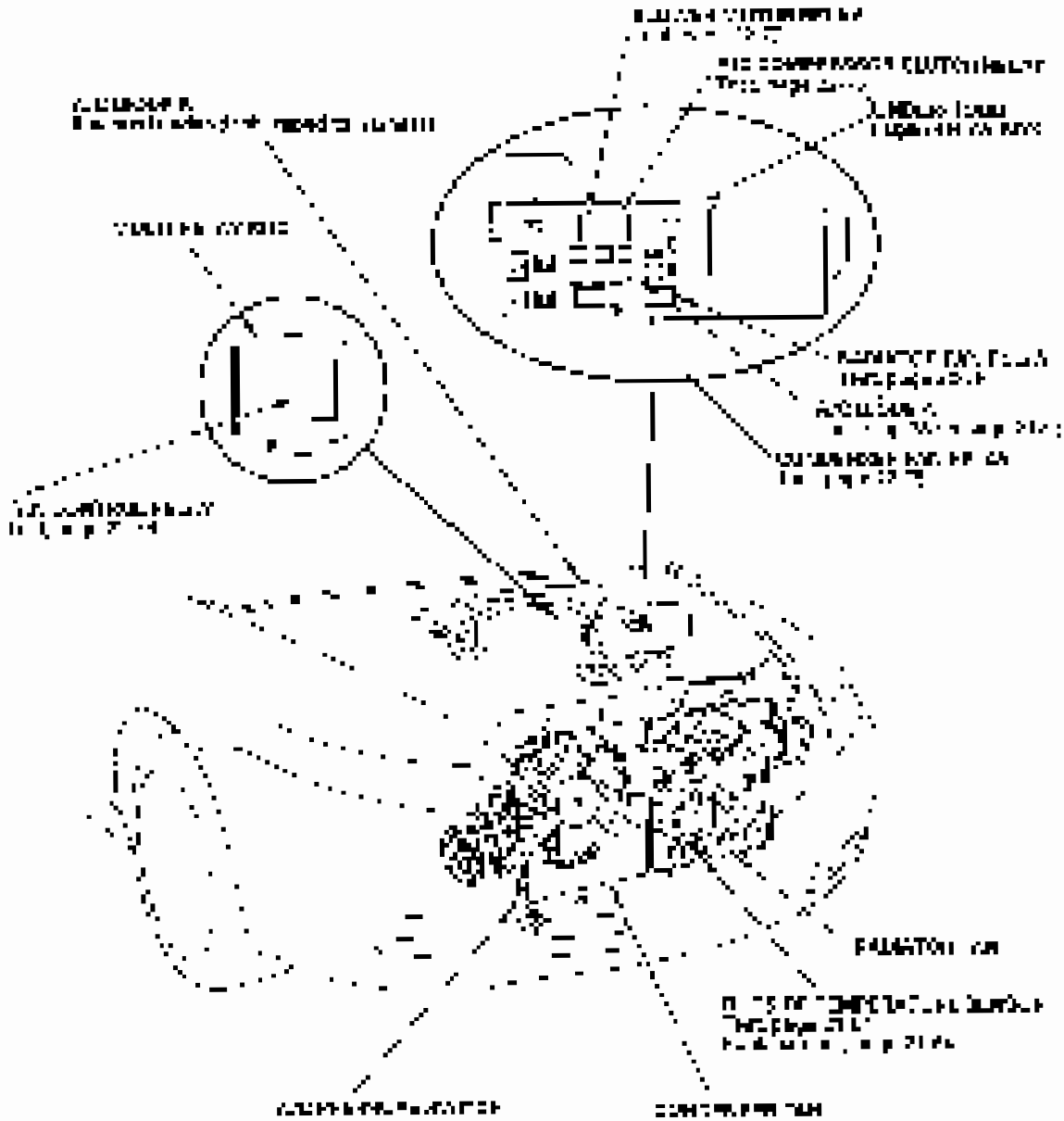
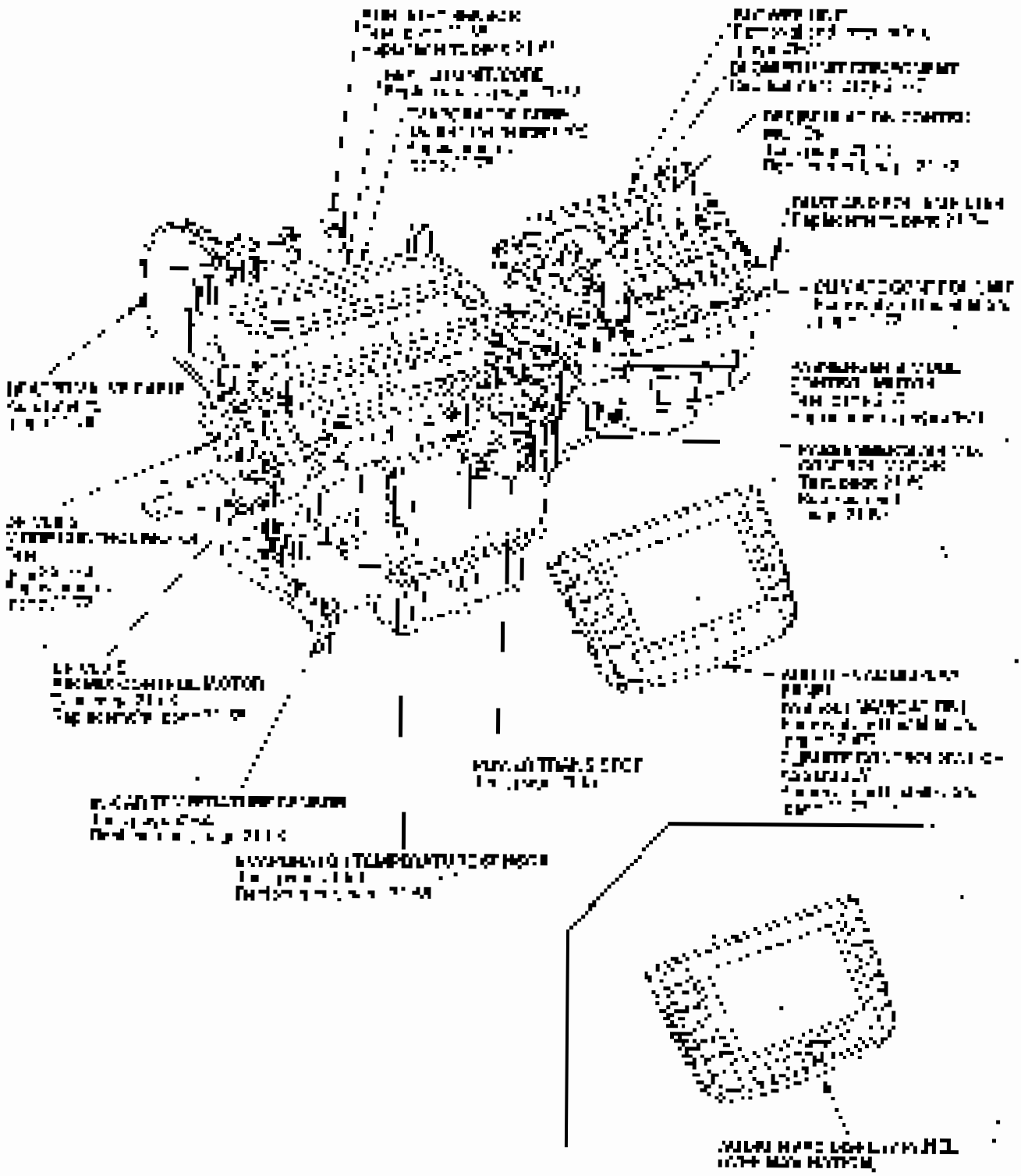
Component Location Index (cont'd)





A/C Service Tips and Precautions

⚠WARNING

- [illegible]
- [illegible]
- [illegible]

⚠CAUTION

- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

A/C Refrigerant Oil Replacement

Recommended [illegible]

- [illegible]
- [illegible]

[illegible]

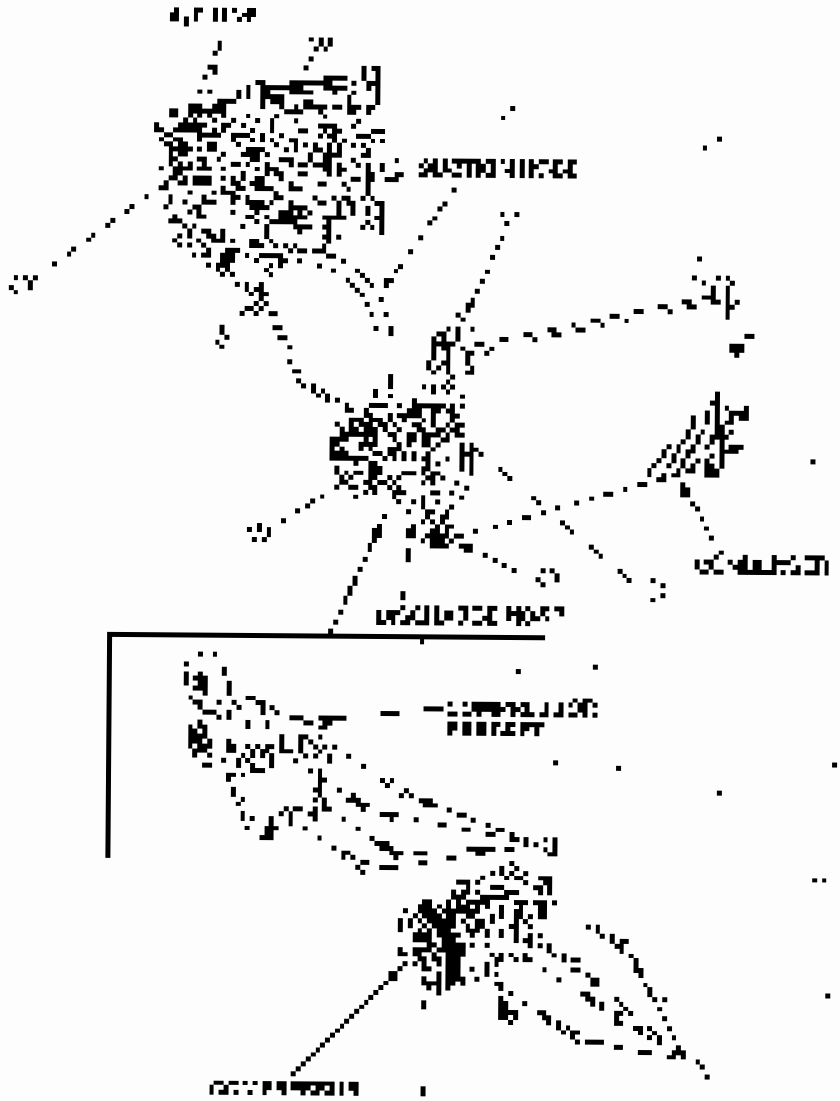
- [illegible]
- [illegible]
- [illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Compressor [illegible]

[illegible]

[illegible]

[illegible]



General Troubleshooting Information

How to Check for DTCs with the HDS

1. Make sure the ignition switch is OFF.
2. Connect the HDS to the vehicle's data link connector (DLC) [illegible]

3. Turn the ignition switch ON (II).
4. Select DTCs in the body electronic control system mode. [illegible]
5. Check for DTCs. If [illegible] refer to the next section [illegible]
6. [illegible]
7. Disconnect the HDS from the DLC.
8. Do not [illegible]

How to Perform a DTC (Without HDS)

[illegible]

NOTE: [illegible]

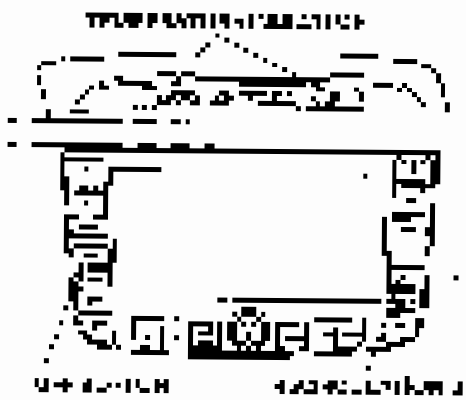
1. [illegible]

2. [illegible]

   NOTE: [illegible]

Without Navigation System

With Navigation System



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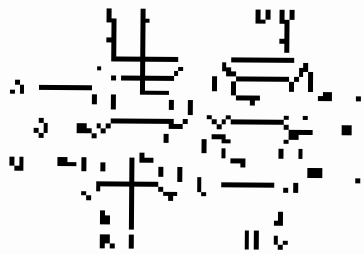

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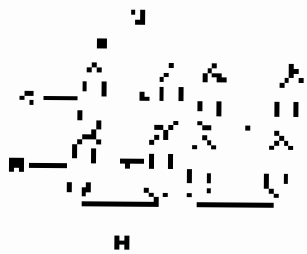


- [illegible]
  - [illegible]

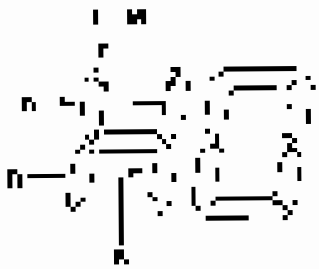
[illegible]

General Troubleshooting Information (cont'd)

Checking DTCs by DTC Indicator

...Troubleshooting Index page 23-137.

...



DTC (Temperature Indicator segment)	Indications	Page
A		
B		
C		
D		
E		
F		
G		
H		
J		
K		
L		
P		
U		
R		
S		

Displaying Sensor Inputs at the Climate Control Unit

The climate control unit has a mode that displays [illegible]. This mode [illegible] the sensors [illegible] determine [illegible].

Check these items before using the sensor input display mode:

1. [illegible] from PRESS to RECIRC [illegible]
2. [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
3. Turn the ignition switch [illegible]

To run the sensor input display mode, follow these steps:

1. Turn the ignition switch OFF.
2. [illegible] the passenger's A/C [illegible], then start the engine.
3. [illegible] the sensors. [illegible]
4. [illegible]

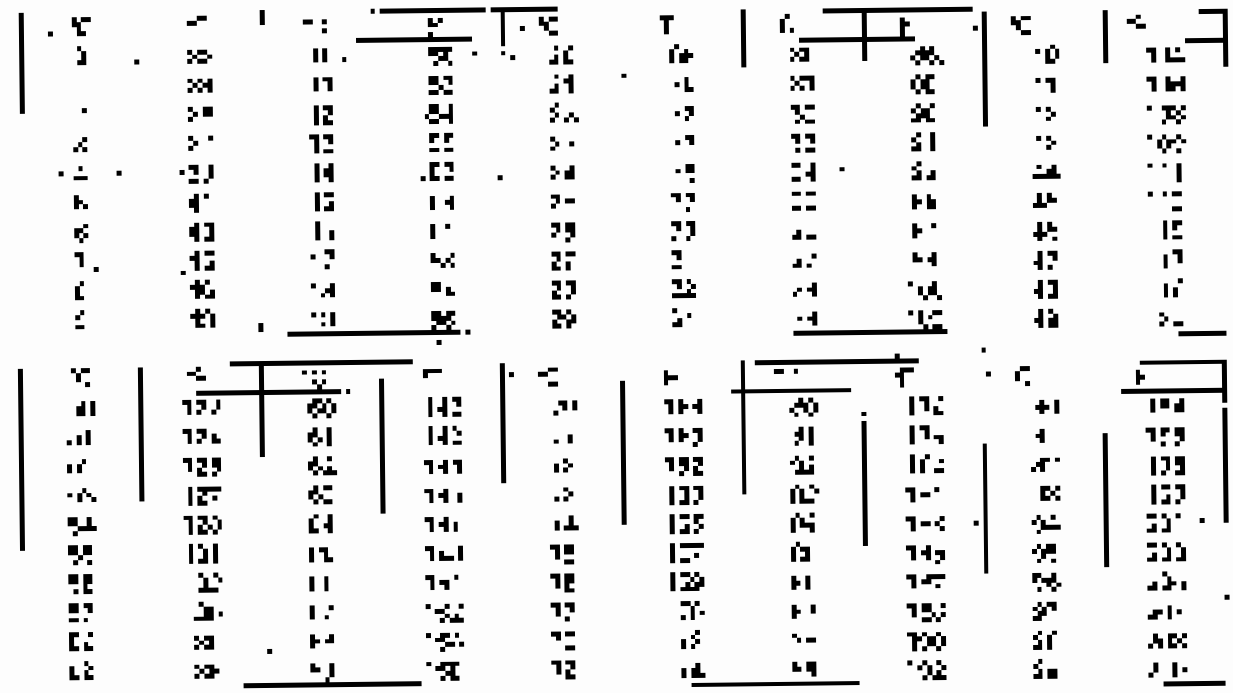
Sensor	Item	Displayed Value
[illegible]	Inside Temperature Sensor [illegible]	°C
[illegible]	Ambient Temperature	°C
3	Solar Radiation Sensor [illegible]	[illegible]
[illegible]	[illegible] Temperature	°C
[illegible]	[illegible] Temperature	°C
[illegible]	[illegible]	% of opening
[illegible]	[illegible]	% of opening
[illegible]	Vehicle Speed [illegible]	Km/h
[illegible]	[illegible] Temperature [illegible]	°C

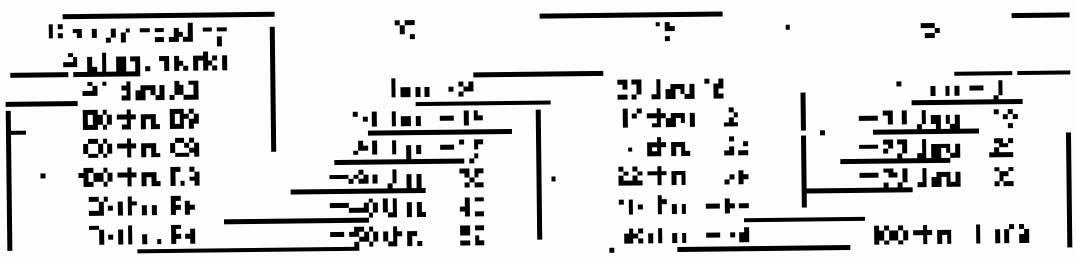
NOTE:
- [illegible]
- [illegible]
- [illegible]
- [illegible]

5. [illegible] the ignition switch [illegible].

(cont'd)

General Troubleshooting Information (cont'd)





DTC Troubleshooting Index

DTC		ECU		
B1232		Climate control unit	Diagnostic trouble code	
B1233		Climate control unit	Signal error	
B1234		Climate control unit	Signal error	
B1235		Climate control unit	Signal error	
B1236		Climate control unit	Signal error	
B1237		Climate control unit	Signal error	
B1238		Climate control unit	Signal error	
B1239		Climate control unit	Signal error	
B123A		Climate control unit	Diagnostic trouble code	
B123B		Climate control unit	Diagnostic trouble code	
B123C		Climate control unit	Signal error	
B123D		Climate control unit	Signal error	
B123E		Climate control unit	Signal error	
B123F		Climate control unit	Signal error	
B1240		Climate control unit	Signal error	
B1241		Climate control unit	Signal error	
B1242		Climate control unit	Signal error	
B1243		Climate control unit	Signal error	
B1244		Climate control unit	Signal error	
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B1246		Climate control unit	Signal error	
B1247		Climate control unit	Signal error	
B1248		Climate control unit	Signal error	
B1249		Climate control unit	Signal error	
B124A		Climate control unit	Signal error	
B124B		Climate control unit	Signal error	
B124C		Climate control unit	Signal error	
B124D		Climate control unit	Signal error	
B124E		Climate control unit	Signal error	
B124F		Climate control unit	Signal error	
B1250		Climate control unit	Signal error	
B1251		Climate control unit	Signal error	
B1252		Climate control unit	Signal error	
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B1258		Climate control unit	Signal error	
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B125F		Climate control unit	Signal error	
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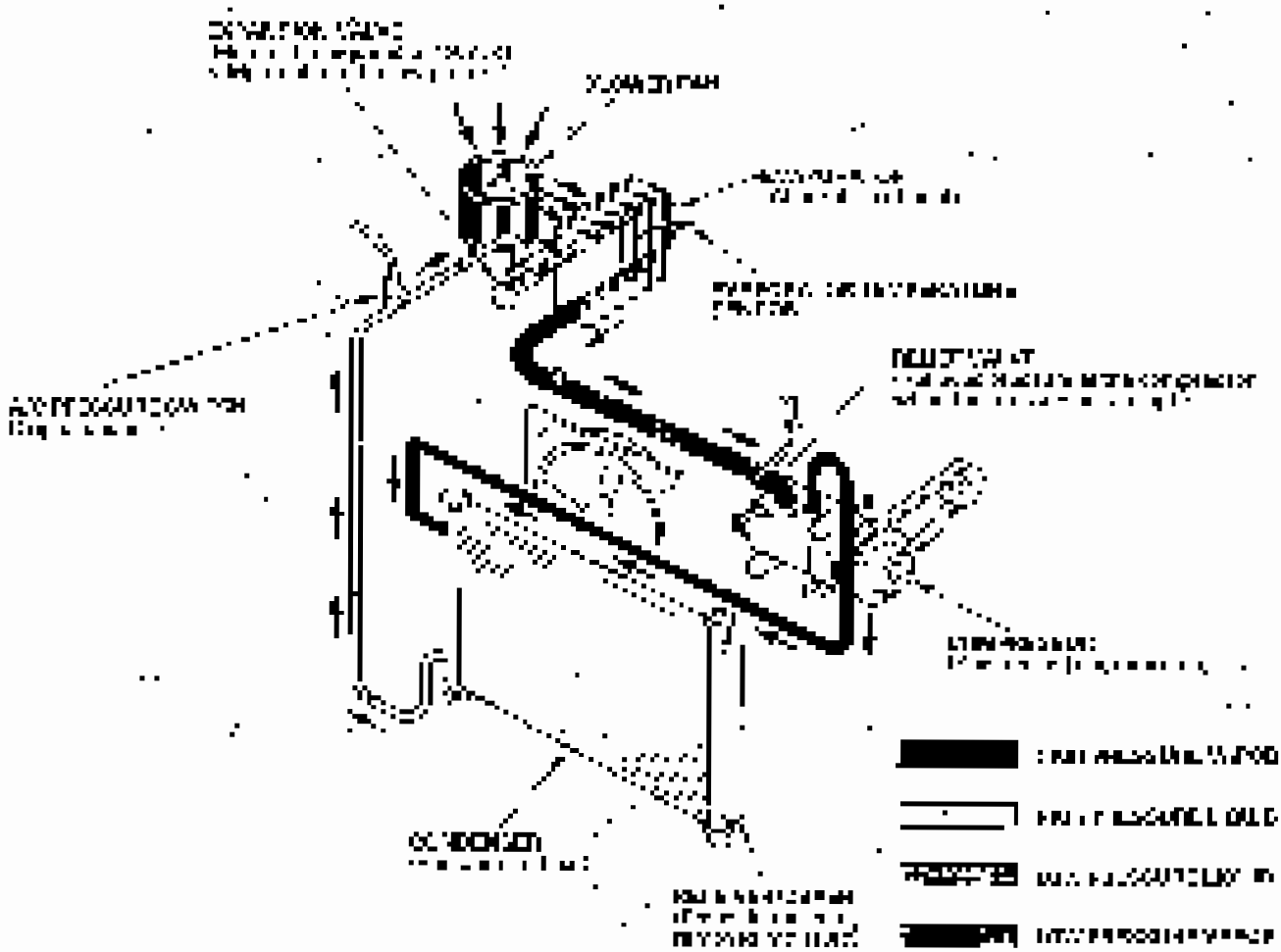
B12FA		Climate control unit	Signal error	
B12FB		Climate control unit	Signal error	
B12FC		Climate control unit	Signal error	
B12FD		Climate control unit	Signal error	
B12FE		Climate control unit	Signal error	
B12FF		Climate control unit	Signal error	

Symptom Troubleshooting Index

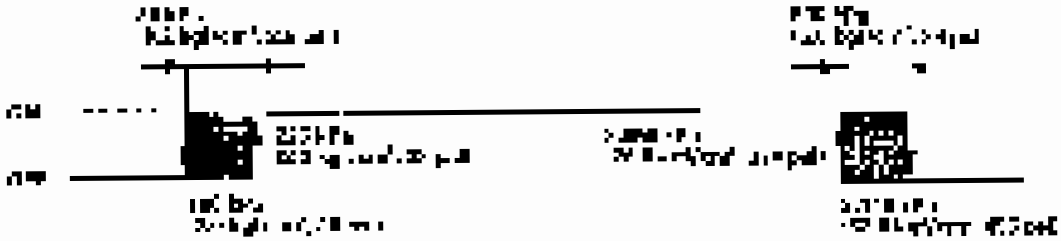
Symptom	Diagnostic procedure	Also check for
Refrigerant leaks from the compressor discharge pressure relief valve and the service valves	Refrigerant Leak Test (see page 21-52)	• P0530 DTCs (see page 21-xx) • Blower Motor Will Not Run at Any Speed (see page 21-xx) • Open fuse(s) and open circuit(s) • Compressor clutch coil open or shorted
The A/C compressor clutch does not engage	Compressor clutch coil open or shorted (see page 21-xx) Compressor clutch coil power and ground circuit troubleshooting (see page 21-xx)	• P0530 DTC (see page 21-xx) • Blower Motor Will Not Run at Any Speed (see page 21-xx) • Poor connection at C203 • Poor connection at compressor clutch coil connector
Both refrigerant pressures are higher than specified in the A/C cycle test and the compressor clutch cycles normally	Refrigerant overcharged (see page 21-52) Condenser cooling system malfunction (see page 21-52)	• P0530 DTC (see page 21-xx) • Blower Motor Will Not Run at Any Speed (see page 21-xx) • Poor connection at C201 • Check fuses and open circuit(s)
Both refrigerant pressures are higher than specified in the A/C cycle test and the compressor clutch cycles normally	Condenser fan high-speed circuit troubleshooting (see page 21-xx)	• Blower Motor Will Not Run at Any Speed (see page 21-xx) • Blower Motor Will Not Run at Any Speed (see page 21-xx) • Poor connection at C201 • Check fuses and open circuit(s)
Both refrigerant pressures are higher than specified in the A/C cycle test and the compressor clutch cycles normally	Condenser fan high-speed circuit malfunction (see page 21-xx)	• P0530 DTC (see page 21-xx) • Check fuses and open circuit(s)
Both refrigerant pressures are lower than specified in the A/C cycle test and the compressor clutch cycles normally	Compressor clutch circuit malfunction (see page 21-xx)	• P0530 DTC (see page 21-xx) • Blower Motor Will Not Run at Any Speed (see page 21-xx) and No CD Player (see page 22-xx) • Check fuses and open circuit(s)
A/C system cycles normally but does not provide sufficient cooling	A/C refrigerant system check (see page 21-xx)	• Body DTCs (see page 21-xx) • Blower Motor Will Not Run at Any Speed (see page 21-xx) • P0530 DTC (see page 21-xx) • Check fuses and open circuit(s)
Blower fan motor does not run at any speed in the A/C mode	HVAC Control Assembly Input Test (see page 21-xx) If DTC P1631 is present, refer to the Diagnostic Trouble Code (DTC) Table in this section. Failure of the HVAC control assembly will set this DTC. Other DTCs may be present that indicate the source of the problem. Blower motor circuit malfunction (see page 21-xx)	• P0530 DTC (see page 21-xx)
Refrigerant pressure is high at all times in the A/C cycle	Test drive vehicle (see page 21-xx) Refrigerant overcharged (see page 21-52)	• P0530 DTC (see page 21-xx) • Check fuses and open circuit(s)

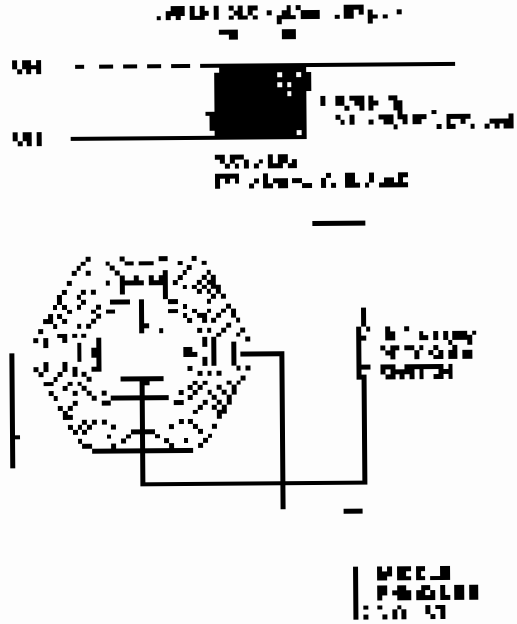


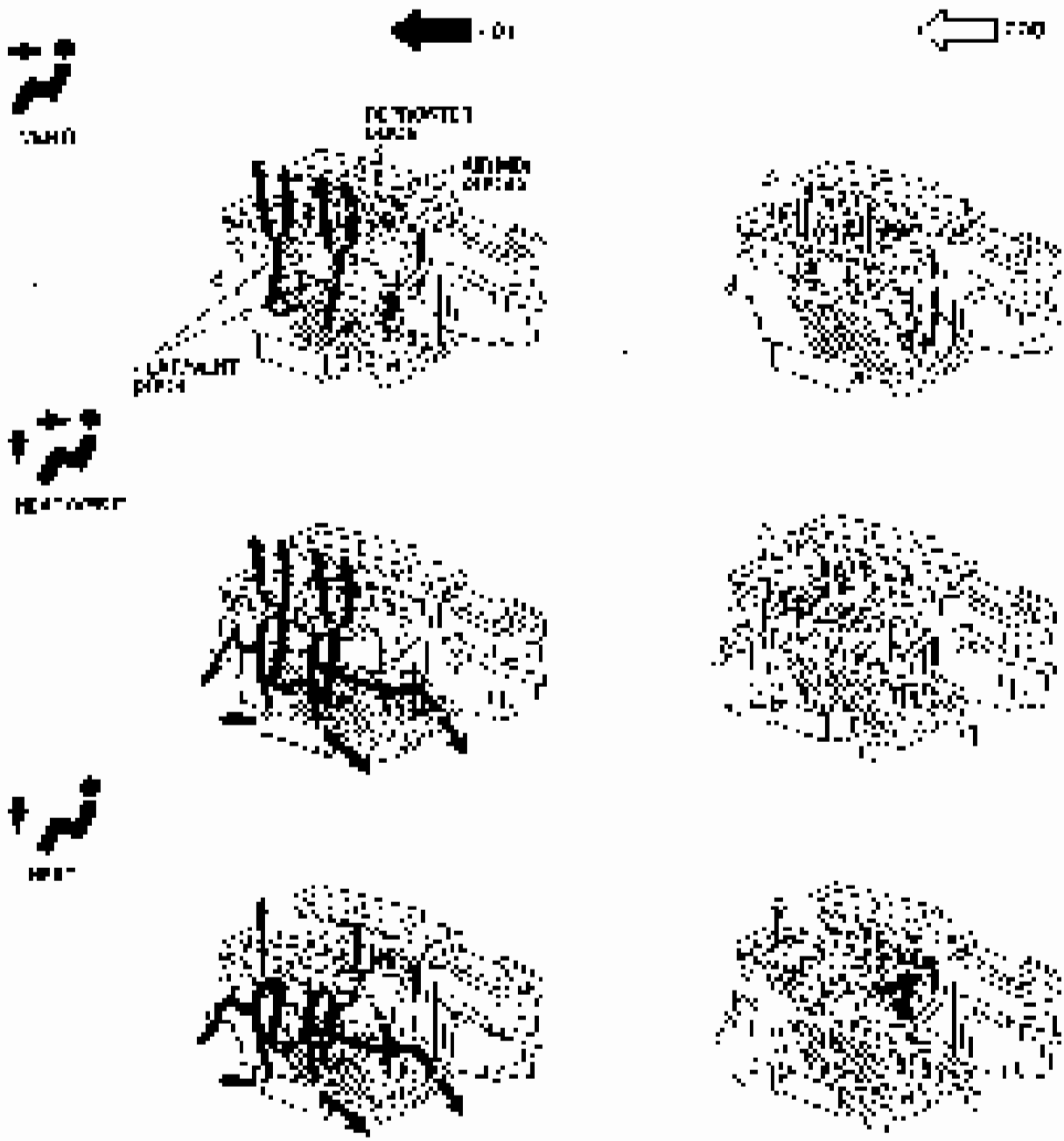
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

System Description (cont'd)

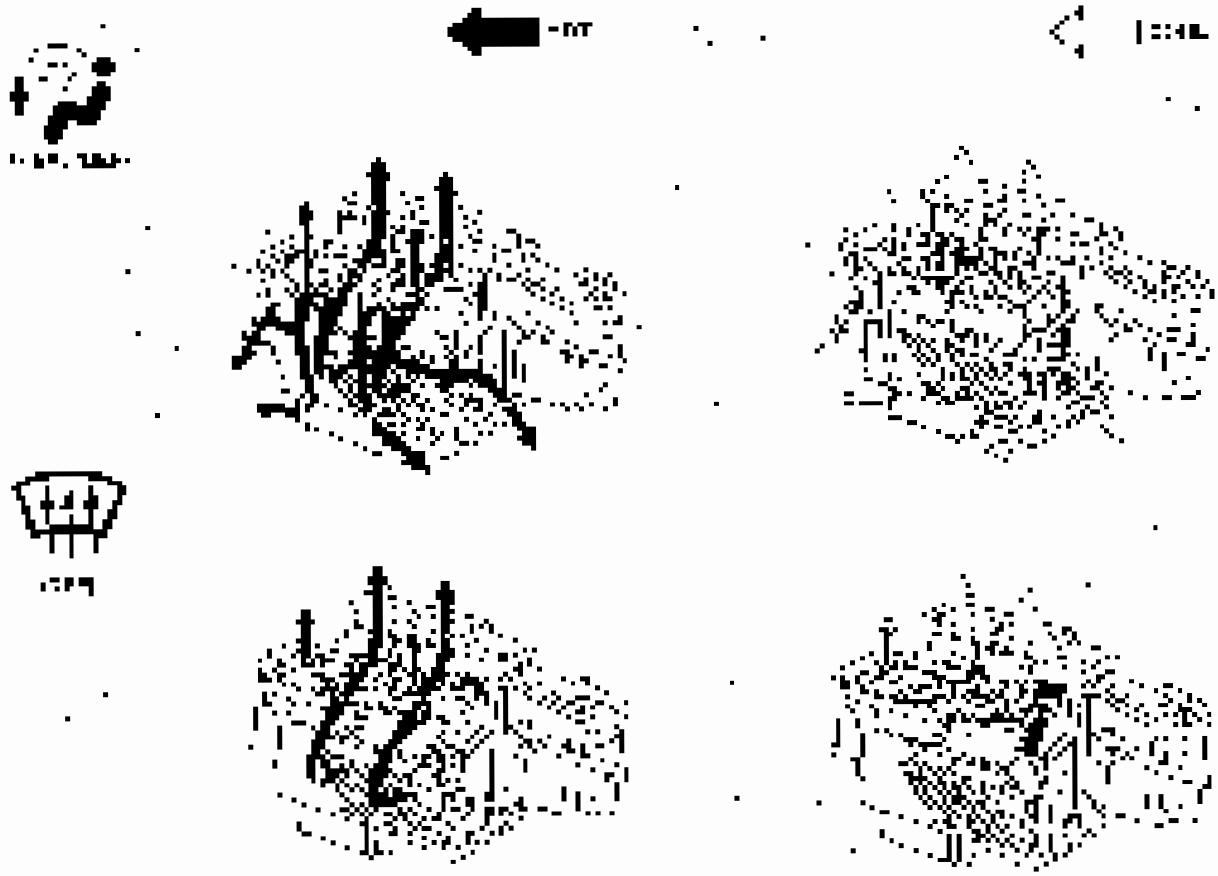
A/C Pressure Switch





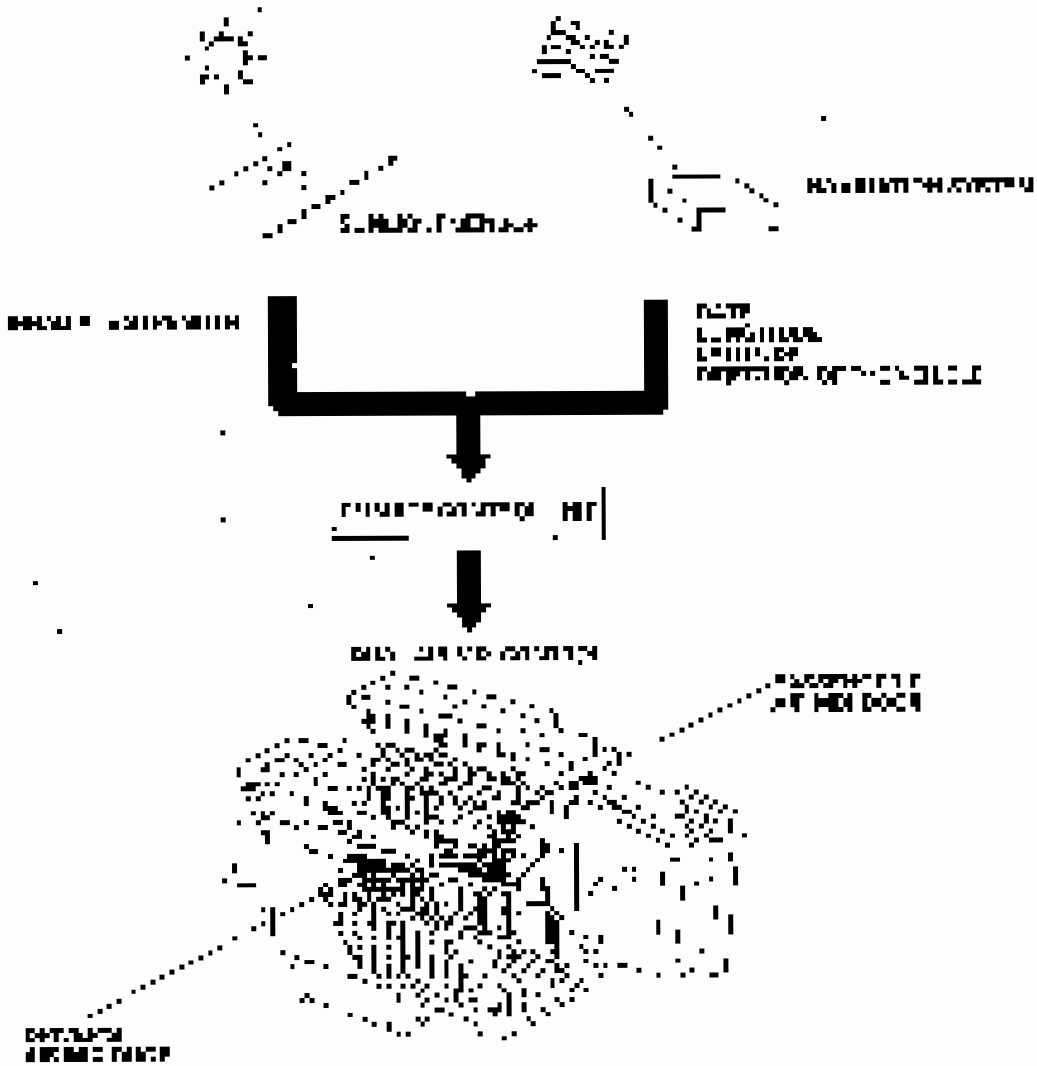


System Description (cont'd)

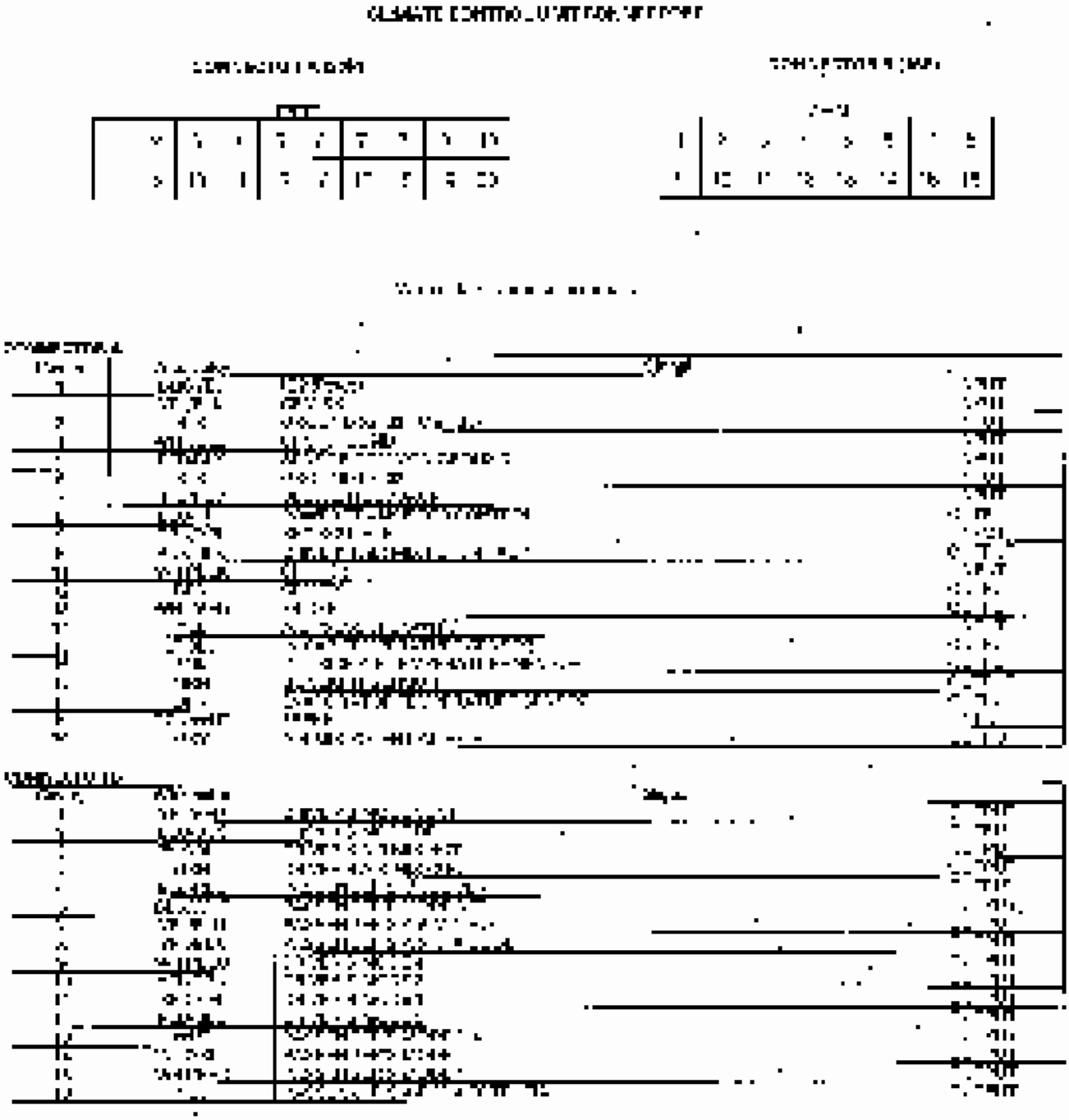


System Description (cont'd)

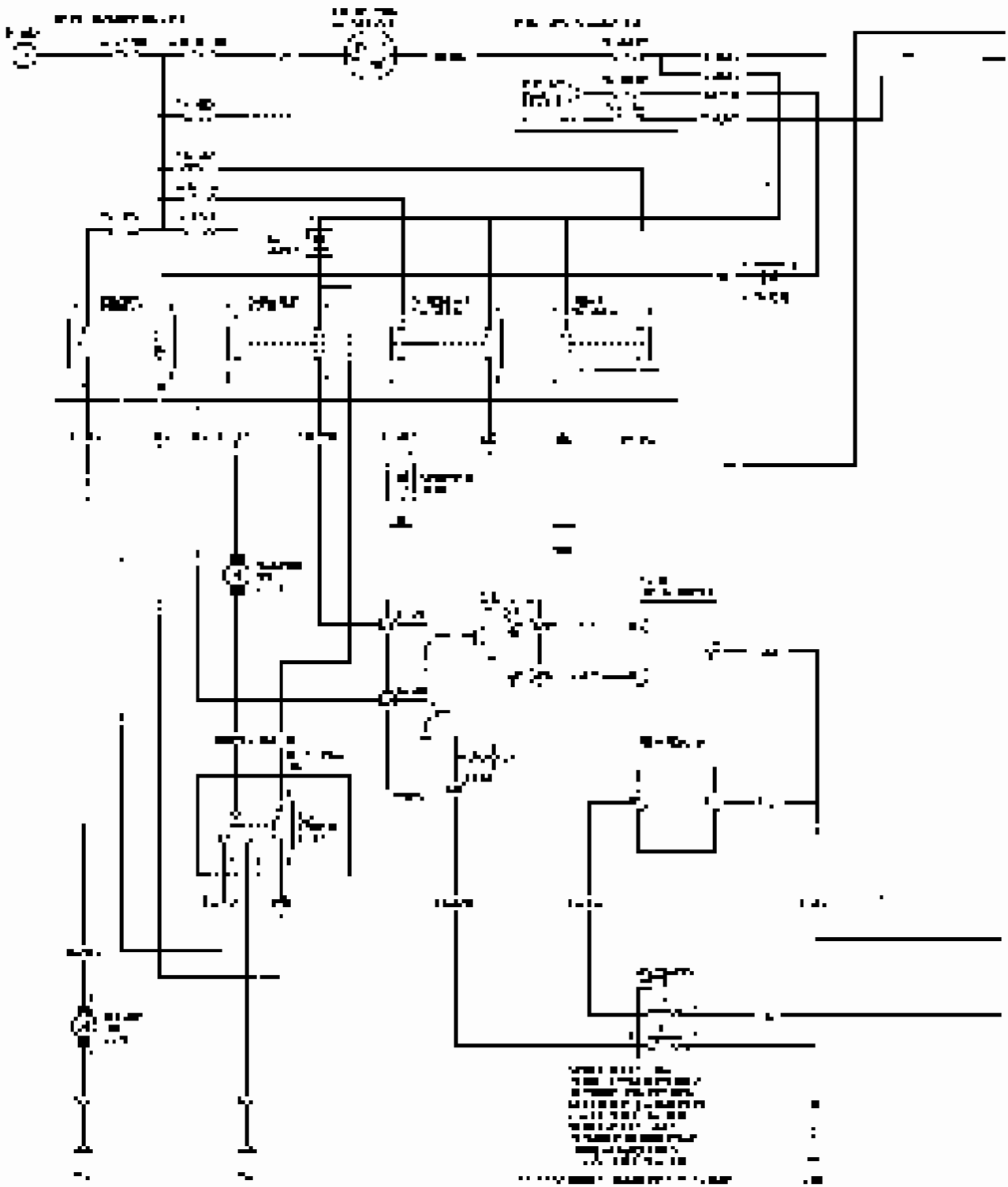
Dual Climate Control System (With navigation system)

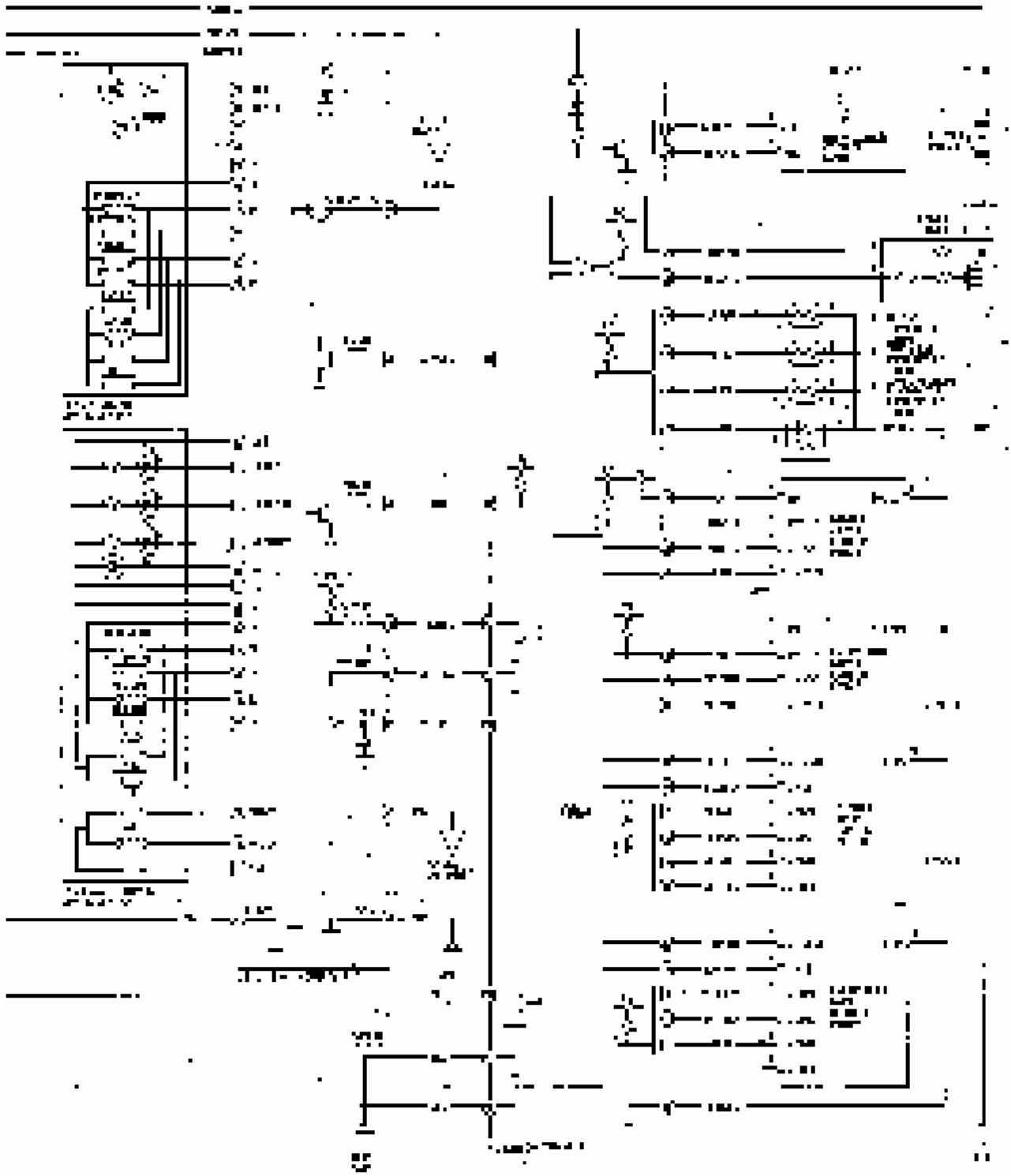


Climate Control Unit Inputs and Outputs



Circuit Diagram





DTC Troubleshooting

DTC Indicator A or DTC B1325: Air Conditioning Refrigerant Temperature Sensor Circuit

[illegible]

A. [illegible]

1. Check for DTCs using the HDS [illegible]

Is DTC P0530 also set?

YES - [illegible]

NO - [illegible]

B. Turn the ignition switch OFF.

C. Disconnect the A/C refrigerant temperature sensor 2P connector.

Is the connector terminal [illegible]

YES - Go to step 2.

NO - Repair the [illegible]

D. Check for an open in the wire between the A/C refrigerant temperature sensor 2P connector terminal [illegible]

Is there continuity?

YES - Go to step 3.

NO - Repair the [illegible]

2. Check for continuity between the A/C refrigerant temperature sensor 2P connector terminal [illegible] and body ground.

Is there continuity?

YES - Repair the [illegible]

NO - Replace the [illegible]

3. Check for an open in the wire between the A/C refrigerant temperature sensor 2P connector terminal [illegible] and the ECM/PCM connector.

Is there continuity?

YES - Check for [illegible]

NO - Repair the [illegible]

DTC Indicator Blinks DTC B1228: A/C Evaporator Temperature Sensor Circuit

1. [illegible]

2. [illegible]

3. Check for DTC(s) other than DTC B1228: A/C evaporator [illegible]

   Is DTC B1228 the only DTC stored?

   YES - [illegible]

   NO - [illegible]

4. [illegible]

5. Remove the evaporator temperature sensor (see page 21-33) and inspect it (see page 21-33).

   Is the sensor OK?

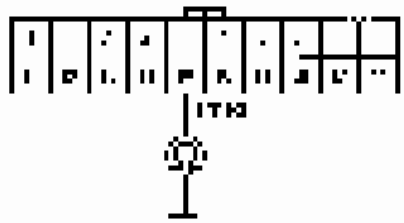
   YES - [illegible]

   NO - [illegible]

6. Disconnect climate control unit connector A (24P).

7. Check for an open circuit between the No. 15 terminal of climate control unit connector A (24P) and body ground.

   CLIMATE CONTROL UNIT CONNECTOR A (24P)



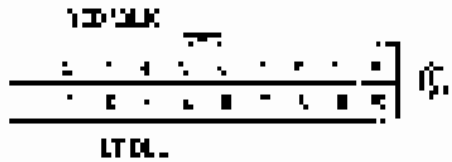
   Is there continuity?

   YES - Go to step 8.

   NO - Repair open in the wire between the climate control unit and the evaporator temperature sensor.

8. Check for continuity between the No. 15 terminal of climate control unit connector A (24P) and body ground.

   CLIMATE CONTROL UNIT CONNECTOR A (24P)



   Is there continuity?

   YES - [illegible]

   NO - Replace the climate control unit with a new one.

DTC Troubleshooting (cont'd)

DTC Indicator Circuit (DTC B1320): Air Outlet Position Sensor Circuit Malfunction (Automatic Air Conditioning System)

1. [illegible]

2. Operate the climate control system in several modes.

3. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

4. [illegible]

5. [illegible]

   [illegible]

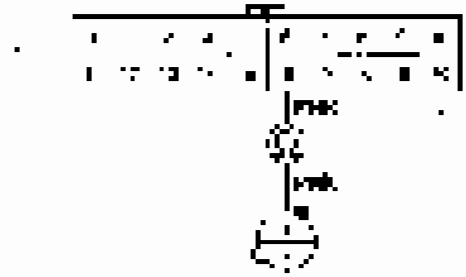
   YES - [illegible]

   NO - [illegible]

6. [illegible]

7. [illegible]

[illegible]

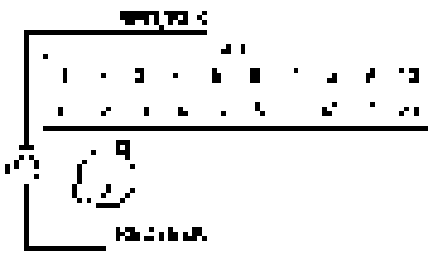


[illegible]

[illegible]

YES - [illegible]

NO — [illegible]



DTC Indicator Does Not Illuminate With Ignition ON and Engine Not Running

1. Check for other malfunctioning systems that may cause the DTC indicator not to illuminate.

2. Check the instrument cluster system for proper operation.

3. Check the VSS (Vehicle Speed Sensor) operation.

   Is the VSS operating properly?

   YES - Go to step 4.

   NO - Repair the VSS.

4. Turn the ignition switch to ON.

5. Check the DTC indicator operation.

   Does the DTC indicator illuminate?

   YES - Go to step 6.

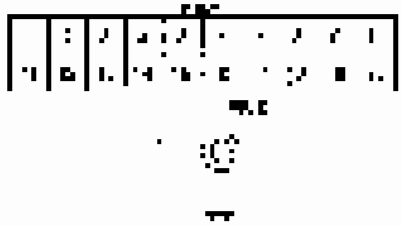
   NO - Replace the instrument cluster assembly.

6. Disconnect the PCM connector and check for poor connection.

DTC Troubleshooting (cont'd)

7. Check for a poor connection or damaged terminal at the sunlight sensor control unit connector A (22P) and body ground.

Sunlight sensor control unit connector A (22P)



Wire side of female terminals

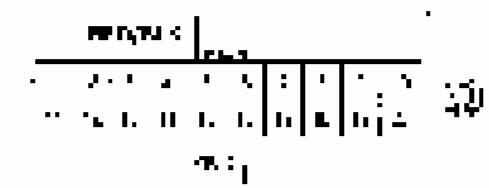
Is the connection OK?

YES – Go to step 8.

NO – Repair poor connection. Clear DTC from the control unit memory, and recheck. If the symptom/indication does not appear, intermittent failure may have occurred. Refer to the applicable symptom troubleshooting.

8. Check for an open circuit in the wire between the sunlight sensor control unit connector A (22P) terminal and the sunlight sensor terminal.

Sunlight sensor control unit connector A (22P)



Wire side of female terminals

Is there continuity?

YES – Check for poor connection or damaged terminal at the sunlight sensor. If the connection is OK, replace the sunlight sensor.

NO – Repair open circuit between the sunlight sensor control unit connector A (22P) terminal and the sunlight sensor terminal.

DTC Indicator E or DTC 31228: Air Conditioner Unit Sunlight Sensor Circuit

1. Connect the HDS interface to the data link connector (DLC).

2. Start the engine and let it idle.

3. Check for DTC 31228 (current failure).

   Is DTC 31228 indicated?

   YES – Go to step 4.

   NO – Intermittent failure, system is OK at this time. Check for poor connection or damaged terminal at the control unit connector. If the connection is OK, replace the control unit.

4. Turn the ignition switch OFF.

5. Disconnect the sunlight sensor connector (2P).

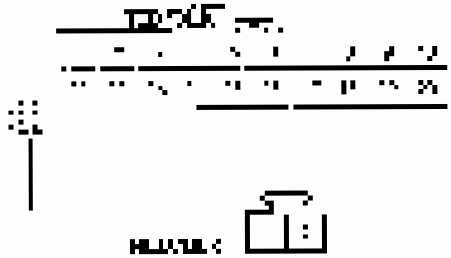
   Is the sunlight sensor connector OK?

   YES – Go to step 6.

   NO – Repair poor connection.

6. Turn the ignition switch ON (II).

7. Measure voltage between the sunlight sensor connector (2P)



DTC Troubleshooting (cont'd)

DTC Indicator For DTC B1230: A/C Sensor Intake Sunlight Sensor Circuit

1. Check the DTC. Is any other DTC indicated?

   YES - Go to the DTC table.

   NO - Go to step 2.

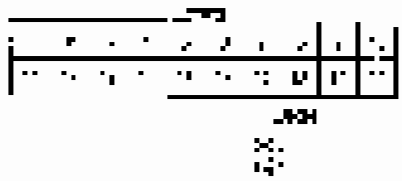
2. Check for poor connection or damaged wire harness between the A/C sensor and the A/C unit.

   Is the connection or wire harness OK?

   YES - Go to step 3.

   NO - Repair as necessary.

3. Check for continuity between the A/C sensor terminal and body ground.

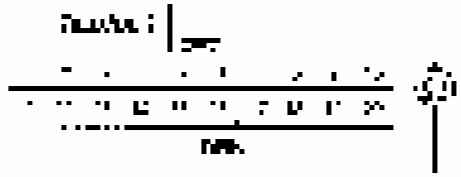


   Is there continuity?

   YES - Check for poor connection or damaged wire harness between the A/C sensor and the A/C unit. If the connection and wire harness are OK, replace the A/C sensor.

   NO - Go to step 4.

4. Check for continuity between the A/C sensor terminal and the No. 12 terminal of the multiplex control unit (driver's dashboard) connector A (26P) and body ground.



   Is there continuity?

   YES - Replace the multiplex control unit (driver's dashboard).

   NO - Repair as necessary.

DTC Indicator Code DTC B1231: Air Conditioning Evaporator Temperature Sensor Circuit

1. Check the DTC by turning the ignition switch ON. Is the DTC B1231 indicated?

2. [illegible]

3. [illegible]

   Is DTC B1231 indicated?

   YES: Continue to step 4.

   NO: [illegible]

4. [illegible]

5. Turn the ignition switch OFF. Disconnect the evaporator temperature sensor 2P connector. Refer to page 21-68 and check for [illegible] Refer to page 21-96.

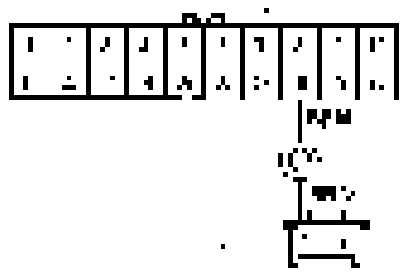
   Is the connector clean and in good condition?

   YES: Continue to step 6.

   NO: Clean the connector. [illegible]

6. Disconnect the evaporator temperature sensor 2P connector. Refer to page 21-68.

[illegible]



[illegible]

Is the connector clean and in good condition?

YES: Continue to step 7.

NO: Clean the connector. [illegible]

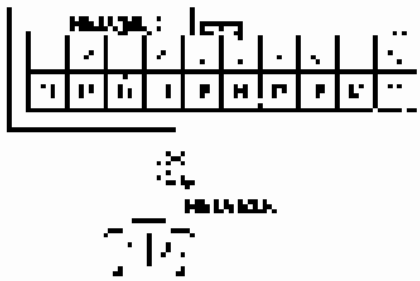
7. [illegible]

(cont'd)

DTC Troubleshooting (cont'd)

A. Check for an intermittent problem in the following circuit:

Ignition control module connector A (32P)
(Wire side of female terminals)



Ignition control module connector B (24P)
(Wire side of female terminals)

Is there an intermittent problem?

YES – Repair as necessary.

NO – Replace the ignition control module with a known good one, then go to the next step.

B. IMA indicator light DTC P1778: A Short in the Transmission Temperature Sensor Circuit

1. Turn the ignition switch OFF.
2. Open the Auto Transmission system (transaxle) manual.
3. Check for DTCs by connecting the HDS to the DLC.

Is DTC P1778 indicated?

YES – Go to step 4.

NO – Intermittent failure.

4. Turn the ignition switch OFF.
5. Disconnect the transmission temperature sensor 2P connector.

Is there continuity between the transmission temperature sensor 2P connector terminal and body ground?

YES – Go to step 6.

NO – Replace the transmission temperature sensor.

6. Reconnect all disconnected components.

DTC [illegible] or DTC [illegible]: An Open in the Driver's Air Bag Squib Circuit

1. Check the DTC (if present) again. Is DTC [illegible] and/or DTC [illegible] present?

2. Disconnect the connector from the driver's air bag module.

3. Check for an open circuit between the [illegible] and the driver's air bag module.

   YES - Go to Step 4.

   NO - Repair the open circuit between the [illegible] and the driver's air bag module.

4. Turn the ignition switch to the ON position.

5. Turn the driver's air bag module terminal [illegible] to the [illegible].

   Is the [illegible] present?

   YES - Go to Step 6.

   NO - Replace the driver's air bag module.

6. Turn the ignition switch to the LOCK position.

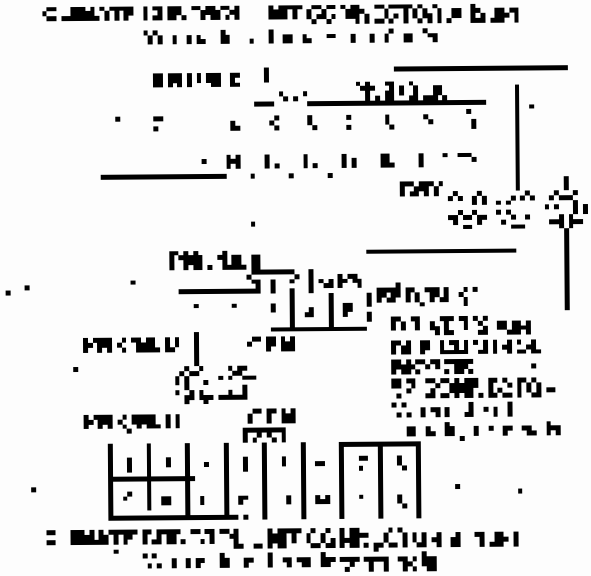
7. Disconnect the [illegible] and the [illegible].

cont'd

DTC Troubleshooting (cont'd)

5. Check for continuity between the [illegible] terminal and body ground.

Connections:
[illegible]



Is there continuity?

YES - [illegible]

NO - Repair open in the wire between the [illegible] and body ground.

DTC Indicator Lamp DTC B0124 (A/C Control Unit Driver Side Mixed Control Motor Circuit)

1. Check for DTCs.

2. [illegible]

3. Check for DTCs other than the one you recorded in step 1.

Is DTC [illegible] indicated?

YES - [illegible]

NO - [illegible]

4. Turn the ignition switch OFF.

5. [illegible]

Is there continuity?

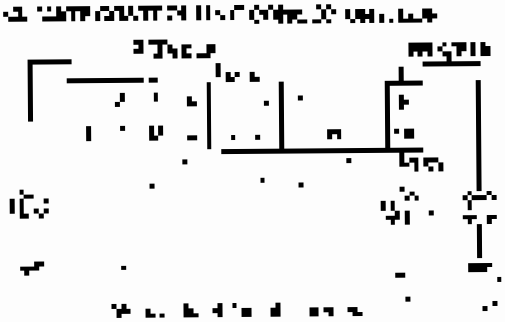
YES - [illegible]

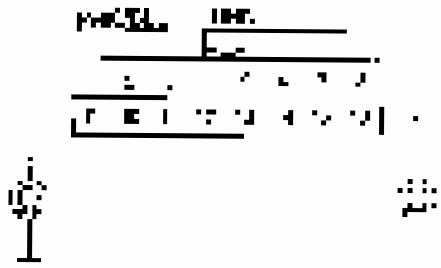
NO - Repair open in the wire between [illegible] and body ground.

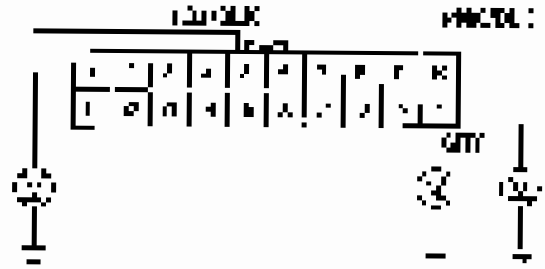
6. Disconnect the driver's side mixed control motor 6P connector.

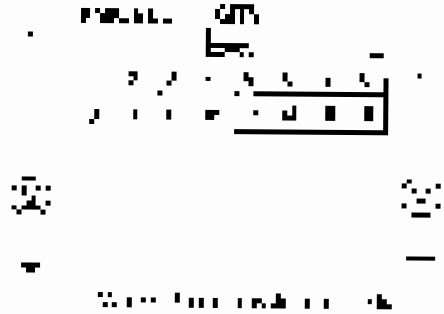
7. Disconnect the A/C control unit connector A (32P) and inspect for [illegible].

8. Check for continuity between body ground and terminal No. 5 of the A/C control unit connector A (32P) in each position of the driver's side mixed control motor: [illegible] terminal No. 5 and body ground.









DTC Troubleshooting (cont'd)

DTC Indicator K or DTC B1235: A Problem in the Passenger Air Mix Control Linkage, Sensor, or Motor

1. Clear the DTC (see page 21-11).
2. Operate the [illegible] motor by pressing the passenger [illegible] switch.
3. Check the [illegible] motor for proper operation.

   Is the [illegible] motor operating properly?

   YES: Go to step 4.

   NO: Replace the [illegible] motor.

4. Turn the ignition switch OFF.
5. Disconnect the passenger's air mix control motor connector (see page 21-[illegible]).

   Is the passenger's air mix control motor connector clean?

   YES: Go to step 6.

   NO: Clean the passenger's air mix control motor connector (see page 21-[illegible]).

6. Check the passenger's air mix control motor connector for poor contact.

   Is there poor contact in the passenger's air mix control motor connector?

   YES: Repair poor contact.

   NO: Replace the passenger's air mix control motor (see page 21-[illegible]).

7. Disconnect the [illegible] motor connector and check for continuity between the [illegible] motor connector and the [illegible] (see page 21-[illegible]).

DTC Indicator L or DTC B1236: An Open in the Passenger Air Mix Control Motor Circuit

1. Clear the DTC (see page 21-11).
2. Operate the [illegible] motor by pressing the passenger [illegible] switch.
3. Check the [illegible] motor for proper operation.

   Is the [illegible] motor operating properly?

   YES: Go to step 4.

   NO: Replace the [illegible] motor.

4. Turn the ignition switch OFF.
5. Disconnect the passenger's air mix control motor connector (see page 21-[illegible]).

   Is the passenger's air mix control motor connector clean?

   YES: Go to step 6.

   NO: Clean the passenger's air mix control motor connector (see page 21-[illegible]).

6. Check the passenger's air mix control motor connector for poor contact.

   Is there poor contact in the passenger's air mix control motor connector?

   YES: Repair poor contact.

   NO: Replace the passenger's air mix control motor (see page 21-[illegible]).

7. Disconnect the [illegible] motor connector and check for continuity between the [illegible] motor connector and the [illegible] (see page 21-[illegible]).

DTC [illegible] Minor DTC C1550: A Short in the Passenger's Air Bag Control Minor Circuit

1. [illegible]

2. [illegible]

3. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

4. [illegible]

5. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

6. [illegible]

7. [illegible]

DTC Troubleshooting (cont'd)

Is there continuity?

YES: Replace the control unit.

NO: Go to step 2.

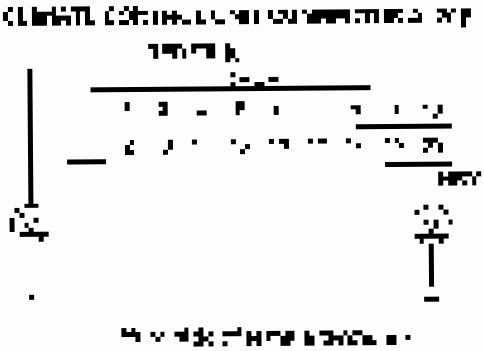
2. Check for continuity between the wire side of female connector and body ground.

Terminal	Connection

Is there continuity between each terminal and body ground?

YES: Repair short to ground in wire harness.

NO: Go to step 3.



Is there voltage?

YES: Temporarily connect a jumper wire between the climate control unit harness side passenger's side connector terminal and body ground. Recheck the DTC. If the same DTC is indicated, replace the control unit.

NO: Check for open circuit in the power control wire between the climate control unit passenger's side connector terminal and the fuse/relay box. If the wire is open, repair it. If the wire is not open, check for poor connection at the fuse/relay box. If the connection is poor, repair it. If the connection is not poor, replace the fuse/relay box.

DTC Indicator N or DTC B1298: A Problem Was Found With The Passenger Air Mix Control Linkage Position Sensor

1. [illegible]
2. [illegible]
3. [illegible]

   [illegible]

   YES - Go to step 4.

   NO - [illegible]

4. [illegible]
5. [illegible]

   [illegible]

   YES - [illegible] and replace the passenger air mix control linkage position sensor. See page 21-[illegible]

   NO - [illegible]

DTC Indicator On or DTC B1299: An Open or Short Was Found In The Driver Air Mix Control Linkage Position Sensor Circuit

1. [illegible]
2. [illegible]
3. [illegible]

   [illegible]

   YES - Go to step 4.

   NO - [illegible]

4. [illegible]
5. [illegible]

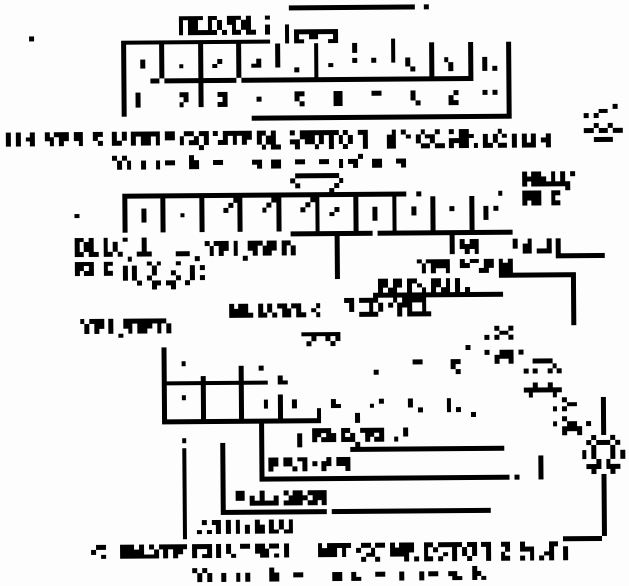
   [illegible]

   YES - Go to step 5.

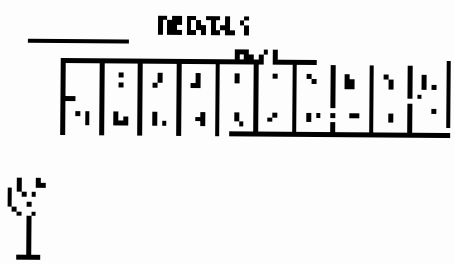
   NO - [illegible]

6. [illegible]
7. [illegible]

DTC Troubleshooting (cont'd)



1. [illegible]



[illegible]

[illegible]

2. [illegible]

[illegible]

NO: [illegible]

YES: [illegible]

3. [illegible]

[illegible]

4. [illegible]

5. [illegible]

[illegible]

[illegible]

NO: [illegible]

YES: [illegible]

DTC Indicator For DTC B1240(L): Ambient Air Temperature Sensor Circuit Low Voltage, Open, or Short to Ground

1. [illegible]

2. [illegible]

3. [illegible]

[illegible]

YES: [illegible]

[illegible]

4. [illegible]

5. [illegible]

[illegible]

[illegible]

NO: [illegible]

YES: [illegible]

DTC Troubleshooting (cont'd)

DTC Indicator Dial DTC B1242: An Open or Short in the Passenger's [illegible] Control Motor Circuit

1. [illegible] OFF [illegible].

2. [illegible]

3. [illegible] DTC [illegible]

   Is DTC [illegible] indicated?

   YES–[illegible]

   NO–[illegible] passenger's [illegible].■

4. Turn the ignition switch [illegible].

5. Test the passenger's [illegible] (see page 21-[illegible]).

   Is the [illegible]?

   YES–[illegible]

   NO–Replace the passenger's [illegible] (see page 21-[illegible]).■

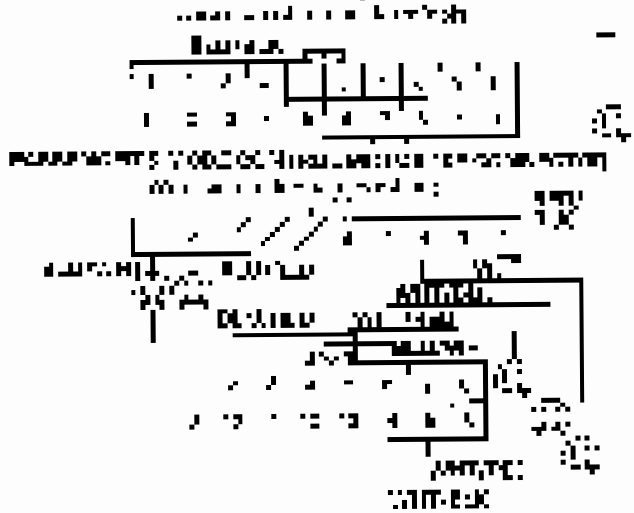
6. [illegible] (20P) connector.

7. [illegible] connector A (20P) [illegible].

8. Check for continuity between [illegible] A (20P) and [illegible] control motor [illegible].

[illegible]	[illegible]
No. [illegible]	[illegible]
[illegible]	[illegible]
No. 5	No. [illegible]
No. 6	No. [illegible]
No. 12	No. [illegible]
No. 14	No. [illegible]
No. 15	No. [illegible]

[illegible]



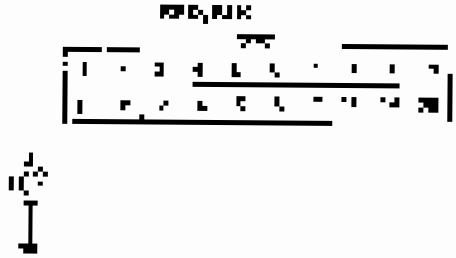
CLIMATE CONTROL UNIT CONNECTOR A (20P)
[illegible]

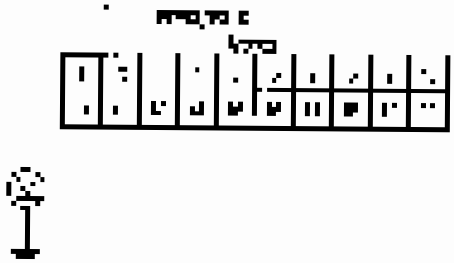
Is there continuity?

YES–[illegible]

NO–[illegible] climate control unit [illegible] control motor.■

9. [illegible] body ground [illegible] connector A (20P) [illegible] and [illegible] No. 5, 6, 13, 14 and 15 [illegible].





DTC Troubleshooting (cont'd)

DTC Indicator B or DTC B1243: A Problem in the Passenger's Mode Control Unit or Light Duct or Motor

1. Disconnect the DTC Indicator B connector from the instrument panel.
2. Turn the ignition switch to the ON (II) position.
3. Check for DTC B1243 (Indicator B).

   Is DTC B1243 indicated?

   YES: Go to step 4.

   NO: Intermittent failure, system is OK at this time.

4. Turn the ignition switch to OFF.
5. Disconnect the passenger's mode control motor connector (C).

   Is the passenger's mode control motor OK?

   YES: Go to step 6.

   NO: Replace the passenger's mode control motor with a new one. Refer to the passenger's mode control motor replacement procedure.

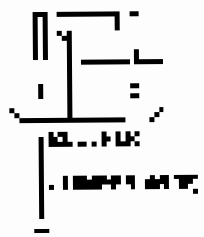
6. Check for open or short between the passenger's mode control motor connector (C) and the passenger's mode control unit connector (A).
7. Replace the passenger's mode control unit with a new one.
8. Recheck.

   Is the problem still there?

   YES: Go to step 9.

   NO: Replacement of the passenger's mode control unit was necessary.

9. Check for open or short between the passenger's mode control unit connector (A) and ground.



Passenger's mode control unit connector (A)

10. Check for poor contact at the passenger's mode control unit connector (A).

    Is there poor contact?

    YES: Repair as necessary.

    NO: Go to step 11.

DTC Indicator B or DTC B1241: A Problem in the Blower Motor Circuit

1. Disconnect the DTC Indicator B connector from the instrument panel.
2. Turn the ignition switch to the ON (II) position.
3. Check for DTC B1241 (Indicator B).

   Is DTC B1241 indicated?

   YES: Go to step 4.

   NO: Intermittent failure, system is OK at this time.

4. Turn the ignition switch to OFF.
5. Disconnect the 2P connector from the blower motor. Connect a jumper wire between the blower motor connector terminal and body ground.

   Is the blower motor OK?

   YES: Go to step 6.

   NO: Replace the blower motor with a new one.

6. Check for open or short between the blower motor connector and the blower unit connector (A).

Blower unit connector (A)

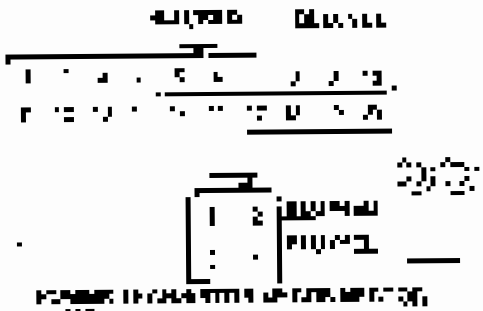
7. Replace the blower unit with a new one.
8. Recheck.

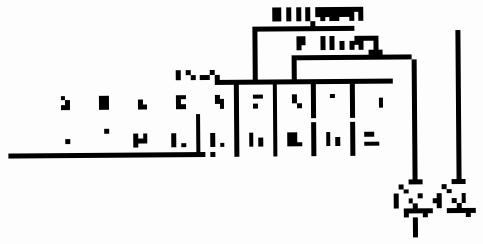
   Is the problem still there?

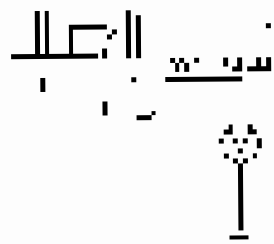
   YES: Go to step 9.

   NO: Replacement of the blower unit was necessary.

DTC Troubleshooting (cont'd)







DTC Troubleshooting (cont'd)

DTC B1725 Display Panel Control Unit: Lost Communication with Climate Control Unit

1. Clear the DTC (see testing the ignition switch OFF, and then ON).

2. [illegible]

3. [illegible]

   Is DTC B1725 indicated?

   YES: Go to step 4.

   NO: [illegible]

4. [illegible]

5. [illegible]

6. Disconnect the climate control unit connector (A) [illegible]

7. Check for open in wire between display panel control unit connector (A) [illegible]
   - Display panel control unit connector (A) [illegible]
   - Climate control unit connector (A) [illegible]

   Is there continuity?

   YES: Replace the display panel control unit. Go to step 8.

   NO: Repair open in wire between display panel control unit and climate control unit.

8. [illegible]

   Is there continuity?

   YES: Replace the climate control unit. Go to step 9.

   NO: Repair open in wire between display panel control unit and climate control unit.

9. [illegible]

   Is there continuity?

   YES: Replace the display panel control unit. Go to step 10.

   NO: Repair open in wire between display panel control unit and climate control unit.

10. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 11.

    NO: Repair open in wire between display panel control unit and climate control unit.

11. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 12.

    NO: Repair open in wire between display panel control unit and climate control unit.

12. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 13.

    NO: Repair open in wire between display panel control unit and climate control unit.

13. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 14.

    NO: Repair open in wire between display panel control unit and climate control unit.

14. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 15.

    NO: Repair open in wire between display panel control unit and climate control unit.

15. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 16.

    NO: Repair open in wire between display panel control unit and climate control unit.

16. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 17.

    NO: Repair open in wire between display panel control unit and climate control unit.

17. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 18.

    NO: Repair open in wire between display panel control unit and climate control unit.

18. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 19.

    NO: Repair open in wire between display panel control unit and climate control unit.

19. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 20.

    NO: Repair open in wire between display panel control unit and climate control unit.

20. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 21.

    NO: Repair open in wire between display panel control unit and climate control unit.

21. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 22.

    NO: Repair open in wire between display panel control unit and climate control unit.

22. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 23.

    NO: Repair open in wire between display panel control unit and climate control unit.

23. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 24.

    NO: Repair open in wire between display panel control unit and climate control unit.

24. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 25.

    NO: Repair open in wire between display panel control unit and climate control unit.

25. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 26.

    NO: Repair open in wire between display panel control unit and climate control unit.

26. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 27.

    NO: Repair open in wire between display panel control unit and climate control unit.

27. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 28.

    NO: Repair open in wire between display panel control unit and climate control unit.

28. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 29.

    NO: Repair open in wire between display panel control unit and climate control unit.

29. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 30.

    NO: Repair open in wire between display panel control unit and climate control unit.

30. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 31.

    NO: Repair open in wire between display panel control unit and climate control unit.

31. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 32.

    NO: Repair open in wire between display panel control unit and climate control unit.

32. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 33.

    NO: Repair open in wire between display panel control unit and climate control unit.

33. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 34.

    NO: Repair open in wire between display panel control unit and climate control unit.

34. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 35.

    NO: Repair open in wire between display panel control unit and climate control unit.

35. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 36.

    NO: Repair open in wire between display panel control unit and climate control unit.

36. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 37.

    NO: Repair open in wire between display panel control unit and climate control unit.

37. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 38.

    NO: Repair open in wire between display panel control unit and climate control unit.

38. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 39.

    NO: Repair open in wire between display panel control unit and climate control unit.

39. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 40.

    NO: Repair open in wire between display panel control unit and climate control unit.

40. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 41.

    NO: Repair open in wire between display panel control unit and climate control unit.

41. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 42.

    NO: Repair open in wire between display panel control unit and climate control unit.

42. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 43.

    NO: Repair open in wire between display panel control unit and climate control unit.

43. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 44.

    NO: Repair open in wire between display panel control unit and climate control unit.

44. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 45.

    NO: Repair open in wire between display panel control unit and climate control unit.

45. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 46.

    NO: Repair open in wire between display panel control unit and climate control unit.

46. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 47.

    NO: Repair open in wire between display panel control unit and climate control unit.

47. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 48.

    NO: Repair open in wire between display panel control unit and climate control unit.

48. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 49.

    NO: Repair open in wire between display panel control unit and climate control unit.

49. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 50.

    NO: Repair open in wire between display panel control unit and climate control unit.

50. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 51.

    NO: Repair open in wire between display panel control unit and climate control unit.

51. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 52.

    NO: Repair open in wire between display panel control unit and climate control unit.

52. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 53.

    NO: Repair open in wire between display panel control unit and climate control unit.

53. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 54.

    NO: Repair open in wire between display panel control unit and climate control unit.

54. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 55.

    NO: Repair open in wire between display panel control unit and climate control unit.

55. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 56.

    NO: Repair open in wire between display panel control unit and climate control unit.

56. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 57.

    NO: Repair open in wire between display panel control unit and climate control unit.

57. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 58.

    NO: Repair open in wire between display panel control unit and climate control unit.

58. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 59.

    NO: Repair open in wire between display panel control unit and climate control unit.

59. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 60.

    NO: Repair open in wire between display panel control unit and climate control unit.

60. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 61.

    NO: Repair open in wire between display panel control unit and climate control unit.

61. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 62.

    NO: Repair open in wire between display panel control unit and climate control unit.

62. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 63.

    NO: Repair open in wire between display panel control unit and climate control unit.

63. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 64.

    NO: Repair open in wire between display panel control unit and climate control unit.

64. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 65.

    NO: Repair open in wire between display panel control unit and climate control unit.

65. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 66.

    NO: Repair open in wire between display panel control unit and climate control unit.

66. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 67.

    NO: Repair open in wire between display panel control unit and climate control unit.

67. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 68.

    NO: Repair open in wire between display panel control unit and climate control unit.

68. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 69.

    NO: Repair open in wire between display panel control unit and climate control unit.

69. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 70.

    NO: Repair open in wire between display panel control unit and climate control unit.

70. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 71.

    NO: Repair open in wire between display panel control unit and climate control unit.

71. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 72.

    NO: Repair open in wire between display panel control unit and climate control unit.

72. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 73.

    NO: Repair open in wire between display panel control unit and climate control unit.

73. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 74.

    NO: Repair open in wire between display panel control unit and climate control unit.

74. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 75.

    NO: Repair open in wire between display panel control unit and climate control unit.

75. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 76.

    NO: Repair open in wire between display panel control unit and climate control unit.

76. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 77.

    NO: Repair open in wire between display panel control unit and climate control unit.

77. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 78.

    NO: Repair open in wire between display panel control unit and climate control unit.

78. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 79.

    NO: Repair open in wire between display panel control unit and climate control unit.

79. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 80.

    NO: Repair open in wire between display panel control unit and climate control unit.

80. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 81.

    NO: Repair open in wire between display panel control unit and climate control unit.

81. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 82.

    NO: Repair open in wire between display panel control unit and climate control unit.

82. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 83.

    NO: Repair open in wire between display panel control unit and climate control unit.

83. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 84.

    NO: Repair open in wire between display panel control unit and climate control unit.

84. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 85.

    NO: Repair open in wire between display panel control unit and climate control unit.

85. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 86.

    NO: Repair open in wire between display panel control unit and climate control unit.

86. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 87.

    NO: Repair open in wire between display panel control unit and climate control unit.

87. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 88.

    NO: Repair open in wire between display panel control unit and climate control unit.

88. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 89.

    NO: Repair open in wire between display panel control unit and climate control unit.

89. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 90.

    NO: Repair open in wire between display panel control unit and climate control unit.

90. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 91.

    NO: Repair open in wire between display panel control unit and climate control unit.

91. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 92.

    NO: Repair open in wire between display panel control unit and climate control unit.

92. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 93.

    NO: Repair open in wire between display panel control unit and climate control unit.

93. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 94.

    NO: Repair open in wire between display panel control unit and climate control unit.

94. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 95.

    NO: Repair open in wire between display panel control unit and climate control unit.

95. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 96.

    NO: Repair open in wire between display panel control unit and climate control unit.

96. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 97.

    NO: Repair open in wire between display panel control unit and climate control unit.

97. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 98.

    NO: Repair open in wire between display panel control unit and climate control unit.

98. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 99.

    NO: Repair open in wire between display panel control unit and climate control unit.

99. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 100.

    NO: Repair open in wire between display panel control unit and climate control unit.

100. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 101.

    NO: Repair open in wire between display panel control unit and climate control unit.

101. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 102.

    NO: Repair open in wire between display panel control unit and climate control unit.

102. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 103.

    NO: Repair open in wire between display panel control unit and climate control unit.

103. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 104.

    NO: Repair open in wire between display panel control unit and climate control unit.

104. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 105.

    NO: Repair open in wire between display panel control unit and climate control unit.

105. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 106.

    NO: Repair open in wire between display panel control unit and climate control unit.

106. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 107.

    NO: Repair open in wire between display panel control unit and climate control unit.

107. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 108.

    NO: Repair open in wire between display panel control unit and climate control unit.

108. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 109.

    NO: Repair open in wire between display panel control unit and climate control unit.

109. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 110.

    NO: Repair open in wire between display panel control unit and climate control unit.

110. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 111.

    NO: Repair open in wire between display panel control unit and climate control unit.

111. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 112.

    NO: Repair open in wire between display panel control unit and climate control unit.

112. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 113.

    NO: Repair open in wire between display panel control unit and climate control unit.

113. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 114.

    NO: Repair open in wire between display panel control unit and climate control unit.

114. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 115.

    NO: Repair open in wire between display panel control unit and climate control unit.

115. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 116.

    NO: Repair open in wire between display panel control unit and climate control unit.

116. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 117.

    NO: Repair open in wire between display panel control unit and climate control unit.

117. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 118.

    NO: Repair open in wire between display panel control unit and climate control unit.

118. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 119.

    NO: Repair open in wire between display panel control unit and climate control unit.

119. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 120.

    NO: Repair open in wire between display panel control unit and climate control unit.

120. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 121.

    NO: Repair open in wire between display panel control unit and climate control unit.

121. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 122.

    NO: Repair open in wire between display panel control unit and climate control unit.

122. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 123.

    NO: Repair open in wire between display panel control unit and climate control unit.

123. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 124.

    NO: Repair open in wire between display panel control unit and climate control unit.

124. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 125.

    NO: Repair open in wire between display panel control unit and climate control unit.

125. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 126.

    NO: Repair open in wire between display panel control unit and climate control unit.

126. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 127.

    NO: Repair open in wire between display panel control unit and climate control unit.

127. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 128.

    NO: Repair open in wire between display panel control unit and climate control unit.

128. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 129.

    NO: Repair open in wire between display panel control unit and climate control unit.

129. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 130.

    NO: Repair open in wire between display panel control unit and climate control unit.

130. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 131.

    NO: Repair open in wire between display panel control unit and climate control unit.

131. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 132.

    NO: Repair open in wire between display panel control unit and climate control unit.

132. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 133.

    NO: Repair open in wire between display panel control unit and climate control unit.

133. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 134.

    NO: Repair open in wire between display panel control unit and climate control unit.

134. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 135.

    NO: Repair open in wire between display panel control unit and climate control unit.

135. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 136.

    NO: Repair open in wire between display panel control unit and climate control unit.

136. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 137.

    NO: Repair open in wire between display panel control unit and climate control unit.

137. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 138.

    NO: Repair open in wire between display panel control unit and climate control unit.

138. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 139.

    NO: Repair open in wire between display panel control unit and climate control unit.

139. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 140.

    NO: Repair open in wire between display panel control unit and climate control unit.

140. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 141.

    NO: Repair open in wire between display panel control unit and climate control unit.

141. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 142.

    NO: Repair open in wire between display panel control unit and climate control unit.

142. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 143.

    NO: Repair open in wire between display panel control unit and climate control unit.

143. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 144.

    NO: Repair open in wire between display panel control unit and climate control unit.

144. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 145.

    NO: Repair open in wire between display panel control unit and climate control unit.

145. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 146.

    NO: Repair open in wire between display panel control unit and climate control unit.

146. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 147.

    NO: Repair open in wire between display panel control unit and climate control unit.

147. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 148.

    NO: Repair open in wire between display panel control unit and climate control unit.

148. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 149.

    NO: Repair open in wire between display panel control unit and climate control unit.

149. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 150.

    NO: Repair open in wire between display panel control unit and climate control unit.

150. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 151.

    NO: Repair open in wire between display panel control unit and climate control unit.

151. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 152.

    NO: Repair open in wire between display panel control unit and climate control unit.

152. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 153.

    NO: Repair open in wire between display panel control unit and climate control unit.

153. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 154.

    NO: Repair open in wire between display panel control unit and climate control unit.

154. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 155.

    NO: Repair open in wire between display panel control unit and climate control unit.

155. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 156.

    NO: Repair open in wire between display panel control unit and climate control unit.

156. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 157.

    NO: Repair open in wire between display panel control unit and climate control unit.

157. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 158.

    NO: Repair open in wire between display panel control unit and climate control unit.

158. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 159.

    NO: Repair open in wire between display panel control unit and climate control unit.

159. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 160.

    NO: Repair open in wire between display panel control unit and climate control unit.

160. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 161.

    NO: Repair open in wire between display panel control unit and climate control unit.

161. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 162.

    NO: Repair open in wire between display panel control unit and climate control unit.

162. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 163.

    NO: Repair open in wire between display panel control unit and climate control unit.

163. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 164.

    NO: Repair open in wire between display panel control unit and climate control unit.

164. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 165.

    NO: Repair open in wire between display panel control unit and climate control unit.

165. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 166.

    NO: Repair open in wire between display panel control unit and climate control unit.

166. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 167.

    NO: Repair open in wire between display panel control unit and climate control unit.

167. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 168.

    NO: Repair open in wire between display panel control unit and climate control unit.

168. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 169.

    NO: Repair open in wire between display panel control unit and climate control unit.

169. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 170.

    NO: Repair open in wire between display panel control unit and climate control unit.

170. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 171.

    NO: Repair open in wire between display panel control unit and climate control unit.

171. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 172.

    NO: Repair open in wire between display panel control unit and climate control unit.

172. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 173.

    NO: Repair open in wire between display panel control unit and climate control unit.

173. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 174.

    NO: Repair open in wire between display panel control unit and climate control unit.

174. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 175.

    NO: Repair open in wire between display panel control unit and climate control unit.

175. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 176.

    NO: Repair open in wire between display panel control unit and climate control unit.

176. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 177.

    NO: Repair open in wire between display panel control unit and climate control unit.

177. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 178.

    NO: Repair open in wire between display panel control unit and climate control unit.

178. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 179.

    NO: Repair open in wire between display panel control unit and climate control unit.

179. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 180.

    NO: Repair open in wire between display panel control unit and climate control unit.

180. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 181.

    NO: Repair open in wire between display panel control unit and climate control unit.

181. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 182.

    NO: Repair open in wire between display panel control unit and climate control unit.

182. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 183.

    NO: Repair open in wire between display panel control unit and climate control unit.

183. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 184.

    NO: Repair open in wire between display panel control unit and climate control unit.

184. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 185.

    NO: Repair open in wire between display panel control unit and climate control unit.

185. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 186.

    NO: Repair open in wire between display panel control unit and climate control unit.

186. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 187.

    NO: Repair open in wire between display panel control unit and climate control unit.

187. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 188.

    NO: Repair open in wire between display panel control unit and climate control unit.

188. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 189.

    NO: Repair open in wire between display panel control unit and climate control unit.

189. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 190.

    NO: Repair open in wire between display panel control unit and climate control unit.

190. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 191.

    NO: Repair open in wire between display panel control unit and climate control unit.

191. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 192.

    NO: Repair open in wire between display panel control unit and climate control unit.

192. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 193.

    NO: Repair open in wire between display panel control unit and climate control unit.

193. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 194.

    NO: Repair open in wire between display panel control unit and climate control unit.

194. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 195.

    NO: Repair open in wire between display panel control unit and climate control unit.

195. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 196.

    NO: Repair open in wire between display panel control unit and climate control unit.

196. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 197.

    NO: Repair open in wire between display panel control unit and climate control unit.

197. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 198.

    NO: Repair open in wire between display panel control unit and climate control unit.

198. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 199.

    NO: Repair open in wire between display panel control unit and climate control unit.

199. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 200.

    NO: Repair open in wire between display panel control unit and climate control unit.

200. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 201.

    NO: Repair open in wire between display panel control unit and climate control unit.

201. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 202.

    NO: Repair open in wire between display panel control unit and climate control unit.

202. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 203.

    NO: Repair open in wire between display panel control unit and climate control unit.

203. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 204.

    NO: Repair open in wire between display panel control unit and climate control unit.

204. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 205.

    NO: Repair open in wire between display panel control unit and climate control unit.

205. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 206.

    NO: Repair open in wire between display panel control unit and climate control unit.

206. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 207.

    NO: Repair open in wire between display panel control unit and climate control unit.

207. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 208.

    NO: Repair open in wire between display panel control unit and climate control unit.

208. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 209.

    NO: Repair open in wire between display panel control unit and climate control unit.

209. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 210.

    NO: Repair open in wire between display panel control unit and climate control unit.

210. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 211.

    NO: Repair open in wire between display panel control unit and climate control unit.

211. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 212.

    NO: Repair open in wire between display panel control unit and climate control unit.

212. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 213.

    NO: Repair open in wire between display panel control unit and climate control unit.

213. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 214.

    NO: Repair open in wire between display panel control unit and climate control unit.

214. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 215.

    NO: Repair open in wire between display panel control unit and climate control unit.

215. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 216.

    NO: Repair open in wire between display panel control unit and climate control unit.

216. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 217.

    NO: Repair open in wire between display panel control unit and climate control unit.

217. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 218.

    NO: Repair open in wire between display panel control unit and climate control unit.

218. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 219.

    NO: Repair open in wire between display panel control unit and climate control unit.

219. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 220.

    NO: Repair open in wire between display panel control unit and climate control unit.

220. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 221.

    NO: Repair open in wire between display panel control unit and climate control unit.

221. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 222.

    NO: Repair open in wire between display panel control unit and climate control unit.

222. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 223.

    NO: Repair open in wire between display panel control unit and climate control unit.

223. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 224.

    NO: Repair open in wire between display panel control unit and climate control unit.

224. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 225.

    NO: Repair open in wire between display panel control unit and climate control unit.

225. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 226.

    NO: Repair open in wire between display panel control unit and climate control unit.

226. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 227.

    NO: Repair open in wire between display panel control unit and climate control unit.

227. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 228.

    NO: Repair open in wire between display panel control unit and climate control unit.

228. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 229.

    NO: Repair open in wire between display panel control unit and climate control unit.

229. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 230.

    NO: Repair open in wire between display panel control unit and climate control unit.

230. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 231.

    NO: Repair open in wire between display panel control unit and climate control unit.

231. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 232.

    NO: Repair open in wire between display panel control unit and climate control unit.

232. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 233.

    NO: Repair open in wire between display panel control unit and climate control unit.

233. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 234.

    NO: Repair open in wire between display panel control unit and climate control unit.

234. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 235.

    NO: Repair open in wire between display panel control unit and climate control unit.

235. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 236.

    NO: Repair open in wire between display panel control unit and climate control unit.

236. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 237.

    NO: Repair open in wire between display panel control unit and climate control unit.

237. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 238.

    NO: Repair open in wire between display panel control unit and climate control unit.

238. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 239.

    NO: Repair open in wire between display panel control unit and climate control unit.

239. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 240.

    NO: Repair open in wire between display panel control unit and climate control unit.

240. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 241.

    NO: Repair open in wire between display panel control unit and climate control unit.

241. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 242.

    NO: Repair open in wire between display panel control unit and climate control unit.

242. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 243.

    NO: Repair open in wire between display panel control unit and climate control unit.

243. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 244.

    NO: Repair open in wire between display panel control unit and climate control unit.

244. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 245.

    NO: Repair open in wire between display panel control unit and climate control unit.

245. [illegible]

    Is there continuity?

    YES: Replace the display panel control unit. Go to step 246.

    NO: Repair open in wire between display panel control unit and climate control unit.

246. [illegible]

    Is there continuity?

    YES: Replace the climate control unit. Go to step 247.

    NO: Repair open in wire between display panel control unit and climate control unit.

247. [illegible

DTC B1205: Climate Control Unit (CCU) Internal Error

NOTE:
- Check the connector connection. See page 22-10 and the troubleshooting hints in this page 21-33.
- If you have multiple DTCs, the same cause may be affecting multiple DTCs. If you have diagnosed and repaired the cause of a higher priority DTC, the cause may have also been repaired for the lower priority DTCs. See page 21-19.

1. Clear the DTC. See page 21-19.

2. Turn the ignition switch OFF. See page 22-...

3. Turn the climate control system on and operate the system. Is the DTC (B1205) indicated again?

4. Check the climate control unit for proper operation. See page 21-...

   Is DTC B1205 indicated?

   YES: Replace the climate control unit. See page 22-...

   NO: Intermittent failure. The system is normal at this time. Check the connector connection and wire harness for poor contact. See page 21-...

Recirculation Control Motor Circuit Troubleshooting

1. Check the recirculation control motor operation. See page 22-...

   Is the motor OK?

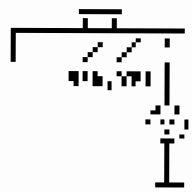
   YES: Go to step 2.

   NO: Replace the recirculation control motor. See page 22-...

2. Check for intermittent and poor connections.

3. Measure the voltage between the No. 5 terminal of the recirculation control motor 5P connector and body ground.

   Recirculation control motor 5P connector



   Voltage should be battery voltage.

   Is there battery voltage?

   YES: Go to step 5.

   NO: Repair open in the wire between the No. 30 (10A) fuse in the under-dash fuse/relay box and the recirculation control motor. See page 21-...

Recirculation Control Motor Circuit Troubleshooting (cont'd)

3. Turn the ignition switch OFF.

4. Test the recirculation control motor for open circuit.

NO: Replace the recirculation control motor (see page 21-92), or check the recirculation control linkage for abnormal [illegible].

5. Disconnect the [illegible]

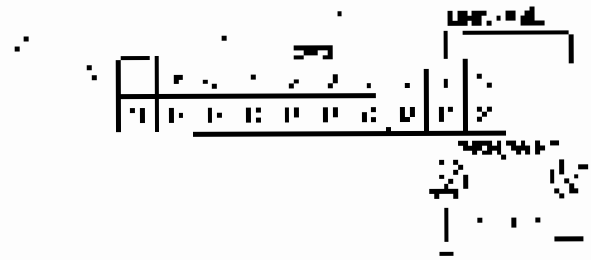
6. [illegible]

[illegible]

7. [illegible]

NO: Repair open in wire between [illegible] and recirculation control motor.

8. Test for short to ground in wire between [illegible] and recirculation control motor.



[illegible]

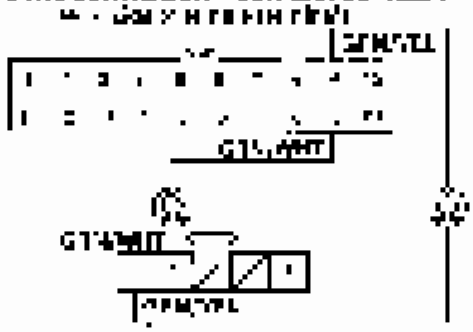
9. [illegible]

YES: [illegible] recirculation control motor. Test the system. If the problem is still present, replace the [illegible]

NO: Go to step 10.

10. [illegible] OFF

Climate Control Power and Ground Circuit Troubleshooting

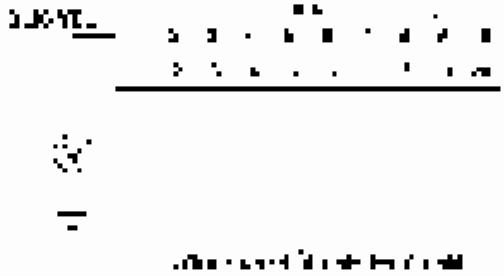


YES - Go to step 5.

NO - Replace the faulty climate control unit. Refer to Climate Control Unit Replacement in this section. Test the system for proper operation.

3. Turn the ignition switch to OFF.

4. Measure the voltage between the harness connector of climate control unit connector A (X1) and body ground.



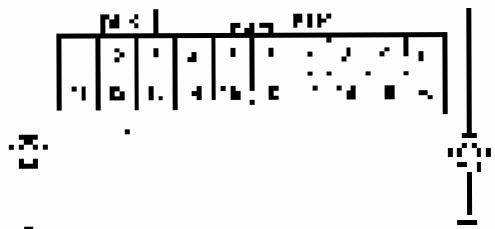
Is the voltage greater than 10 volts?

YES - Go to step 5.

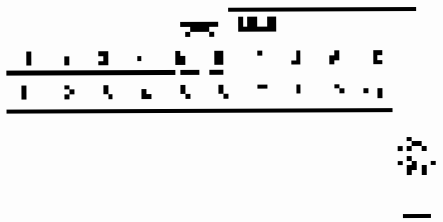
NO - Repair the open circuit between the fuse and the climate control unit. Test the system for proper operation.

Climate Control Power and Ground Circuit Troubleshooting (cont'd)

6. Check for continuity between the A/C relay 3 (C) circuit and the ground circuit. If there is no continuity, repair an open in the A/C relay 3 (C) circuit.



7. Check for continuity between the A/C relay 3 (B) circuit and the ground circuit. If there is no continuity, repair an open in the A/C relay 3 (B) circuit.



If the A/C relay 3 (C) circuit and the A/C relay 3 (B) circuit are good, replace the A/C relay 3. If the symptom still exists after replacing the A/C relay 3, replace the climate control unit.

Radiator and Condenser Fan Low Speed Circuit Troubleshooting

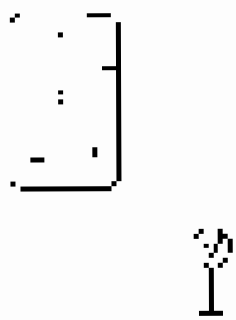
NOTE:

- Perform the troubleshooting procedure with the ignition switch in the ACC or ON (II) position, unless otherwise specified.
- If you need additional troubleshooting procedures, refer to the Symptom-to-System Chart on page 11-3.

1. Check the No. 21 (10A) radiator and condenser fan motor fuse in the under-hood fuse/relay box. Is the fuse blown?

2. Remove the radiator and condenser fan relay from the under-hood fuse/relay box. Turn the ignition switch to ON (II). Is there battery voltage between the radiator and condenser fan relay 2 (B) terminal and body ground?

3. Measure the voltage between the radiator and condenser fan relay 2 (C) terminal and body ground.



4. Connect the No. [illegible] and No. [illegible] terminals of the condenser fan relay 4P socket with a jumper wire.

CONDENSER FAN RELAY 4P SOCKET

[illegible]

YES—Go to step [illegible].

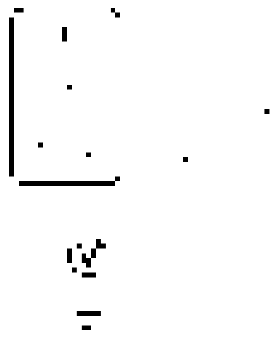
NO—Go to step 1[illegible].

5. Disconnect the jumper wire.

6. Turn the ignition switch ON (II).

7. [illegible] and body ground.

CONDENSER FAN RELAY 4P SOCKET



Is there battery voltage?

YES—Go to step [illegible].

NO—Go to step [illegible].

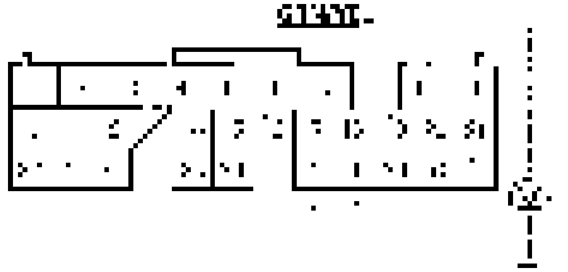
8. Turn the ignition switch OFF.

9. Reinstall the condenser fan relay.

10. Turn the ignition switch ON (II).

11. Using the backprobe set, measure the voltage [illegible] and body ground [illegible]

ECM/PCM CONNECTOR [illegible]



Wire side of female terminals

Is there battery voltage?

YES—Check for loose terminals in the ECM/PCM connectors. [illegible]

NO—Repair open in the wire between the condenser fan relay and the ECM/PCM.

12. [illegible]

13. [illegible]

14. [illegible]

15. Turn the ignition switch ON (II), [illegible] ON.

(cont'd)

Radiator and Condenser Fan Low Speed Circuit Troubleshooting (cont'd)

17. [illegible]

[illegible]

Is there battery voltage?

YES - Go to step 18.

NO - [illegible]

18. Turn the A/C and recirculation [illegible] switches OFF.

19. Disconnect the condenser fan 2P connector.

20. Connect the test [illegible] of the connector [illegible] to ground [illegible]

[illegible]

Is there battery voltage?

YES - Go to step 21.

NO - [illegible]

21. Turn the ignition switch OFF, then turn the A/C and recirculation [illegible]

[illegible]

YES - Go to step 22.

NO - [illegible]

22. Remove the [illegible] switch from the control panel (see page 23-[illegible]).

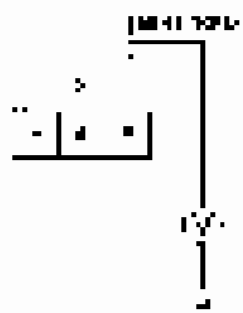
[illegible]

YES - [illegible]

NO - [illegible]

23. Turn the ignition switch ON (II). Start the A/C and recirculation [illegible]

24. Measure the voltage between [illegible] and ground.



Is there battery voltage?

YES - Go to step 25.

NO - [illegible]

25. Turn the ignition switch OFF.

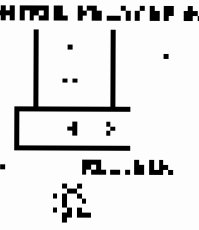
26. Disconnect the [illegible] switch connector.

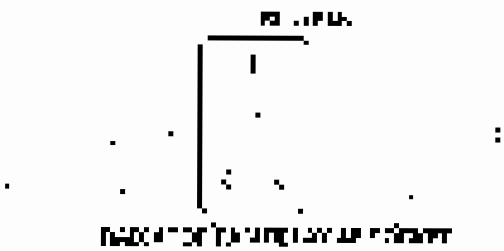
27. Check for continuity between [illegible] and ground.

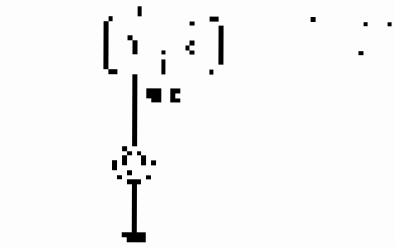
Is there continuity?

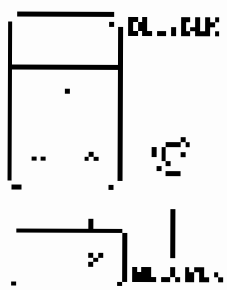
YES - [illegible]

NO - [illegible]









Radiator and Condenser Fan Low Speed Circuit Troubleshooting (cont'd)

[illegible]

Turn the ignition switch to LOCK (0).

Disconnect the 2-way black connector from the No. 2 terminal of A/C clock. A/C fan motor and body ground.

[illegible]

[illegible]

YES—Replace the A/C fan motor. Refer to the removal and installation of condenser fan motor.

NO—Repair open in the wire between the A/C clock A/C fan and the condenser fan motor.

Condenser Fan High Speed Circuit Troubleshooting

NOTE:
- Before starting the troubleshooting, check the related fuse for open circuit. If the fuse is open, check for short circuit in the related circuit before replacing the fuse.
- If the A/C compressor clutch does not engage, troubleshoot the A/C compressor clutch circuit first. Refer to page 21-51.

1. Disconnect the No. 3 (GRY) 2-way connector from the condenser fan motor.

   Is there battery voltage?

   YES—Go to step 2.

   NO—Repair open in the wire between the condenser fan motor and the No. 3 terminal of the A/C clock.

2. Remove the condenser fan motor relay from the underhood fuse/relay box. Refer to the underhood fuse/relay box label.

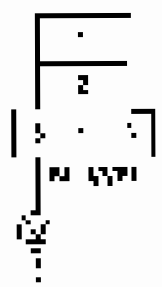
   Is there battery voltage?

   YES—Go to step 3.

   NO—Repair open in the wire between the No. 3 terminal of the A/C clock and the condenser fan motor relay.

3. Remove the condenser fan motor relay from the underhood fuse/relay box. Check for continuity between the condenser fan motor relay and body ground.

[illegible]



[illegible]

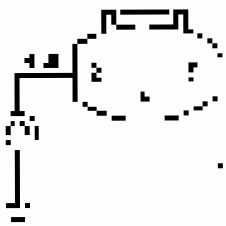
There should be continuity.

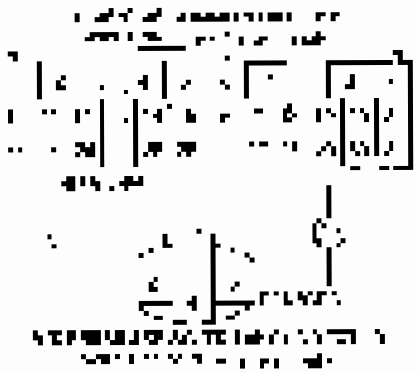
YES—Go to step 4.

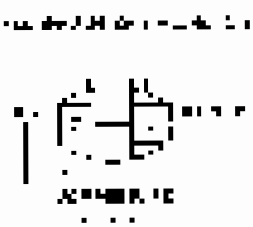
NO—Repair open in the wire between the condenser fan motor relay and body ground.

4. Turn the ignition switch to LOCK (0).

Radiator and Condenser Fan High Speed Circuit Troubleshooting







Compressor Clutch Circuit Troubleshooting

Note:
- [illegible]
- [illegible]
- [illegible]

1. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

2. [illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

3. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

4. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

5. [illegible]

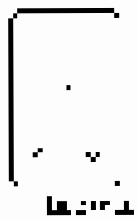
   [illegible]

   YES: [illegible]

   NO: [illegible]

[illegible]

Compressor Clutch Circuit Troubleshooting (cont'd)



A/C Pressure Switch Circuit Troubleshooting

NOTES:
- [illegible]
- Before performing this inspection, read the troubleshooting/test [illegible] page 11-2.

1. [illegible]

   YES: [illegible]

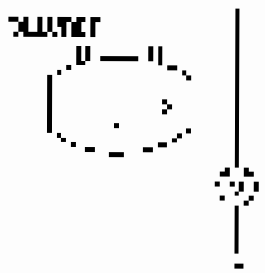
   NO: [illegible]

2. [illegible]

3. [illegible]

4. Measure the voltage between the A/C pressure switch 3P connector terminal and body ground.

   A/C pressure switch 3P connector



   Wire side of female connector

   [illegible]

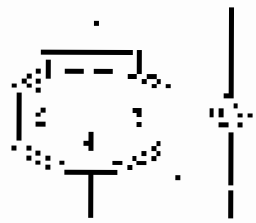
   YES: Go to step 5.

   NO: Repair open in the wire between the A/C pressure switch and the A/C compressor clutch relay.

5. Turn the ignition switch to the LOCK (0) [illegible]

6. Check for continuity between the No. 4 terminal and body ground of the A/C pressure switch.

   A/C pressure switch



   [illegible]

   YES: Go to step 7.

   NO: Go to step 8.

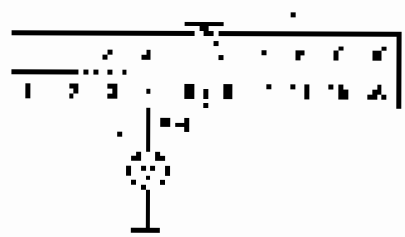
7. [illegible]

8. [illegible]

9. [illegible]

10. Measure the voltage between the No. 4 terminal of the A/C pressure switch 3P connector and body ground.

    [illegible]



    Wire side of female connector

    [illegible]

    YES: Go to step 11.

    NO: Repair open in the wire between the [illegible] and the A/C pressure switch.

cont'd

A/C Pressure Switch Circuit Troubleshooting (cont'd)

1. Turn the ignition switch OFF.

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

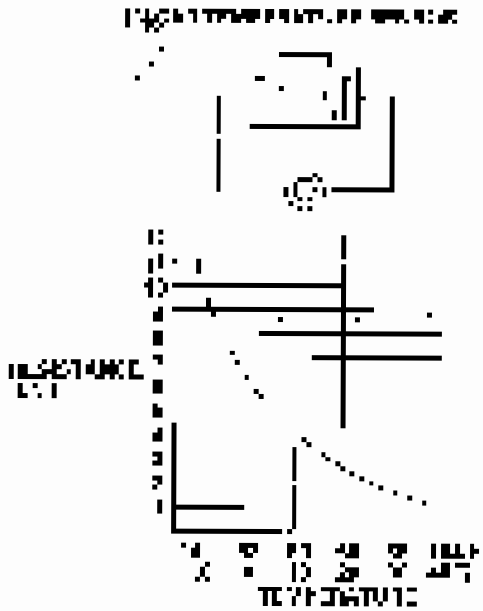
12. [illegible]

In-car Temperature Sensor Test

1 [illegible]

2 [illegible]

3 [illegible]



4 [illegible]

In-car Temperature Sensor Replacement

1 [illegible]

2 [illegible]

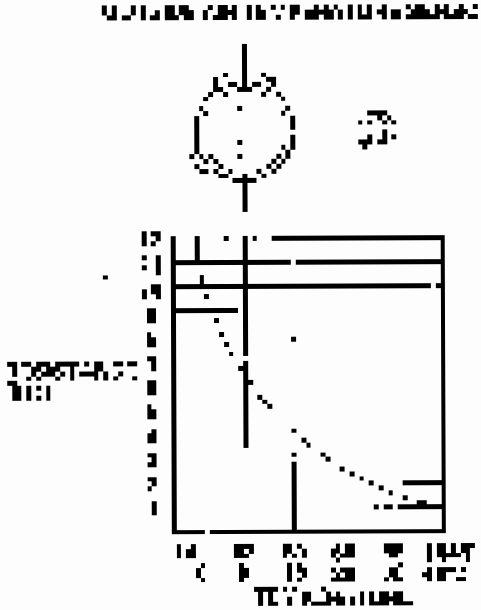
3 [illegible]

Outside Air Temperature Sensor Test

1. [illegible]

2. Digital meter: Allow water and measure resistance. Thermometer: Warm or cool water, and check resistance change [illegible]

3. Compare resistance measurement to specification. If out of specification, replace sensor. [illegible]



4. [illegible]

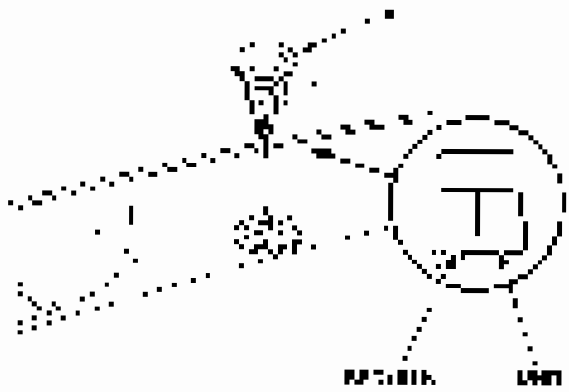
Outside Air Temperature Sensor Replacement

1. [illegible]

2. [illegible]

Sunlight Sensor Test

1. [illegible]

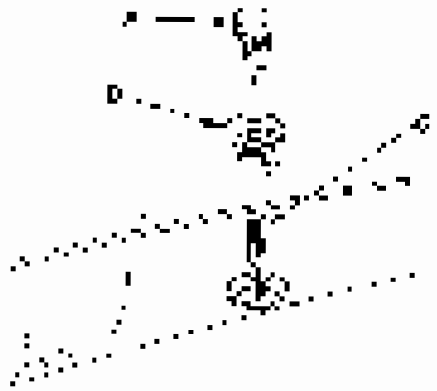


2. [illegible]

3. [illegible]

Sunlight Sensor Replacement

1. [illegible]

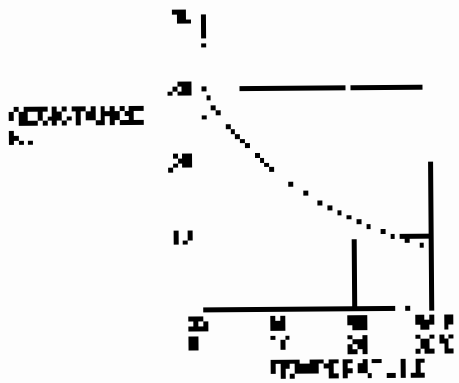


2. [illegible]

Evaporator Temperature Sensor Test

1. Remove the evaporator temperature sensor. See page 21-65.
2. Connect an ohmmeter to the sensor terminals as shown in the illustration.

3. Measure the resistance of the sensor at room temperature and at the temperature indicated in the illustration.
4. Compare the ohmmeter readings to the specification in the illustration.



5. If the sensor is not within specification, replace it. See page 21-65.

Evaporator Temperature Sensor Replacement

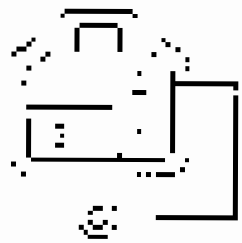
1. Remove the passenger's side dashboard lower cover. See page 20-xx.
2. Disconnect the evaporator temperature sensor connector. Remove the sensor from the evaporator.

3. Install the evaporator temperature sensor.

Power Transistor Test

[illegible] Remove the power transistor.

2. [illegible]
   - [illegible]
   - [illegible] replace the power transistor.



3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]
   - [illegible]
   - [illegible]

Driver's Air Mix Control Motor Test

1. [illegible]

   NOTICE

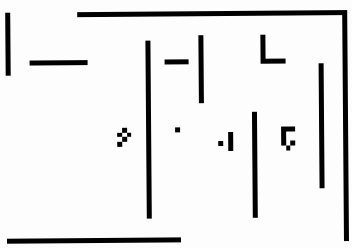
   [illegible]

2. [illegible]

3. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

   [illegible]



4. [illegible]

5. [illegible]

6. [illegible]

   [illegible]
   [illegible]

7. [illegible]

Driver's Air Mix Control Motor Replacement

1. [illegible]

2. [illegible]

3. [illegible]

Passenger's Air Mix Control Motor Test

[illegible]

1. [illegible]

   NOTICE

   [illegible]

2. [illegible]

3. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]

   [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

Passenger's Air Mix Control Motor Replacement

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

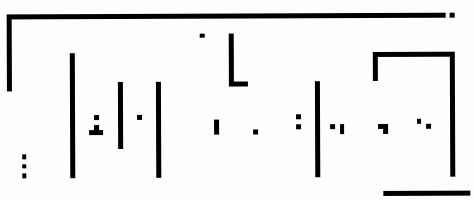
Driver's Mode Control Motor Test

NOTE: Before making checks in this procedure, refer to page 21-69.

1. Disconnect the 6P connector from the driver's mode control motor.

NOTICE!
Connecting the battery voltage and ground to the wrong terminals will damage the driver's mode control motor.

2. Connect battery power to the driver's mode control motor connector as shown in the illustration. Check that the motor operates smoothly and the shaft moves to the position shown in the illustration.



3. If the motor does not operate properly, replace the driver's mode control motor (see page 21-70).

- If the linkage and door are not smoothly operated, repair them.
- If the linkage and door are operated smoothly, go to the next step.

4. Check for open circuit between the driver's mode control motor connector terminals and the ECM connector terminals. Also check for continuity between the No. 5 and 6 terminals and the body ground. If the circuit is open or shorted, repair it.

5. If the circuit is normal, replace the ECM with a known-good one, and recheck the system.

Driver's Mode Control Motor Replacement

1. Remove the dashboard (see page 20-[illegible]).

2. Disconnect the 6P connector from the driver's mode control motor. Remove the driver's mode control motor (4 screws) and the duct joint (see page 21-[illegible]).

3. Install the new driver's mode control motor in the reverse order of removal.

Passenger's Mode Control Motor Test

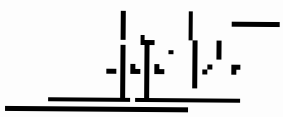
NOTE: Before testing, make sure the [illegible] page 21-2.

1. [illegible]

   NOTICE

   [illegible]

2. Connect a jumper wire from the [illegible] passenger's mode control motor, and ground the [illegible] Check that the passenger's mode control motor moves smoothly, and stops at the [illegible] Reverse the jumper wire connections, and check that the passenger's mode control motor moves smoothly, and stops at the [illegible] If the passenger's mode control motor does not operate as described, replace it.



3. With the passenger's mode control motor still removed, [illegible] Check for continuity between the passenger's mode control motor terminals and ground as follows:

   - [illegible]
   - [illegible]
   - With the passenger's mode control motor in the [illegible] smoothly to the [illegible]

4. [illegible] If there is no continuity, [illegible] Check for continuity between the passenger's mode control motor terminals and ground. There should be continuity [illegible] If there is no continuity, replace the passenger's mode control motor.

5. [illegible] If there is continuity, replace the passenger's mode control motor. See page 21-71.

Passenger's Mode Control Motor Replacement

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

6. [illegible]

Recirculation Control Motor Test

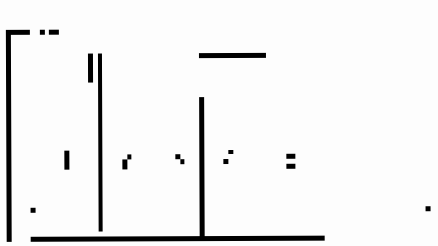
[illegible]

1. [illegible] recirculation control motor.

   NOTICE

   [illegible]

2. [illegible] recirculation control motor [illegible] ground. Be sure to [illegible] recirculation control motor [illegible]. To avoid damaging the recirculation control motor, do not remove more than [illegible] from the recirculation control motor [illegible]. Disconnect the [illegible] ground. Remove the recirculation control motor [illegible] recirculation control motor [illegible].



3. [illegible] recirculation control motor [illegible]. If [illegible] recirculation control motor [illegible]:
   - [illegible] recirculation control motor [illegible] page 21-72.
   - [illegible] recirculation control motor [illegible].

Recirculation Control Motor Replacement

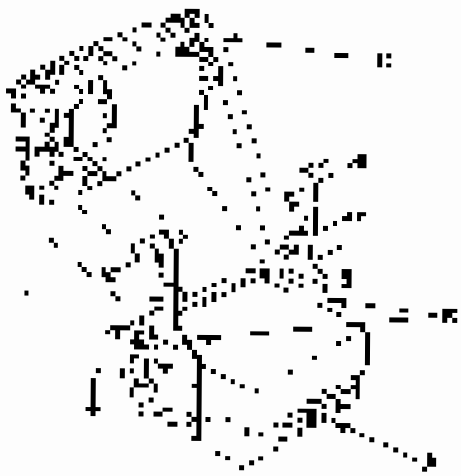
1. [illegible]
2. [illegible] page 21-15).
3. [illegible] recirculation control motor [illegible] page 21-15).
4. Disconnect the [illegible] recirculation control motor [illegible] recirculation control motor [illegible] recirculation control motor [illegible].

5. Install the motor in the recirculation control motor. Be sure the [illegible] engages with the [illegible] recirculation control motor [illegible].

Climate Control Switch Assembly Removal and Installation

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

5. [illegible]

Climate Control Unit Removal and Installation

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

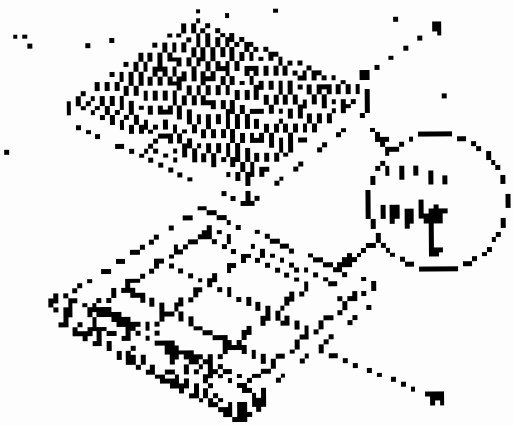
Dust and Pollen Filter Replacement

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]



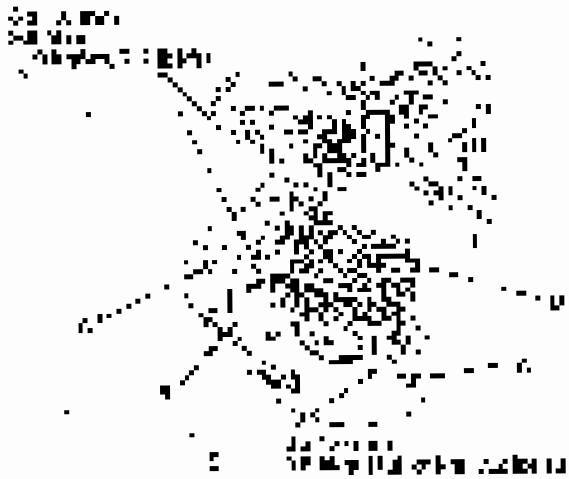
4. [illegible]

Blower Unit Removal and Installation

1. [illegible]

2. [illegible]

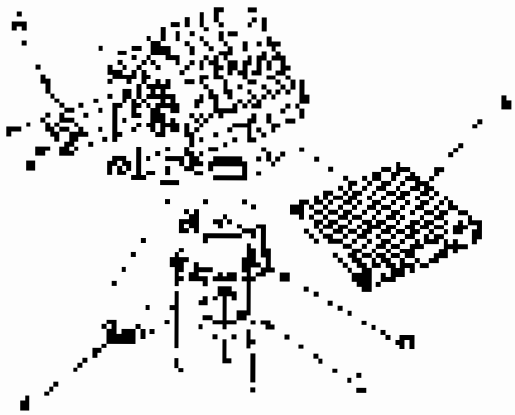
3. [illegible]



4. [illegible]

Blower Unit Component Replacement

- [illegible]
- [illegible]
- [illegible]



Evaporator Core Replacement

1. [illegible]
2. [illegible]

3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

Evaporator Core Replacement (cont'd)

7. Carefully pull the evaporator core out of the heater housing in the direction shown.

8. Install the core in the reverse order of removal and note the following:

- Do not damage the fins of the evaporator core.
- Be sure to install the seal in the correct direction. The seal should be installed so that the flat side of the seal is facing the evaporator core.
- Be sure to install the seal in the correct position. Improper installation will cause air leakage.
- Be sure to install the drain hose in the correct position. Improper installation will cause air leakage.
- Be sure to install the drain hose in the correct position. Improper installation will cause air leakage.
- Be sure to install the drain hose in the correct position. Improper installation will cause air leakage.

Heater Unit/Core Replacement

Before removing the heater unit, be sure to read the precautions and procedures in the beginning of this section.

1. Disconnect the negative cable from the battery and drain the engine coolant.

2. Remove the glove box and the lower dashboard panel.

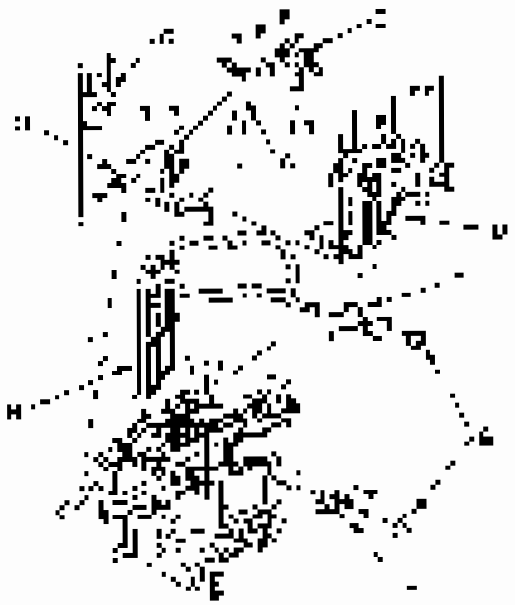
3. Disconnect the heater hoses and the evaporator core pipes.

4. Remove the mounting bolts and nuts, then pull the heater unit out of the passenger compartment.

5. When installing the heater unit, be sure to route the heater hoses properly.

Heater Unit/Core Replacement (cont'd)

1. [illegible]



[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Heater Valve Cable Adjustment

1. [illegible]

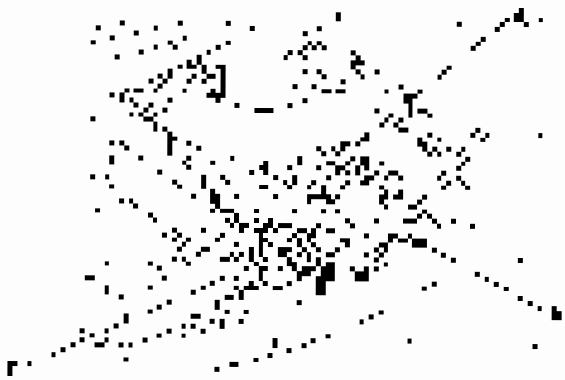
2. [illegible]

3. [illegible]

4. [illegible]

NOTE: [illegible]

5. [illegible]



Compressor Replacement

[illegible]

1. [illegible]

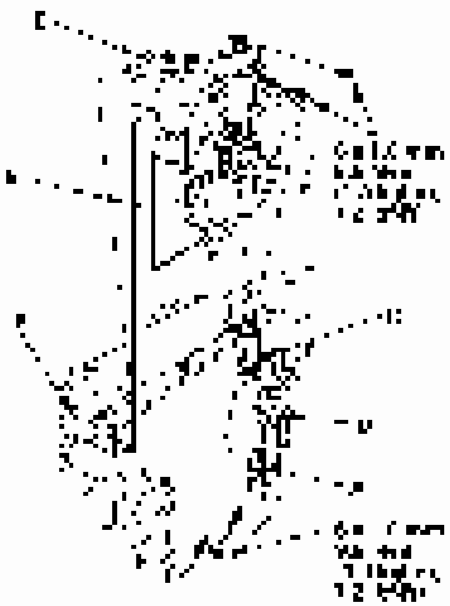
2. [illegible]

3. Make sure the ignition is OFF. Disconnect the negative cable from the battery.

4. Recover the refrigerant with a recovery/recycling/charging station only. See appropriate [illegible]

5. [illegible]

6. Remove the compressor clutch connector. Remove the compressor hose fitting (A). Discharge the condenser fan connector (B). Disconnect the condenser fan connector (C). Remove the bolt (D) from the condenser fan shroud. Remove the [illegible] Remove the [illegible] Remove the [illegible] Remove the [illegible]



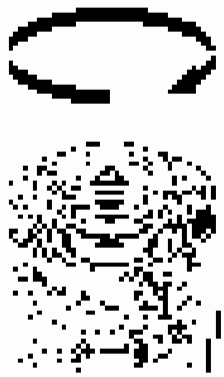
7. Disconnect the compressor clutch connector. Remove the bolt and the wire harness clip from the compressor. Disconnect the compressor hose fitting (A) and discharge line (B) from the compressor. Cap all open fittings immediately to minimize the refrigerant's exposure to moisture.

8. Remove the mounting bolts and the compressor. Discard the O-rings. Install the O-rings lightly coated with refrigerant oil.

Compressor Clutch Check

[illegible] procedure in this section [illegible] page 21-63.

2. Check the pulley bearing for rough rotation or excessive noise. Replace the pulley if the bearing is rough or noisy. Refer to Pulley Replacement in this section.



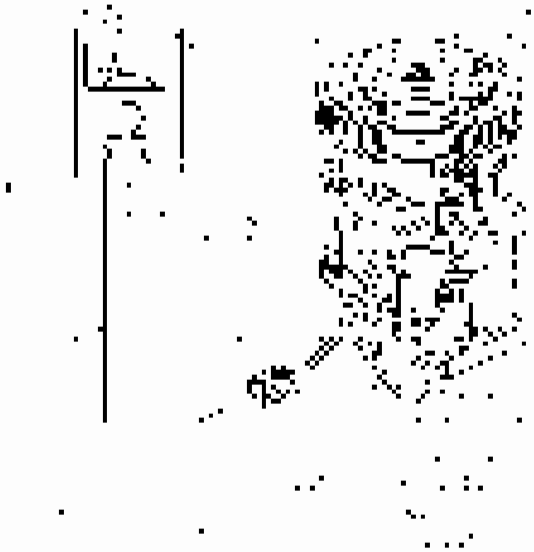
3. Measure the clearance between the rotor and the pulley with a feeler gauge. If the clearance is not within specification, replace the pulley. Refer to Pulley Replacement in this section.

[illegible]

NOTE: [illegible]
[illegible] 0.5 mm)

4. [illegible] page 21-63.

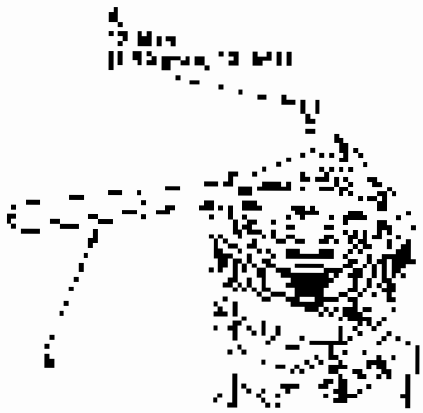
Field Coil Resistance - [illegible]



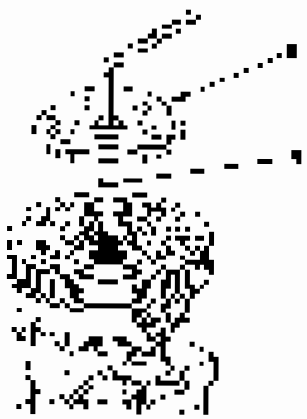
Compressor Clutch Overhaul

Special Tools Required
[illegible]

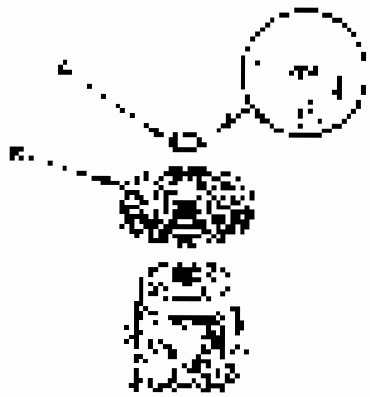
1. Remove the compressor clutch assembly as previously described. Secure the compressor in a vise with soft jaws. Install clutch holder [illegible].



2. Remove the [illegible] using a puller. Remove the shim(s) and note the number and thickness of shims for reassembly. Remove the rotor from the compressor. Inspect the rotor for damage and wear as described in the following section.



3. [illegible] Remove the snap ring. Install the clutch holder and remove the [illegible] from the compressor.



4. [illegible] Remove the snap ring. Install the clutch holder and remove the [illegible] from the compressor.

5. Remove the [illegible]

- Install the [illegible] on the compressor shaft and tighten the screw to hold it in place.
- Carefully pry the [illegible] from the compressor housing.
- Install a new seal in the compressor housing. Use a seal installer tool to press the seal into the housing.
- Remove the [illegible] from the compressor shaft.

Compressor Relief Valve Replacement

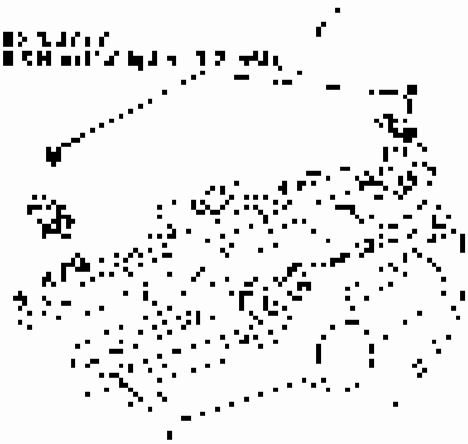
1. Recover the refrigerant. (With R-134a, recycle the refrigerant.) See page 21-27.
2. Remove the relief valve. (With R-134a, remove the Schrader valve core.) See the illustration.

3. Clean the relief valve bore.
4. Apply refrigerant oil to the O-ring on the new relief valve, then install it in the compressor. See page 21-27 for the torque.
5. Remove the plugs and install the right side relief valve.
6. Charge the system. See page 21-

Condenser Replacement

1. Make sure the ignition switch is in the LOCK (0) position, then disconnect the negative (-) cable from the battery.
2. Remove the [illegible] (page [illegible]).
3. Remove the [illegible] (page 21-[illegible]).
4. Make sure the ignition switch is in the LOCK (0) position, then disconnect the battery and the battery cable.
5. Remove the [illegible] and the [illegible] from the condenser.

6. [illegible] from the [illegible] of the condenser.



7. [illegible] and the [illegible] from the condenser. Be careful not to damage the [illegible].

Continued

Condenser Replacement (cont'd)

5. Remove the radiator from the condenser.

6. Remove the air conditioning line bracket bolts from the condenser.

10. Remove the condenser by lifting it to the left to avoid damaging the radiator or condenser fins when removing the condenser.

11. [illegible]

- If you are installing a new condenser, add refrigerant oil [illegible] (see page [illegible]).
- Replace the O-rings on the condenser pipe fittings, and apply refrigerant oil to the O-rings before installing the pipes into the condenser. [illegible]
- Install the condenser in the reverse order of removal. Tighten the condenser bolts and the compressor bolts securely.
- Do not pull the compressor pulley belt. Adjust the belt tension if necessary (see page [illegible]).
- Charge the system with refrigerant (see page [illegible]).
- Check for refrigerant leaks (see page [illegible]).

Receiver/Dryer Desiccant Replacement

1. [illegible]

2. [illegible]

3. [illegible]

Refrigerant Recovery

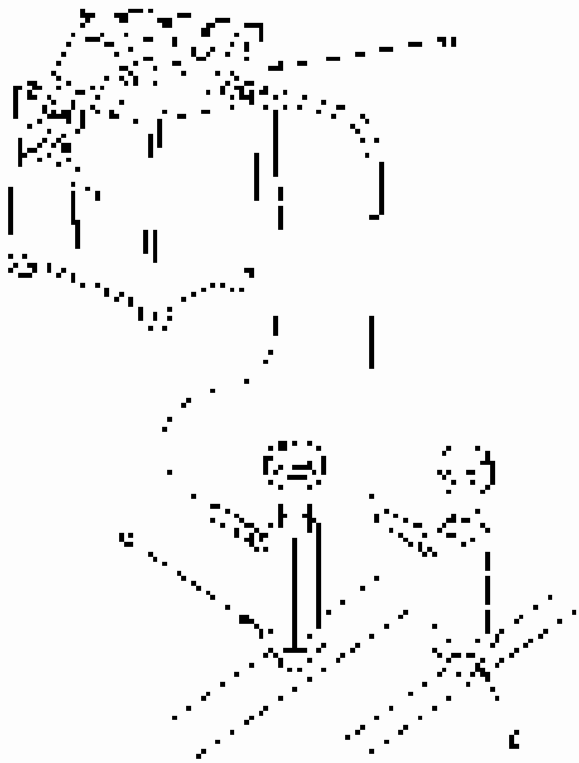
⚠CAUTION

- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

1. [illegible]



2. [illegible]

System Evacuation

ACAUTION

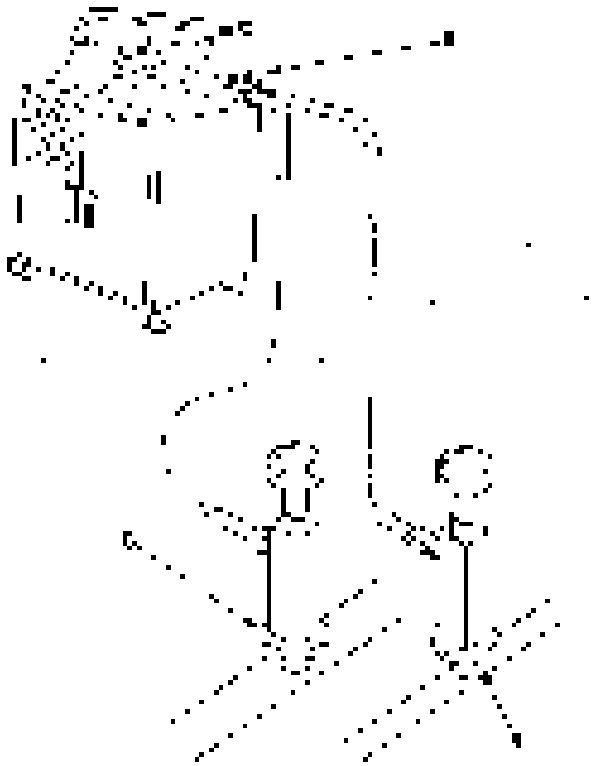
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

1. [illegible]

2. [illegible]



3. [illegible]

System Charging

⚠CAUTION

- [illegible]
- [illegible]
- [illegible]

[illegible]

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

[illegible]

3. [illegible] page 21-43).
4. [illegible]

   Select the appropriate service procedure for your refrigerant charging station.

   [illegible]
5. Check for refrigerant leaks (see page 21-45).
6. Check for system performance (see page 21-46).

Refrigerant Leak Test

[illegible]

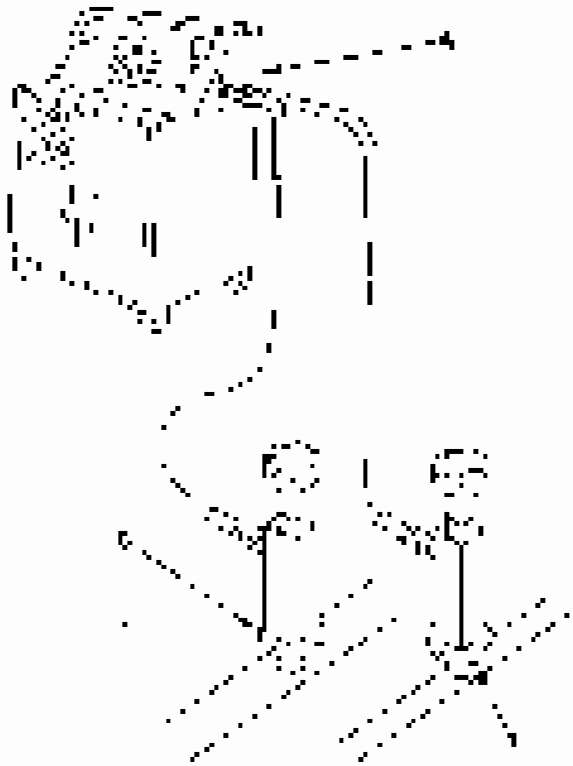
⚠CAUTION

- [illegible]
- [illegible]
- [illegible]

NOTE

- [illegible]
- [illegible]

1. [illegible]



2. [illegible]

   [illegible]

   [illegible]
   [illegible]
   [illegible]
   [illegible]
   [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

A/C System Test

Performance Test

⚠ CAUTION

- [illegible]
- [illegible]
- [illegible]

[illegible]

NOTE:
- [illegible]
- [illegible]

1. [illegible]

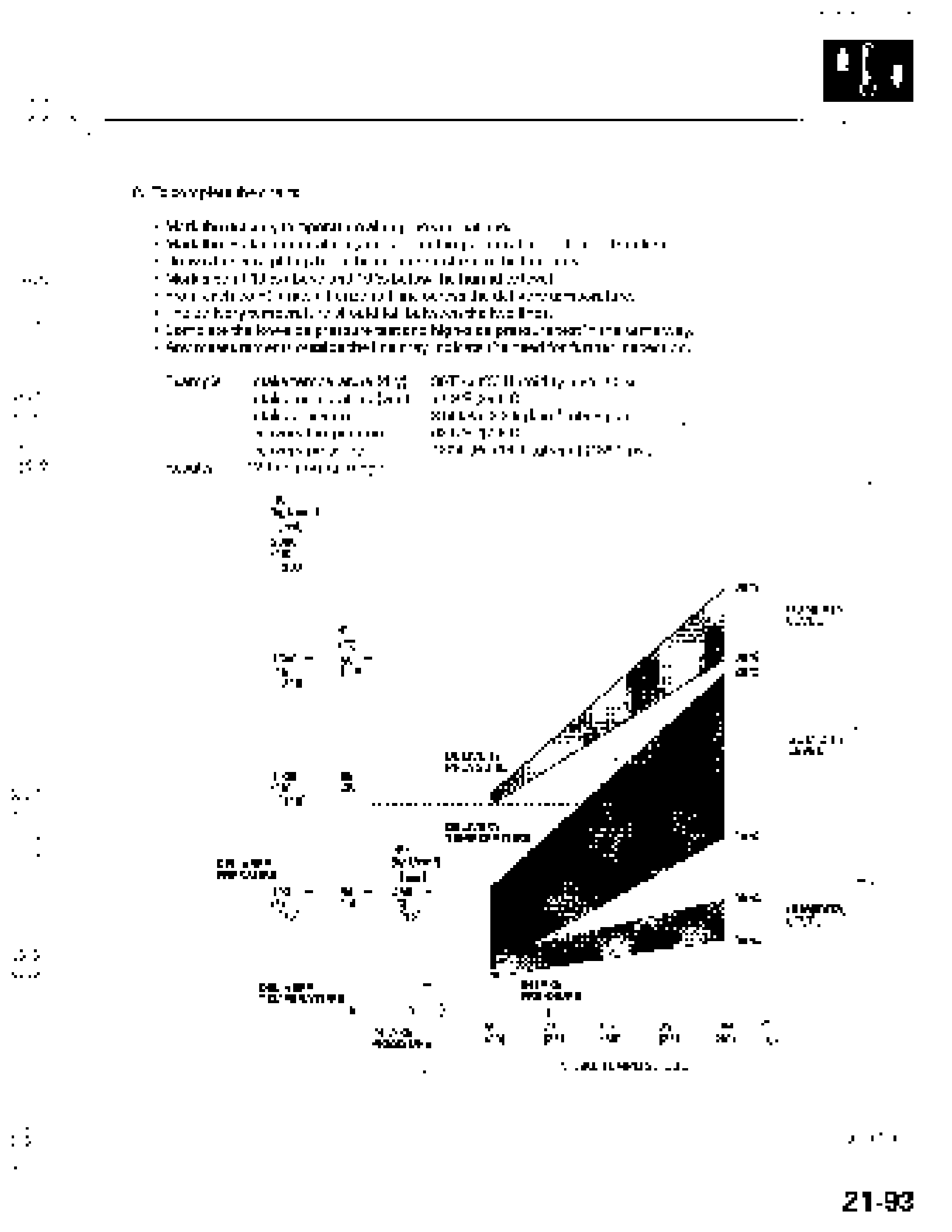
2. [illegible]

3. [illegible] page 21-85.

4. [illegible]

5. [illegible]:
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]
   - [illegible]

7. [illegible]



A/C System Test (cont'd)

Pressure Test

Test result	Related symptoms	Probable causes	Remedy
Discharge pressure abnormally high	Abnormal dropping compressor pressure drop between 196 kPa (2 kg/cm², 28 psi) and high pressure side pressure	Air in system	Recharge refrigerant system
	Engine overheats	• Engine cooling system malfunction • Condenser cooling fan motor malfunction	Repair
	Unable to control temperature	Refrigerant overcharged	Recharge
Discharge pressure abnormally low	High and low pressure sides balance soon after stopping compressor	• Faulty compressor discharge valve • Faulty compressor valve	Replace compressor
Suction side pressure abnormally low	Suction side pressure and discharge pressure balance soon after stopping compressor	• Insufficient refrigerant • Refrigerant leakage	• Repair • Recover refrigerant and recharge with specified amount
	Expansion valve and liquid tank are frosted	• Poor refrigerant circulation (Refrigerant line clogged)	• Replace expansion valve and recharge with specified amount
	Low-pressure gauge indicates vacuum.	• Faulty expansion valve	• Replace expansion valve
	Evaporator gets warm (Refrigerant does not circulate.)	Poor compressor	Replace compressor. Check lubrication oil amount.
	Engine overheats	Poor refrigerant circulation	Repair
Suction pressure abnormally high	Discharge and suction side pressures balance soon after stopping compressor	Poor compressor discharge valve	Replace compressor
	Suction pressure side does not cool and sometimes frosted	Excessive refrigerant in system	Recover refrigerant and recharge with specified amount
	High and low pressure sides balance soon after stopping compressor	• Faulty gasket • Faulty high pressure valve • Poor compressor discharge valve	Replace compressor
Discharge and suction pressures abnormally high	Discharge pressure too high	• Poor heat radiation of condenser • Refrigerant overcharged	• Repair • Replace refrigerant • Check cooling system
Discharge and suction pressures abnormally low	Low-pressure side and hose are cold sometimes frosted	Clogged or closed expansion valve	Replace valve
	Temperature difference between inlet and outlet of receiver dryer is small	Clogged or closed receiver dryer	Replace receiver
Receiver tank	Compressor noise	Compressor malfunction	Replace compressor
	Compressor oil level is low	Lack of refrigerant/oil	Repair leak. Recharge refrigerant and compressor oil.
	Compressor gasket is worn or damaged	Gasket damaged	Replace gasket

SUPPLEMENTAL RESTRAINT SYSTEM [illegible] (if vehicle fault indicator illuminates or remains illuminated)

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Body Electrical

Special Tools

Illustration	Tool Number	Description	Use
1	[illegible]	[illegible]	1
2	[illegible]	[illegible]	1
3	[illegible]	[illegible]	1

General Troubleshooting Information

Tips and Precautions

Before Troubleshooting

- [illegible] appropriate [illegible]

- [illegible]

WARNING

- Do not [illegible] battery [illegible] ground cable has been removed. Sparks will damage the terminal sealant.
- [illegible] engine [illegible] battery [illegible] connected [illegible]

Handling Connectors

- Disconnect the connector and inspect it for corrosion, poor contact, etc.
- Make sure the female connector is completely inserted.
- If corrosion is found on the terminals, clean it off. Use electrical contact cleaner if necessary.

- Make sure the terminals are not bent and are aligned properly.
- Check for poor contact by pulling lightly on each wire. Also, check the terminals for proper crimping.
- Replace any damaged connectors.

- Do not [illegible] connectors [illegible] type [illegible] wire [illegible] terminal [illegible]
- Always [illegible]

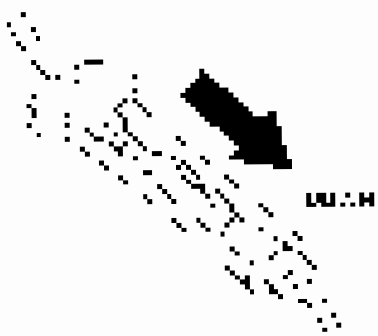
- Before [illegible] engine [illegible] make sure [illegible] wire [illegible] [illegible] plug [illegible]

General Troubleshooting Information (cont'd)

- Check for loose or poor contact in the suspected circuit. Pull on each connector to be sure it is fully engaged.

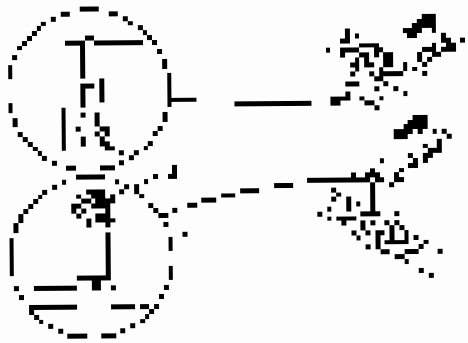
- Test for continuity between test points with the ignition switch OFF. If the specified resistance is not present, repair as necessary.

- Test for voltage between test points with the ignition switch ON.
- If voltage is not present, repair as necessary.



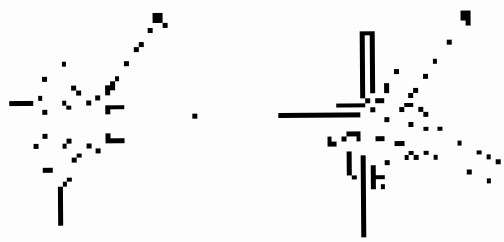
Harness Wires and Harnesses

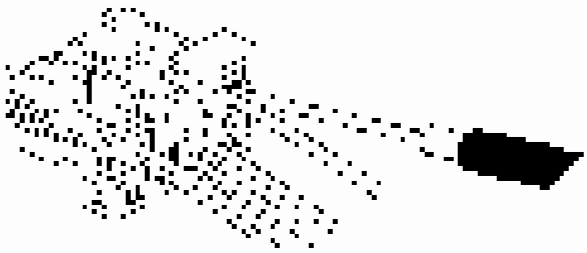
- Inspect wires and harnesses for insulation damage and poor connections.
- Repair damaged wires and harnesses.

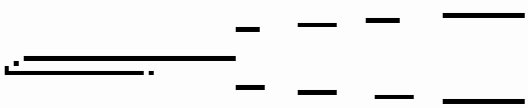


- Repair or replace all wires that are burned, frayed, or have damaged insulation.

- After repairing the wiring, be sure to restore the factory wire routing and clamping. Improper routing can cause future problems.
- Check for pinched wires. Be sure wires are routed away from edges, moving components, and hot parts.
- Be sure wires are not twisted or kinked. Straighten them as much as possible.







Diagnostic Troubleshooting

1. **Verify the Complaint**
   Verify the customer's complaint. Make sure you understand the symptoms and conditions under which the problem occurs. Review any technical service bulletins that may apply to the problem.

2. **Analyze the Symptoms**
   Analyze the customer's complaint and any symptoms you observe. Develop a plan for checking the most likely causes of the problem. Be sure to check for any technical service bulletins that may apply to the problem.

   Remember that many problems are caused by more than one component failing. Don't stop your diagnosis after finding one problem.

3. **Isolate the Problem**
   Perform tests and inspections to isolate the problem. Use the diagnostic procedures in this section and any other relevant service information.

4. **Fix the Problem**
   Once the problem is identified, make the necessary repairs. Always use new parts when replacing components. Follow all applicable procedures.

5. **Verify the Repair**
   After repairs are complete, verify that the problem is fixed. Test the vehicle under the same conditions that originally caused the problem. Check for any new problems that may have been introduced during the repair.

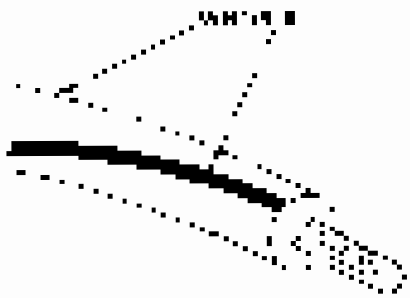
General Troubleshooting Information (cont'd)

Wire Color Codes

The following wire color abbreviations are used in this section:

[illegible]	White
[illegible]	Yellow
[illegible]	Black
[illegible]	Blue
[illegible]	Green
[illegible]	Red
[illegible]	Orange
[illegible]	Pink
[illegible]	Brown
[illegible]	Gray
[illegible]	Purple
[illegible]	Light Blue
[illegible]	Light Green

[illegible] wire is identified by its color and a stripe color. The stripe is the second color listed.



How to Check for DTCs with the Honda Diagnostic System (HDS)

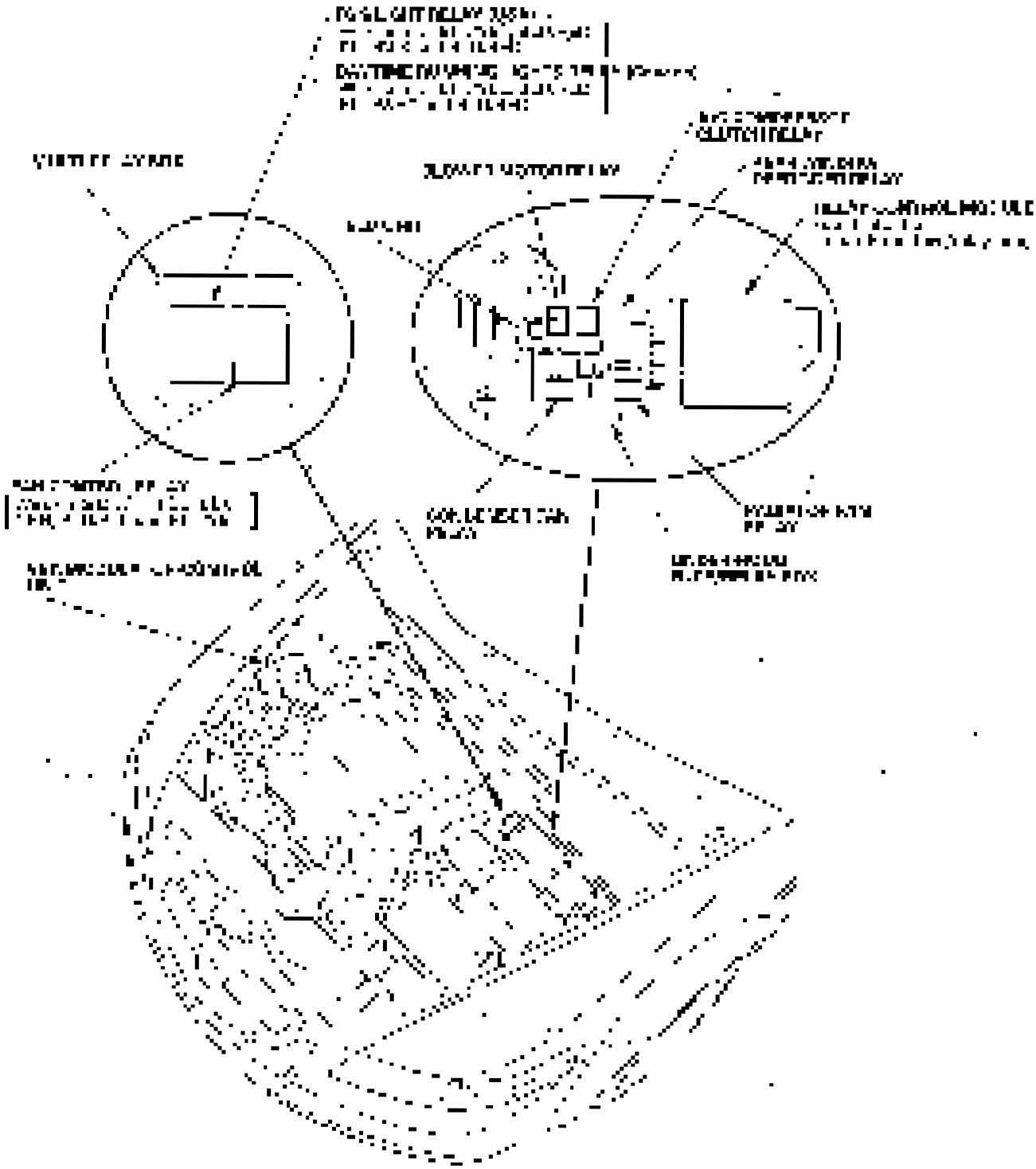
1. Connect the Honda Diagnostic System (HDS) to the Data Link Connector (DLC) [illegible] driver's side of the [illegible].

   NOTE: For specific instructions refer to the HDS [illegible] Diagnostic System Help.

2. Select the "TEST MODE" [illegible] Diagnostic Trouble Code(s) [illegible] Refer to the [illegible] the appropriate DTC [illegible]

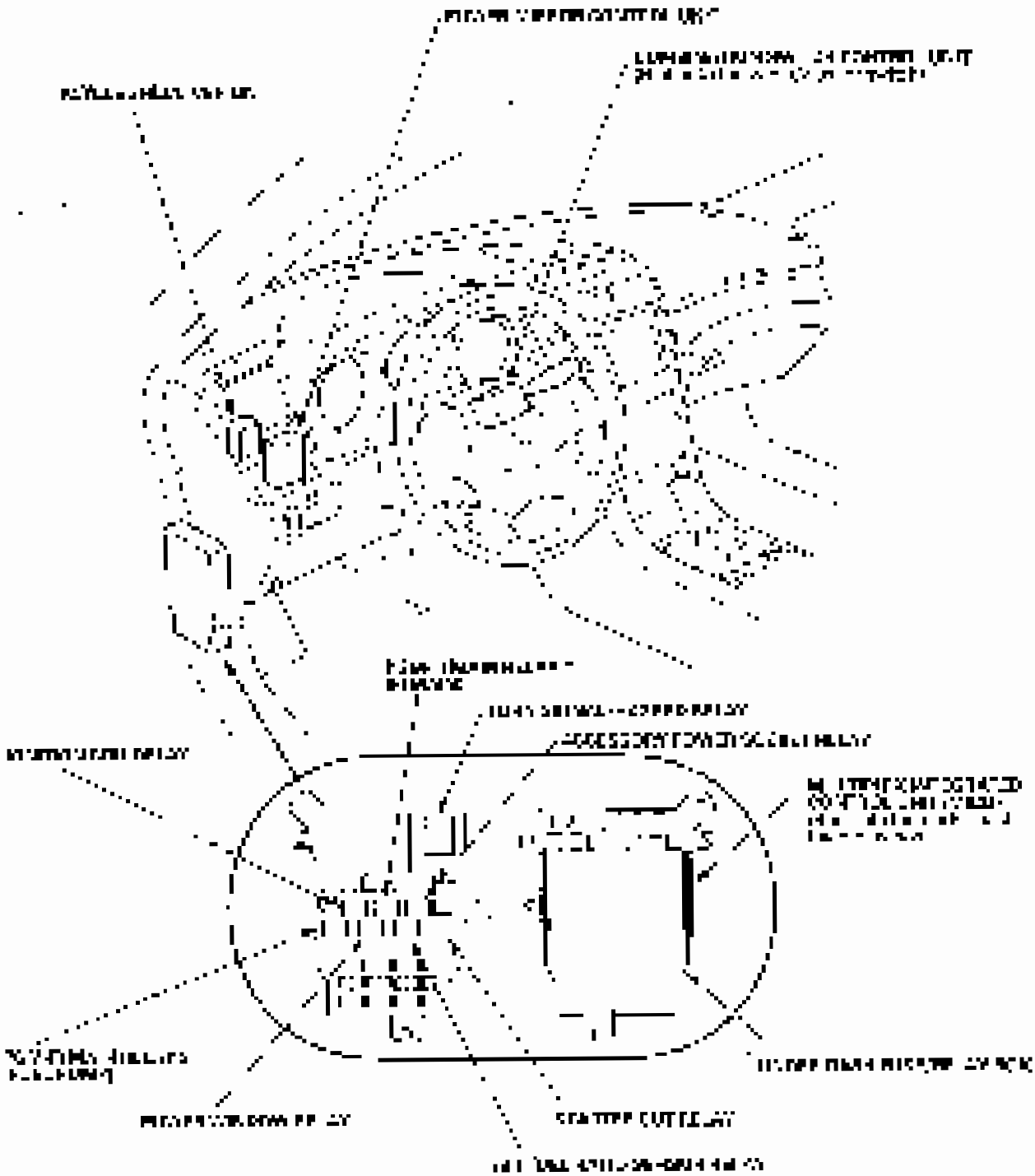
Relay and Control Unit Locations

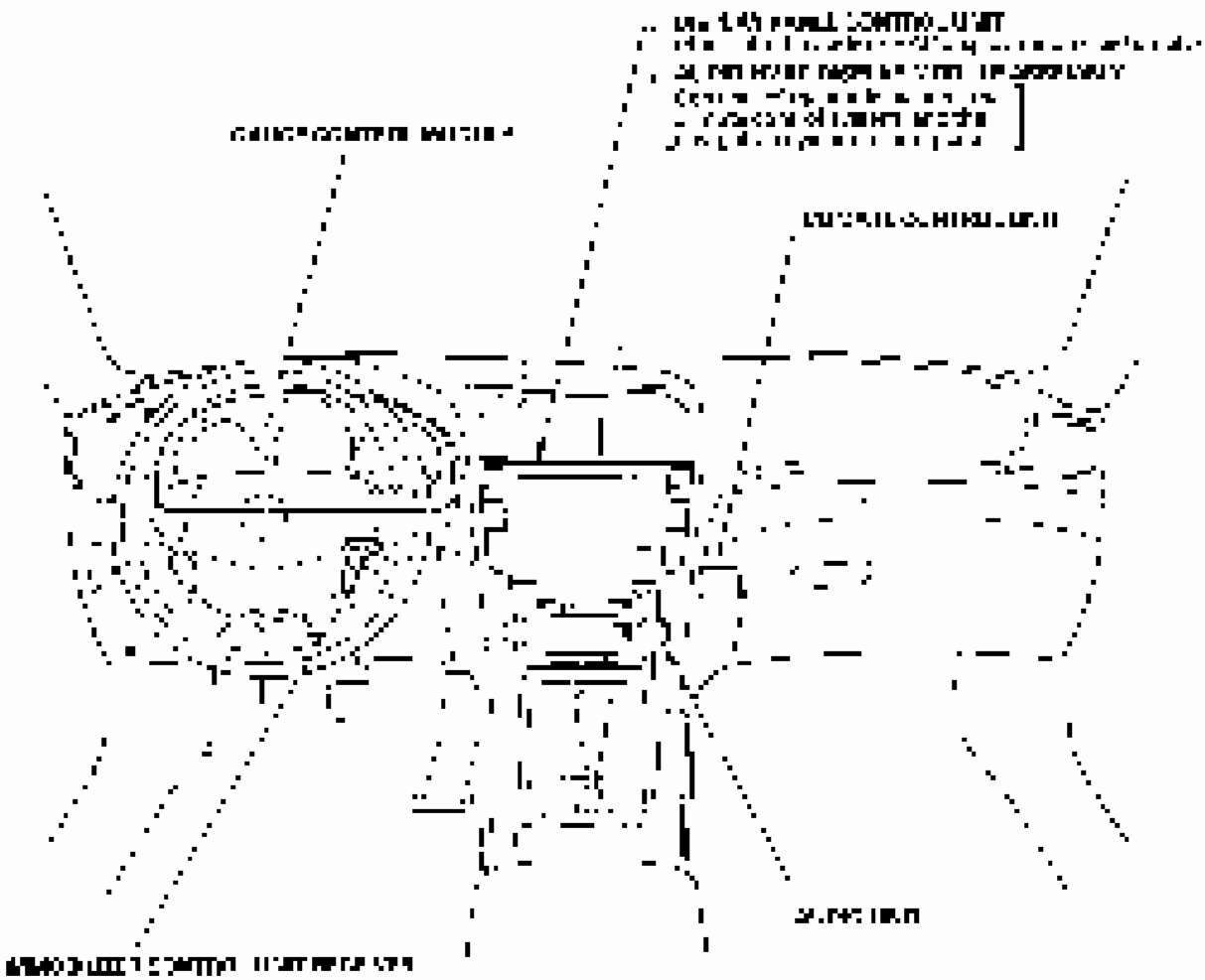
Engine Compartment



Relay and Control Unit Locations

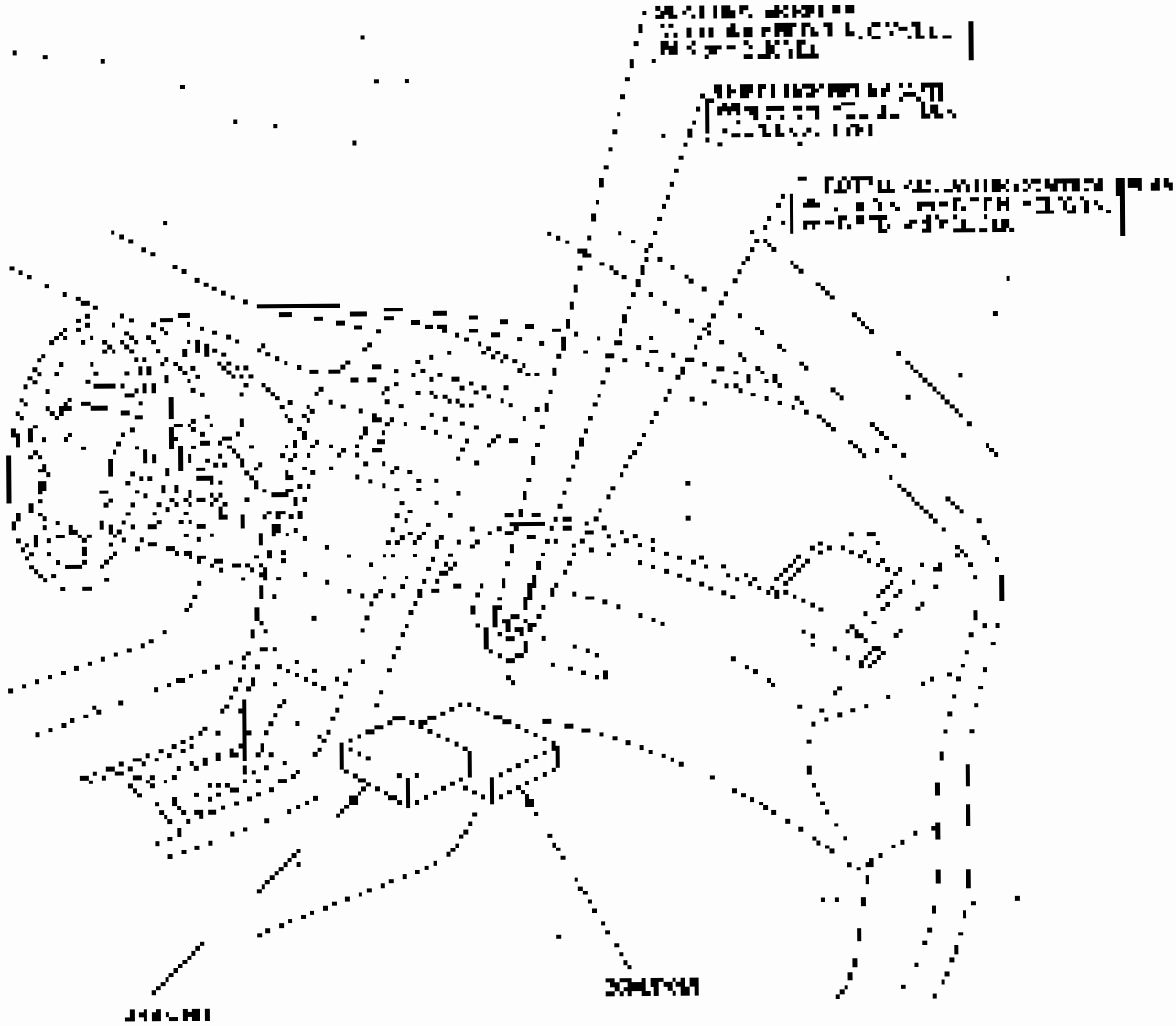
Dashboard



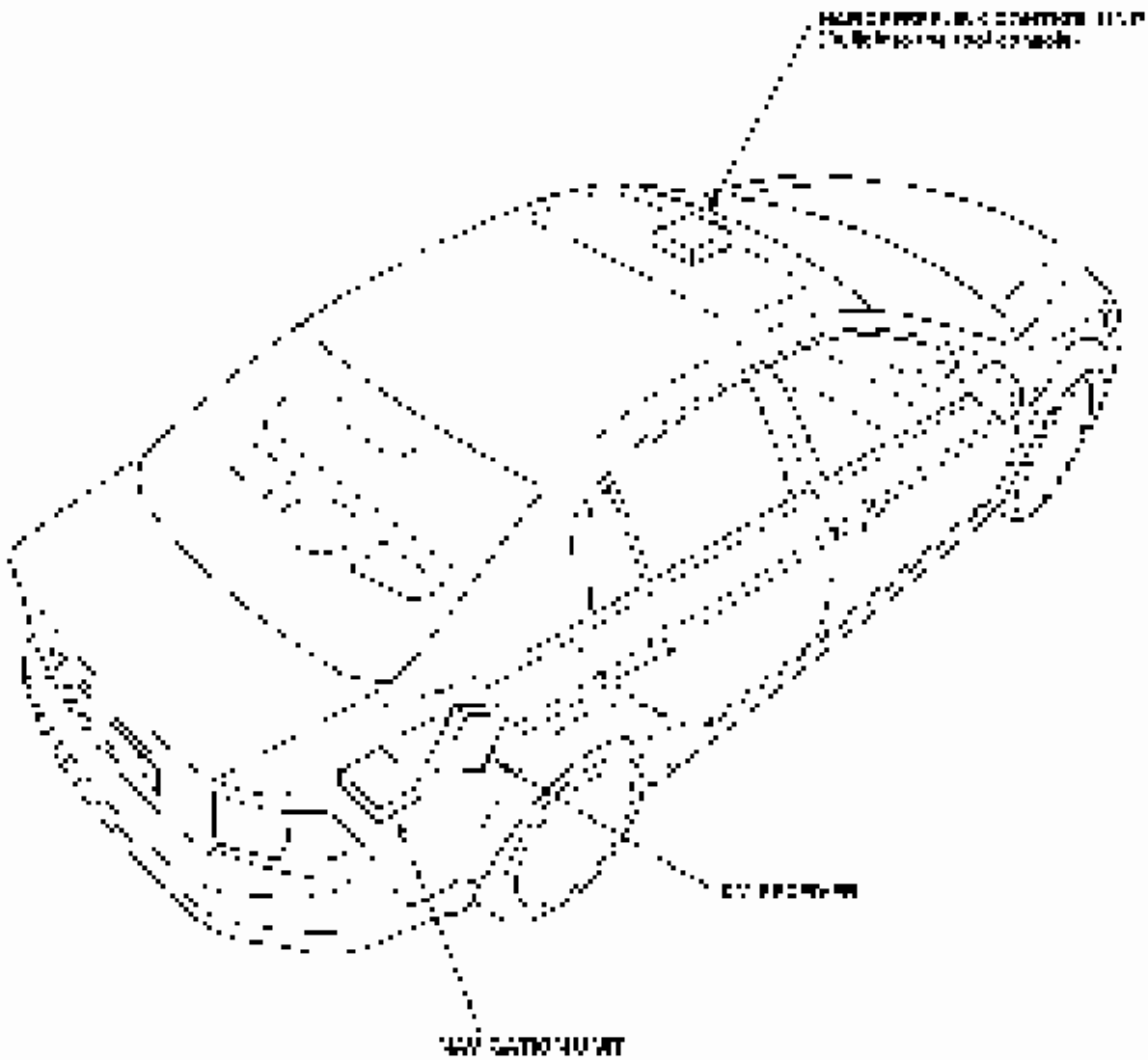


(cont'd)

Dashboard (cont'd)

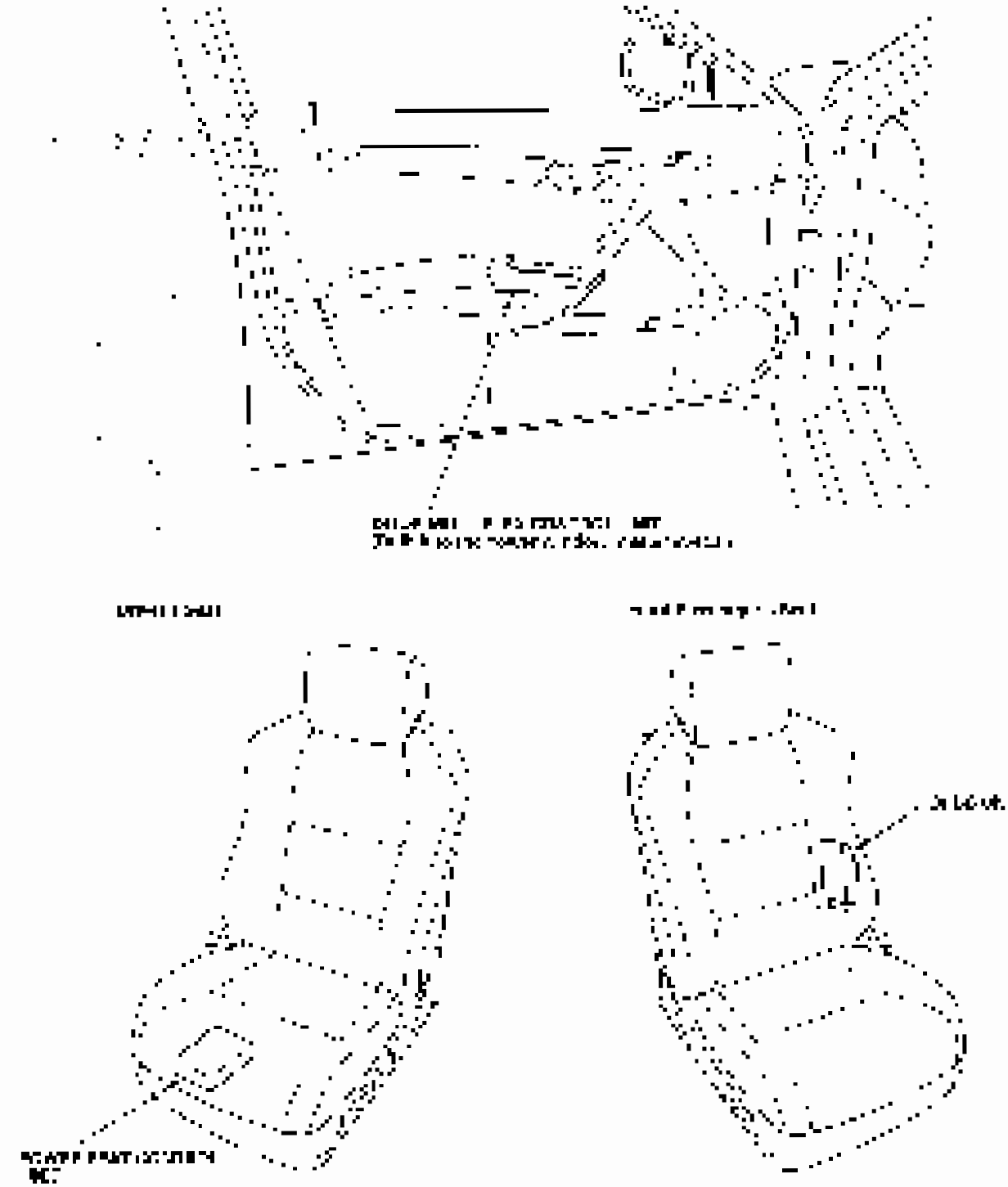


Roof and Trunk

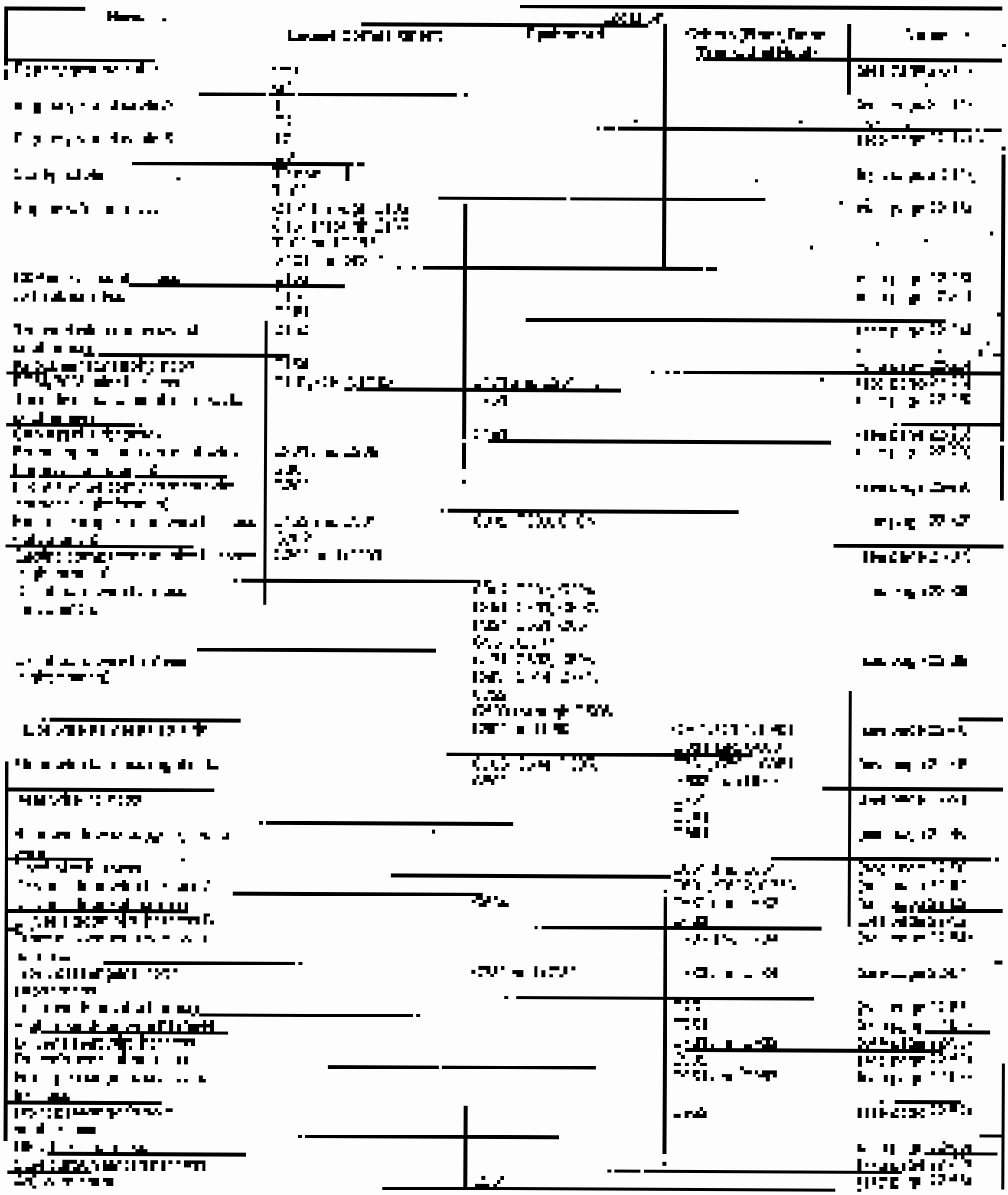


Relay and Control Unit Locations

Door and Seat



Connector Index

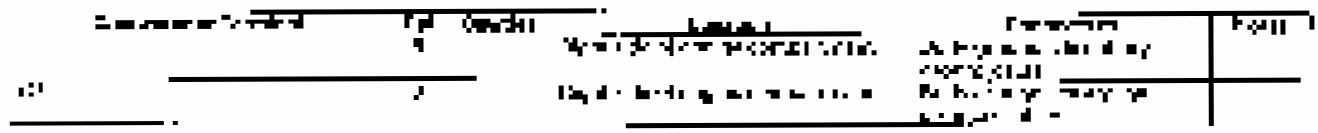


Connector to Harness Index

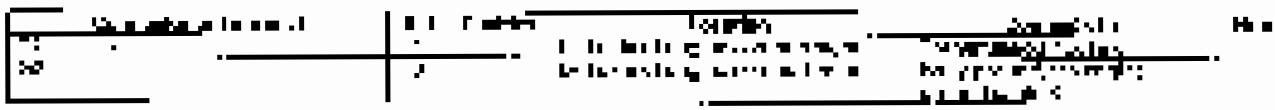
Starter Cable

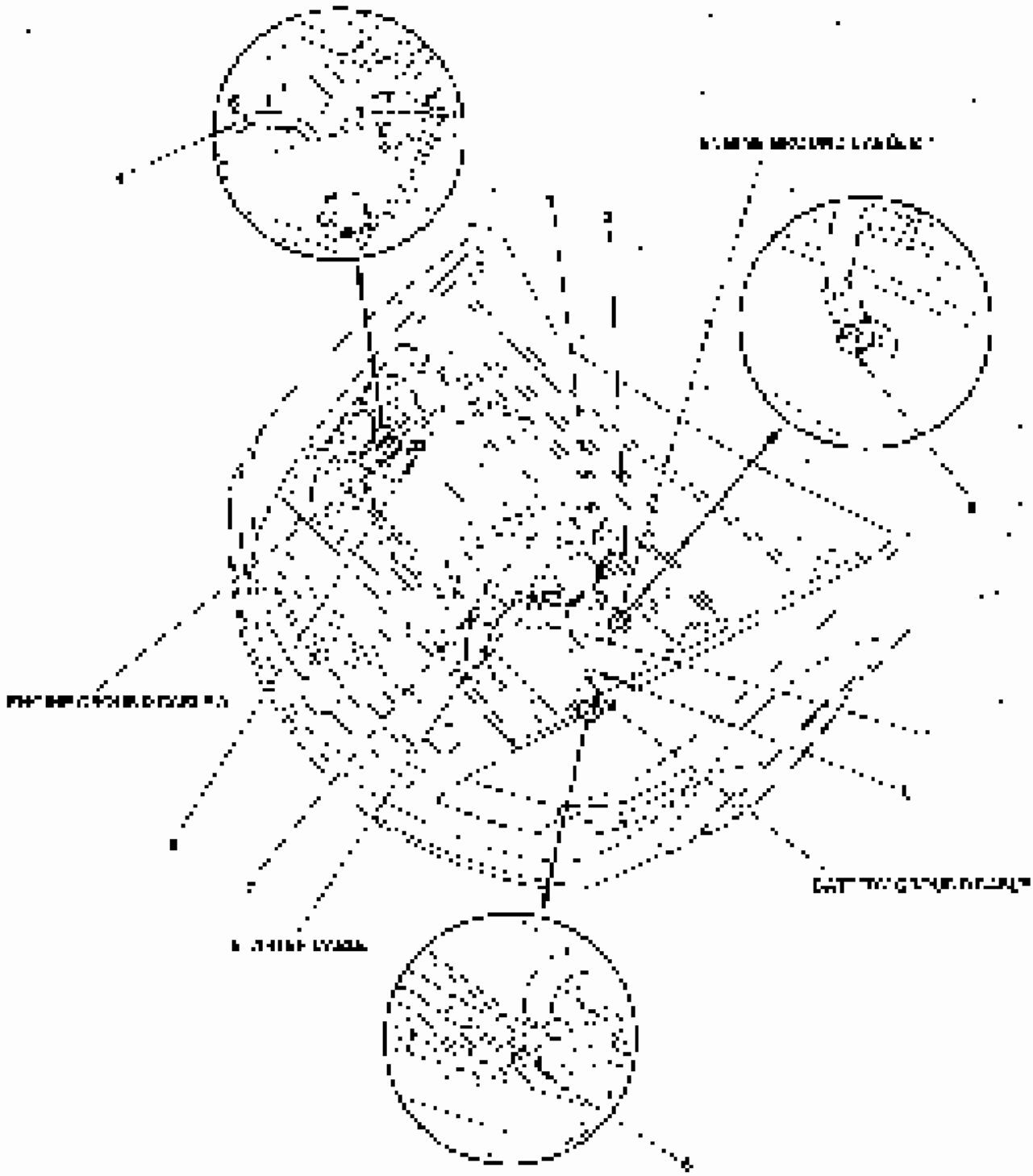
Battery Ground Cable

Engine Ground Cable 4



Engine Ground Cable 3





Connector to Harness Index (cont'd)

Engine Wire Harness (M/T)

Connector or Terminal	No.	Cavities	Location	Connects to	Notes
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]		[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
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[illegible]	[illegible]	[illegible]	[illegible]		
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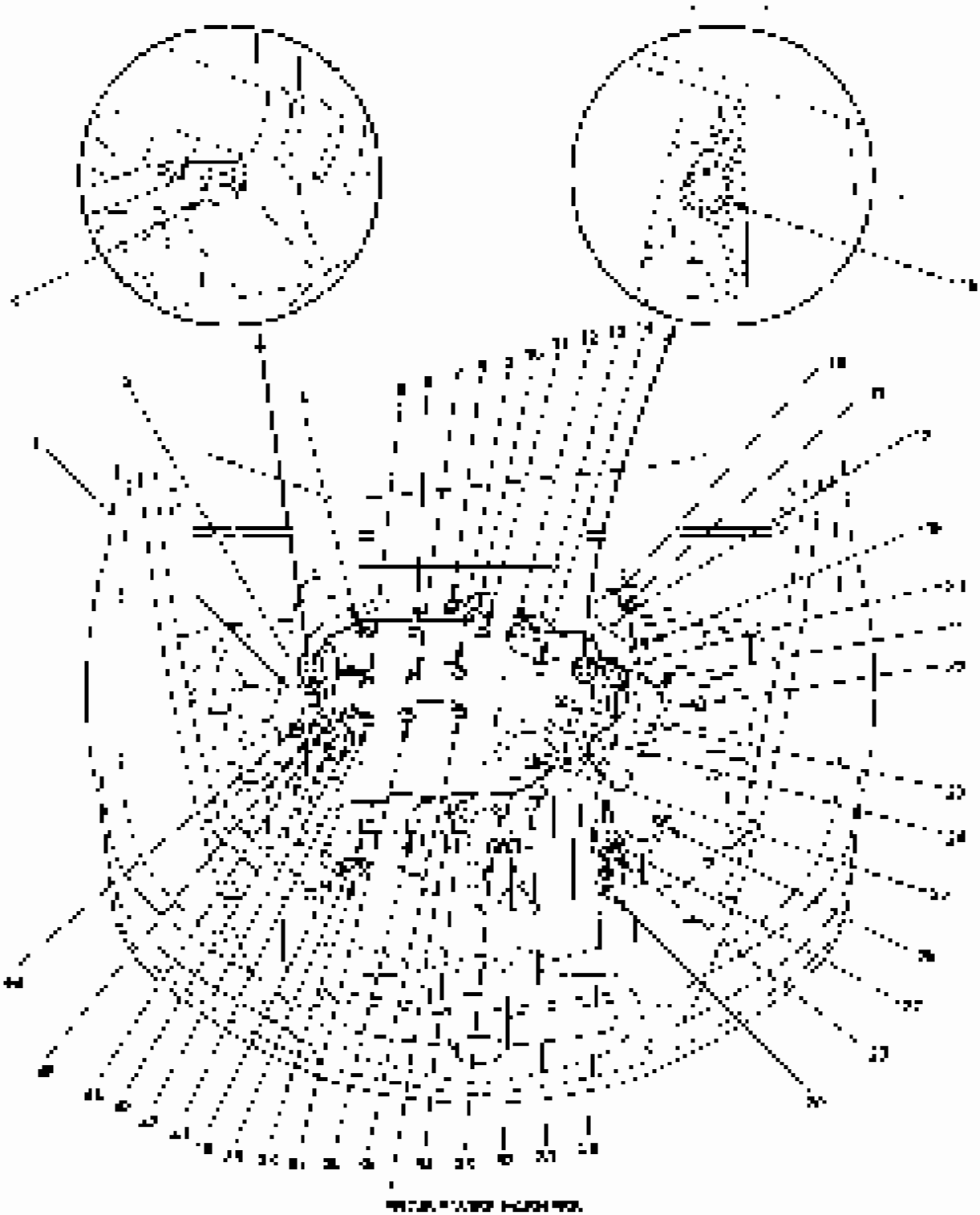
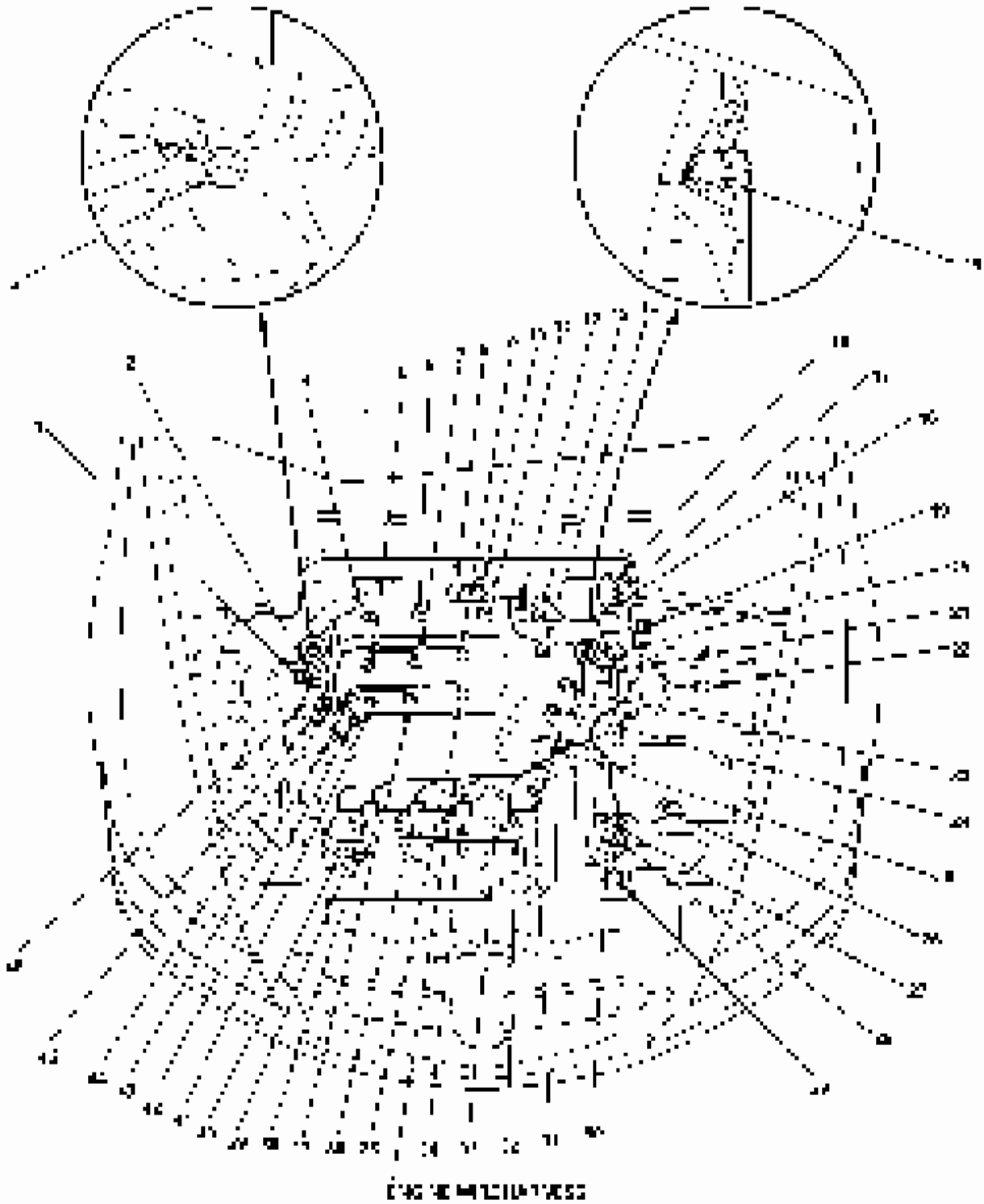
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		



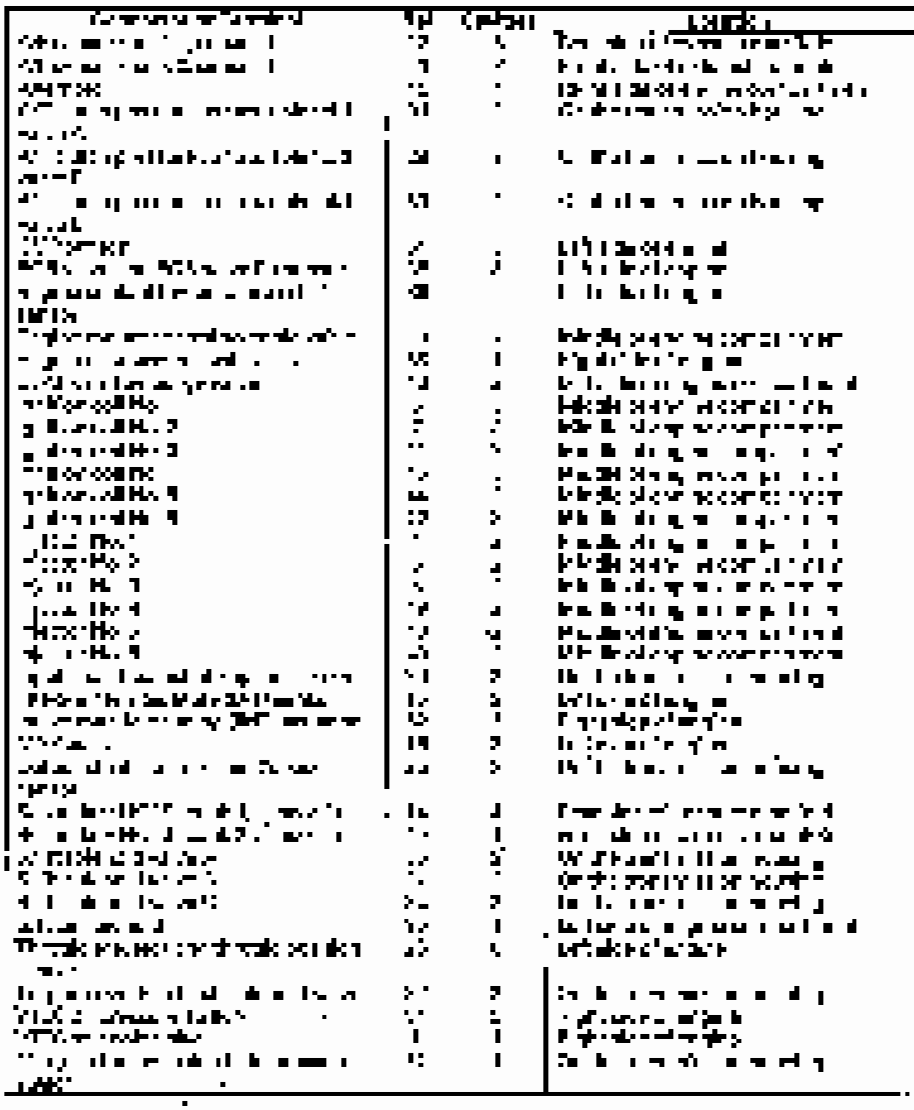
Connector to Harness Index (cont'd)

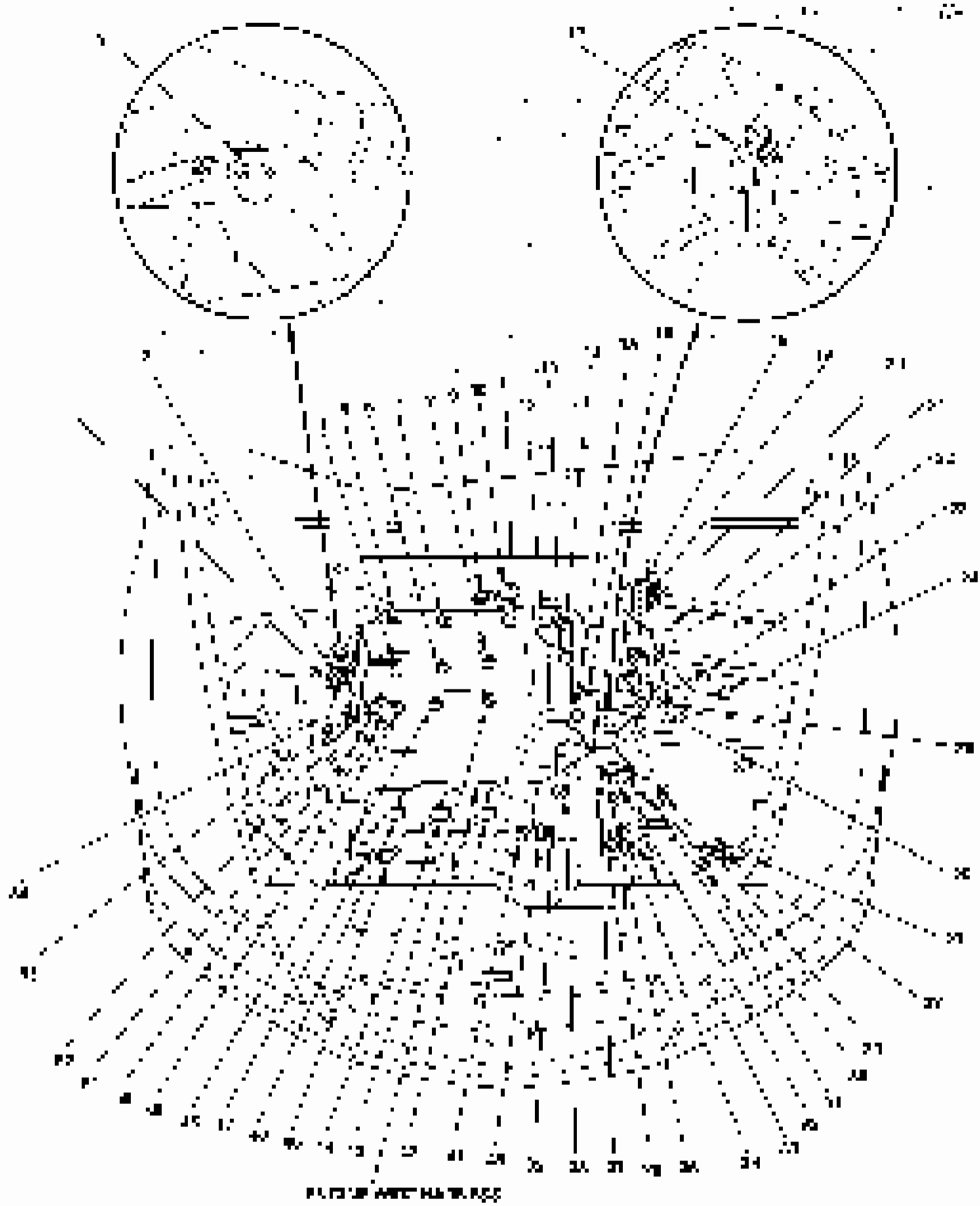
Engine Wire Harness (M/T) (cont'd)

Connector Number	Pin	Color	Location	Connects	Note

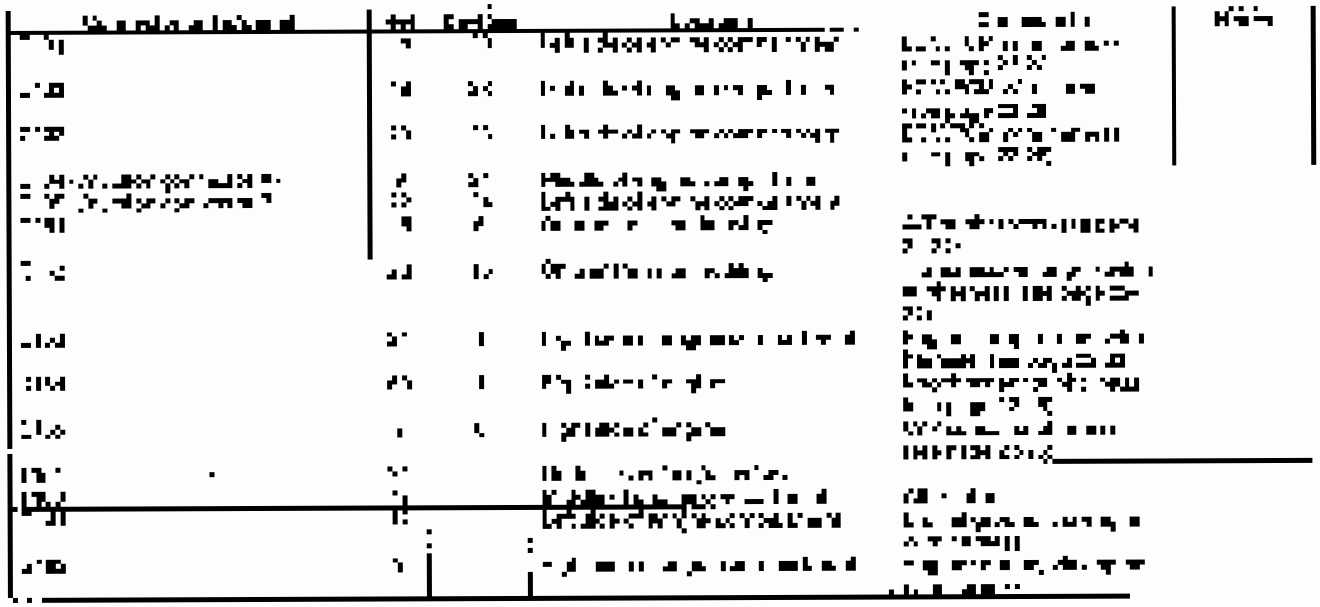


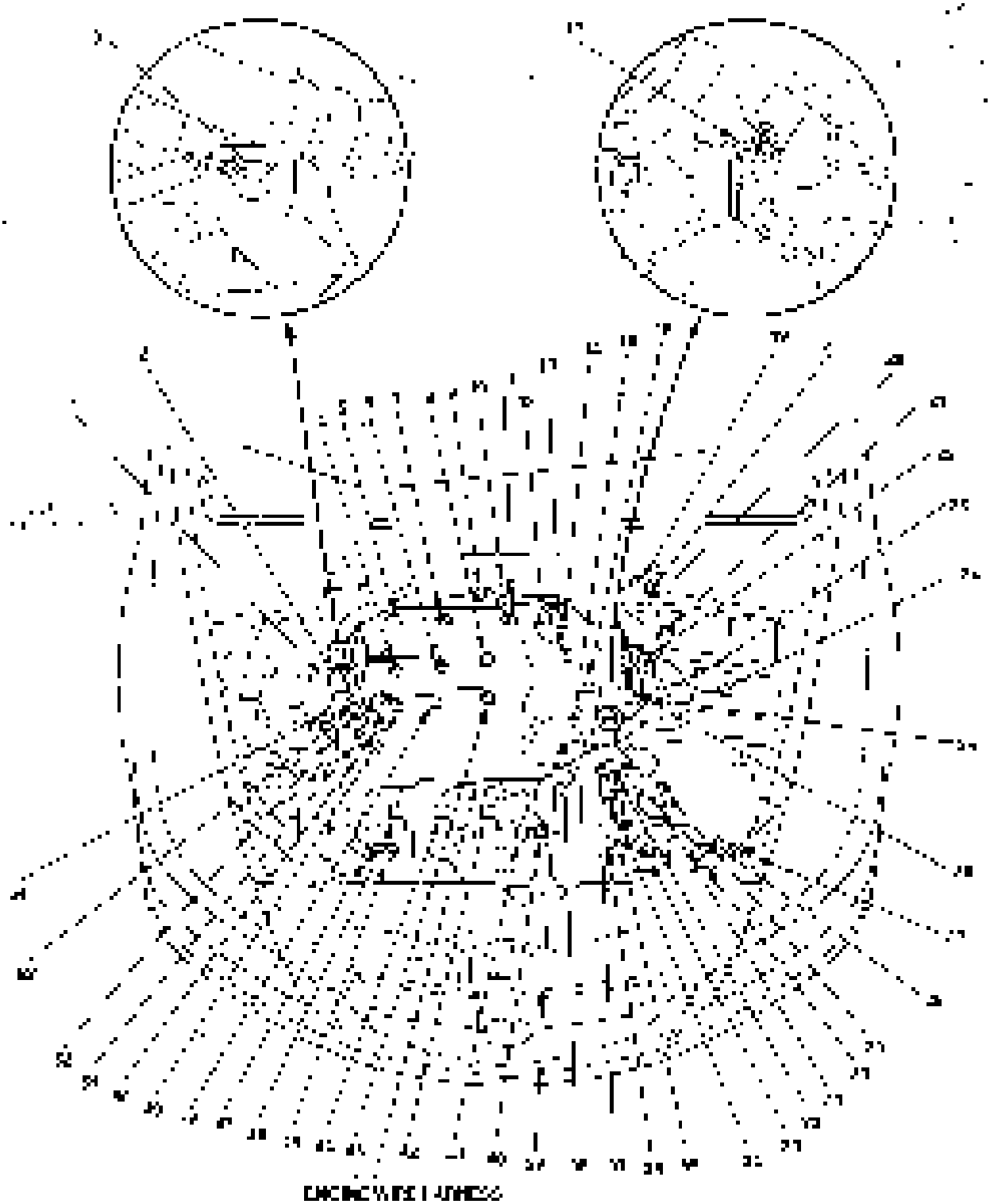
Connector to Harness Index (cont'd)



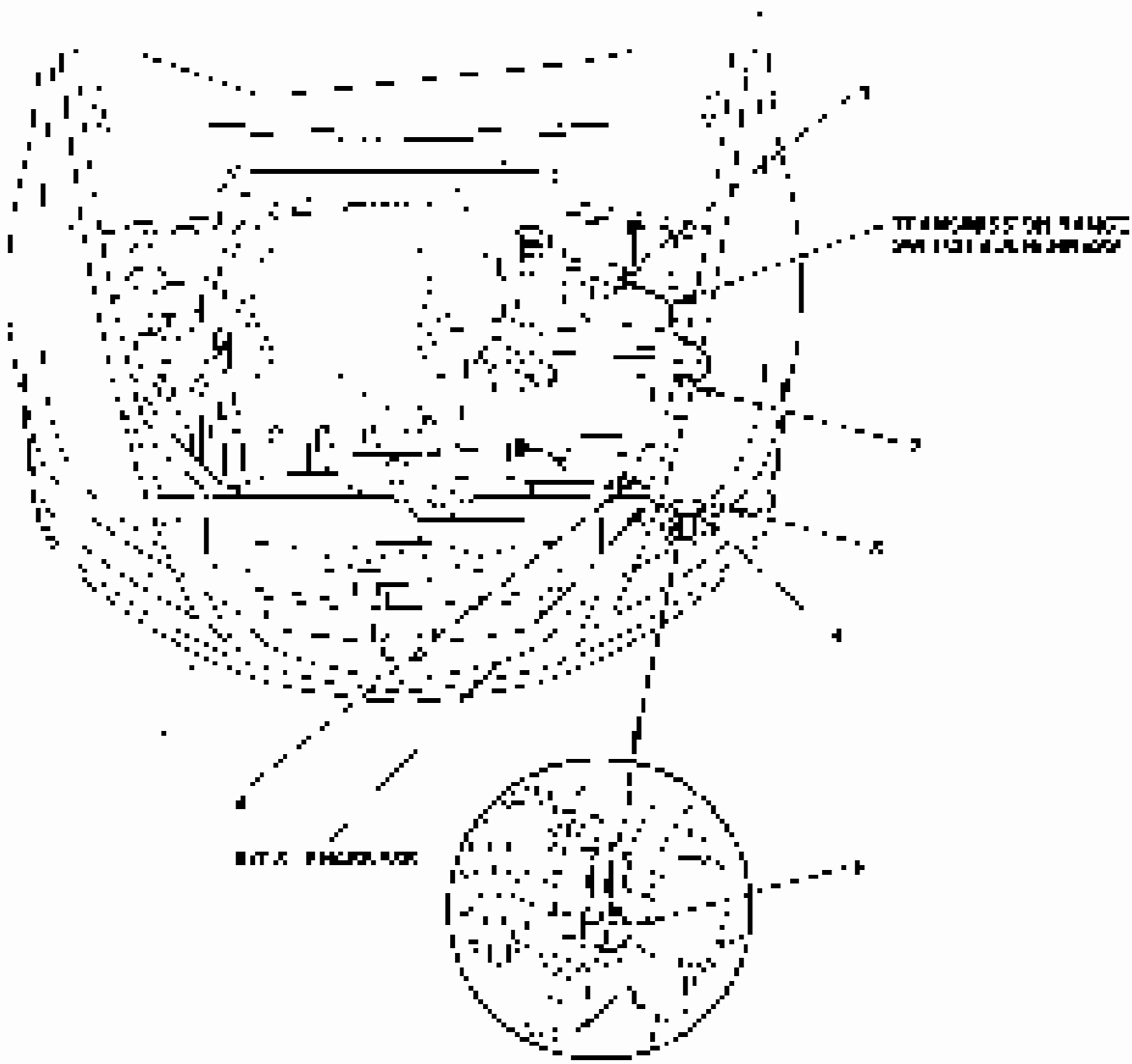


Connector to Harness Index (cont'd)



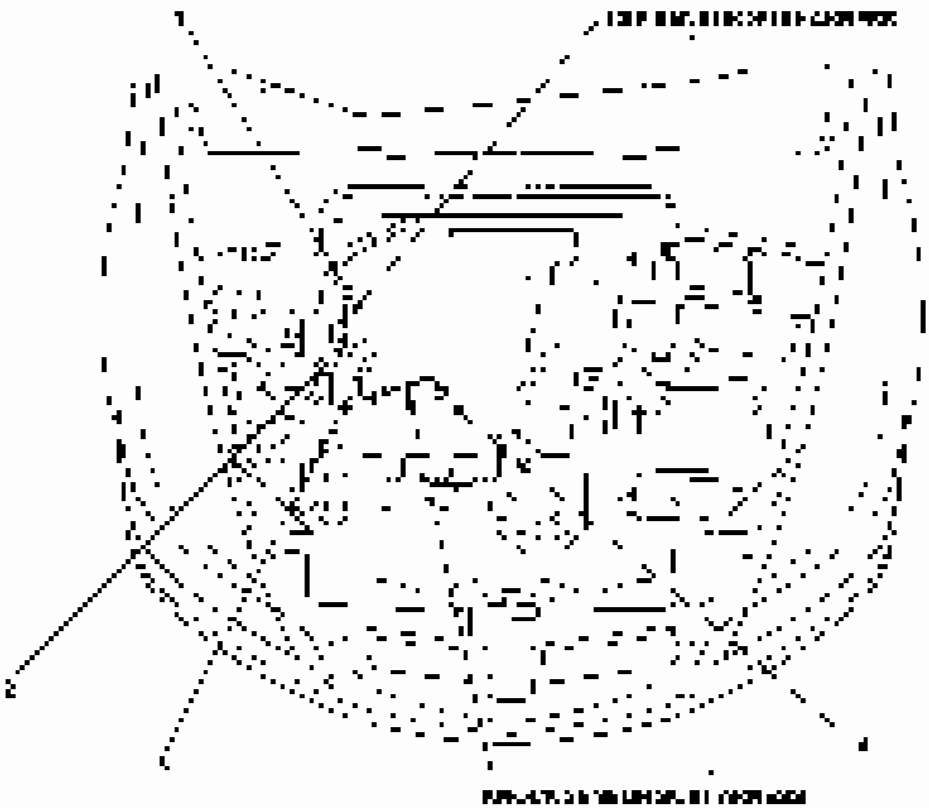


Connector to Harness Index (cont'd)

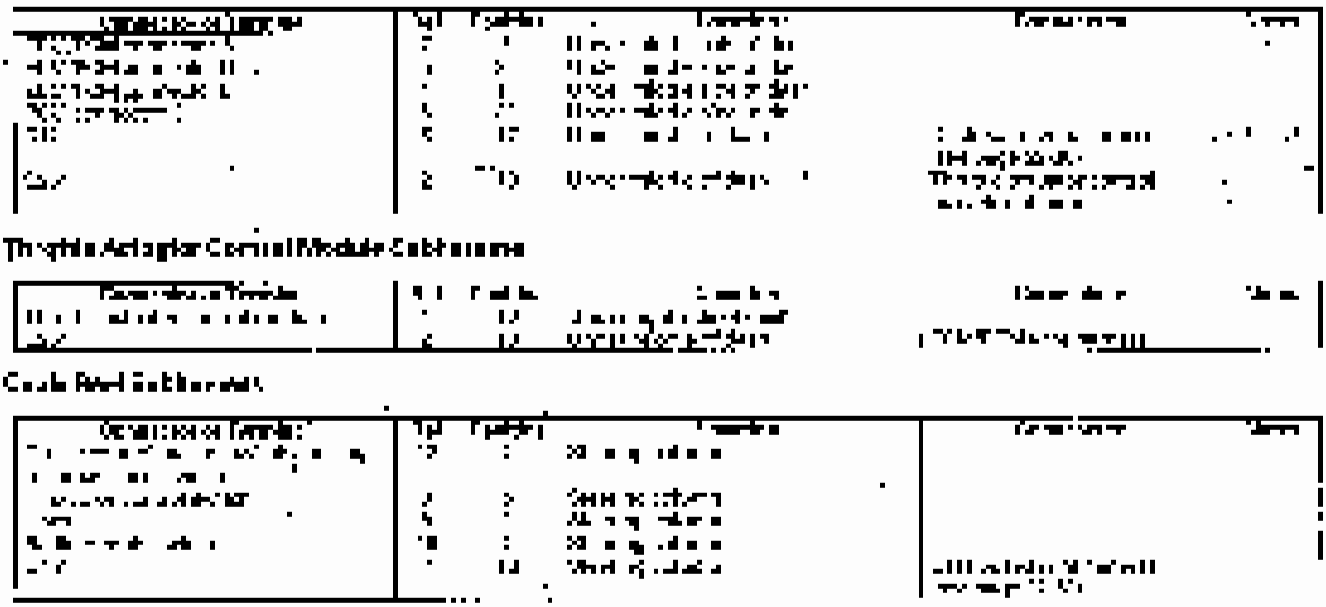


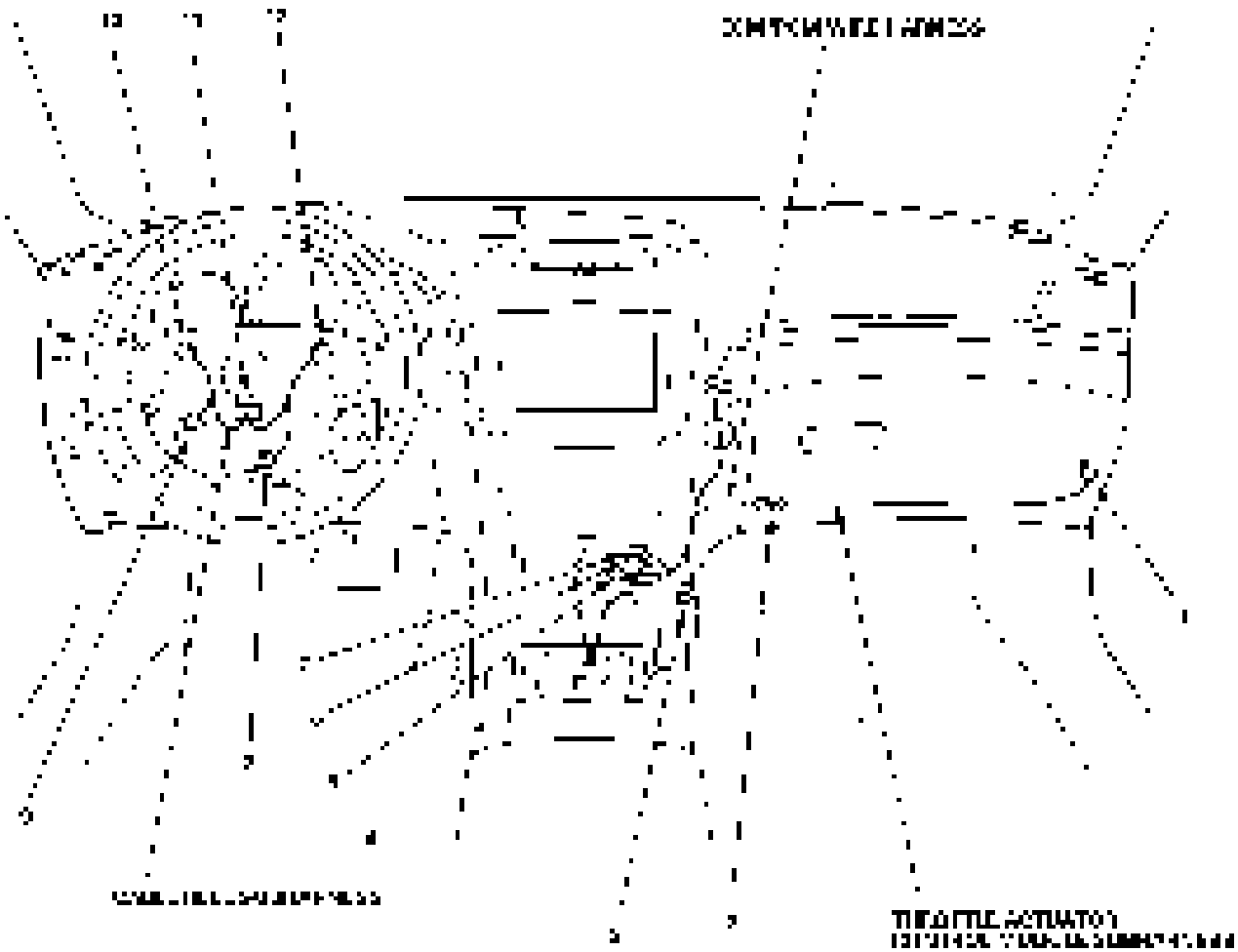
Rotor / Carrier Bushing

240° Carrier Bushing



Connector to Harness Index (cont'd)





Connector to Harness Index (cont'd)

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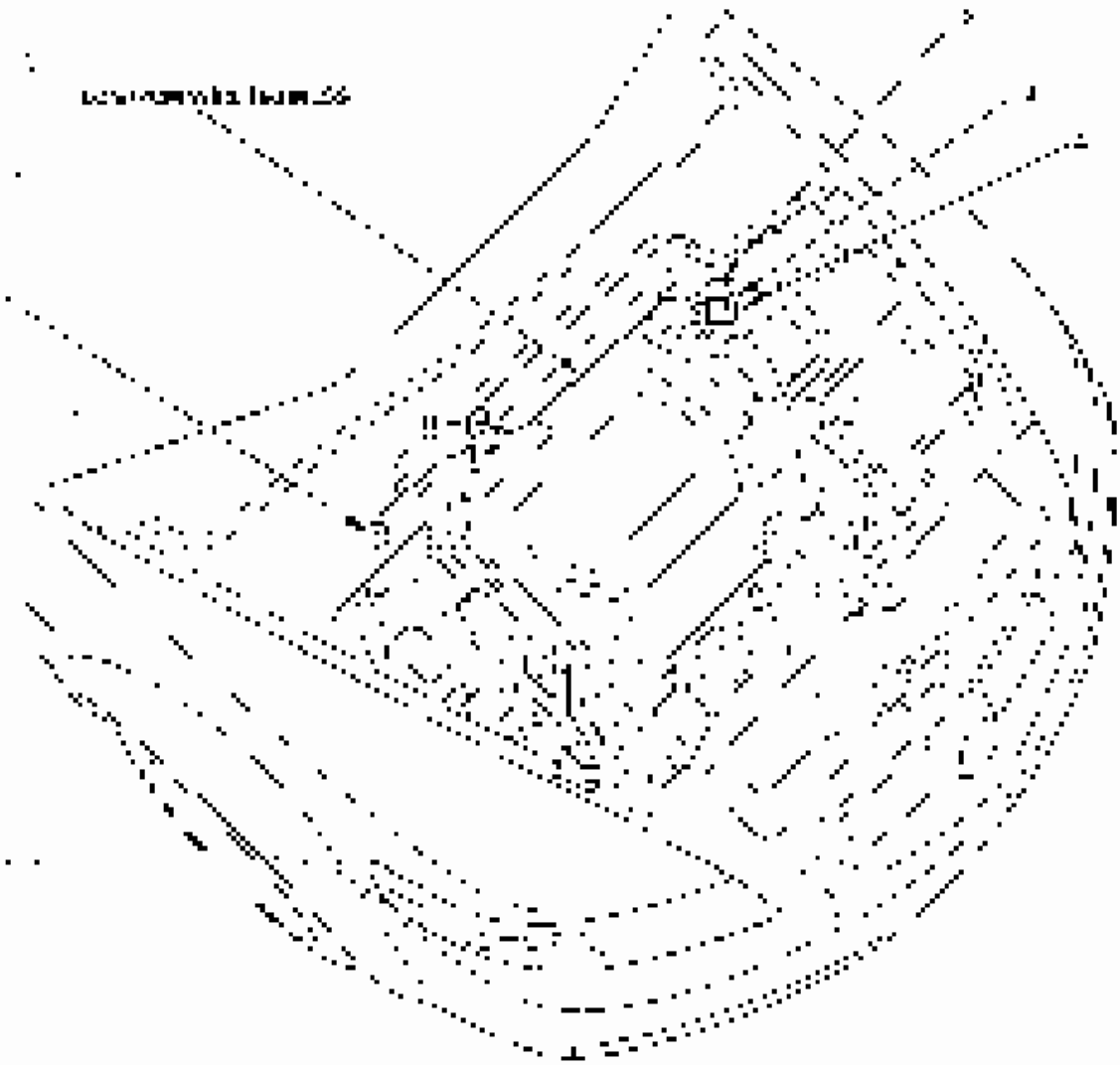
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



[illegible]

[illegible]

Front Engine Compartment Wire Harness (Right Hand)

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
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[illegible]	[illegible]
[illegible]	[illegible]
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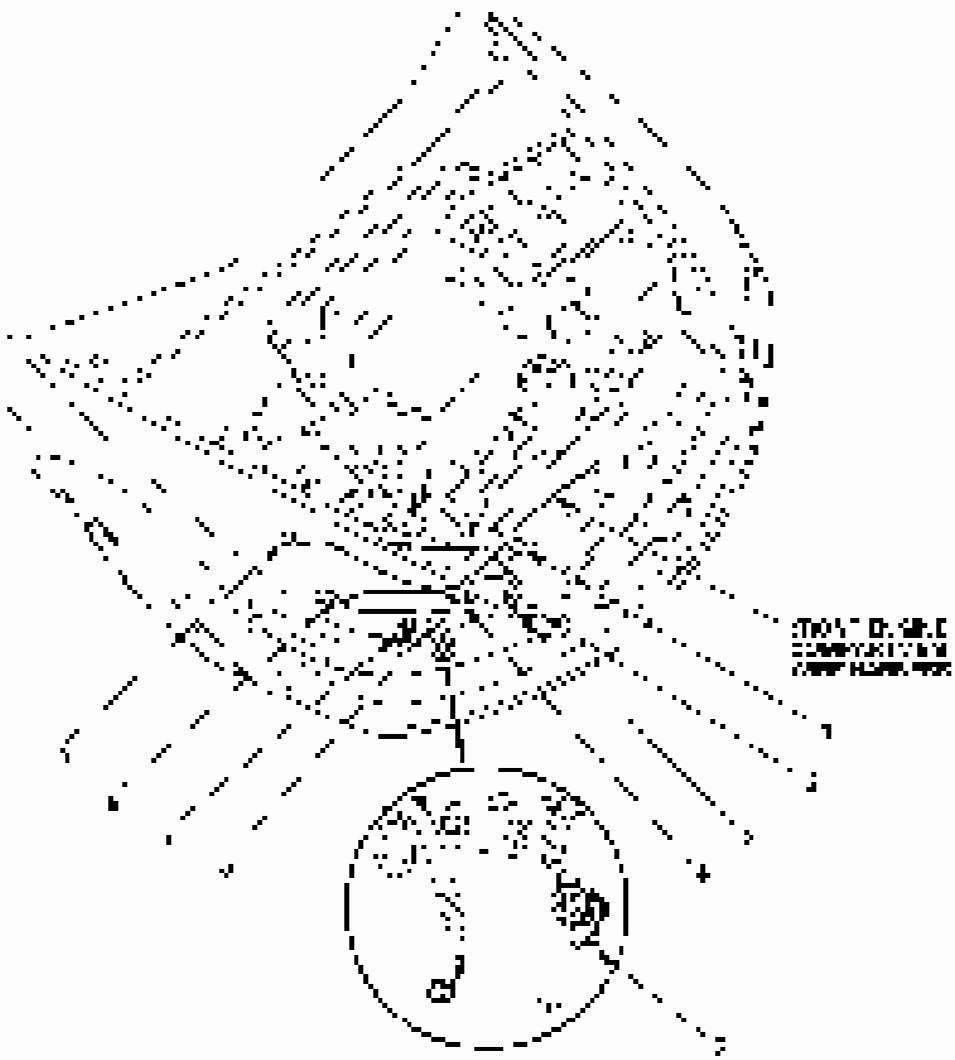

Connector to Harness Index (cont'd)

Front Engine Compartment Wire Harness Left branch

Connector or Terminal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
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[illegible]	[illegible]	[illegible]	[illegible]		
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[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
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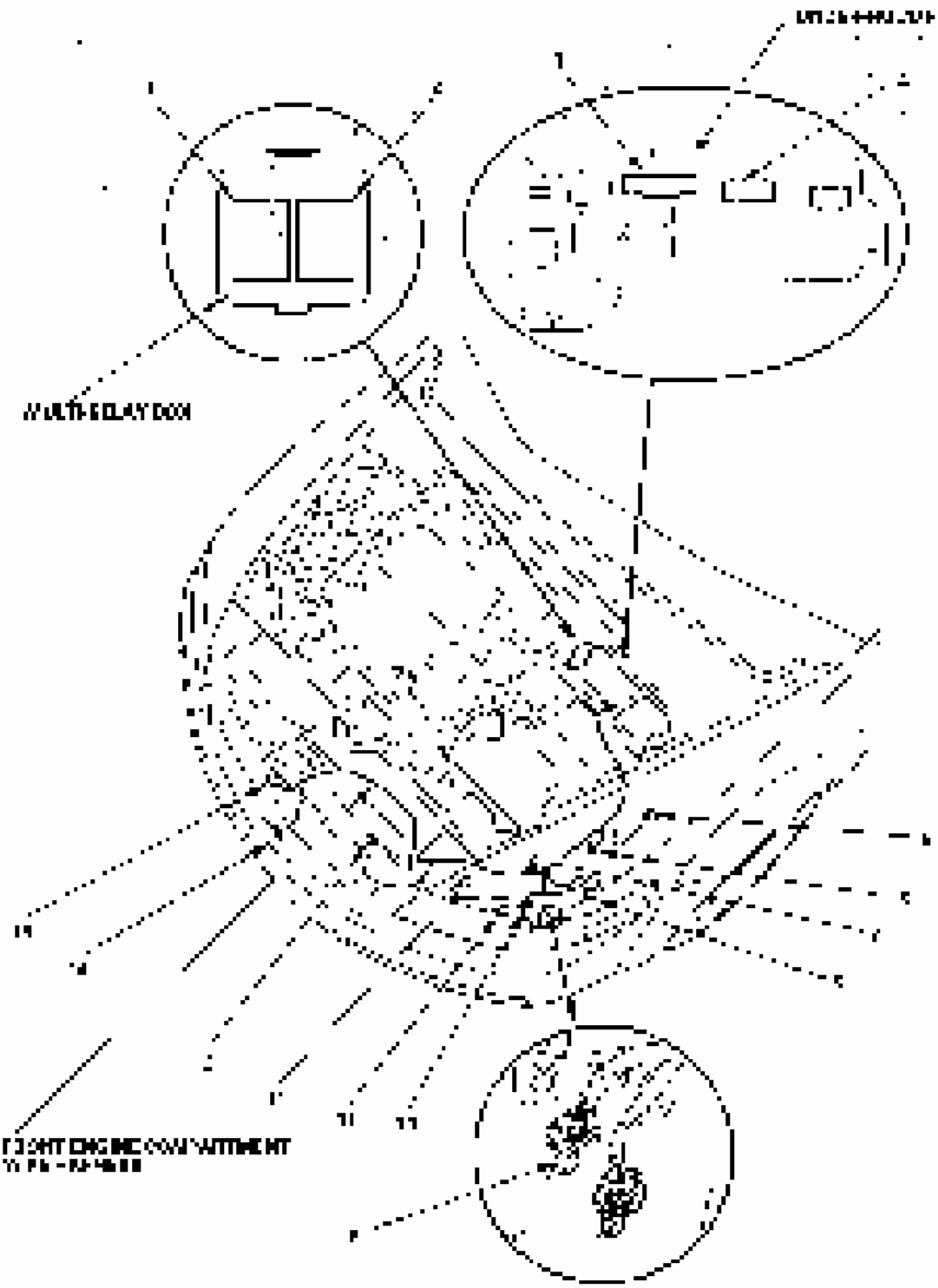
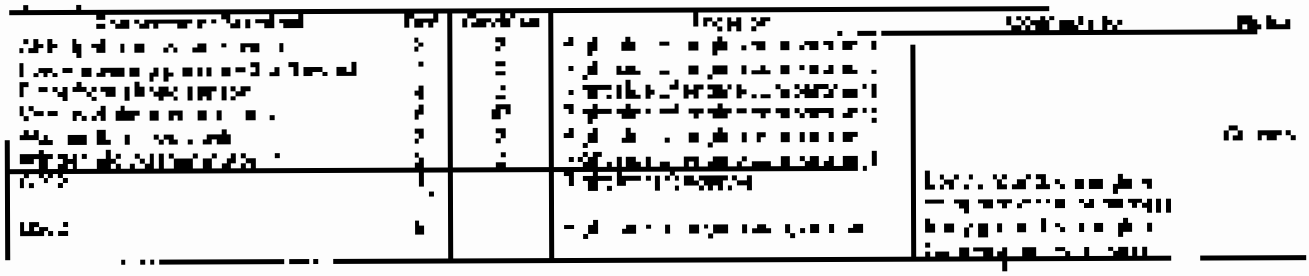
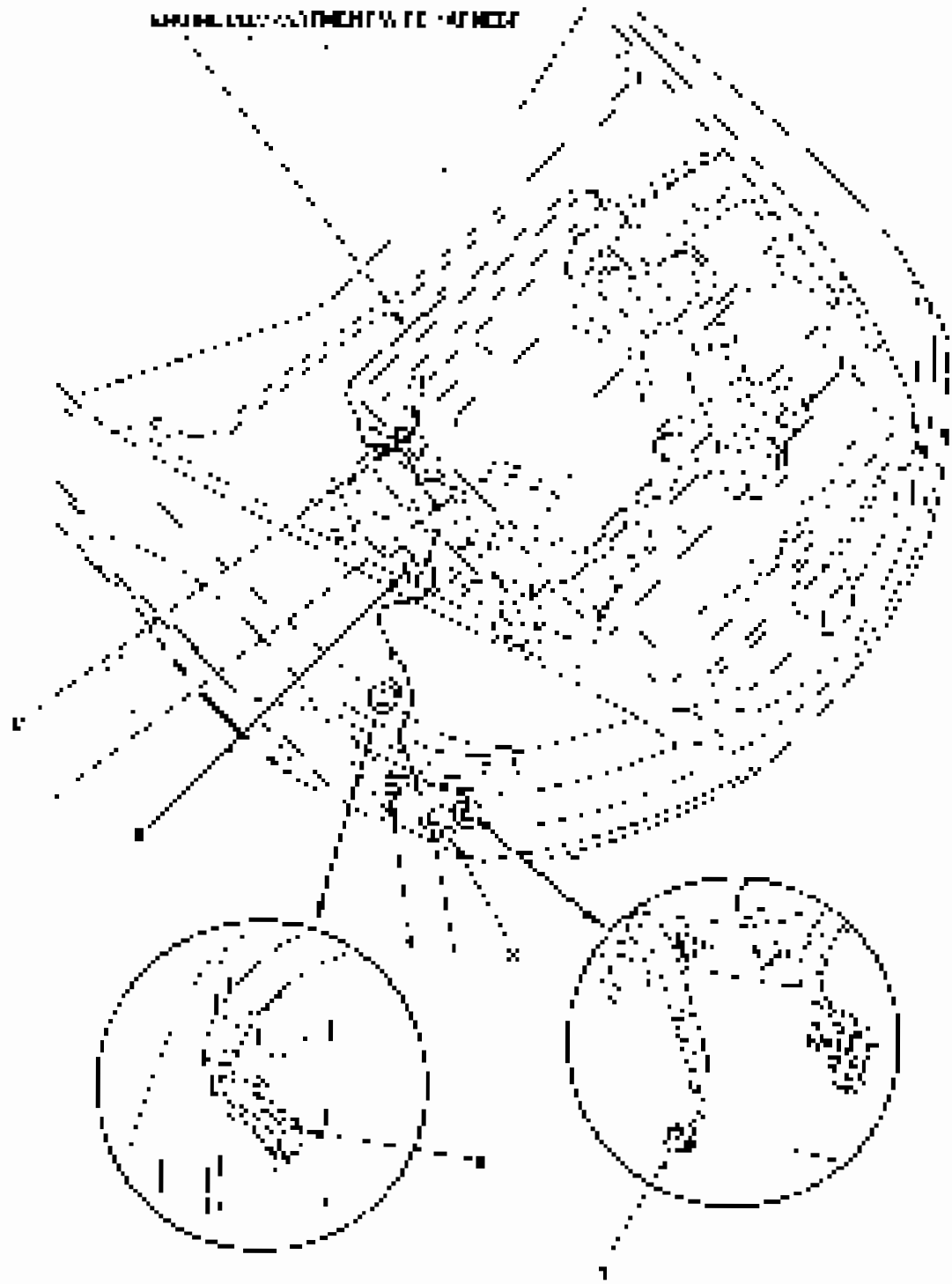
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	



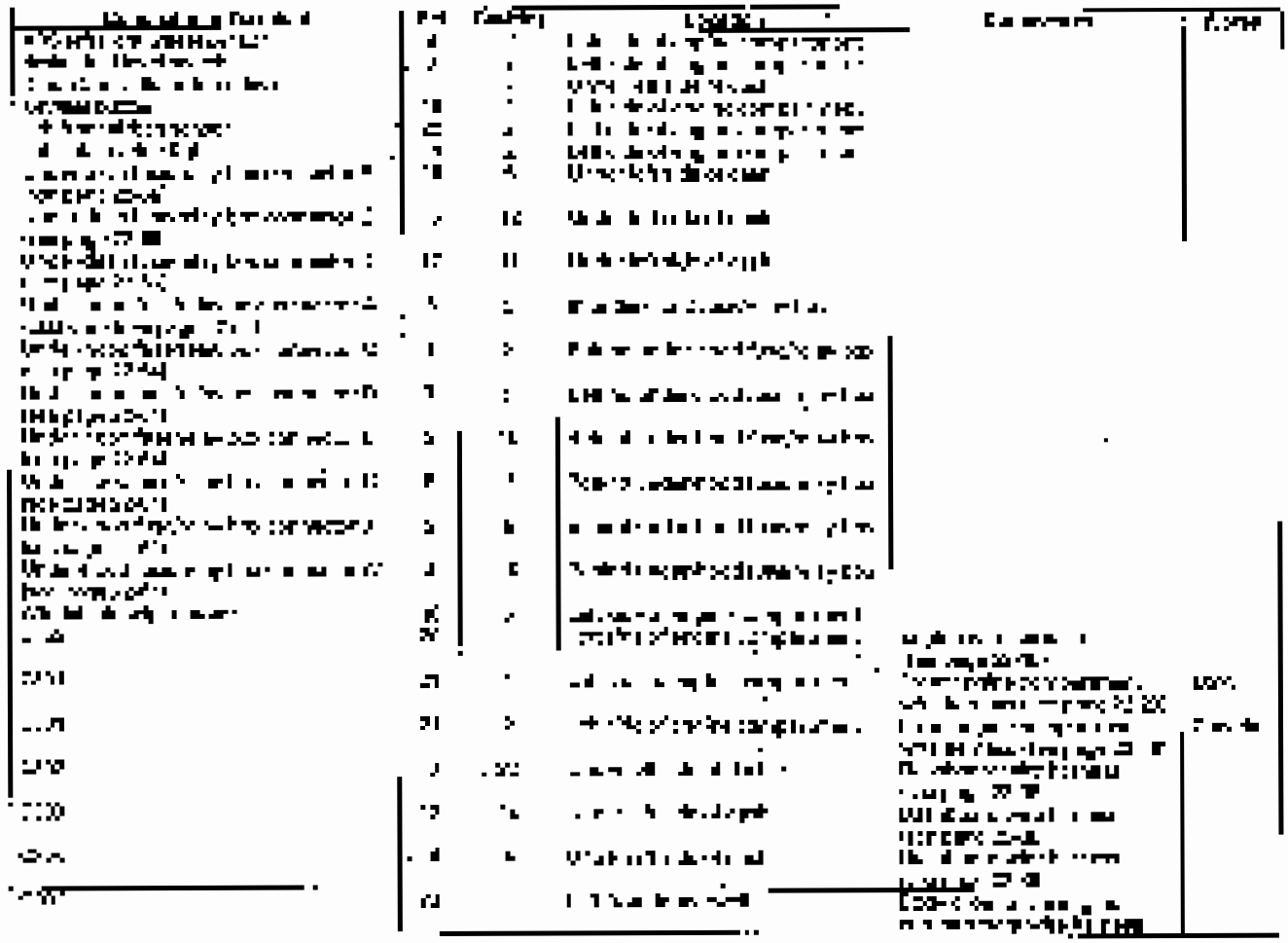
Connector to Harness (with Joint)

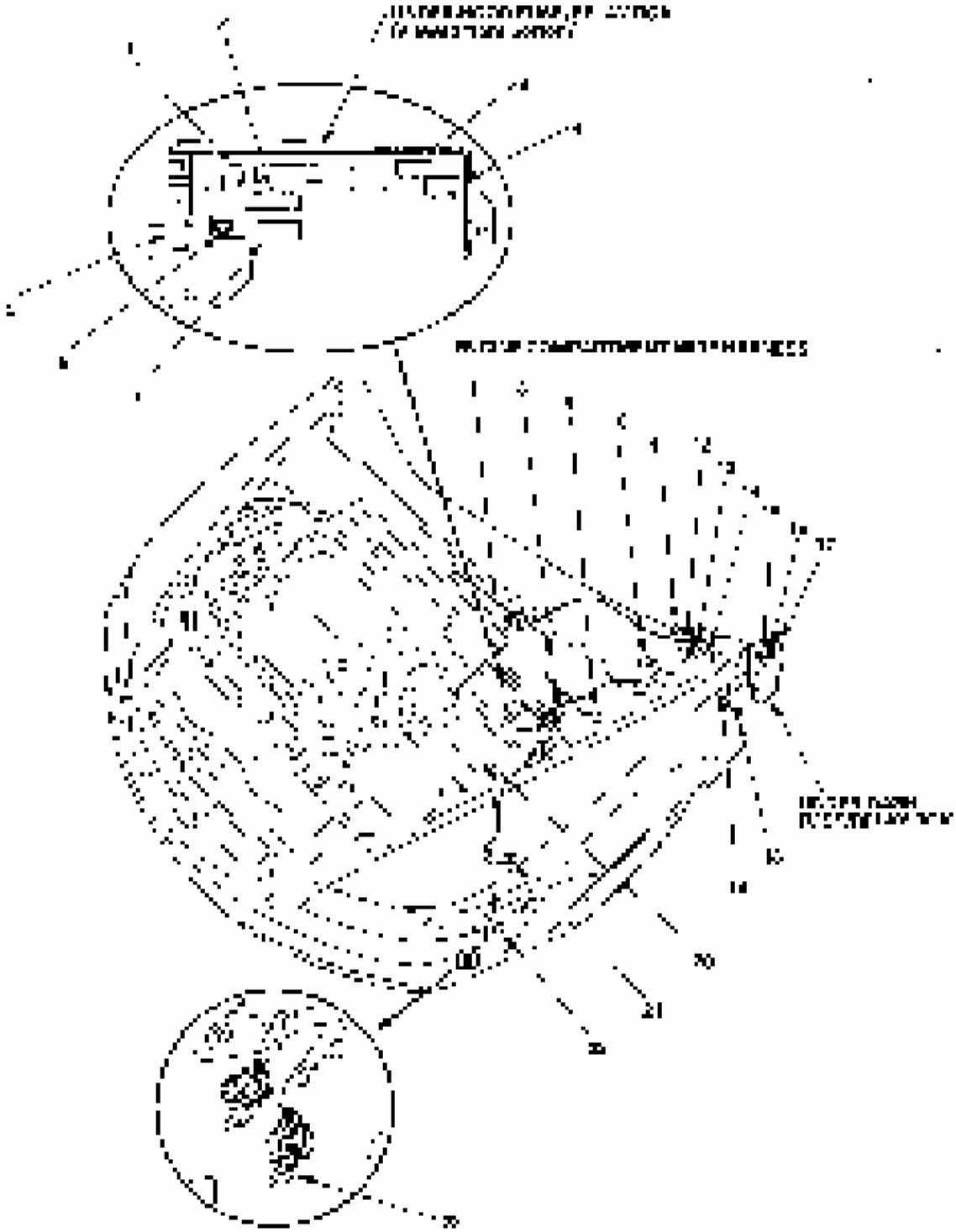
Engine Compartment Wire Harness - Right Bank





Connector to Harness Index (cont'd)





Connector to Harness Index (cont'd)

Engine Compartment Wire Harness (M/T: Left-hand)

Connector Symbol	Pin	Hole No.	Location	Connector	Model
[illegible]	4	2	[illegible]		
[illegible]	5	2	[illegible]		
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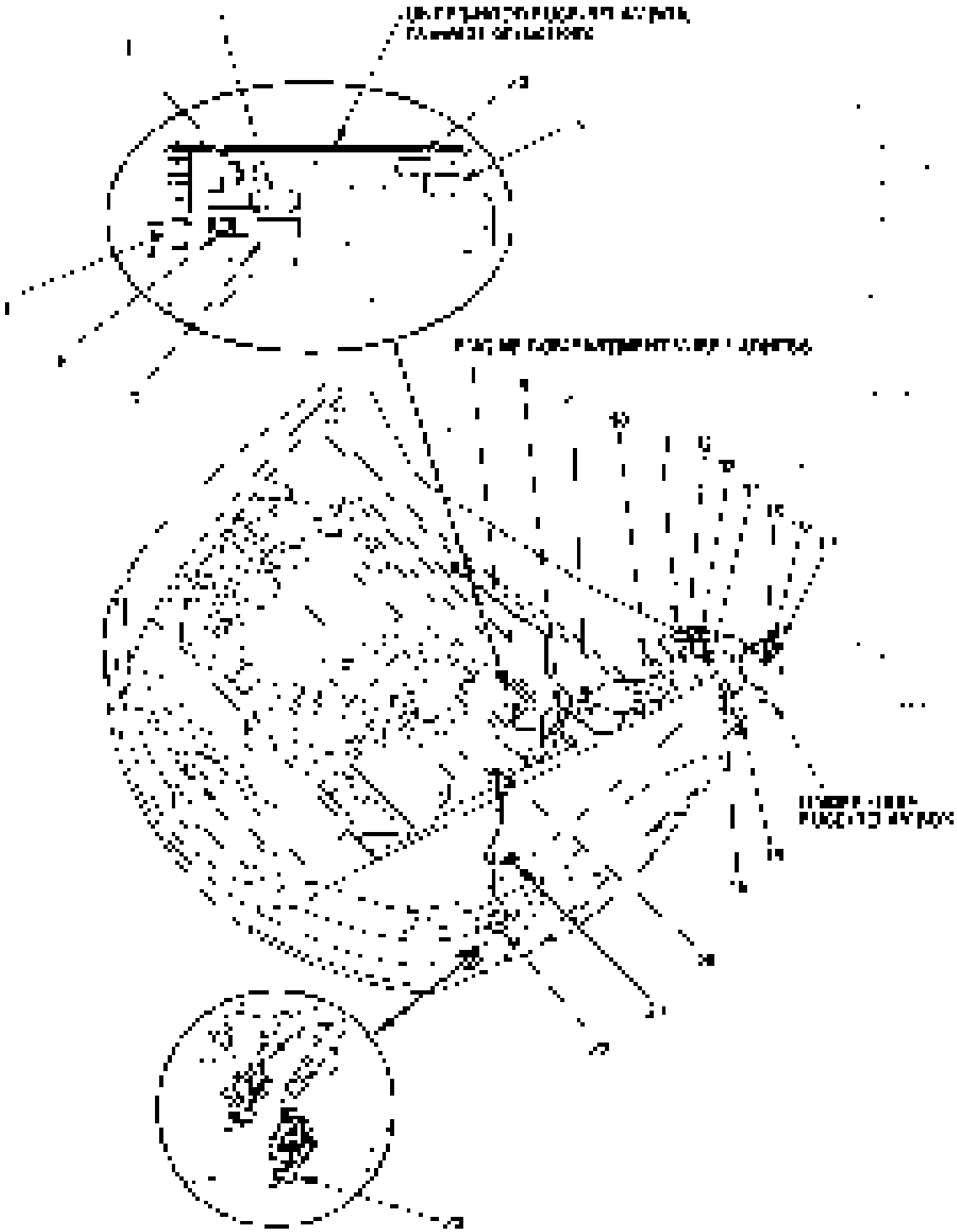
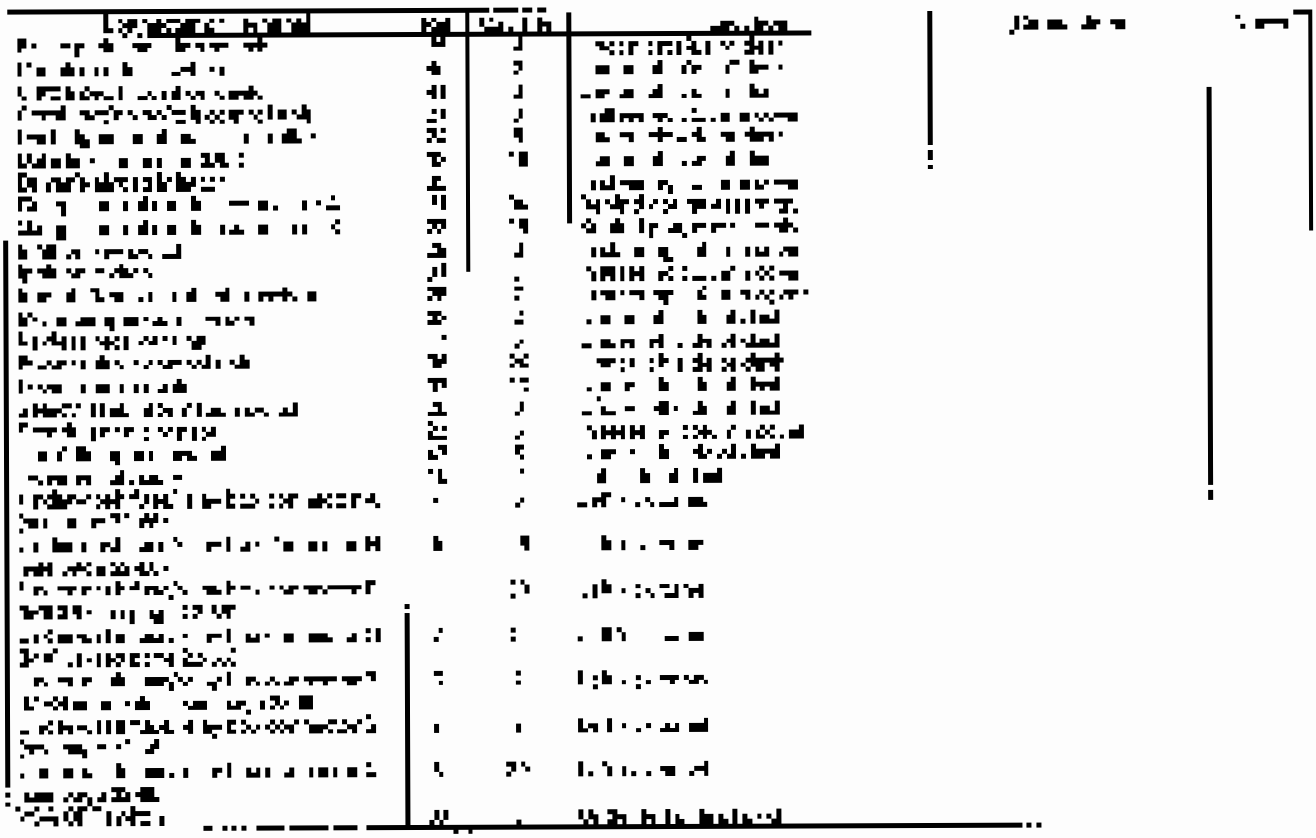
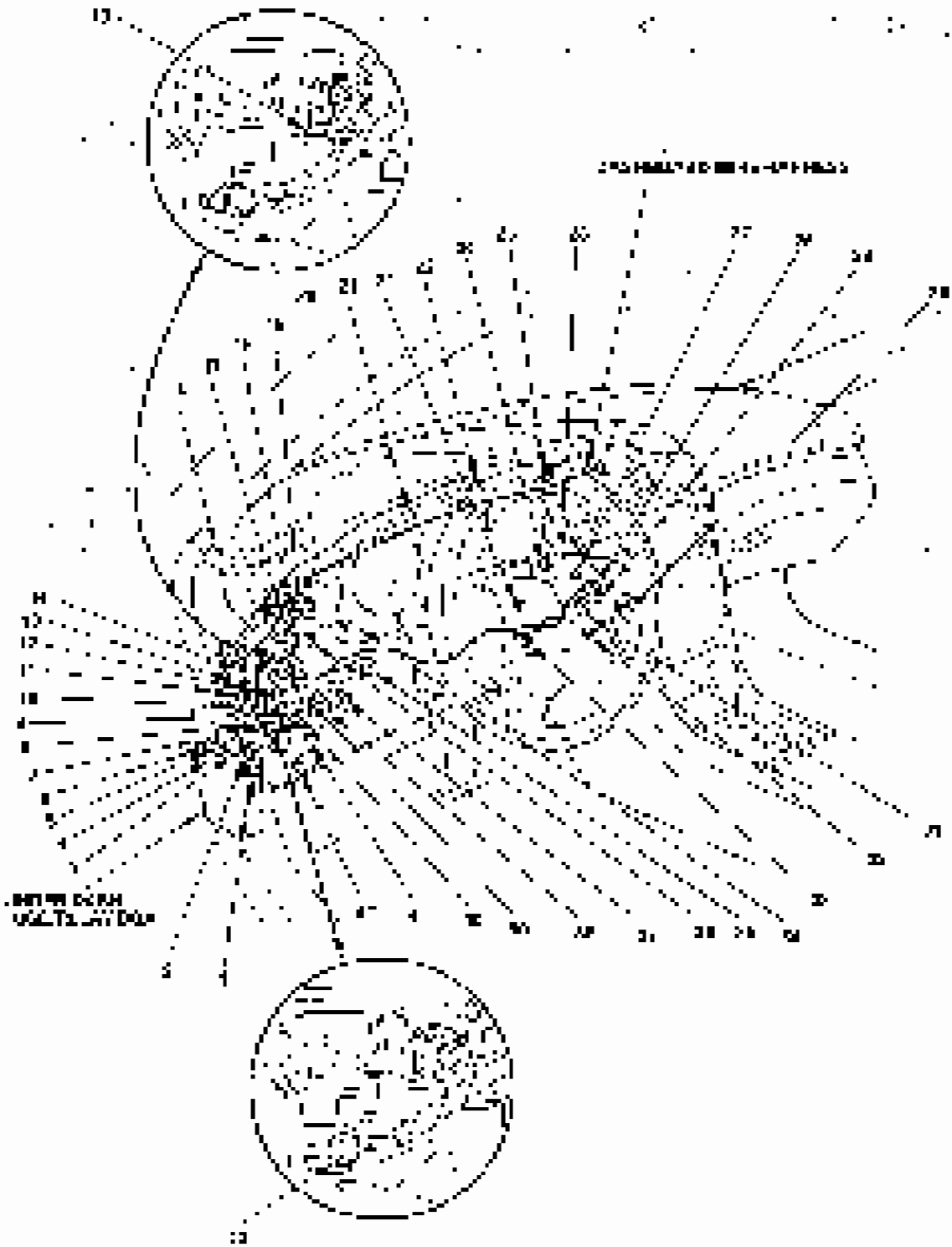
[illegible]	18	1	[illegible]		
[illegible]	22	6	[illegible]		
[illegible]	8	5	[illegible]		
[illegible]	18		[illegible]		
[illegible]	3	6	[illegible]		
[illegible]	22	11	[illegible]		
[illegible]	9	5	[illegible]		
[illegible]	7	5	[illegible]		
[illegible]	7	4	[illegible]		
[illegible]	6	12	[illegible]		
[illegible]	5	7	[illegible]		
[illegible]	3	4	[illegible]		
[illegible]		11	[illegible]		
[illegible]	5	1	[illegible]		
[illegible]	9	1	[illegible]	Engine control system [illegible]	
[illegible]	4	1	[illegible]	[illegible]	[illegible]
[illegible]	17	13	[illegible]	[illegible]	[illegible]
[illegible]	13	11	[illegible]	[illegible]	
[illegible]	12	11	[illegible]	[illegible]	
[illegible]	16	8	[illegible]	[illegible]	
[illegible]	57		[illegible]	[illegible]	

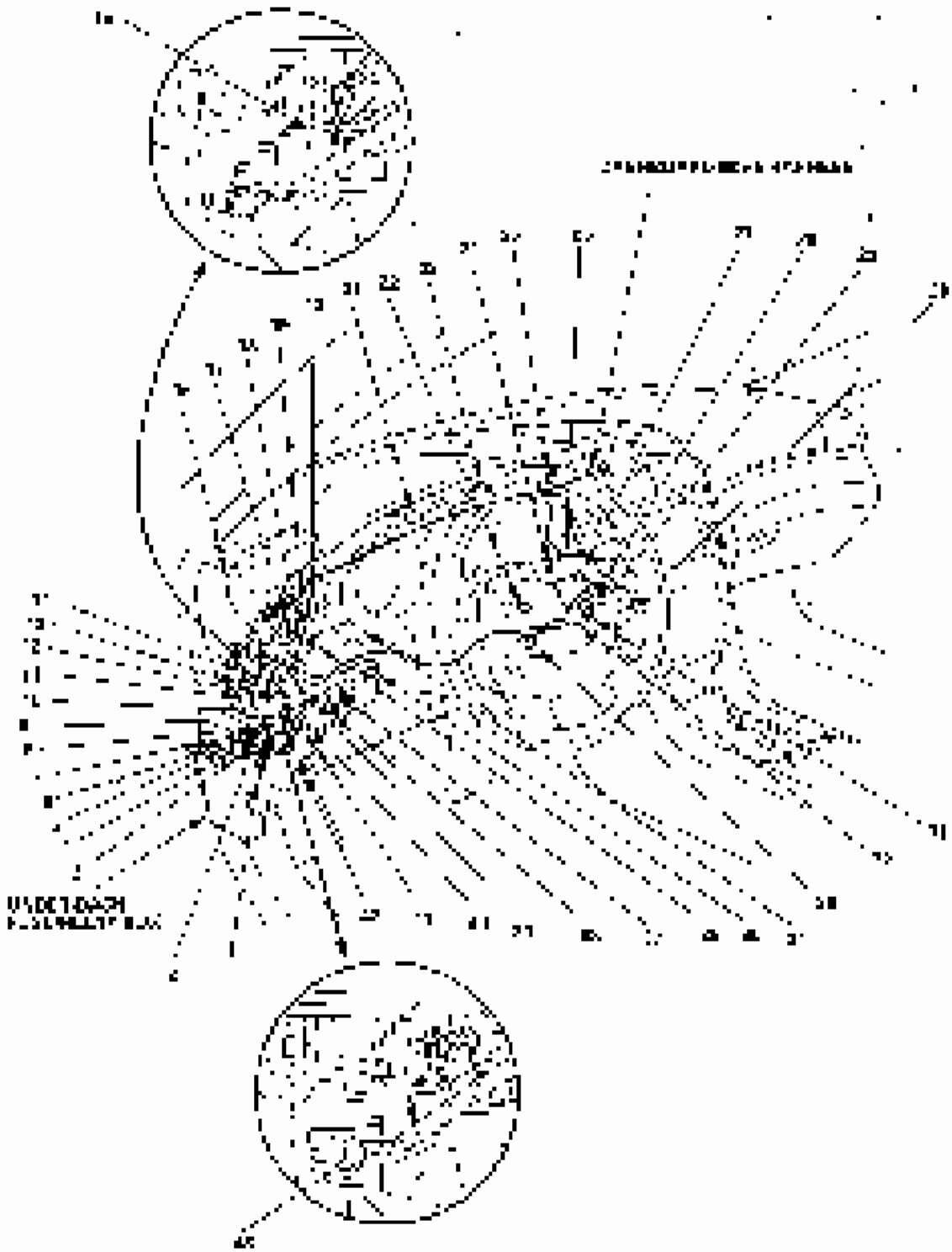


Connector to Harness Index (cont'd)





Connector to Harness Index (cont'd)



Connectors and Harnesses

Connector to Harness Index (cont'd)

[illegible]

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[illegible]	[illegible]	[illegible]	[illegible]		
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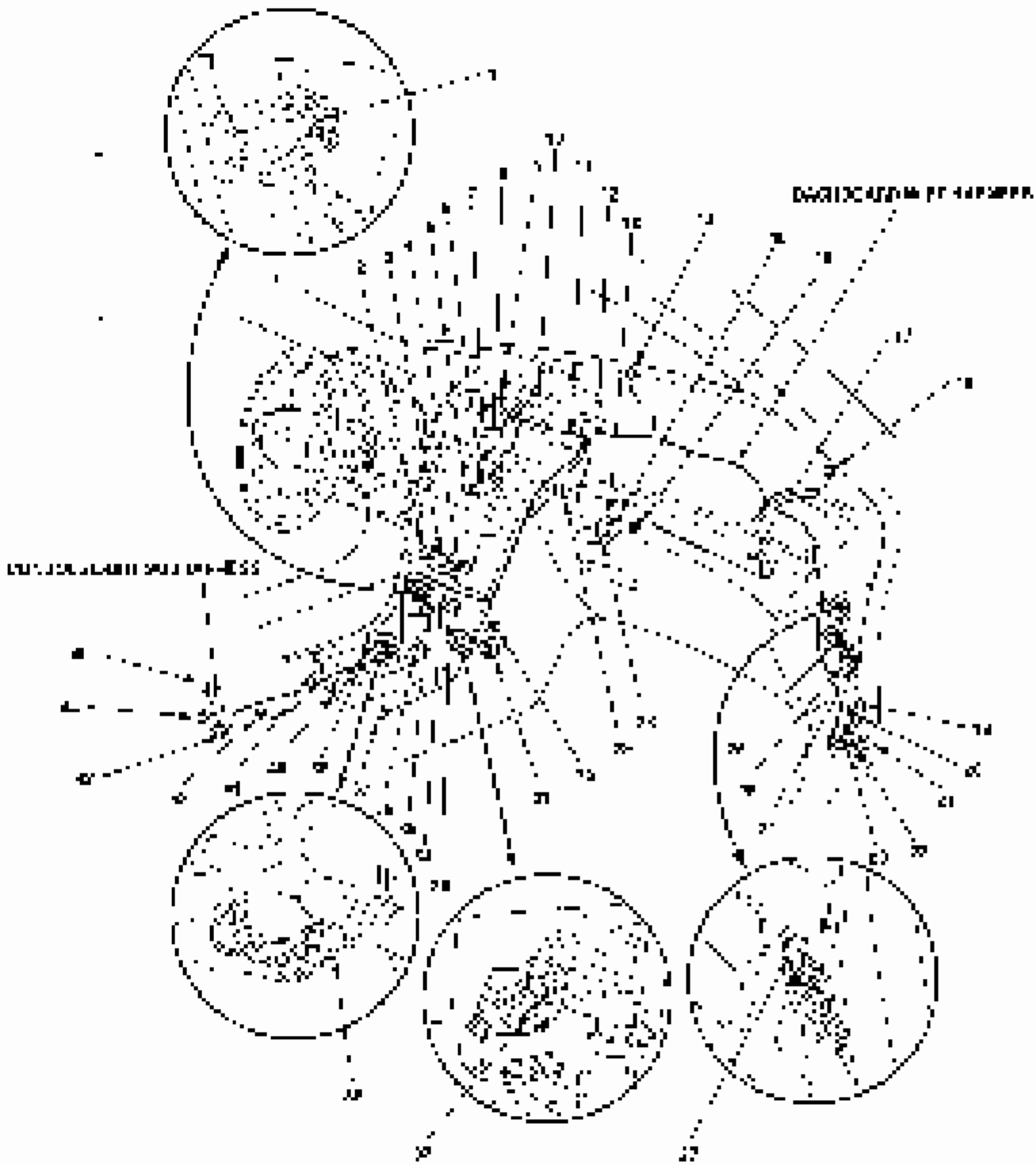
[illegible]

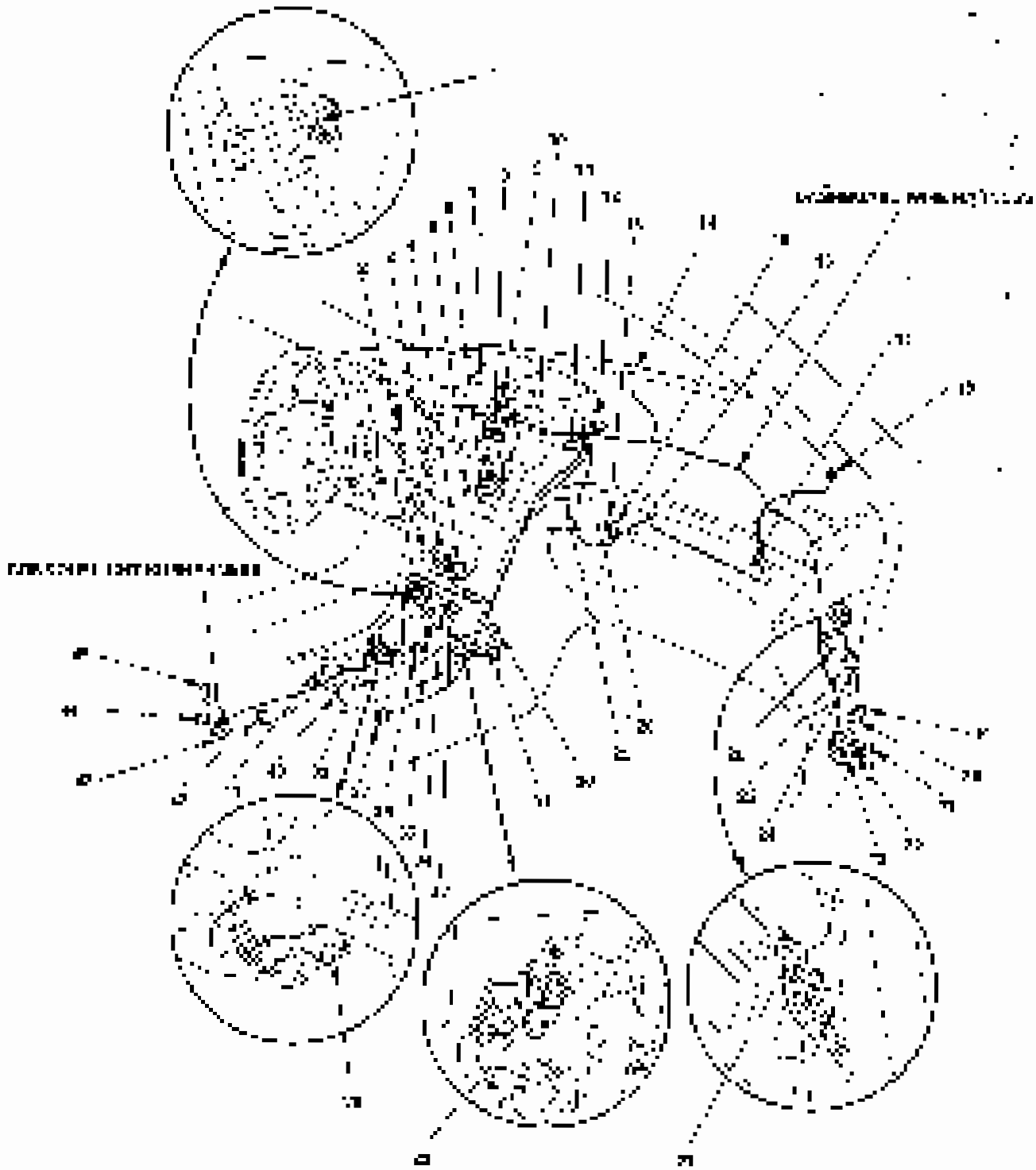
[illegible]



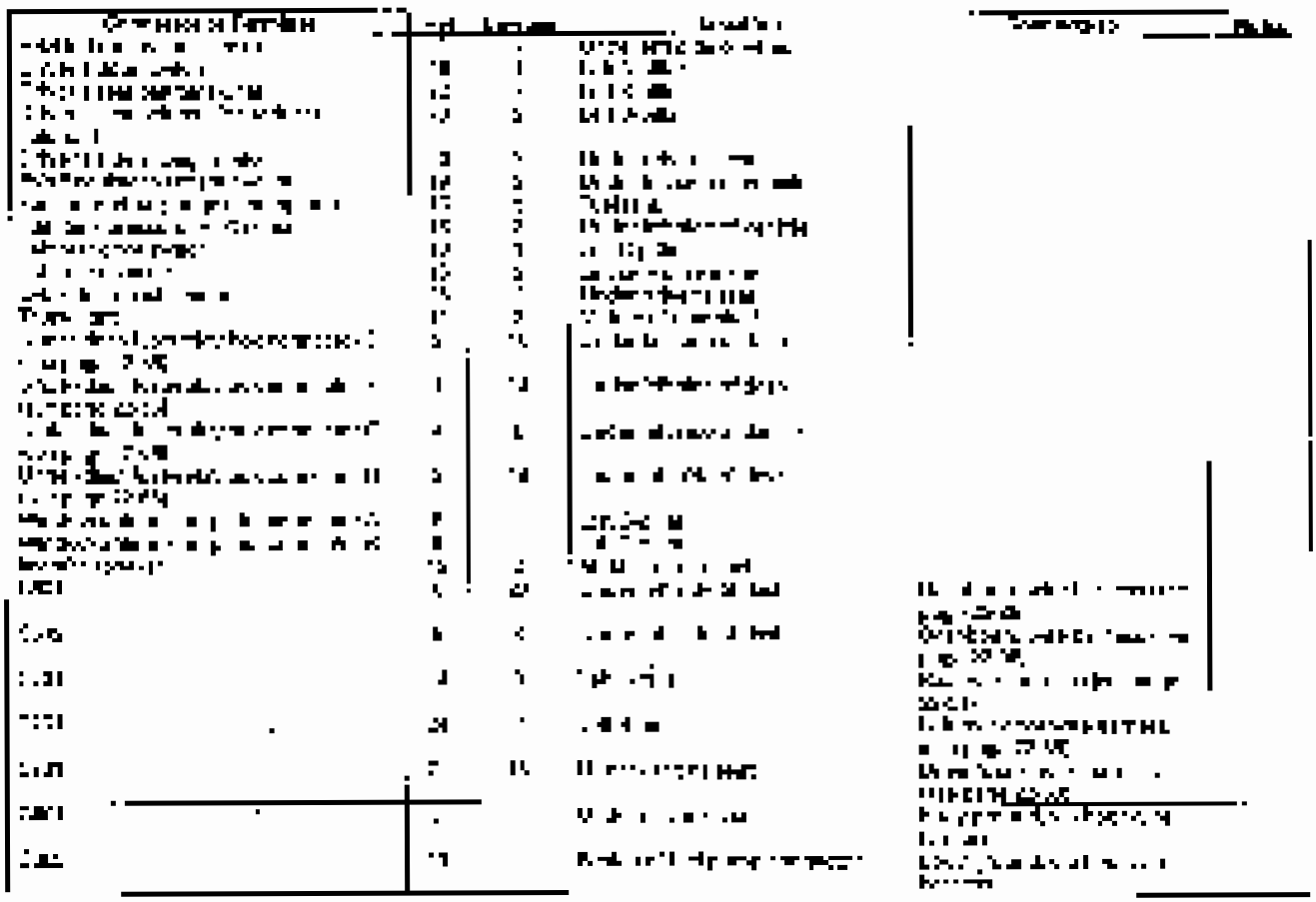
Connector to Harness Index (cont'd)

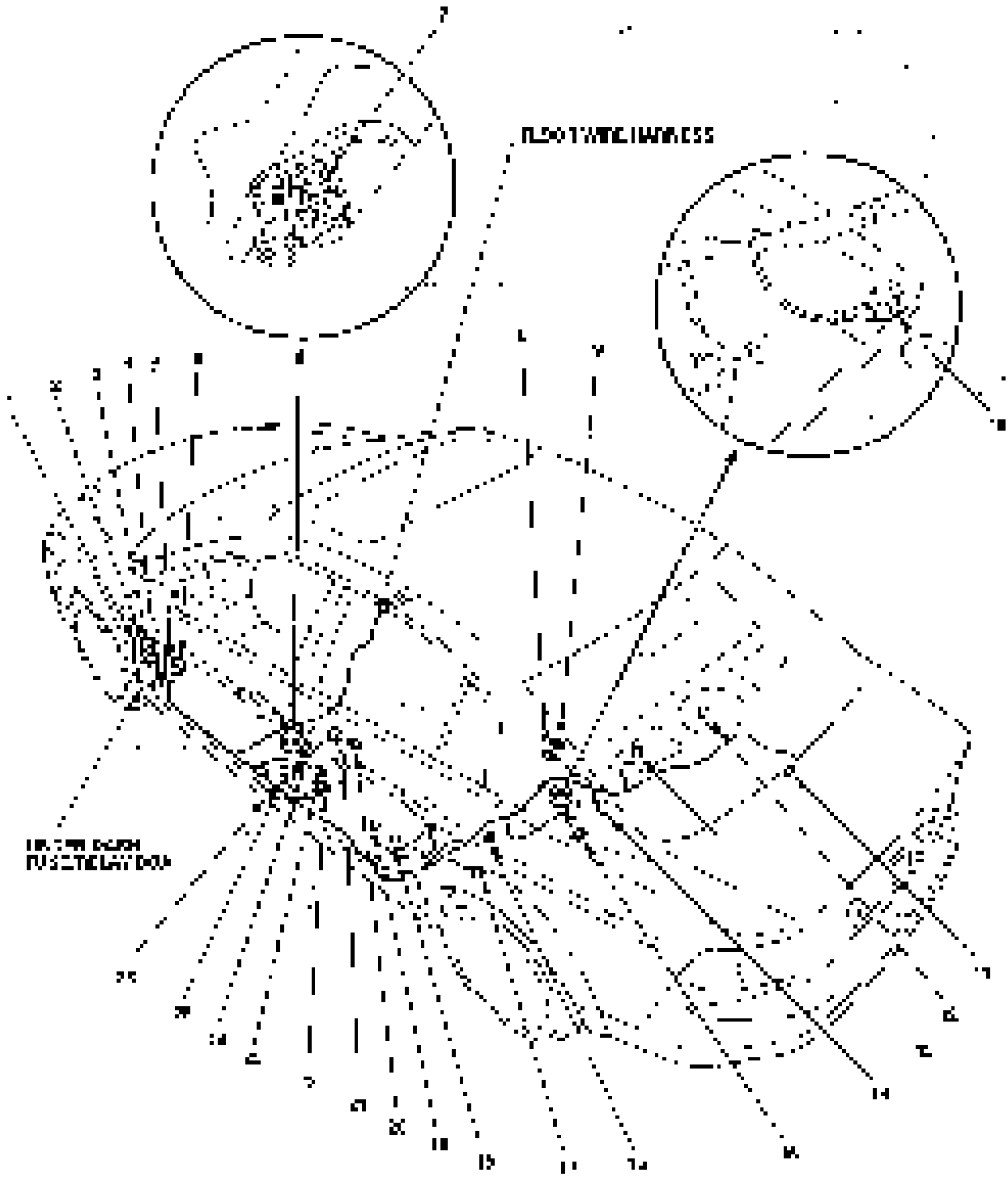
Dashboard Wire Harness (Right Hand Drive)

Console Light Dashboard



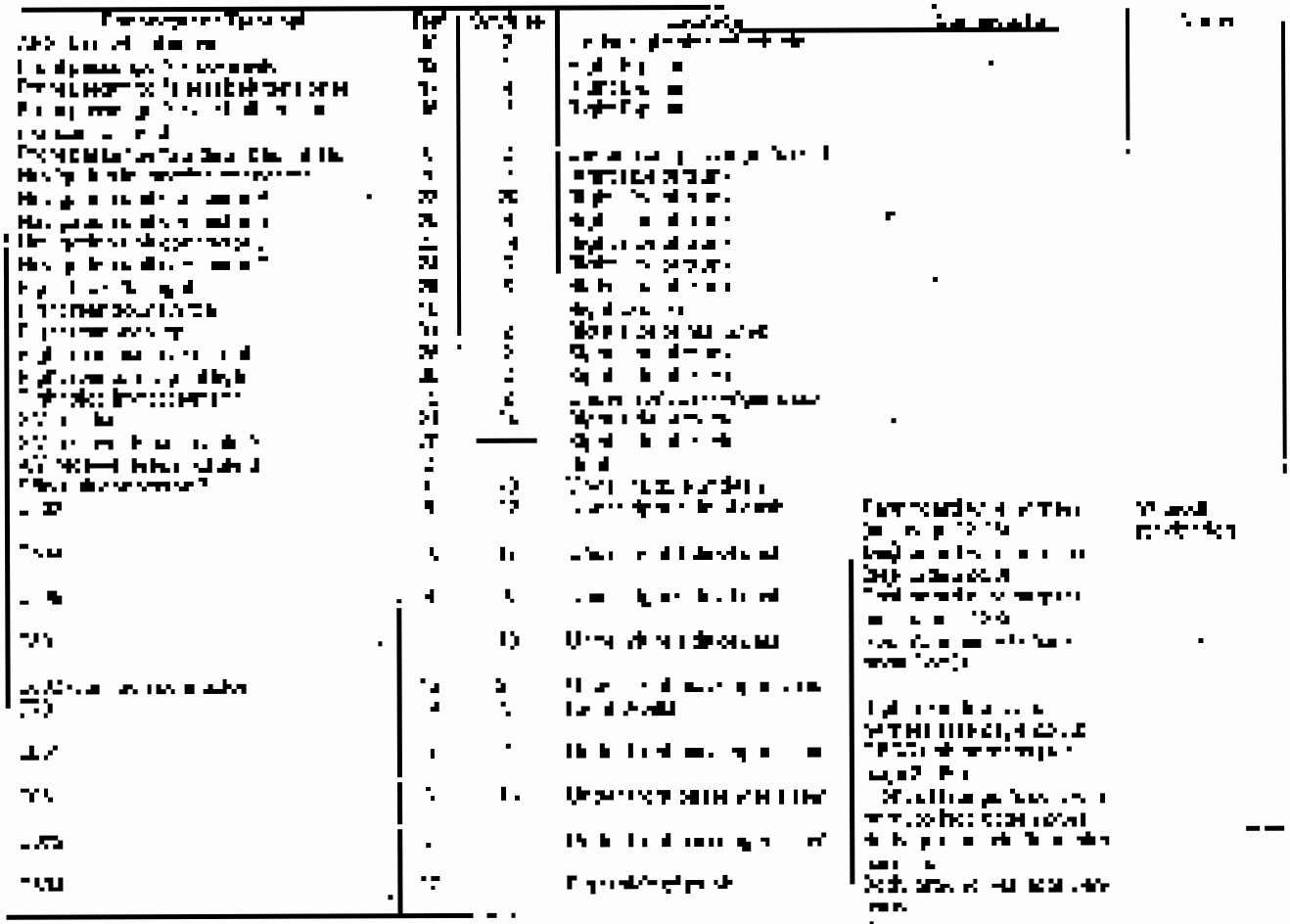
Connector to Harness Index (cont'd)



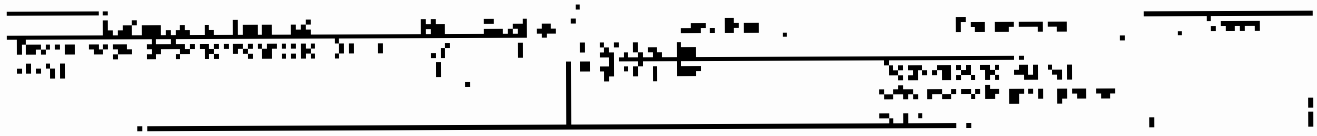


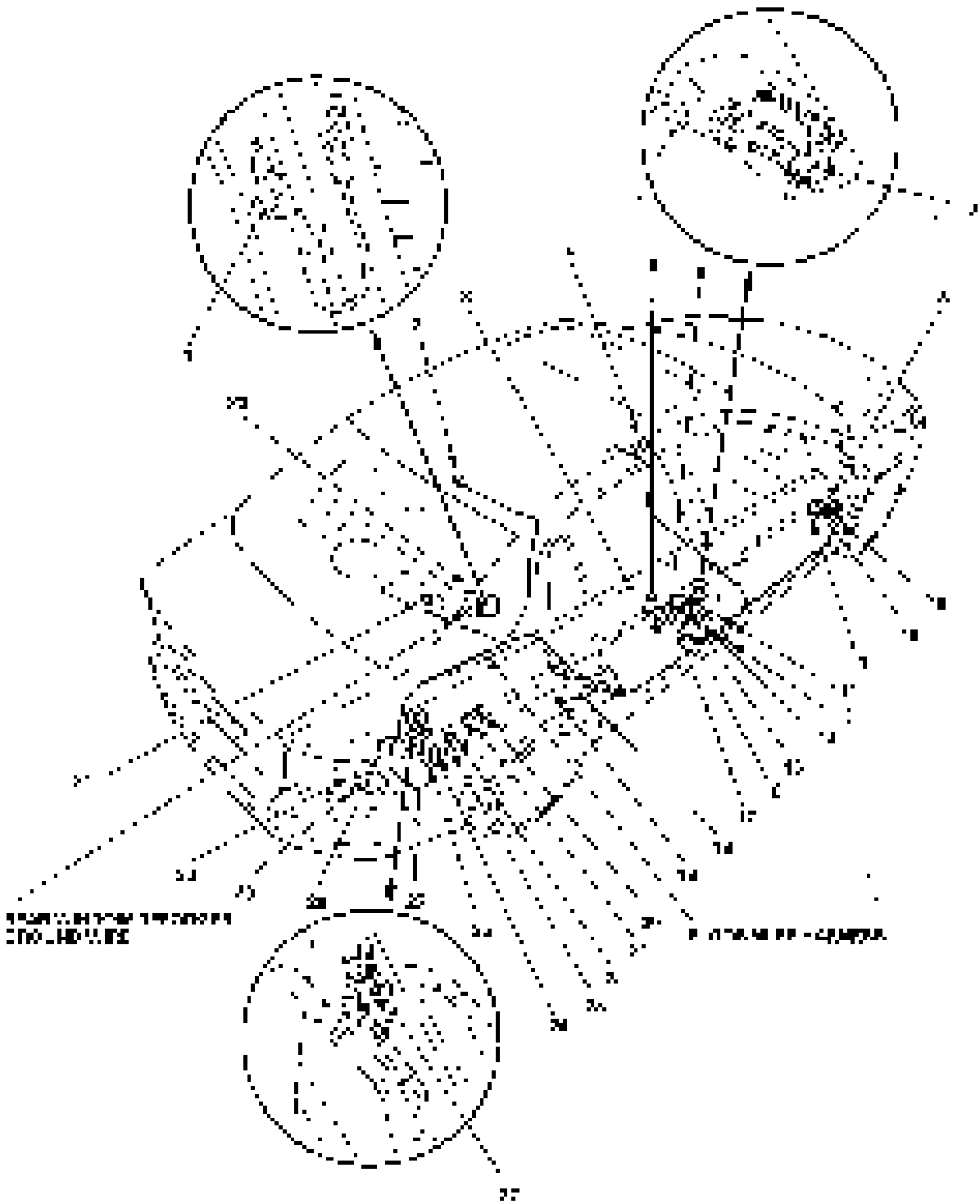
Connector to Harness Index (cont'd)

Door Wire Harness (Right-Hand)



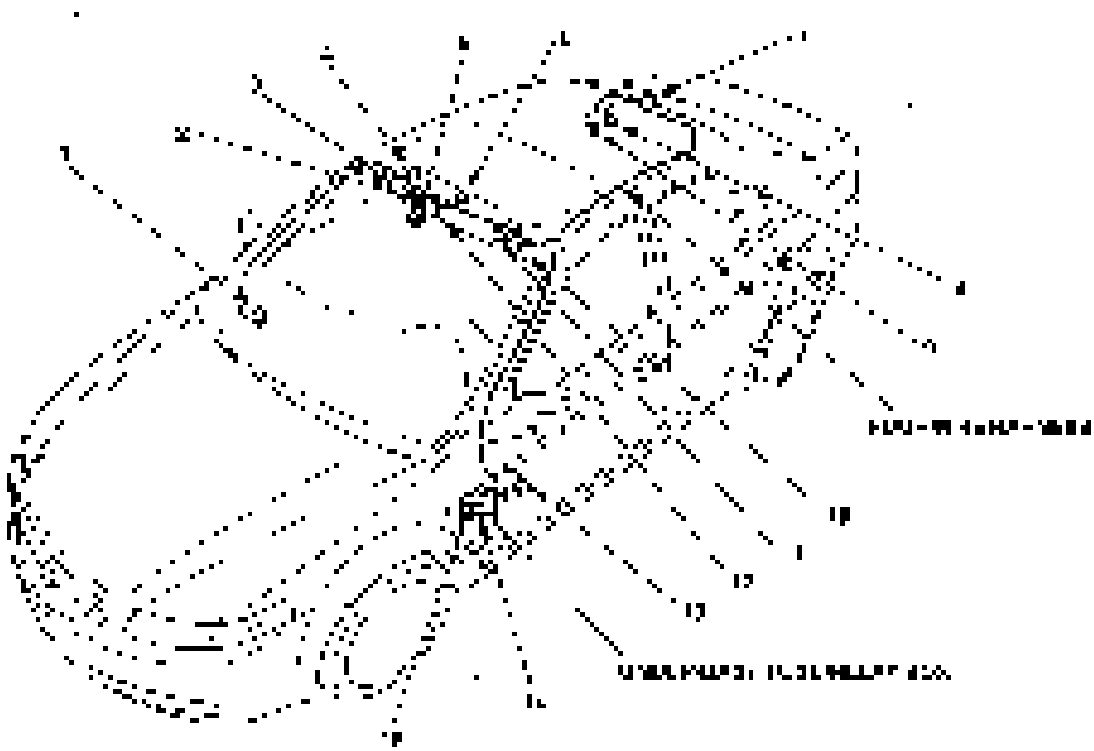
Rear Window Defogger Wire Harness



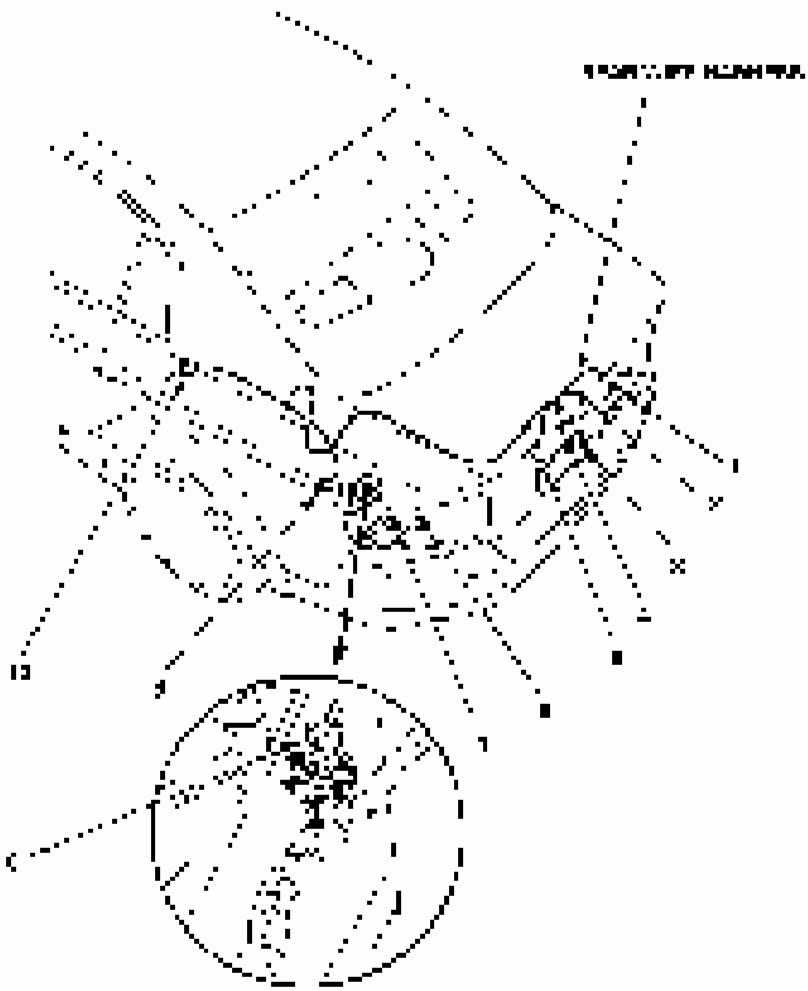


Connector to Harness Index (cont'd):

Roof Wire Harness



Rear Wire Harness

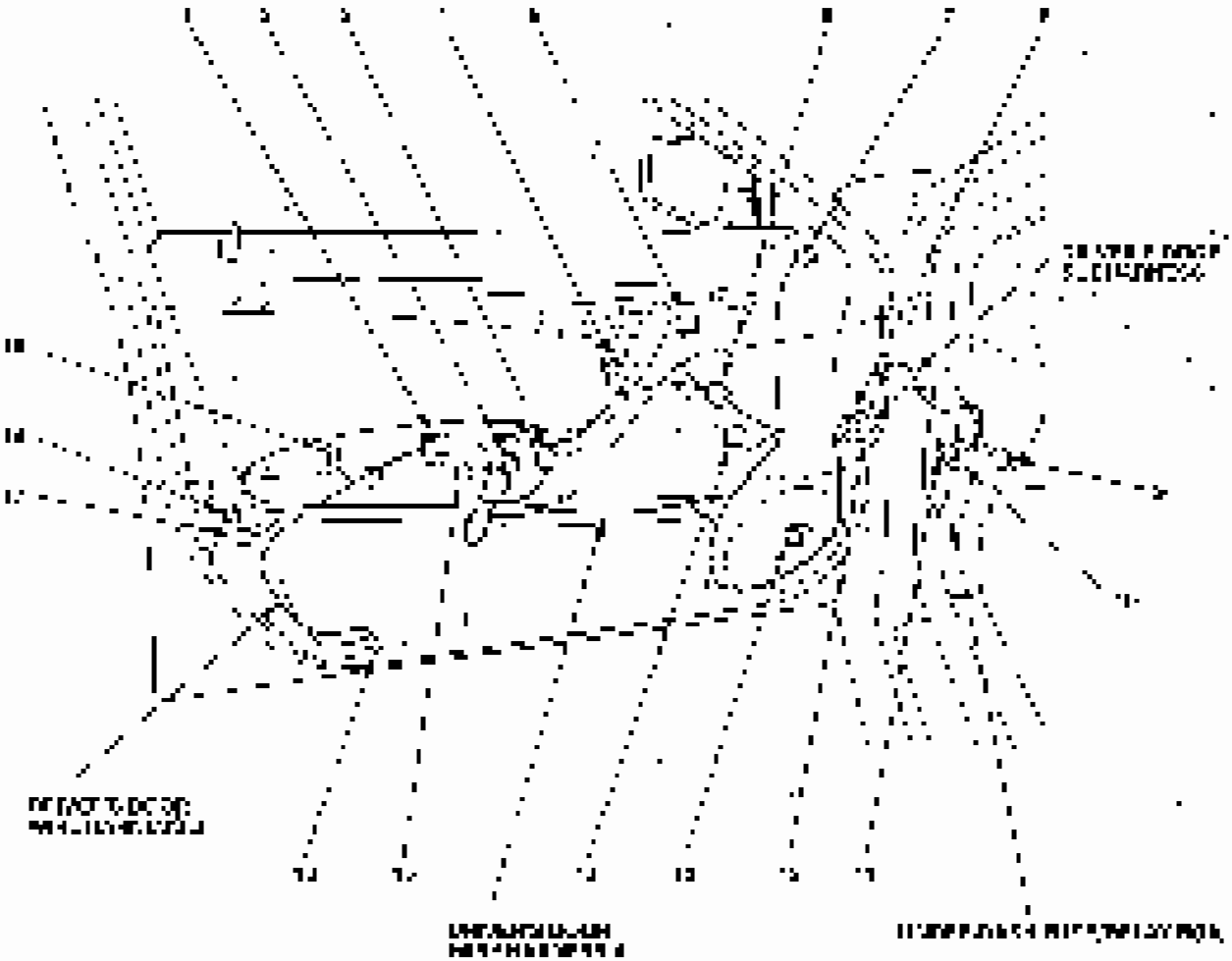


Connector to Harness Index (con't)

Driver's Door Wire Harness A

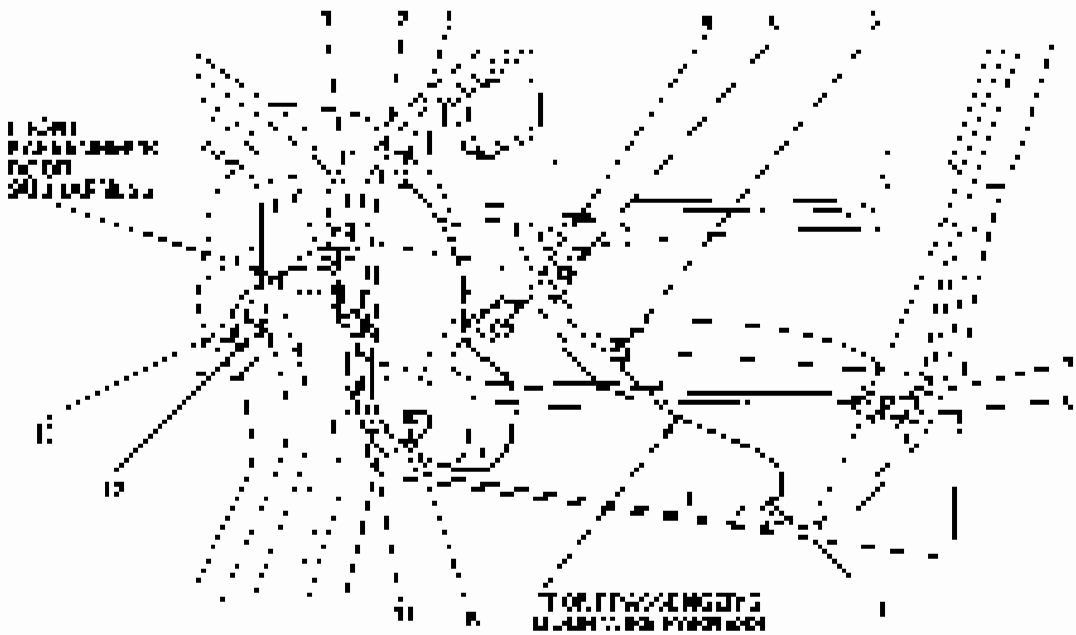
Driver's Door Subharness

Driver's Door Wire Harness B

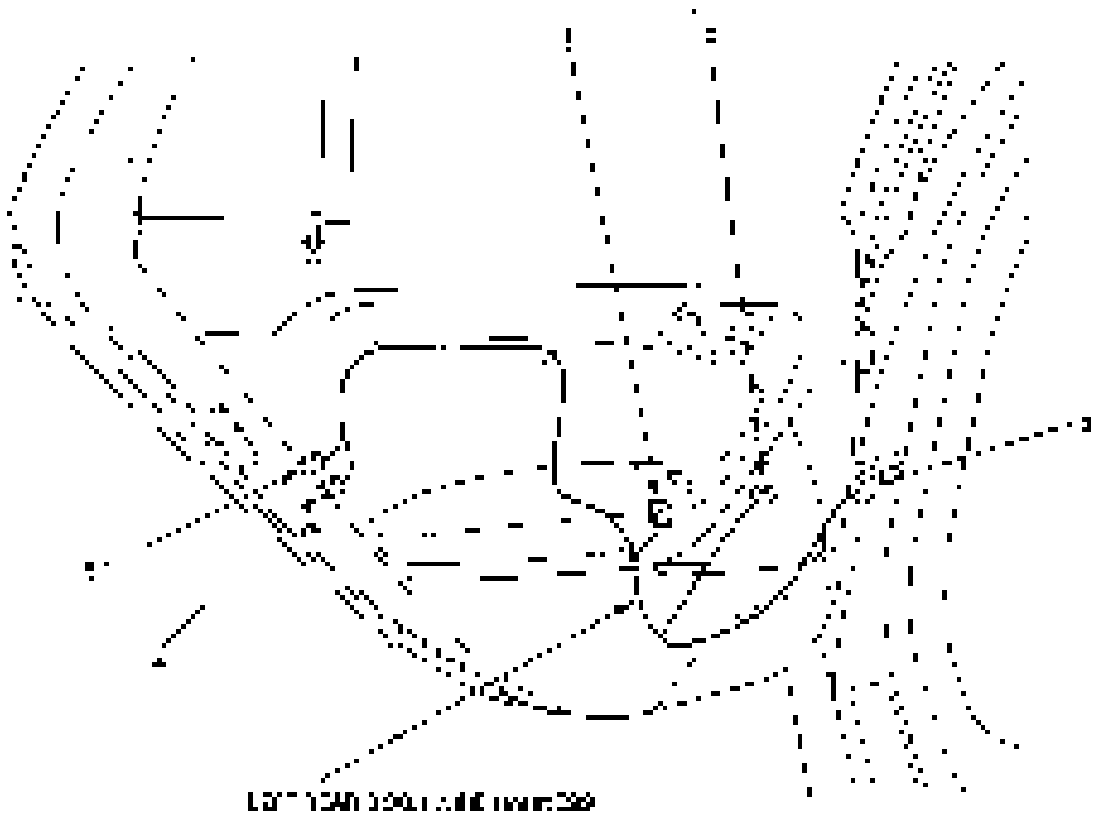


Connector to Harness Index (cont'd)

Front Passenger's Door Switch



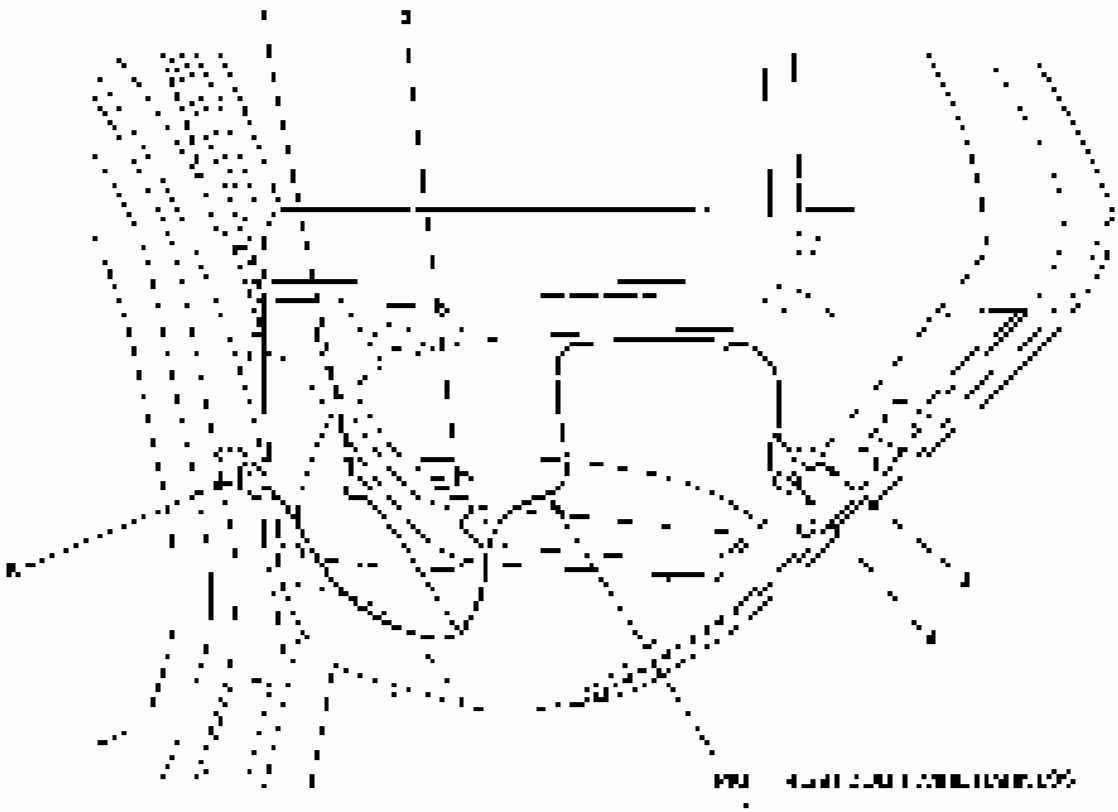
Left Rear Door Wire Harness

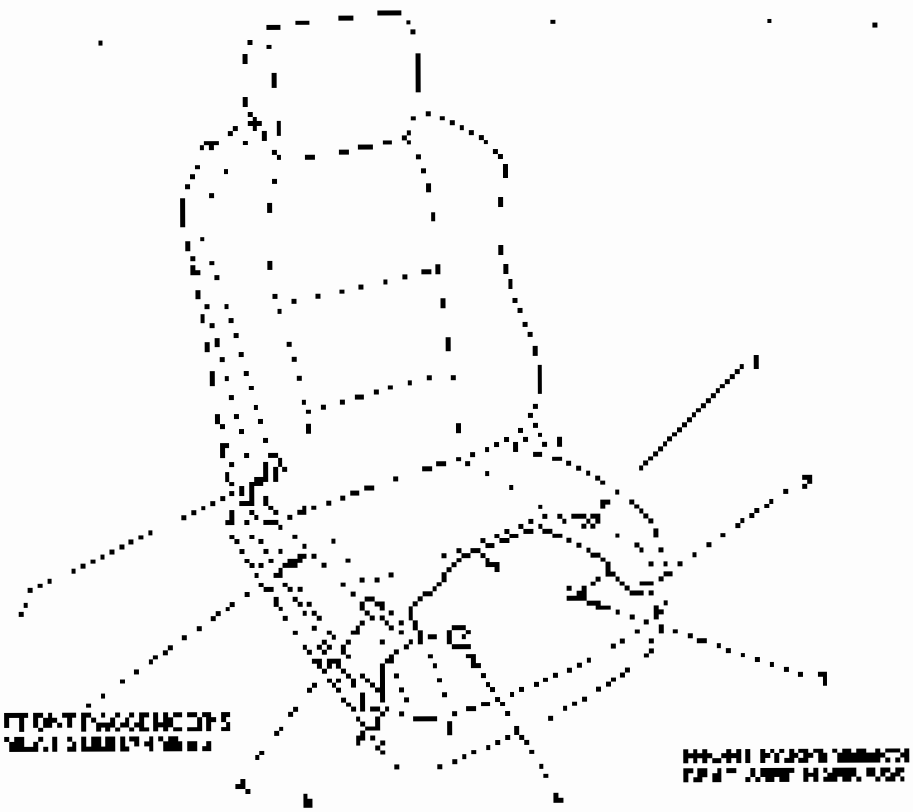


Connector to Harness Index (cont'd)

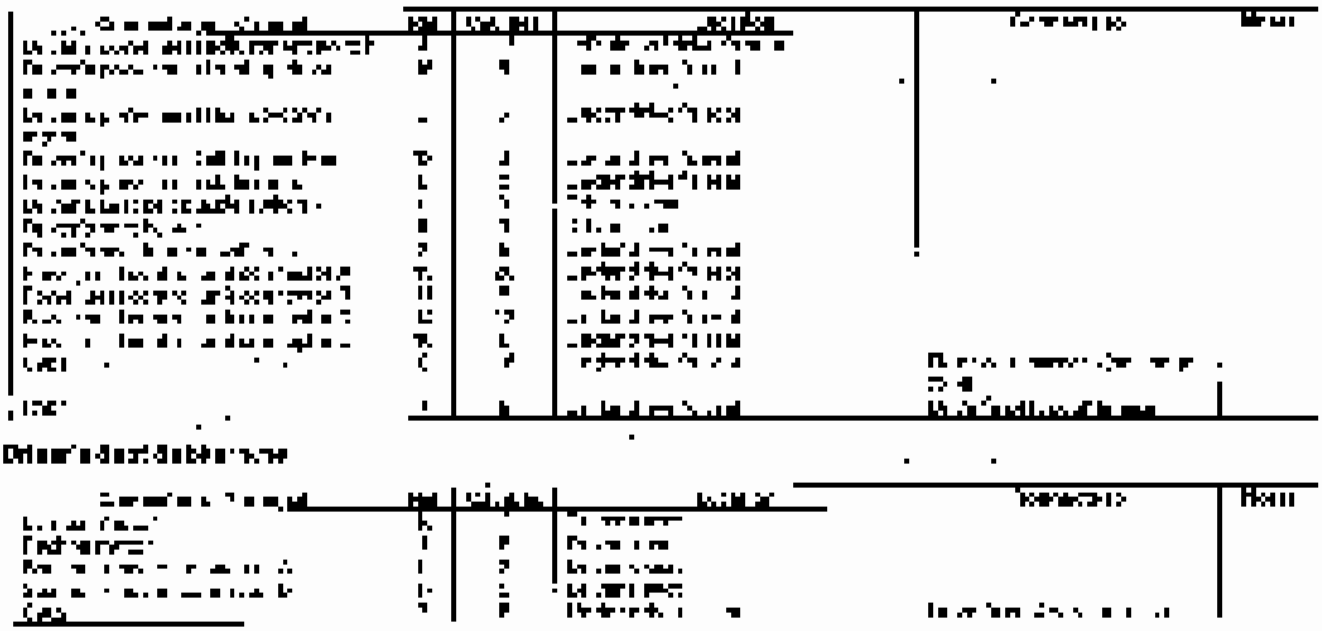
Right Rear Door Wire Harness

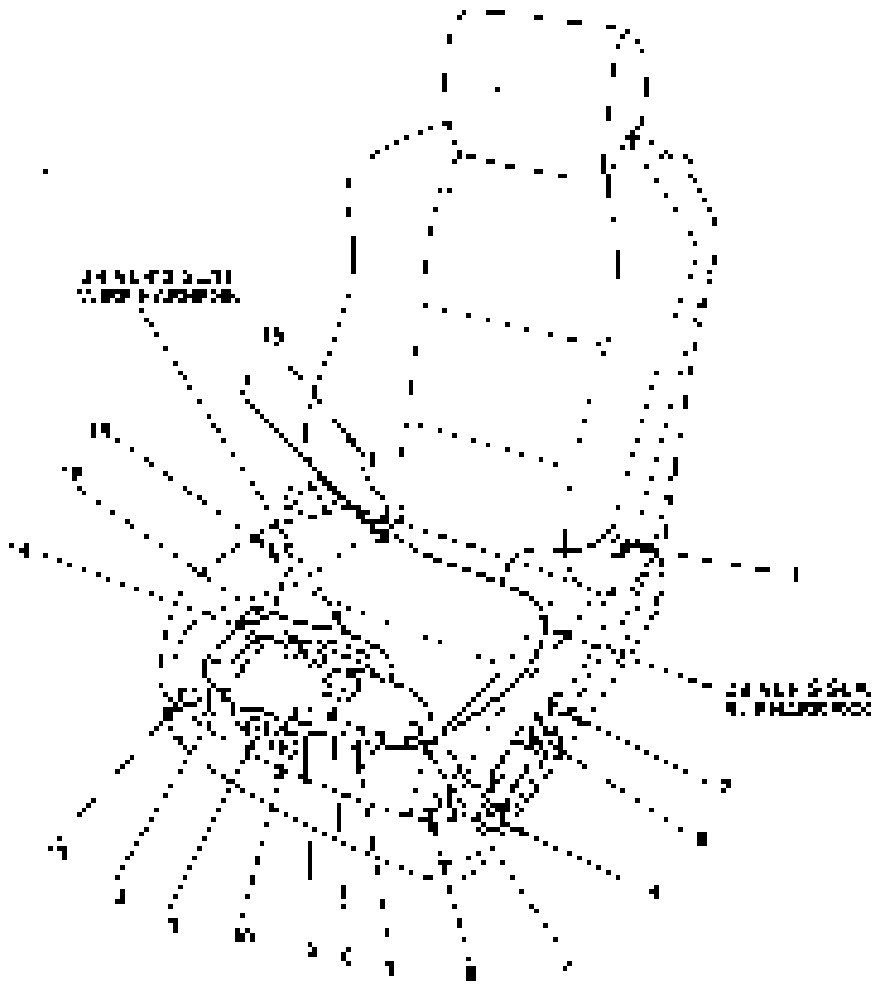
Total				





Connector to Harness Index (cont'd)





Connector to Harness Index (cont'd)

Dashboard Wire Harness (ZX6 Models)

Connector Symbol	Pin	Color	Location	Connects To	Notes
[illegible]	3	[illegible]	[illegible]		
[illegible]	5	[illegible]	[illegible]		
[illegible]	7	[illegible]	[illegible]		
[illegible]	11	[illegible]	[illegible]		
[illegible]	15	[illegible]	[illegible]		
[illegible]	1	[illegible]	[illegible]	[illegible]	
[illegible]	9	[illegible]	[illegible]	[illegible]	
[illegible]	13			[illegible]	

Floor Wire Harness (ZX6 Models)

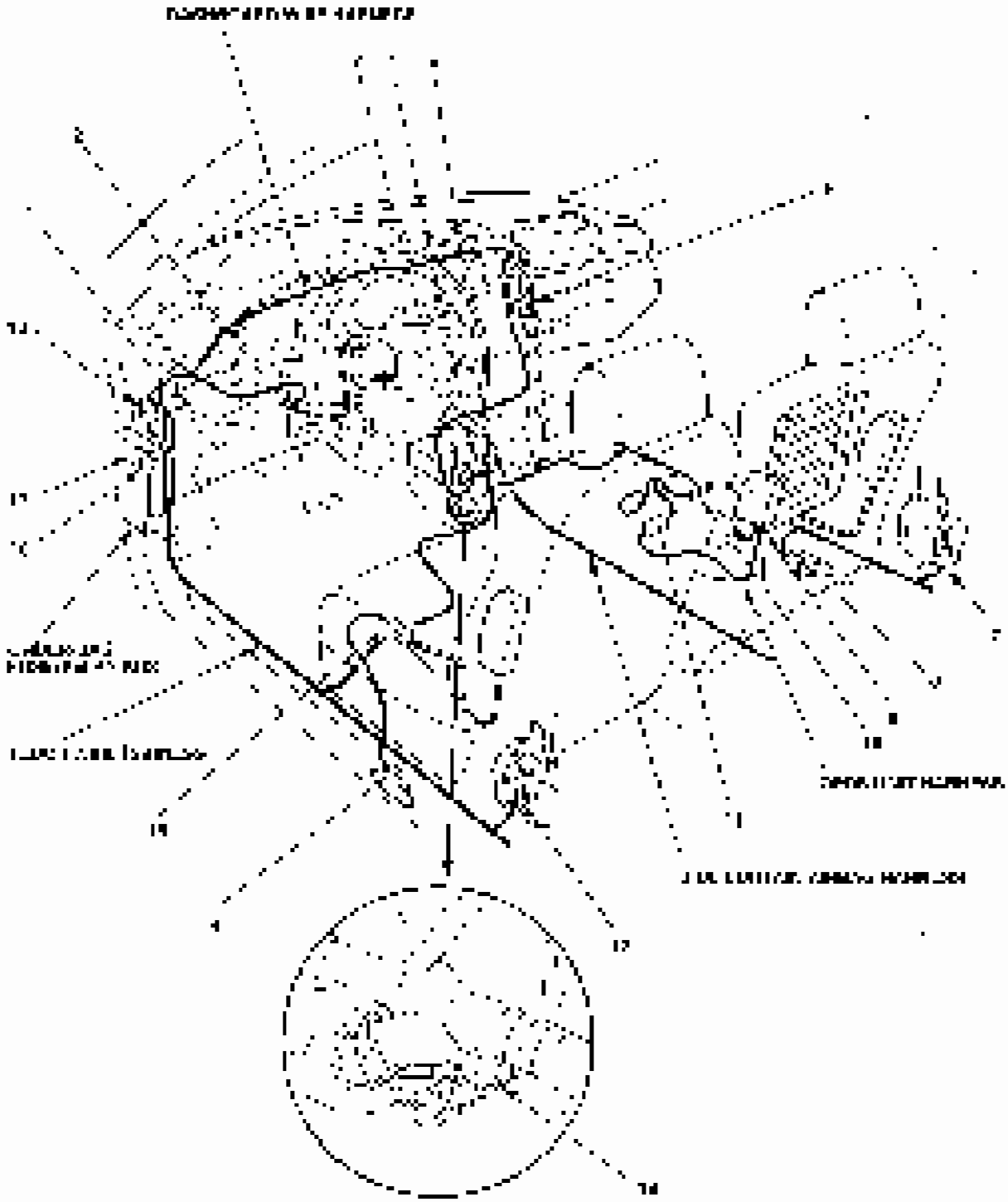
Connector Symbol	Pin	Color	Location	Connects To	Notes
[illegible]	17	[illegible]	[illegible]		
[illegible]	5	[illegible]	[illegible]		
[illegible]	1	[illegible]	[illegible]		
[illegible]	15	[illegible]	[illegible]		
[illegible]	11	[illegible]	[illegible]		
[illegible]	3	[illegible]	[illegible]		
[illegible]	7	[illegible]	[illegible]		
[illegible]	9	[illegible]	[illegible]	[illegible]	
[illegible]	13	[illegible]	[illegible]	[illegible]	

[illegible] Lead Harness

Connector Symbol	Pin	Color	Location	Connects To	Notes
[illegible]	9	[illegible]	[illegible]		
[illegible]	11	[illegible]	[illegible]	[illegible]	

Rear Curtain Airbag Harness

Connector Symbol	Pin	Color	Location	Connects To	Notes
[illegible]	5	[illegible]	[illegible]		

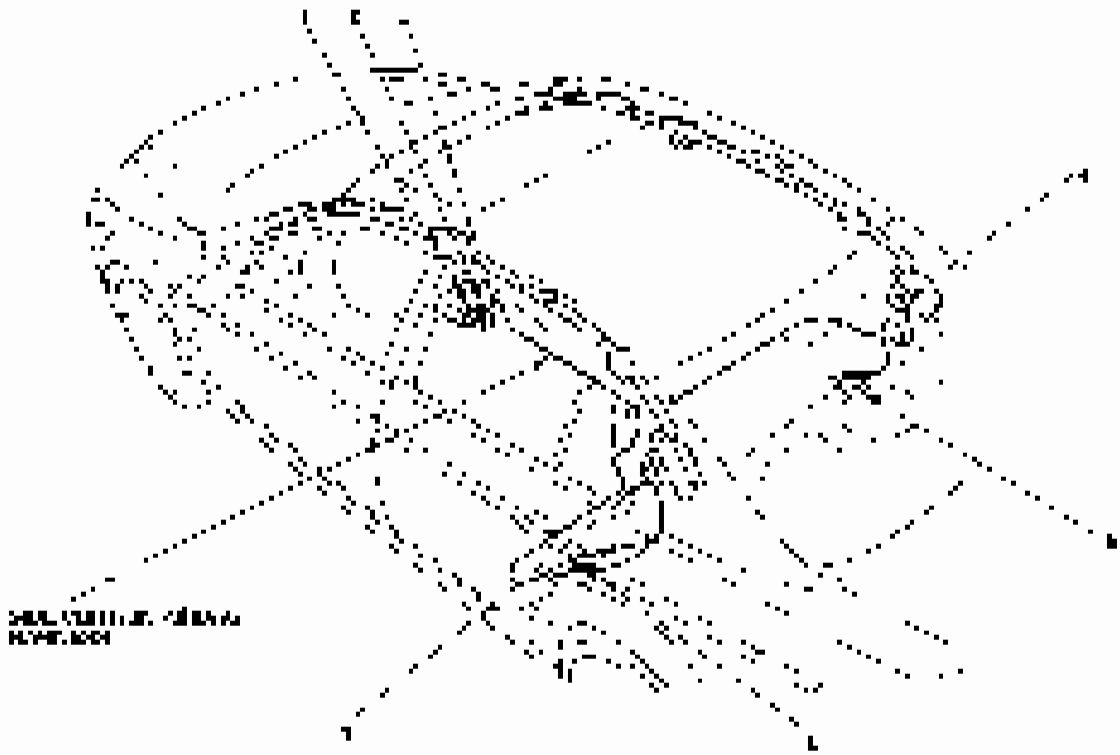


Connector to Harness Index (cont'd)

[illegible]

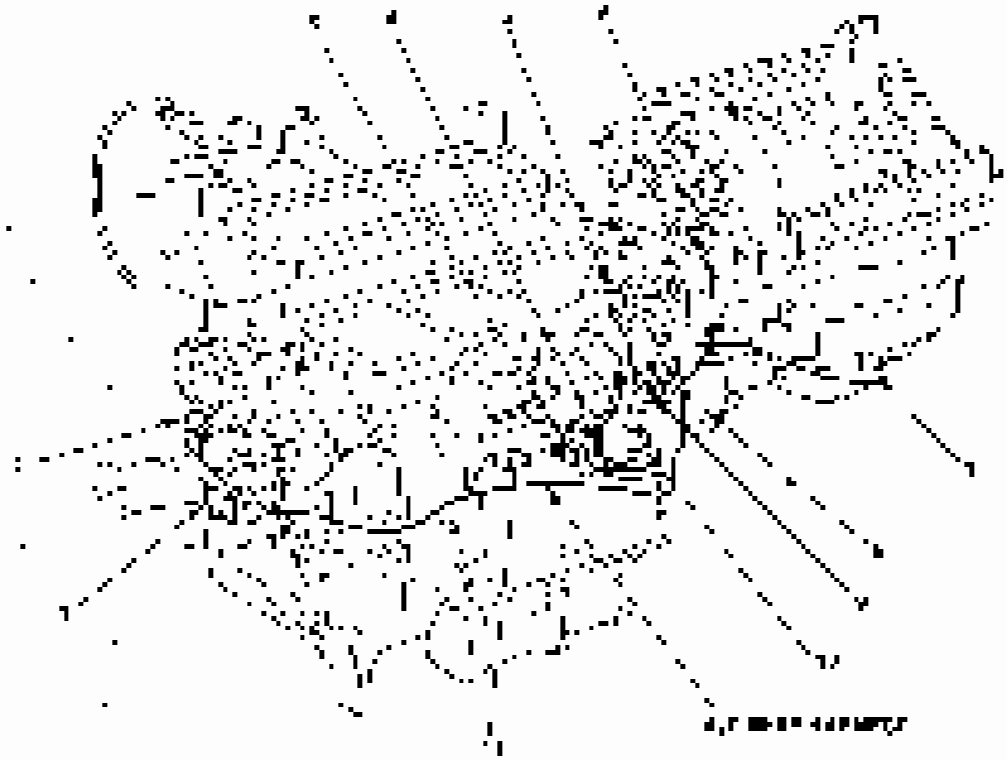
[illegible]

[illegible]

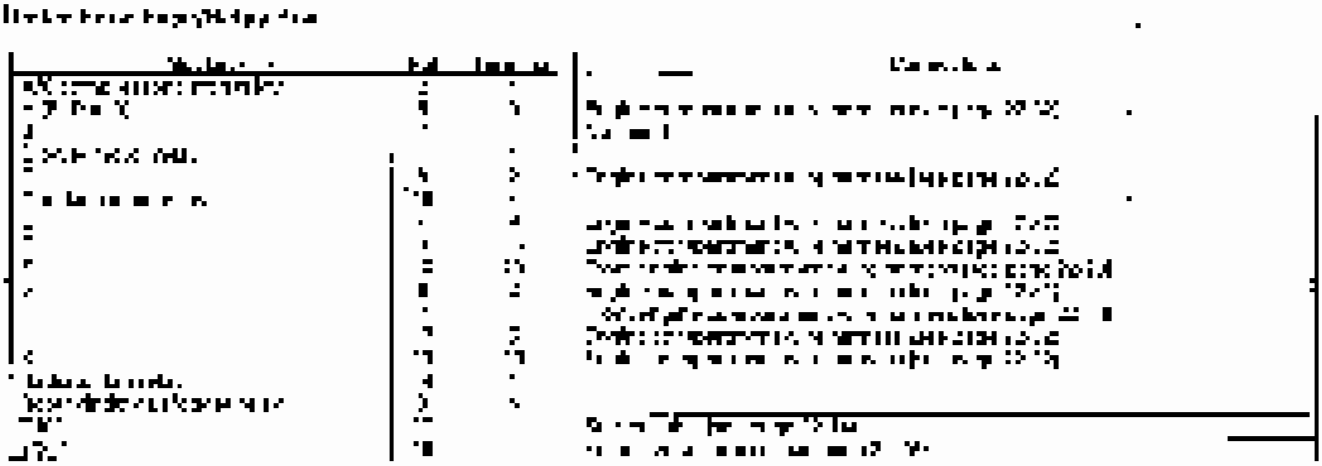


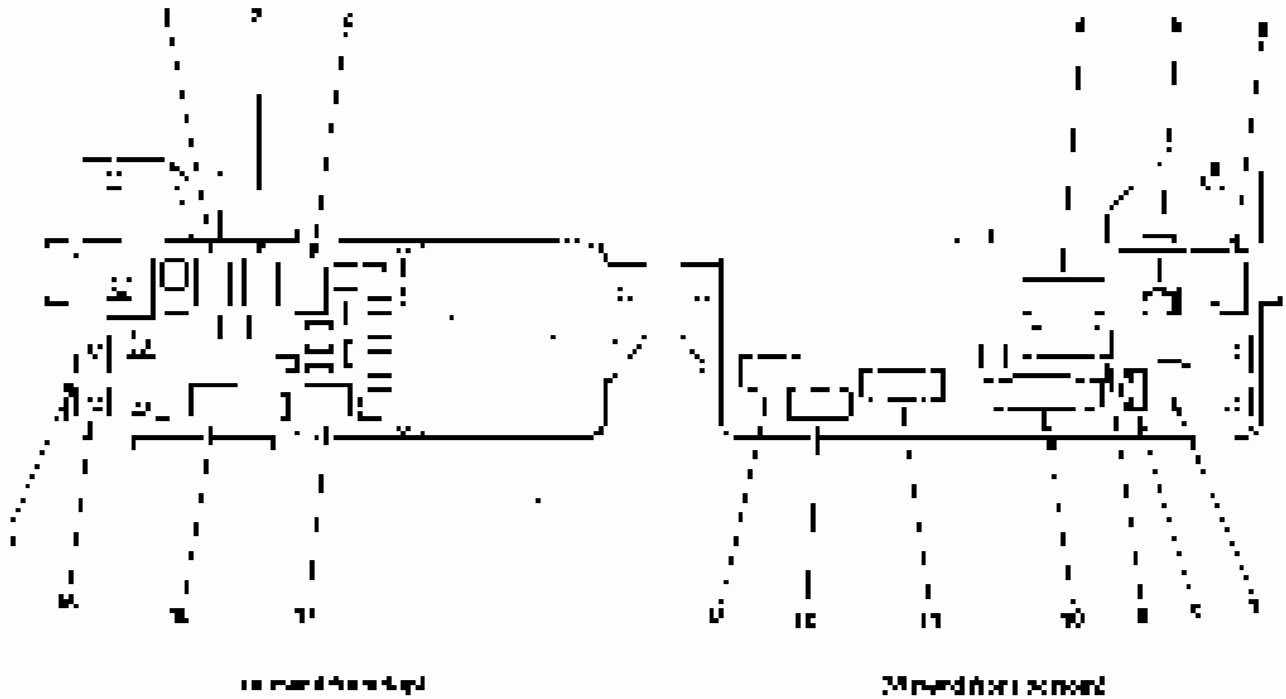
[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

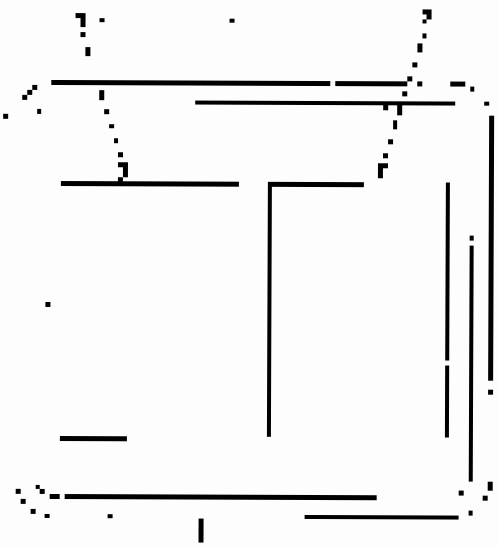


Connector to Fuse/Relay Box Index

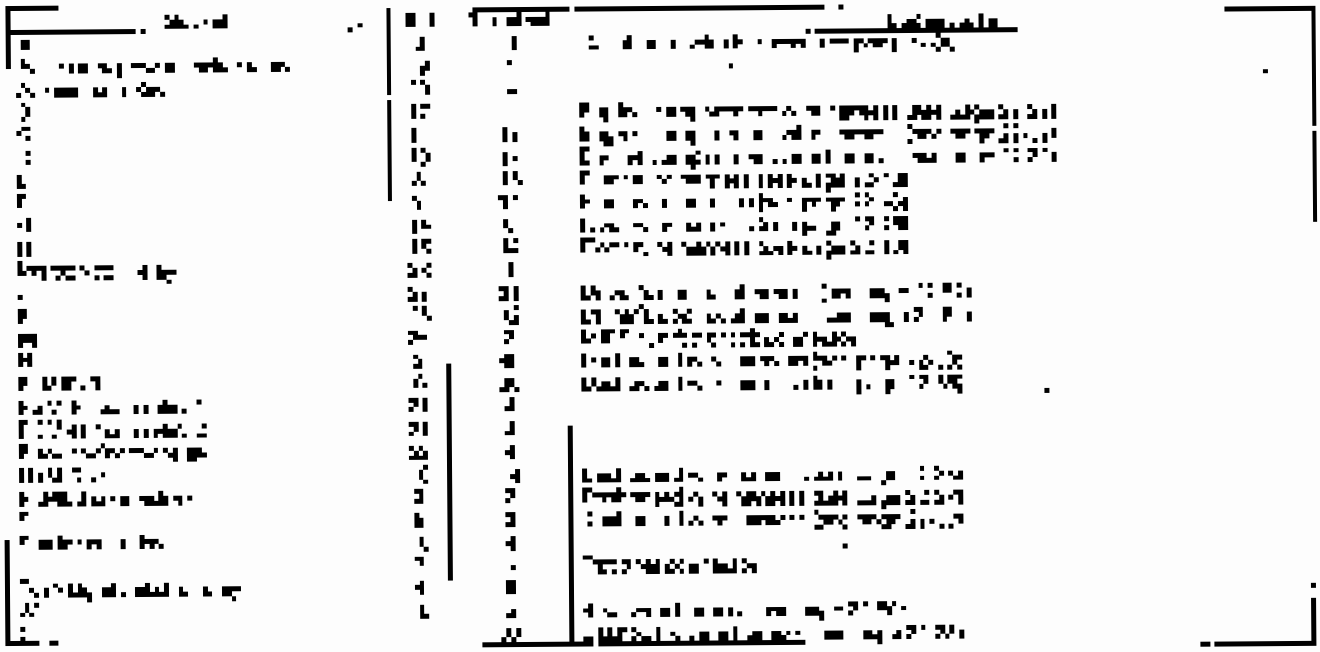


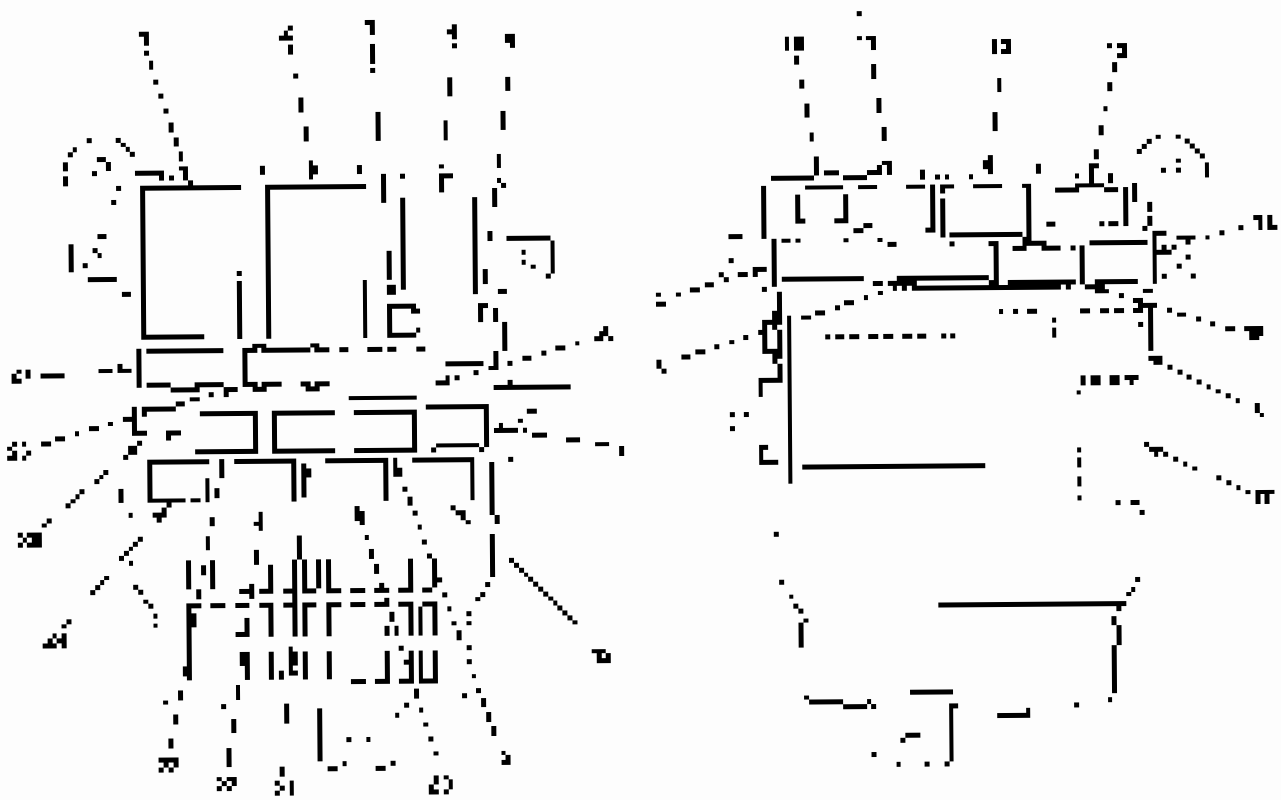


Underhood Multi-relay Box



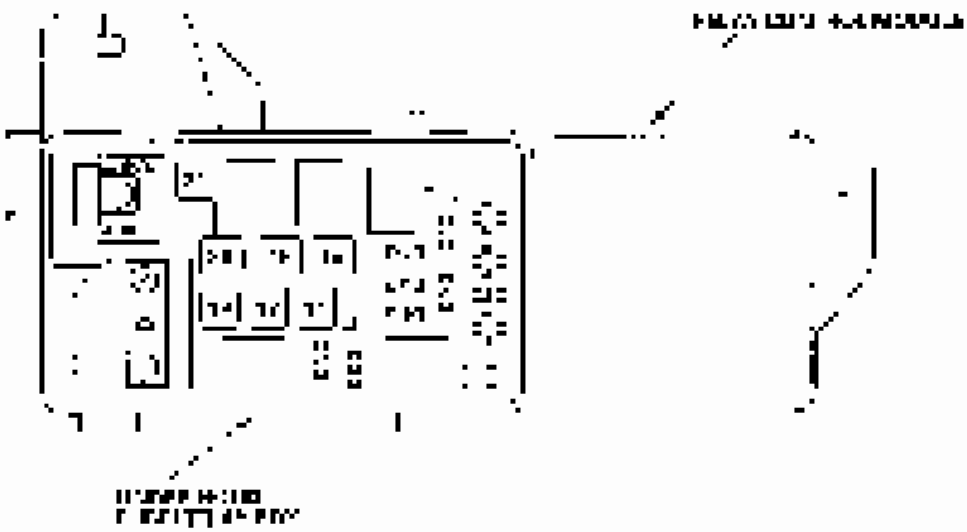
Connector to Fuse/Relay Box Index (cont'd)



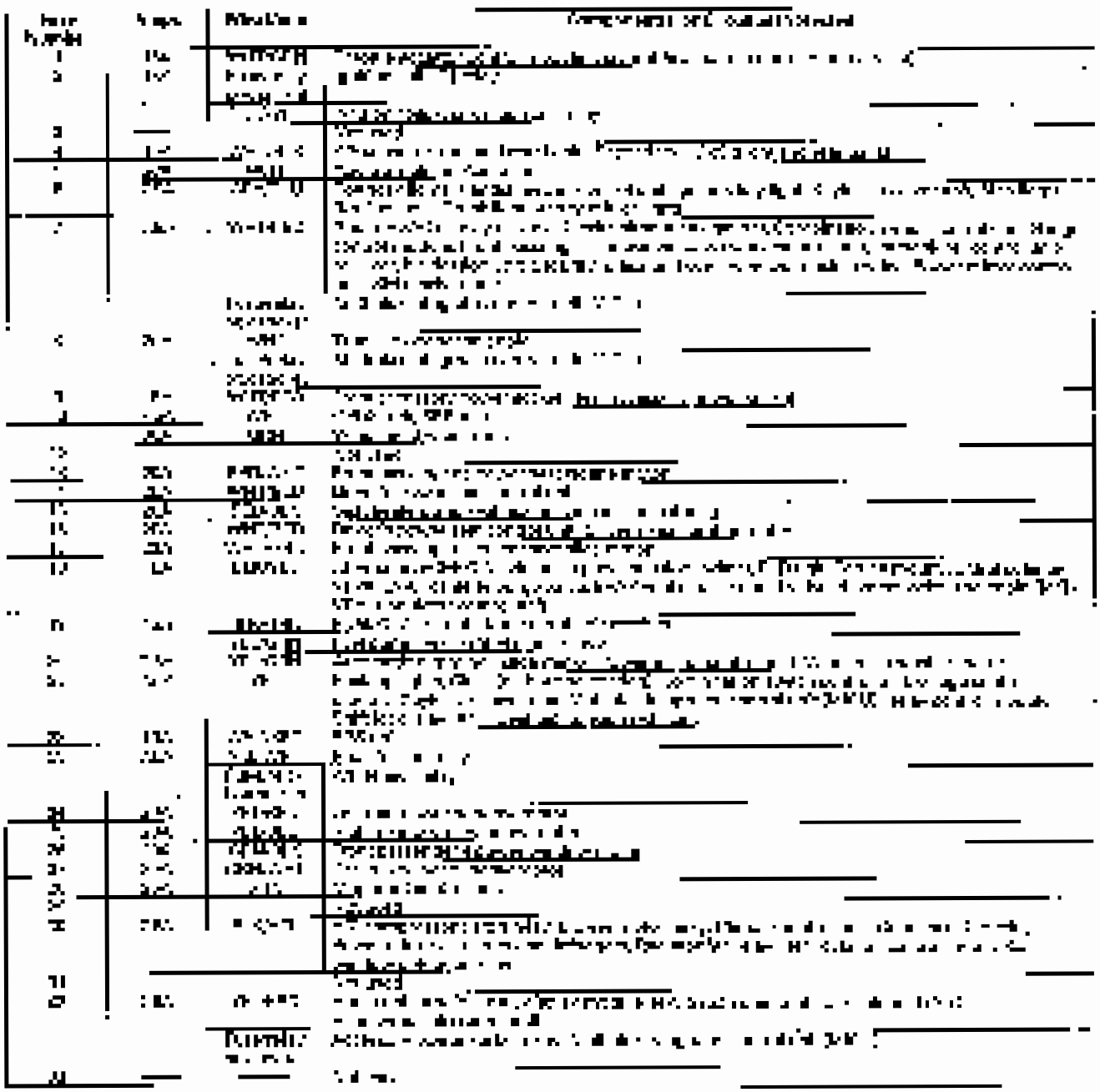


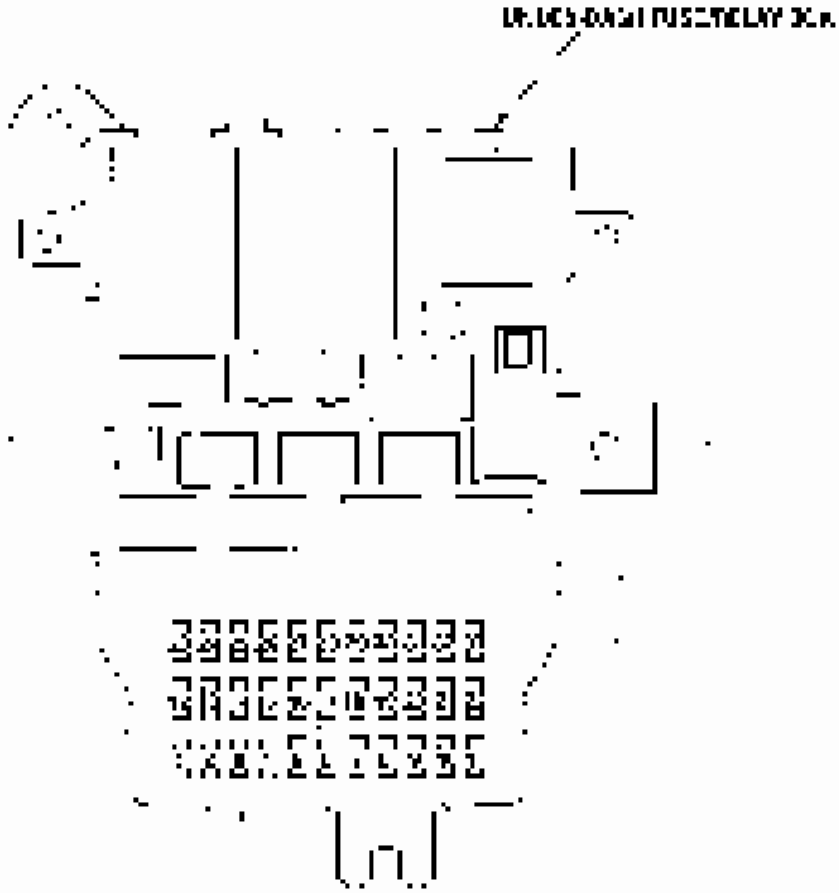
Fuse to Components Index

Underhood Fuse/Relay Box



Fuse to Components Index (cont'd)





Ground to Components Index

Ground	Components Grounding Provided
G1	[illegible]
G2	[illegible]
G3	[illegible]
C101	[illegible]
and	[illegible]
G102	[illegible]
G201	[illegible]
G202	[illegible]
G203	[illegible]
G301	[illegible]
G302	[illegible]
G303	[illegible]
G304	[illegible]
G305	[illegible]
G306	[illegible]
G307	[illegible]
G308	[illegible]
G309	[illegible]
G310	[illegible]
G311	[illegible]
G312	[illegible]
G313	[illegible]
G314	[illegible]
G315	[illegible]
G316	[illegible]
G317	[illegible]

Under-hood Fuse/Relay Box

Removal and Installation

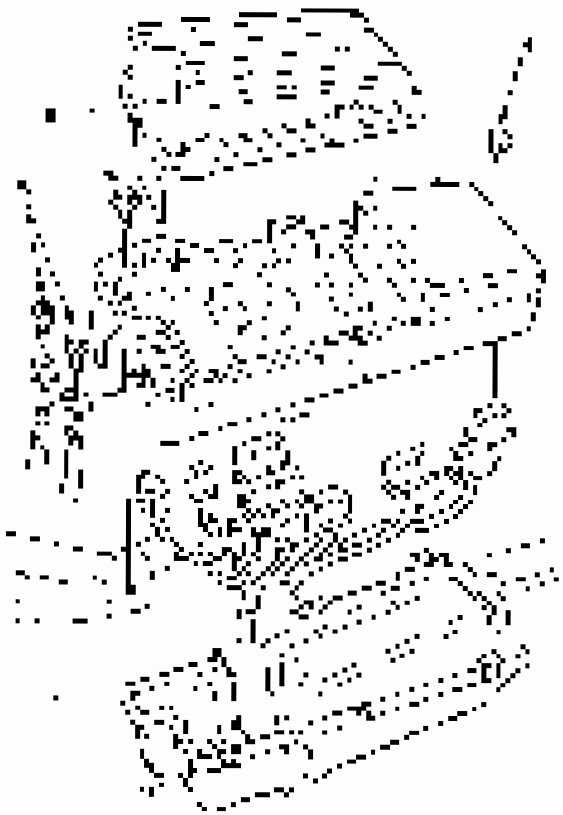
Removal

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]



5. [illegible]

6. [illegible]

7. [illegible]

Installation

[illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

DTC Troubleshooting

B1005: Relay Control Module lost communication with VICU

B1258: Relay Control Module lost communication with VICU (manual)

B1087: Relay Control Module lost communication with VICU (door switch message)

B1088: Relay Control Module lost communication with Driver Multiplex Control Unit (door switch driver message)

B1089: Relay Control Module lost communication with Driver Multiplex Control Unit (power message)

B1090: Power Control Module lost communication with Gauge Control Module (VSP/N message)

B1091: Relay Control Module lost communication with Combination Switch Control Unit (A/T message)

B1092: Relay Control Module lost communication with Combination Switch Control Unit (headlight switch message)

B1093: Relay Control Module lost communication with Combination Switch Control Unit (beam switch message)

DTC Detecting Condition: [illegible]

Possible Cause: [illegible]

1. Check for DTC: [illegible]

   If DTC B1093 is set, check for poor connection or damaged harness between Relay Control Module and Combination Switch Control Unit. If connection and harness are normal, replace Combination Switch Control Unit.

   YES: Go to step 2.

   NO: Refer to Relay Control Module Inspection on page 22-[illegible].

2. Check for poor connection or damaged harness between Relay Control Module and Gauge Control Module. If connection and harness are normal, replace Gauge Control Module. Refer to Gauge Control Module Inspection on page 22-[illegible].

Chart 1

A	B	Repair
B1005	B1258	Refer to Power Control Module on page 22-[illegible]
B1087	B1088	
B1089	B1090	
	B1091	
	B1092	

Chart 2

A	B	Repair
B1093	B1093	Open Wire Harness or Poor Connection
B1258	Refer to page 22-[illegible]	
	Normal	
	Refer to page 22-[illegible]	

Chart 3

A	B	Repair
B1005	B1005	Gauge Control Module on page 22-[illegible]
B1091	B1091	
	B1092	
	B1093	
	B1258	
	Normal	

Chart 4

A	B	Repair
B1092	B1092	Combination Switch Check
B1093	B1093	Refer to page 22-[illegible]
	B1258	
	Normal	

Under-dash Fuse/Relay Box

Removal and Installation

[illegible] See page 22-[illegible] and [illegible] See page 22-[illegible] before performing [illegible].

Removal

1. [illegible]
2. [illegible]
3. Remove the [illegible] See page 22-52.
4. [illegible]

5. Remove the [illegible]
6. [illegible]

   NOTE: [illegible]

Installation

1. [illegible]
2. [illegible]
3. Connect the [illegible]
4. Install the [illegible]
5. [illegible]

Battery Test

WARNING

A battery can explode if you do [illegible] the proper procedures, [illegible] anyone nearby. [illegible] and keep [illegible] away from the battery.

[illegible] Battery [illegible] [illegible] the [illegible] procedure.

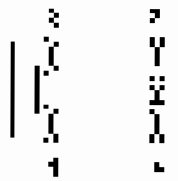
1. [illegible] between [illegible] (70°F and 100°F).
2. Inspect the battery case [illegible] for [illegible]
   - If [illegible] damaged, replace the battery.
   - If the case is OK, go to step 3.
3. Check the indicator [illegible]
   - [illegible] the battery is charged, go to [illegible]
   - [illegible] charge, go to [illegible]
4. Apply a 300 amp load for 15 seconds to remove the surface charge.
5. Wait 15 seconds, then apply a load of 200 amps for 15 seconds.
6. Read the [illegible]
   - If voltage is above 9.6 volts, the battery is OK.
   - If voltage is below 9.6 volts, go to step 7.
7. [illegible] the battery [illegible] 30 minutes. [illegible] it may be necessary [illegible] properly [illegible]
   - If [illegible] the battery is charged [illegible] the battery is OK.
   - If [illegible] the battery [illegible] replace the battery.

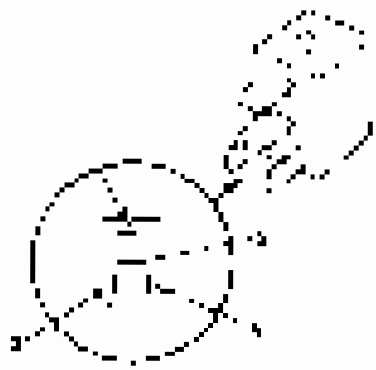
Power Relay Term

Relay	Term
[illegible]	[illegible]
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
[illegible]	

Normally-open type

- [illegible]
- [illegible]

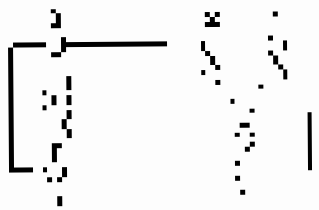


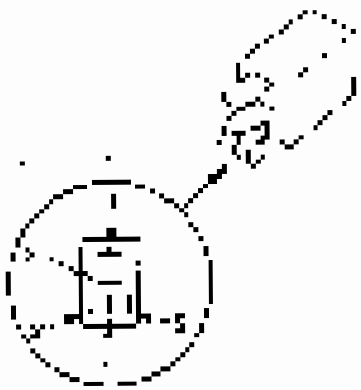


Power Relay Test (cont'd)

Flow-through type B

- [illegible]
- [illegible]





Ignition Switch

Test

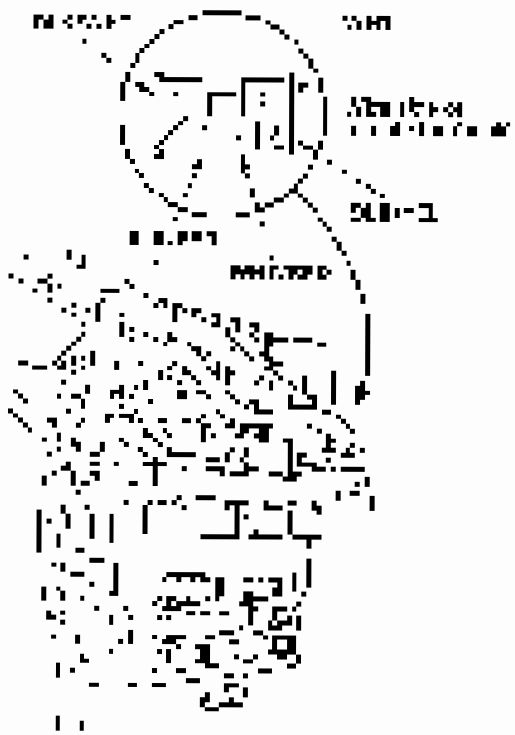
[illegible]

1. [illegible]

2. Disconnect the battery negative cable.

3. [illegible]

4. [illegible]



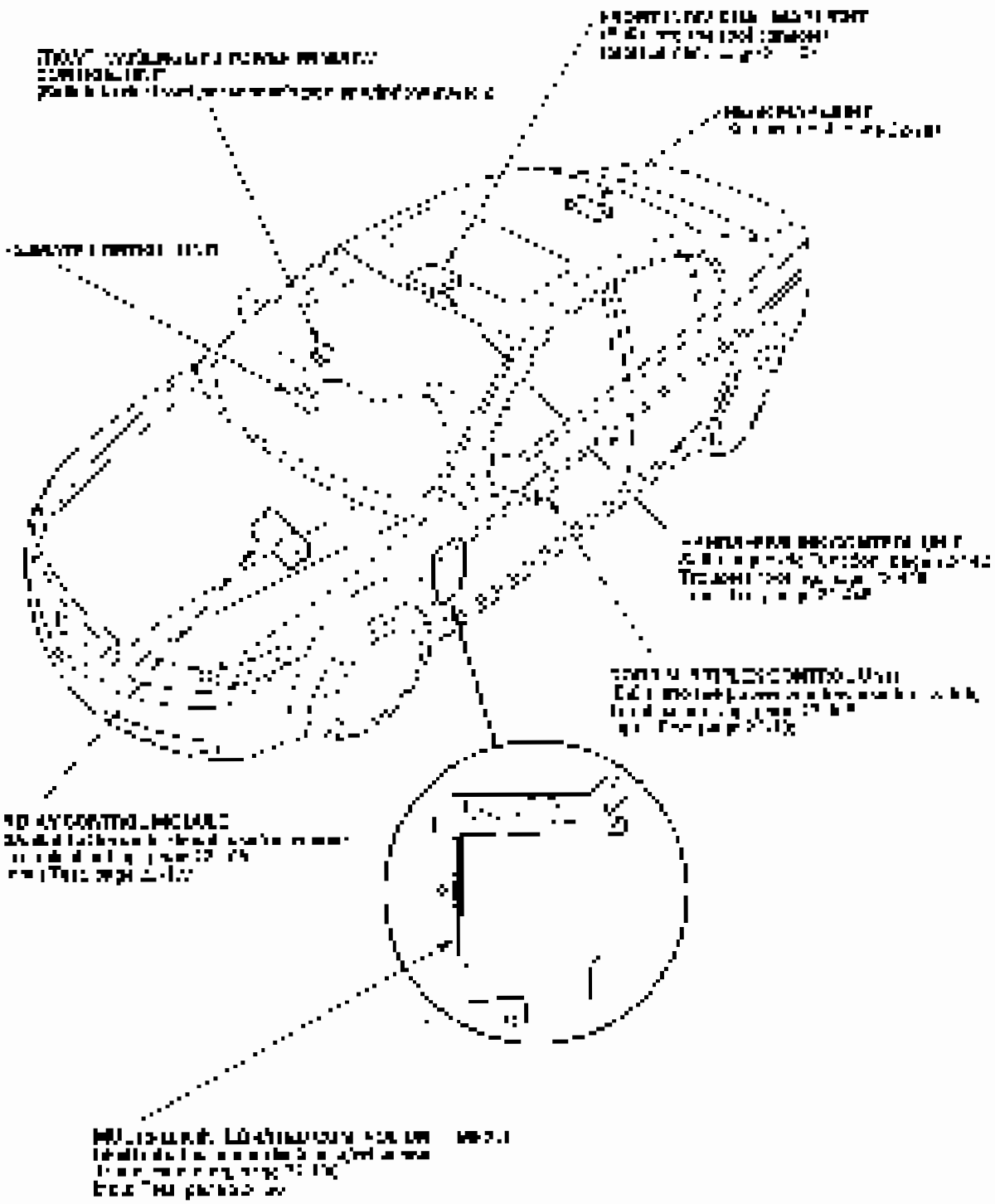
5. [illegible]

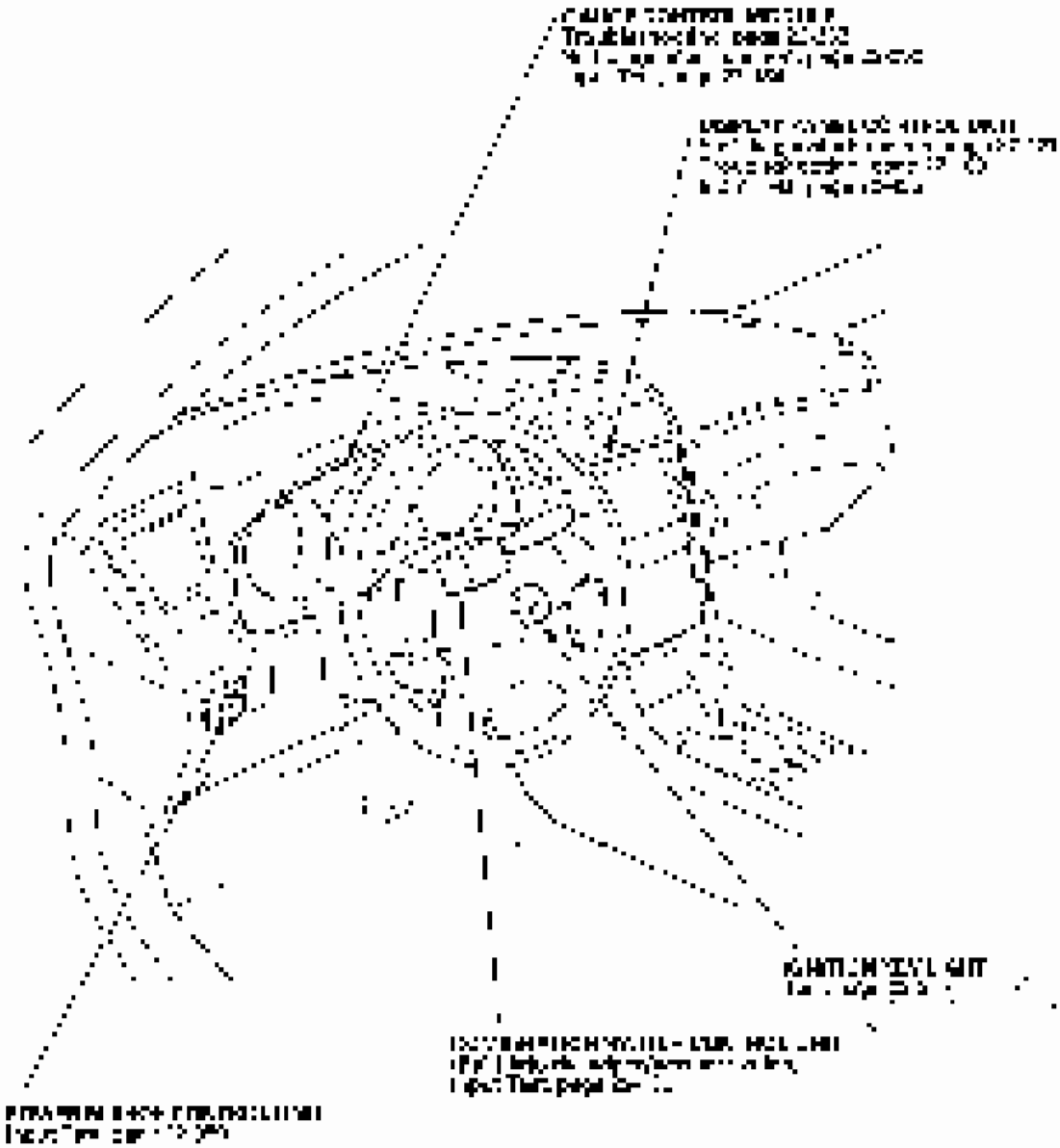
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]					
[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]

6. [illegible]

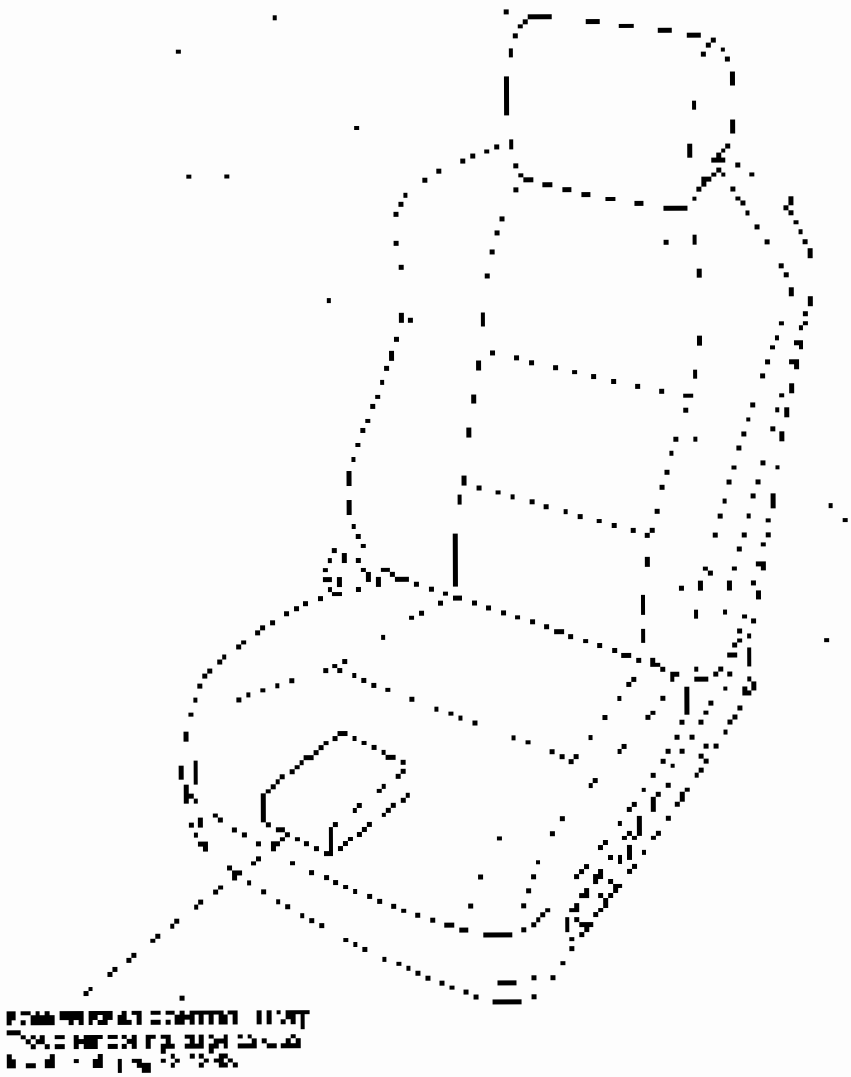
7. After reconnecting the battery negative cable, [illegible]

Component Location Index





Component Location Index (cont'd)



General Troubleshooting Information:

Troubleshooting CAN Circuit Related Problems:

Using the HDS (preferred method):

1. [illegible]

2. [illegible]

Without HDS (Use only if the HDS is unavailable):

1. Check for common causes of circuit problems using DLC/ System Diagnostic Test Mode (See page [illegible])

2. Check for DTCs using ALDL Mode (See page 22-410).

   NOTE: If you are unable to complete the following procedure, or if the problem still exists after you have completed the procedure, see your Honda dealer for assistance.

   - If the check engine light is flashing, refer to the DTC Index (See page 22-442).
   - If the check engine light is not flashing, refer to the Symptom Index (See page 22-420).

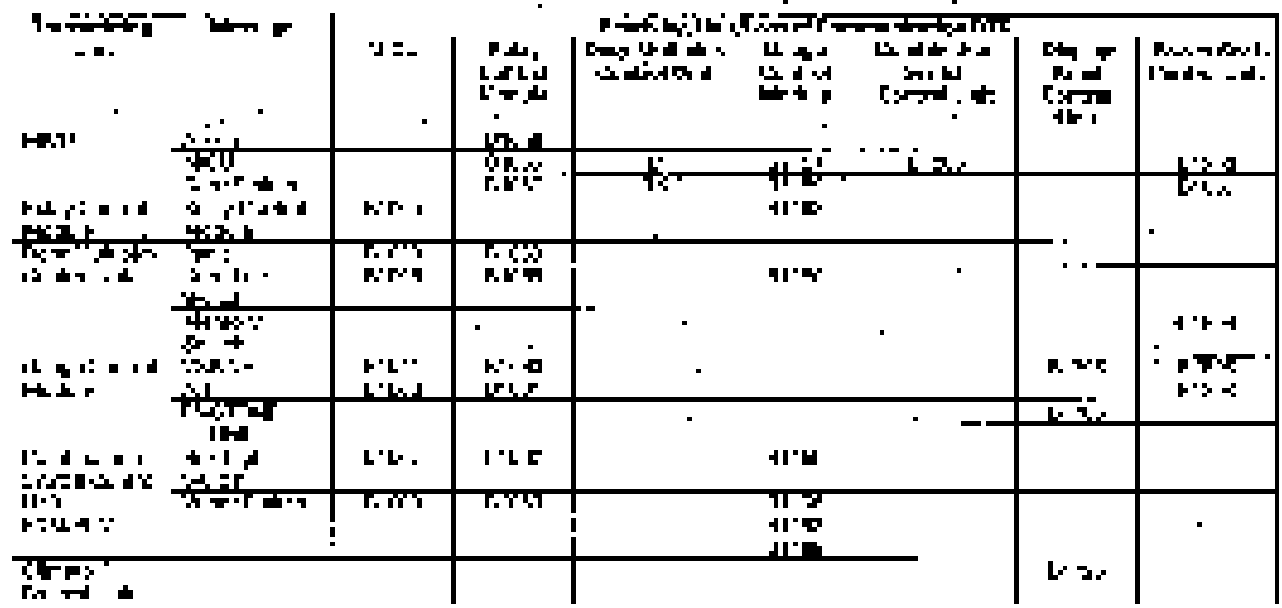
3. Carefully examine the connectors for the [illegible] in the area to be tested.

   - Disconnect the [illegible]
     - Check for [illegible]
     - Check for [illegible]
       [illegible]
     - Reconnect the [illegible]

4. If no DTCs are indicated, use DLC/ System Diagnostic Test Mode 2 to check all inputs and outputs (See page 22-410).

General Troubleshooting Information (cont'd)

Loss of Communication DTC Cross-Reference Chart



DTC Troubleshooting Index

- Numbers in page DTCs
- Emissions related DTCs
- Engine and transmission related DTCs (applicable vehicles) (Refer to Section 11 Engine Mechanical System.)
- Supplemental DTCs

DTC	Description	ECU	DTC type	Page
P1000	Communication error between VSA and PCM	VSA	Loss of Communication	See page 22-[illegible]
P1031	VSA Internal error (CPU error)	VSA	Internal [illegible]	See page 22-[illegible]
P1032	VSA Internal error (EEPROM error)	VSA	Internal [illegible]	See page 22-[illegible]
P1033	VSA Communication between Brake Control Module	VSA	Loss of Communication	See page 22-[illegible]
P1034	VSA Communication between Brake Control Module and Steering Angle Sensor Module	VSA	Loss of Communication	See page 22-[illegible]
P1035	VSA Communication between Brake Control Module and Steering Angle Sensor Module (Steering Angle Sensor Initialization Incomplete)	VSA	Loss of Communication	See page 22-[illegible]
P1036	VSA Communication between Brake Control Module and PCM (Timeout)	VSA	Loss of Communication	See page 22-[illegible]
P1037	VSA Communication between Brake Control Module and PCM (Incompatible)	VSA	Loss of Communication	See page 22-[illegible]
P1038	Communication error between VSA and Body Control Module	VSA	Loss of Communication	See page 22-[illegible]
P1039	Communication error between VSA and Body Control Module	Body Control Module	Loss of Communication	See page 22-113
P1040	Body Control Module communication error with VSA	Body Control Module	Loss of Communication	See page 22-[illegible]
P1041	Body Control Module communication error with VSA (Timeout)	Body Control Module	Loss of Communication	See page 22-[illegible]
P1042	Body Control Module communication error with VSA (Incompatible)	Body Control Module	Loss of Communication	See page 22-[illegible]
P1043	Body Control Module communication error with Steering Angle Sensor Module	Body Control Module	Loss of Communication	See page 22-[illegible]
P1044	Body Control Module communication error with Steering Angle Sensor Module (Timeout)	Body Control Module	Loss of Communication	See page 22-[illegible]
P1045	Body Control Module communication error with Steering Angle Sensor Module (Incompatible)	Body Control Module	Loss of Communication	See page 22-[illegible]
P1046	Body Control Module communication error with Communication Switch Detection Unit	Body Control Module	Loss of Communication	See page 22-[illegible]
P1047	Body Control Module communication error with Communication Switch Detection Unit (Switch Message)	Body Control Module	Loss of Communication	See page 22-[illegible]

Next

DTC Troubleshooting Index (cont'd)

DTC	Description	ECU	Diagnosis	Page
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	see page 22-244
[illegible]	[illegible]	[illegible]	[illegible]	see page 22-247
[illegible]	Power source circuit [illegible] Trip Computer Measurement NG	Body Control Module	Battery voltage	see page 22-137
[illegible]	Communication circuit between DLC 3 and	Door Multiplex Control Unit	Loss of Communication	see page [illegible]
[illegible]	Door Multiplex Control Unit [illegible]	Door Multiplex Control Unit	[illegible]	see page [illegible]
[illegible]	[illegible]	Door Multiplex Control Unit	Short Circuit	see page 22-223
[illegible]	[illegible]	Door Multiplex Control Unit	Short Circuit	see page 22-225
[illegible]	Driver's door key cylinder switch [illegible]	Door Multiplex Control Unit	Signal Error	see page 22-117
[illegible]	Driver's door key cylinder switch [illegible]	Door Multiplex Control Unit	Signal Error	see page [illegible]
[illegible]	Driver's door key cylinder switch [illegible]	Door Multiplex Control Unit	Signal Error	see page [illegible]
[illegible]	[illegible]	Door Multiplex Control Unit	Short Circuit	see page 22-231
[illegible]	[illegible]	Door Multiplex Control Unit	Short Circuit	see page 22-233
[illegible]	Driver's door key cylinder switch [illegible]	Door Multiplex Control Unit	Signal Error	see page 22-235
[illegible]	Door Multiplex Control Unit [illegible] Communication with Door Multiplex Control Unit [illegible]	Door Multiplex Control Unit	Loss of Communication	see page 22-237
[illegible]	Door Multiplex Control Unit [illegible]	Door Multiplex Control Unit	Loss of [illegible]	see page [illegible]
[illegible]	[illegible]	Door Multiplex Control Unit	Short Circuit	see page 22-239
[illegible]	[illegible]	Door Multiplex Control Unit	Signal Error	see page 22-140
[illegible]	Front passenger's power window pulse detection circuit	Door Multiplex Control Unit	Signal Error	see page 22-241
[illegible]	Front passenger's power window switch [illegible]	Door Multiplex Control Unit	Signal Error	see page [illegible]

DTC	Description	Set	Type	Page
B1153	Communication with Gauge Control Module	Gauge Control Module	Loss of Communication	See page 22-140
B1155	Gauge Control Module Internal Error	Gauge Control Module	Signal Error	See page 22-295
B1156	Gauge Control Module Not Programmed with Vehicle Configuration Data or Control Unit Locally Disabled	Gauge Control Module	Loss of Communication	See page 22-296
B1157	Gauge Control Module Not Programmed with Vehicle Configuration Data	Gauge Control Module	Loss of Communication	See page 22-297
B1158	Gauge Control Module Not Communicating with VSCU	Gauge Control Module	Loss of Communication	See page 22-298
B1159	Gauge Control Module Not Communicating with Body Control Module	Gauge Control Module	Loss of Communication	See page 22-299
B1160	Gauge Control Module Not Communicating with Multiplex Control Unit	Gauge Control Module	Loss of Communication	See page 22-300
B1161	Gauge Control Module Not Communicating with Steering Angle Sensor Control Unit	Gauge Control Module	Loss of Communication	See page 22-301
B1162	Gauge Control Module Not Communicating with SCM/PSCM	Gauge Control Module	Loss of Communication	See page 22-302
B1163	Gauge Control Module Not Communicating with TCM/ECT	Gauge Control Module	Loss of Communication	See page 22-303
B1164	Fuel gauge sending unit signal error	Gauge Control Module	Signal Error	See page 22-304
B1165	Control unit power supply voltage 5.2V	Gauge Control Module	Power voltage	See page 22-305
B1166	Gauge Control Module Not Communicating with ECM	Gauge Control Module	Loss of Communication	See page 22-306
C1202	Communication with brake control unit	Electronic Control Unit	Communication	See page 21-140
C1222	Open in the front wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-240
C1223	Short in the front wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-251
C1224	Open in the rear wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-262
C1225	Short in the rear wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-273
C1226	Open in the front wheel speed sensor circuit	Electronic Control Unit	Signal Error	See page 21-284
C1227	Short in the front wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-295
C1228	Open in the rear wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-306
C1229	Short in the rear wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-317
C1230	Open in the front wheel speed sensor circuit	Electronic Control Unit	Signal Error	See page 21-328
C1231	Short in the front wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-339
C1232	Open in the rear wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-350
C1233	Short in the rear wheel speed sensor circuit	Chassis Control Unit	Signal Error	See page 21-361

DTC Troubleshooting Index (cont'd)

DTC	Description	ECU	DTC Type	Page
B1234	Short in the power supply circuit for the control unit	Climate Control Unit	Signal Error	See page 21-97
B1235	Short in the passenger's side mode control linkage, door motor	Climate Control Unit	Signal Error	See page 21-101
B1236	Open circuit in the passenger's side mode control linkage, door motor	Climate Control Unit	Signal Error	See page 21-105
B1237	Short circuit in the mode control motor circuit	Climate Control Unit	Signal Error	See page 21-109
B1238	[illegible]	Climate Control Unit	Signal Error	See page 21-113
B1239	[illegible]	Climate Control Unit	Signal Error	See page 21-117
B1240	Open circuit in the passenger's side mode control linkage, position sensor circuit	Climate Control Unit	Signal Error	See page 21-121
B1241	Open circuit in the passenger's blower motor control circuit	Climate Control Unit	Signal Error	See page 21-125
B1242	[illegible]	[illegible]	[illegible]	See page 22-120
B1243	[illegible]	Communication Control Unit	Signal Error	See page 22-123
B1275	Short circuit in the OFF position circuit of the multifunction switch	Communication Control Unit	Signal Error	See page 22-127
B1276	Short circuit in the AUTO position circuit of the multifunction switch	Communication Control Unit	Signal Error	See page 22-131
B1277	[illegible]	[illegible]	[illegible]	See page 22-135
B1278	Short circuit in the multifunction switch illumination control circuit	Communication Control Unit	Signal Error	See page 22-139
B1279	Short circuit in the multifunction switch illumination control circuit	Communication Control Unit	Signal Error	See page 22-143
B1280	Turn signal indicator circuit malfunction	Combination Switch Control Unit	Signal Error	See page 22-147
B1281	Short circuit in the multifunction switch OFF position circuit	Combination Switch Control Unit	Signal Error	See page 22-151
B1282	Short circuit in the multifunction switch (AUTO) position circuit malfunction	Combination Switch Control Unit	Signal Error	See page 22-155
B1283	Short circuit in the multifunction switch (AUTO) position circuit malfunction	Combination Switch Control Unit	Signal Error	See page 22-159
B1284	Short circuit in the multifunction switch (AUTO) position circuit malfunction	Combination Switch Control Unit	Signal Error	See page 22-163

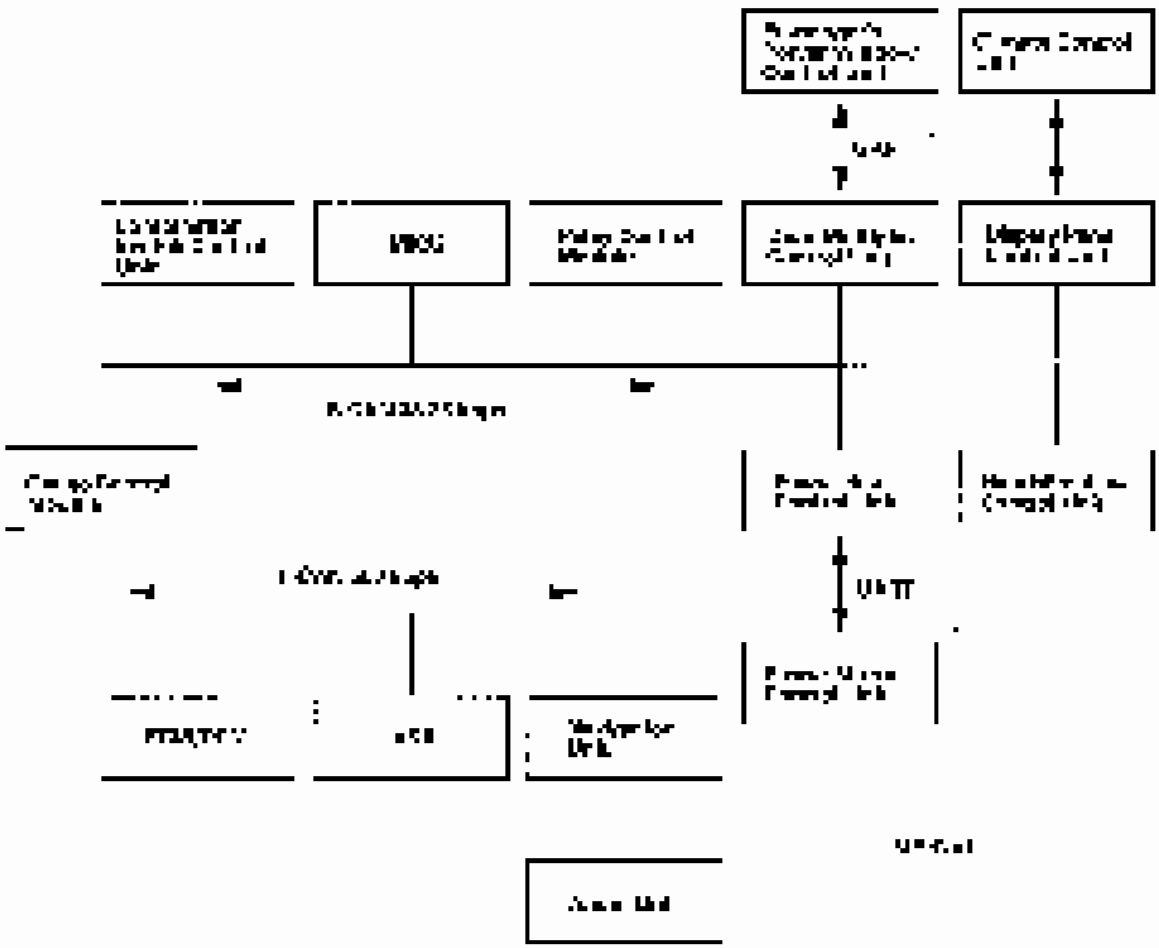
DTC	Description	Item	Detection Item	Page
D1230	Communication Circuit Error (LIN Bus)	Headlight Control Unit	Lost of Communication	See page 22-412
P1B70	Display panel control unit internal error (CPU error)	Display panel control unit	Internal Error	See page 22-432
P1B71	Display panel control unit internal error (EEPROM error)	Display panel control unit	Internal Error	See page 22-432
P1B72	Display panel control unit (Combination meter) Signal input circuit range check (Signal too high)	Display panel control unit	Lost of Communication	See page 22-432
D1235	Display panel control unit (Multi communication interface ECU) communication error (CAN-FD message)	Display panel control unit	Lost of Communication	See page 22-434
P1B73	Display Control Display Communication circuit low	Display panel control unit	Lost of Communication	See page 22-434
P1B74	Display Control Display Communication circuit high	Display panel control unit	Lost of Communication	See page 22-435
D1236	Communication Interface (HMI) Error	Head-up display Control Unit	Lost of Communication	See page 22-436
D1237	Head-up Display Control Circuit Error (Microcomputer)	Head-up display Control Unit	Internal Error	See page 22-437
D1238	Head-up Display Image Output Command Error	Head-up display Control Unit	Signal Error	See page 22-438
P1B75	Head-up Display Control Circuit Low (Image output)	Head-up display Control Unit	Signal Error	See page 22-439
P1B76	Head-up Display Control Circuit High (Image output)	Head-up display Control Unit	Signal Error	See page 22-440
P1B77	Head-up Display Control Circuit Low (Motor Drive Switch Signal)	Head-up display Control Unit	Signal Error	See page 22-441
D1239	Head-up Display Control Circuit Error	Head-up display Control Unit	Signal Error	See page 22-442
D1240	Communication Interface (LIN) Error	Power Seat Control Unit	Lost of Communication	See page 22-443
P1B78	Power Seat Control Unit internal error	Power Seat Control Unit	Internal Error	See page 22-444
P1B79	Power Seat Control Unit (Combination meter) signal input circuit range check (Signal too high)	Power Seat Control Unit	Lost of Communication	See page 22-445
D1241	Power Seat Control Unit (Multi communication interface ECU) communication error with (CAN)	Power Seat Control Unit	Lost of Communication	See page 22-446
D1242	Power Seat Control Unit (Multi communication interface ECU) with Communication Control Unit (Gateway) communication error	Power Seat Control Unit	Lost of Communication	See page 22-447
P1B7A	Power Seat Control Unit (Combination meter) signal input circuit range check (Signal too low)	Power Seat Control Unit	Lost of Communication	See page 22-448
P1B7B	Power Seat Control Unit (Multi communication interface ECU) communication error with (CAN-FD message)	Power Seat Control Unit	Lost of Communication	See page 22-449

DTC Troubleshooting Index (cont'd)

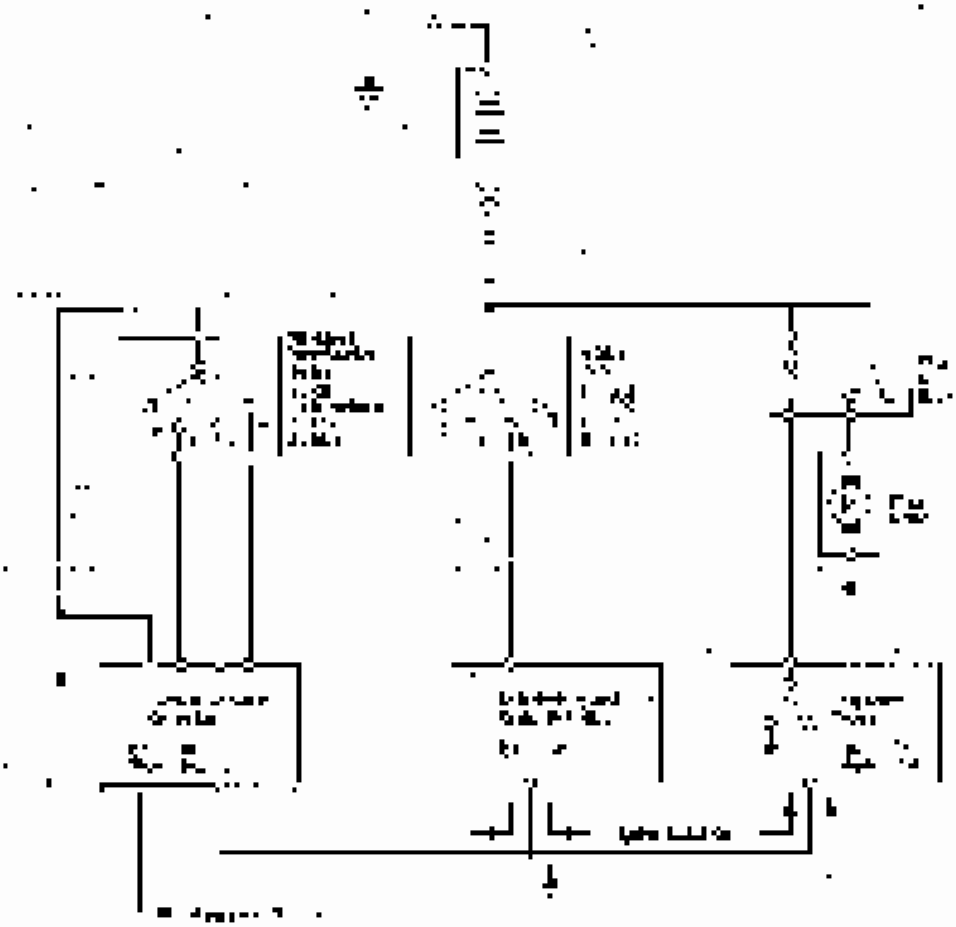
DTC	Description	ECU	DTC Type	Page
B1439	Short circuit in pilot circuit	Power Seat Control Unit	Signal Error	see page 22-xxx
B1525	Thermal protector motor output error	Power Seat Control Unit	Signal Error	see page 22-xxx
B1527	Thermal protector motor output error	Power Seat Control Unit	Signal Error	see page 22-xxx
B1528	Pinching detection error	Power Seat Control Unit	Signal Error	see page 22-xxx
B1529	Pinching detection error (Slide motor)	Power Seat Control Unit	Signal Error	see page 22-xxx
B1530	Pinching detection error (Lumbar motor)	Power Seat Control Unit	Signal Error	see page 22-xxx
B1531	Pinching detection error (Recline motor)	Power Seat Control Unit	Signal Error	see page 22-xxx
B1532	Lumbar motor output error	Power Seat Control Unit	Signal Error	see page 22-xxx
B1533	Slide motor output error	Power Seat Control Unit	Signal Error	see page 22-xxx
B1534	Recline motor output error	Power Seat Control Unit	Signal Error	see page 22-xxx
B1535	Memory switch operation memory circuit error	Power Seat Control Unit	Signal Error	see page 22-xxx
B1536	Power Seat Control Unit lost communication with other units (CAN communication error)	Power Seat Control Unit	Lost Communication	see page 22-xxx

System Description

Body Controller Area Network (B-CAN) and Fuel Controller Area Network (F-CAN)



System Description (cont'd)



Connected ECUs

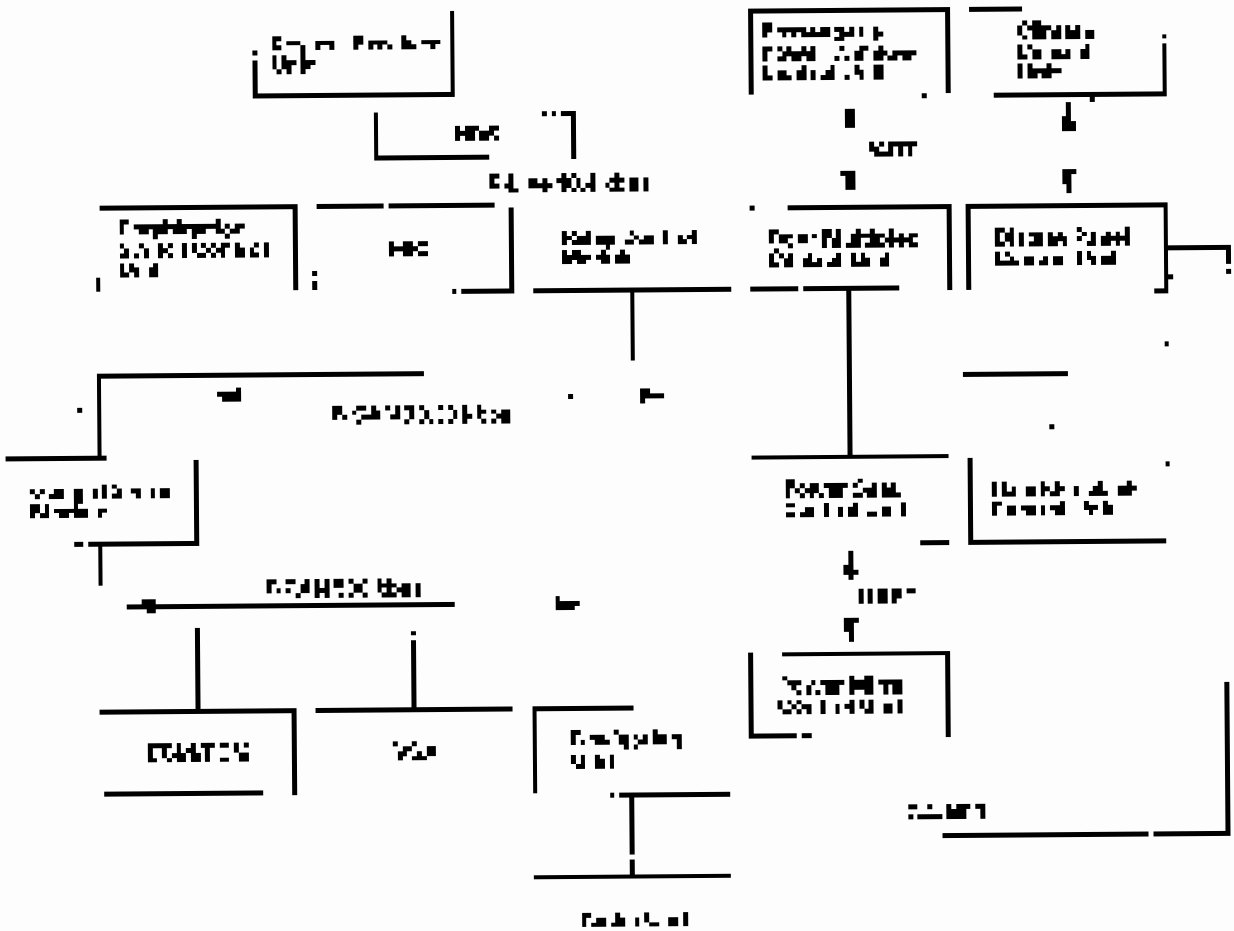
[illegible]

B-CAN ECUs

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

F-CAN ECUs

- [illegible]
- [illegible]
- [illegible]
- [illegible]



System Description (cont'd)

Network "Loss of Communication" Error Checking

[illegible]

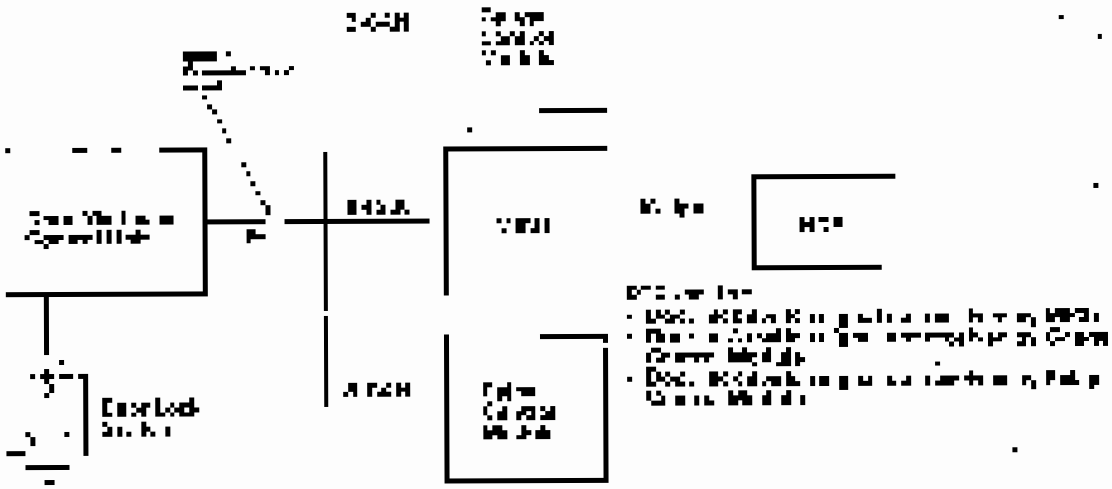
Examples of communication circuit fault -

Normal circuit

[illegible]

Short circuit

[illegible]



Diagnostic Trouble Codes (DTC)

System Description (cont'd)

B-CAN System Switch Device Index

Distribution Switch Control Unit

Input signal	Output signal/condition
[illegible]	[illegible]

Relay Control Module

Input signal	Output signal/device
Door mirror tilting/fold control switch, Door mirror tilting/fold control switch, Door mirror tilting/fold control switch, Door mirror tilting/fold control switch	Door mirror tilting/fold control switch, Door mirror tilting/fold control switch, Door mirror tilting/fold control switch, Door mirror tilting/fold control switch

[illegible] Control Unit

Input signal	Output signal
[illegible]	[illegible]

Multiplex [illegible] Control Unit

Input signal	Output signal/condition
[illegible]	[illegible]

Display Control Unit

Input signal	Output signal/condition
[illegible]	[illegible]

B-CAN System Switch Device Index

Input Signal	Output Signal/Device
[illegible]	[illegible]

Input Signal	Output Signal/Device
[illegible]	[illegible]

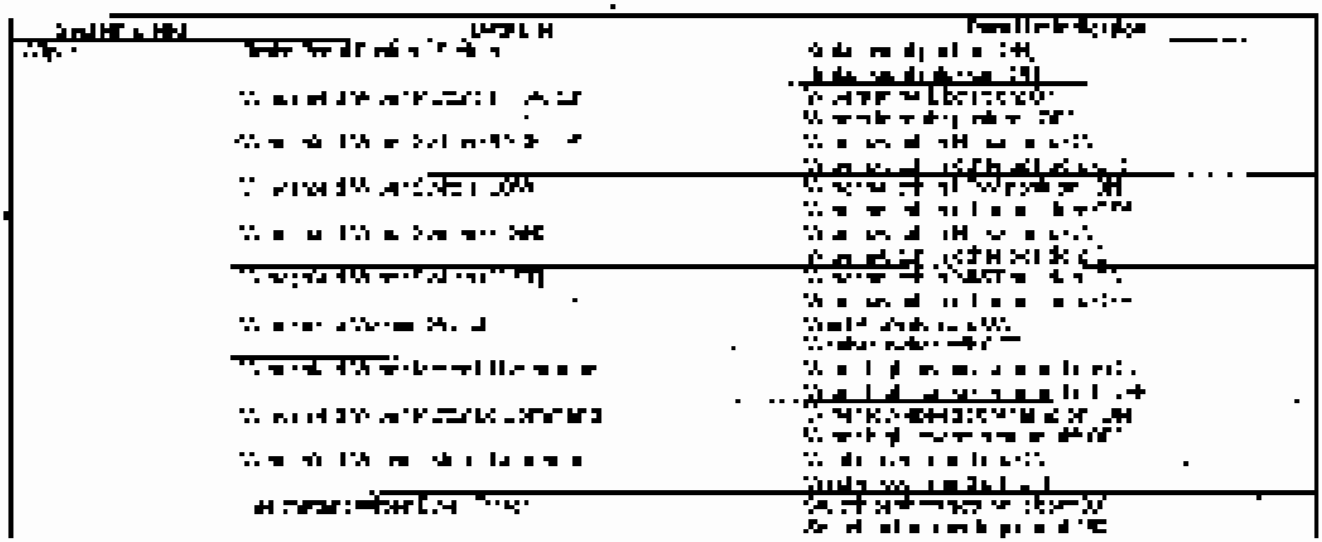
Input Signal	Output Signal/Device
[illegible]	[illegible]

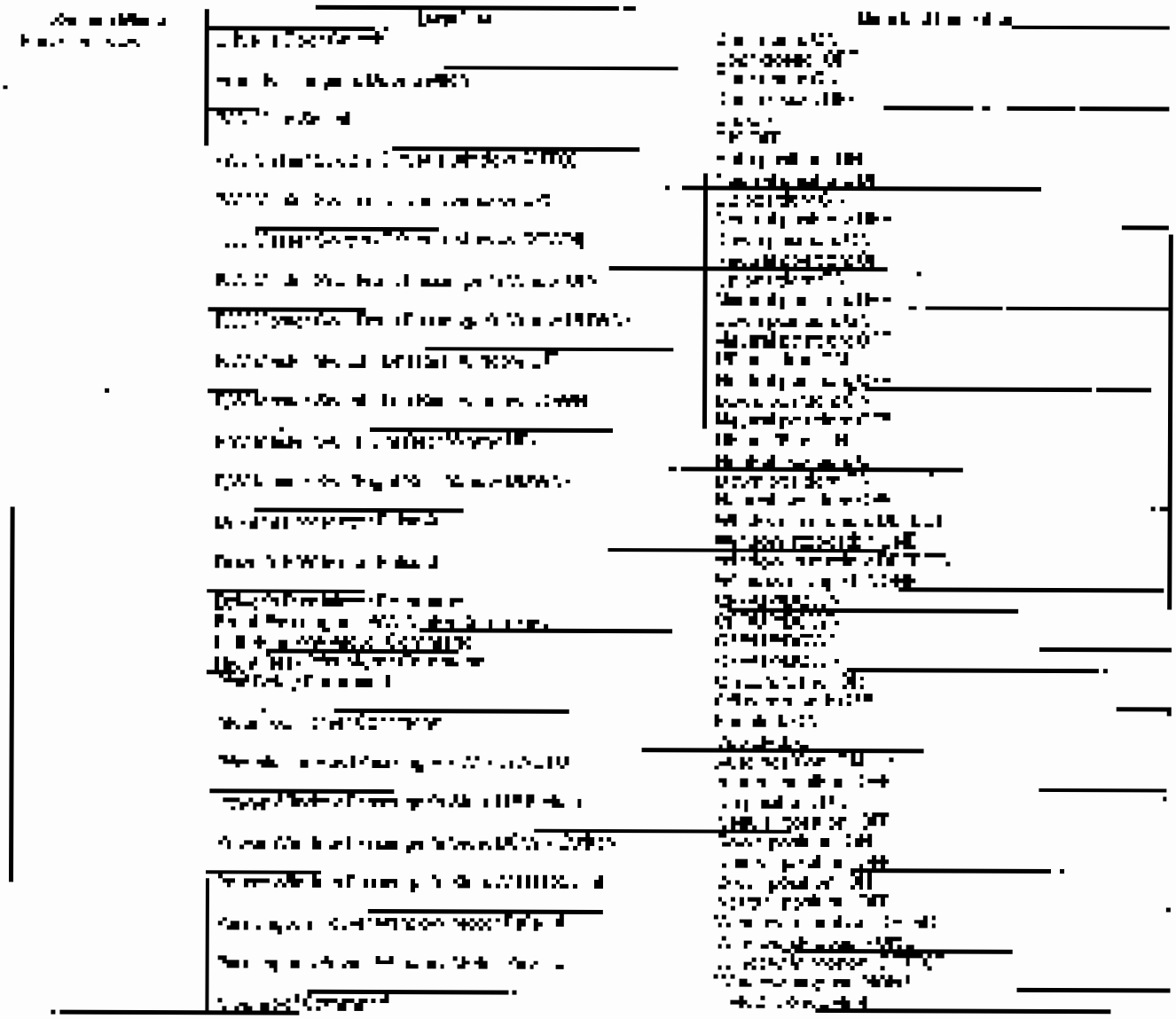
Input Signal	Output Signal/Device
[illegible]	[illegible]

Input Signal	Output Signal/Device
[illegible]	[illegible]

System Description (cont'd)

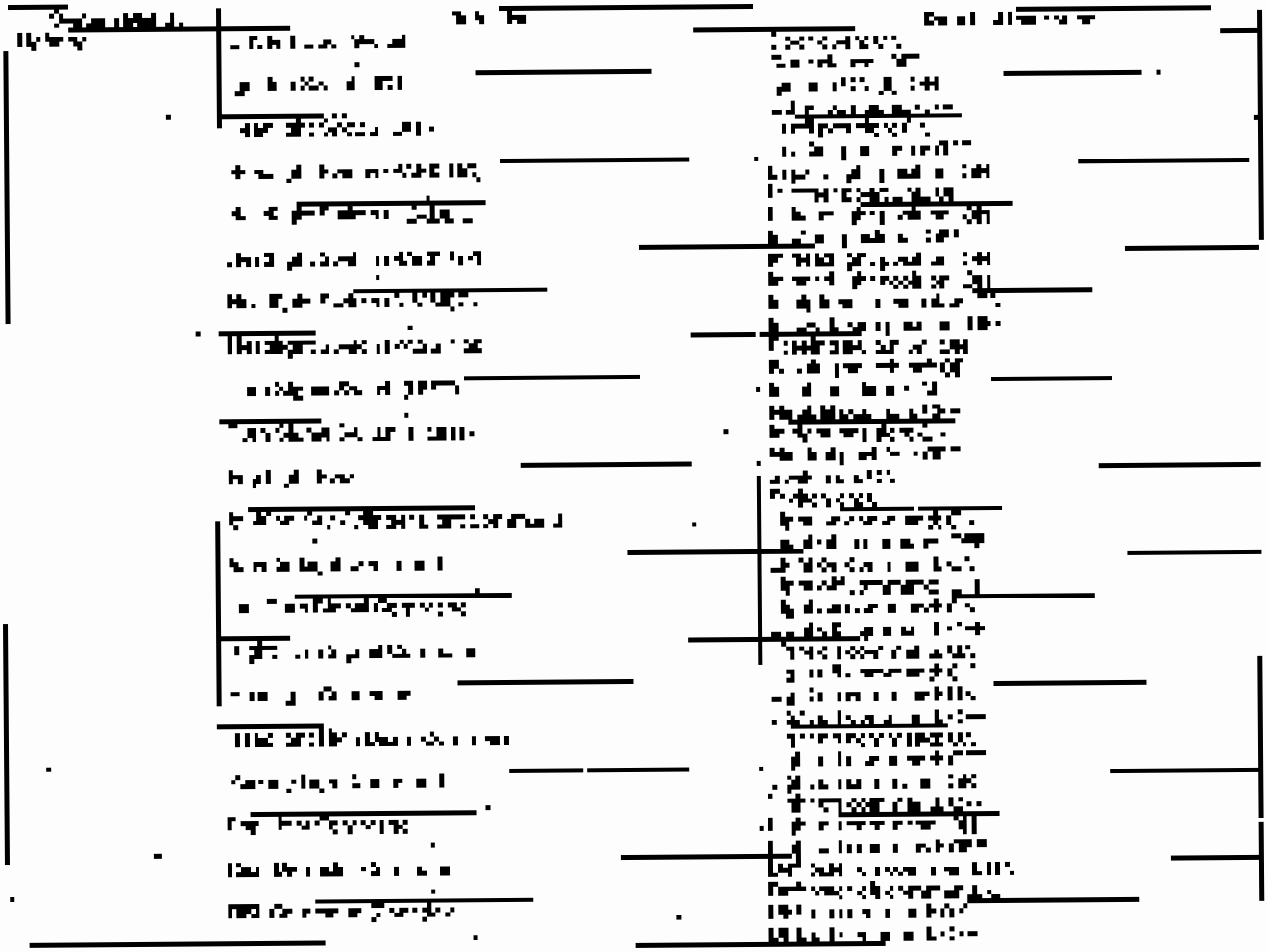
HDS Inputs and Connections

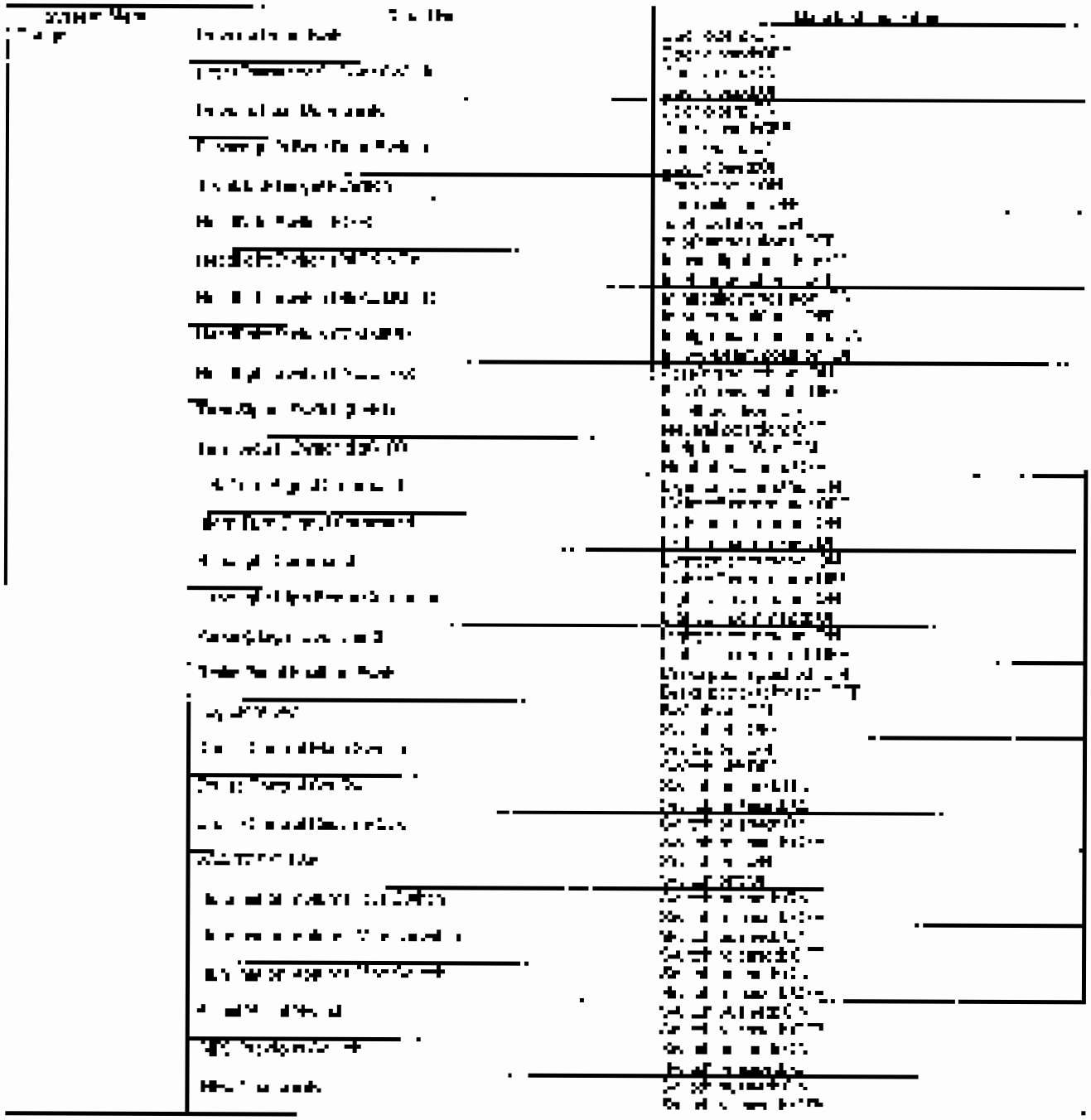




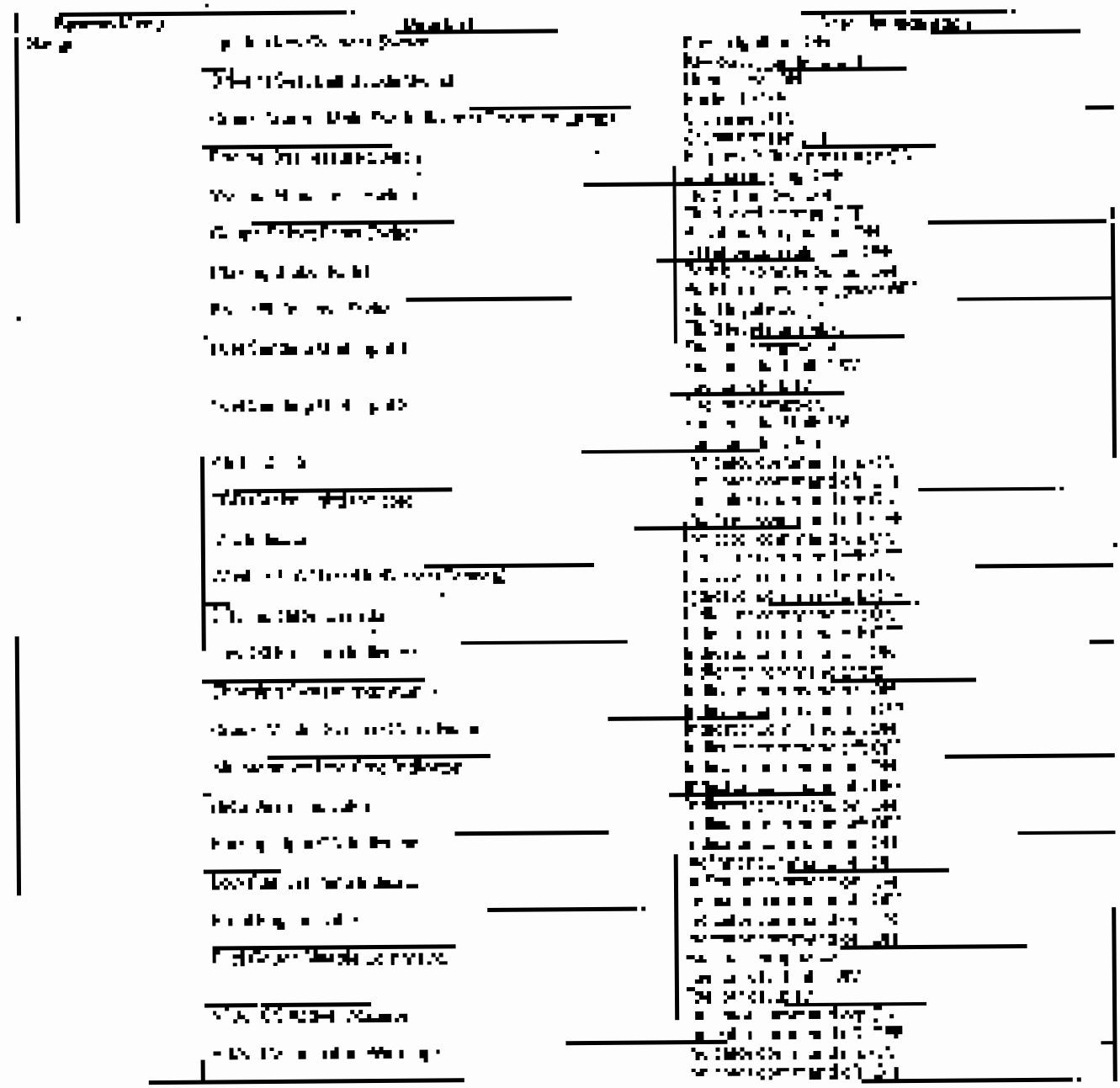
Multiplex Integrated Control System (MICS)

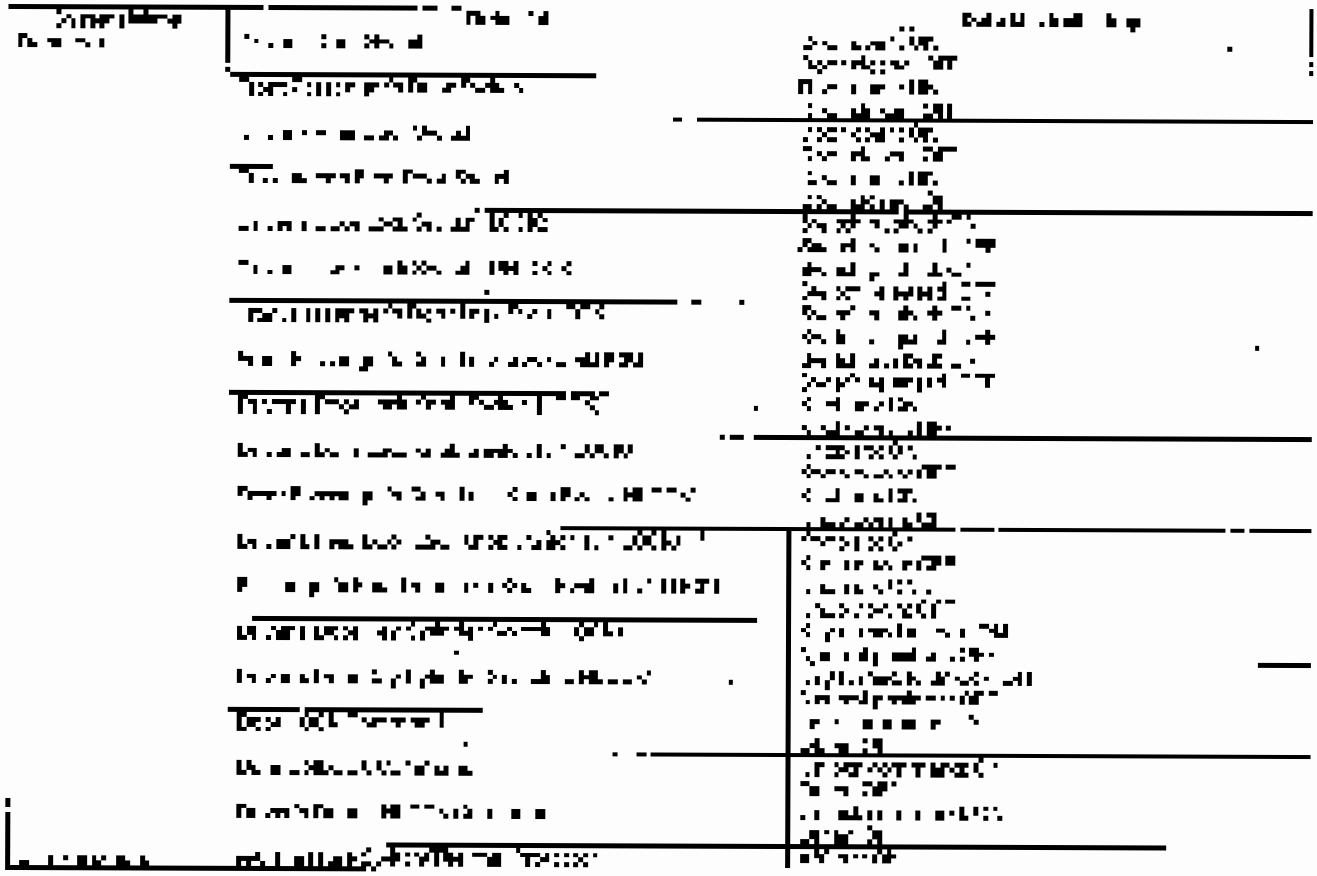
System Description (cont'd)



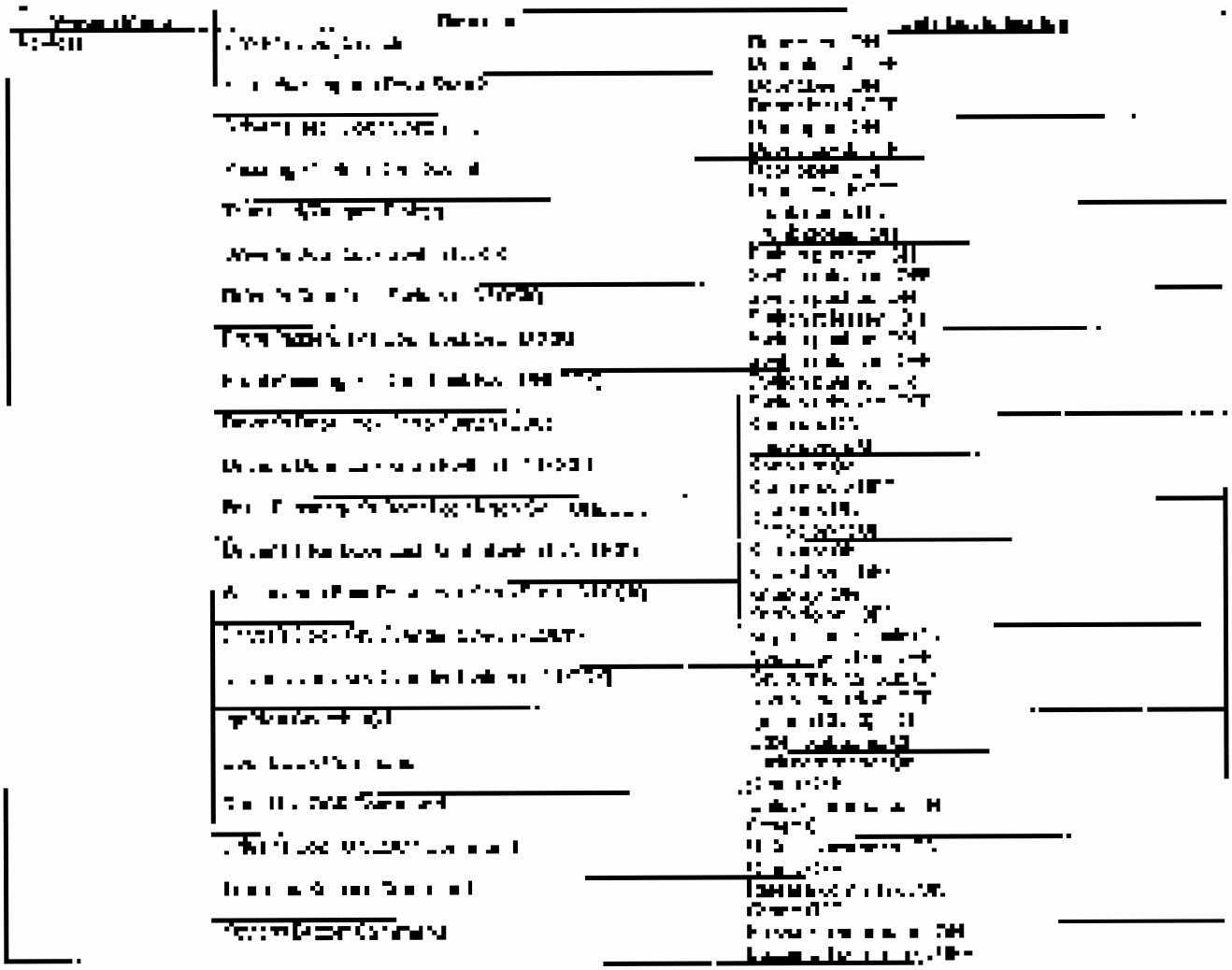


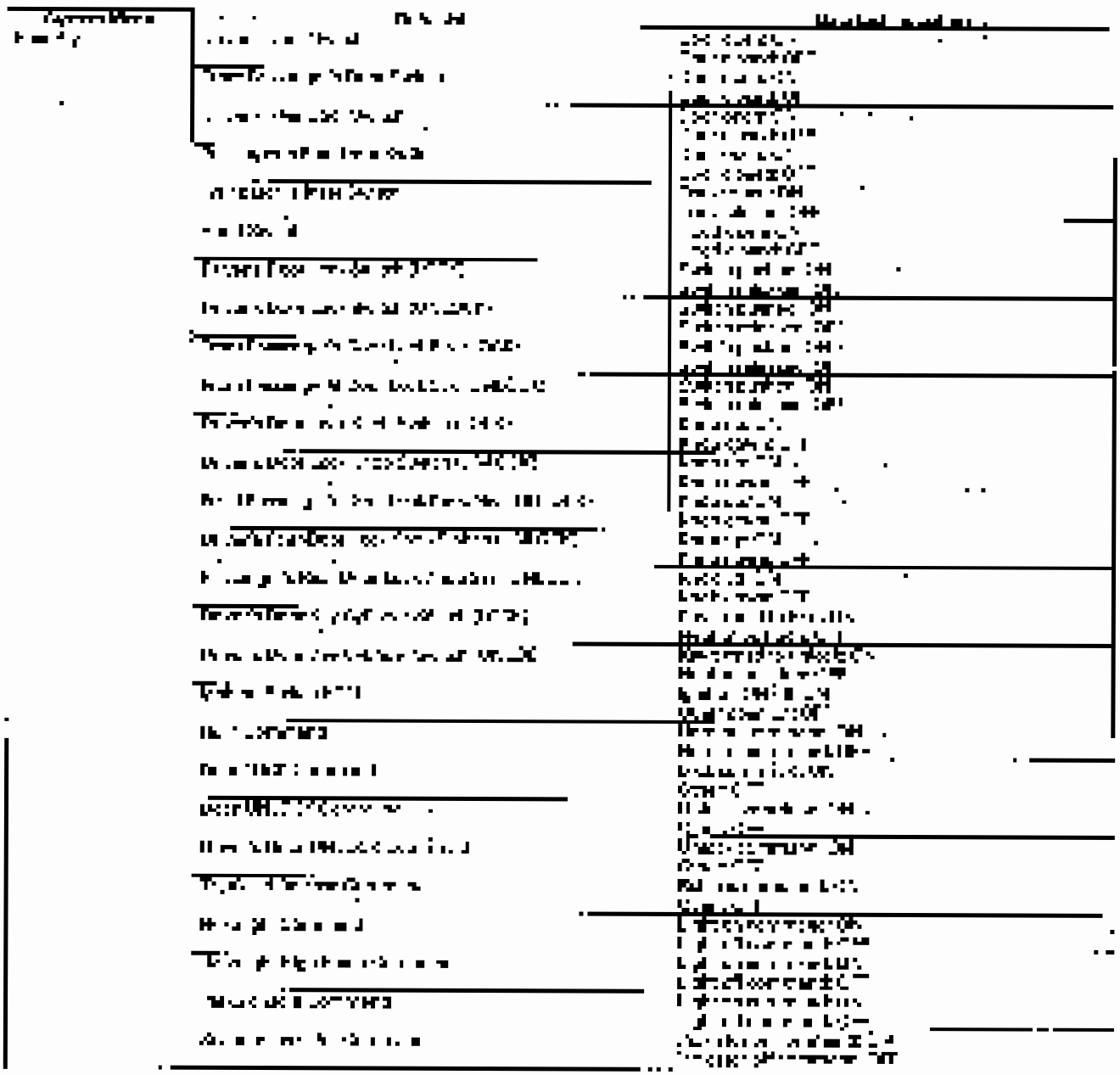
System Description (cont'd)





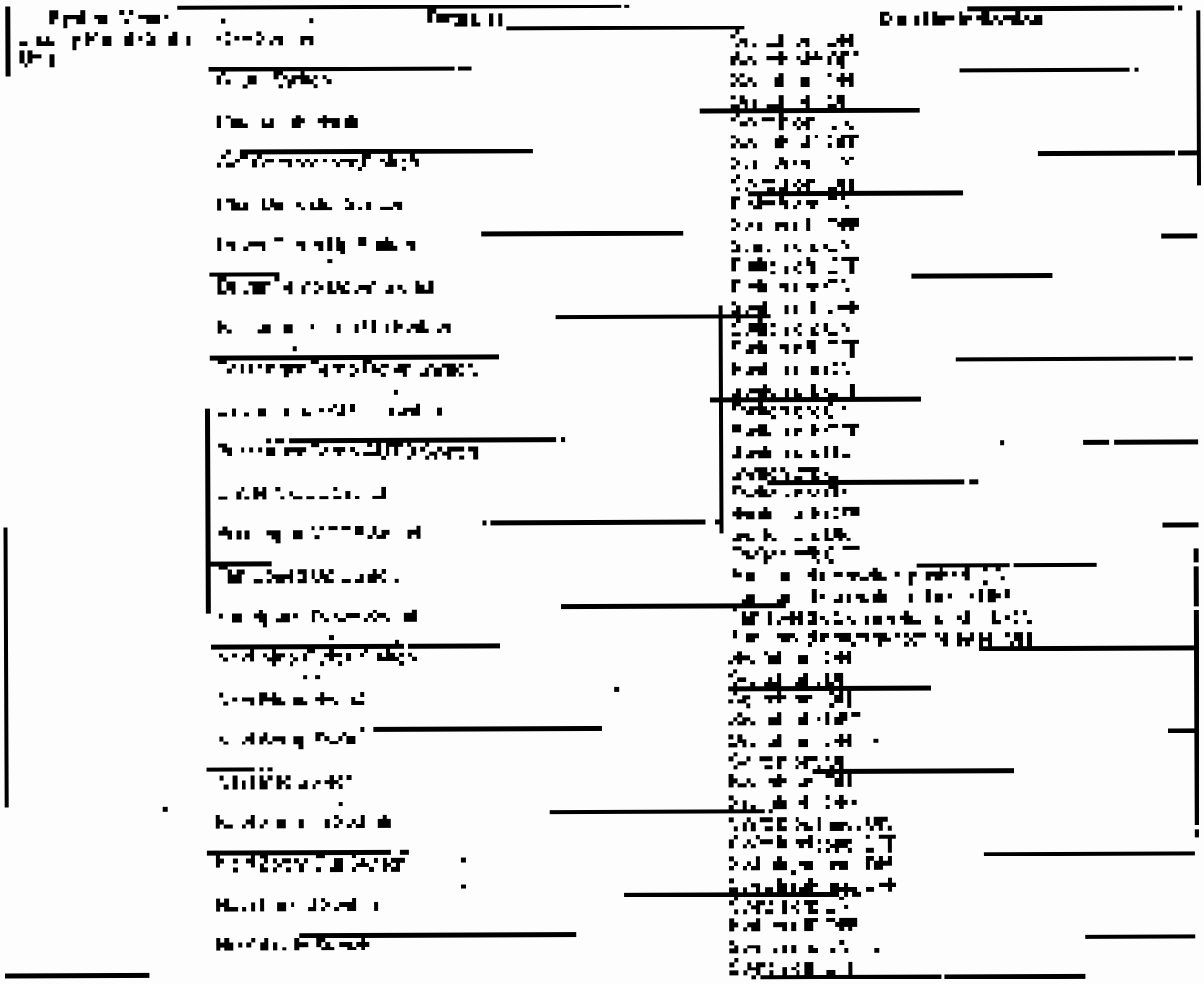
System Description (cont'd)

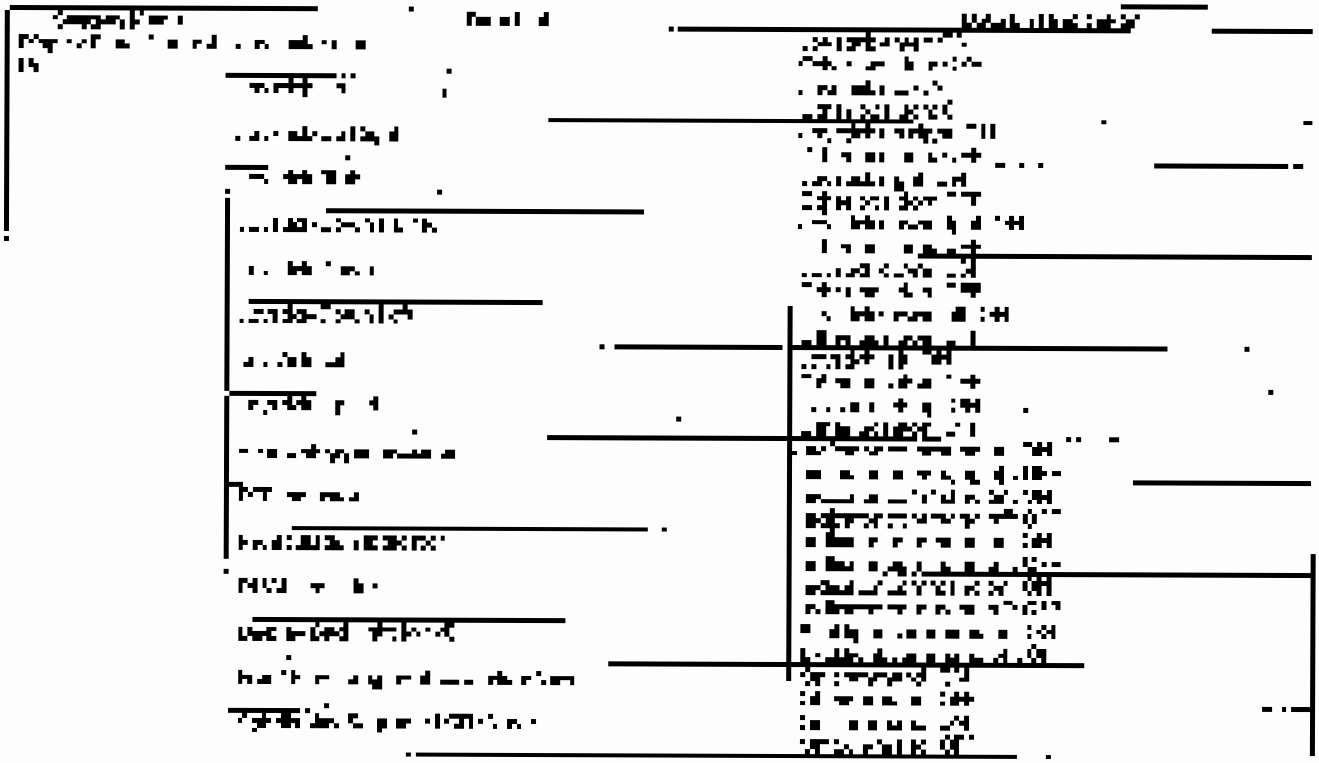




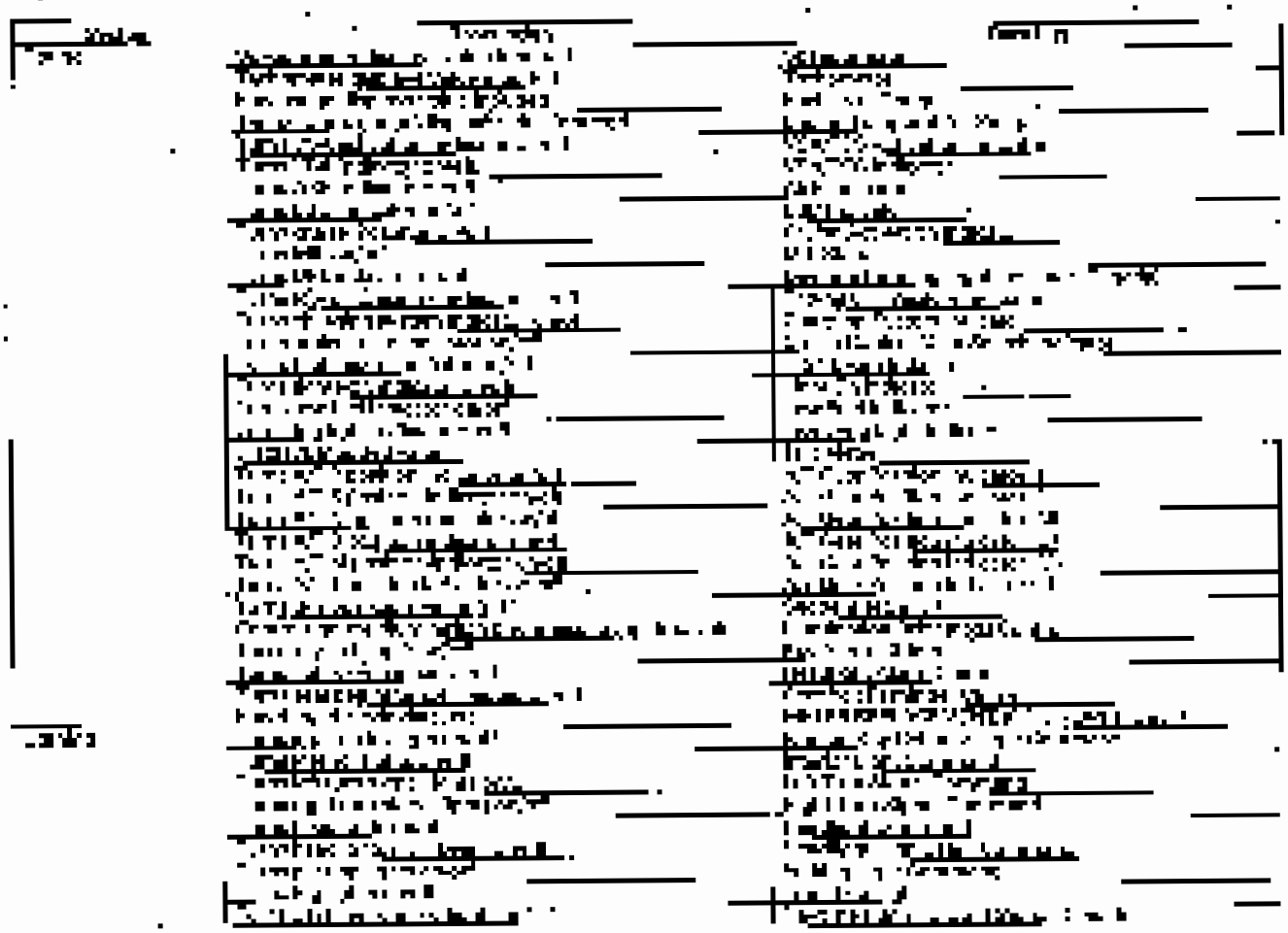
Multiplex Integrated Control System (MICS)

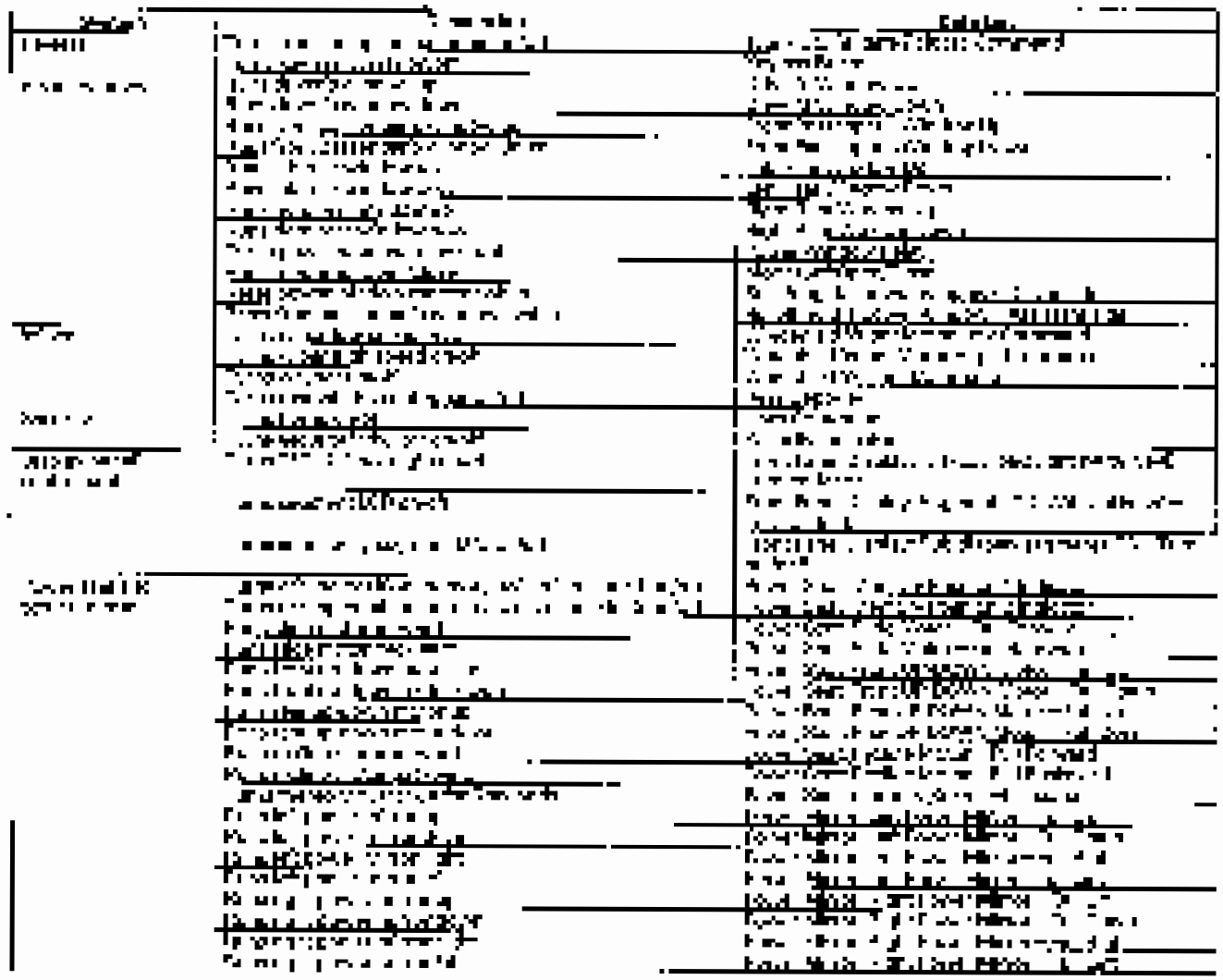
System Description (cont'd)





System Description (cont'd)





Troubleshooting - B CAN System Diagnosis Test Mode A

Perform this diagnostic test to check the operation of the B CAN system.

NOTE: Use this test only if no other DTCs are stored or if directed to do so by the DTC chart.

1. Check for any other warning lights on the instrument panel.
   - Check the following:
     - Charging system warning light
     - Oil pressure warning light
     - Brake system warning light
     - Anti-lock brake system (ABS) warning light
     - Supplemental restraint system (SRS) warning light
     - Vehicle stability assist™ (VSA®) system warning light
     - Malfunction indicator lamp (MIL)
     - Tire pressure monitoring system (TPMS) warning light
     - Electric power steering (EPS) warning light
     - Passive entry passive start (PEPS) system warning light
     - Multi-information display
     - Security
     - Door ajar warning light
     - Low fuel warning light
     - Low oil pressure warning light
     - Driving position memory system

   Are any symptoms other than the B CAN system present?

   YES - Go to the applicable symptom chart.

   NO - Go to the applicable troubleshooting flowchart for the system with the symptom.

2. Connect the Honda Diagnostic System (HDS) to the Data Link Connector (DLC).

3. Turn the ignition switch to ON (II). Select the VEHICLE SYSTEM SELECTION menu, then select the INTEGRATED CONTROL MODULE (ICM) menu. Select the following from the ICM menu:
   - MICS
   - Occupant detection system
   - Gauge control module
   - Combination meter (analog type)
   - Multi-information display
   - Steering angle sensor unit
   - Electric power steering (EPS) unit

   NOTE:
   - If the vehicle is equipped with a navigation system, select the ICM, DCM/TCU, then the navigation system.
   - If the vehicle is equipped with a Multi-Information Display, select the Multi-Information Display.

   Is there a malfunction indicated?

   YES - Go to the applicable DTC troubleshooting flowchart.

   NO - Intermittent failure, the system is functioning normally at this time. Check for poor connections or loose terminals at the suspected circuit.

4. [illegible] BODY ELECTRICAL SYSTEM SELECTION MENU [illegible] DTCs.

[illegible]?

YES– [illegible]

NO– [illegible] following [illegible] B-CAN System Diagnosis Test Mode C (see page 22-110).

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- Power windows
- Wipers/washers
- Power door locks

If the problem is in one of the following [illegible] troubleshooting for the individual system.

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- Security
- Keyless entry
- Climate control
- Key interlock
- Dash lights brightness
- [illegible]
- [illegible]
- [illegible]
- [illegible]

5. [illegible] DTC Troubleshooting [illegible].

6. Troubleshoot the DTCs in this order:

- [illegible] DTCs
- [illegible]
- [illegible]
- Signal error DTCs

Troubleshooting - B-CAN System Diagnosis Test Mode B

[illegible] B-CAN System Diagnosis Test Mode A.

1. [illegible] BODY ELECTRICAL SYSTEM SELECTION MENU.

2. [illegible]

   [illegible]?

   YES– Go to step 3.

   NO– [illegible]

3. [illegible]

Unit and component list
MICU (see page 22-123)
Door multiplex control unit (see page 22-12[illegible])
Gauge control module (see page 22-13[illegible])
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Troubleshooting - B-CAN System Diagnosis Test Mode C

[illegible]

NOTE:
- [illegible] Multiplex Integrated Control System (MICS) - B-CAN System Diagnosis Test Mode C Description and Operation on page 22-111.
- Use the B-CAN scanner and Impact wrench Index (P/N [illegible]) for all Impact wrench output checks and the control module information for any repairs and assembly procedures (see page 00-10).
- [illegible]

1. [illegible] DTC(s) stored in any BCM, MCDM, MCDD, MCDP, MCDS, MCDE, MCDC, MCDH, MCDL, MCDK, MCDJ, MCDI, MCDG, MCDF, MCDB, MCDA, MCDN, MCDM, MCDO, MCDP, MCDQ, MCDR, MCDS, MCDT, MCDU, MCDV, MCDW, MCDX, MCDY, MCDZ, MCDA, MCDB, MCDC, MCDD, MCDE, MCDF, MCDG, MCDH, MCDI, MCDJ, MCDK, MCDL, MCDM, MCDN, MCDO, MCDP, MCDQ, MCDR, MCDS, MCDT, MCDU, MCDV, MCDW, MCDX, MCDY, MCDZ?

   YES - Go to step 2.

   NO - [illegible]

2. [illegible] DTC(s) stored in any BCM, MCDM, MCDD, MCDP, MCDS, MCDE, MCDC, MCDH, MCDL, MCDK, MCDJ, MCDI, MCDG, MCDF, MCDB, MCDA, MCDN, MCDM, MCDO, MCDP, MCDQ, MCDR, MCDS, MCDT, MCDU, MCDV, MCDW, MCDX, MCDY, MCDZ?

   YES - Go to step 3.

   NO - [illegible]

3. Select DATA LIST, then select the TEST MODE MCDM, MCDD, MCDP, MCDS, MCDE, MCDC, MCDH, MCDL, MCDK, MCDJ, MCDI, MCDG, MCDF, MCDB, MCDA, MCDN, MCDM, MCDO, MCDP, MCDQ, MCDR, MCDS, MCDT, MCDU, MCDV, MCDW, MCDX, MCDY, MCDZ. Check the inputs of the switch that was not working properly.

   Does the MCDM, MCDD, MCDP, MCDS, MCDE, MCDC, MCDH, MCDL, MCDK, MCDJ, MCDI, MCDG, MCDF, MCDB, MCDA, MCDN, MCDM, MCDO, MCDP, MCDQ, MCDR, MCDS, MCDT, MCDU, MCDV, MCDW, MCDX, MCDY, MCDZ operate properly?

   YES - Go to step 4.

   NO - [illegible]?

4. In the DATA LIST, check the output signal of the multiplex wiring connector.

   Is the output signal OK?

   YES - Go to step 5.

   NO - If the output signal is not OK, check the connector for poor connection, damage, etc. (see page 22-112).

5. Check the relay. Apply battery voltage to the relay coil terminals and measure the resistance between the relay terminals.

   Is the resistance between the relay terminals 0 Ω?

   YES - Go to step 6.

   NO - Replace the relay.

6. Check the wire harness between the relay and the [illegible] for open circuit and short to ground.

   Is the wire harness OK?

   YES - Replace the relay. Refer to the [illegible] Service Manual.

   NO - Repair the wire harness.

Perform the following procedure to diagnose the suspected malfunction in the B-CAN system.

NOTE:
- Before you perform the procedure in Test Mode D, see page 22-109 (Early Symptom Diagnosis Test Mode C) on page 22-110 first.
- See the service data for the vehicle you are working on for the following procedure. Some procedures require you to use a scan tool. If you do not have a scan tool, see page 22-109.
- Always clear the DTCs after you complete the Test Mode D unless other prompted in the DTC troubleshooting procedures in the manual.

1. Check the connector for a malfunction (corroded, loose, etc.) at each B-CAN system control unit.

   Is there a problem?

   YES—Repair or replace as necessary.

   NO—Replace the control unit with a known good one, then go to step 2.

2. Check for DTCs by following the "DTC RETRIEVAL" procedure in the scan tool DFI.

   Are any DTCs indicated?

   YES—Go to the DTC troubleshooting in the "DTC RETRIEVAL" procedure in the scan tool DFI.

   NO—Go to step 3.

3. Turn OFF the ignition switch, disconnect the negative battery cable, then reconnect it after 10 seconds.

4. Select the DATA LIST from the "DTC RETRIEVAL" menu in the scan tool. Then check the B-CAN system control units for communication.

   Is there a problem?

   YES—Go to step 5.

   NO—Go to step 6.

5. Check the B-CAN system control units for communication.

   Is there a problem?

   YES—Repair or replace as necessary.

   NO—Replace the control unit with a known good one, then go to step 6.

6. Select H-SC TEST from the "DTC RETRIEVAL" menu in the scan tool, and do the following operation: Hold the malfunction-indicating component.

   Is the malfunction-indicating component indicated?

   YES—Replace the control unit with a known good one, then go to step 7.

   NO—Replace the malfunction-indicating component, then go to step 7.

7. Select DATA LIST from the "DTC RETRIEVAL" menu in the scan tool, and check the malfunction-indicating component.

   Is there a problem?

   YES—Replace the control unit with a known good one, then go to step 7.

   NO—Go to step 8.

8. Check the connector for a malfunction (corroded, loose, etc.) at each B-CAN system control unit.

   Is there a problem?

   YES—Repair or replace as necessary.

   NO—Replace the control unit with a known good one, then go to step 8.

Troubleshooting - B-CAN System Diagnosis Test Mode 1

[illegible]

1. [illegible]

   [illegible] OK?

   YES - Go to step 2.

   NO - Check and repair the [illegible]

2. [illegible]

3. [illegible]

4. Connect the MICS service connector (A) to the [illegible]

5. [illegible]

6. [illegible]

   [illegible]

   YES - [illegible]

   NO - Go to step [illegible]

7. [illegible]

   - DTC [illegible]
   - DTC [illegible]
   - [illegible]
   - DTC [illegible]
   - [illegible]
   - DTC [illegible]

DTC	Cause
1	[illegible]
2	[illegible]
3	[illegible]
4	[illegible]
5	[illegible]

8. Check for B+ (IGN) circuit voltage. Refer to applicable service manual. Is there voltage? [illegible]

   Answer: DTC(s) observed?

   YES: Go to step 9.

   NO: [illegible]

9. [illegible] Is the problem [illegible]

10. Troubleshoot the DTC(s) in numerical order.

    - Clear [illegible] DTCs
    - Install [illegible] DTM
    - [illegible]
    - [illegible]

Test Mode 2

11. Remove the [illegible] and disconnect [illegible] Turn [illegible] Observe the [illegible] Are any [illegible] DTCs displayed? [illegible]

    Answer: [illegible] DTC displayed?

    YES: [illegible]

    NO: [illegible]

12. [illegible] Refer to applicable service manual. Operate [illegible] Observe the [illegible] Is there [illegible]

MIL

Item
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

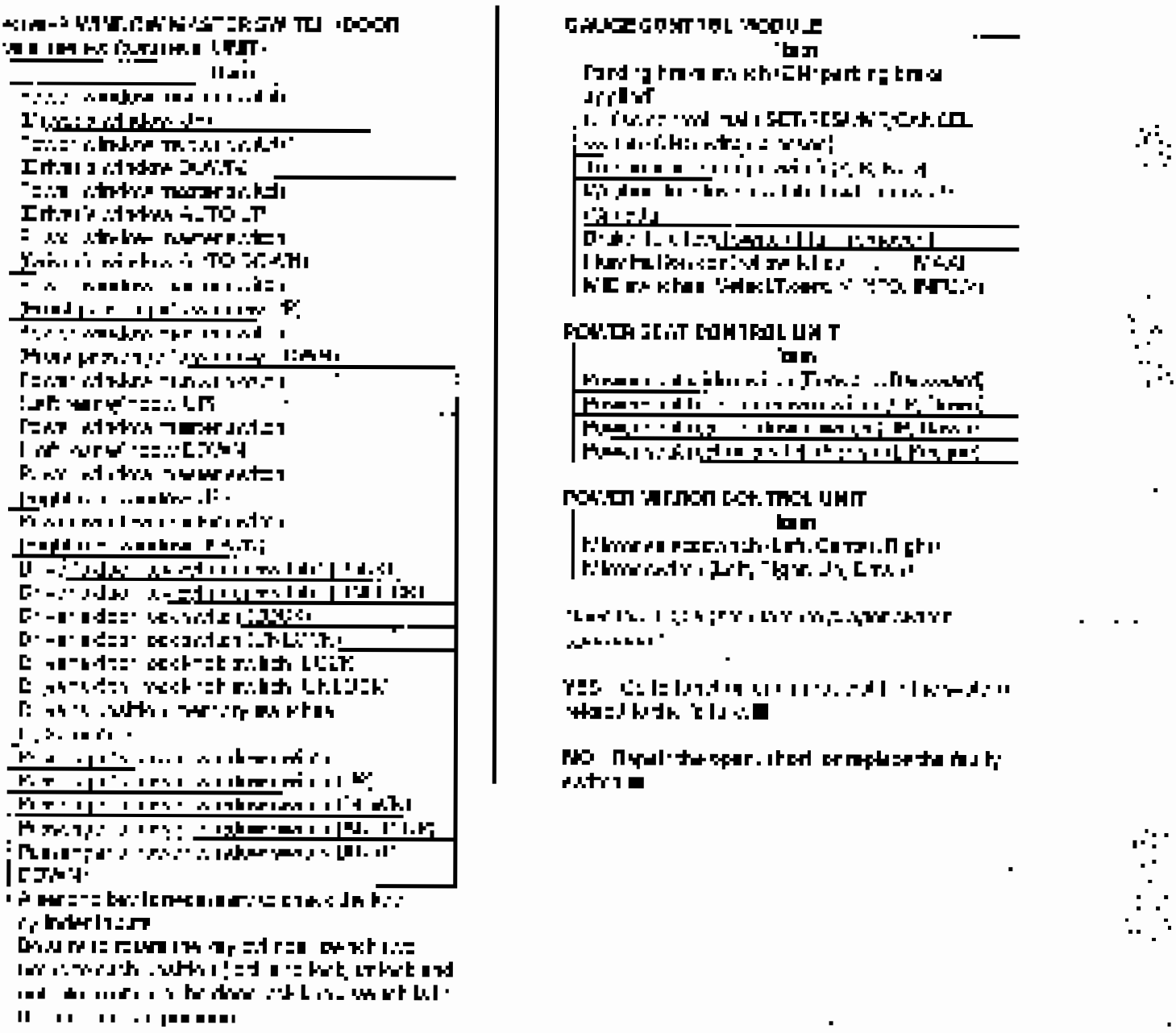
Item
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

COMBINATION SWITCH CONTROL UNIT

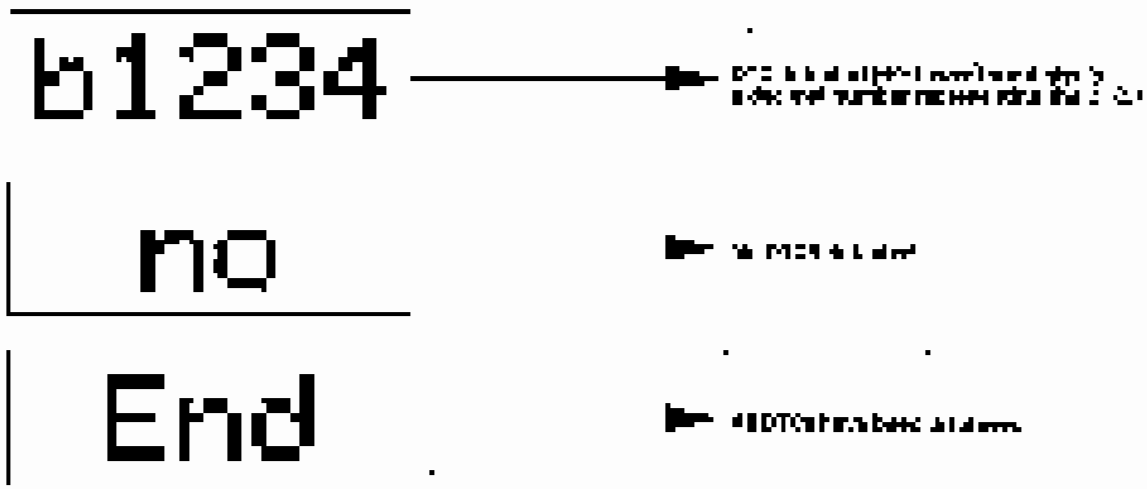
Item
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

CONT'D

Troubleshooting - B-CAN System Diagnosis Test Mode 1 (cont'd)

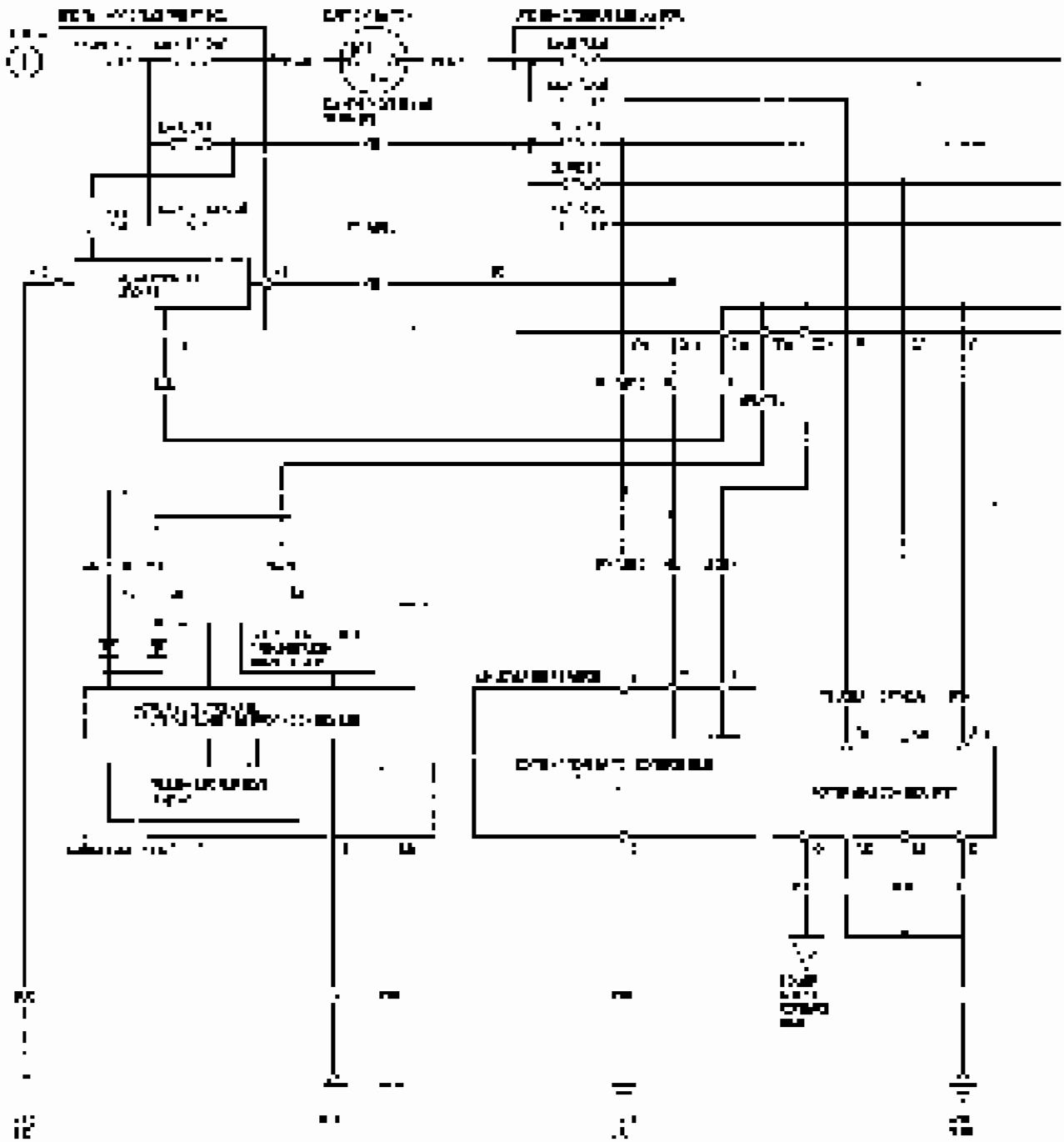


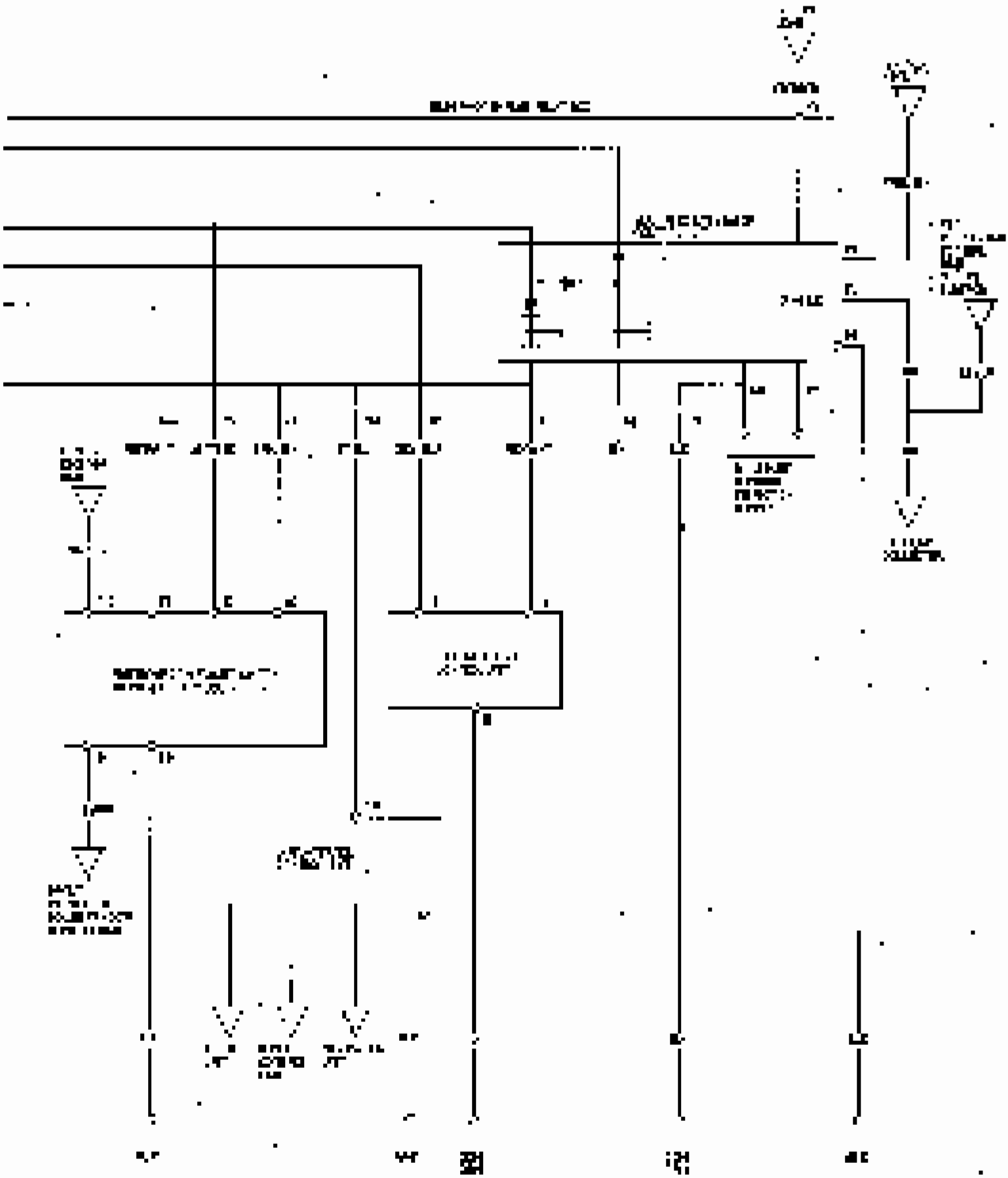
Gauge Control Module DTC Display



How to clear the DTC

Circuit Diagram





DTC Troubleshooting

[illegible] Communication Bus Line Error

1. [illegible]

2. Turn the ignition switch to [illegible] and [illegible]

3. Check for DTCs with the IDS

   [illegible]

   [illegible]

   NG: [illegible] page [illegible]

   OK: Go to step 4.

4. Check for DTCs with the IDS

   [illegible]

   YES: Go to step 5.

   NO: Replace the MICS-ECU.

5. Disconnect the cable from the negative battery terminal. Check the connector between the [illegible] and the MICS-ECU for [illegible]

Tester Connection	Specified Condition
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

   Is the check result normal?

   YES: Go to step 6.

   NO: Replace or repair the connector.

6. Measure the voltage between the terminals of the connector.

Tester Connection	Specified Condition
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

7. Check for open and short circuit between each of the following terminals of the connector and ground.

8. Check for continuity between each of the following terminals of the connector and ground.

Tester Connection	Specified Condition
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

   Is the check result normal?
   YES: Replace the MICS-ECU. Check the DTC.
   NO: Repair or replace the harness between the [illegible] and the connector.

9. [illegible]

   Is the check result normal?
   YES: Replace the MICS-ECU. Check the DTC.
   NO: Repair or replace the harness between the [illegible] and the connector.

DTC B1068: Communication Bus Line Circuit

NOTE: If you are unable to duplicate the DTC, the vehicle may have been driven under conditions that are not suitable for the DTC to set. Review the [illegible]

1. [illegible]

2. [illegible]

3. Check for DTCs other than DTC B1068.

Is DTC B1068 indicated?

YES: [illegible]

NO: [illegible]

4. Check for DTCs with the [illegible]

Is DTC B1068 indicated?

YES: [illegible]

NO: [illegible]

DTC B1078/Component Malfunction Detected

NOTE: [illegible]

1. Check for DTC B1068.

2. [illegible]

3. Check for other [illegible]

Is [illegible]

YES: [illegible]

NO: [illegible]

4. [illegible]

Is [illegible]

YES: Troubleshoot DTC B1068.

NO: [illegible]

DTC Troubleshooting (cont'd)

DTC B1100: Communication Bus Line Error

NOTE: Perform troubleshooting of multiple DTCs according to the priority given in the DTC troubleshooting index of the MICS system diagnostic test mode. (See page 22-113)

1. Clear the DTC with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Check for DTCs with the HDS.

Is DTC B1100 indicated?

YES: Go to step 4.

NO: Intermittent failure, the system is OK at this time. Check for poor connection. Refer to the wiring diagram and check the connector for DTC B1100 and the surrounding area (harness connector, terminal).

4. Check for DTCs with the HDS.

Is DTC B1100 indicated?

YES: Troubleshoot DTC B1100. (See page 22-120)

NO: If the DTC is intermittent, replace the yaw rate/G sensor. (See page 22-120)

DTC B1250: Communication Bus Line Error

NOTE: Perform troubleshooting of multiple DTCs according to the priority given in the DTC troubleshooting index of the MICS system diagnostic test mode. (See page 22-113)

1. Clear the DTC with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Check for DTCs with the HDS.

Is DTC B1250 indicated?

YES: Go to step 4.

NO: Intermittent failure, the system is OK at this time. Check for poor connection. Refer to the wiring diagram and check the connector for DTC B1250 and the surrounding area (harness connector, terminal).

4. Check for DTCs with the HDS.

Is DTC B1250 indicated?

YES: Troubleshoot DTC B1250.

NO: If the DTC is intermittent, replace the yaw rate/G sensor. (See page 22-120)

DTC B1700: [illegible]

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]

   [illegible]

   YES – Go to step 4.

   NO – [illegible]
4. [illegible]

   [illegible]

   YES – Intermittent DTC B1700.

   NO – Refer to DTC [illegible]

DTC B1750: [illegible]

NOTE: [illegible]

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]

   Is DTC B1750 [illegible]?

   YES – Go to step 4.

   NO – [illegible]
4. [illegible]

   Is DTC B1700 [illegible]?

   YES – [illegible]

   NO – [illegible]

DTC Troubleshooting (cont'd)

DTC B1300 Communication Bus Malfunction

NOTE: If you have installed a non-genuine Honda stereo/CD system, diagnosis may require a non-genuine Honda scan tool. See page 22-105.

1. Reset the DTC with the HDS.
2. Test drive the vehicle for 10 minutes, then check for DTCs.
3. Check for DTCs and note the results.

Are DTC B1300 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MICS unit. See page 22-105.

4. Check for DTCs and note the results.

Are DTC B1300 indicated?

YES - Troubleshoot DTC B1300.

NO - Check for poor connections or loose terminals at the MICS unit.

DTC B1004/31: Vehicle Immobilizer System Control Unit (VICU) Internal Error (VICU Internal Error)

NOTE: If you have more than one key, try starting the engine with each key. If the engine starts with one of the keys, but not with another key, refer to the Immobilizer System Description in the Nissan Service Manual.

1. Check the DTC. Is DTC B1004/31 displayed?
2. Turn the ignition switch OFF and then back ON.
3. Operate the [illegible]
4. Check the DTC. Is DTC B1004/31 displayed?

YES: Replace the VICU and register all ignition keys. Refer to the Nissan Service Manual.

NO: The system is functioning properly at this time. Perform the following procedure if the symptom appears again.

DTC U1000/31: CAN Communication Circuit (VICU Internal Error) (CAN Communication Circuit)

NOTE: If you have more than one key, try starting the engine with each key. If the engine starts with one of the keys, but not with another key, refer to the Immobilizer System Description in the Nissan Service Manual.

1. Check the DTC. Is DTC U1000/31 displayed?
2. Turn the ignition switch OFF and then back ON.
3. Operate the [illegible]
4. Check the DTC. Is DTC U1000/31 displayed?

YES: Replace the VICU and register all ignition keys. Refer to the Nissan Service Manual.

NO: The system is functioning properly at this time. Perform the following procedure if the symptom appears again.

DTC Troubleshooting (cont'd)

DTC B1162: Tape Multiplex Control Unit Initialize Error

NOTE: If you are unable to clear the DTC, or the system fails to operate normally after completing the following diagnostic procedure, see page 22-129.

Clear the DTC with the HDS.

Turn the ignition switch OFF, and then back ON (II).

Operate the power window switch (DRIVER).

Check for DTC B1162 (tape multiplex control unit initialize error).

YES - Replace the tape multiplex control unit (multiplex) with a new one.

NO - Intermittent failure, the tape multiplex control unit (multiplex) is good at this time. Check for poor connection at the tape multiplex control unit (multiplex) connector.

DTC B1080 MCU Lost Communication with Body Control Module

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in the DTC/Symptom Diagnostic Index page 22-3001

1. Check for DTCs: [illegible]

2. To [illegible]

3. [illegible]

   a. DTC [illegible] indicated?

   YES - Go to step 4.

   NO - [illegible] Check for loose or poor connections at the MCU and the Body Control Module (BCM). If the connections are good, replace the MCU. [illegible]

4. Check for DTCs: [illegible]

   a. DTC [illegible] indicated?

   YES - Go to step 5.

   NO - [illegible] Check for loose or poor connections at the MCU and the Body Control Module (BCM). If the connections are good, replace the MCU. [illegible]

5. [illegible]

DTC B1080 MCU Lost Communication with Door Multiplex Control Unit (Door Lock / Switch Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in the DTC/Symptom Diagnostic Index page 22-3001

1. Check for DTCs: [illegible]

2. To [illegible]

3. [illegible]

   a. DTC [illegible] indicated?

   YES - Go to step 4.

   NO - [illegible] Check for loose or poor connections at the MCU and the Body Control Module (BCM). If the connections are good, replace the MCU. [illegible]

4. Check for DTCs: [illegible]

   a. DTC [illegible] indicated?

   YES - Check for loose or poor connections at the MCU and the Door Multiplex Control Unit. If the connections are good, replace the MCU. If the problem still exists, replace the Door Multiplex Control Unit. [illegible]

5. [illegible]

DTC Troubleshooting (cont'd)

DTC B1407: M.CU Lost Communication with Rain Sensor and Solar Control Unit (Headlight Washer Message)

[illegible]

1. Check the DTC with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Check for DTCs with the HDS.

   Is DTC B1407 indicated?

   YES - Go to step 4.

   NO - Intermittent failure. The MICS may be OK at this time. Check for poor connections or loose wires at the M.CU (see page 22-127) and the rain sensor/solar control unit connector (see page 22-137). If the connections are good, check the harness wire between the M.CU and the rain sensor/solar control unit (see page 22-127) and the charging system (see page 4-2).

4. Check for DTCs with the HDS.

   Are DTC B1407 and DTC B2600 indicated?

   YES - Go to the Combination Switch/Control Unit Inspection (see page 22-130).

   NO - Check for poor connections or loose wires at the M.CU (see page 22-127). If the connections are good, replace the M.CU (see page 22-134).

DTC B1408: M.CU Lost Communication with Body Control Module (A/T Models)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in the DTC Troubleshooting Index (see page 22-[illegible]).

1. [illegible]
2. Turn the ignition switch OFF, and then back ON (II).
3. Check for DTCs with the HDS.

   Is DTC B1408 indicated?

   YES - [illegible]

   NO - Intermittent failure. The MICS may be OK at this time. Check for poor connections or loose wires at the M.CU (see page 22-127) and the body control module (see page 22-[illegible]). If the connections are good, check the harness wire between the M.CU and the body control module (see page 22-127) and the charging system (see page 4-2).

4. Check for DTCs with the HDS.

   Are DTC B1408 and DTC B2600 indicated?

   YES - Go to the Combination Switch/Control Unit Inspection (see page 22-130).

   NO - Check for poor connections or loose wires at the M.CU (see page 22-127). If the connections are good, replace the M.CU (see page 22-134).

DTC B1011/11 VCSEC Lost Communication with the Gear Shift Module Primary Controller [No Sub Messages]

NOTE: If any other DTCs are stored in addition to DTC B1011/11, diagnose those DTCs first. Refer to the applicable diagnostic trouble code (DTC) table.

1. Check for DTC B1011/11.

2. Turn the ignition switch to OFF and wait for 60 seconds.

3. Check for DTC B1011/11.

Is DTC B1011/11 detected?

YES: Go to step 4.

NO: Intermittent malfunction (poor connection, etc.). Check the connectors and terminals of the circuit related to the DTC. Refer to the applicable wiring diagram. If the connectors and terminals are normal, replace the VCSEC. Refer to Body Control Module (BCM) - Removal & Installation - Vehicle Security System on page 23-135. After the replacement, perform the VCSEC configuration. Refer to Body Control Module (BCM) - Configuration on page 23-133.

4. Check for DTC B1011/11.

Is DTC B1011/11 detected?

YES: Go to step 5.

NO: Intermittent malfunction (poor connection, etc.). Check the connectors and terminals of the circuit related to the DTC. Refer to the applicable wiring diagram. If the connectors and terminals are normal, replace the VCSEC. Refer to Body Control Module (BCM) - Removal & Installation - Vehicle Security System on page 23-135. After the replacement, perform the VCSEC configuration. Refer to Body Control Module (BCM) - Configuration on page 23-133.

5. Check for DTC B1011/11.

Is DTC B1011/11 detected?

YES: Go to step 6.

NO: Intermittent malfunction (poor connection, etc.). Check the connectors and terminals of the circuit related to the DTC. Refer to the applicable wiring diagram. If the connectors and terminals are normal, replace the VCSEC. Refer to Body Control Module (BCM) - Removal & Installation - Vehicle Security System on page 23-135. After the replacement, perform the VCSEC configuration. Refer to Body Control Module (BCM) - Configuration on page 23-133.

6. Check for DTC B1011/11.

Is DTC B1011/11 detected?

YES: Replace the VCSEC. Refer to Body Control Module (BCM) - Removal & Installation - Vehicle Security System on page 23-135. After the replacement, perform the VCSEC configuration. Refer to Body Control Module (BCM) - Configuration on page 23-133.

NO: Intermittent malfunction (poor connection, etc.). Check the connectors and terminals of the circuit related to the DTC. Refer to the applicable wiring diagram. If the connectors and terminals are normal, replace the VCSEC. Refer to Body Control Module (BCM) - Removal & Installation - Vehicle Security System on page 23-135. After the replacement, perform the VCSEC configuration. Refer to Body Control Module (BCM) - Configuration on page 23-133.

DTC Troubleshooting (cont'd)

B1C03000: Power Supply Circuit [CAN Line] (Open Circuit for Relay Control Module and MICS)

[illegible]

1. Check for DTC other than B1C03.

2. [illegible]

[illegible]

Do the SRS (Air Bag) system indicator light illuminate?

YES — Go to step 3.

NO — Inspect each MICS unit check for loose or poor connection in the MICS unit circuit. If the connection is [illegible] check for open circuit in the wire harness between the MICS unit and the relay control module. If the connection is [illegible] check for open circuit in the wire harness between the MICS unit and the [illegible]

3. Check the MICS unit power supply circuit. Refer to "Power Supply Circuit Inspection Procedure".

Is the result OK?

YES — Go to step 4.

NO — [illegible]

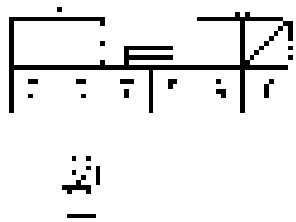
4. [illegible]

5. Disconnect the connector from the [illegible] connector.

6. Turn the ignition switch to [illegible]

7. Measure the voltage between the [illegible] connector terminal and body ground.

[illegible]



[illegible]

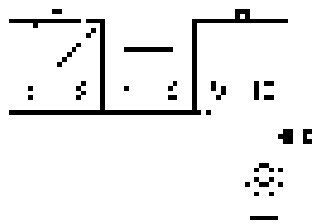
Is the voltage [illegible]?

YES — [illegible]

NO — Check for open circuit in the wire harness between the [illegible] connector and the [illegible]

8. Measure the voltage between the [illegible] connector terminal and body ground.

[illegible]



[illegible]

Is the voltage [illegible]?

YES — Check for poor connection at the [illegible] connector. If the connection is [illegible] check for open circuit in the wire harness between the [illegible] connector and the [illegible]

NO — Check for open circuit in the wire harness between the [illegible] connector and the [illegible] If the wire harness is [illegible] check for poor connection at the [illegible]

DTC B1905: Communication Bus High Electrical Fault, Bus Communication Error Mode 11

NOTE: If you are instructed to clear DTCs, be sure to record all DTCs and Freeze Frame data before clearing DTCs. See page 22-10.

1. Check for DTCs (vehicles with DLC).

2. Check for pending DTCs (vehicles with DLC).

3. Check for DTC B1905 (vehicles with DLC).

   Is DTC B1905 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is normal at this time. Check for poor connection or loose wire harness and connector. Refer to Troubleshooting Intermittent Failures, page 22-7. Also check the following connectors for poor connection: See connector locations index on page 22-7. Refer to wiring diagram on page 22-129.

4. Check for DTCs (vehicles with DLC).

   Is DTC B1905 displayed?

   YES - Replace the ECM. See page 22-130.

   NO - Intermittent failure, the system is normal at this time. Check for poor connection or loose wire harness and connector. Refer to Troubleshooting Intermittent Failures, page 22-7.

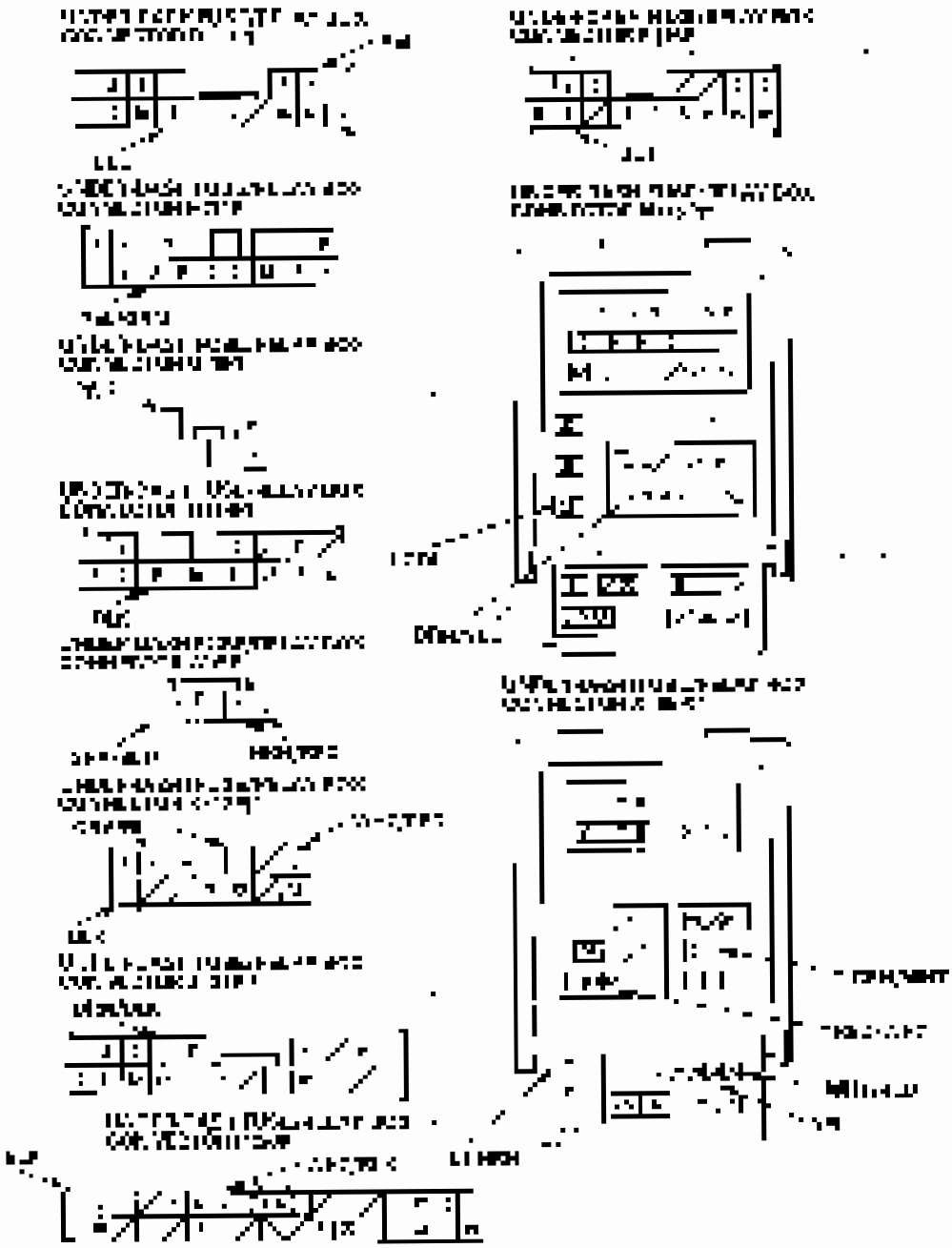
Multiplex Integrated Control Unit Input Test

NOTE: Make sure the ignition switch is in the LOCK position and the negative battery cable is disconnected before performing this test. Failure to do so may result in damage to the multiplex integrated control unit.

Refer to the Connector Identification Index on page 22-32.

Refer to the Multiplex Integrated Control Unit Connector Terminal Identification Chart.

NOTE: Test all connections and wiring for intermittent operation.



* Connector side view of terminal. Refer to connector identification chart.

COPY

1. Inspect the connector pins for damage, corrosion, contamination, or poor mating and repair as needed.

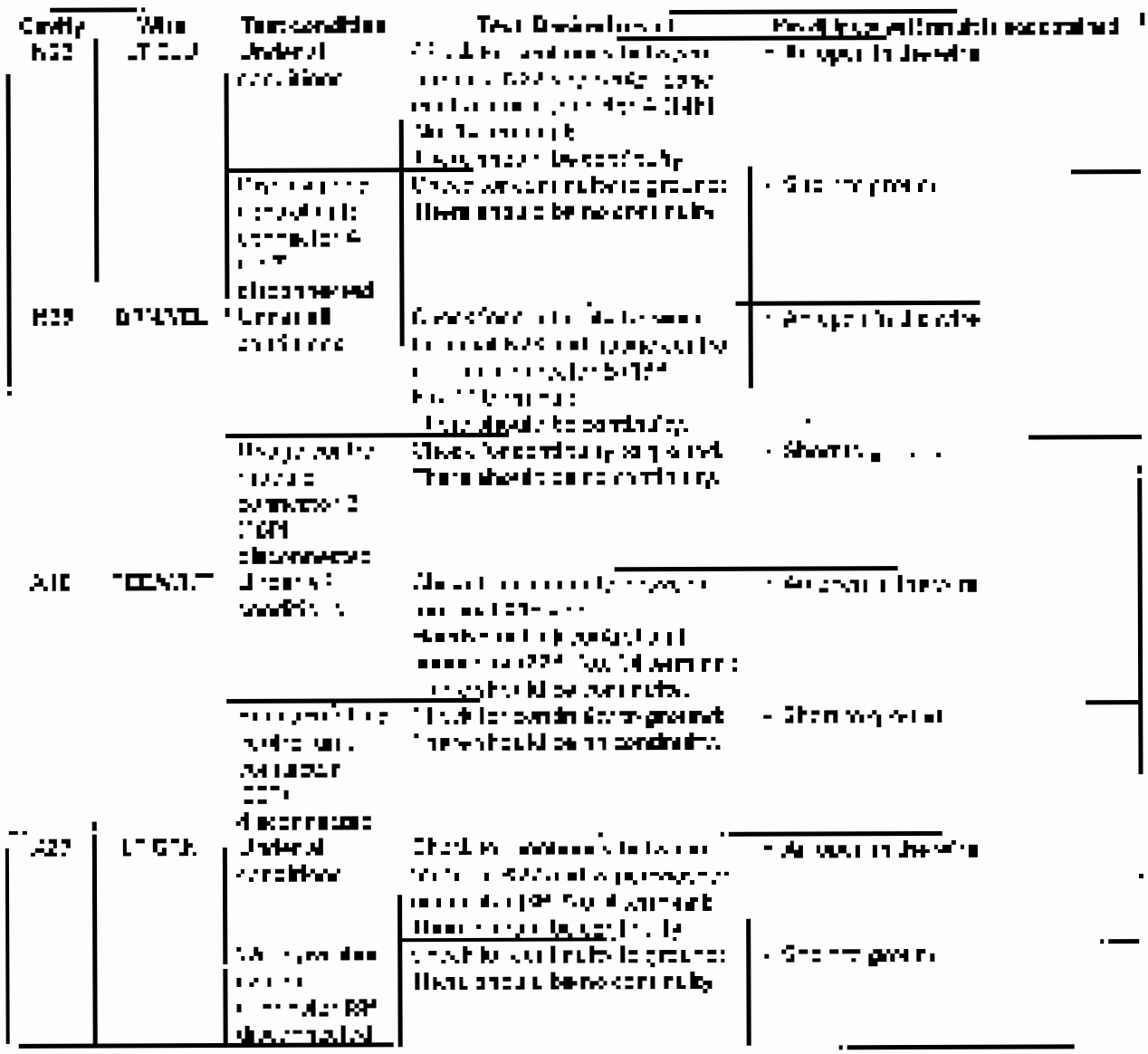
- If the connector pins are bent, damaged, or corroded, replace the connector or the entire harness.
- If the connector pins are OK, go to step 2.

2. Check the connector and the wiring harness for open or short between the control module connector pin and the component connector pin.

- Turn the ignition switch to ACC, disconnect the control module connector and the component connector.
- Refer to the wiring diagram.

Cavity	Wire	Test condition	Test (Check and repair)	Possible cause (Installation error and
E2	BLK	Ground	Check for open between control module connector E2 and ground	• Open in harness • Poor ground (G203, G207)
-		verification	Check for short between control module connector E2 and other terminals	• Improper installation
B8				
P1	BLK	Ground verification	Check for open between control module connector P1 and ground Refer to wiring diagram	• Open in harness • Poor ground (G202)
m1	BLK	Ground verification	Check for open between control module connector P1 and body control module connector C1 (C2) pin 1 Refer to wiring diagram	• Open in harness • Poor ground (G202)
		Replace control module connector P1 (C2) pin terminal	Check for poor connection at control module connector P1 (C2) pin terminal	• Short to ground
m1	BLK	Ground verification	Check for open between control module connector P1 and body control module connector C1 (C2) pin 1 Refer to wiring diagram Test the vehicle for symptom	• Poor ground (G202)
		Replace control module connector P1 (C2) pin terminal	Check for poor connection at control module connector P1 (C2) pin terminal	• Short to ground
f1	PPL/BLK	Ground verification	Check for open between control module connector P1 and body control module connector A (B2) pin 1 Refer to wiring diagram Test the vehicle for symptom	• Open in harness
		Replace control module connector P1 (C2) pin terminal	Check for poor connection at control module connector P1 (C2) pin terminal	• Short to ground

Multiplex Integrated Control Unit Input Test (cont'd)

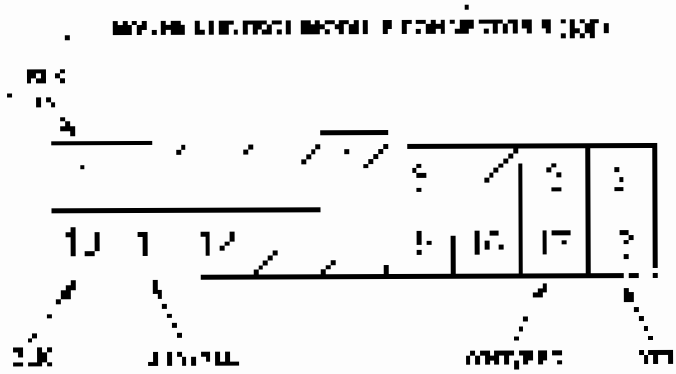


- [illegible]
- [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Gauge Control Module Input Test

1. [illegible] page 22-[illegible]
2. [illegible] gauge control module [illegible]
3. [illegible] connector and disconnect [illegible]
   - [illegible]
   - [illegible]



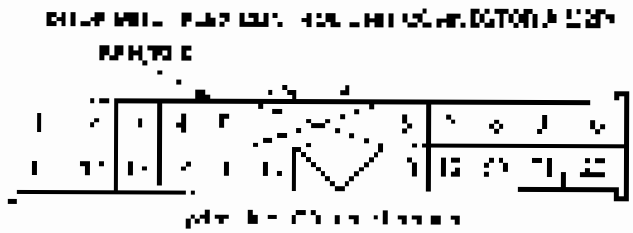
4. [illegible] connector and disconnect [illegible]
   - [illegible]
   - [illegible] gauge control module.

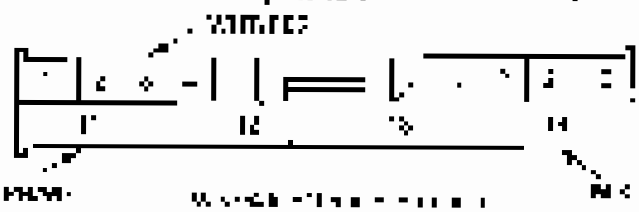
Cavity	Wire	Test Condition	Test Description	Possible Conditions Indicated
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Door Multiplex Control Unit Input Test

1. [illegible]

2. [illegible]





3. [illegible]

- [illegible]
- [illegible]

4. [illegible]

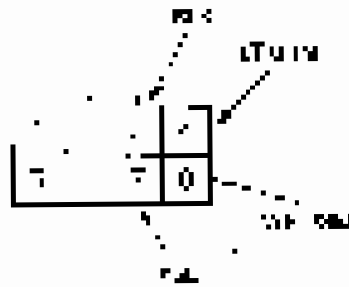
- [illegible]
- [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Combination Switch Control Unit Input Test

1. [illegible]

2. [illegible]



[illegible]

3. [illegible]

- [illegible]
- [illegible]

4. [illegible]

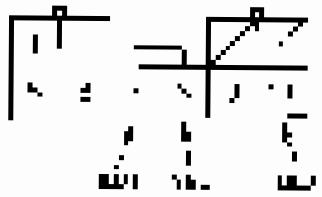
- [illegible]
- [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Relay Control Module Input Test

1. [illegible]

2. [illegible]



3. [illegible]

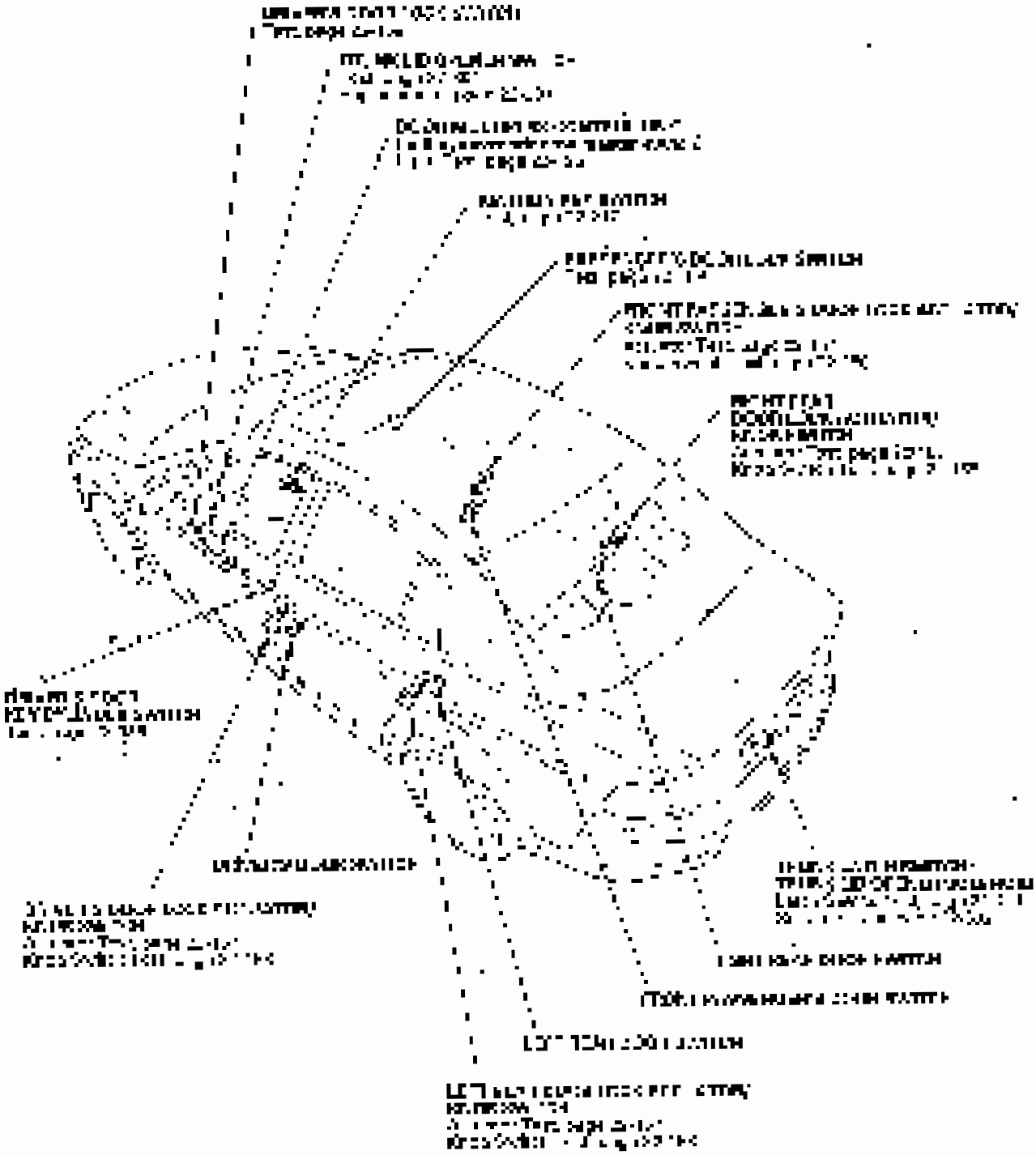
   - [illegible]
   - [illegible]

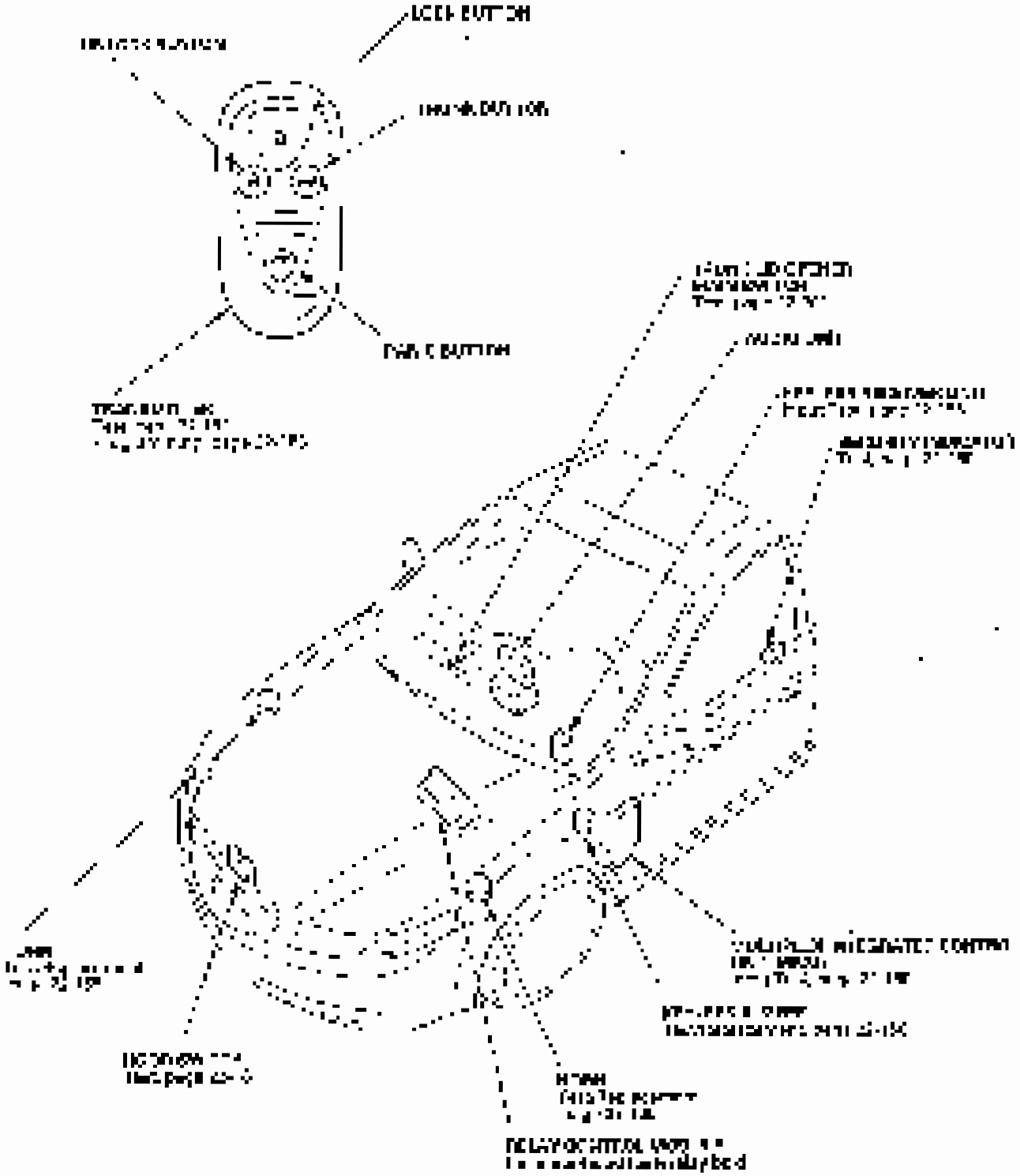
4. [illegible]

   - [illegible]
   - [illegible]

Circuit	Wire	Test condition	Test Description	Possible test results and corrective actions
[illegible]	[illegible]	[illegible]	[illegible]	• [illegible] • [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	• [illegible] • [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	• [illegible] • [illegible]
		[illegible]	[illegible]	• [illegible]

Component Location Index





Keyless Entry/Security Alarm System

System Description

Security Alarm System

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Parts Price

[illegible]

[illegible]

Keyless Entry System

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

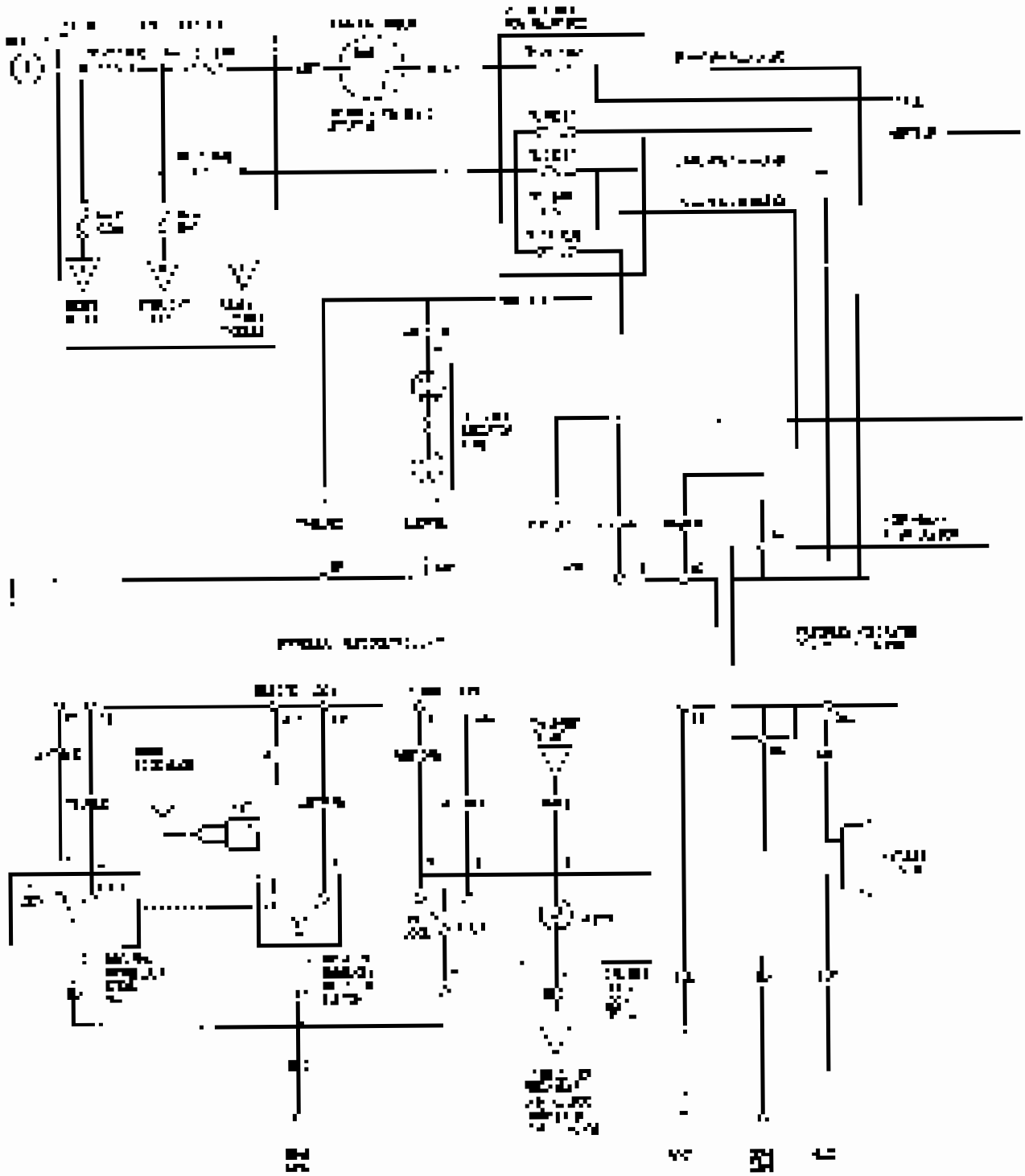
[illegible]

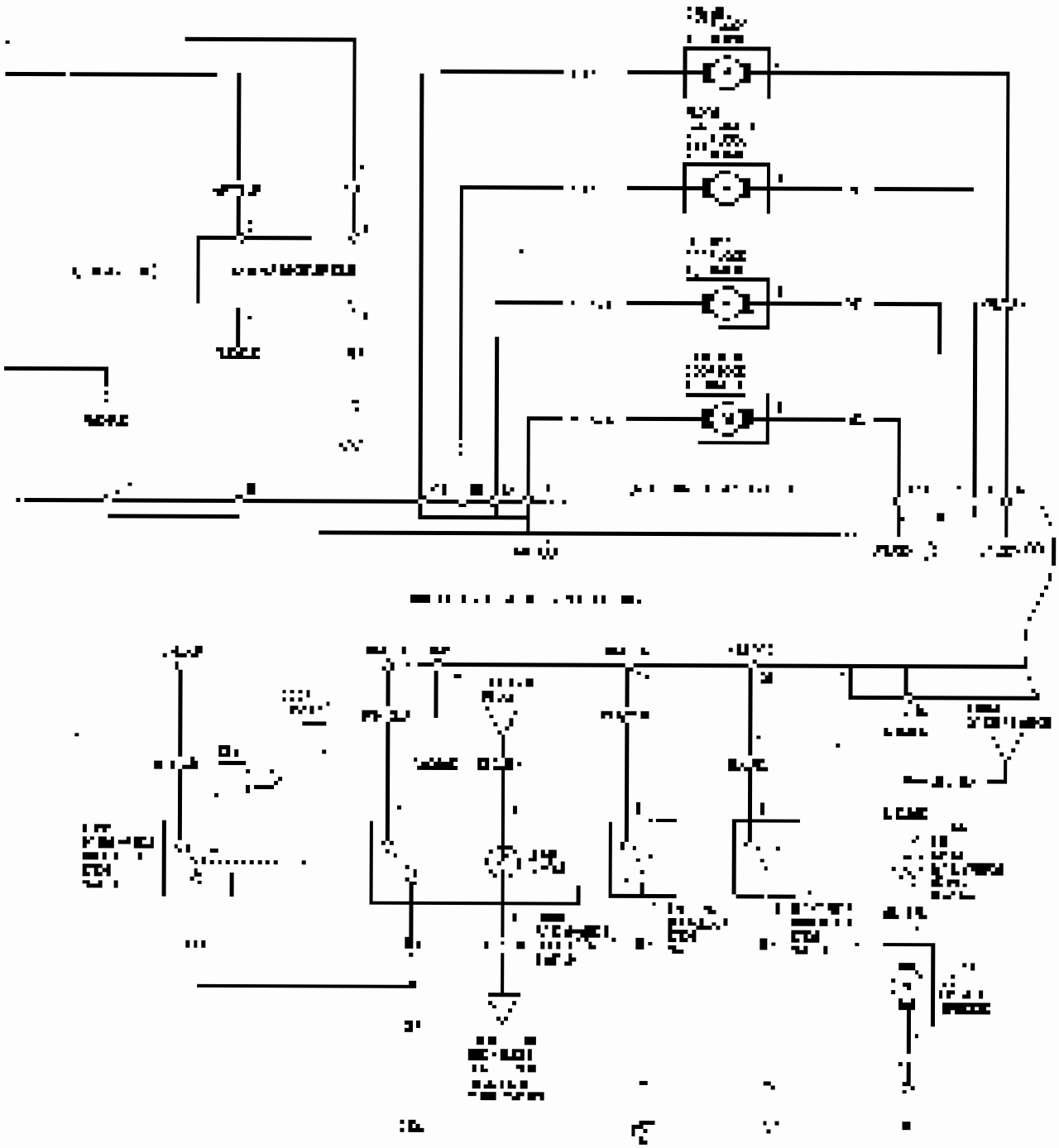
[illegible]

Power Door Lock System

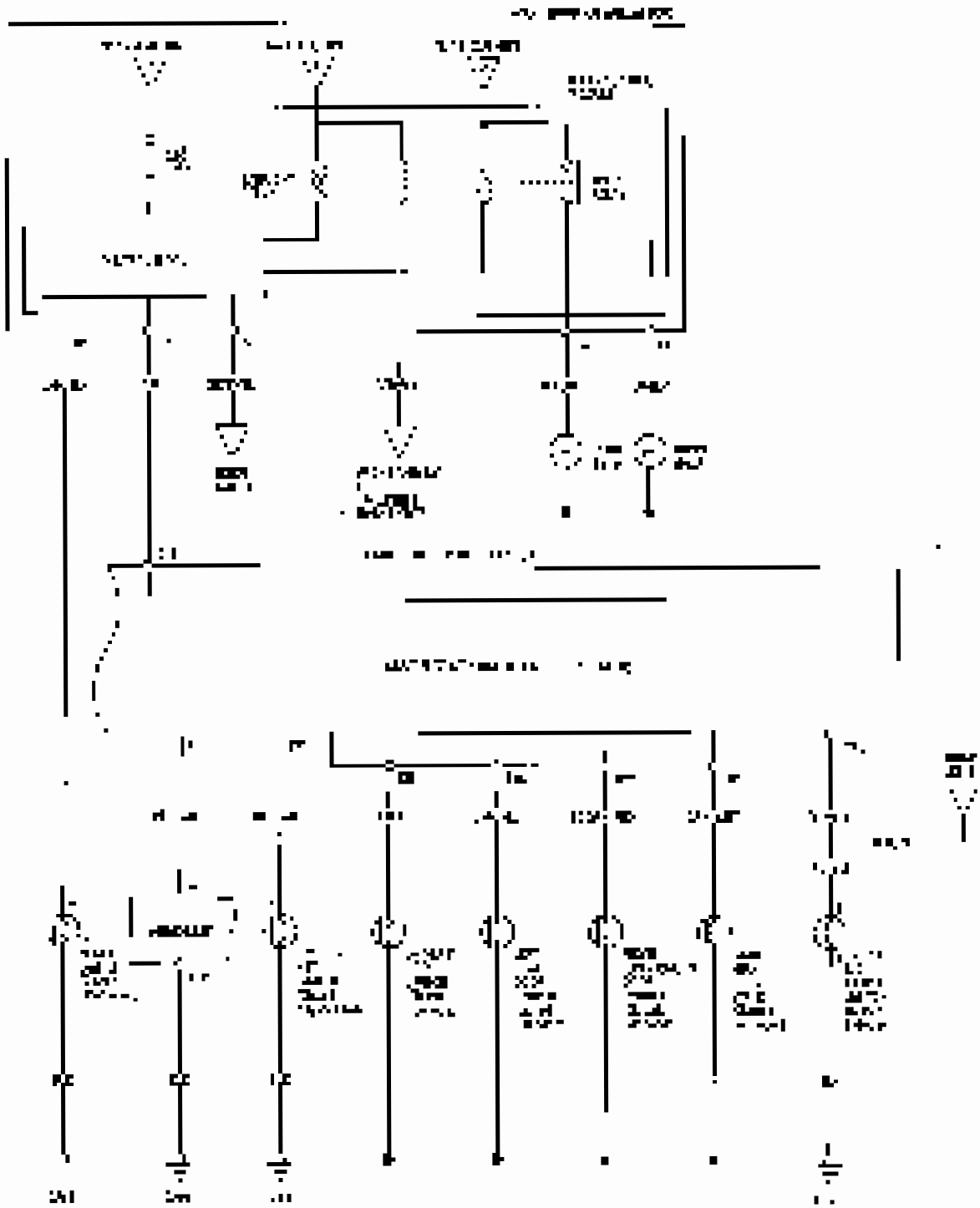
[illegible]

Circuit Diagram





Circuit Diagram (cont'd)



DTC Troubleshooting

B1028: Passenger's Door Lock Switch Signal Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in DTC Troubleshooting Procedure [redacted].

1. [redacted]
2. [redacted]
3. Open and close the passenger's door, and check the door lock switch.
4. [redacted]

   Is the [redacted] indicated?

   YES: [redacted]

   NO: [redacted] Check for Intermittent Problems)

5. [redacted]

   [redacted]

6. Check the [redacted] Passenger's Door Lock Switch Signal (BLK/W) and the [redacted] Passenger's Door Lock Switch Signal (BLK/R) for open or short to GND.

   Are there any problems?

   YES: [redacted]

   NO: [redacted]

7. Disconnect the passenger's door lock switch connector (D-22) and the [redacted] (D-102) connector. Check for open in the [redacted] Passenger's Door Lock Switch Signal (BLK/W) and the [redacted] Passenger's Door Lock Switch Signal (BLK/R) between the [redacted] and the passenger's door lock switch.

   [redacted]

   YES: [redacted]

   NO: [redacted]

8. [redacted]
9. [redacted]

   [redacted]

10. Remove the passenger's door panel. See Appendix C.
11. [redacted]
12. Check for [redacted] Passenger's Door Lock Switch Signal (BLK/W) and the [redacted] Passenger's Door Lock Switch Signal (BLK/R) in the [redacted] connector.

    Are there any problems?

    YES: [redacted]

    NO: Go to step 13.

13. [redacted]
14. Check for poor connection between the [redacted] connector and the passenger's door lock switch connector. Repair as necessary.

    Is the connection OK?

    YES: [redacted]

    NO: Repair as necessary and recheck.

DTC Troubleshooting (cont'd)

DTC B1124: Driver's Door Key Cylinder Switch Signal Error

[illegible]

1. [illegible]
2. Turn the ignition switch OFF, and then turn it ON (II).
3. [illegible]
4. [illegible]

   YES: Go to step 5.

   NO: [illegible]

5. [illegible]
6. [illegible]

   YES: [illegible]

   NO: [illegible]

7. [illegible]

   YES: [illegible]

   NO: [illegible]

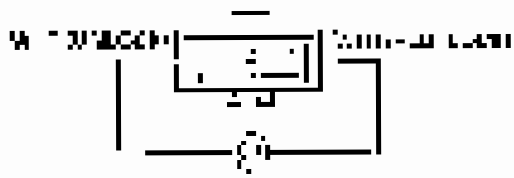
8. [illegible]

   YES: [illegible]

   NO: [illegible]

9. [illegible]
10. Disconnect the driver's door key cylinder switch connector, and the power window master switch connector (2P).
11. Check for continuity between the key cylinder switch (2P) connector terminal [illegible] and the power window master switch (2P) connector.

    [illegible]

    [illegible]

    [illegible]

    YES: [illegible]

    NO: [illegible]

12. Disconnect the driver's door key cylinder switch connector.
13. Check for continuity between the key cylinder switch (2P) connector terminal [illegible] and body ground.

    [illegible]

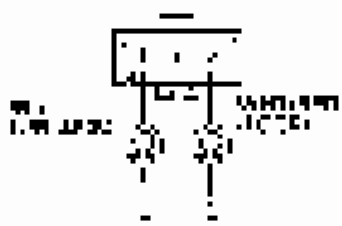
    YES: Replace the driver's door key cylinder switch.

    NO: Go to step 14.

[illegible]

[illegible] Disconnect the driver's door key cylinder lock (4P) connector.

[illegible] Check for continuity between the No. 3 LOCK terminal and [illegible] ground terminal of the driver's door key cylinder lock (4P) connector.



Is there continuity?

YES — Replace the driver's door key cylinder lock.

NO — Repair or replace the wire harness between the driver's door key cylinder lock (4P) connector and [illegible]

DTC B1128 Driver's Door Lock Switch Signal Error

[illegible] Check the driver's door lock switch for continuity. Refer to the appropriate [illegible] diagnostic procedure. Is the switch OK?

1. Clear the DTC from the [illegible]

2. [illegible]

3. [illegible]

4. Check for DTC [illegible]

Is DTC B1128 indicated?

YES — Go to step 5.
NO — Intermittent failure. The system is OK at this time. Check the connections for poor contact.

5. With the ignition switch [illegible] position, check the voltage between the driver's door key cylinder lock (4P) connector terminal and BODY ELECTRICAL SYSTEM [illegible] terminal.

Is there battery voltage?

YES — Go to step 6.
NO — Check for an open circuit in the wire between the driver's door key cylinder lock (4P) connector and the BODY ELECTRICAL SYSTEM [illegible] terminal.

6. Check the CHIME information of the Driver's Door Key Cylinder LOCK and Driver's Door Lock Switch UNLOCK in the DATA LIST.

Are they normal?

YES — Go to step 7.
NO — Check for poor contact in the [illegible] circuit. If the circuit is OK, replace the power window main switch.

7. Disconnect the driver's door key cylinder lock and [illegible] connectors. Check for continuity between the Driver's Door Key Cylinder LOCK terminal and the Driver's Door Lock Switch [illegible] terminal.

Does the [illegible] continuity?

YES — Replace the driver's door key cylinder lock.
NO — Repair or replace the wire harness between the driver's door key cylinder lock (4P) connector and the [illegible]

DTC Troubleshooting (cont'd)

DTC B1439 Driver's Door Lock Knob Switch Signal Error

NOTE: If you are troubleshooting multiple DTCs, you must follow the instructions in DTC Troubleshooting Flow Chart (page 22-147).

1. Check the DTC(s) you retrieved.

2. Turn the ignition switch to LOCK (0).

3. Check the driver's door lock knob switch wire harness.

4. Check for DTC(s) B1439.

Is DTC B1439 retrieved?

YES - Go to step 5.

NO - Intermittent failure, the system is good at this time. Check poor connections.

5. Reset the DTC by following the DTC RESET PROCEDURE, and recheck the DTC(s).

Check the DRIVER'S DOOR LOCK KNOB SWITCH SIGNAL in the Door Lock Switch (LOCK) test mode. Does the Driver's Door Lock Knob Switch (LOCK) operate correctly?

YES - Go to step 6.

NO - Replace the driver's door lock knob switch.

6. Check for DTC(s).

Is DTC(s) retrieved?

YES - Replace the BCM.

NO - Intermittent failure, the system is good at this time.

2. [illegible]

   Are cards from more than one payment system supported?

   YES: Check if terminal supports the relevant AIDs and if the cardholder confirmation is required for each application. Then select the application with the highest priority according to the terminal's table. If no match, the terminal may allow the cardholder to select any application supported by the terminal.

   NO: Go to step 3.

3. Terminal sends GET PROCESSING OPTIONS command.

4. Obtain application file locator (AFL) from card response.

5. Read application data from card as designated by the AFL. Store data needed for processing later. Data authentication is performed.

   [illegible]

   Are the versions supported by the terminal and the card the same?

   YES: Continue.

   NO: Terminal and card cannot interact.

6. Processing restrictions are performed, such as verifying application version numbers and checking application usage control.

   Should cardholder verification be performed?

   YES: Perform cardholder verification as specified in the CVM list until a method is successful or a method fails and processing is to be terminated.

   NO: Skip cardholder verification.

7. Terminal risk management is performed.

8. Terminal sends first GENERATE AC command to the card.

9. Card processes transaction and returns either an ARQC, TC or AAC.

10. Card-terminal interaction is completed.

    If ARQC was returned:

    YES: Go to step 11.

    NO: Transaction is declined.

11. Online processing is performed.

    Was online processing successful?

    YES: Send issuer authentication data to the card. Go to step 12.

    NO: Terminal action analysis is performed.

12. Terminal sends second GENERATE AC command.

    Was second GENERATE AC successful?

    YES: Card returns a TC, indicating approval of the transaction. Terminal displays approval message.

    NO: Terminal displays message indicating that the transaction was declined.

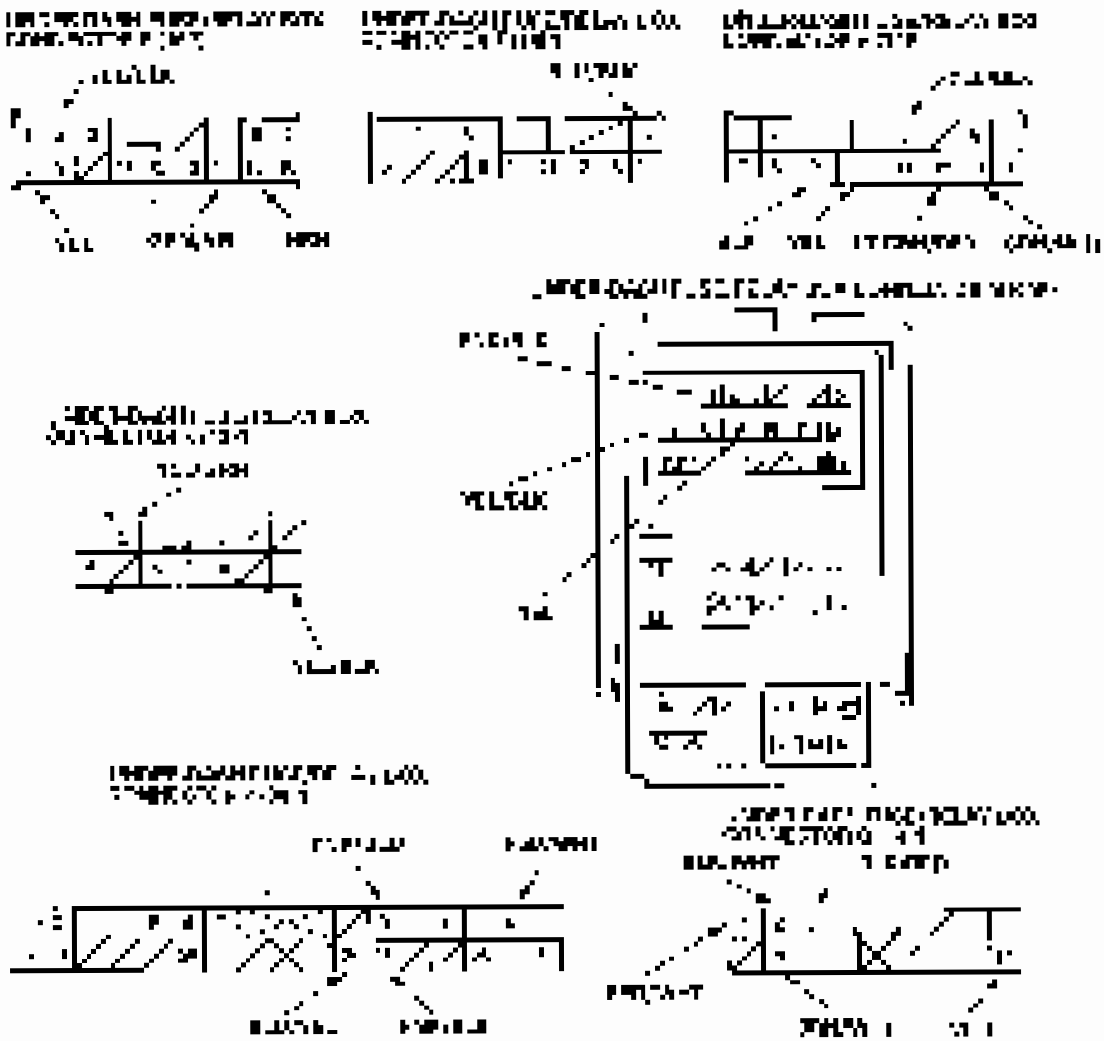
Control Unit Input Test

NOTE: Before testing the keyless entry/security control unit, [illegible] (see page 22-153).

Multiplex Integrated Control Unit

- Turn the ignition switch to [illegible]
- Remove the [illegible] (see page 22-152).
- Disconnect the [illegible] connector.

NOTE: All connectors are viewed from the terminal side.



- [illegible]

- If the control unit [illegible] connector, replace the control unit (see page 22-153).
- If the control unit [illegible] go to step 2.

Cavity	Wire	Test condition	Test Specification	Possible cause/Remedy/Items obtained
E	BLK	Under all conditions	Check for open circuit between ground (E302) and engine ground	• Poor ground (E302) CAT • An open in harness
F	R/W or R	Ignition switch ON (Engine stopped)	Voltage should appear momentarily when ignition switch is turned to ON	• Fusible link wire • Poor contact in ignition switch • An open in harness
J K-2	YEL/GRN YEL/BLK	Connect the battery positive terminal to J and K-2 terminals and K-1, K-3 terminals to battery negative terminal.	Check voltage between terminals and ground. The ATF solenoid valve should operate and a click should be heard.	• Poor contact in ignition switch • Malfunctioning ATF solenoid valve • An open in harness
G	W/BLK	Ignition switch ON	Check voltage between terminal and ground.	• Fusible link wire • An open in harness
M	W or R	Connect the battery positive terminal to M, apply vacuum to the vacuum switch, and connect M terminal to body ground.	Check for continuity between terminal and body ground.	• Poor contact in vacuum switch • An open in harness
D2 D3	YEL/BLK YEL	Connect the battery positive terminal to D2 terminal and D1, D3 terminals to body ground.	Check voltage between terminals and ground. The shift solenoid valve should operate.	• Malfunctioning shift solenoid valve • An open in harness
H	W/BLK	Ignition switch ON	Check voltage between terminal and ground.	• Malfunctioning combination meter • An open in harness
H-1	W or R	Ignition switch ON (Engine stopped)	Voltage should appear momentarily when ignition switch is turned to ON	• Fusible link wire • An open in harness
C11	W/BLK	Under all conditions	Apply battery power to C11 terminal momentarily. The alarm should sound.	• Poor ground (E302) • Faulty buzzer • An open in harness

Control Unit Input Test (cont'd)

- [illegible]
- [illegible]

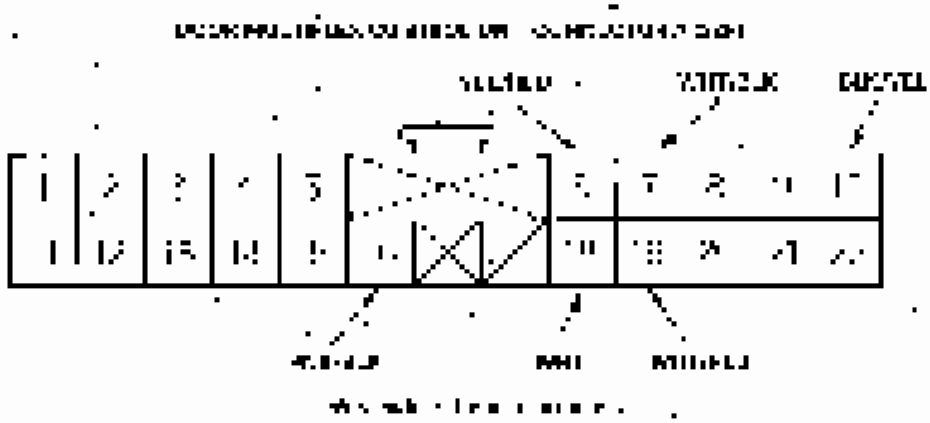
Terminal	Wire	Test Condition	Test Description	Possible Cause If Result is not obtained
[illegible]	[illegible]	[illegible]	[illegible]	• Poor ground (G30) • Faulty [illegible] • [illegible]
		[illegible]	Check for voltage drop during cranking There should be no voltage drop	• Poor ground (G30) • [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	• Poor ground (G30) • Faulty front passenger's door lock motor • [illegible] • [illegible]
		[illegible]	Check for voltage drop during cranking There should be no voltage drop	• [illegible] • [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	• [illegible] • [illegible] • [illegible]
		[illegible]	Check for voltage drop during cranking There should be no voltage drop	• [illegible] • [illegible] • [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	• Poor ground (G30) • Faulty [illegible] • [illegible]
		[illegible]	Check for voltage drop during cranking There should be no voltage drop	• [illegible]

Display	Meter	Test condition	Test/Desired result	Possible cause (Procedure if normal after repair)
C1	[illegible]	[illegible]	Check for voltage at ground: There should be [illegible]	• Power ground (C2) [illegible] • Faulty [illegible] • Faulty [illegible] • [illegible]
D13	[illegible]	[illegible]	[illegible]	• Poor ground (C2)** • Faulty ignition switch • [illegible] • Faulty ignition switch • Electric [illegible]
		[illegible]	Check for voltage at ground: There should be 2 V or more.	
C15	[illegible]	Driver's door open	Check for voltage at ground: [illegible]	• [illegible] • [illegible]
		Driver's door closed	Check for voltage at ground: [illegible]	• Faulty [illegible] • Blown fuse
C2	[illegible]	[illegible]	[illegible]	• Faulty front passenger's door switch • [illegible] • Faulty [illegible] • Blown fuse
		Front passenger's door closed	Check for voltage at ground: There should be 5 V or more.	
C14	[illegible]	Left rear door open	Check for voltage at ground: [illegible]	• [illegible] • Poor [illegible]
		Left rear door closed	[illegible]	• Faulty left rear door switch • Blown fuse
C13	[illegible]	Right rear door [illegible]	[illegible]	• Faulty right rear door switch • [illegible] • Faulty [illegible]
		Right rear door closed	Check for voltage at ground: There should be 5 V or more.	
C24	[illegible]	Trunk lid open	Check for voltage at ground: [illegible]	• Poor [illegible] • Faulty [illegible] • [illegible]
		Trunk lid closed	[illegible]	• Faulty trunk lid switch • Blown fuse

* Refer to the electrical circuit diagram and check the wire harness and connectors between each component.

Control Unit Input Test (cont'd)

1. Disconnect Control Unit.
2. Turn ignition switch to ACC.
3. Disconnect 22P connector from control unit.



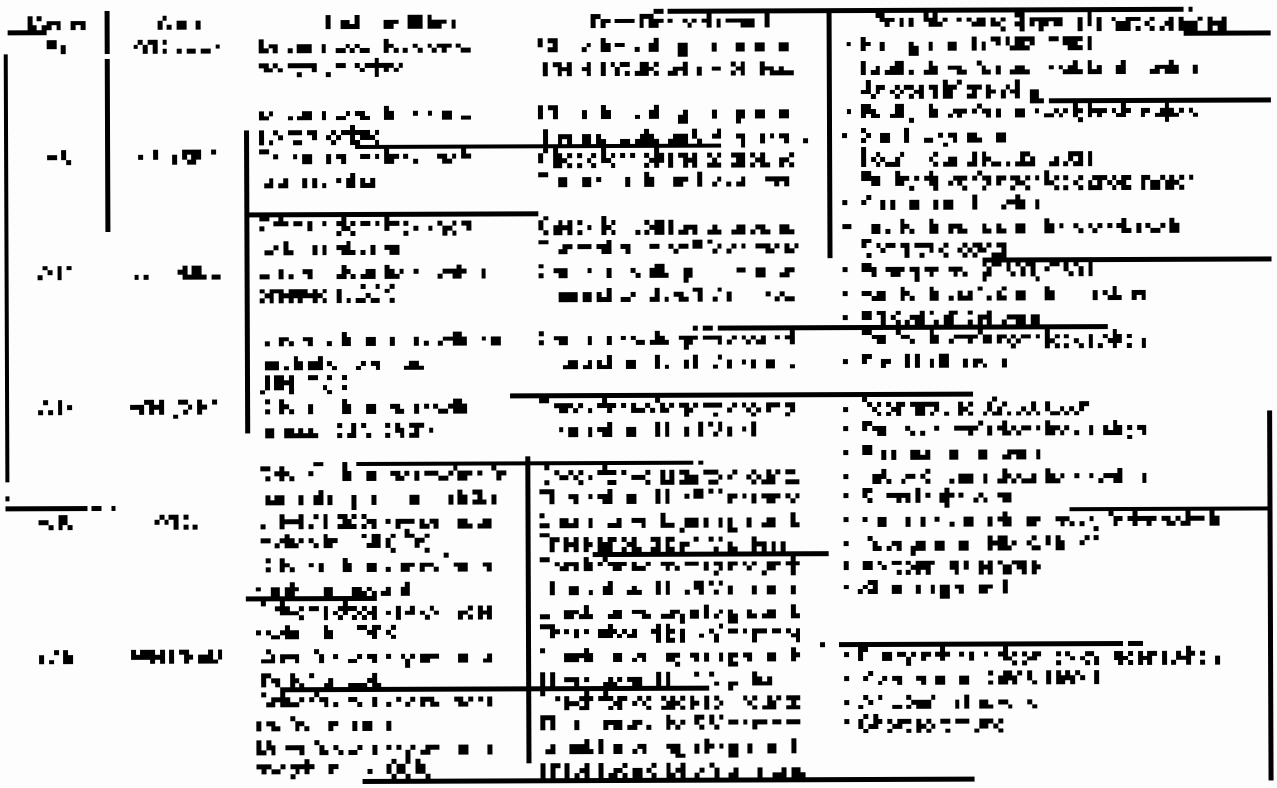
4. Inspect harness side connector as follows:

- Refer to terminal arrangement and harness side connector figure and check for bent terminals.
- Refer to terminals and [illegible].

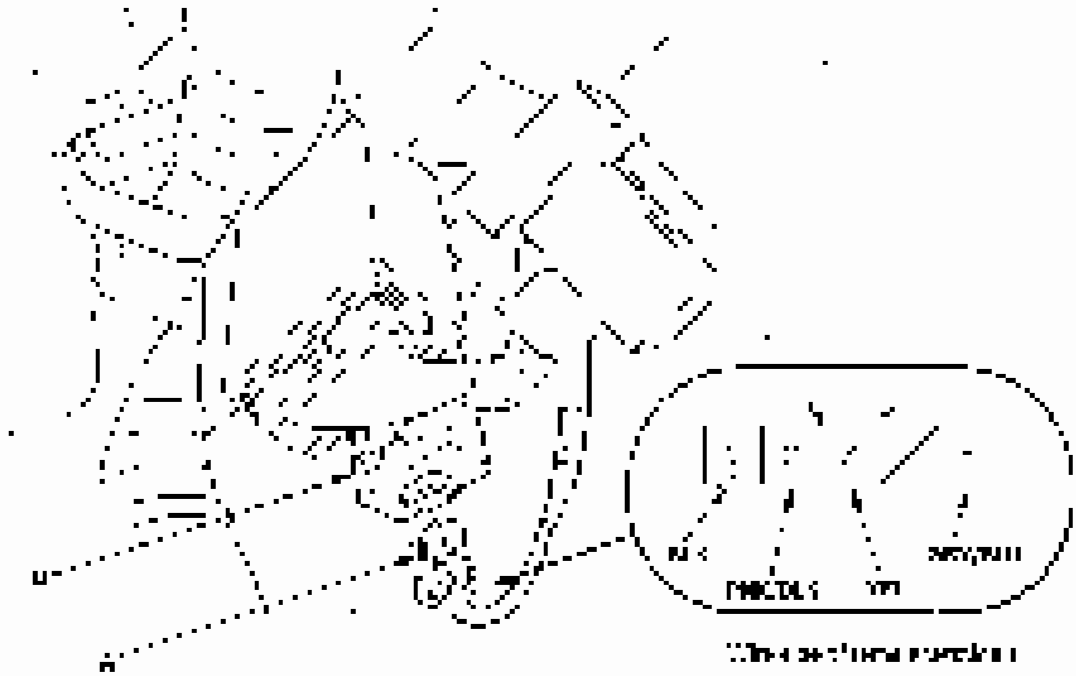
5. With harness side connector still disconnected, measure resistance according to value(s) in table below.

- If not as specified, check harness for open circuit or poor connection between control unit and vehicle.
- If harness is OK, replace control unit.

Connector	Terminal	Signal name [illegible]	Test item [illegible]	Resistance value or allowable condition [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



Keyless Receiver Unit Input Test



Door Lock Actuator Test

Driver's door

1. [illegible]

2. [illegible]

3. [illegible]

Terminal		
Position		
Lock	[illegible]	[illegible]
Unlock	[illegible]	[illegible]

4. [illegible]

Passenger's door

1. [illegible]

2. [illegible]

3. [illegible]

Terminal		
Position		
Lock	[illegible]	[illegible]
Unlock	[illegible]	[illegible]

4. [illegible]

Door Lock Knob Switch Test

Driver's Door

1. Remove the door trim panel (see page 20-[illegible]).
2. Disconnect the 3P connector from the door lock knob switch.

3. Check for continuity between the terminals.
   - There should be continuity between the No. 2 and No. 3 terminals when the door lock knob switch is in the LOCK position and no continuity when the switch is in the UNLOCK position.
   - There should be continuity between the No. 1 and No. 3 terminals when the door lock knob switch is in the UNLOCK position and no continuity when the switch is in the LOCK position.

4. If the switch fails any of the above tests, replace the door lock knob switch.

Passenger's Door

1. Remove the [illegible] (see page 20-[illegible]).
2. Disconnect the 3P connector from the door lock knob switch.

3. Check for continuity between the terminals.
   There should be continuity between the No. 1 and No. 3 terminals when the door lock knob switch is in the UNLOCK position and no continuity when the switch is in the LOCK position.

4. If the switch fails the above test, replace the door lock knob switch.

Door Lock Switch Test

1. Remove the door trim panel. See page 23-17.
2. Disconnect the connector from the front passenger door lock switch.

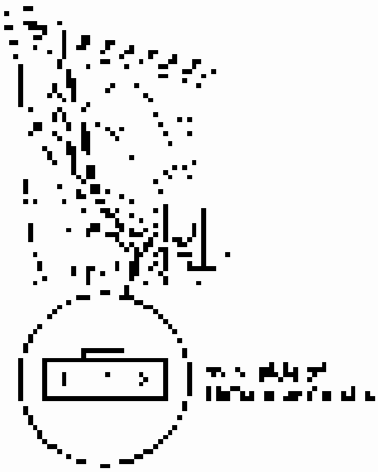
3. Check for continuity between the terminals.

- There should be continuity between the No. 1 and No. 3 terminals when the door lock switch is in the LOCK position.
- There should be continuity between the No. 2 and No. 3 terminals when the door lock switch is in the UNLOCK position.
- There should be no continuity between the No. 2 and No. 3 terminals when the door lock switch is in the neutral position.
- There should be no continuity between the No. 1 and No. 3 terminals when the door lock switch is in the neutral position.

4. Reconnect the door lock switch connector.

Door Key Cylinder Switch Test

1. Remove the driver's door panel. See page 23-17.
2. Disconnect the 3P connector from the key cylinder switch.



3. Check for continuity between the terminals.

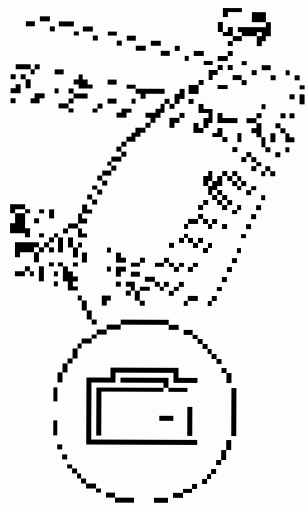
- There should be continuity between the No. 1 and No. 2 terminals when the key is in the UNLOCK position.
- There should be continuity between the No. 2 and No. 3 terminals when the key is in the neutral position.
- There should be continuity between the No. 1 and No. 3 terminals when the key is in the LOCK position.
- There should be no continuity between the No. 1 and No. 2 terminals when the key is in the neutral position.

4. Reconnect the connector and install the door key switch. See page 23-17.

Security Indicator Test

1. [illegible]

2. [illegible]



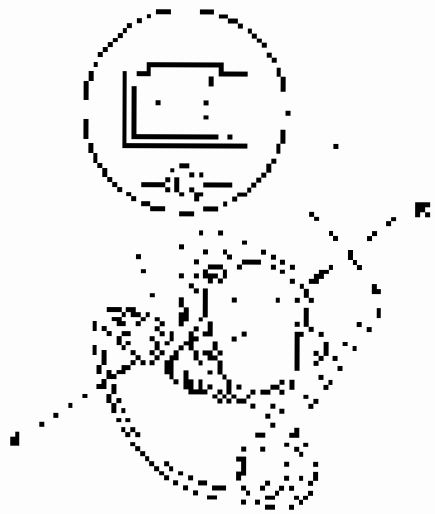
3. [illegible]

4. [illegible]

Keyless Buzzer Test/Replacement

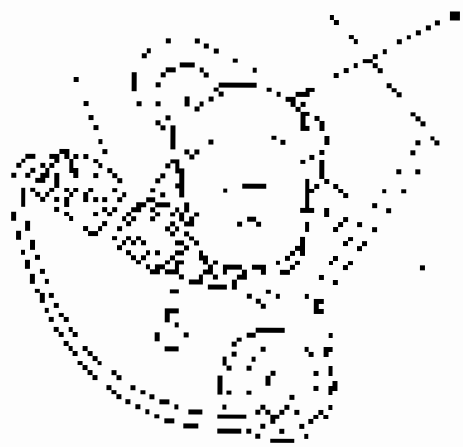
1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]



Hood Switch Test

1. [illegible]
2. [illegible]

3. [illegible]
4. [illegible]

Transmitter Test

Notes:
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

With HDS

[illegible]

Without HDS

1. [illegible]
   - [illegible]
   - [illegible]
2. [illegible]
   - [illegible]
   - [illegible]

3. [illegible]
   - [illegible]
   - [illegible]

4. [illegible]
   - [illegible]
   - [illegible]
     - [illegible]

Transmitter Programming

[illegible]

NOTE: It is important to remember the time limit between the steps. If too much time elapses between steps, the unit will time out.

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

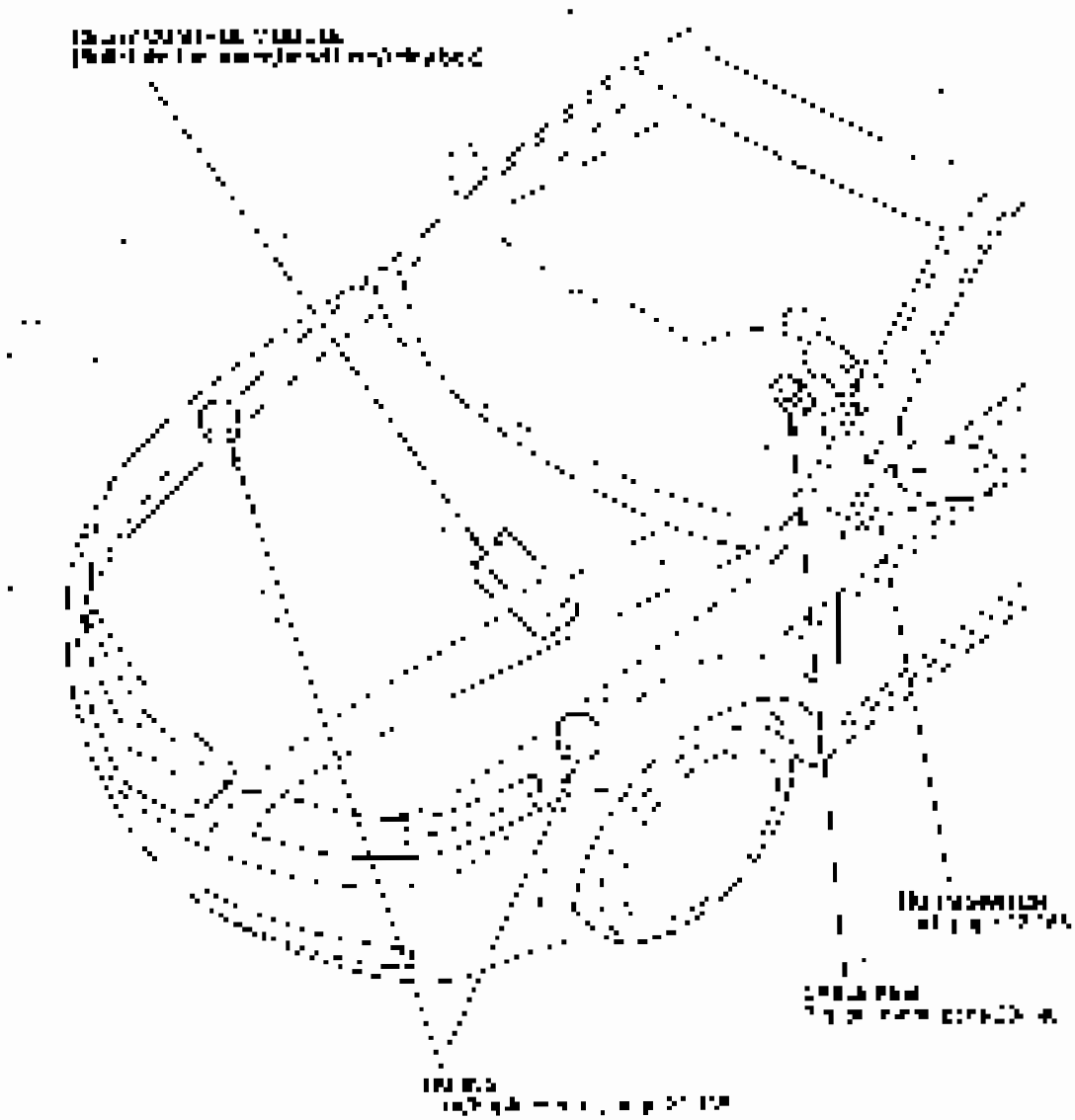
13. [illegible]

14. [illegible]

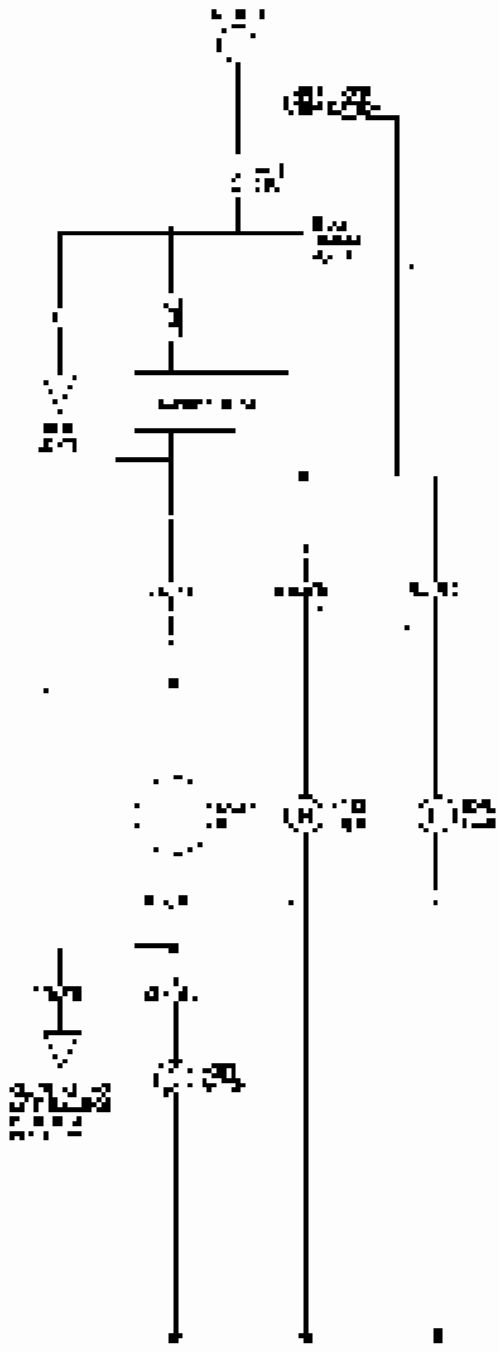
15. [illegible]

NOTE: [illegible]

Component Location Index

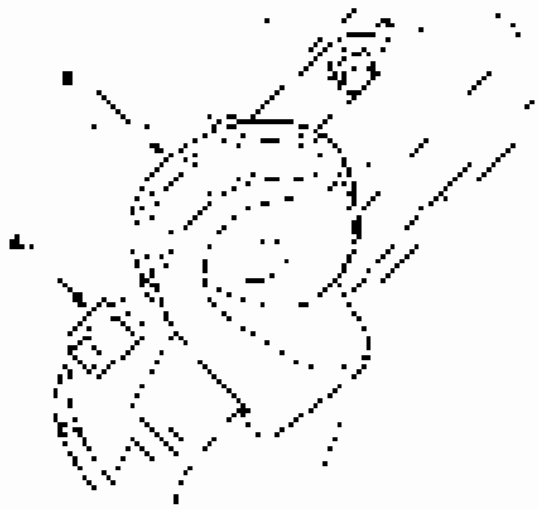


Circuit Diagram



Horn Test/Replacement

1. [illegible]
2. [illegible]



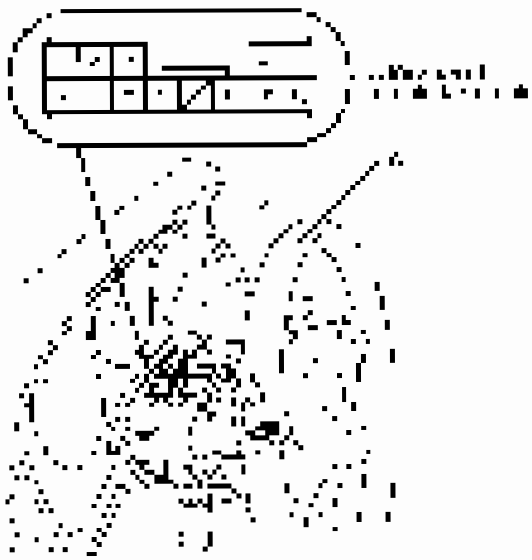
3. [illegible]

4. [illegible]

Horn Switch Test

1. [illegible]

2. Disconnect the cable at "A" connector(s) from the clockspring wire harness.



3. Using an ohmmeter, connect one test lead to the clockspring wire harness [illegible] ground.

   - If the horns sound, go to step 4.
   - If the horns do not sound, check the following items:
     - [illegible]
     - [illegible]
     - [illegible]
     - [illegible]
     - [illegible]
     - [illegible]

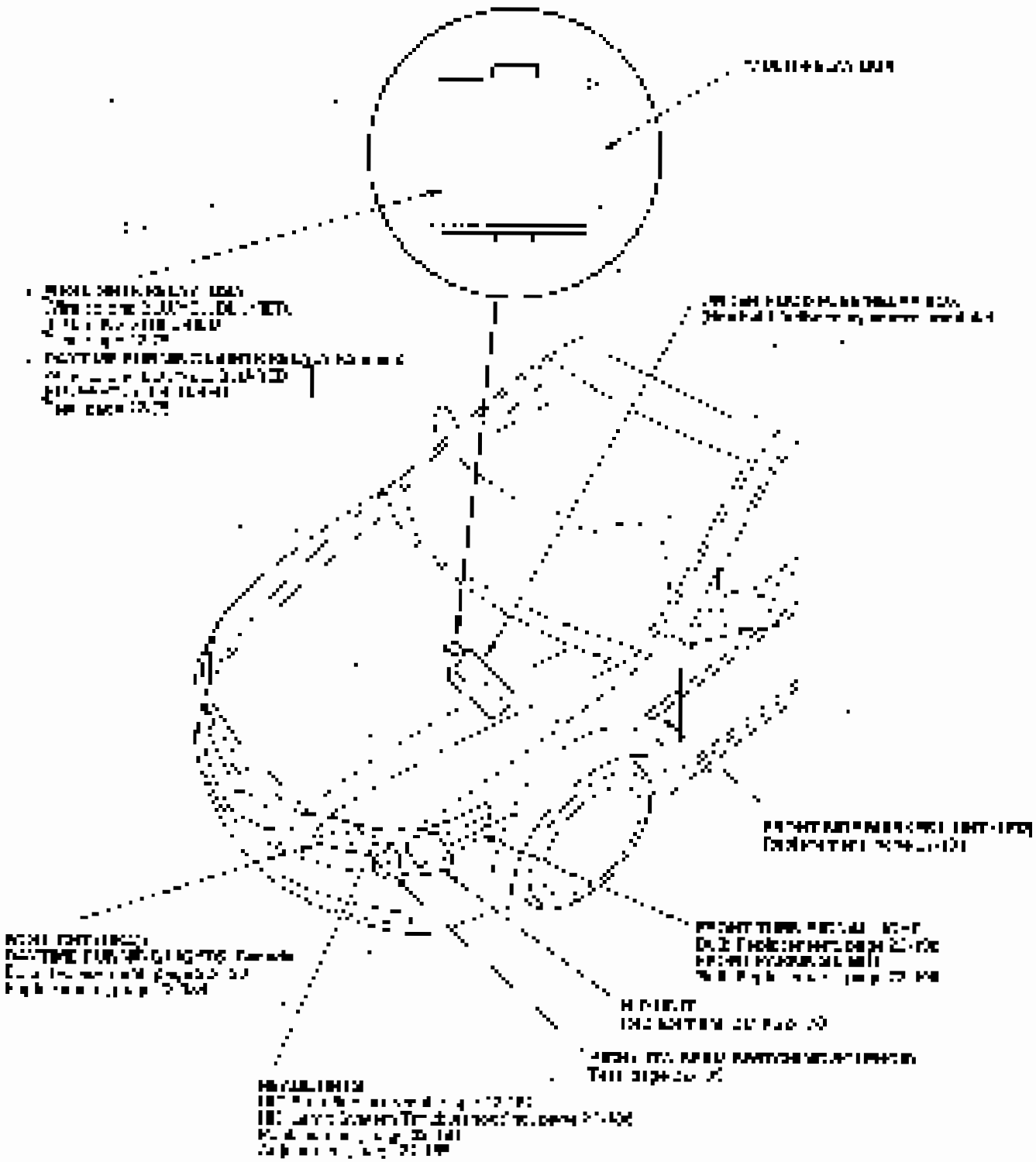
4. Disconnect the other test lead from [illegible] and connect it to the [illegible].

5. Remove the [illegible] and [illegible]. See page [illegible]. If the [illegible] is not [illegible], replace the [illegible].

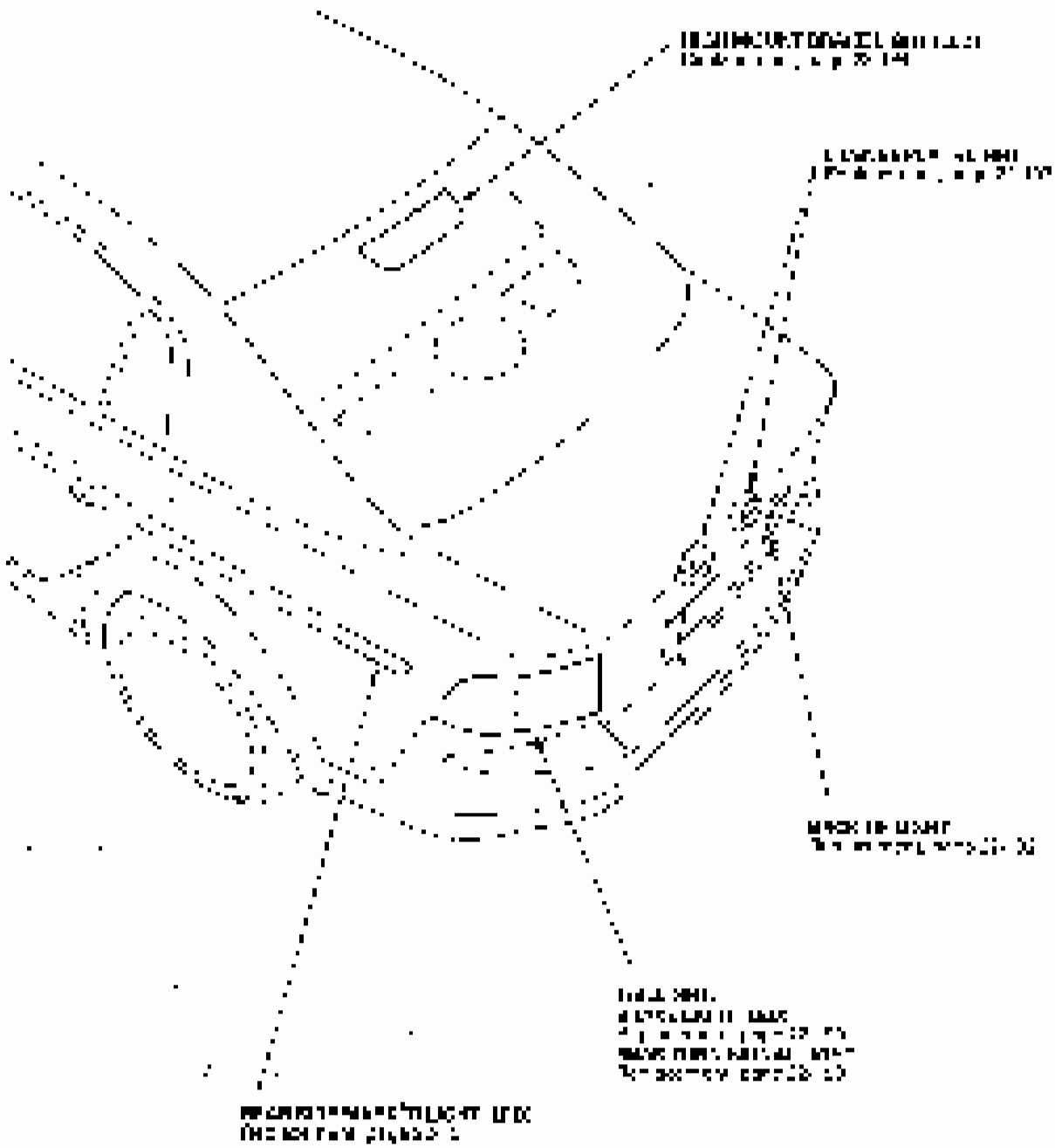
6. Using an ohmmeter, connect one test lead to [illegible] and the other test lead to [illegible] ground.

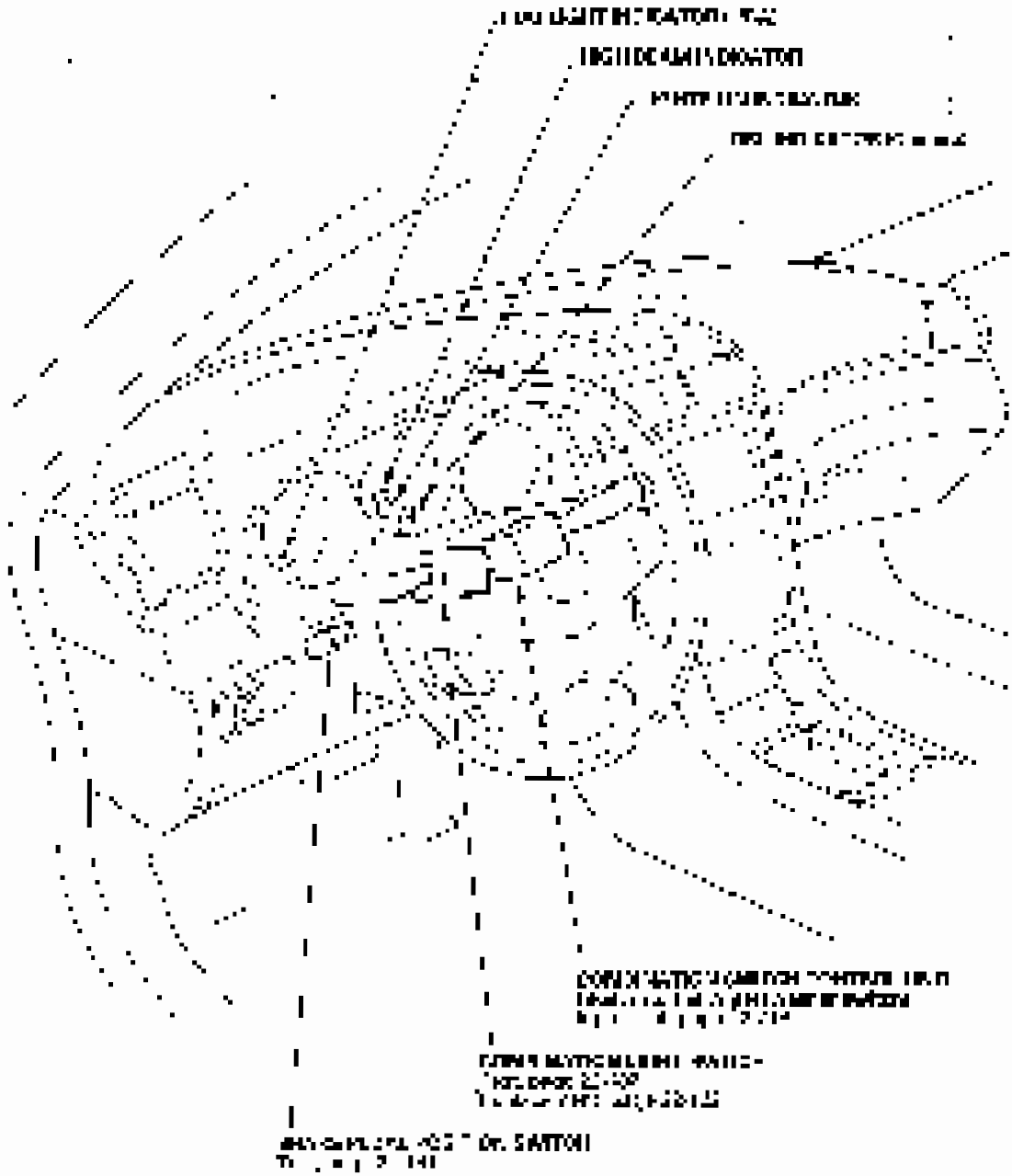
   - If the horns sound, replace the [illegible].
   - If the horns do not sound, check the following items:
     - [illegible]
     - [illegible]

Component Location Index

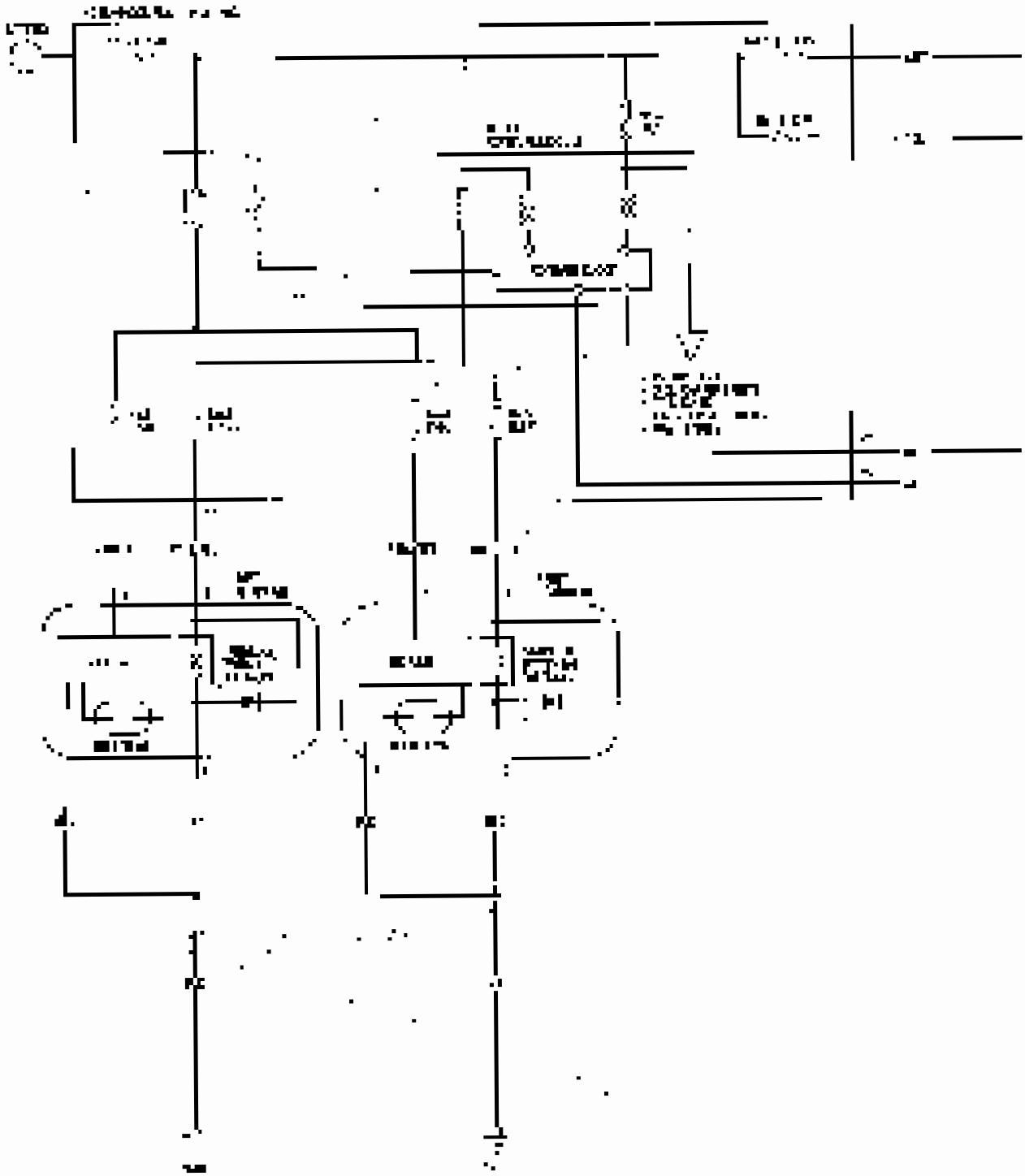


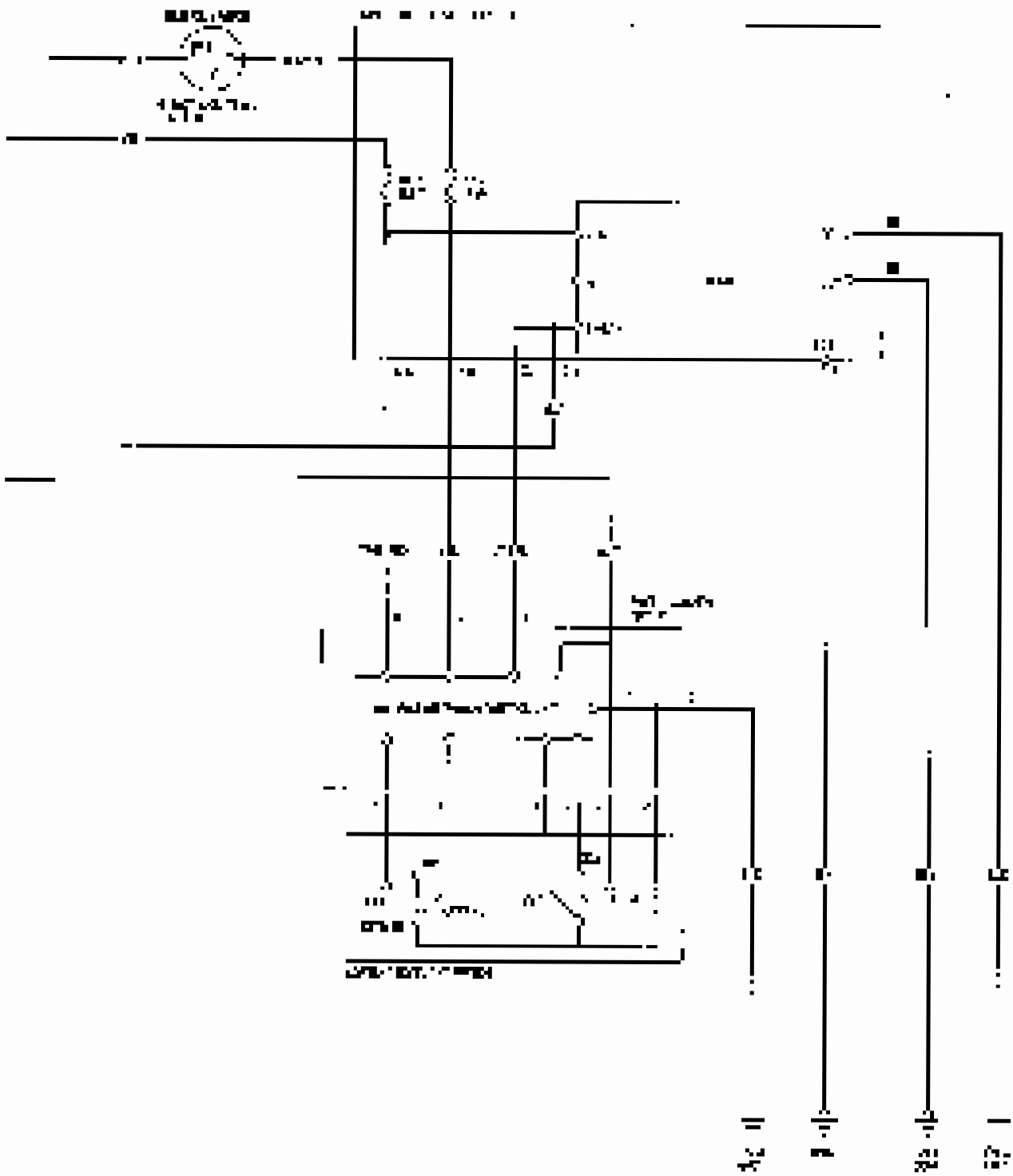
Component Location Index (cont'd)



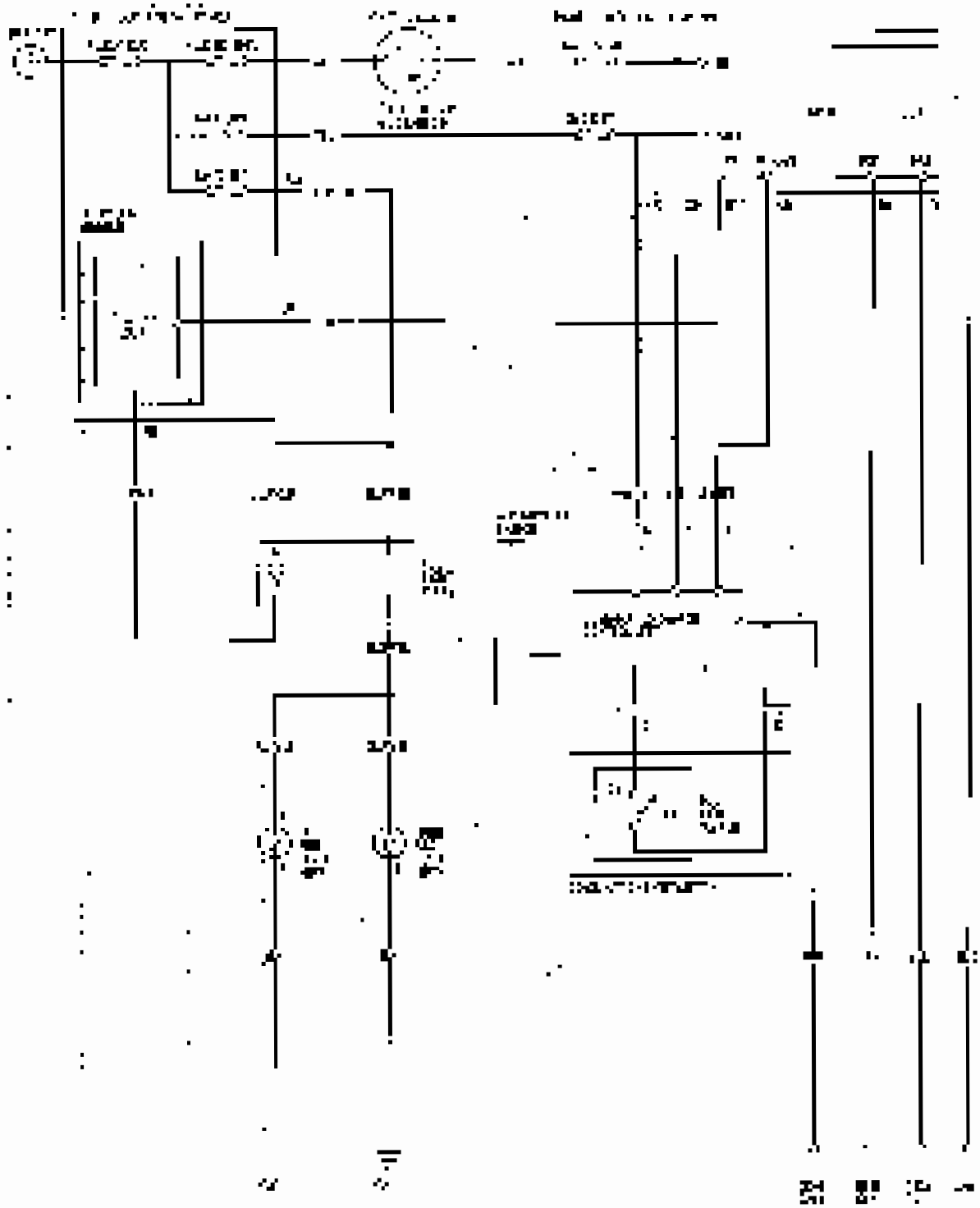


Circuit Diagram



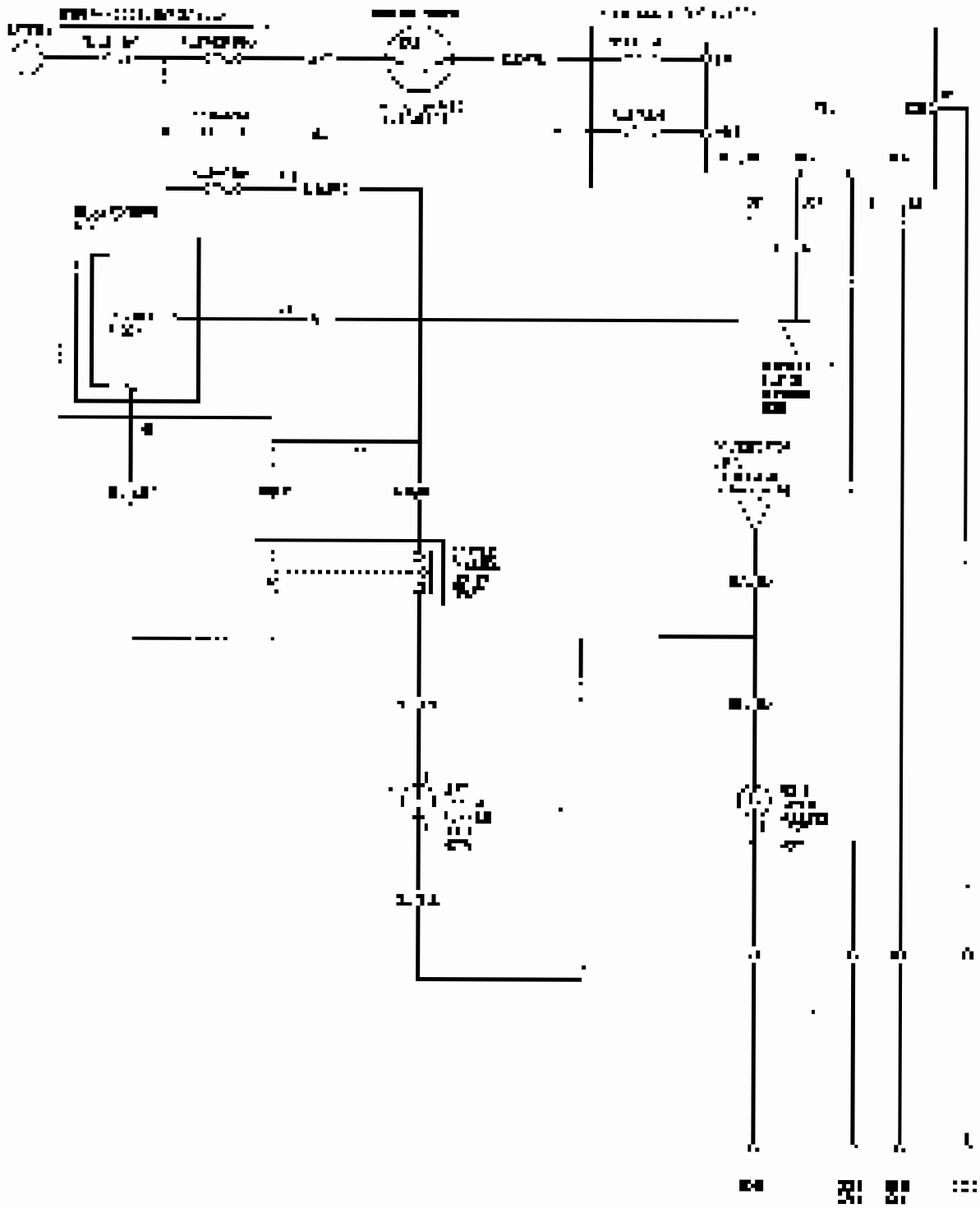


Circuit Diagram - Fog Lights

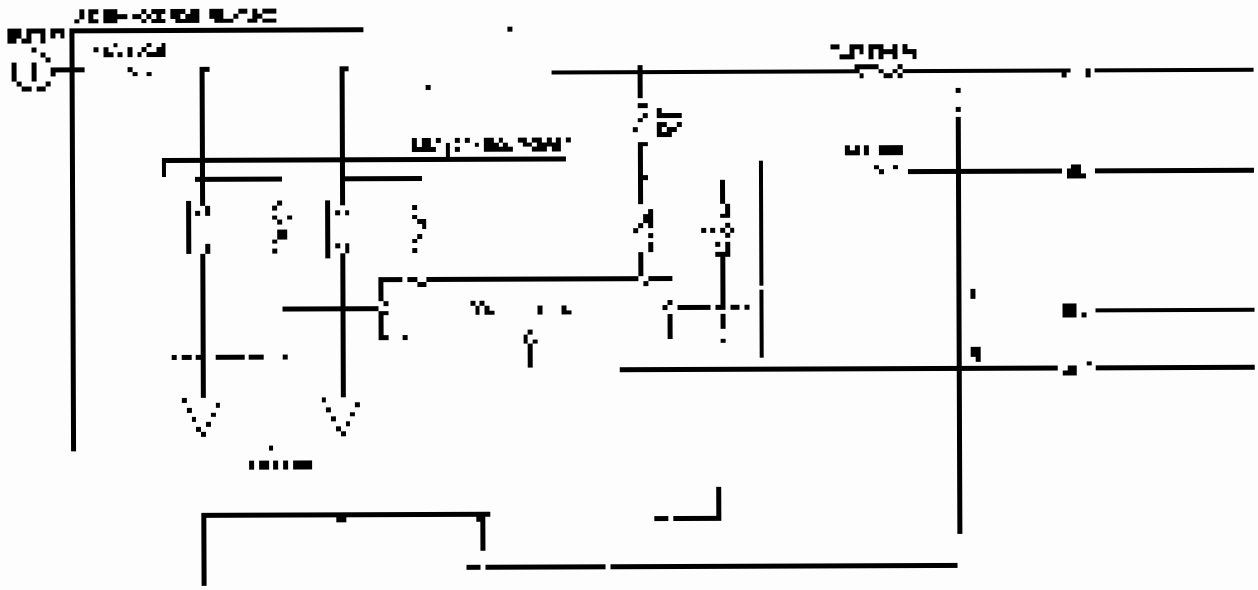


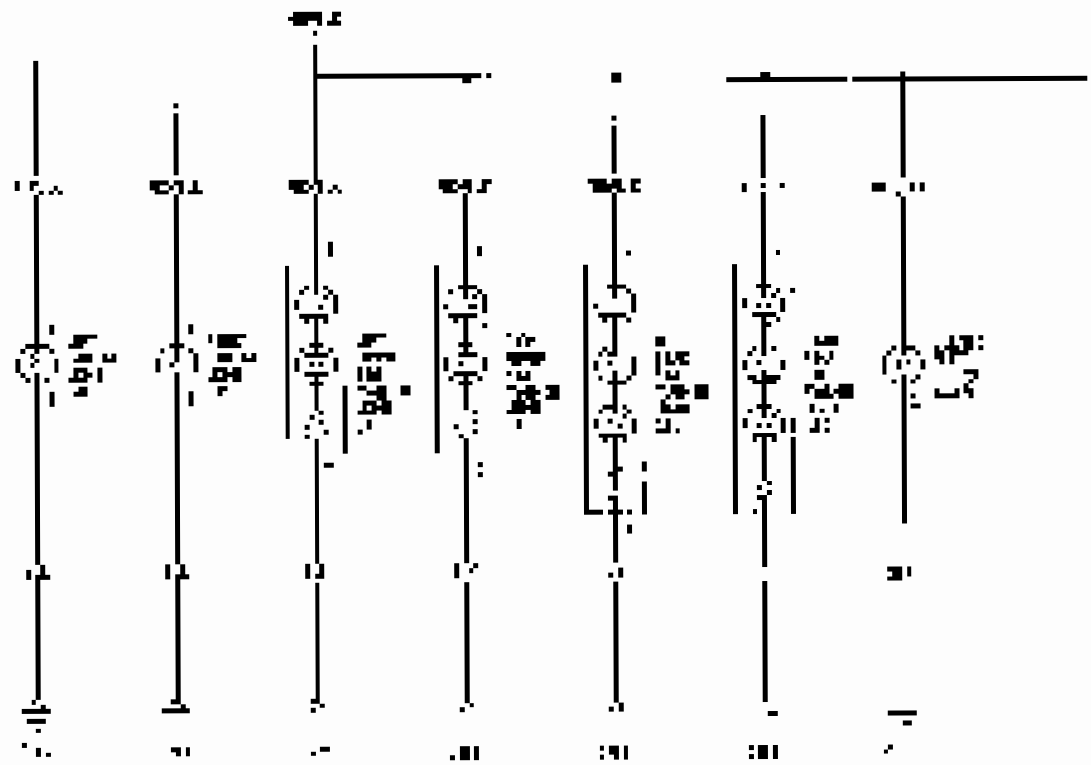
Circuit Diagram - Daytime Running Lights

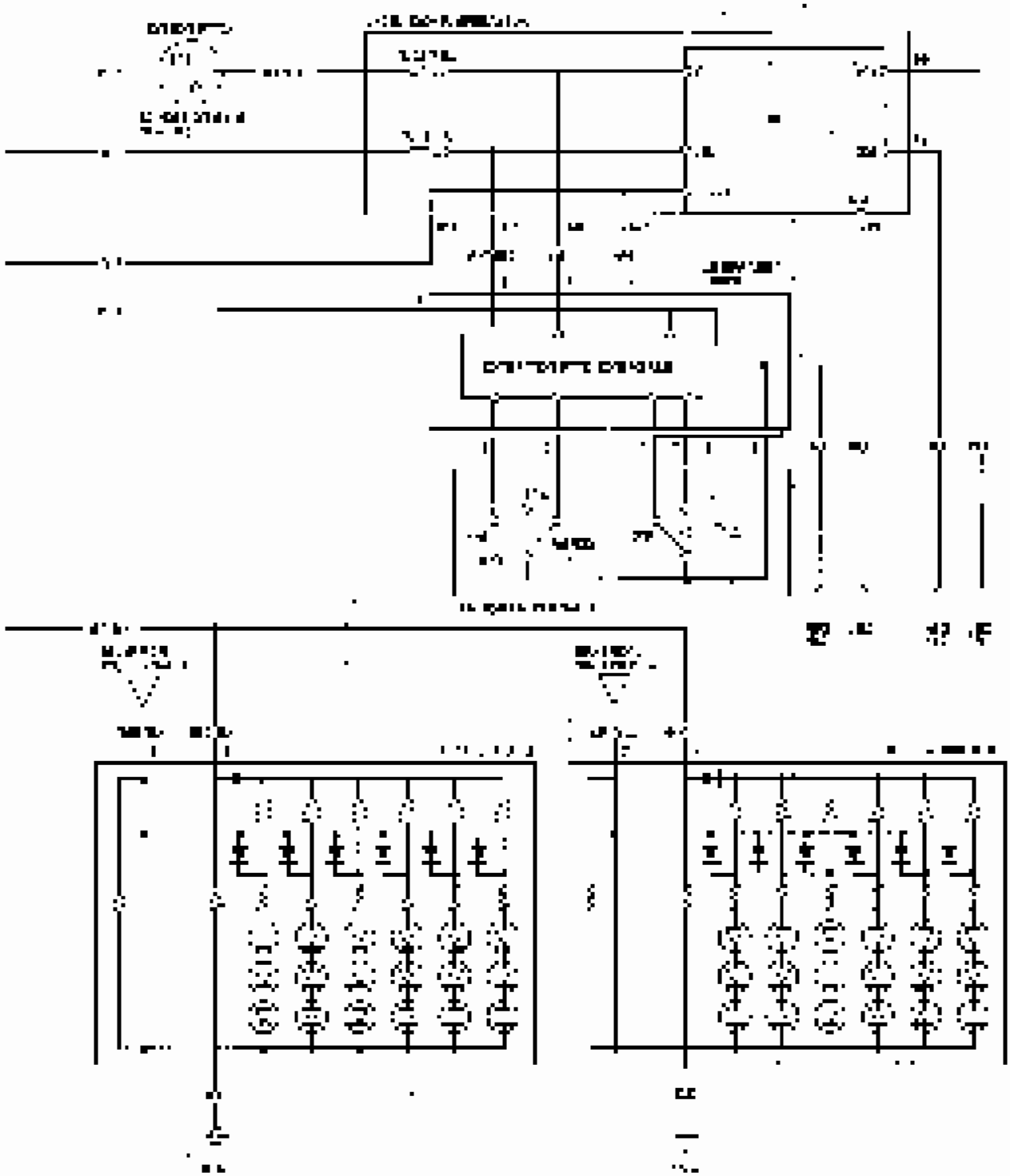
Canada



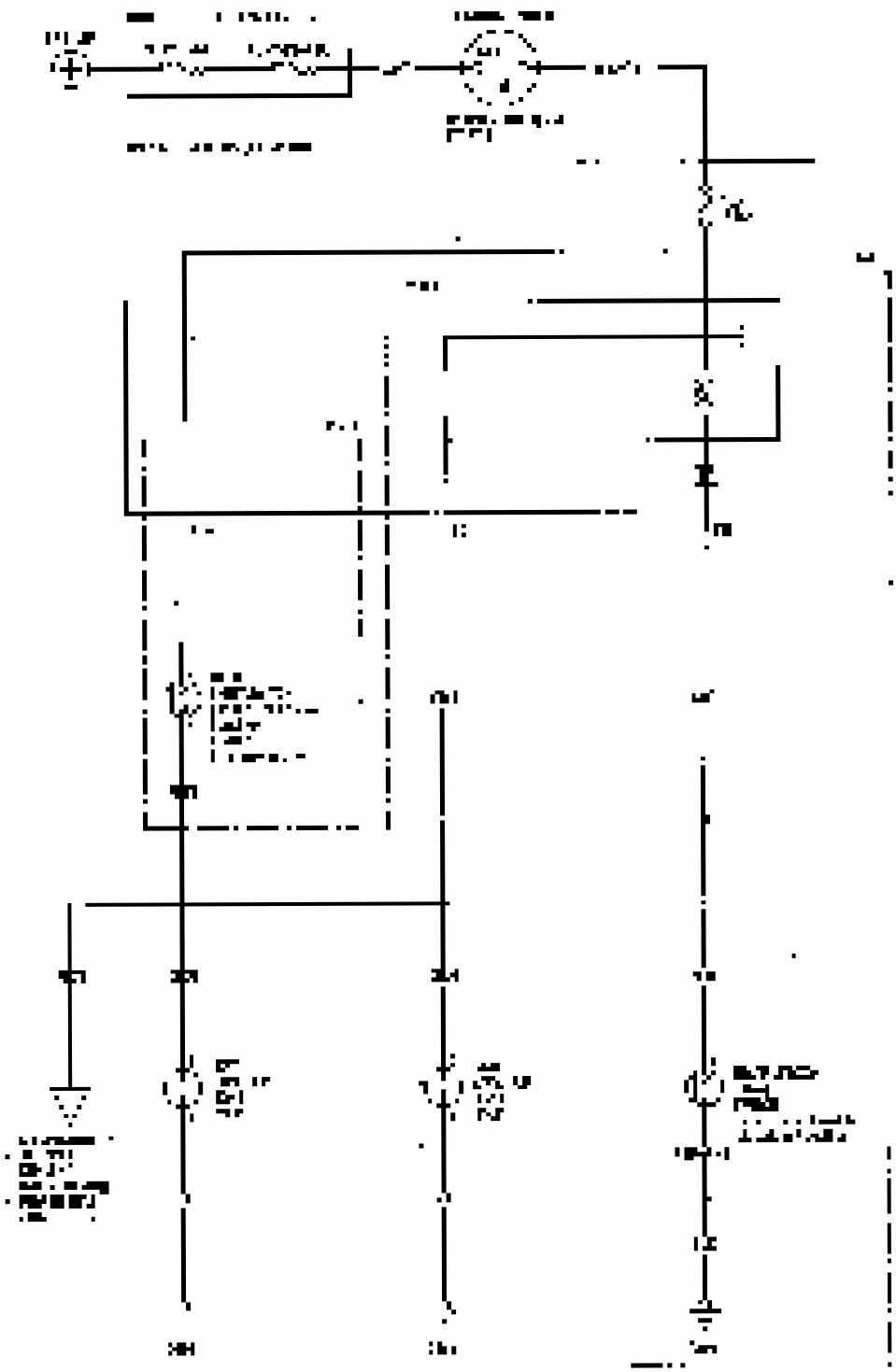
Circuit Diagram - Parking/Side Marker/License Plate Lights, Taillights



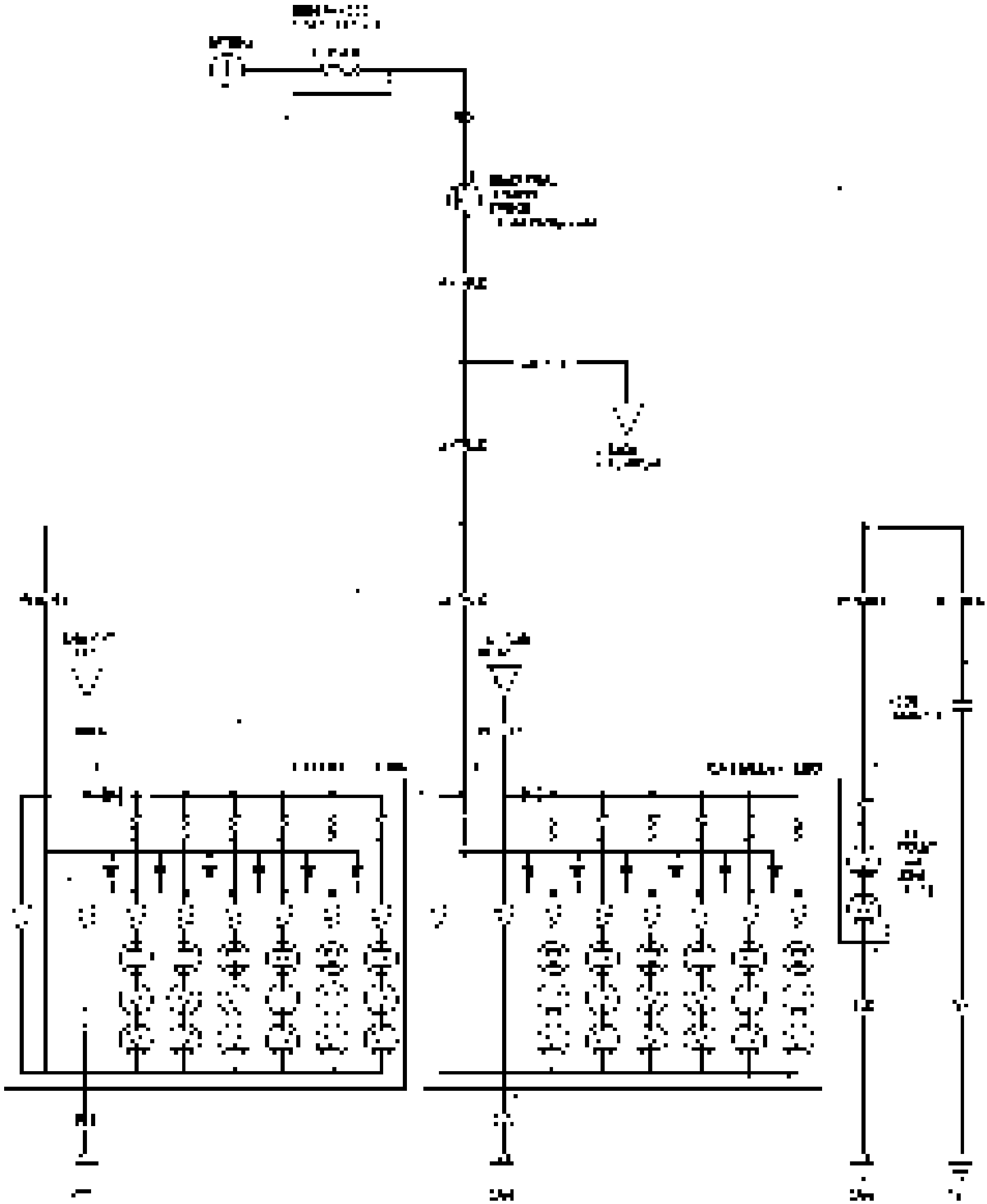




Circuit Diagram - Back-up Lights



Circuit Diagram - Brake Lights



DTC Troubleshooting

DTC B1001: Low Light Signal Error

[illegible]

1. Clear the DTC with the HDS.

2. [illegible]

[illegible]

[illegible]

Is the light on?

YES - Go to step 4.

NO - [illegible]

3. [illegible] Is DTC B1001 reset?

YES - Go to step 4.

NO - [illegible]

4. With the [illegible] Is DTC B1001 reset?

5. Check the On/OFF information of the Low Light Switch (BACK-UP) in the DATA LIST.

[illegible]

YES - [illegible]

NO - [illegible]

6. [illegible]

7. Check the On/OFF information of the Low Light Switch (BACK-UP) in the DATA LIST.

[illegible]

YES - [illegible]

NO - [illegible]

8. [illegible] Is DTC B1001 reset?

[illegible]

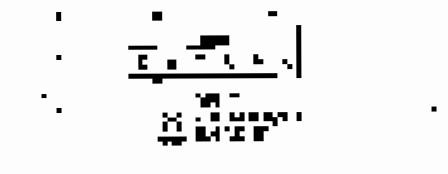
[illegible]

[illegible]

NOTE: [illegible]

11. [illegible] Is DTC B1001 reset?

1. Check for [illegible]



[illegible]

[illegible]

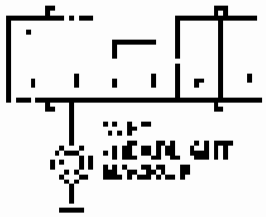
YES - Go to step 12.

NO - [illegible]

12. [illegible]

13. Check for overheated harness and connector (Poor contact in the [illegible] control module I/P connector or [illegible] ground circuit).

[illegible]



[illegible]

Is the inspection normal?

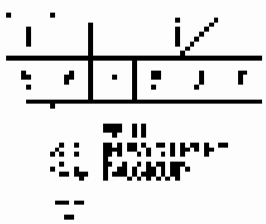
YES : Go to step 14.

NO : Repair or replace the malfunctioning part. Then go to [illegible]

14. [illegible]

15. Disconnect the [illegible] control module I/P connector and [illegible] harness side connector. Then connect terminals of [illegible] harness side connector.

[illegible]



[illegible]

Is the inspection normal?

YES : [illegible]

NO : [illegible]

DTC B1275, Headlight Switch OFF Position Circuit Malfunction

NOTE: Perform [illegible] when the headlight switch is turned to the OFF position. [illegible]

1. [illegible]

2. Turn the ignition switch OFF, and then back ON (I). Check whether it operates.

3. Turn the parking lamps [illegible] and check whether it operates.

4. Turn the headlight switch to the [illegible] position and check whether it operates.

5. Check the [illegible] control module connector terminals and harness for [illegible] and poor contact.

6. Check the DTC detecting condition.

Is DTC [illegible] detected?

YES : Go to step 7.

NO : Intermittent malfunction (poor contact in the control module I/P connector or [illegible]). Check and repair the malfunctioning part.

7. Turn the ignition switch OFF.

8. Disconnect the control module I/P connector and [illegible] harness side connector. Then connect terminals of [illegible] harness side connector.

9. Perform the [illegible] when the headlight switch is turned to the OFF position.

Is the [illegible] normal?

YES : Replace the control module I/P connector.

NO : Replace the control module I/P connector.

DTC Troubleshooting (cont'd)

DTC B1230: Headlight Switch in Parking Switch Position Circuit Malfunction

NOTE: If you encounter trouble entering multiple DTCs, be sure to check the connections at the B-CAN system diagnostic mode A (see page 22-103).

1. Check the DTC for the B-CAN.
2. Turn the ignition switch OFF, and then turn it to ACCESSORY or ON.
3. Turn the parking light switch ON.
4. Turn the headlight switch to LOW. Check that the headlights come on.
5. Check the connection at the parking light switch. Is the connection OK?

   YES: Replace the parking light switch.

   NO: Reconnect the connector, and then check that the DTC is indicated. If the DTC is indicated, check the wire harness between the parking light switch and the B-CAN unit. Repair as necessary.
6. Turn the ignition switch OFF.
7. Disconnect the B-CAN unit connector.
8. Check for continuity between the parking light switch terminal and body ground.
9. Perform the parking light switch test (see page 22-142).

   Is the parking light switch OK?

   YES: Check for an intermittent short in the wire harness between the parking light switch and the B-CAN unit. Repair as necessary.

   NO: Replace the parking light switch.

DTC B1231: Headlight Switch Off Position Circuit Malfunction

NOTE: If you encounter trouble entering multiple DTCs, be sure to check the connections at the B-CAN system diagnostic mode A (see page 22-103).

1. Check the DTC for the B-CAN.
2. Turn the ignition switch OFF, and then turn it to ACCESSORY or ON.
3. Turn the parking light switch OFF.
4. Turn the headlight switch to LOW. Check that the headlights go off.
5. Check the connection at the headlight switch. Is the connection OK?

   YES: Replace the headlight switch.

   NO: Reconnect the connector, and then check that the DTC is indicated. If the DTC is indicated, check the wire harness between the headlight switch and the B-CAN unit. Repair as necessary.
6. Turn the ignition switch OFF.
7. Disconnect the B-CAN unit connector.
8. Check for continuity between the headlight switch terminal and body ground.
9. Perform the parking light switch test (see page 22-142).

   Is the parking light switch OK?

   YES: Check for an intermittent short in the wire harness between the headlight switch and the B-CAN unit. Repair as necessary.

   NO: Replace the parking light switch.

DTC B1220: Headlight Switch Signal Circuit Malfunction

NOTE: [illegible]

1. [illegible]
2. Turn the ignition switch to ACC or [illegible]
3. Change the combination switch from low beam to high beam and [illegible]
4. [illegible]
5. Check for DTC B1220.

   Is DTC B1220 indicated?

   YES: Go to step 6.

   NO: [illegible]

6. [illegible]
7. Disconnect the combination light switch 12P connector from the [illegible]
8. [illegible]

   [illegible]

   Yes → [illegible]

   NO: [illegible]

DTC B1240: Front Fog Light Switch Circuit Malfunction

NOTE: [illegible]

1. [illegible]
2. Turn the ignition switch to ON, and then to ACC.
3. Turn the front fog light switch to ON, and then to [illegible]
4. [illegible]
5. Check for DTC B1240.

   Is DTC B1240 indicated?

   YES: Go to step 6.

   NO: [illegible]

6. [illegible]
7. Disconnect the combination light switch 12P connector from the [illegible]
8. Check for open or short in wire harness between [illegible]

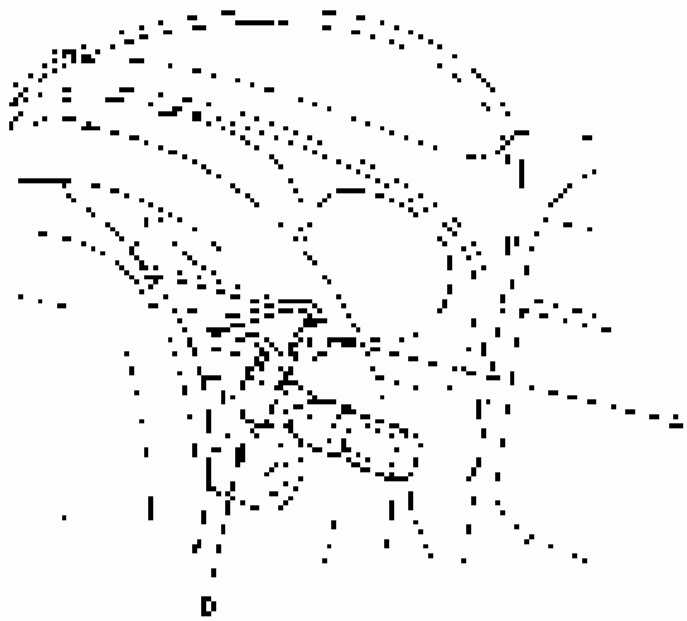
   [illegible]

   Yes → [illegible]

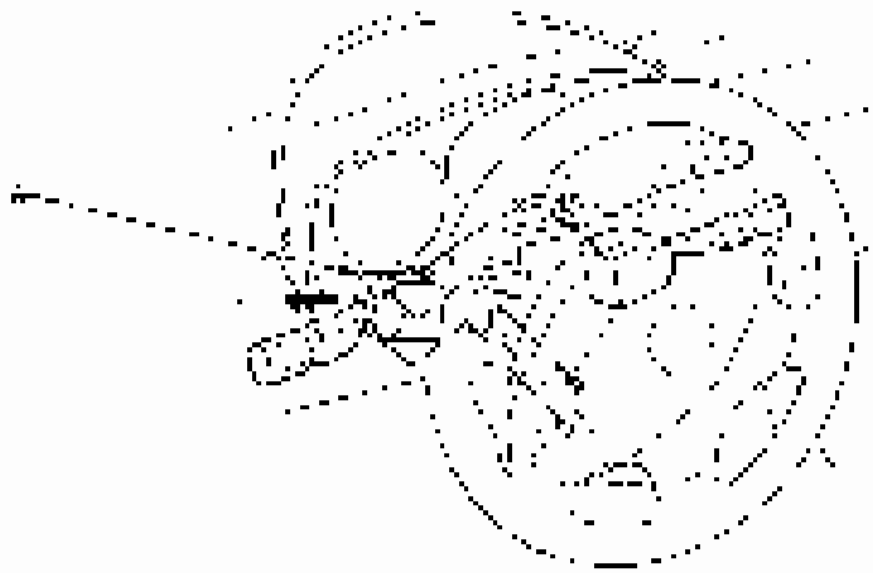
   NO: [illegible]

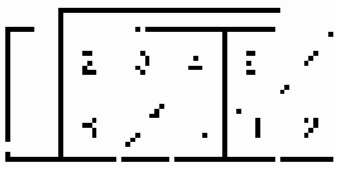
Combination Light Switch Test/Replacement

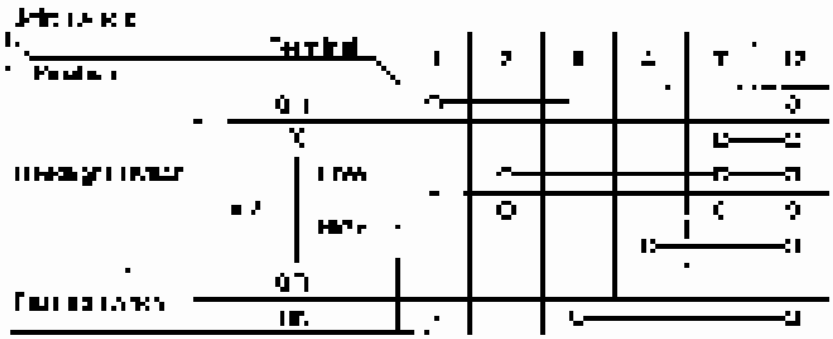
1. Remove the dash board [illegible] cover. See page 20-151.
2. Remove the steering column cover. See page 19-34.
3. Disconnect the combination light switch 3P connector (C) from the wire harness connector (D).

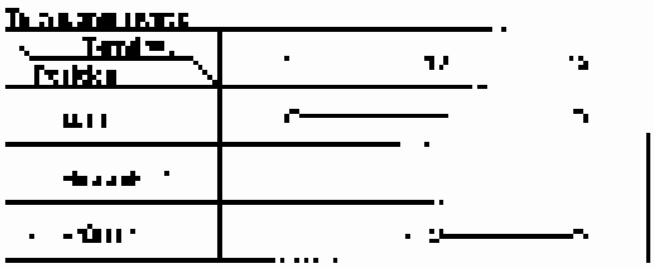


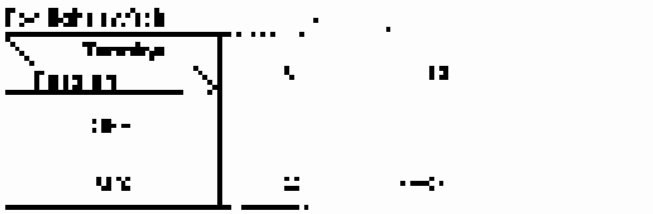
4. Remove the [illegible] screw from the instrument panel lower light [illegible].





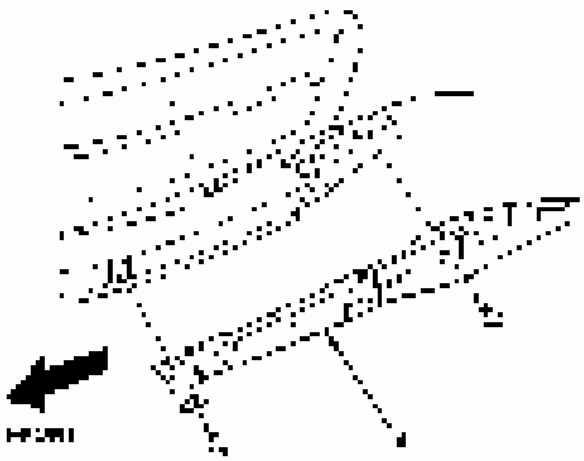






Headlight Replacement

1. [illegible]
2. [illegible]



3. [illegible]

4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]

Headlight Adjustment

⚠CAUTION

Headlight beam aiming must be done only by qualified technicians using approved equipment and procedures. Improper aiming can cause accidents.

Before starting the adjustment, check the following:
- Tire pressure is correct.
- Make sure that the passenger's seat is unoccupied.
- Make sure that the headlight lenses and reflectors are clean.

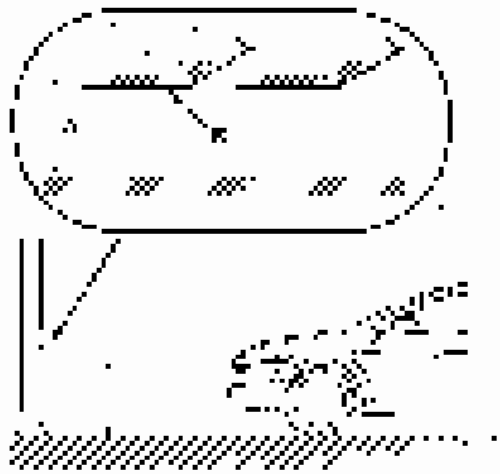
1. Park the vehicle on a flat surface facing a wall as shown.

2. Park the vehicle 25 ft (7.5 m) away from a wall as shown.

3. Turn the ignition switch ON.

4. Measure the distance from the center of the headlight to the floor.

Vertical adjustment:
Mark a point on the wall 2 in (50 mm) below headlight height. B.



5. Turn the screw to adjust the headlight beam aiming to the marks.

HID Lamp System Troubleshooting

AWARNING

[illegible]

ACAUTION

- [illegible]
- [illegible]
- [illegible]
- [illegible]

1. [illegible]

   [illegible]
   YES—Go to step 2.
   NO—Replace the [illegible] and recheck.

2. Make sure you have the [illegible] and are using the [illegible] system. Then shut down the vehicle and disconnect the negative battery cable. Wait one minute, then reconnect the cable. Start the engine and turn the headlights ON.

3. [illegible]

4. Disconnect the [illegible] connector from the HID ballast. See page 22-177.

5. Make sure the [illegible] terminals in the HID ballast connector are clean and not damaged.

   [illegible]
   YES—Go to step 6.
   NO—Clean or repair as needed.

6. [illegible]

7. [illegible]

8. Check for voltage between [illegible] and ground.

   [illegible]

   [illegible]

   Connector Side Terminals
   *BB [illegible]
   NO—[illegible]

9. [illegible]

10. Check for continuity between [illegible] and ground.

    [illegible]

    [illegible]

    Connector Side Terminals
    *BB—Substitute a known-good HID and recheck. If the lamp operates, [illegible] original [illegible].
    NO—[illegible]

    [illegible]
    Are you [illegible]?

HID Bulb Replacement

⚠WARNING

[illegible]

⚠CAUTION

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

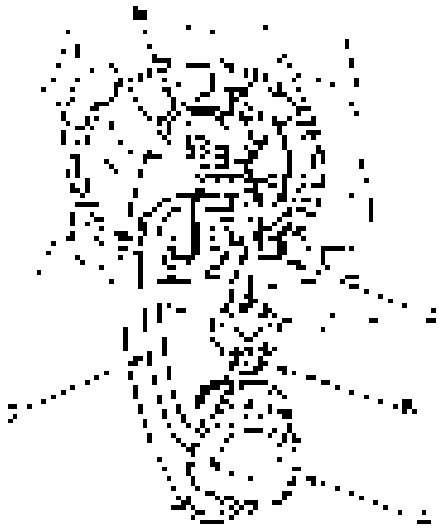
[illegible]

2. Turn the combination lights switch OFF.
3. Disconnect the negative (-) battery cable. For the disconnection method, refer to page 22-184.
4. Remove the front combination light assembly. For the removal method, refer to page 22-184.
5. Remove the front combination light socket cover. Turn it 45° counterclockwise.

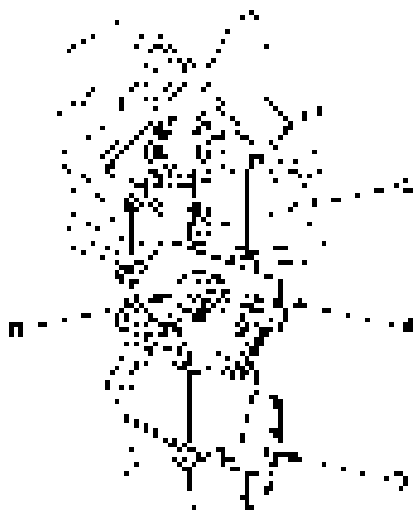
6. [illegible]

[illegible]

HID Bulb Replacement (cont'd)



HID Unit Replacement



High/Low Beam Switching Solenoid Test

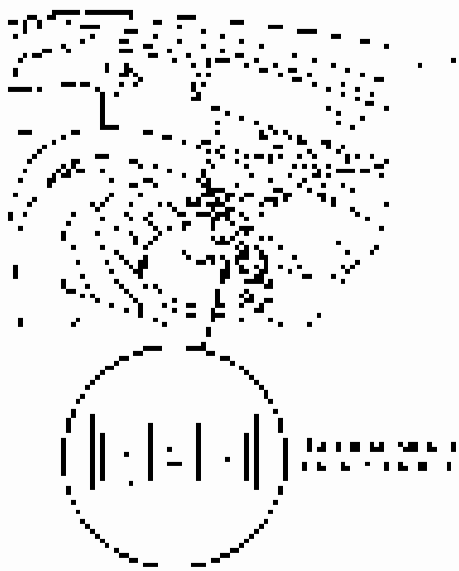
1. [illegible]

2. [illegible]

NOTE: [illegible]

3. [illegible]

4. [illegible]



5. [illegible]

Bulb Replacement

Fog Light (USA)/Daytime Running Lights (Canada)

1. Disconnect the 2P connector from the fog light.

Fog Light	51W
Daytime Running Light	6.4W

2. Turn the bulb socket counterclockwise and remove it from the fog light housing.
3. Install a new bulb in the socket, then install the socket in the fog light housing by aligning its tabs with the slots in the housing, and turning it clockwise.

NOTE: Do not touch the glass surface of the bulb. If you do, clean it with a cloth moistened with alcohol to prevent premature bulb failure.

Front Turn Signal/Front Parking Light

1. Remove the front bumper (see page 20-112).
2. Disconnect the 3P connector from the front turn signal/front parking light.

Front Turn Signal/Parking Light	21/5W

3. Turn the bulb socket counterclockwise and remove it from the front turn signal/parking light housing.
4. Install a new bulb in the socket, then install the socket in the housing.

Side Marker Light Replacement

1. Remove the [illegible] page 20-152) and front fender liner (see page 23-14), or the front wheel opening trim (see page 23-63).
2. [illegible]

Front Side Marker Light

Rear Side Marker Light

3. Disconnect the [illegible] connector from the light.
4. [illegible]

Brake Pedal Position Switch Test

1. [illegible] pedal position switch (A).

2. [illegible]

- [illegible]
- [illegible]

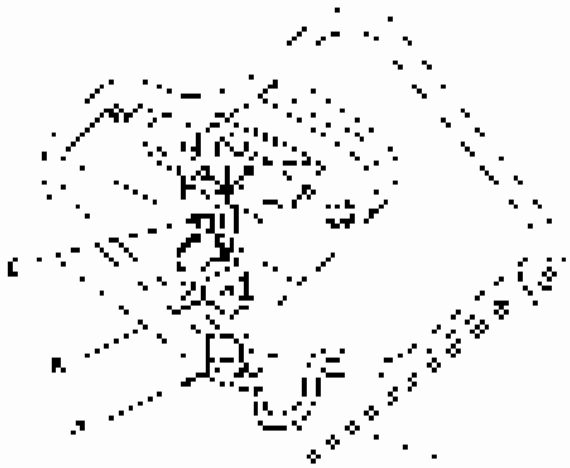
3. [illegible]

- [illegible]
- [illegible]

4. [illegible] page 20-152.

Back-up Light Bulb Replacement

1. Open the trunk lid and remove the trunk trim. Refer to page 22-62.
2. Disconnect the 2P connector from the back-up light.
3. Turn the bulb counterclockwise and remove it.



4. Install the bulb in the reverse order of removal.

License Plate Light Replacement

1. Open the trunk lid and remove the trunk trim. Refer to page 20-XX.
2. Disconnect the 2P connector from the [illegible]

License Plate Light

3. [illegible]
4. Remove the screw and the license plate light assembly from the trunk lid.
5. Replace the [illegible]
6. [illegible]

Taillight Replacement

1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]

8. [illegible]
9. [illegible]
10. [illegible]

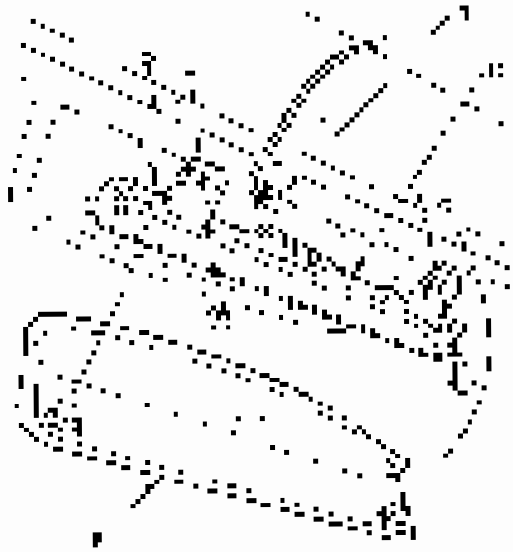
Taillight/Brake Light LED Replacement

1. Remove the taillight cover (see procedure).
2. Remove the taillight socket from the housing.

3. Make a small mark on the taillight housing around the bulb. This will help you install the bulb in the correct position.
4. Remove the four screws and washers securing the taillight assembly to the vehicle.
5. Separate the taillight assembly from the vehicle and remove it from the vehicle.
6. Install the taillight assembly in the reverse order of removal.

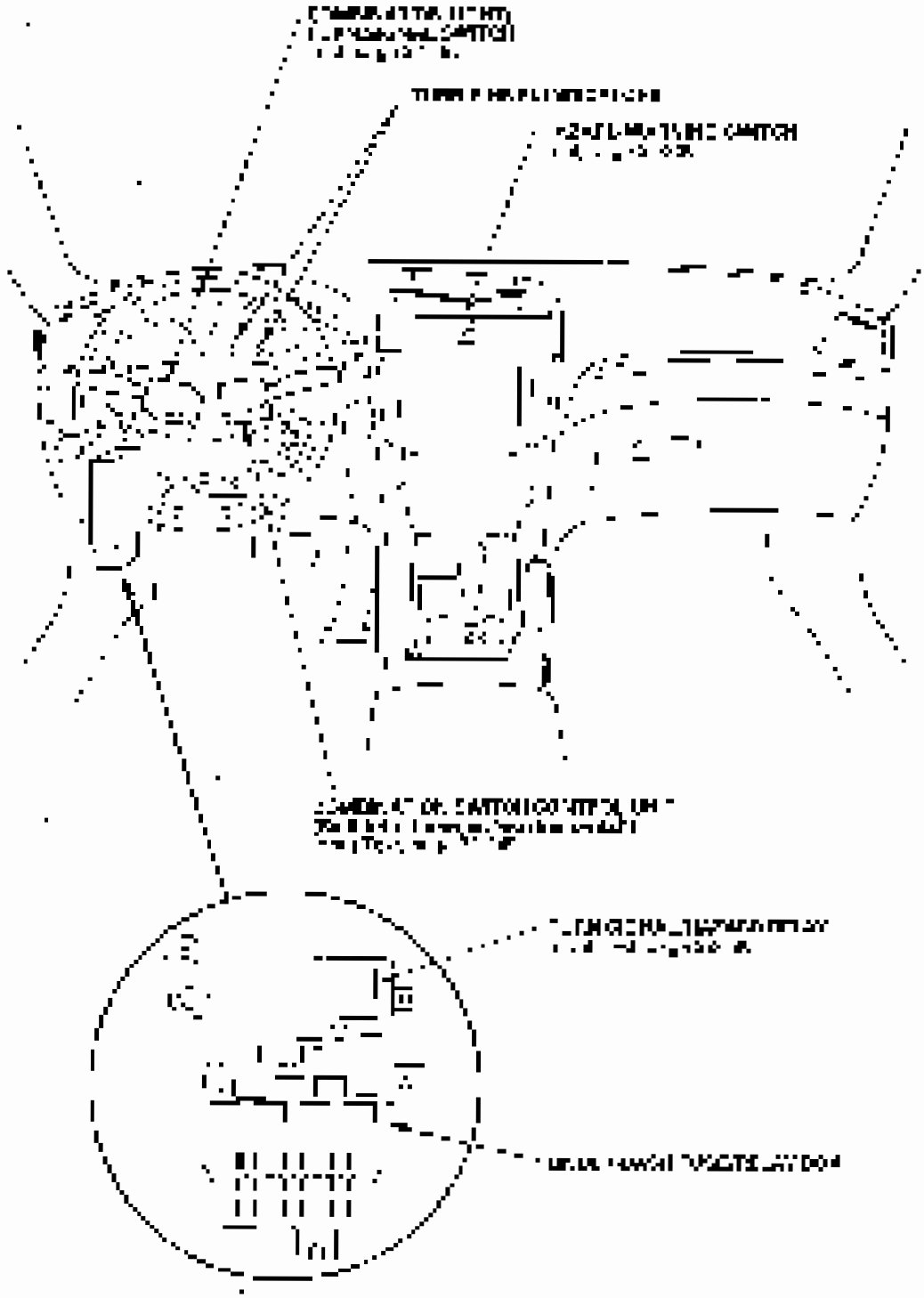
High Mount Brake Light Replacement

1. Remove the high mount brake light cover (see procedure).



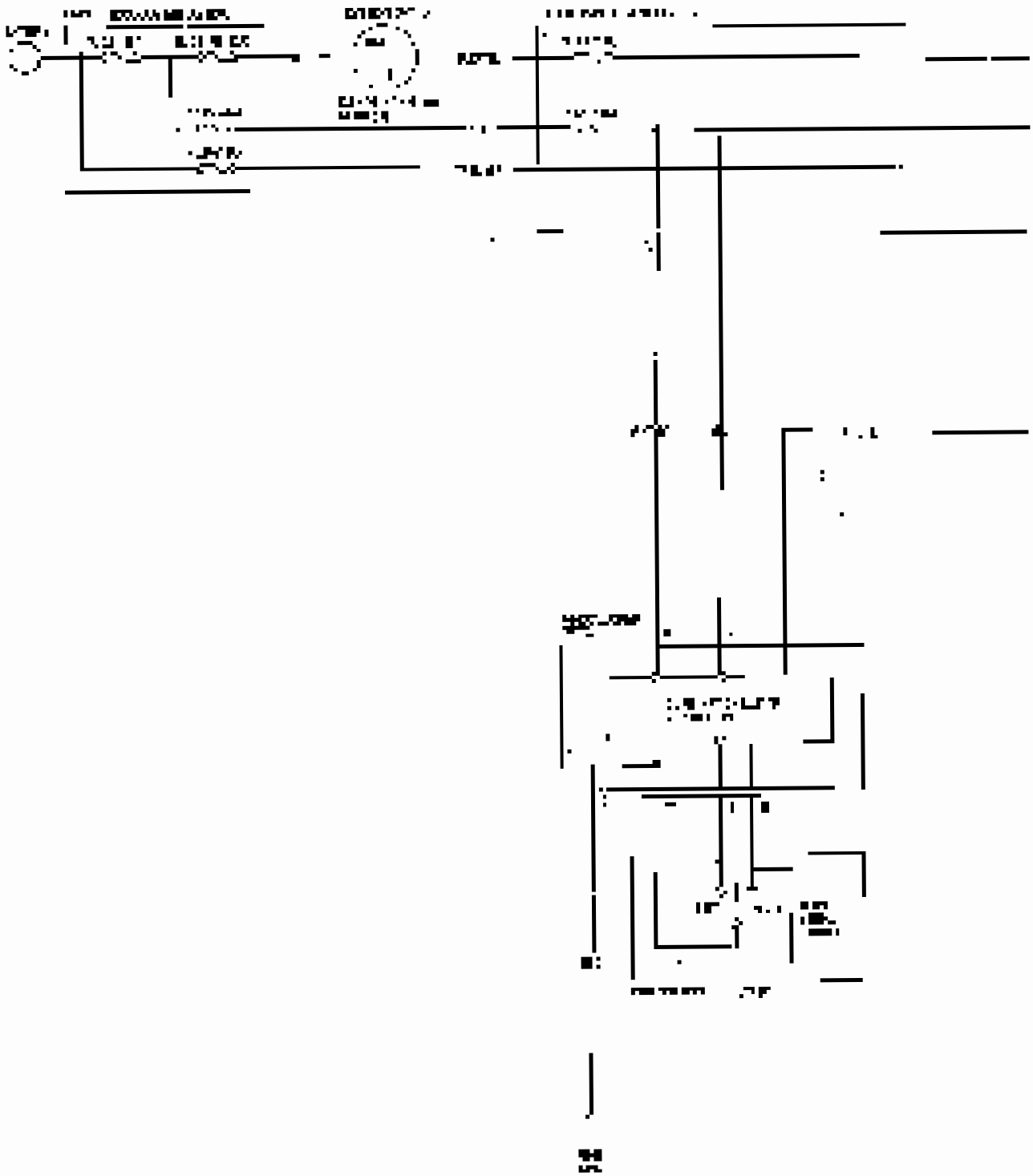
2. Disconnect the electrical connector from the high mount brake light assembly.
3. Remove the two screws securing the high mount brake light assembly to the vehicle.
4. Install the high mount brake light assembly in the reverse order of removal.
5. Check the new high mount brake light assembly for proper operation.

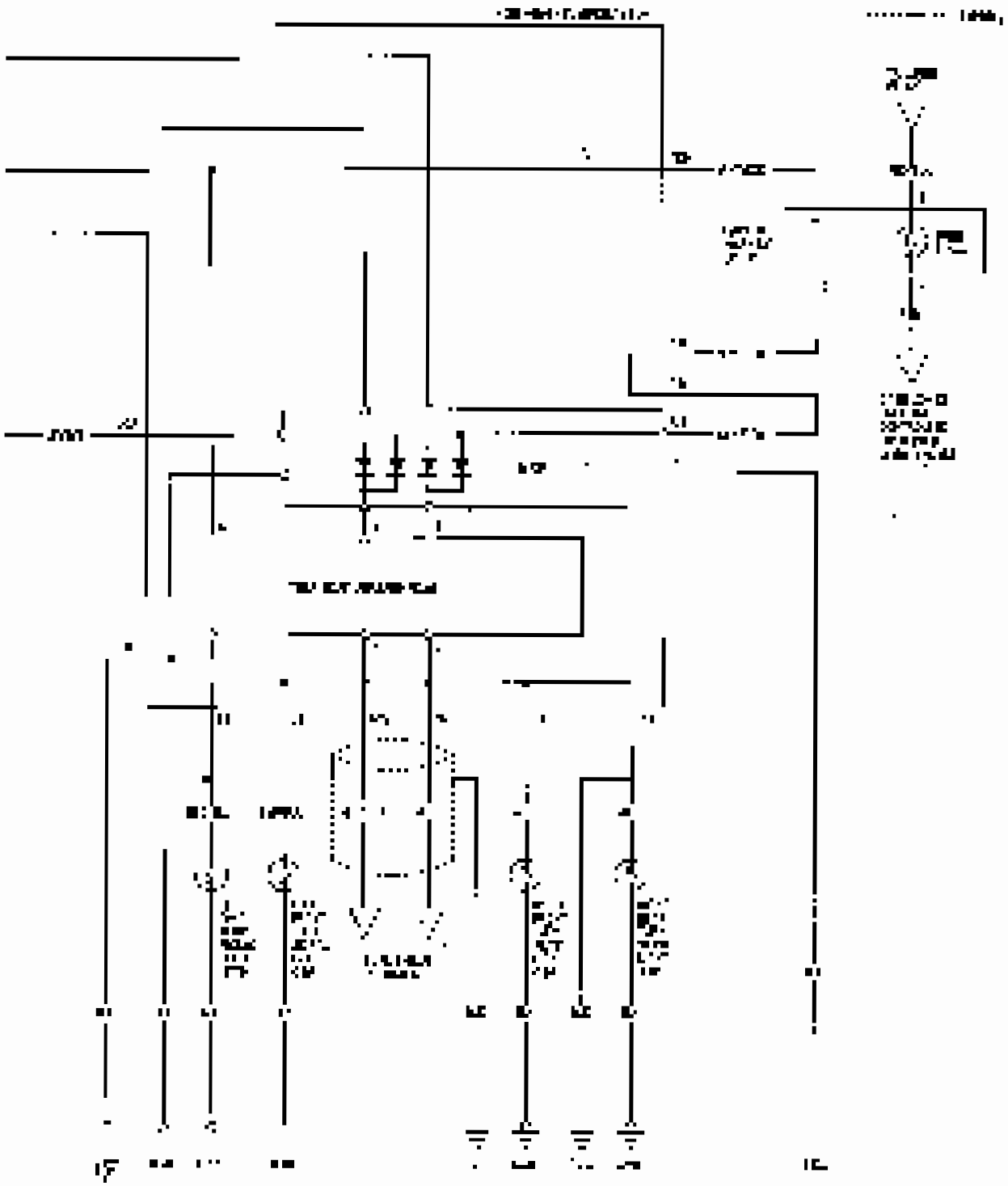
Component Location Index



Turn Signal/Hazard Flasher

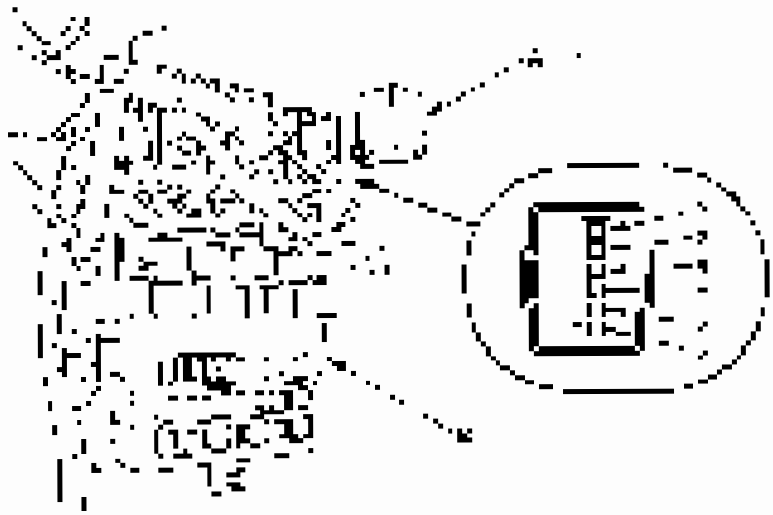
Circuit Diagram





Turn Signal/Hazard Relay Input Test

1. [illegible]



2. [illegible]
   - [illegible]
   - [illegible]

- [illegible]
- [illegible]

Study	[illegible]	Trace Detected result	Possible [illegible]
0	[illegible]	Check for voltage supply and ... There should be battery voltage.	• Blown 10A [illegible] fuse • Faulty ignition switch • Wire open or shorted
	Ground circuit	Check resistance between ... Should be [illegible]	• Wire open between ... (G201, G202) • Poor ground (G201, G202) • Poor connection at [illegible]
	Control circuit	Check for voltage at ... The left turn signal light should [illegible]	• Wire open or shorted • Faulty [illegible]
3	Control circuit	[illegible]	• Short circuit • Poor ground (G201, G202) • Faulty [illegible]
4	[illegible]	Check for voltage supply ... There should be [illegible]	• Wire open or shorted • Faulty [illegible] • Faulty [illegible] • [illegible]
5	[illegible]	[illegible]	• Faulty [illegible] • Faulty [illegible]
6	[illegible]	Check for voltage ... Check for voltage ... There should be [illegible]	• Poor ground (G201, G202) • [illegible] • [illegible] • [illegible] • [illegible] • [illegible]

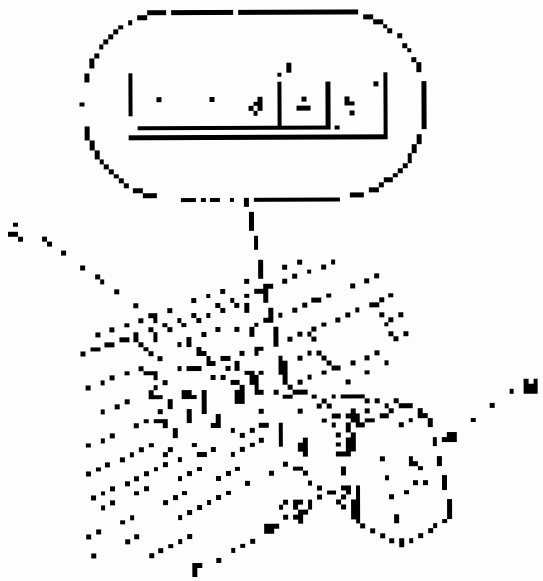
[illegible] page 22-[illegible].

Turn Signal/Hazard Flasher

Hazard Warning Switch Test

1. [illegible]

2. [illegible]



3. [illegible]

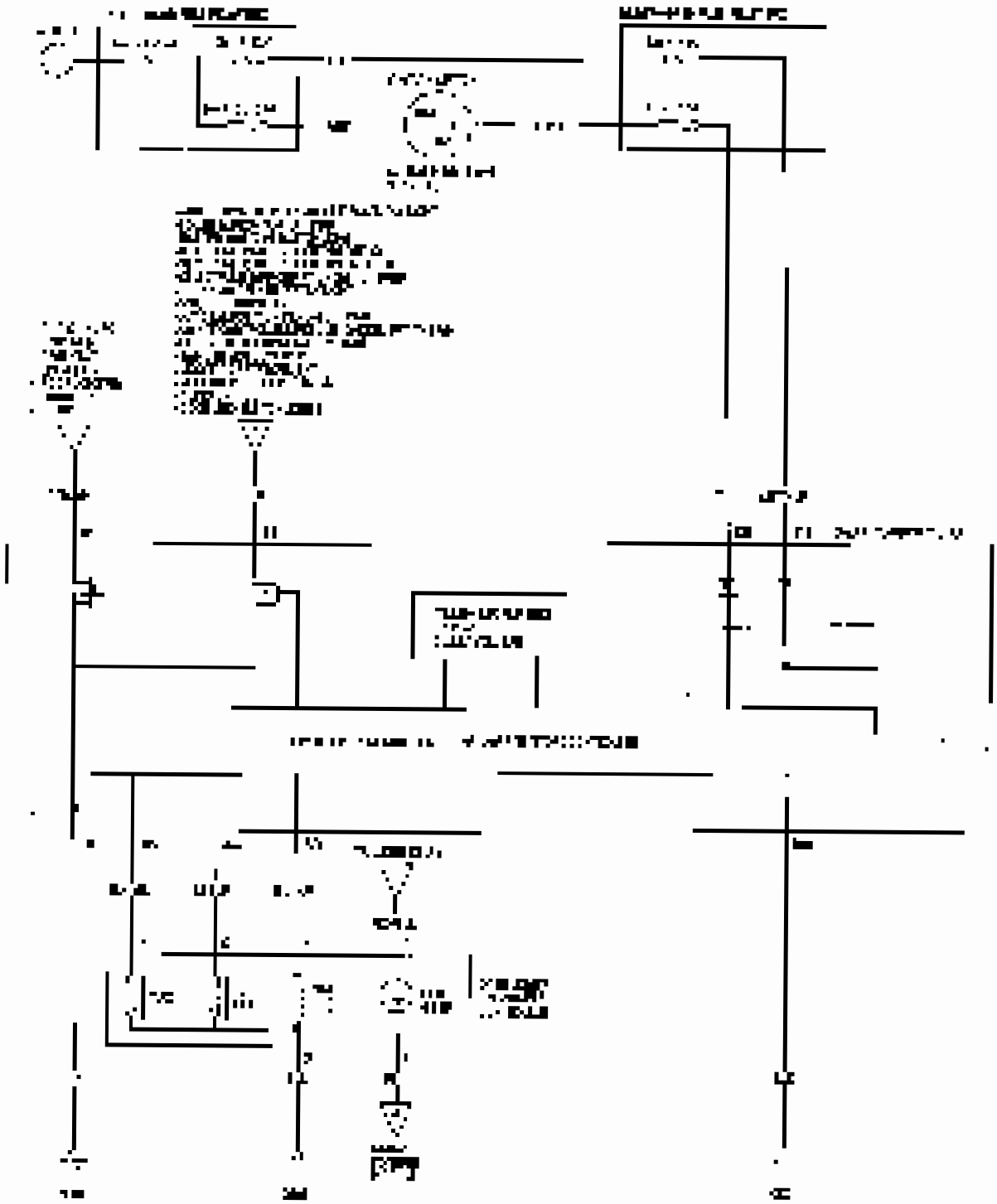
4. [illegible]

[illegible]		
[illegible]		
[illegible]		
[illegible]		

5. [illegible]

Dash Lights Brightness Controller

Circuit Diagram



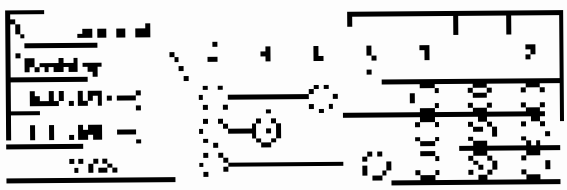
Dash Lights Brightness Controller Test/Replacement

1. [illegible]

2. [illegible]

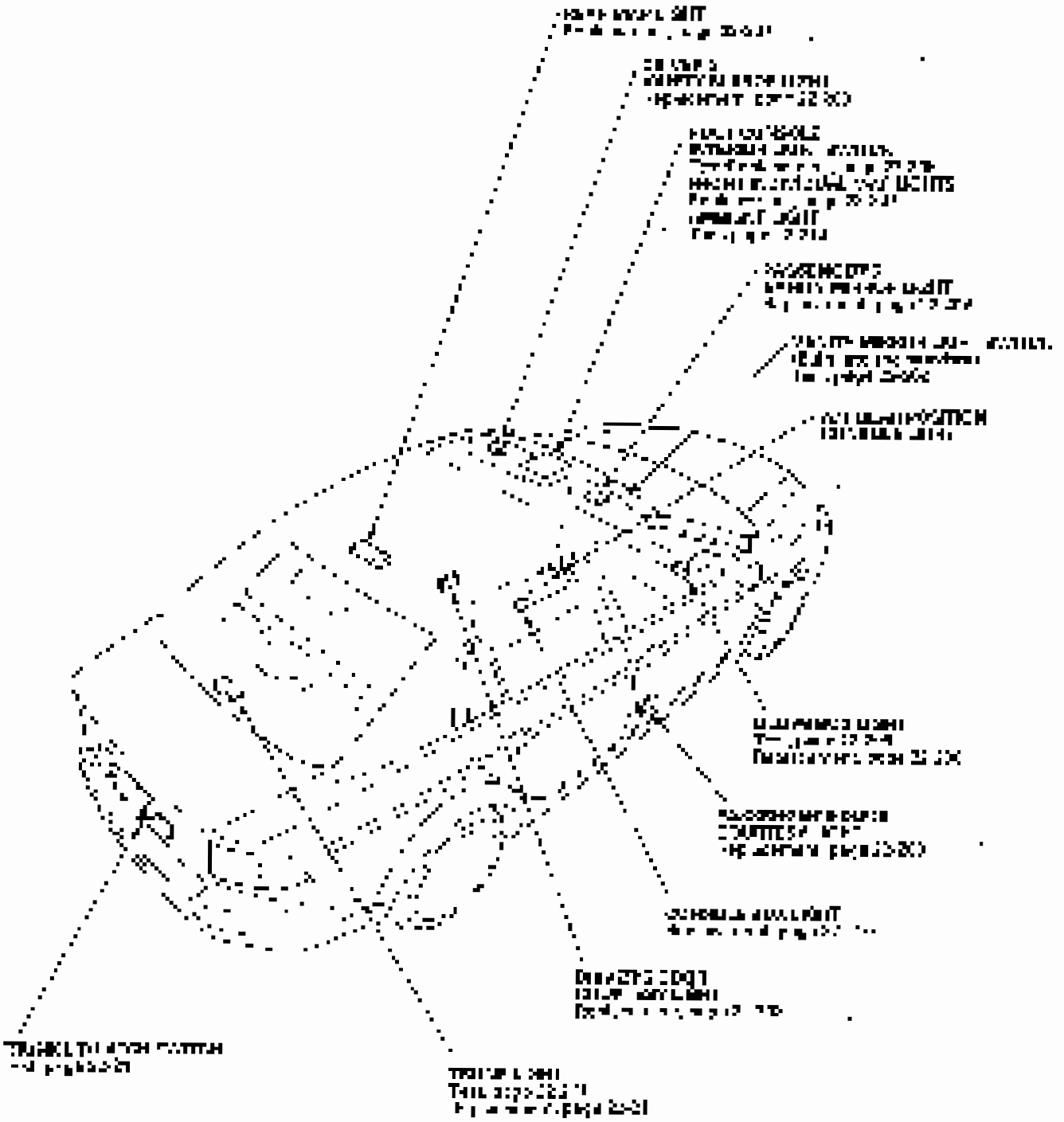
3. [illegible]

4. [illegible]



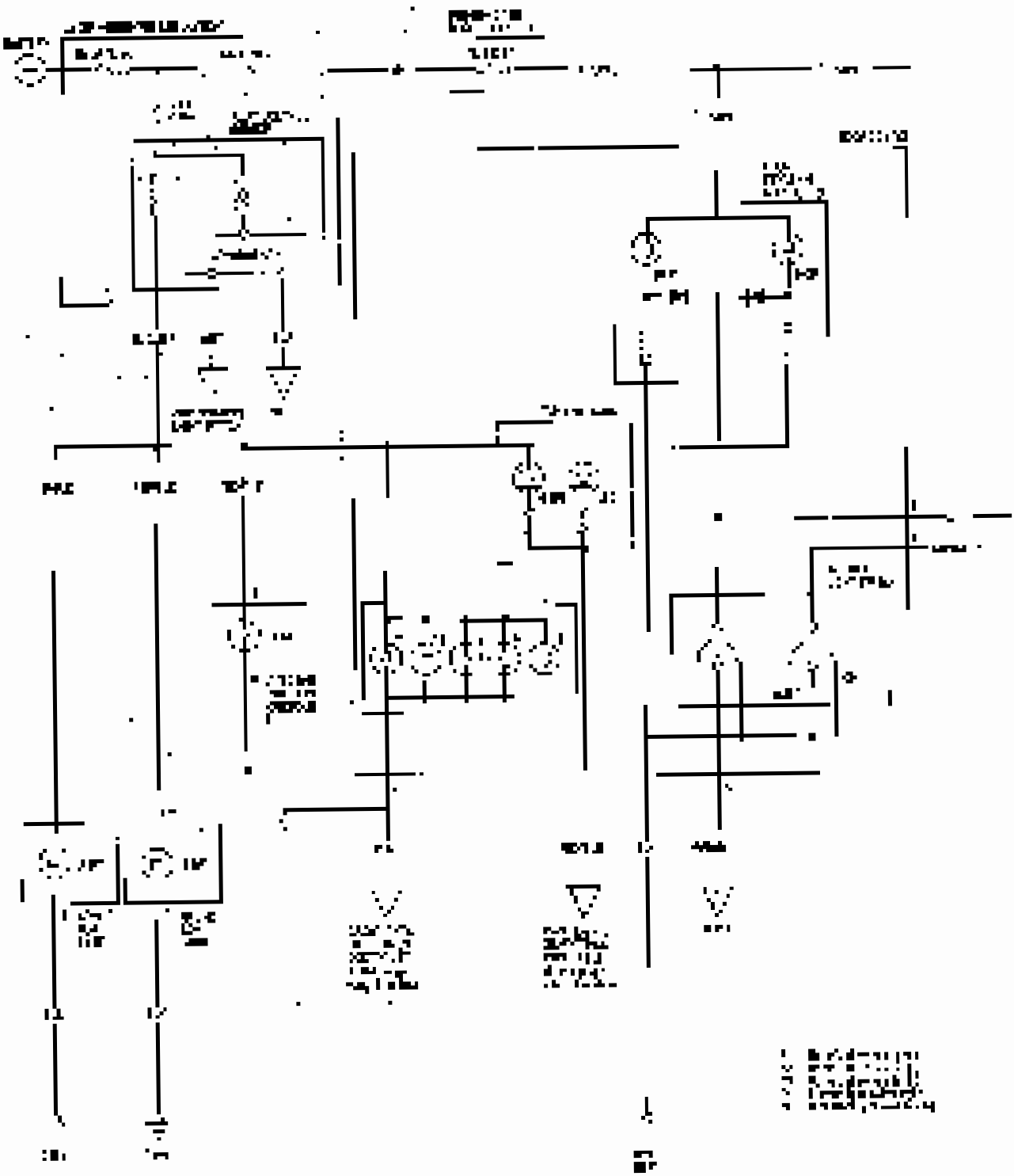
5. [illegible]

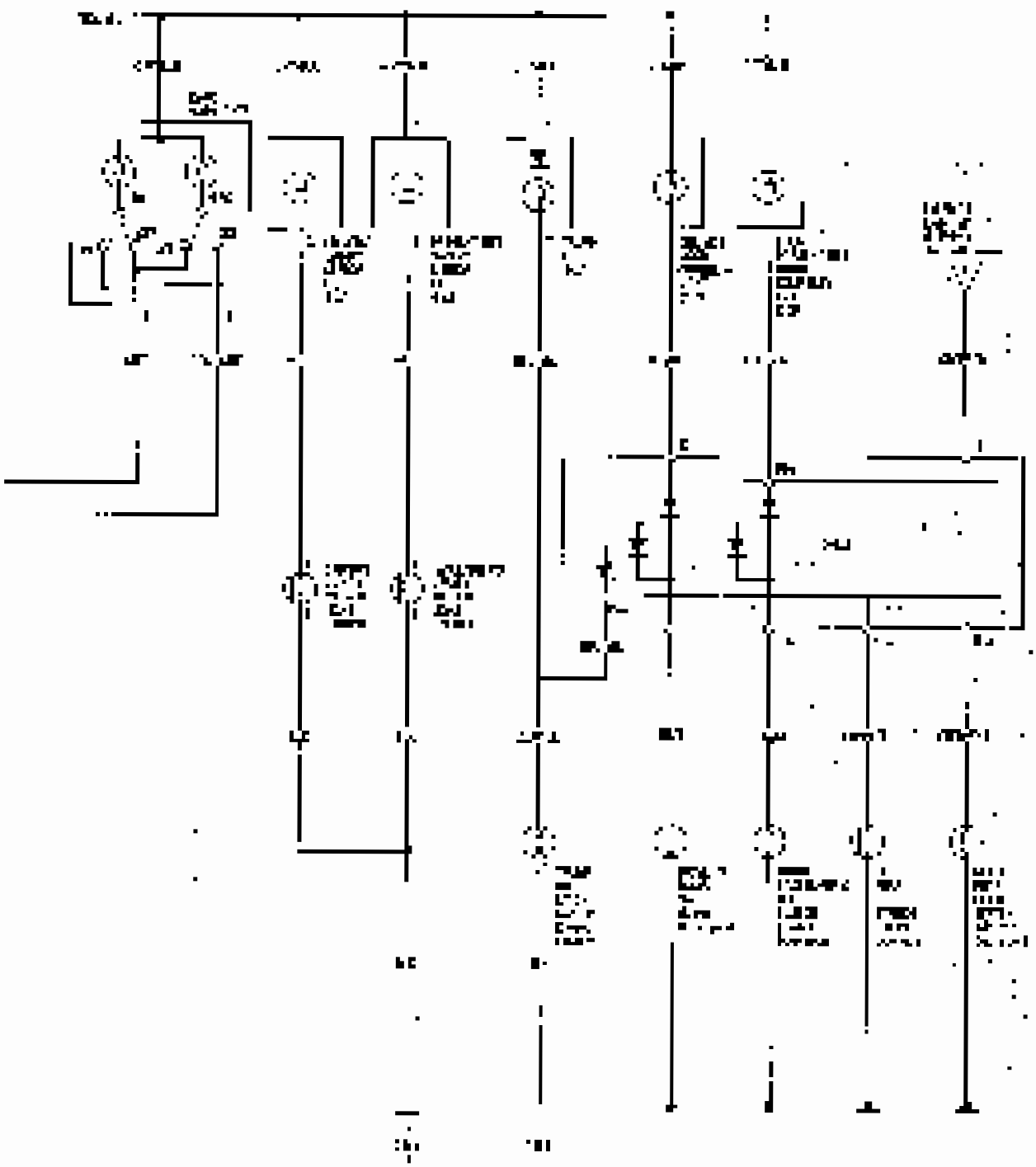
Component Location Index



Interior Lights

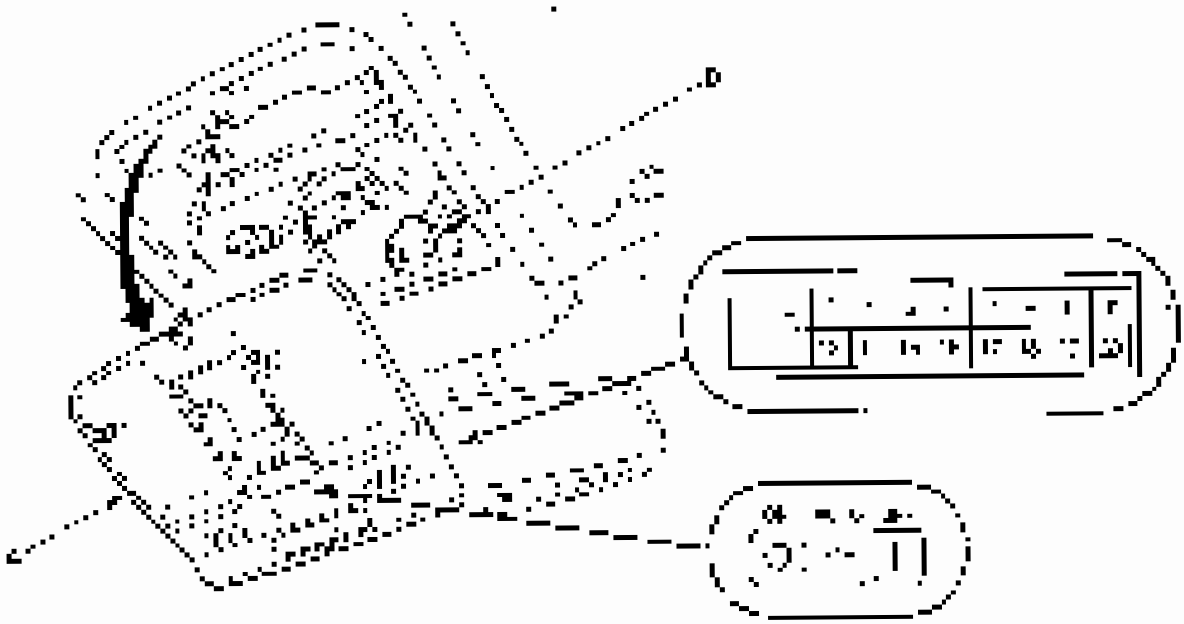
Circuit Diagram





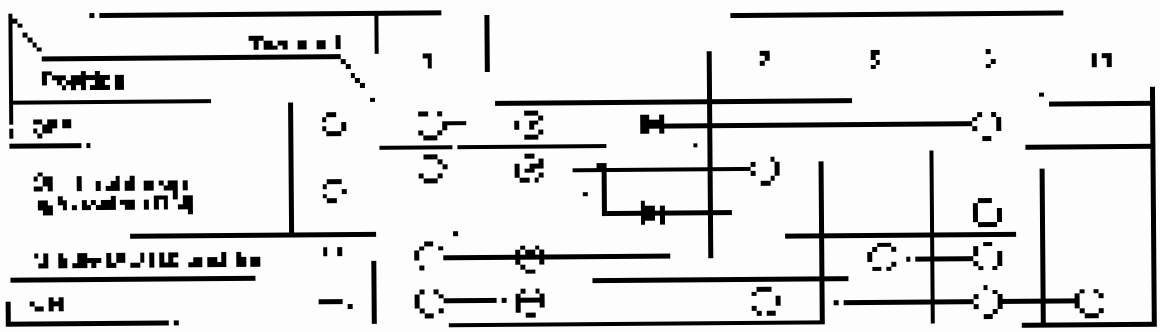
Interior Light Switch Test/Replacement

1. Remove the [illegible] (page [illegible]).
2. Carefully [illegible].



3. [illegible]
4. [illegible]

NOTE:
- [illegible]



5. [illegible]

Front Individual Map Light Replacement

1. [illegible]

   [illegible]

2. [illegible]

Rear Map Light Replacement

1. [illegible]

   [illegible]

* [illegible]

* [illegible]

3. [illegible]

Glove Box Light Test/Replacement

1. [illegible]
2. [illegible]
3. [illegible]

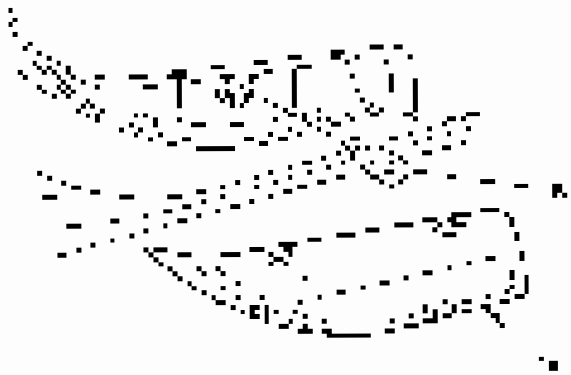
Glove Box Light : 1.4 W

4. [illegible]
5. [illegible]

Courtesy Light Replacement

1. [illegible]

Courtesy Light : 3 CP

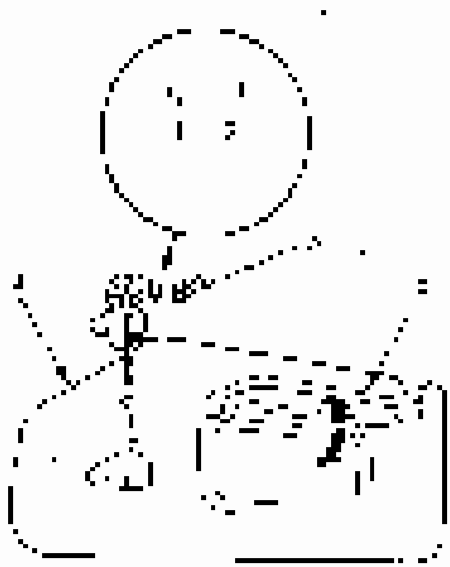


2. [illegible]
3. [illegible]

Vanity Mirror Light Switch Test

1. [illegible]

2. [illegible]



3. [illegible]
   - [illegible]
   - [illegible]

4. [illegible]

Vanity Mirror Light Replacement

1. [illegible]

2. [illegible]

   Vanity Mirror Light: 5 W

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

Console Box Light Replacement

1. Remove the center console. See page 22-171.
2. Disconnect the 2P connector from the console box light.

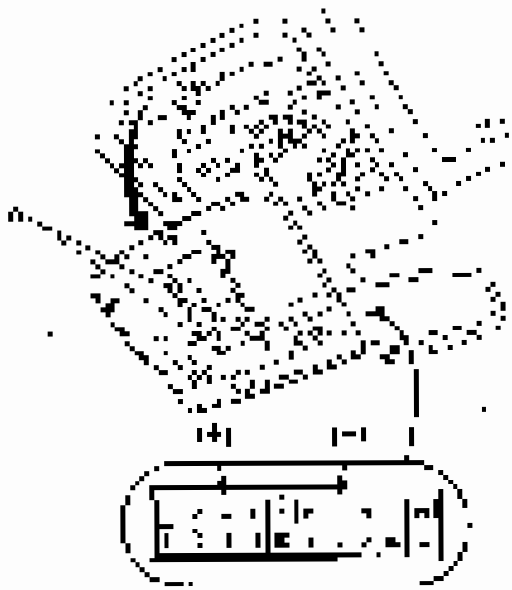
Console box light: 1.4 W

3. Carefully pry out the console box light with a flat-tip screwdriver.
4. Install in the reverse order of removal.

NOTE: Be sure not to damage the lens or the console when removing the console box light.

Ambient Light Test

1. Remove the [illegible] from the [illegible]. See page 22-[illegible].
2. Connect a jumper wire from battery positive terminal to the [illegible] terminal and battery negative terminal to the [illegible] terminal. The ambient light should illuminate. If the light does not illuminate, replace the [illegible].



Trunk Light Test/Replacement

1. Open the trunk lid.
2. [illegible]

Trunk light - [illegible]

3. [illegible]
4. Check for continuity between the [illegible] and body ground. There should be continuity. If there is no continuity, check the bulb. If the bulb is OK, replace the trunk light.

Trunk Lid Latch Switch Test

1. Open the trunk. [illegible]
2. [illegible]

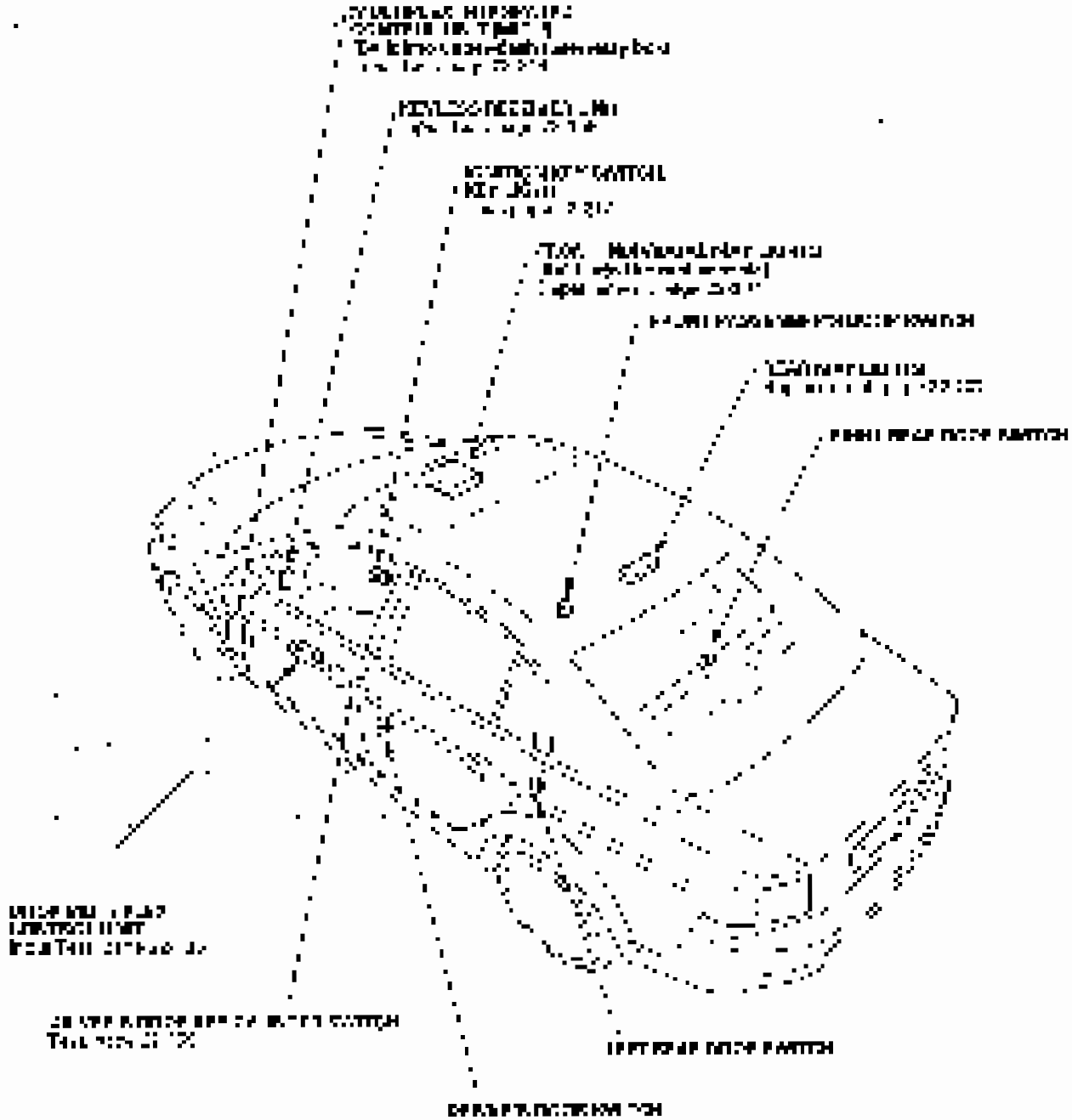
3. [illegible]

- There should be continuity with the trunk lid latch unlatched (open).
- There should be no continuity with the trunk lid latch latched (closed).

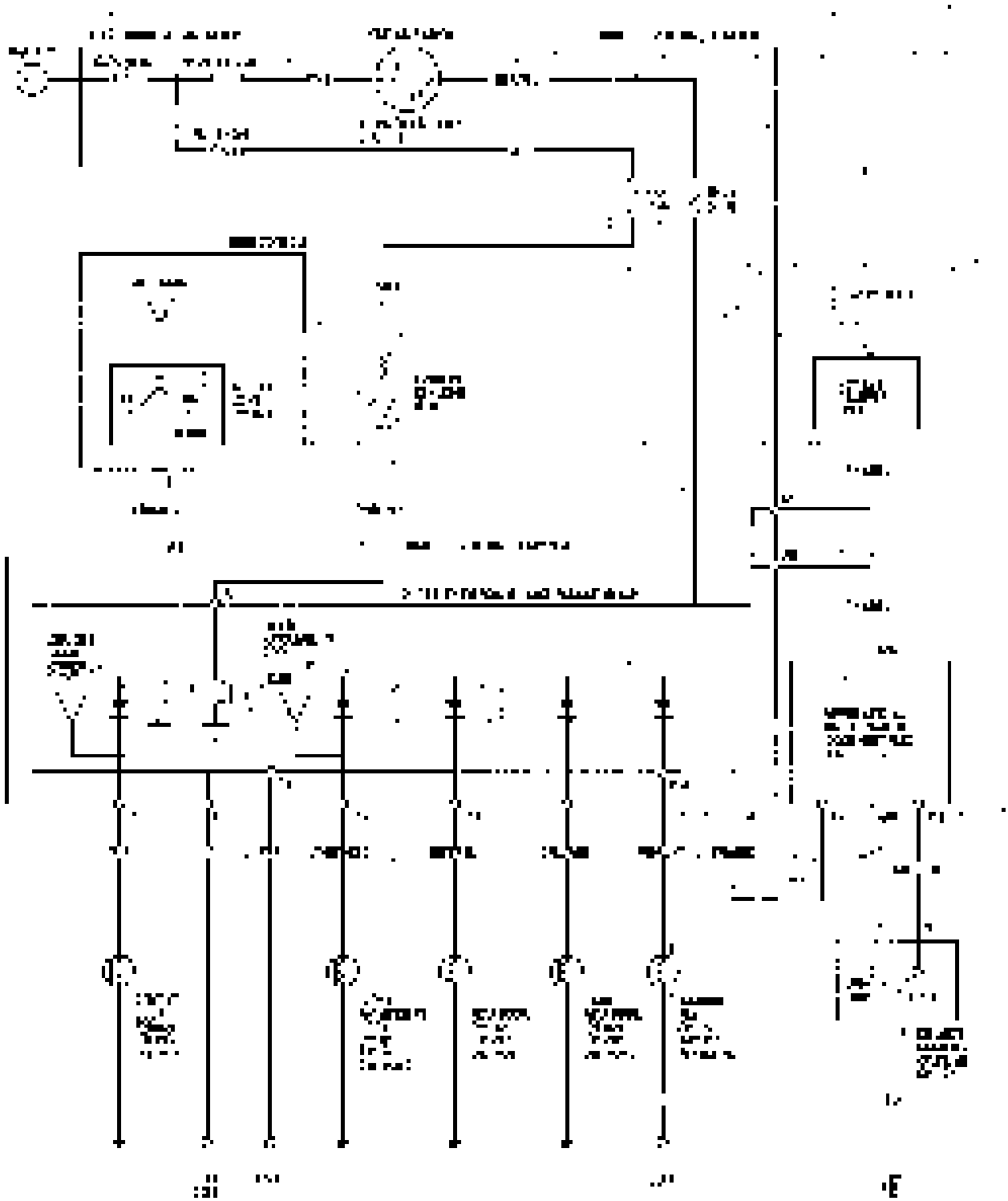
4. [illegible]

Entry Light Control System

Component Location Index



Circuit Diagram



Control Unit Input Test

NOTE: Make sure the ignition switch is OFF before disconnecting any connectors.

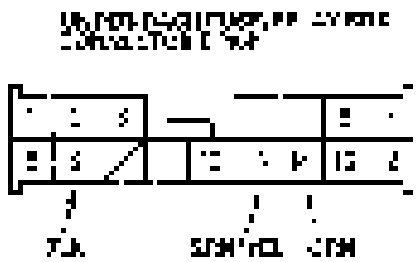
1. [illegible]

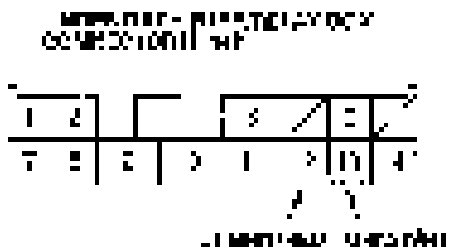
Multiplex Integrated Control Unit

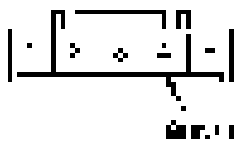
2. Remove the Multiplex Integrated Control Unit cover (page 20-52).

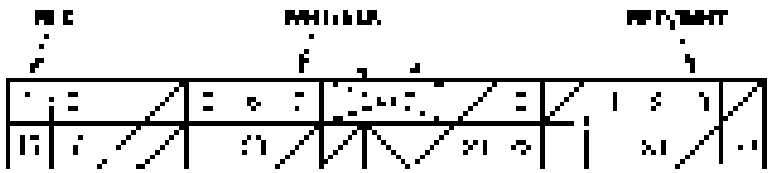
3. Disconnect the Multiplex Integrated Control Unit 3P connector.

NOTICE: Do not damage the terminals when probing them.





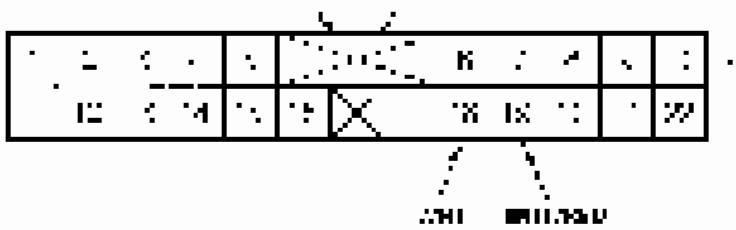


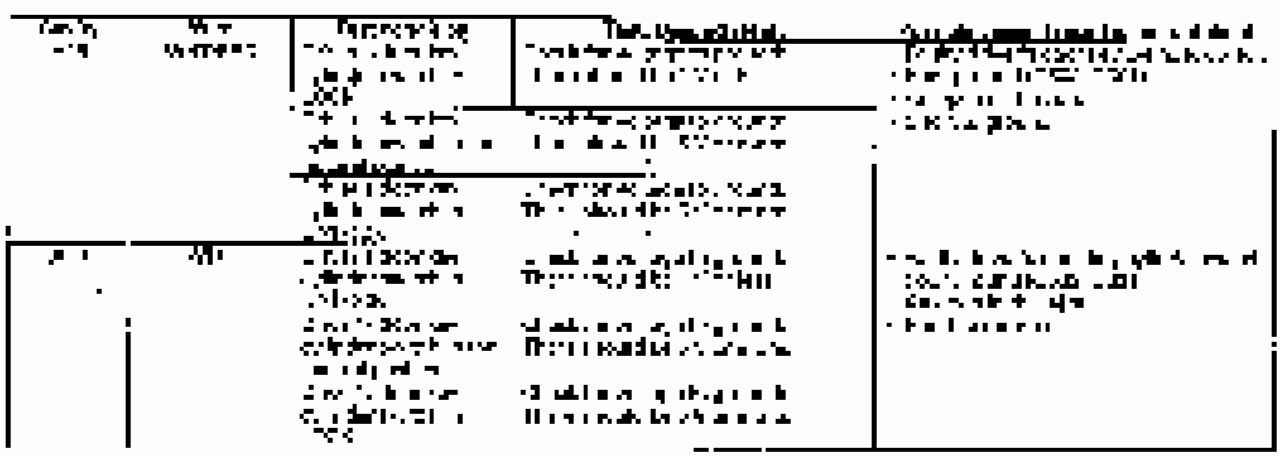


4. Inspect the [illegible]

- [illegible]
- [illegible]

Control Unit Input Test (cont'd)

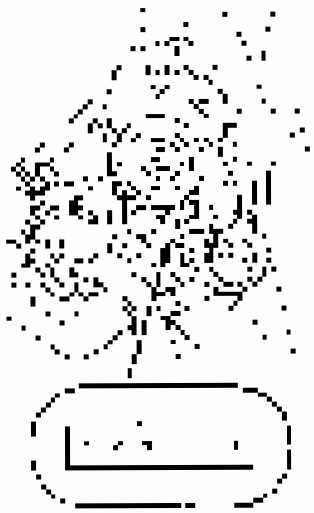




Ignition Key Switch Test

1. [illegible]

2. Disconnect the 5P connector.



3. Check for continuity between the [illegible] terminals.

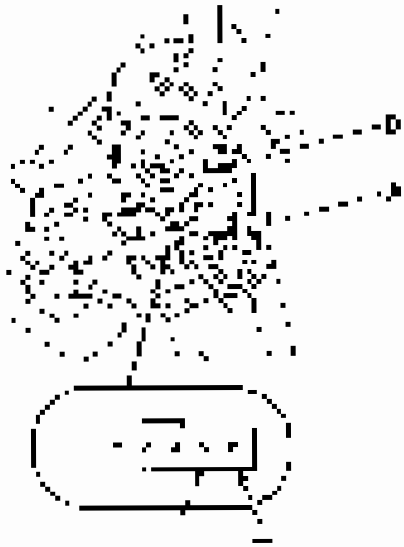
- There should be [illegible]
- There should be [illegible]

4. If [illegible] replace the [illegible].

Ignition Key Light Test

1. [illegible]

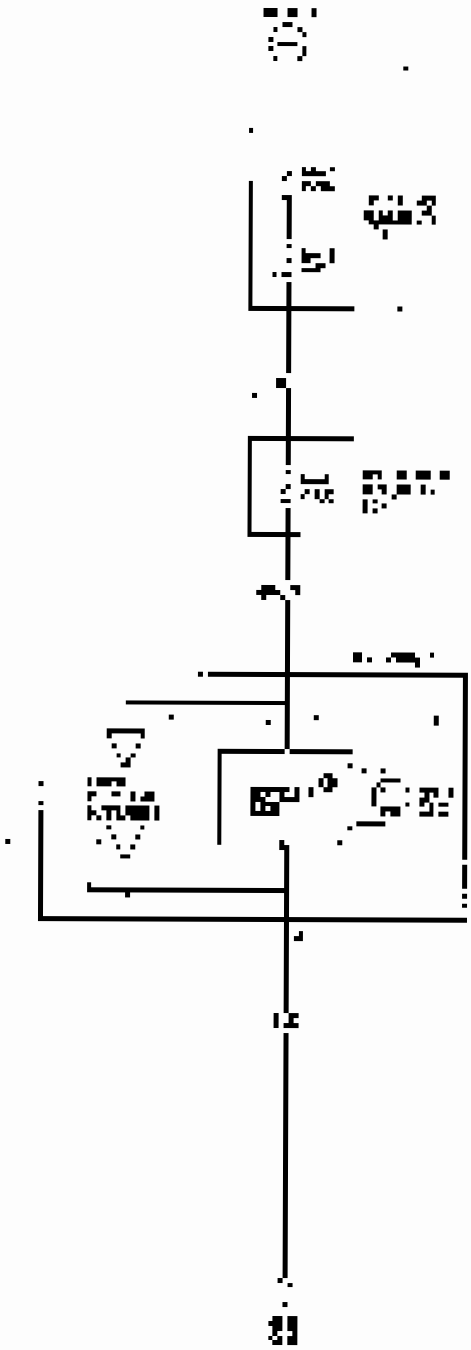
2. [illegible]



3. [illegible]

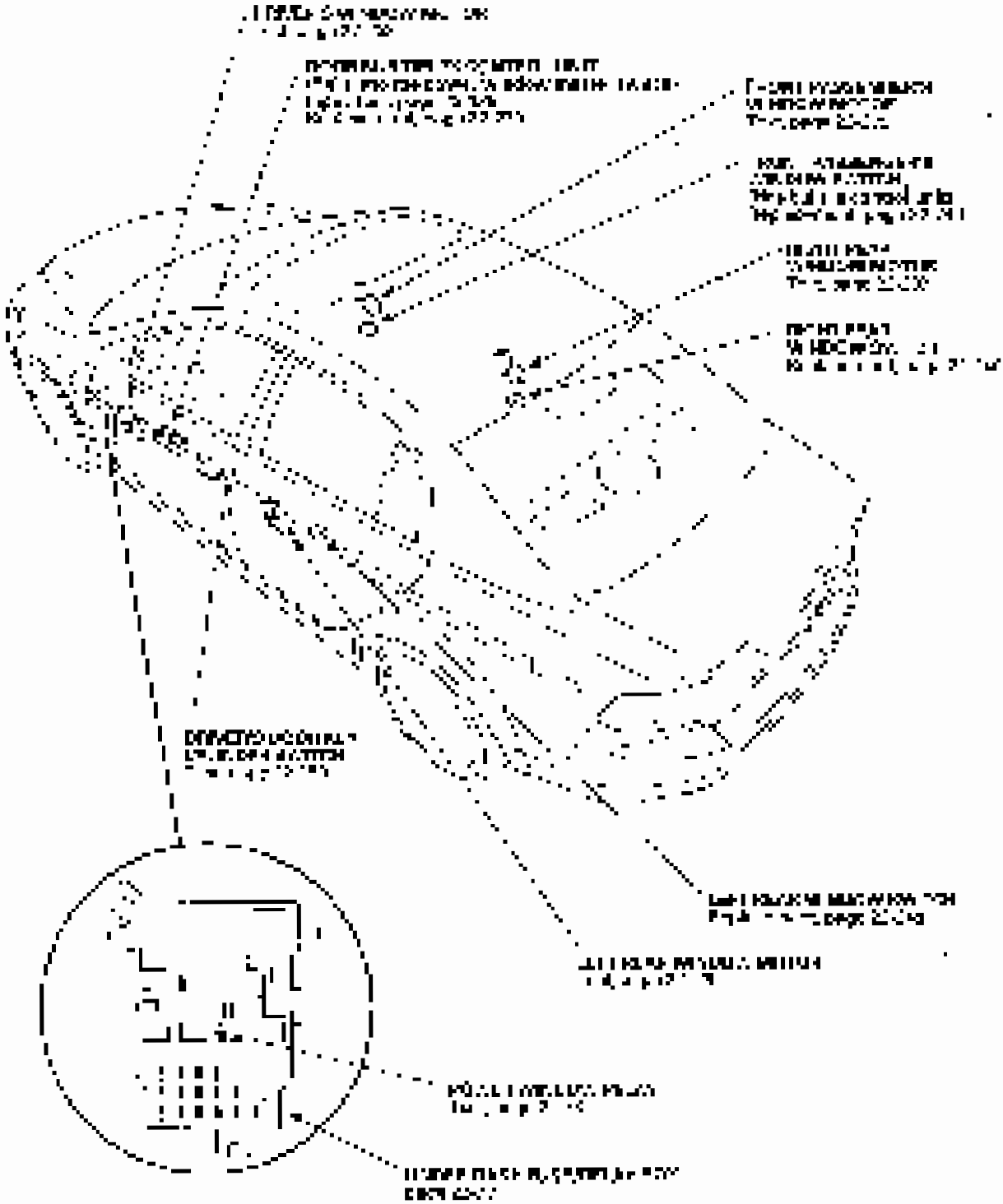
4. If the LED [illegible]

Circuit Diagram



Test

Component Location Index



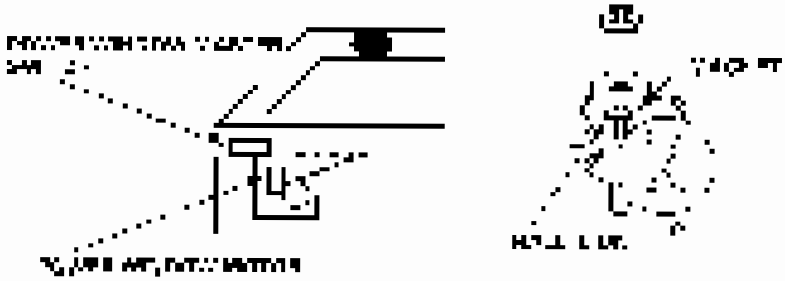
System Description

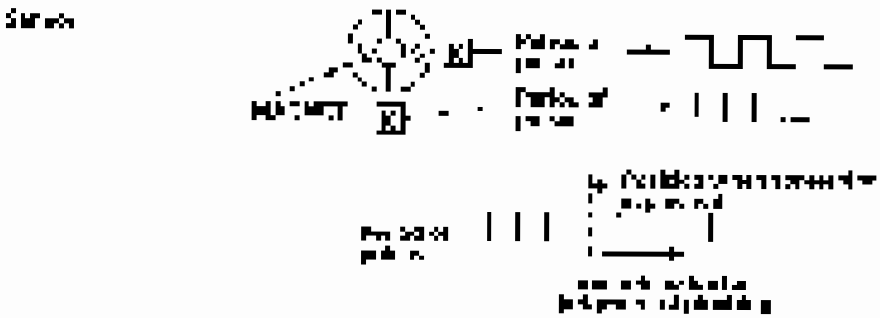
Antipinch Power Window Operation

[illegible]

Driver's Window
[illegible]

Front Passenger's Window
[illegible]





Key Cylinder Operation
[illegible]

System Operation
[illegible]

Resetting the Power Window Control Unit

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Using the HDS:

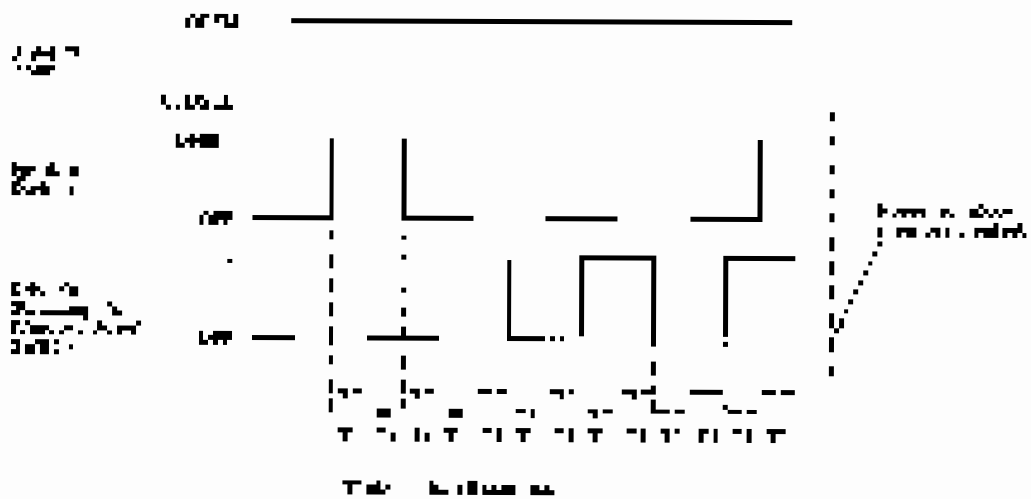
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]

Resetting the Power Window Control Unit (cont'd)

Without the IMS

1. [illegible]
2. Make sure all doors are closed. If any door is open, the power windows will not operate.
3. Open and close each passenger's door.

   Did the window(s) move down within 5 seconds of each door?

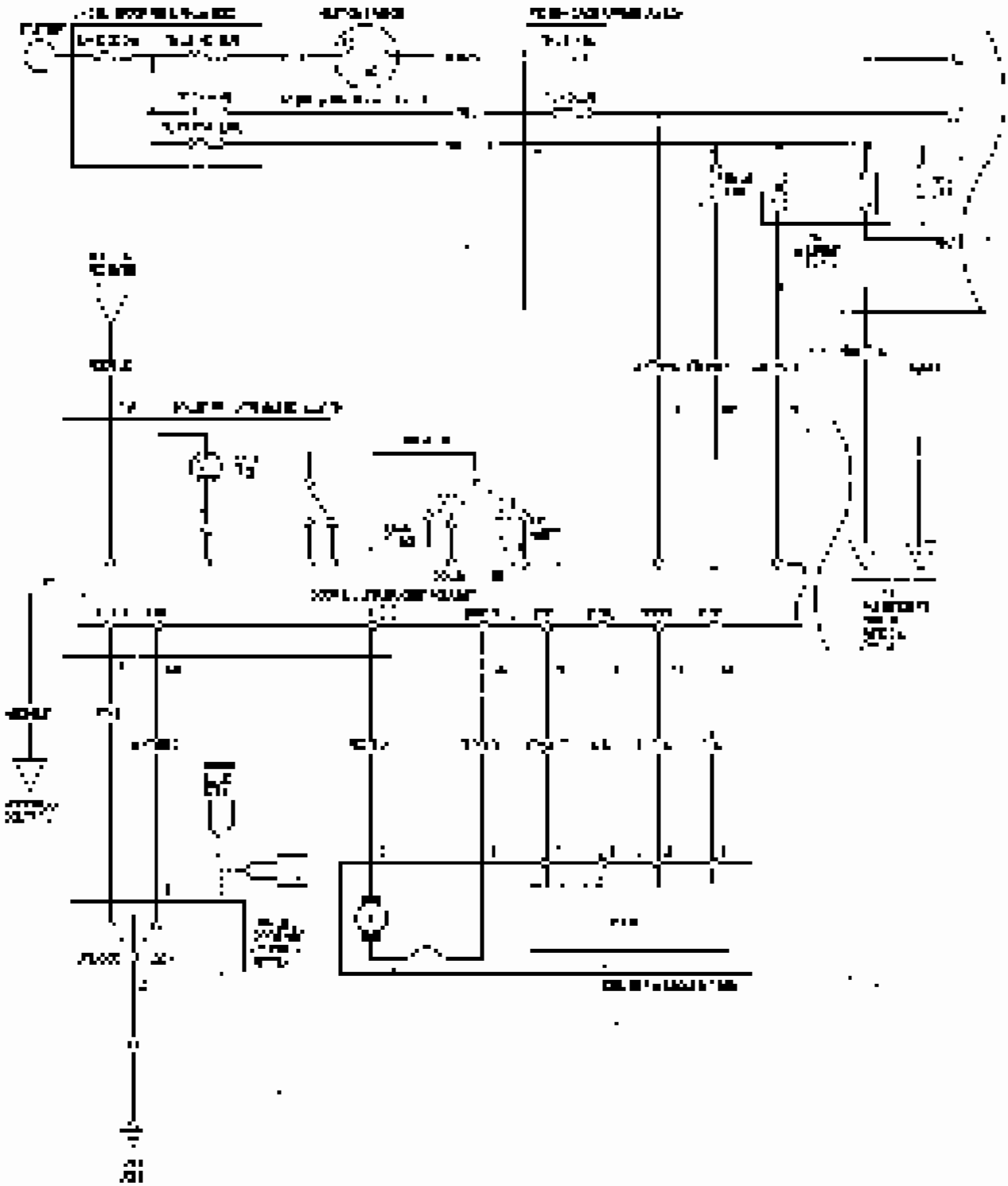


   Yes: Go to step 4.
   No: Replace the control unit with a known good one, then go to step 4.

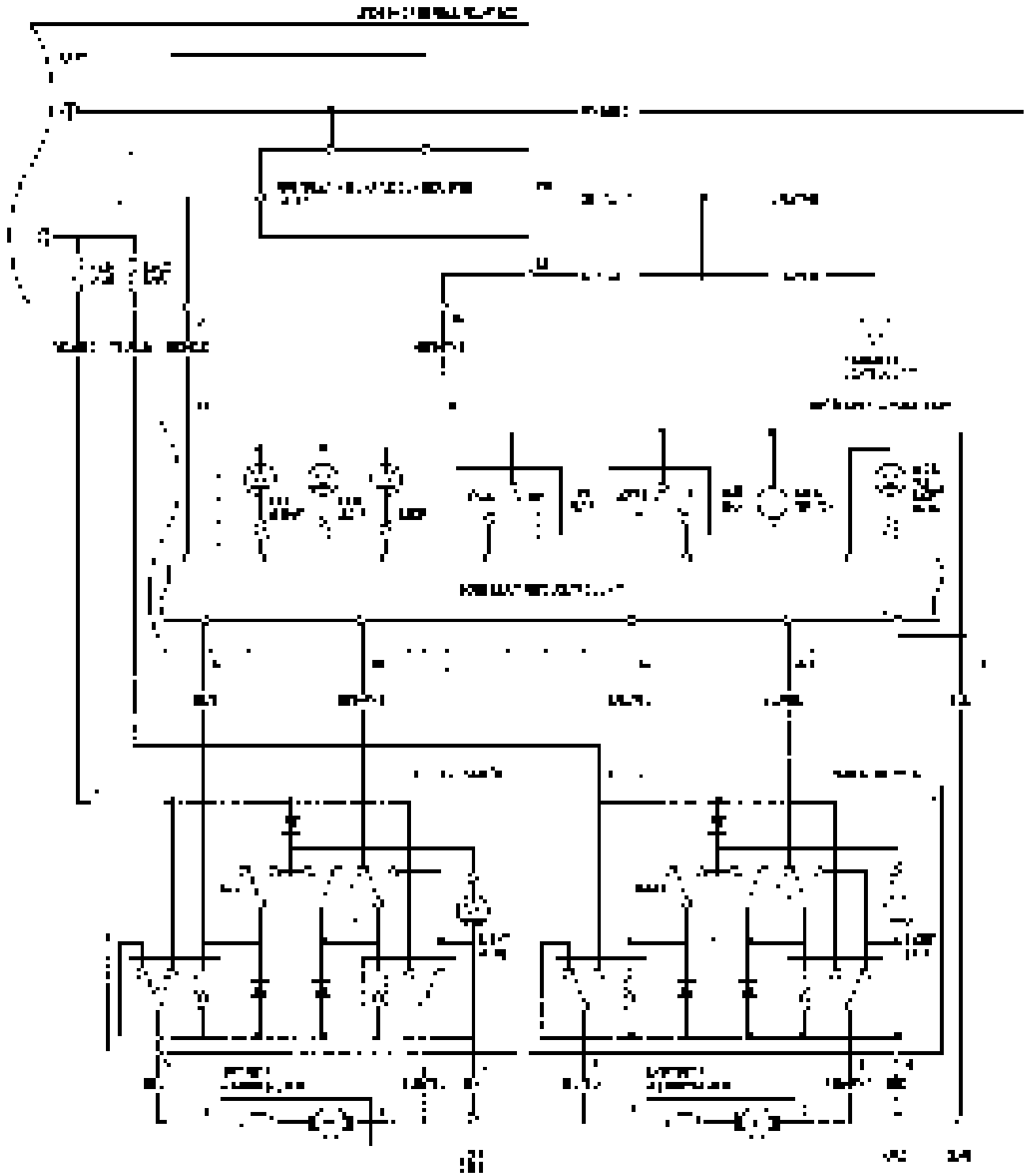
4. Turn the ignition switch OFF.
5. Hold the MAIN switch down until the passenger's window is fully down.
6. Release the MAIN switch.
7. Hold the MAIN switch up until the passenger's window is fully up.
8. Release the MAIN switch.
9. Wait 5 seconds.
10. Continue to hold the MAIN switch up until the passenger's window moves down a little, then release the switch.
11. Hold the MAIN switch up until the passenger's window moves down a little, then release the switch.
12. Repeat step 11 four times. If the passenger's window does not move down, replace the control unit with a known good one, then go to step 13.
13. Continue to hold the MAIN switch up until the passenger's window is fully up. If the window does not move up, replace the control unit with a known good one.

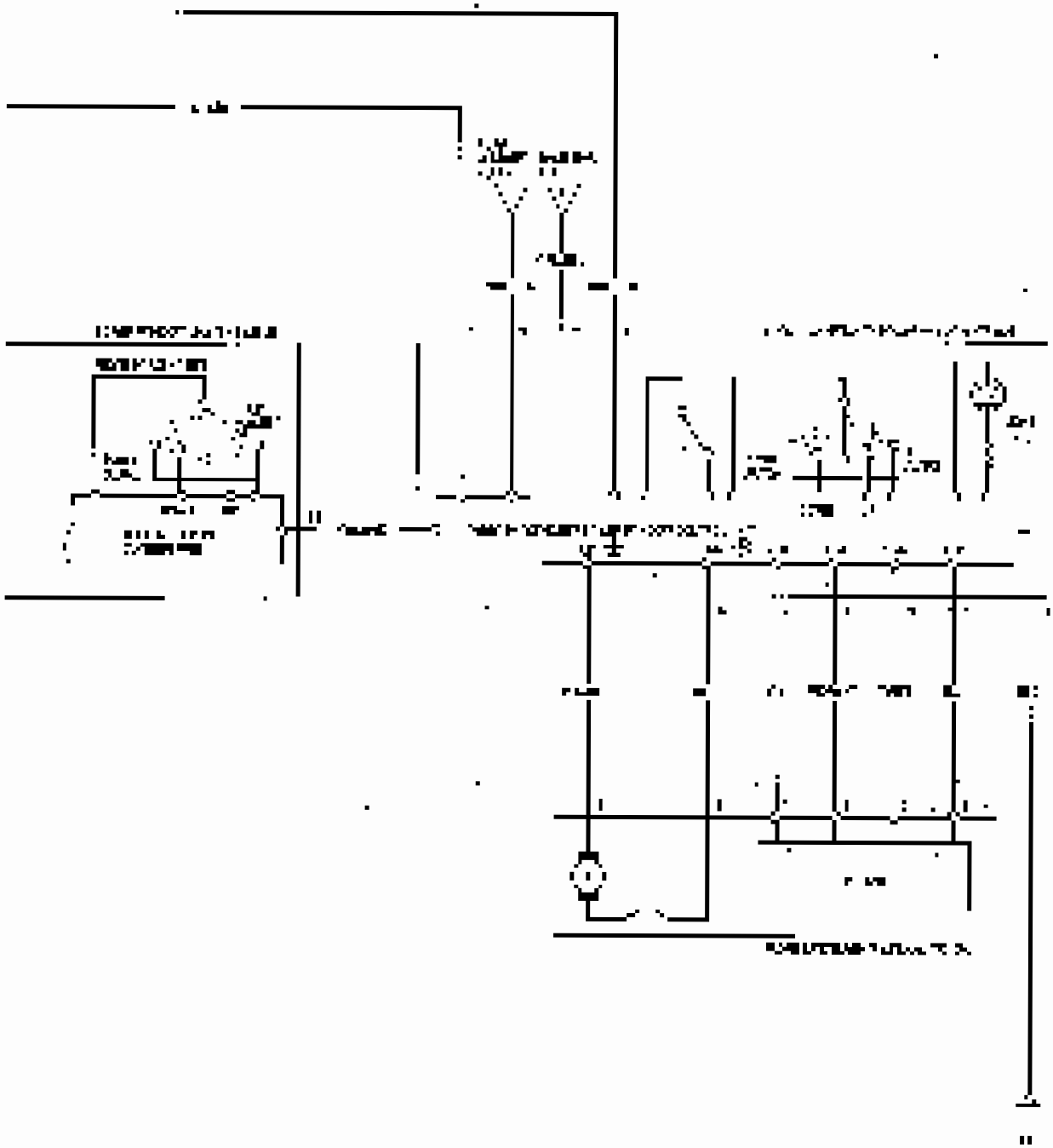
    If the power windows still do not work properly, check the power window relay. If the relay is OK, check for poor connections or damaged wires between the control unit and the relay. If all connections are good, the problem is probably in the control unit.

Circuit Diagram



Circuit Diagram (cont'd)





DTC Troubleshooting

DTC B1128: Driver's Power Window Motor A Pulse Error

NOTE: If you are troubleshooting multiple DTCs, [illegible]

1. [illegible]

2. [illegible]

3. Make sure the POWER switch is in the ACCESSORY or ON position. Select HDS: Driver Door Data List.

4. While [illegible] operate the driver's power window switch. Does the HDS indicate that the DRIVER'S POWER WINDOW SWITCH is operating correctly?

   YES - [illegible]

   NO - Go to step 5.

5. [illegible]

   YES - [illegible] replace the driver's power window switch. [illegible]

   NO - [illegible]

DTC B1129: Driver's Power Window Motor B Pulse Error

NOTE: If you are troubleshooting multiple DTCs, [illegible]

1. [illegible]

2. Close and latch the driver's power window [illegible]

3. Select HDS: Driver Door Data List. [illegible]

4. While [illegible] operate the driver's power window switch. Does the HDS indicate that the DRIVER'S POWER WINDOW SWITCH is operating correctly?

   YES - [illegible]

   NO - Go to step 5.

5. [illegible]

   YES - [illegible] replace the driver's power window switch. [illegible]

   NO - [illegible]

DTC B1119D: Front Passenger's Power Window Motor Circuit Open

1. Perform the following procedure: DTC B1119D.

2. Does the front passenger's power window operate normally?

YES: Replace the front passenger's power window motor assembly.

NO: Go to step 3.

3. Disconnect the front passenger's power window motor assembly connector. Turn the ignition switch to the ON position. Measure the voltage between the front passenger's power window motor assembly connector terminal 1 and body ground.

Is the voltage 10 V or more?

YES: Repair the open circuit between the front passenger's power window motor assembly and the main body ECU (multiplex communication control unit).

NO: Go to step 4.

4. Disconnect the front passenger's power window motor assembly connector. Turn the ignition switch to the ON position. Measure the voltage between the front passenger's power window motor assembly connector terminal 2 and body ground.

Is the voltage 10 V or more?

YES: Replace the front passenger's power window motor assembly.

NO: Repair the open circuit between the front passenger's power window motor assembly and body ground.

DTC B1119E: Front Passenger's Power Window Motor Circuit Short

1. Perform the following procedure: DTC B1119D.

2. Does the front passenger's power window operate normally?

YES: Replace the front passenger's power window motor assembly.

NO: Go to step 3.

3. Disconnect the front passenger's power window motor assembly connector. Turn the ignition switch to the ON position. Measure the voltage between the front passenger's power window motor assembly connector terminal 1 and body ground.

Is the voltage 10 V or more?

YES: Repair the short circuit between the front passenger's power window motor assembly and the main passenger's power window motor assembly (multiplex communication control unit).

NO: Go to step 4.

4. Disconnect the front passenger's power window motor assembly connector. Turn the ignition switch to the ON position. Measure the voltage between the front passenger's power window motor assembly connector terminal 2 and body ground.

Is the voltage 10 V or more?

YES: Repair the short circuit between the front passenger's power window motor assembly and body ground.

NO: Replace the front passenger's power window motor assembly.

DTC Troubleshooting (cont'd)

DTC B1740: Driver's Power Window Position Sensor Circuit Error

NOTE: If you have trouble troubleshooting multiple DTCs, see the troubleshooting instructions in the BCM/key system diagnosis beginning on page 23-101.

1. Check for DTCs (see page 22-[illegible]).

2. [illegible]

3. [illegible]

4. Check for DTCs (see page 22-[illegible]).

   Is DTC B1740 or B1741 indicated?

   YES: Troubleshoot the DTC(s) (see page 22-[illegible]).

   NO: [illegible]

5. Install the power window switch (see page 22-[illegible]).

6. Check for DTCs again (see page 22-[illegible]).

   Is DTC B1740 indicated?

   YES: [illegible]

   NO: The system is now normal. [illegible]

7. [illegible]

8. Open and close the driver's power window [illegible] switch.

9. Check for DTCs (see page 22-[illegible]).

   Is DTC B1740 indicated?

   YES: Replace the power window [illegible] switch.

   NO: Intermittent failure, the system is now normal.

DTC B1741: Driver Multiplex Control Unit (Left Communication Line) [illegible] Power Window Switch [illegible]

NOTE: If you have trouble troubleshooting multiple DTCs, see the troubleshooting instructions in the BCM/key system diagnosis beginning on page 23-101.

1. Check for DTCs (see page 22-[illegible]).

2. Turn the ignition switch to [illegible].

3. Open and close the driver's power window switch [illegible].

   Does the driver's power window switch [illegible]?

4. Check for DTCs (see page 22-[illegible]).

   Is DTC B1741 indicated?

   YES: Troubleshoot the DTC(s) (see page 22-[illegible]).

   NO: [illegible]

5. Check for DTCs (see page 22-[illegible]).

   Is DTC B1741 indicated?

   YES: Go to step 6.

   NO: The system is now normal. [illegible]

6. Turn the ignition switch to [illegible].

7. Disconnect the driver's [illegible] power window connector and front passenger's power window switch connector.

8. Check for continuity between [illegible] and body ground.

   Is there continuity?

   YES: [illegible]

   NO: Replace the driver's power window [illegible] switch.

DTC B1142: Driver Multifunction Control Unit Serial Communication Circuit Driver Passenger's Power Window Switch (UART) Inoperative

NOTE: If you have trouble duplicating the DTC, try to duplicate the conditions mentioned in the DTC Confirmation Procedure on page 22-130.

1. [illegible]

2. [illegible]

3. Open and close each door window, and operate the power window switches using the driver's door control unit and each door switch.

4. Open and close the driver's and passenger's power window switches using the driver's door control unit and each door switch.

5. Check for DTC B1142.

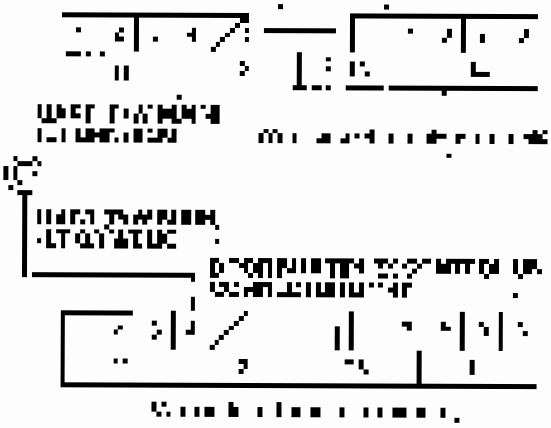
   Is DTC B1142 indicated?

   YES - Go to step 6.

   NO - The system is OK at this time. Check for poor connections or intermittent trouble in the driver's and passenger's power window switch circuits.

6. [illegible]

7. Disconnect the driver's door control unit connector. Check for poor connection or bent terminals at the driver's door control unit connector. If the connection is OK, measure the resistance between the following terminals of the driver's door control unit connector and body ground:

   Is the resistance 10 kΩ or more?

   YES - Replace the driver's door control unit with a new one.

   NO - Check for an open in the wire between

DTC Troubleshooting (cont'd)

DTC B1143: Door Multiplex Control Unit Internal Error (CTP DOOR)

NOTE: If you have just replaced the multiplex control unit, you must initialize the new unit. See page 23-130.

1. Check for DTCs other than B1143.

2. Disconnect the driver's door multiplex control unit connector. Install a known-good unit.

3. Reconnect the driver's door multiplex control unit connector.

4. Clear the DTC. See page 23-111.

5. Check for DTCs other than B1143.

Is DTC B1143 indicated?

YES: Check and replace the ECM, if necessary. See page 23-111.

NO: The problem is intermittent. Check the connectors for poor contact.

DTC B1145: Front Passenger's Power Window Position Sensor Circuit Error

NOTE: If you have just replaced the multiplex control unit, you must initialize the new unit. See page 23-130.

1. Check for DTCs other than B1145.

2. Disconnect the front passenger's door multiplex control unit connector.

3. Check for DTCs other than B1145.

Is DTC B1145 indicated?

YES: Check and replace the front passenger's door multiplex control unit, if necessary. See page 23-130.

NO: Go to step 4.

4. Check the front passenger's door multiplex control unit connector for poor contact.

Is the connector in good condition?

YES: Check and replace the front passenger's door multiplex control unit, if necessary. See page 23-130.

NO: Repair the connector.

5. Check for DTCs other than B1145.

Is DTC B1145 indicated?

YES: Check and replace the front passenger's power window switch, if necessary. See page 23-130.

NO: The problem is intermittent. Check the connectors for poor contact.

DTC B1145, Right Passenger Air Bag Squib Resistance Out of Range

NOTE: If you are troubleshooting multiple DTCs, be sure to perform the diagnostic procedure for DTC B1145 first.

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]
   [illegible]

5. [illegible]
   [illegible]

6. [illegible]

7. Check for DTCs and other MIL.

   [illegible]

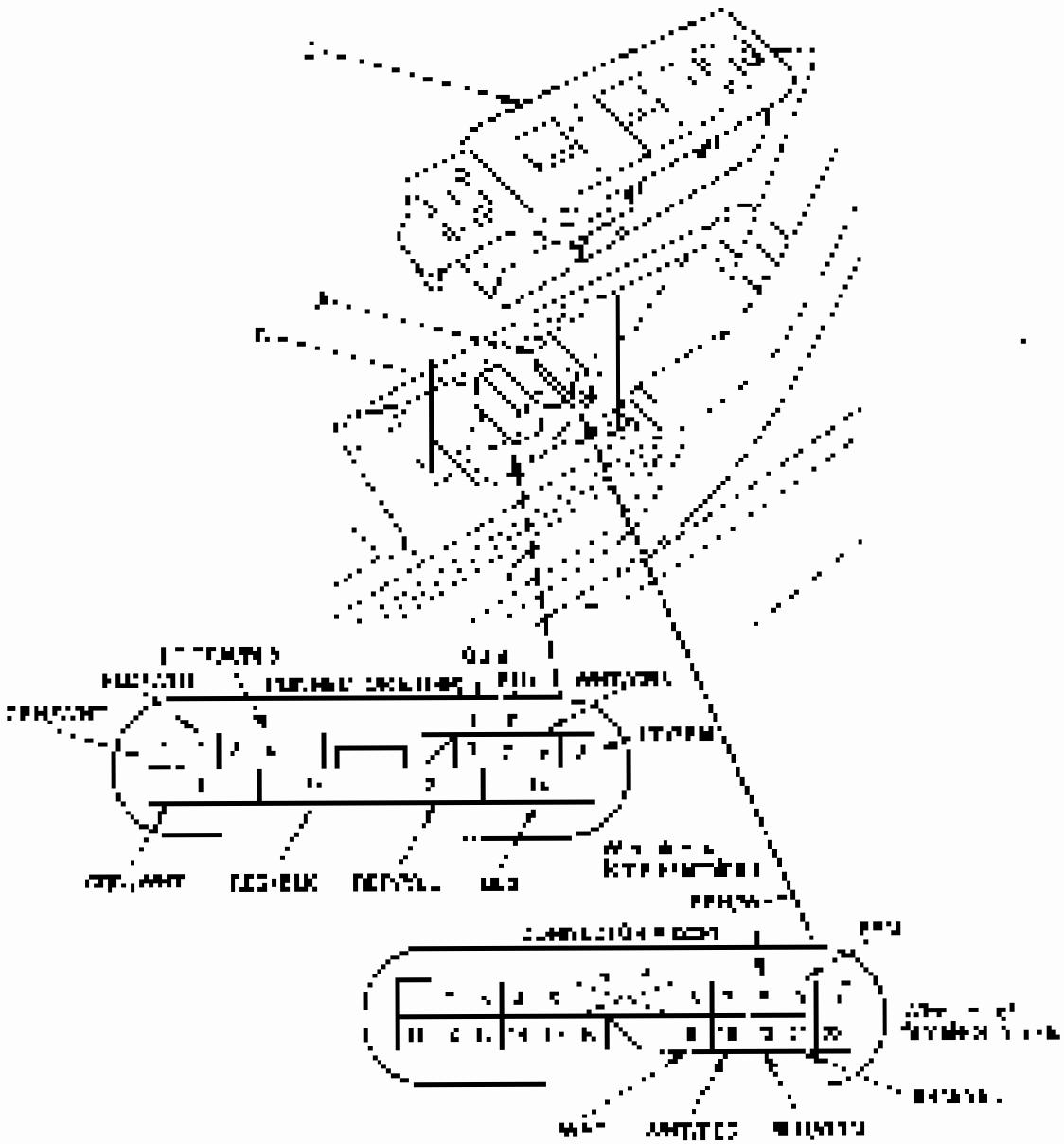
   [illegible]
   [illegible]

   NO [illegible]

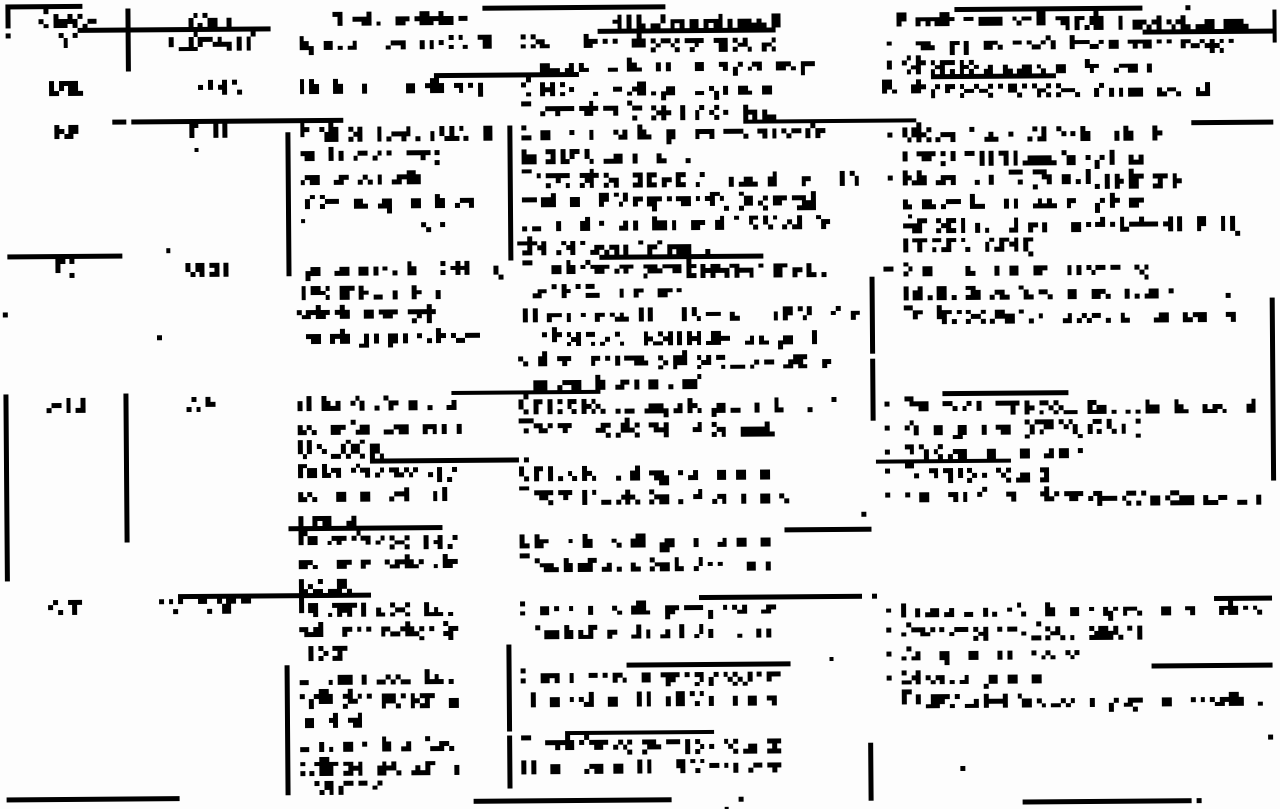
Master Switch Input Test

NOTE: [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]



Master Switch Input Test (cont'd)



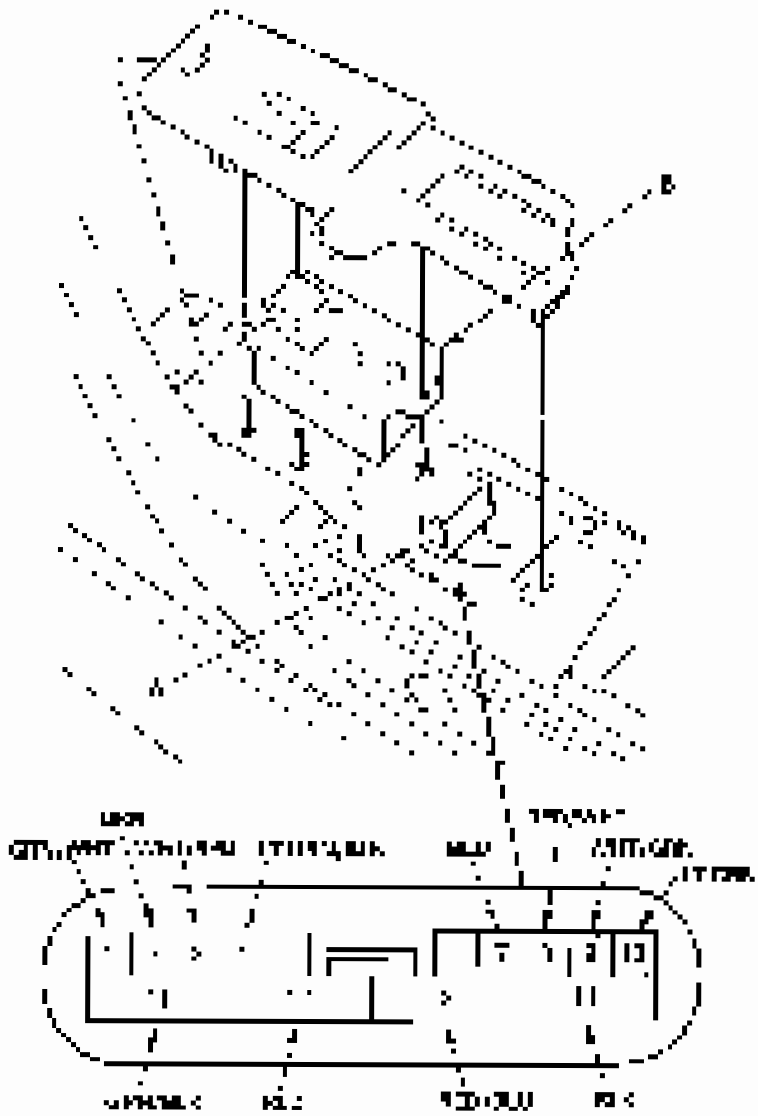
Front Passenger's Power Window Switch Input Test

NOTE: [illegible]

Disconnect [illegible] from the front passenger's power window switch. See [illegible] System Components and Wire Harness page 22-100.

2. Remove the front passenger's power window switch. See page 22-240.

3. Disconnect the [illegible] from the front passenger's power window switch (B).



Wire side of female terminals

4. Inspect the connector terminals for poor contact (pushed-out terminals, poor crimps, etc.).

- If the terminals are bad, repair or replace the connector. Check the system for proper operation.
- If the terminals are good, [illegible]

Return to:

Front Passenger's Power Window Switch Input Test (except 4)

- With the ignition switch in ACC or ON, test the front passenger's power window switch input wire voltage as described below.
- If the test results are not OK, go to the next step.

Step	Wire	Test Condition	Test Description	Probable Cause (If Test Result is Not OK)
1	[illegible]	[illegible]	Check for continuity between the wire harness terminal and body ground. Be sure to check for poor connection at the terminal. Measure resistance.	[illegible]
2	[illegible]	Front passenger's power window switch connected	Measure voltage at the terminal. There should be battery voltage.	• Blown [illegible] fuse (open circuit in the wire harness) • Poor connection
3	[illegible]	Front passenger's power window switch connected	Connect the [illegible] terminal to ground. Check for voltage at the wire harness side connector terminal. There should be battery voltage.	• Poor [illegible] connection • Open circuit in wire harness • Faulty power window switch • Faulty [illegible] control unit
4	[illegible]	Front passenger's power window switch connected	Check for voltage at the terminal. There should be battery voltage.	• Blown [illegible] fuse (open circuit in the wire harness) • [illegible] open circuit in wire harness • Poor connection • Faulty [illegible] control unit
5	[illegible]	Connect the [illegible] terminal to the [illegible] with a jumper wire. Turn the [illegible] switch [illegible]	Check for voltage at the terminal. There should be battery voltage.	• Blown [illegible] fuse (open circuit in the wire harness) • Faulty [illegible] control unit • Poor connection
6	[illegible]	Front passenger's power window switch connected	Check for continuity between the terminal and body ground. There should be continuity.	
7	[illegible]	Front passenger's power window switch connected	Check for continuity between the terminal and body ground. There should be continuity.	• Faulty [illegible] control unit • Poor connection

1. Perform the following procedures on the [illegible] (see page 22-231).

- [illegible]
- [illegible]

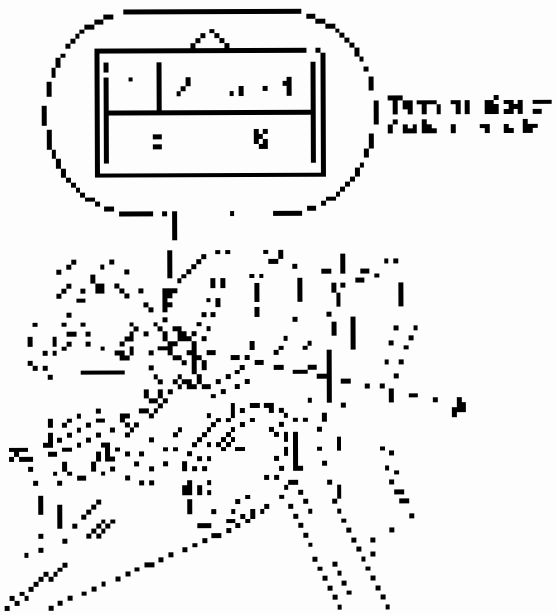
Quality	Value	Instrumentation	Test Conditions/Limits	Possible Causes If Results Not Obtained
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

2. [illegible] (see page 22-231).

Driver's and Front Passenger's Window Motor Test

Motor Test

1. [illegible] page 20-[illegible]
2. [illegible] window motor:



3. [illegible] power window switch [illegible] window motor operates [illegible] When the [illegible]

[illegible]	A	B
UP	○	○
DOWN	○	○

4. [illegible]

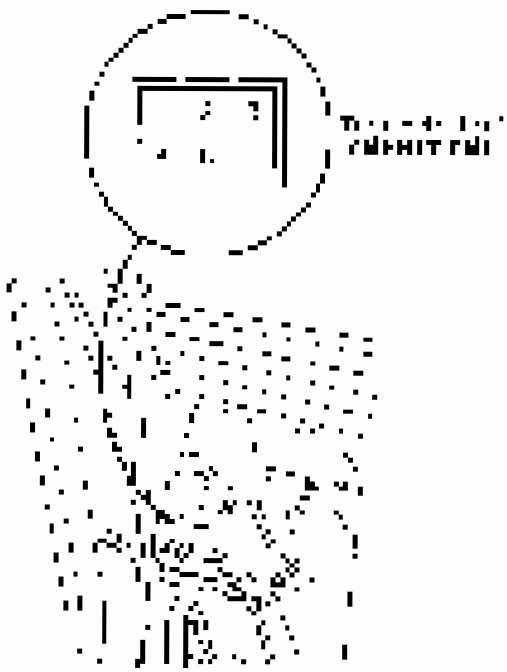
Failure Four

1. [illegible]
2. [illegible]
   - [illegible]
   - Connect a [illegible] between the [illegible] and the [illegible] window motor. [illegible]
   - Connect a [illegible] between the [illegible] and the [illegible] window motor and ground. [illegible]
3. [illegible]
   - [illegible] page 22-234
   - [illegible] page 22-234
4. [illegible]
5. [illegible]

Rear Window Motor Test

Remove the rear window compartment (see page 23-11).

2. Disconnect the 6P connector from the rear window motor.



3. Check for continuity between the terminals of the rear window motor connector.

Terminal		

If there is no continuity, replace the rear window motor.

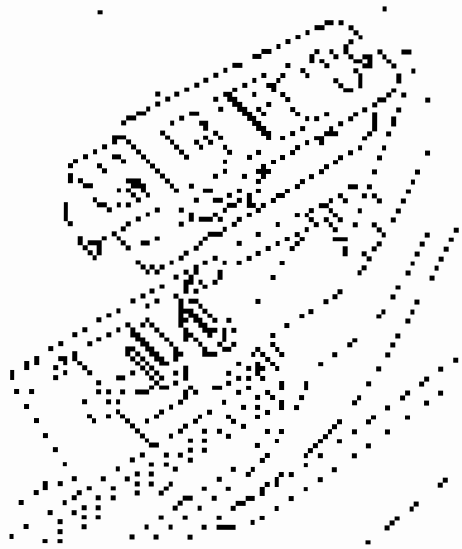
4. Check for continuity between each terminal and body ground.

If there is continuity, replace the rear window motor.

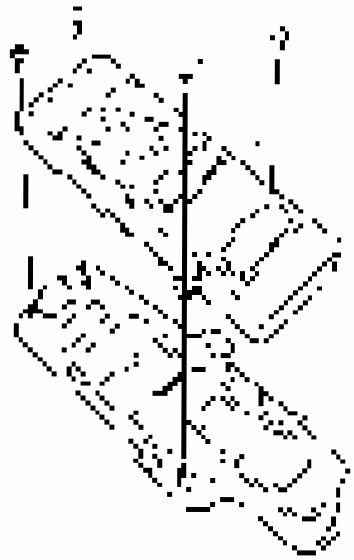
Master Switch Replacement

1. Remove the door trim panel (see page 20-5).

2. Remove the screws and disconnect the connector from the master switch. Then remove the switch assembly from the door panel.



3. Remove the screw holding the switch and remove the switch from the switch panel.



4. Install the switch in the reverse order of removal.

5. Check the power window system (see page 22-237).

Passenger's Window Switch Test/Replacement

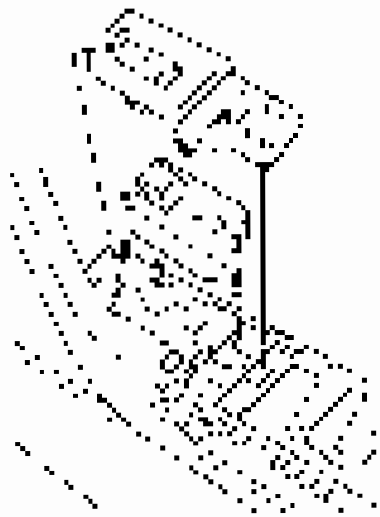
Front Passenger's

1. Remove the front passenger's door panel (see page 22-21).
2. Remove the screws attaching the front passenger's power window switch to the door panel, and remove the switch from the door panel.

3. Disconnect the 6P connector from the switch.
4. Test the switch (see page 22-241).
5. Reconnect the connector to the switch.
6. Install the switch in the door panel.
7. Install the door panel (see page 22-21).

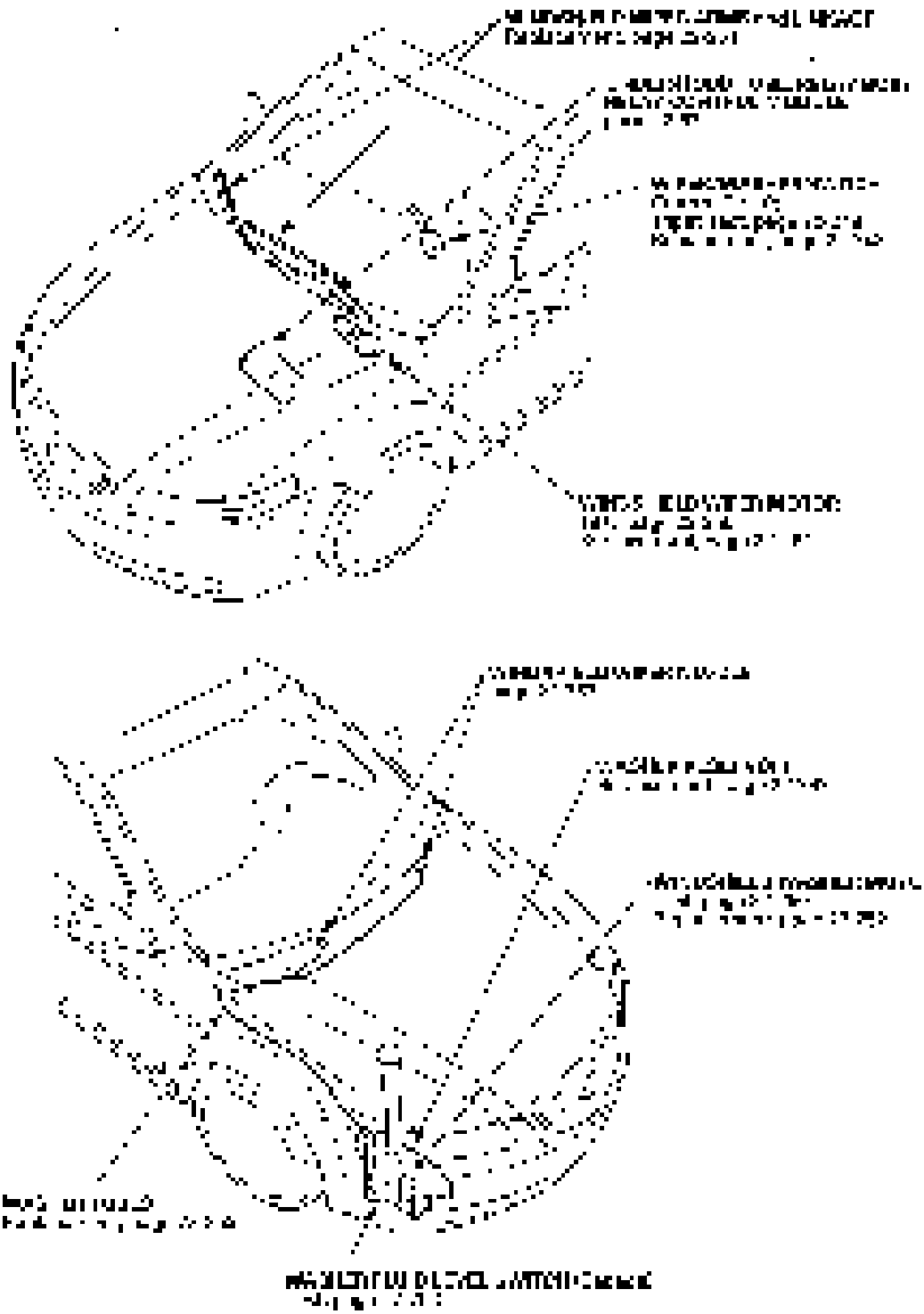
Rear

1. Remove the door panel (see page 22-21).
2. Disconnect the 6P connector from the power window switch, then remove the screws attaching the switch to the door panel.

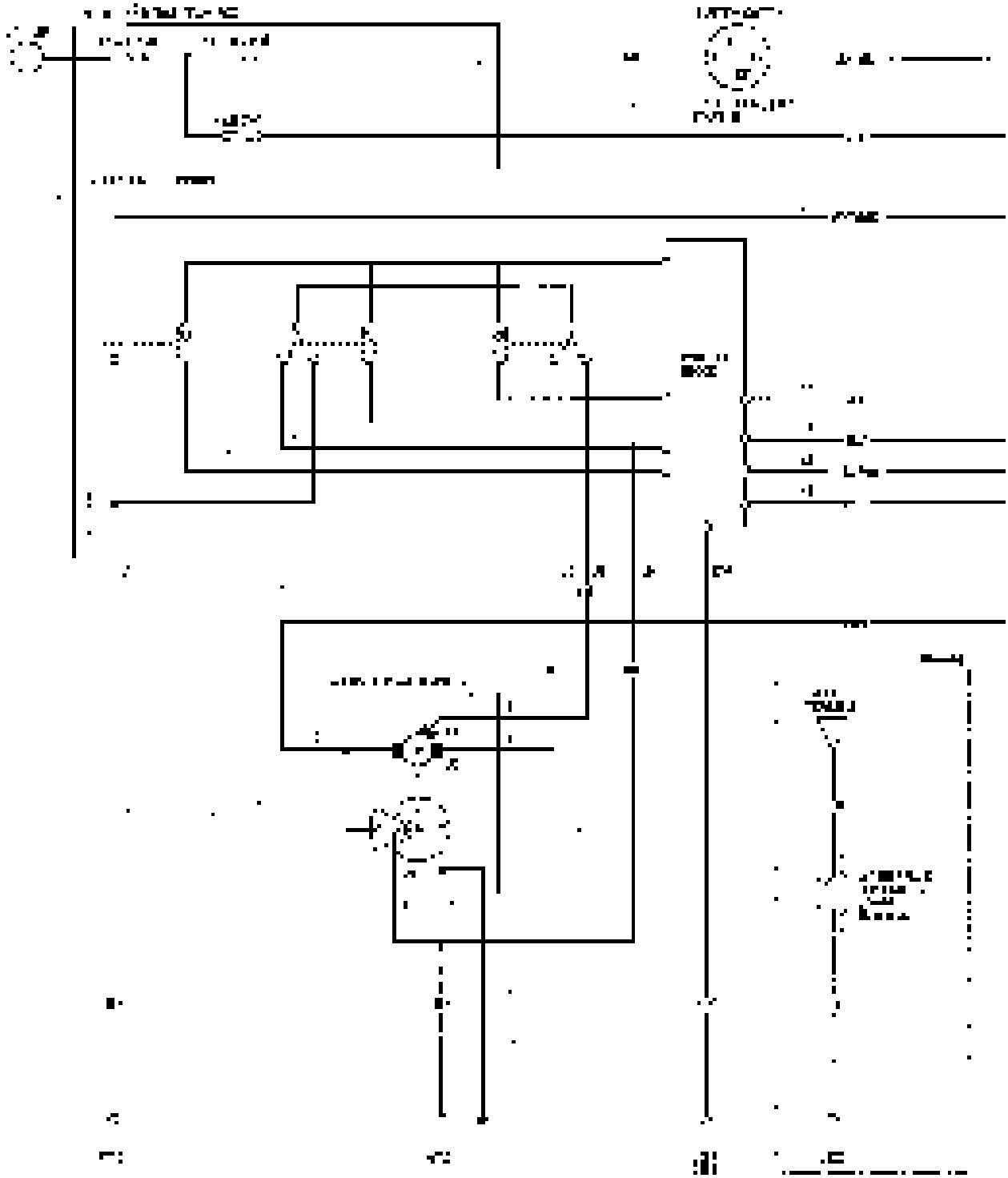


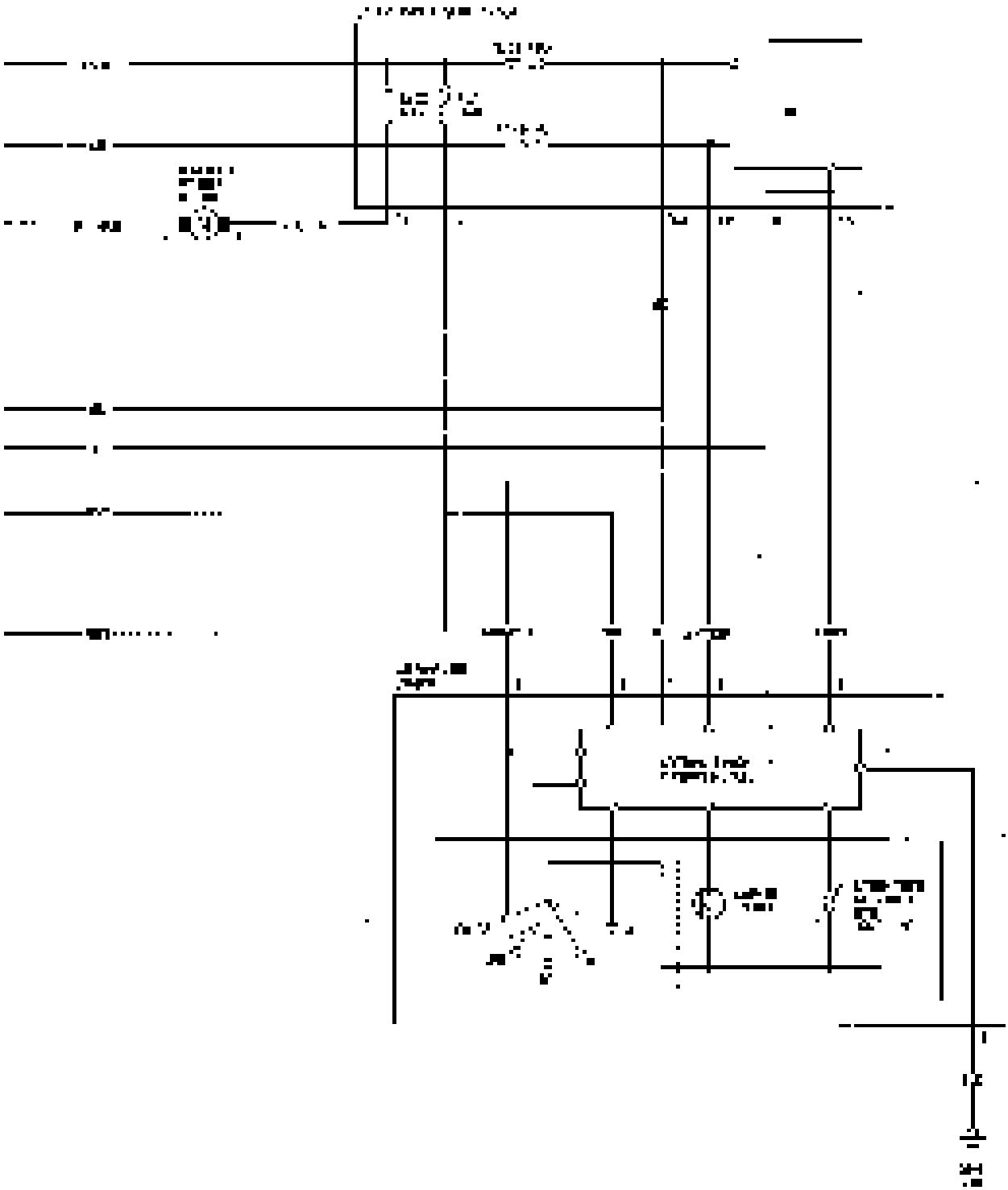
3. Remove the switch from the door panel while releasing the claws.
4. Test the rear power window switch (see page 22-241).
5. Install the switch in the door panel.

Component Location Index



Circuit Diagram





DTC Troubleshooting

DTC B1 [illegible]: [illegible] Wiper Signal Error

[illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

   [illegible]

   NO: [illegible]

5. [illegible]

   [illegible]

   YES: [illegible]

   NO: [illegible]

6. [illegible]

7. [illegible]

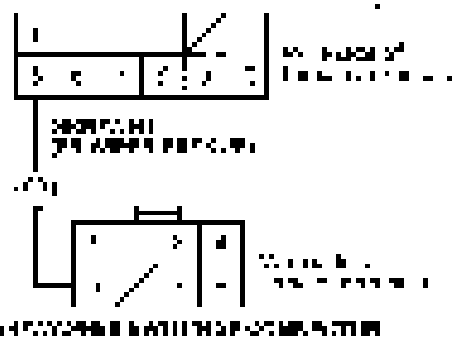
   [illegible]

   YES: [illegible]

   NO: [illegible]

8. [illegible]

[illegible]



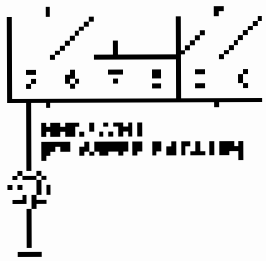
[illegible]

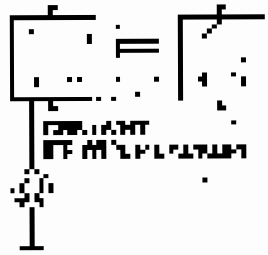
[illegible]

[illegible]

NOTE: [illegible]

[illegible]





DTC Troubleshooting (cont'd)

DTC B1107: Windshield Wiper Park Signal Error

[illegible]

1. Check for DTC B1107.

2. Turn the ignition switch OFF, and then back ON (II).

3. Turn the wiper switch to the LOW position. Did the wiper operate at low speed?

   YES - Go to step 4.

   NO - Intermittent failure. The wiper motor may be faulty. Check for poor connections or loose wires at the wiper motor. If the connections are good, replace the wiper motor.

4. [illegible]

5. Disconnect the wiper motor connector. Is there continuity between body ground and terminal No. 4 of the wiper motor connector?

   YES - Go to step 6.

   NO - Repair open in wire between terminal No. 4 of the wiper motor connector and body ground.

6. [illegible]

   Does the wiper motor operate normally?

   YES - Go to step 7.

   NO - Replace the wiper motor. Refer to the wiper motor removal/installation.

7. [illegible]

8. Disconnect the 10P connector from the BCM. Check for continuity between terminal No. 5 of the wiper motor connector and body ground.

   Is there continuity?

   YES - Go to step 9.

   NO - Go to step 10.

9. Check for continuity between terminal No. 4 of the wiper motor connector and terminal No. 5 of the BCM (10P) connector. Does the wire have continuity?

   YES - Replace the BCM. Refer to the BCM removal/installation.

   NO - Repair open in wire between terminal No. 4 of the wiper motor connector and terminal No. 5 of the BCM (10P) connector.

10. Check for continuity between terminal No. 4 of the wiper motor connector and terminal No. 5 of the BCM (10P) connector.

    Is there continuity?

    YES - Go to step 11.

    NO - Repair open in wire between terminal No. 4 of the wiper motor connector and terminal No. 5 of the BCM (10P) connector.

11. [illegible]

    Is there continuity?

    YES - Replace the ATTS sensor.

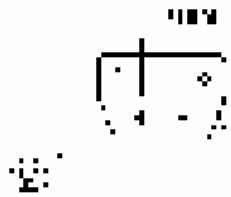
    NO - [illegible]

12. [illegible]

13. Turn the ignition switch to OFF.

14. Check for [illegible]

[illegible]



[illegible]

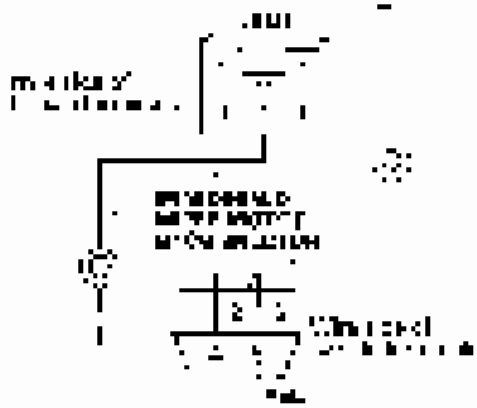
[illegible]

YES - [illegible]

[illegible]

15. Check for continuity between the [illegible]

[illegible]



[illegible]

YES - [illegible]

NO - [illegible]

DTC Troubleshooting (cont'd)

DTC B1281: Windshield Wiper Switch Signal Malfunction

DTC B1282: Windshield Wiper Switch Position Circuit Malfunction

DTC B1283: Windshield Wiper Switch LOW Position Circuit Malfunction

DTC B1284: Windshield Wiper Switch HIGH Position Circuit Malfunction

NOTE: Do [illegible] before proceeding. If you [illegible] diagnostic trouble codes, see page [illegible]

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then start the [illegible].
3. Turn the windshield wiper switch to the INT position.
4. Turn the windshield wiper switch to LOW.
5. Turn the windshield wiper switch to HIGH.
6. Turn the windshield wiper switch to MIST.
7. Check for DTCs using the HDS.

   Is DTC B1281, B1282, B1283, or B1284 indicated?

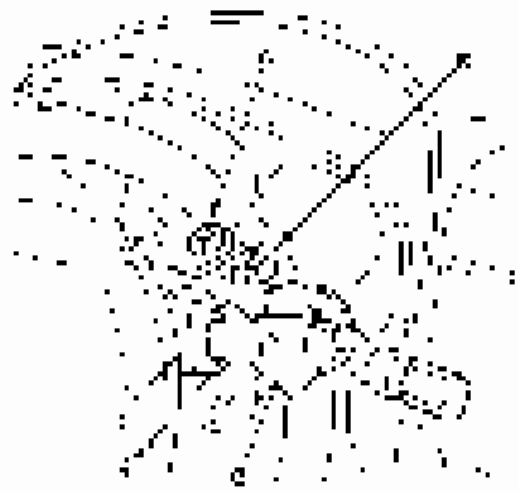
   YES - Replace the wiper switch assembly.

   NO - [illegible] intermittent failure, the system is functioning normally at this time. [illegible]

Wiper/Washer Switch Test/ Replacement

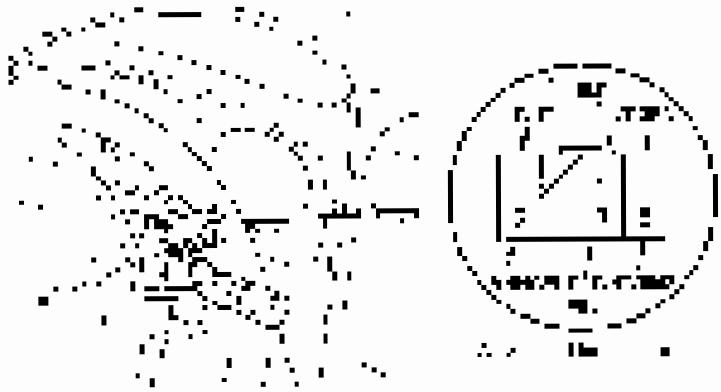
NOTE: [illegible]

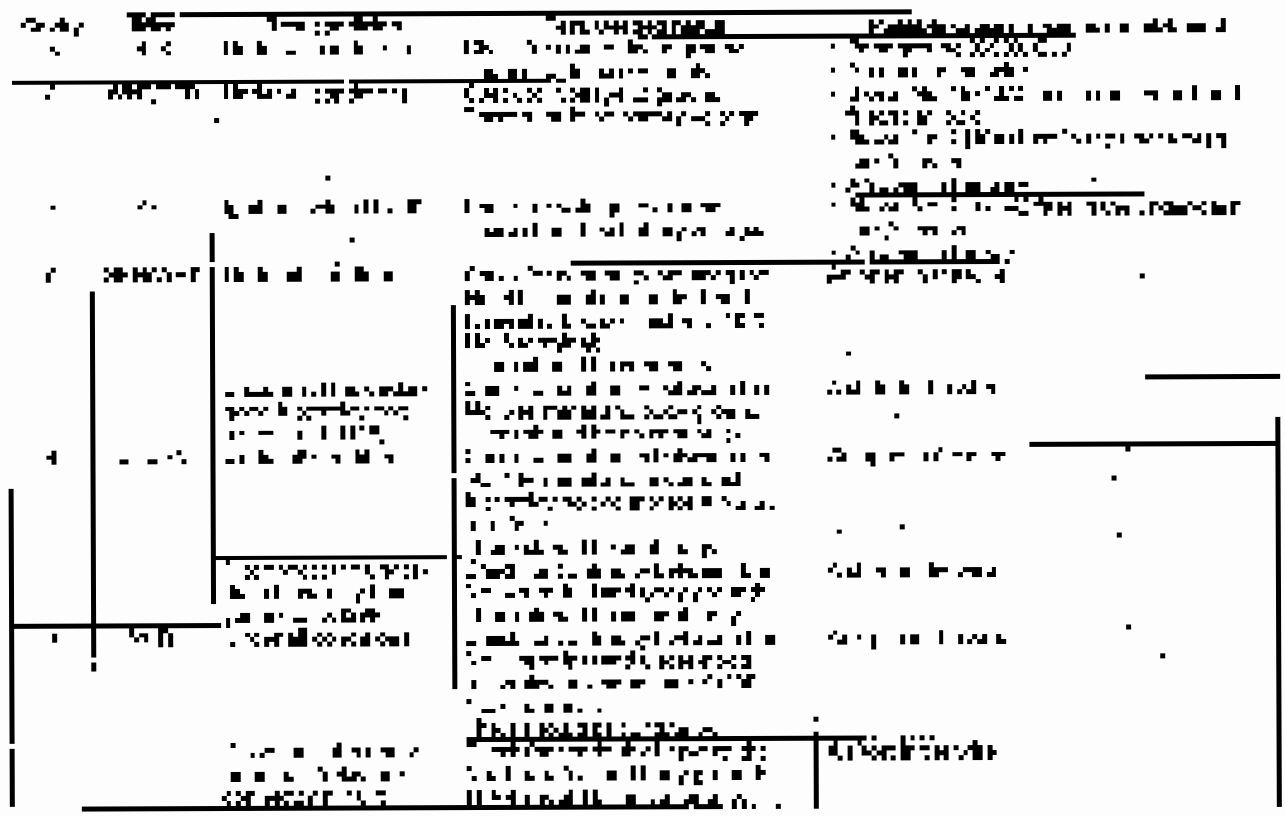
1. Remove the [illegible] (see page 20-[illegible]).
2. Remove the mounting screws (see page 20-[illegible]).
3. [illegible]



4. [illegible]

Wiper/Washer Switch (Combination Switch Control) Unit Input Test



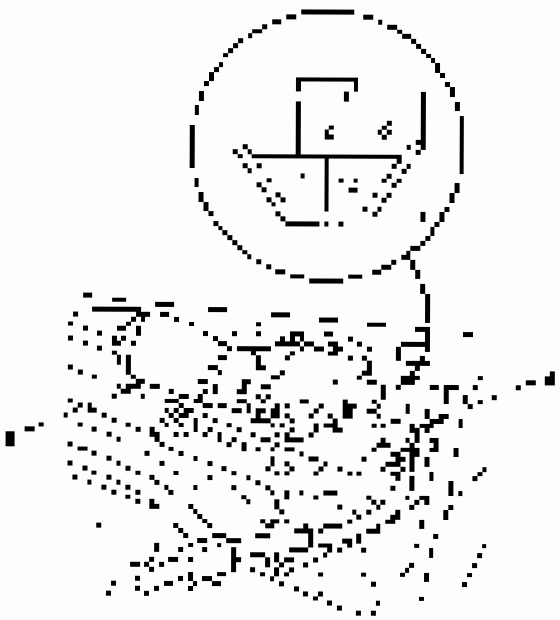


Wiper Motor Test

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

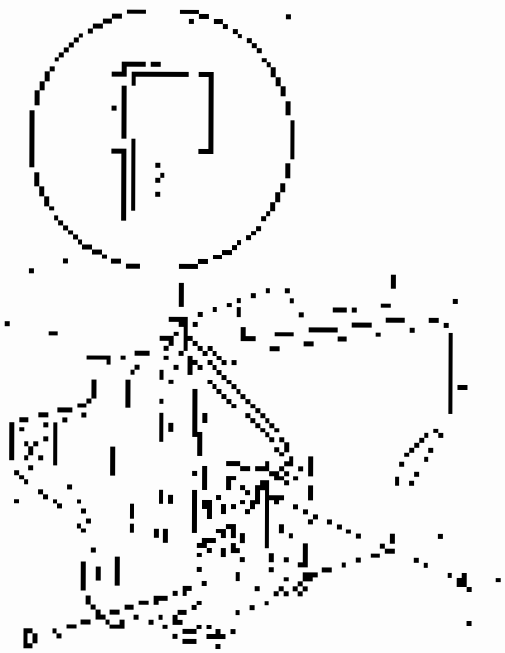
5. [illegible]

6. [illegible]

Washer Motor Test

1. [illegible]

2. [illegible]



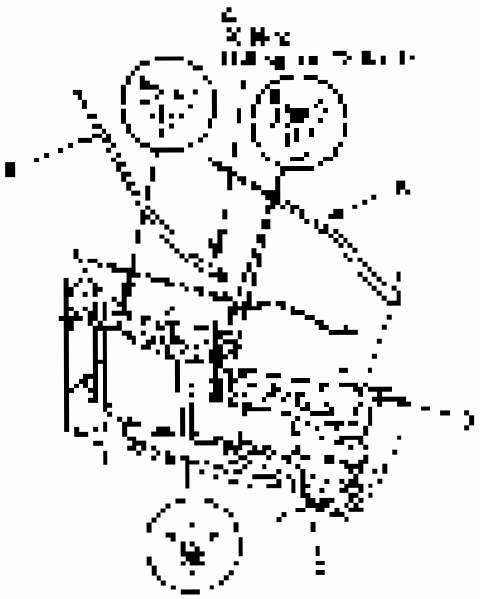
3. [illegible]

- [illegible]
- [illegible]

Wiper Motor Replacement

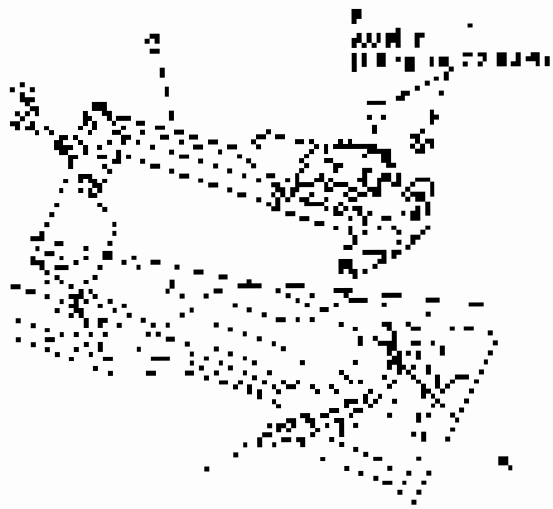
1. Open the hood. Remove the left and right cowl grilles as necessary. (See page [illegible])

2. Remove the wiper arms. (See [illegible])



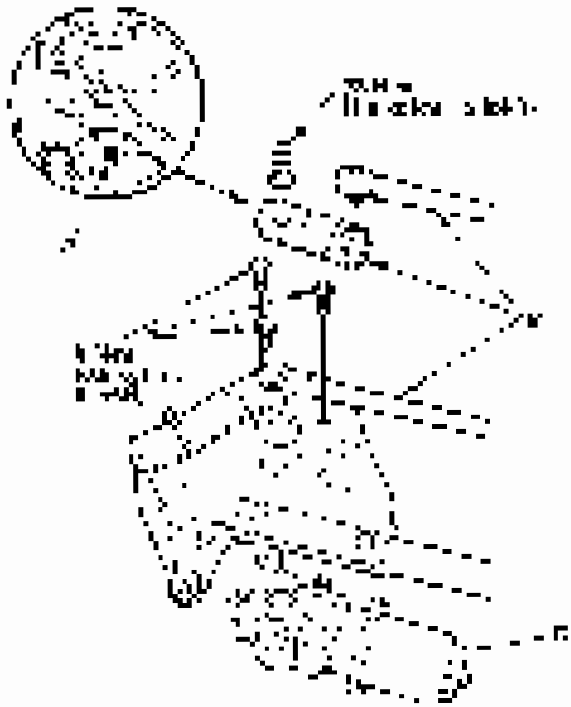
3. Remove the [illegible].

4. Disconnect the [illegible] from the wiper motor.



5. Remove the [illegible] and wiper linkage assembly.

6. Remove the [illegible] and adjust the wiper linkage as necessary. See [illegible] for wiper linkage adjustment.



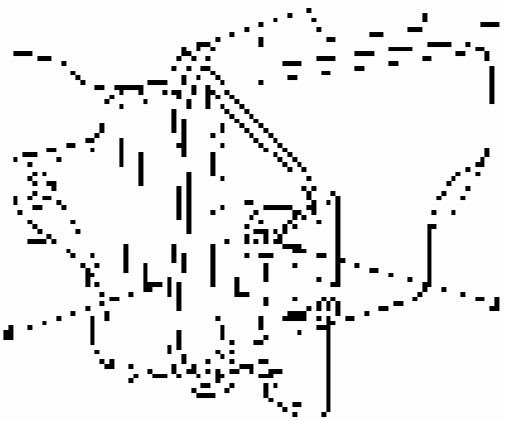
7. Install in reverse order of removal.

- Apply multipurpose grease to the wiper linkage pivots.
- Before installing the wiper arms, turn the wiper motor ON then OFF to make sure the motor is in the park position.
- If necessary, readjust the wiper arms.
- Check wiper operation.

Washer Reservoir Replacement

1. [illegible]

2. [illegible]



3. [illegible]

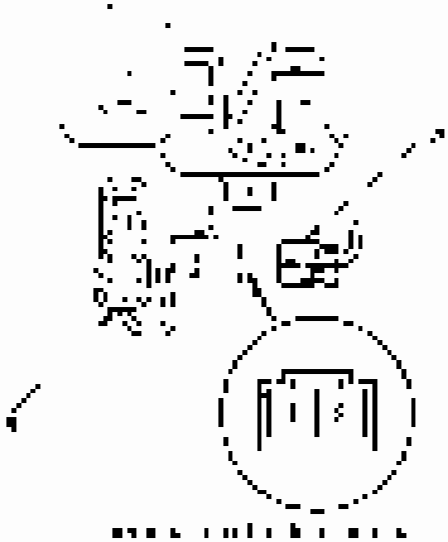
4. [illegible]

Washer Fluid Level Switch Test

Canada

[illegible]

1. [illegible]



2. [illegible]

[illegible]

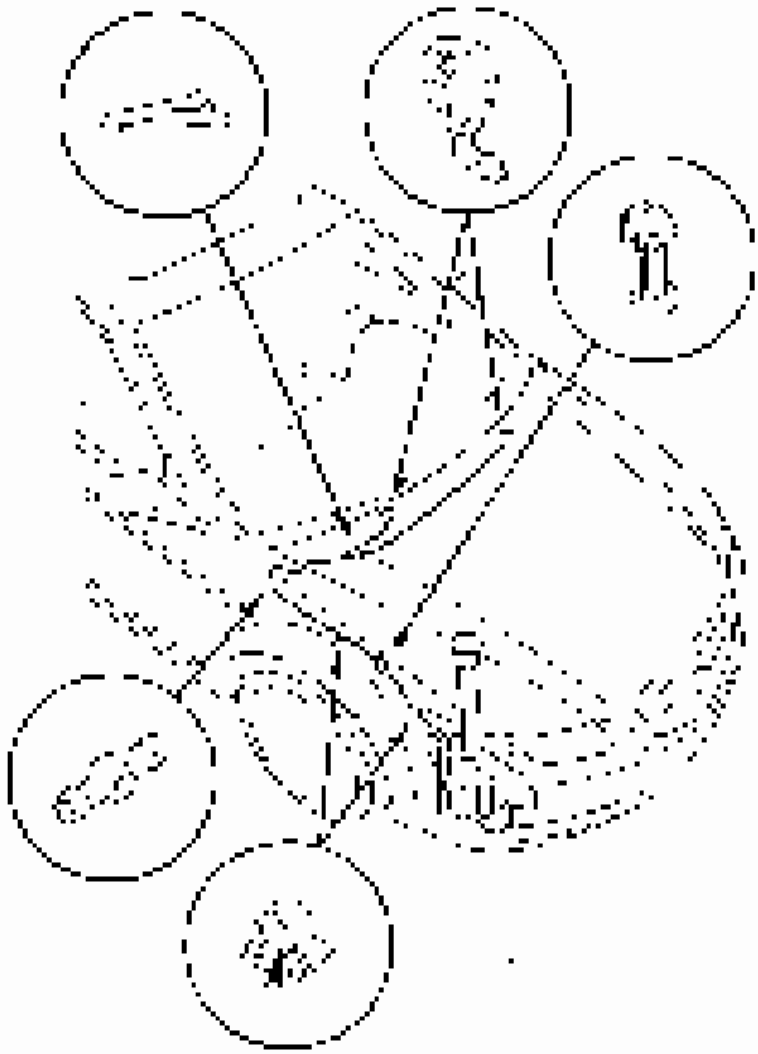
3. Check for [illegible]
   - [illegible]
   - [illegible]

4. [illegible]

Washer Tube Replacement

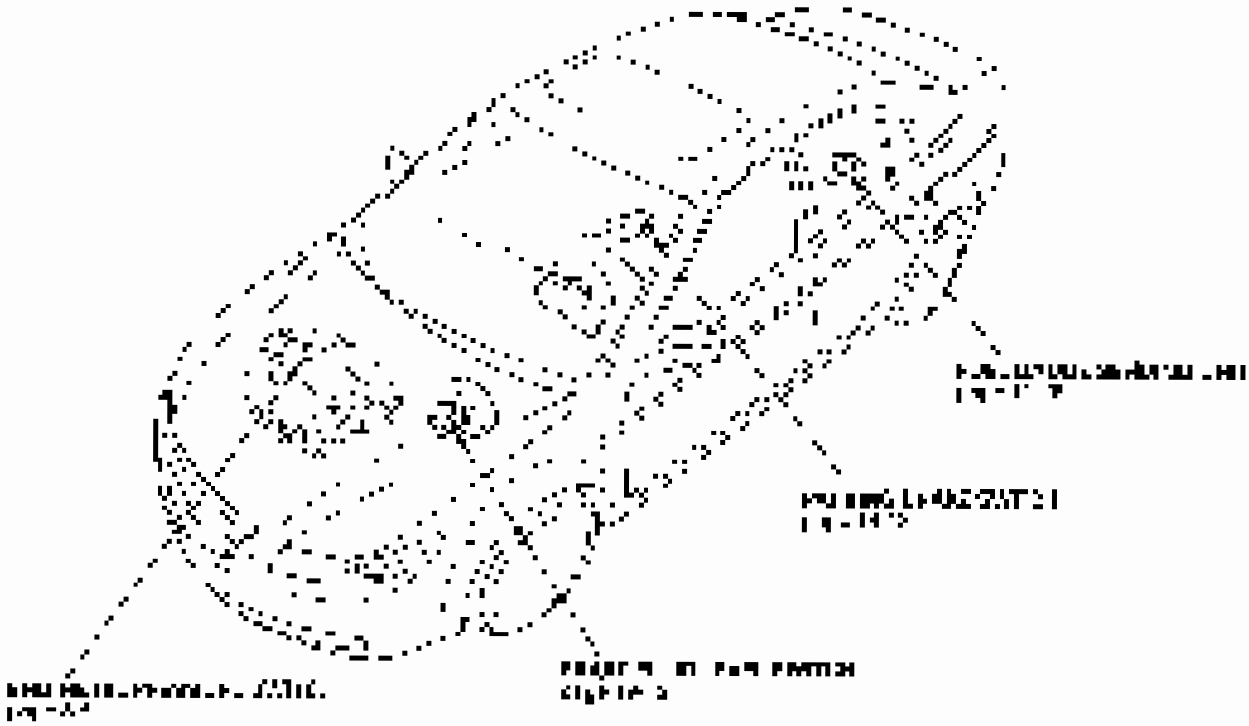
1. [illegible]

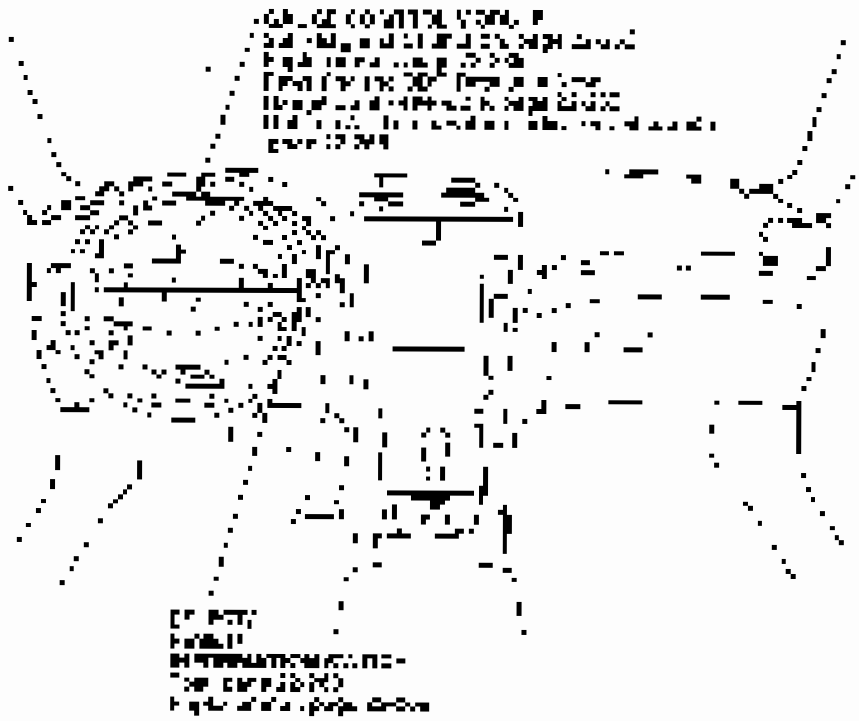
2. [illegible]

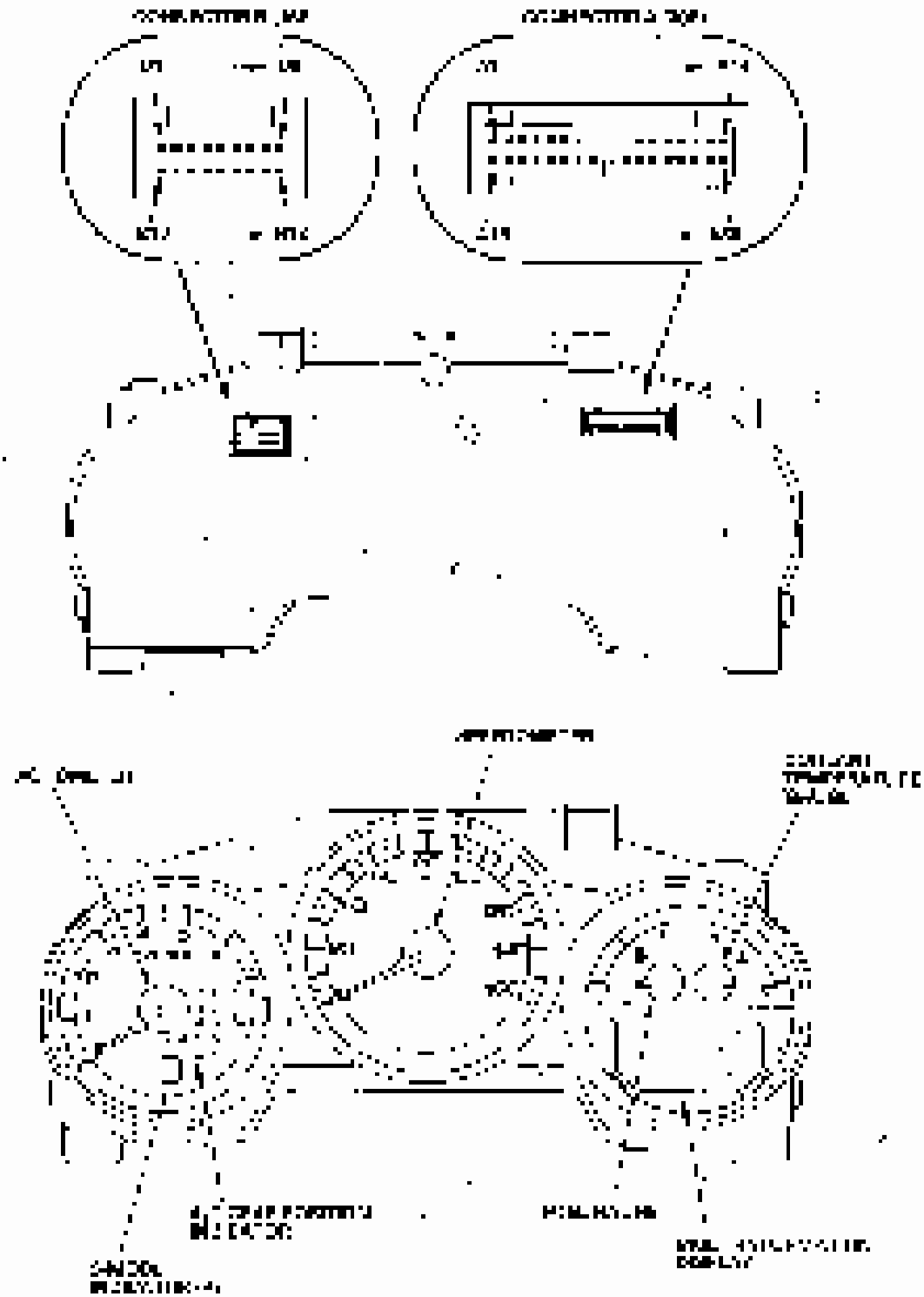


3. [illegible]

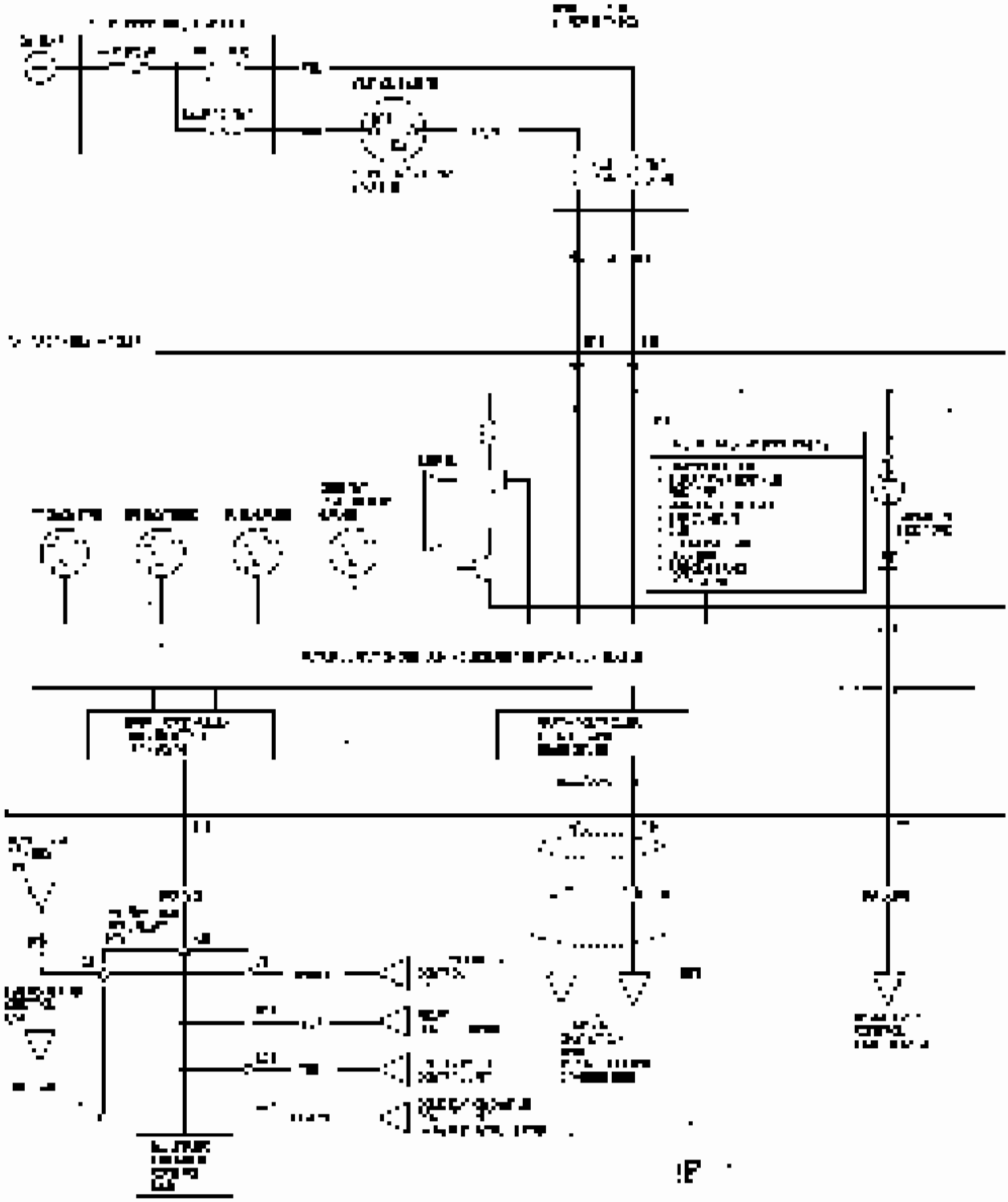
Component Location Index

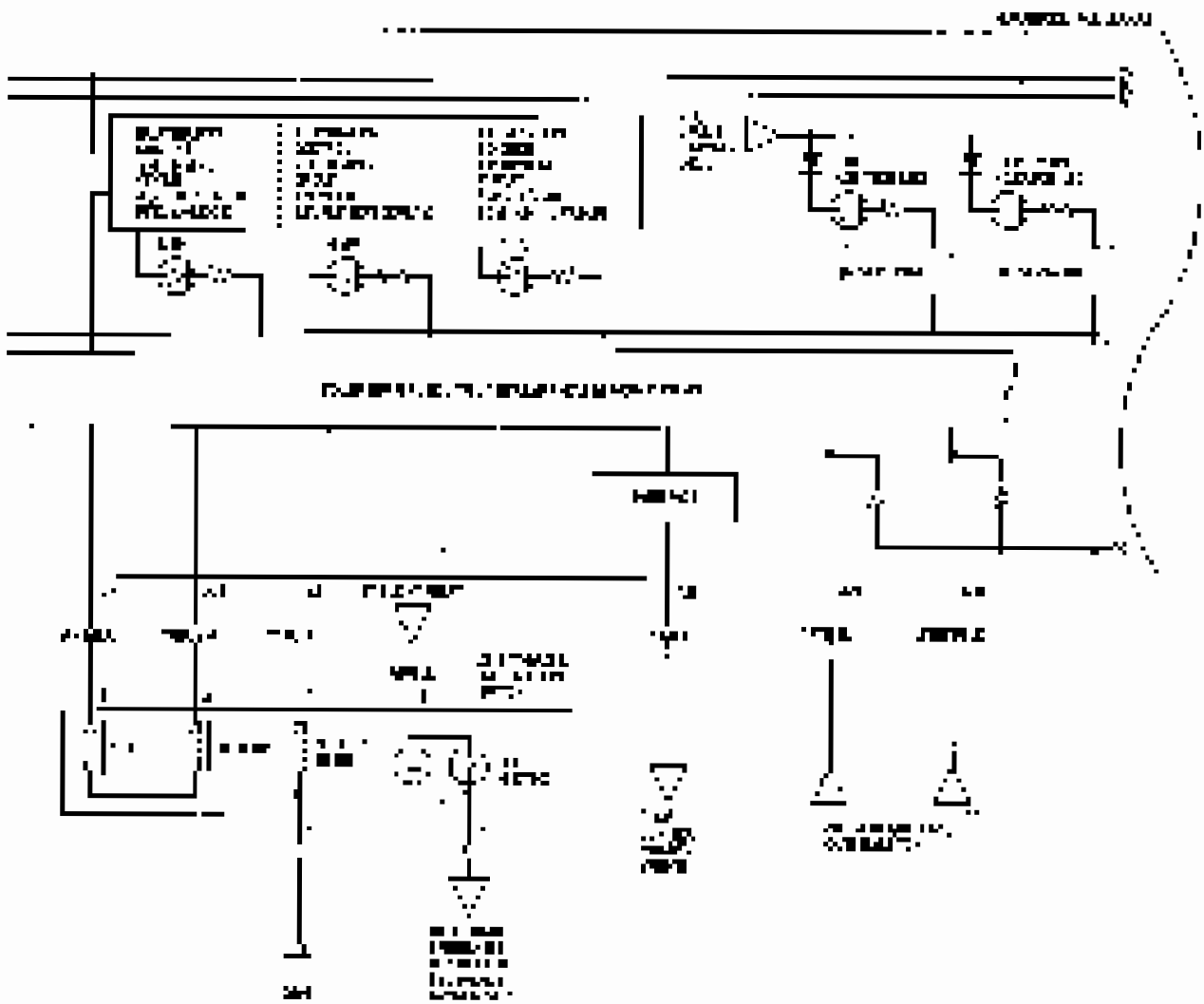




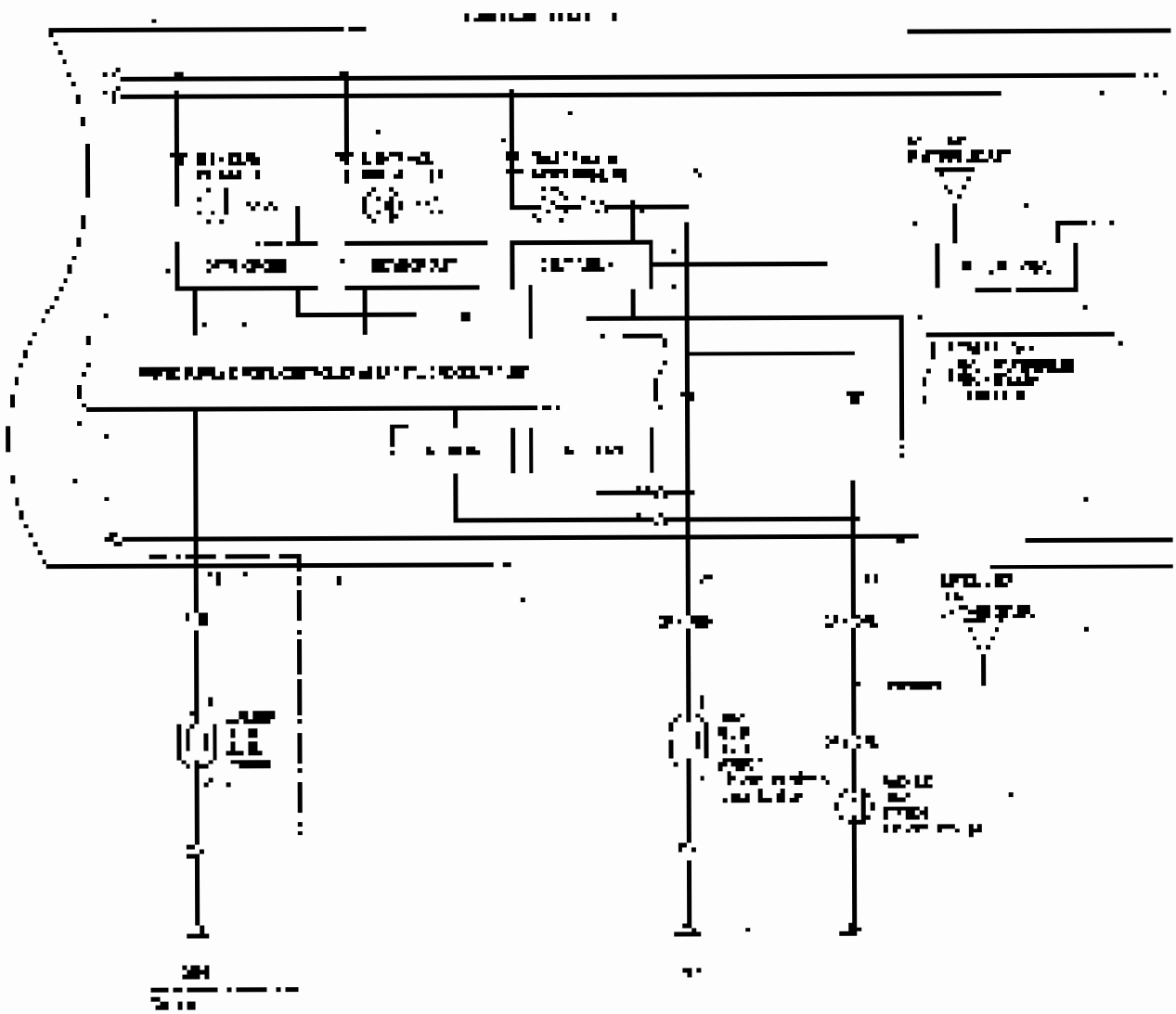


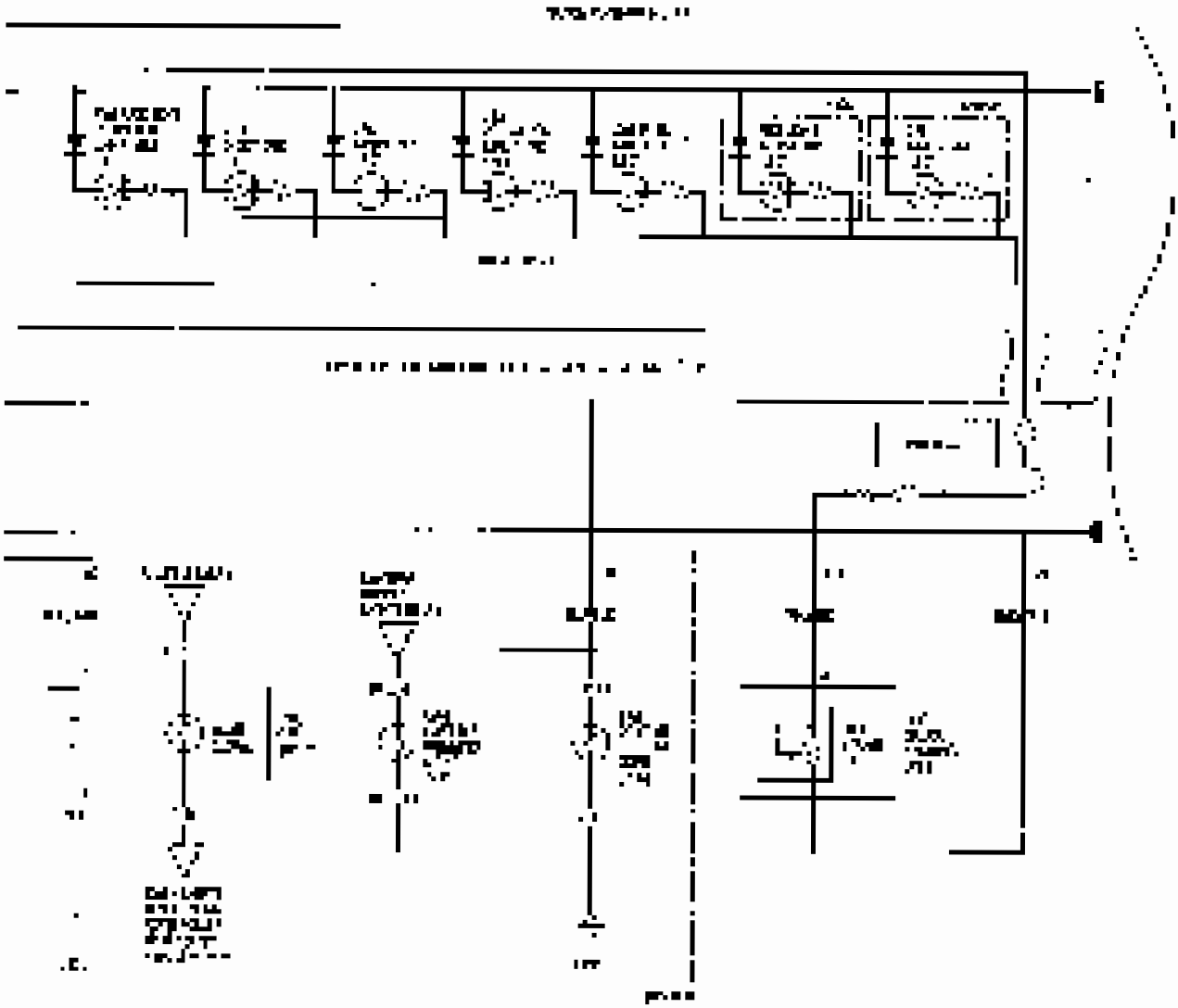
Circuit Diagram



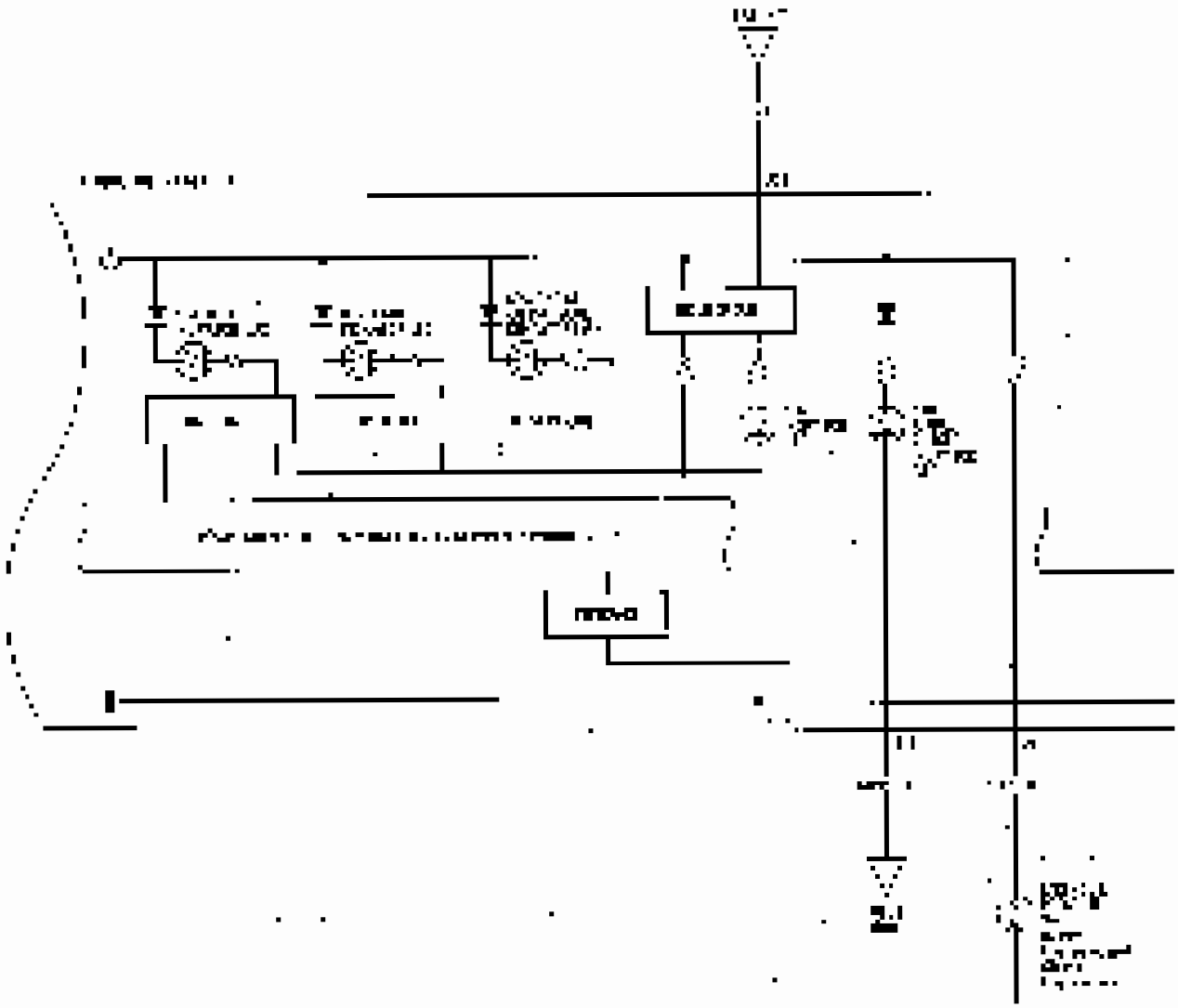


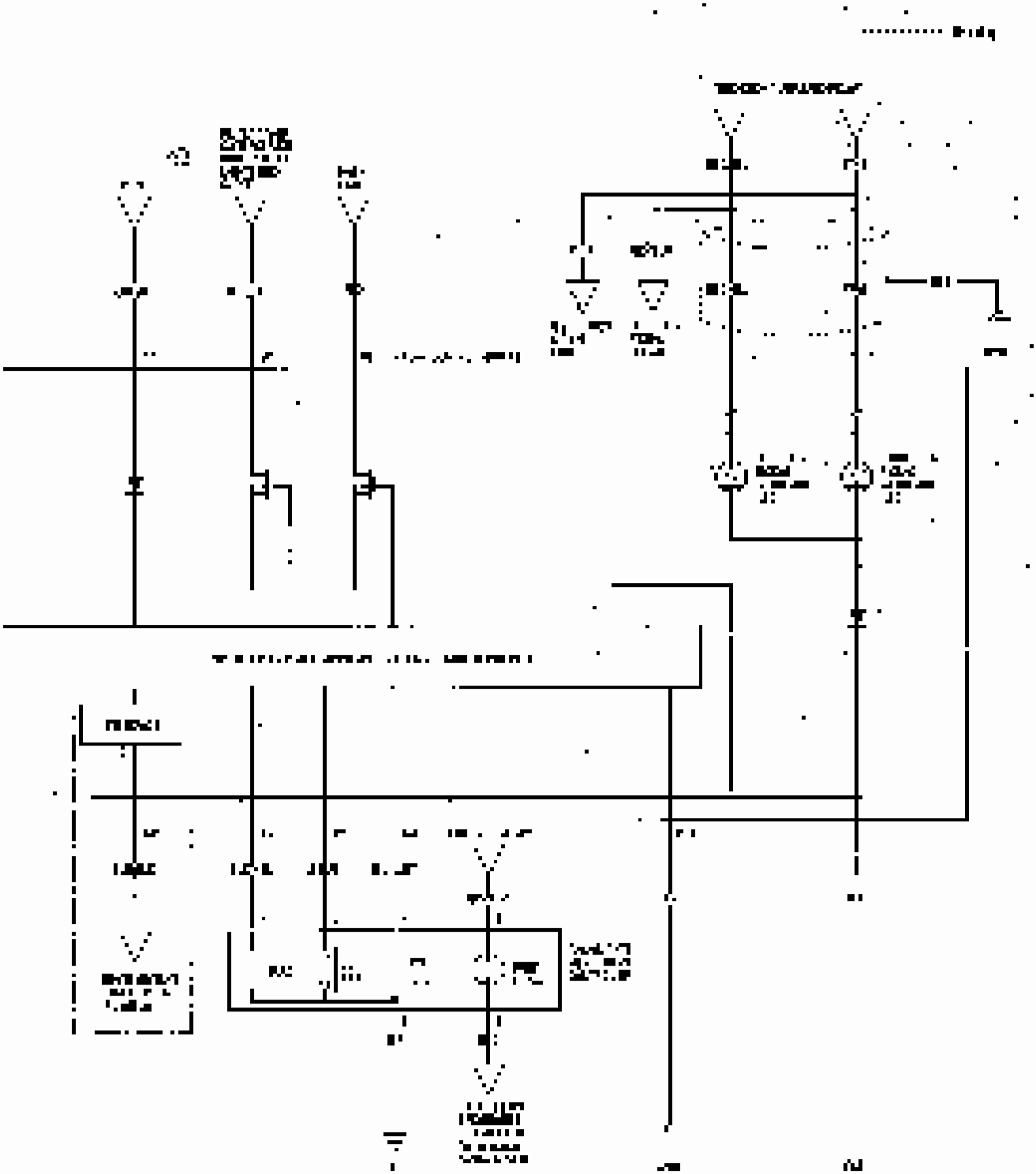
Circuit Diagram (cont'd)





Circuit Diagram (cont'd)





Self-diagnostic Function

[illegible] (page 22-[illegible])

This [illegible] module has a self-diagnostic function.

- The [illegible]
- The [illegible]
- The [illegible]
- The [illegible]
- The [illegible] gauge [illegible]
- [illegible] DTC [illegible]

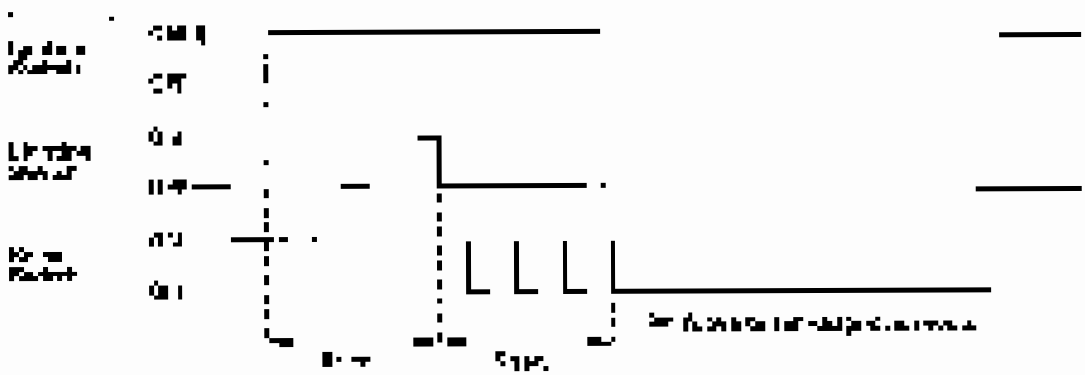
[illegible]

Entering the self-diagnostic function

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. Within 2 seconds, [illegible]
5. Within 2 seconds, [illegible]

NOTE:
- [illegible]
- [illegible] button [illegible]
- [illegible]



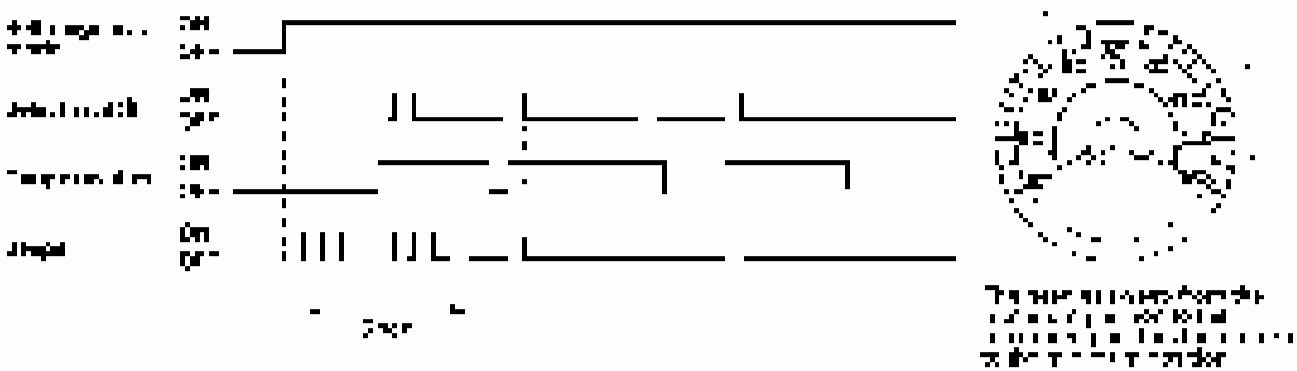
The Indicator Drive Circuit Check

Switch Input Check

The Beeper Drive Circuit Check

The HUD [Sport shift and multi-information display (MID)] Segment Check

The Gauge Drive Circuit Check

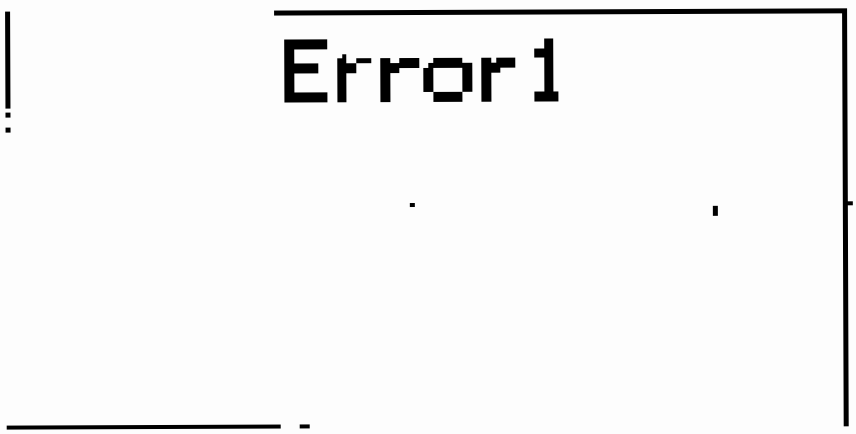


Self-Diagnostic Function (cont'd)

The Communication Line Check

- [illegible]
- [illegible]
- [illegible]

Reading the self-diagnostic Error (1)



[illegible]

Ending the self-diagnostic function

[illegible]

Gauge Control Module Replacement

1. [illegible]
2. [illegible]

3. [illegible]
4. [illegible]

Rewriting the ODO Data on a New Gauge Control Module

NOTE:
- [illegible]
- [illegible]
- [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

Outside Air Temperature Indicator Calibration

[illegible]

Description

[illegible]

Outside Air Temperature Indicator Logic

[illegible]

Update on the Outside Air Temperature Indicator While Driving

[illegible]

Troubleshooting

[illegible]

Calibration

[illegible]

[illegible]

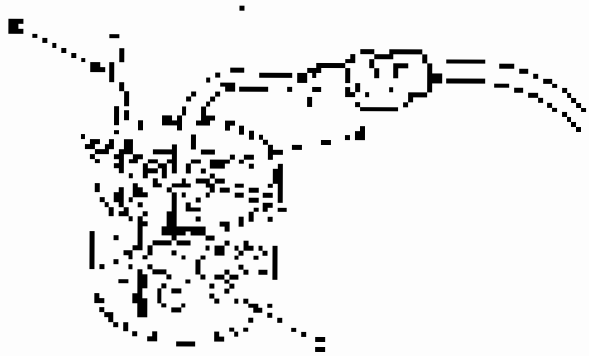
2. [illegible]

-0.1.2.3.-3.-2.-1

3. [illegible]

[illegible]

[illegible]



Select/Reset/Information Switch Test/Replacement

- [illegible]

- [illegible]

- [illegible]

- [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

- [illegible]

DTC Troubleshooting

[illegible] Gauge Control Module EEPROM [illegible]

[illegible]

- [illegible]

- [illegible]

- [illegible]

  [illegible]

  YES - [illegible]

  NO - [illegible]

DTC B1105 Gauge Control Module Lost Communication With the Combination Switch Control Unit Headlight Switch Message

NOTE: If you have more than one DTC to be diagnosed, refer to the instructions in DTC Dependency Chart page 22-001.

1. Check for DTC

2. Turn the ignition switch to ON (II).

3. Check for DTC

Is DTC B1105 indicated?

YES - Go to step 4.

NO - Intermittent failure. Check for poor connection or loose terminal at the Gauge Control Module connector. If the connection is OK, replace the Gauge Control Module.

4. Check for DTC

Is DTC B1105 or B1106 indicated?

YES - Go to Combination Switch Control Unit Input Test page 22-107.

NO - Go to Gauge Control Module Input Test page 22-107.

DTC B1106 Gauge Control Module Lost Communication with the Combination Switch Control Unit Wiper Switch Message

NOTE: If you have more than one DTC to be diagnosed, refer to the instructions in DTC Dependency Chart page 22-001.

1. Check for DTC

2. Turn the ignition switch to ON (II).

3. Check for DTC

Is DTC B1106 indicated?

YES - Go to step 4.

NO - Intermittent failure. Check for poor connection or loose terminal at the Gauge Control Module connector. If the connection is OK, replace the Gauge Control Module.

4. Check for DTC

Is DTC B1105 or B1106 indicated?

YES - Go to Combination Switch Control Unit Input Test page 22-107.

NO - Go to Gauge Control Module Input Test page 22-107.

DTC Troubleshooting (cont'd)

DTC B1154: Gauge Control Module Lost Communication with Multiplex Integrated Control Unit (MICU)

NOTE: Before you troubleshoot with this DTC, [illegible]

1. [illegible]
2. Turn the ignition switch OFF, and then back ON (II).
3. Check for DTCs stored in the IMA.

   Is DTC [illegible] stored?

   YES—[illegible]

   NO—Refer to the applicable DTC in the Troubleshooting Index of the Multiplex Integrated Control Unit (MICU).

4. Check for DTCs stored in the IMA.

   Is DTC [illegible] stored?

   YES—Go to the applicable DTC in the Troubleshooting Index of the Multiplex Integrated Control Unit (MICU).

   NO—Go to [illegible]

DTC B1155: Gauge Control Module Lost Communication with Body Control Module

NOTE: [illegible]

Check the DTCs stored in the IMA.

2. Turn the ignition switch OFF, and then back ON (II).
3. Check for DTCs [illegible]

   Is DTC [illegible] stored?

   YES—Go to [illegible]

   NO—[illegible] Check [illegible]

4. Check for DTCs [illegible]

   Is DTC [illegible] stored?

   YES—Go to the Body Control Module Input Test [illegible]

   NO—Go to Gauge Control Module Input Test [illegible]

DTC B1355 Gauge Control Module Lost Communication with the Multiplex Integrated Control Unit (MICU) Driver Side Vehicles

DTC B1180 Gauge Control Module Lost Communication with Main Body Multiplex Control Unit (Body Side) Passenger Side Vehicles

1. Check for DTC

2. Turn the ignition switch to ON (II).

3. Check for DTC B1355.

Is DTC B1355 displayed?

YES — Go to step 4.

NO — Intermittent failure, system is OK at this time. Check poor connection or refer to Intermittent Failure Diagnosis in Section 00.

4. Check for DTC B1180.

Is DTC B1180 displayed?

YES — Replace the Gauge Control Module. Then go to the next step.

NO — Go to Gauge Control Module Input Test on page 22-134.

1. Check for DTC

2. Turn the ignition switch to ON (II).

3. Check for DTC B1180.

Is DTC B1180 displayed?

YES — Go to step 4.

NO — Intermittent failure, system is OK at this time. Check poor connection or refer to Intermittent Failure Diagnosis in Section 00.

4. Check for DTC B1355.

Is DTC B1355 displayed?

YES — Replace the Gauge Control Module. Then go to the next step.

NO — Go to Gauge Control Module Input Test on page 22-134.

DTC Troubleshooting (cont'd)

DTC B1148 Gauge Control Module Lost Communication with ECM/PCM (6 gear Manual)

1. Check for DTCs and record.
2. Turn the ignition switch to ON and then back to LOCK (OFF).
3. Start the engine and let it idle for at least 2 minutes.
4. Check for DTCs and record.

   Is DTC B1148 recorded?

   YES—Go to step 5.

   NO—Intermittent failure, the PCM/ECM communication circuit is OK at this time. Check for poor connections. If no connections are found, check the battery and fuse (see page 22-11). And then, begin by symptom troubleshooting.

5. Check for communication between the PCM/ECM and the gauge control module.

   Are there any other DTCs?

   YES—Go to the indicated DTC's troubleshooting.

   NO—Go to step 6.

6. Do the Gauge Control Module Input Test (see page 22-124).

   Are all gauges OK?

   YES—Replace the gauge control module.

   NO—Repair the faulty circuit. Then recheck for DTCs.

7. Start the engine and let it idle for at least 2 minutes.
8. Check for DTCs and record.
9. Is DTC B1148 recorded? (Engine speed must be over 1,000 rpm)
10. Replace the gauge control module and then check for DTCs (see page 22-123).
11. Check for DTCs and record.

    Is DTC B1148 recorded?

    YES—Replace the PCM/ECM.

    NO—Intermittent failure, the PCM/ECM was replaced because of a defective gauge control module. Review symptom troubleshooting (see page 22-11).

DTC B1169: Gauge Control Module Lost Communication with ECM/PCM A/T [Passenger]

NOTE: If more than one DTC is set, perform the trouble shooting for any DTC beginning with network communication before performing the trouble shooting for this DTC.

1. Connect the DRB-IIIt to the PCI bus.
2. Turn the ignition switch to the ON position. Do not start the engine.
3. Read and record all DTCs and freeze frame data.
4. Erase DTCs.
5. Start the engine and let it idle for at least 2 minutes.
6. Are any DTCs displayed?

   YES Go to Step 7.

   NO Intermittent condition. Refer to the PCM connector inspection procedure in the service information. Check for loose or poor connections at the PCM connector. Check the wiring harness for a short or open between the PCM and the ignition switch. If the connector and wiring harness check OK, replace the PCM.

7. Record and erase DTCs.

   Are any DTCs displayed?

   YES Go to the DTC table and perform the indicated trouble shooting.

   NO Go to Step 8.

8. Turn the ignition switch to the OFF position for 30 seconds.
9. Start the engine and let it idle for at least 2 minutes.
10. Are any DTCs displayed?

    YES Go to Step 11.

    NO Refer to the DTC table.

11. Check the PCM and the ECM for:

    Is DTC B1169 displayed?

    YES Replace the ECM/PCM.

    NO The original problem may have been caused by a loose or poor connection at the ECM/PCM.

DTC Troubleshooting (cont'd)

DTC B1126: Fuel Level Sensor (Fuel Gauge Sensing Unit) Signal Circuit Open

NOTE: If you [illegible]

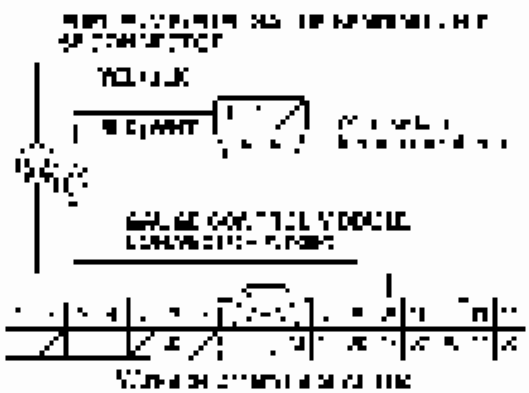
1. [illegible]

   YES: [illegible]

   NO: [illegible]

2. [illegible]

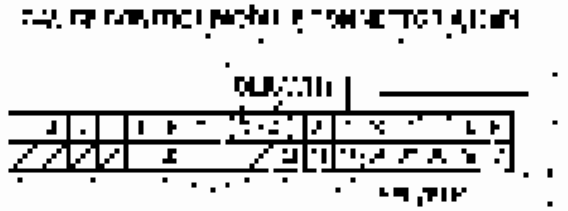
3. [illegible]



   YES: [illegible]

   NO: [illegible]

4. [illegible]



   YES: [illegible]

   NO: [illegible]

DTC B1117: Abnormal Battery Voltage (Out of Range)

NOTE: Perform this procedure if multiple DTCs are stored. Refer to the Diagnostic Trouble Code (DTC) Index procedure before proceeding with this procedure.

1. [illegible]

2. [illegible]

3. Check for DTCs with the HDS.

   Is DTC P0562, P0563 stored?

   YES - [illegible]

   NO - [illegible]

4. [illegible]

   Is DTC P0122, P0123 stored?

   YES - Go to step 5.

   NO - [illegible] ■

5. Check for a Battery Sensor (page 22-24) and the charging system (page 4-25).

   Is the battery and charging system normal?

   YES - [illegible]

   NO - [illegible] ■

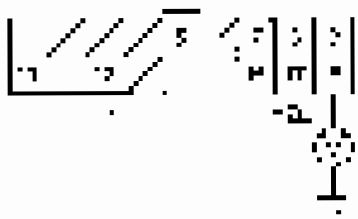
6. [illegible]

   Is the battery voltage 10 V or more?

   YES - Go to step 7.

   NO - [illegible] ■

7. [illegible]

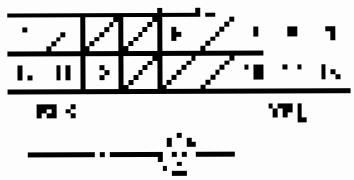


   Is there battery voltage?

   YES - Go to step 8.

   NO - [illegible] ■

8. [illegible]



   Is there continuity?

   YES - [illegible]

   NO - [illegible] ■

DTC Troubleshooting (cont'd)

DTC B1172/B1272 F-CAN Communication Error Between Engine

NOTE: If you have an HDS, record any DTCs in the control unit other than B1172/B1272 before you begin troubleshooting. Clear the DTCs after recording them.

1. Check the gauge control unit connector.

2. Turn the ignition switch to ON (II).

3. Select the gauge control unit from the HDS vehicle menu.

4. Check for DTCs in the gauge control unit.

   Is DTC B1172/B1272 indicated?

   YES - Replace the gauge control unit.

   NO - Troubleshoot intermittent failures, see page 22-10.

5. Select the engine control unit from the HDS vehicle menu.

6. Check for DTCs in the engine control unit.

7. Turn the ignition switch to LOCK (0), and then to ON (II).

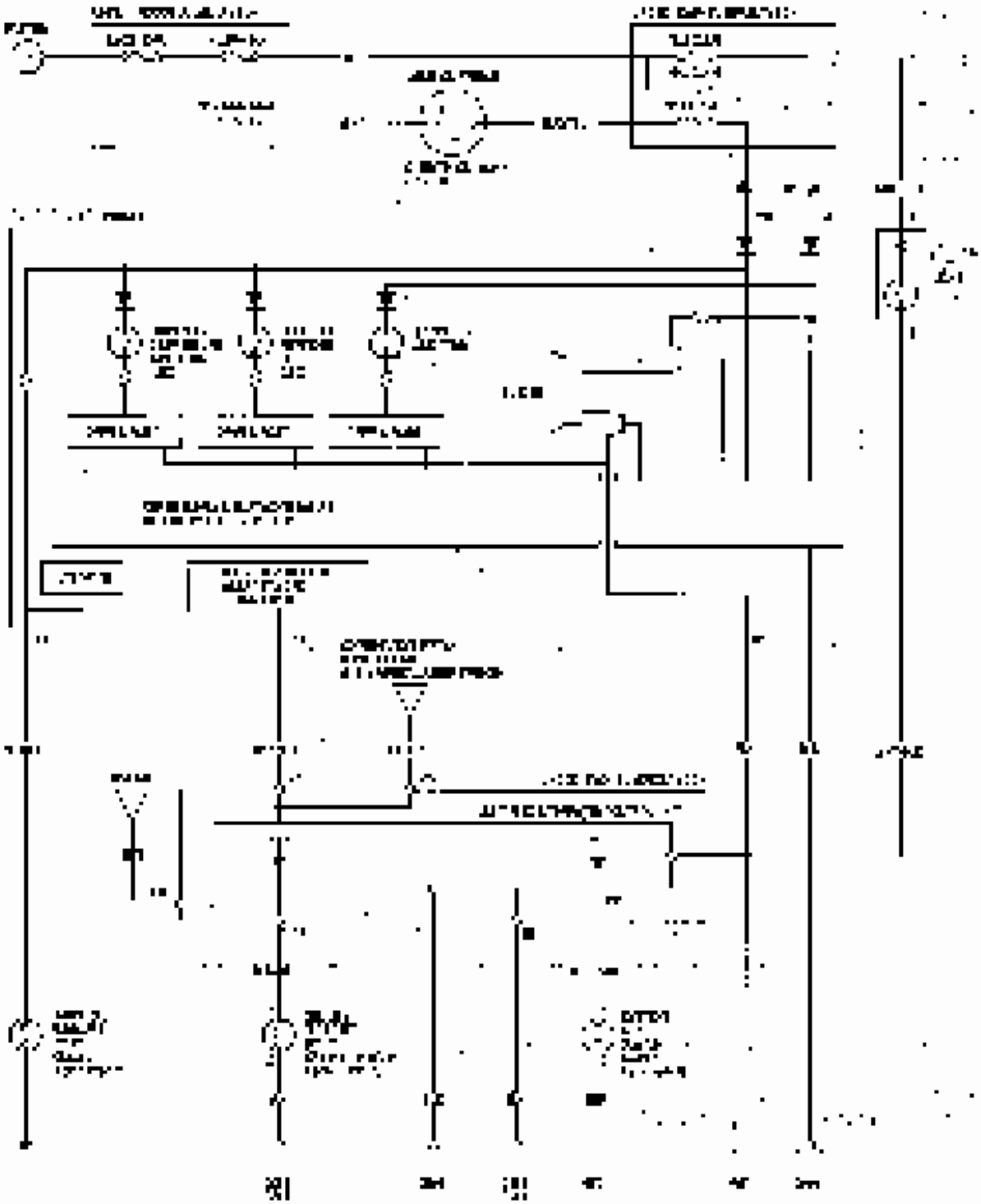
8. Check for DTCs in the engine control unit.

   Is DTC P1610 indicated?

   YES - Replace the ECM/PCM.

   NO - Troubleshoot intermittent failures, see page 22-10.

Circuit Diagram



Control Unit Input Test

1. [illegible]

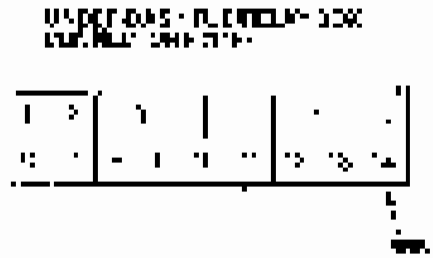
Multiplex Integrated Control Unit

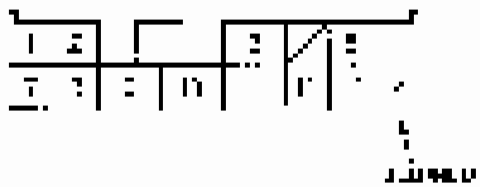
2. [illegible]

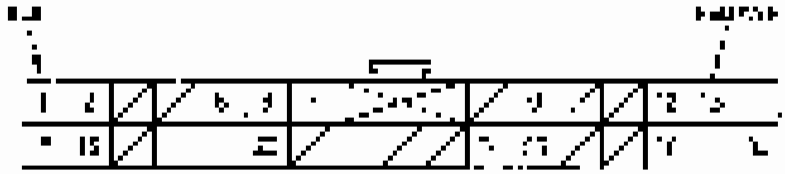
3. [illegible]

4. Disconnect the multiplex integrated control unit 32P connector.

NOTE: A connector saver cable is available from [illegible].







5. Inspect the connectors and terminals. If they are in good condition, they are all marked good condition.

- If the new fuse blows again, [illegible]
- If the new fuse is OK, go to step 6.

- [illegible]

  - [illegible]
  - [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

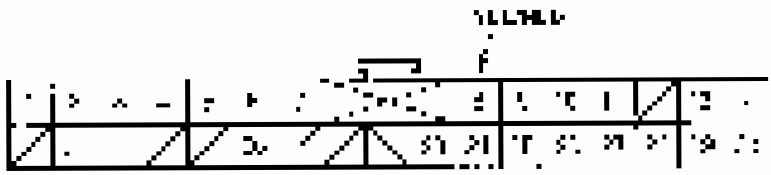
[illegible]

a. [illegible]

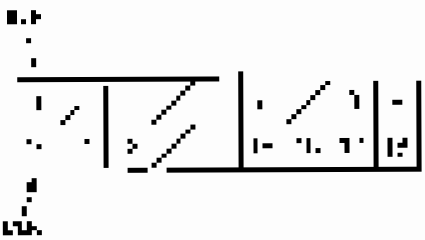
b. [illegible]

c. [illegible]

[illegible]



[illegible]



[illegible]

- [illegible]
- [illegible]

[illegible]

Control Unit Input Test (cont'd)

- [illegible]

  - [illegible]
  - [illegible]

Coolant temp. °C (°F)	Voltage V (Ω)	Test condition	Test Data and result	Possible cause if result is not as listed
[illegible]	[illegible]	Engine [illegible]	Check for continuity between [illegible] ground. [illegible]	• Faulty engine oil pressure switch • Any open in wire harness
		Key [illegible]	• [illegible]	• Blown [illegible] fuse • Faulty key [illegible] switch • Open in wire harness
51 (124)	0.2 (200)	Ambient condition	Check for continuity between [illegible] ground. [illegible]	• [illegible] • Open in wire harness

*1: Remove [illegible] from the combination meter assembly and check the gauge control module.

*2: Refer to the Gauge Self-Diagnosis Procedure in this section (page 24-254).

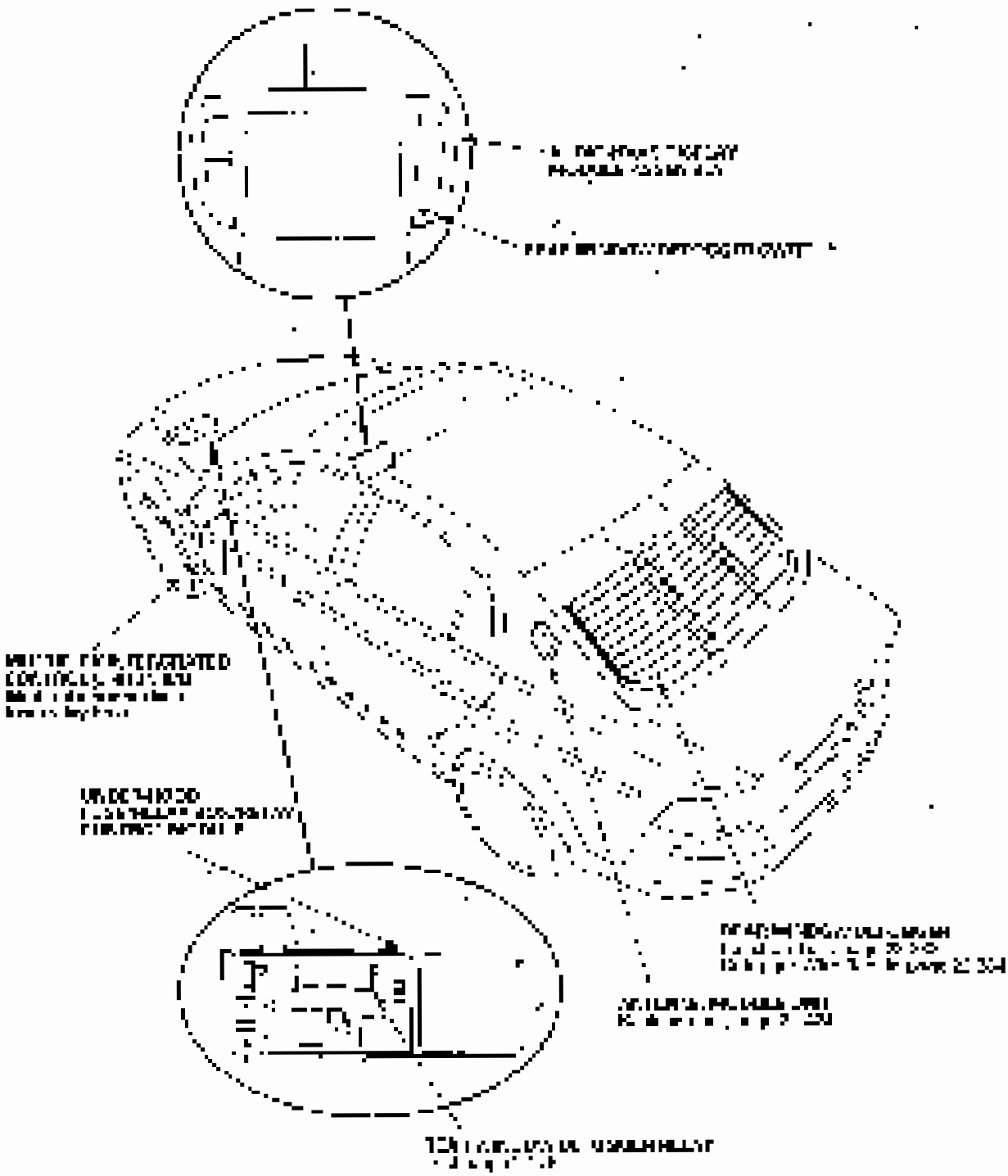
- If the [illegible] check the [illegible] for [illegible] (page 24-[illegible]).
- If the [illegible] check the [illegible] for [illegible] and/or [illegible] for short. If OK, replace the gauge control module.

*3: [illegible]

- If the [illegible] check the [illegible] for [illegible] and/or [illegible] for short. If OK, replace the [illegible] control module.
- If the [illegible] check the [illegible] for [illegible] and/or [illegible] for short. If OK, replace the [illegible] control module.

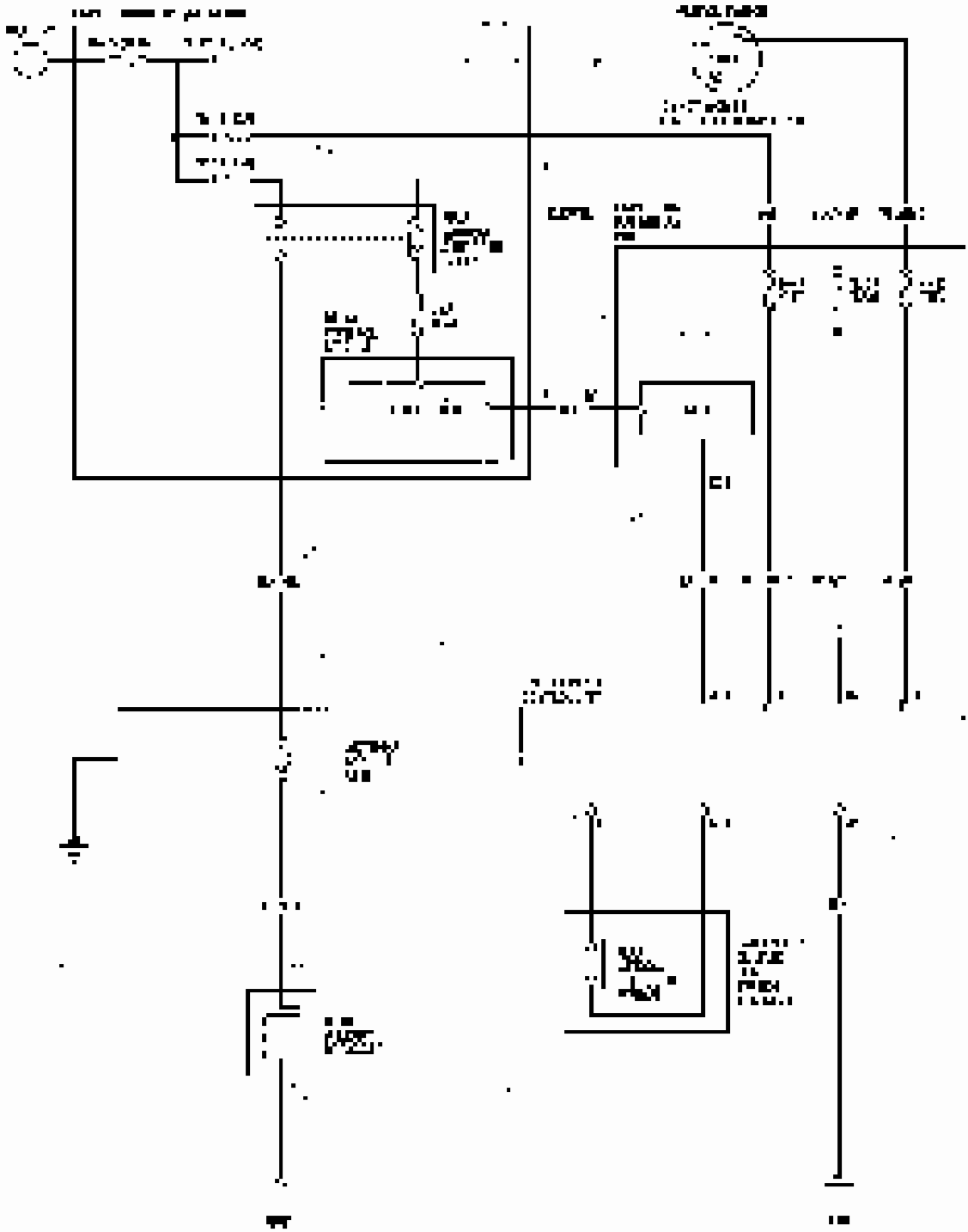
Rear Window Defogger

Component Location Index



Rear Window Defogger

Circuit Diagram



Function Test

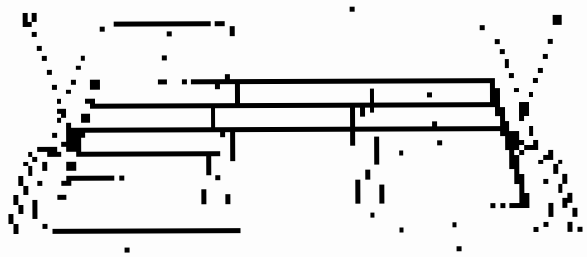
[illegible]

[illegible]

- [illegible]
- [illegible]

1. [illegible]

   - [illegible]
     - [illegible]
     - [illegible]
     - [illegible]
     - [illegible]
   - [illegible]



[illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

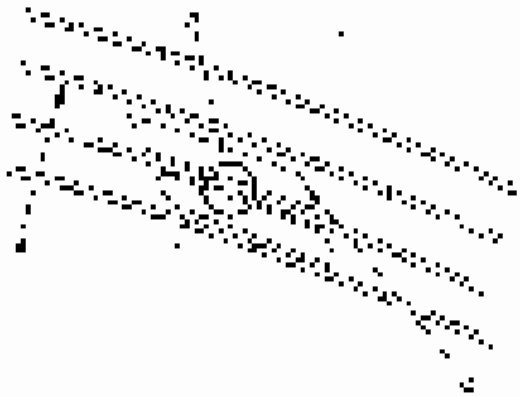
6. [illegible]

   - [illegible]
   - [illegible]
     - [illegible]
     - [illegible]

Defogger Wire Repair

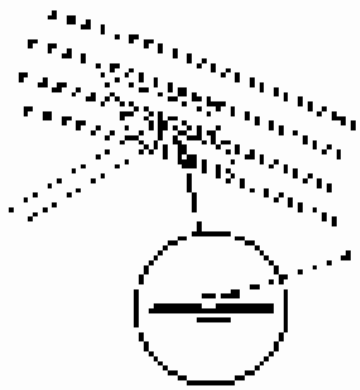
NOTE: To make an effective repair, the broken section must be no longer than 1 inch (25 mm).

1. Lightly scrape away enough of the conductive coating to expose approximately 1/2 inch (13 mm) of the broken wire.



2. Clean a small area around each end of the broken wire with rubbing alcohol.

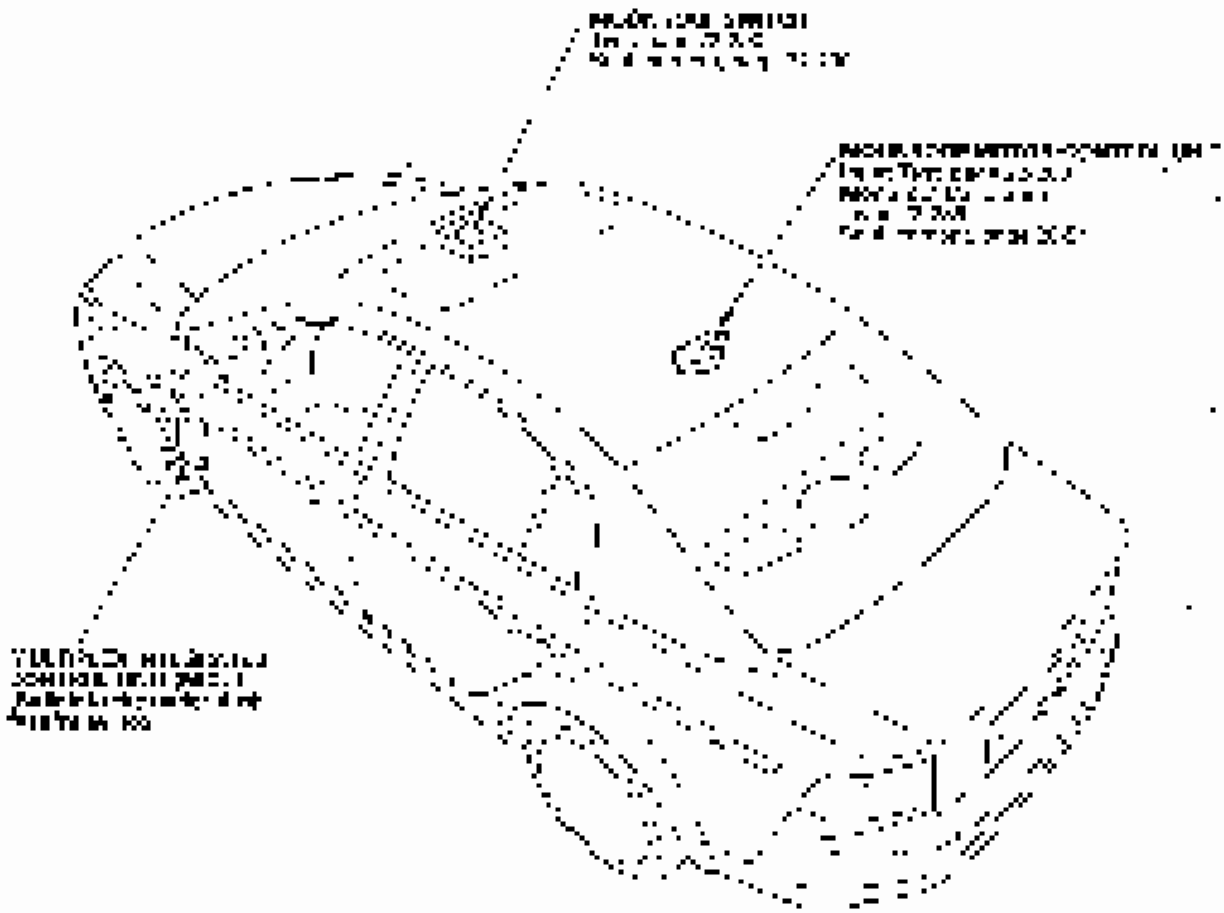
3. Using a small brush, apply a heavy coat of silver conductive paint (commercially available from auto parts stores) over the broken wire. Make sure the paint overlaps the wire by at least 1/8 inch (3 mm) on each side of the break.



4. Let the paint dry at least 24 hours before using the defogger.

5. Apply a second coat of paint in the same way. Let it dry at least 24 hours before using the defogger.

Component Location Index



Moonroof Calibration

NOTE: The moonroof calibration must be performed whenever the following components are removed or replaced:
- The moonroof glass assembly (including the sunshade assembly)
- The moonroof motor assembly
- Any component or assembly that must be removed to replace:
  - Roof panel
    - Moonroof glass
    - Moonroof seal
    - Moonroof guide rail assembly
    - Moonroof cable assembly

To calibrate the moonroof, perform the following steps:

1. Turn the ignition switch to ON (II).

2. Open the moonroof to the open position and release the open switch.

3. [illegible] the moonroof ON/OFF switch until the moonroof glass moves slightly back to the tilt position and then stops completely.

   - Roof Motor
   - Check that the moonroof [illegible]

4. Release the ON/OFF switch.

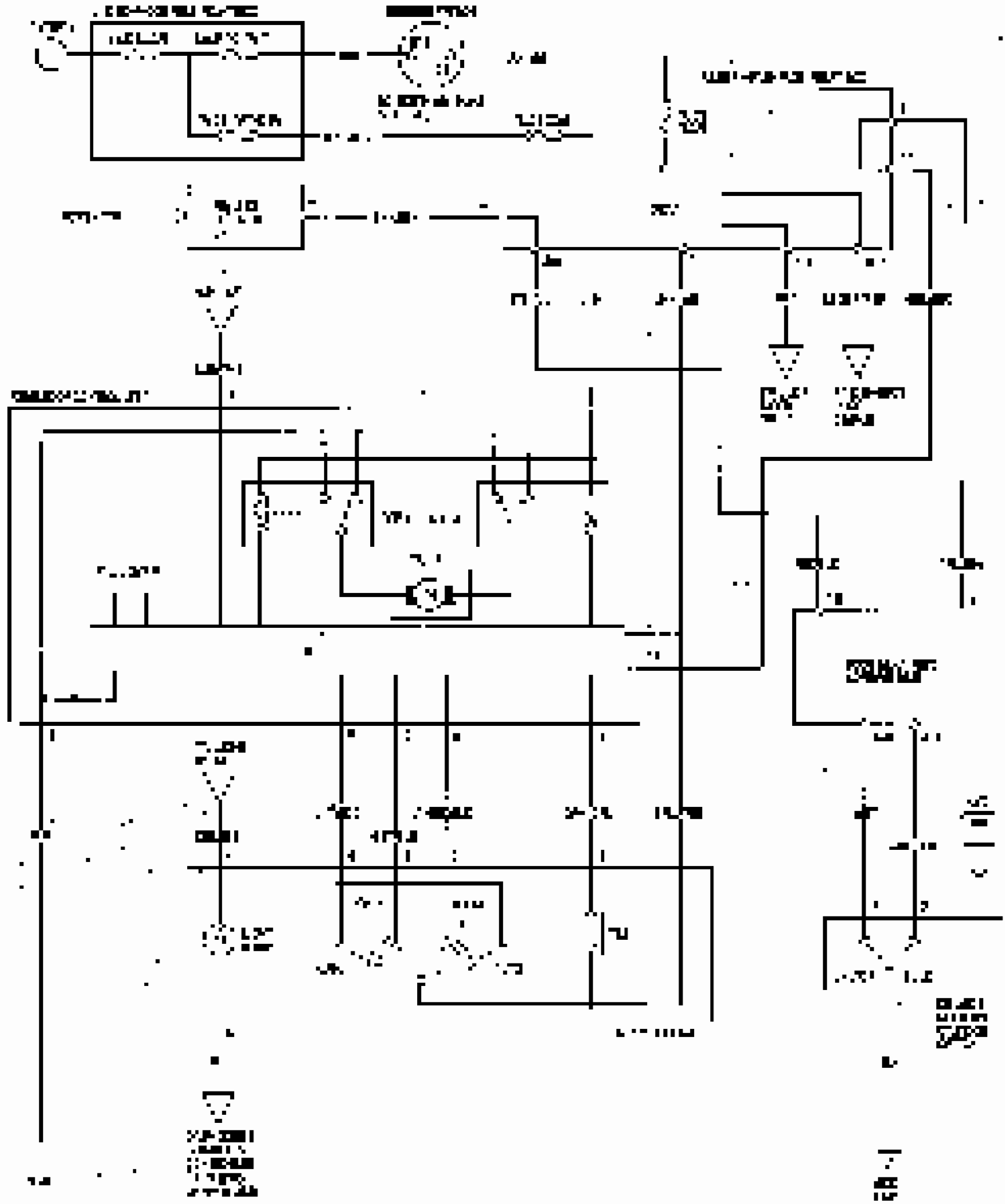
5. Within 5 seconds, press and hold the moonroof ON/OFF switch again.

6. Hold the switch until the moonroof glass fully begins to tilt down.

- Continue to hold the switch for [illegible] seconds after the moonroof glass begins to tilt down. The calibration is now complete.

7. Verify proper operation of the moonroof.

Circuit Diagram

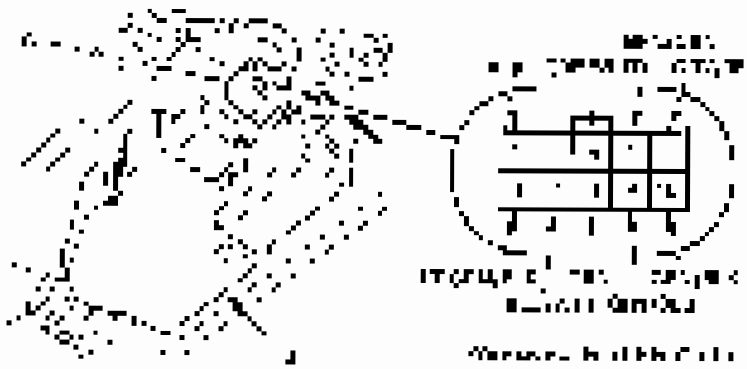


Moonroof Control Unit Input Test

1. [illegible]

2. [illegible]

3. [illegible]



4. [illegible]

- [illegible]
- [illegible]

5. [illegible]

- [illegible]
- [illegible]

Check	Wire	Terminal No.	Test Condition	Result	Possible cause if result is not obtained
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	2L	[illegible]	Check for continuity to ground	There should be continuity	• Poor ground (G301) • Broken wire
4	[illegible]	[illegible]	Check for continuity between body ground and [illegible]	There should be continuity	• Broken wire
		[illegible]	Check voltage between [illegible] and body ground:	[illegible]	• [illegible] • [illegible]

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
4	GRN/ORN	Master switch in UP position	Check for continuity between the No. [illegible] and No. 4 terminals: There should be continuity.	• Faulty [illegible] switch • An open in the wire
5	GRN/BLU	Master switch in DOWN position	Check for continuity between the No. 3 and No. 5 terminals: There should be continuity.	• Faulty passenger switch • An open in the wire
6	[illegible]	Master switch in [illegible] position	Check for continuity between the No. [illegible] and No. [illegible] terminals: There should be continuity.	• Faulty master switch • An open in the wire
8	[illegible]	Master switch in AUTO DOWN or AUTO UP position	Check for continuity between the No. [illegible] and No. [illegible] terminals: There should be continuity.	• Faulty master switch • An open in the wire

6. [illegible] connector A [illegible]

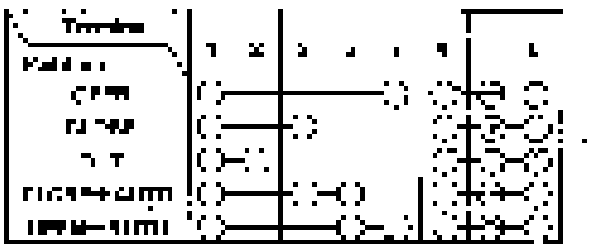
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
7	[illegible]	Under all conditions	Check for continuity between the No. 7 terminal and the [illegible] terminal. There should be continuity.	• An open in the wire
			Check for continuity between the No. 7 terminal and body ground: There should be no continuity.	• A short in the wire
10	[illegible]	Under all conditions	Check for continuity between the No. 10 terminal and the power window [illegible] terminal. There should be continuity.	• An open in the wire
		Disconnect power window master switch connector A [illegible]	Check for continuity between the No. 10 terminal and body ground: There should be no continuity.	• A short in the wire

Moonroof Switch Test/Replacement

1. Carefully pry out the moonroof switch (A).

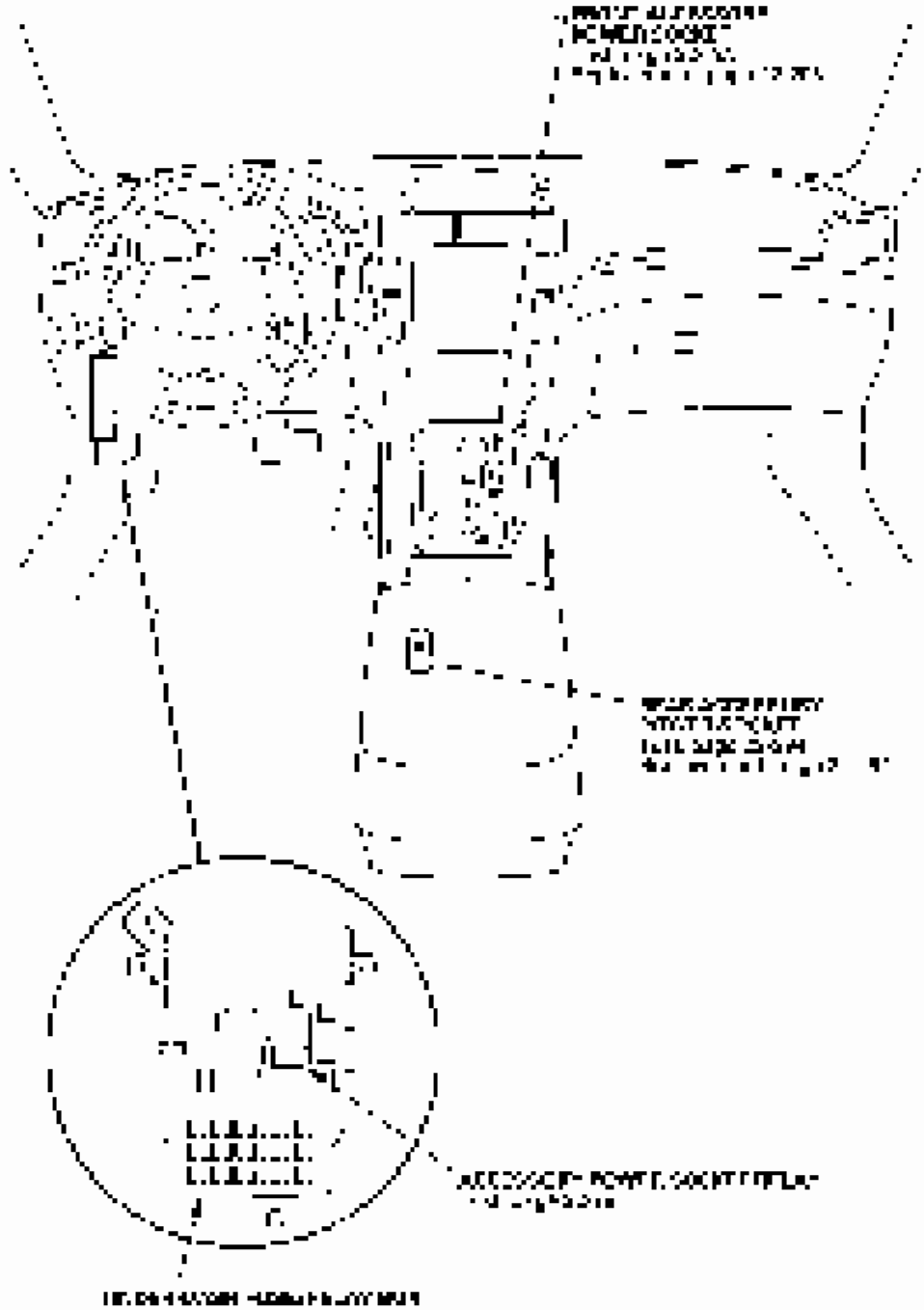
2. Disconnect the 7P connector (B) from the moonroof switch.

3. Check for continuity between the terminals in each switch position according to the table below.



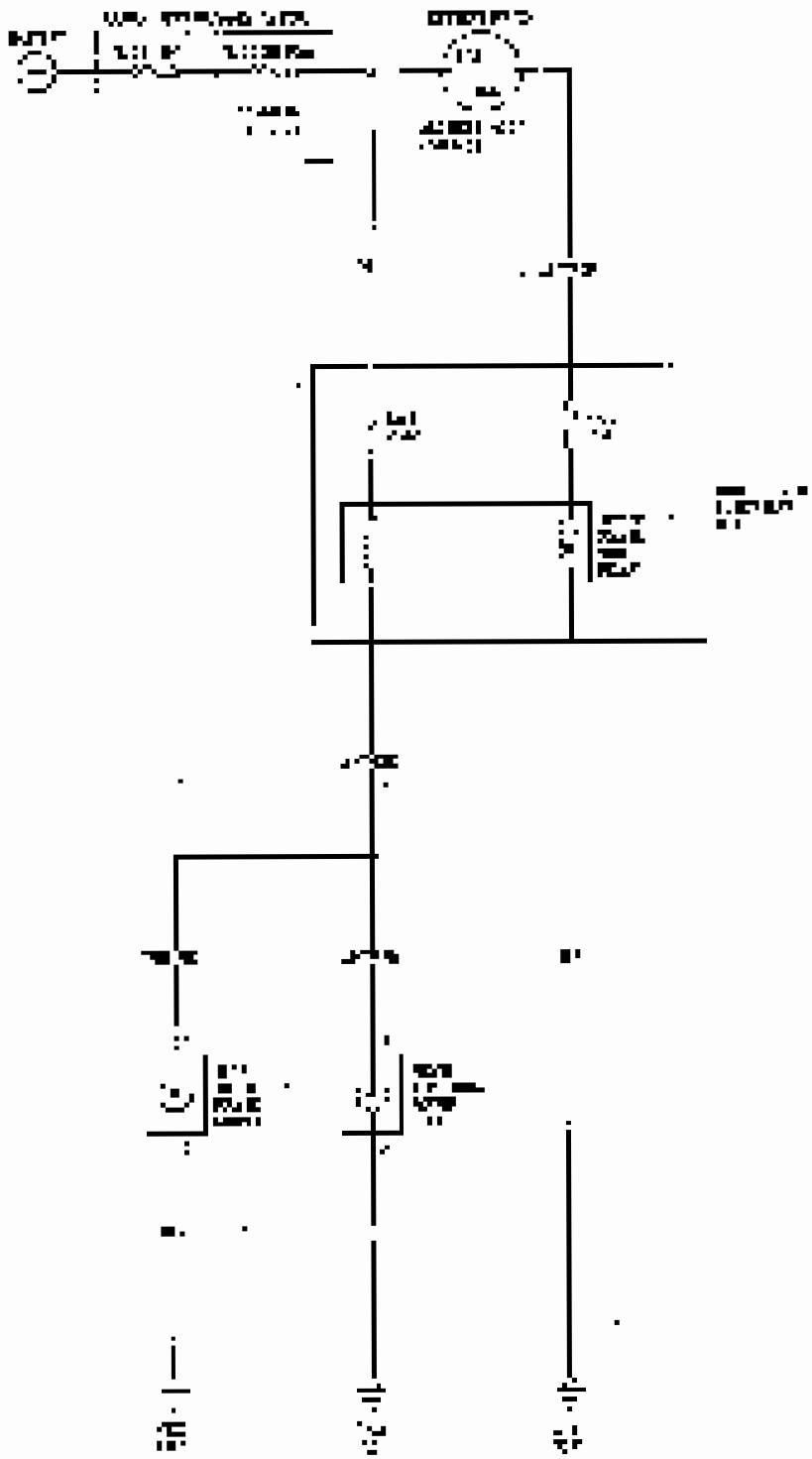
4. If the moonroof switch does not test as specified, replace it.

Component Location Index



Accessory Power Sockets

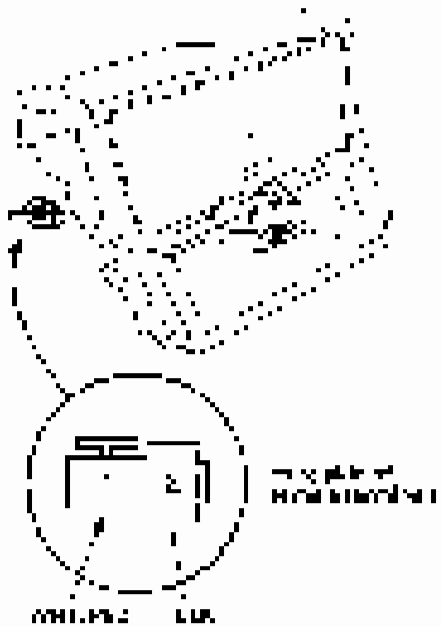
Circuit Diagram



Front Accessory Power Socket Test/Replacement

1. Remove the power console panel (see page 23-23).

2. [illegible]



3. Inspect the power supply circuit for a short or open in the following terminal:

- If the terminal is not OK, go to step 4.

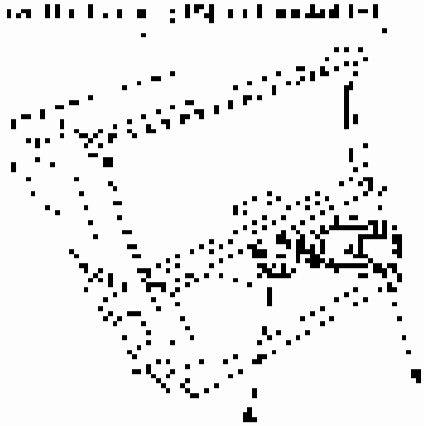
4. [illegible]

- If there is continuity, repair the short circuit between the power socket and the fuse.
- If there is no continuity, check for poor contact in the connector.

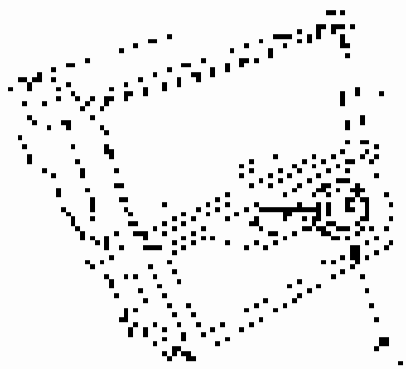
5. Check for continuity between body ground and each terminal:

- If there is continuity, go to step 6.
- If there is no continuity, check for poor contact in the connector.

6. [illegible]



7. Remove the lighter (P).

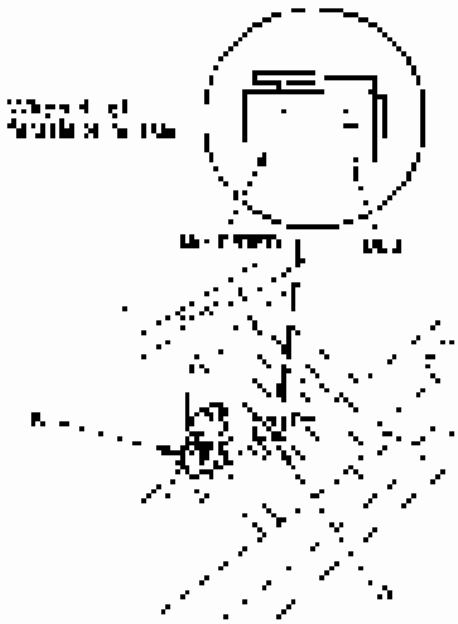


8. [illegible]

Rear Accessory Power Socket Test/Replacement

1. [illegible]

2. [illegible]



3. [illegible]

- [illegible]
- [illegible]

4. [illegible]

- [illegible]
- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
- [illegible]

5. [illegible]

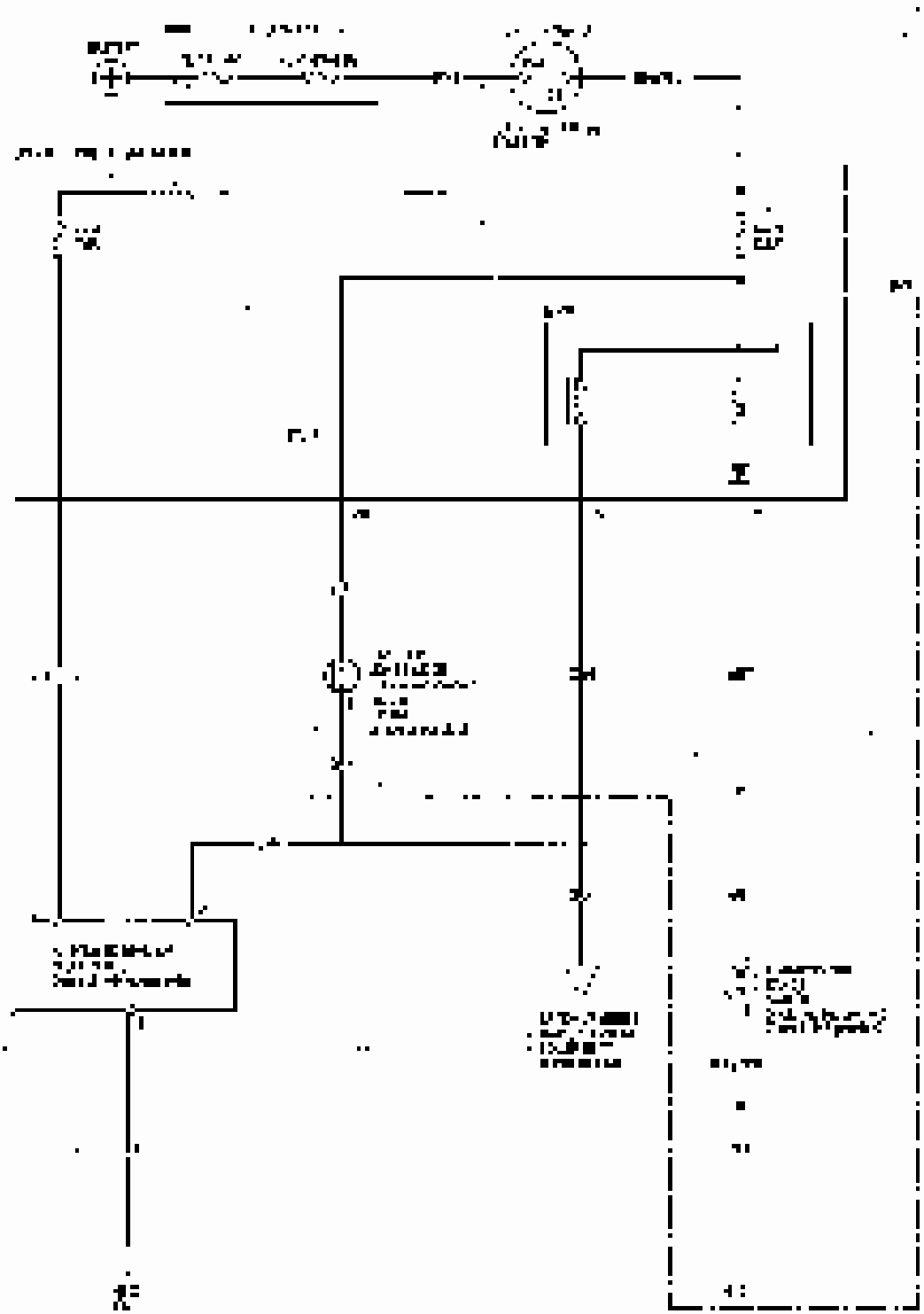
- [illegible]
- [illegible]
  - [illegible]
  - [illegible]

6. [illegible]

7. [illegible]

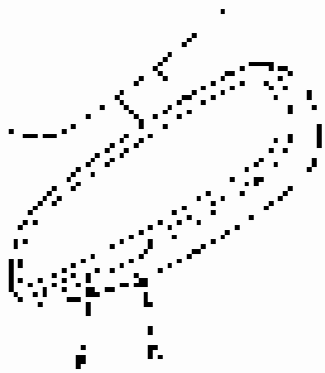
8. [illegible]

Circuit Diagram

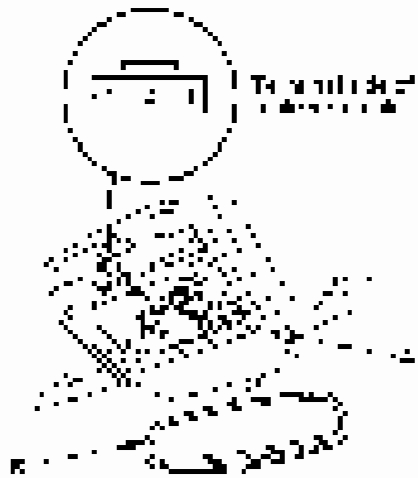


Automatic Dimming Inside Mirror

System Description

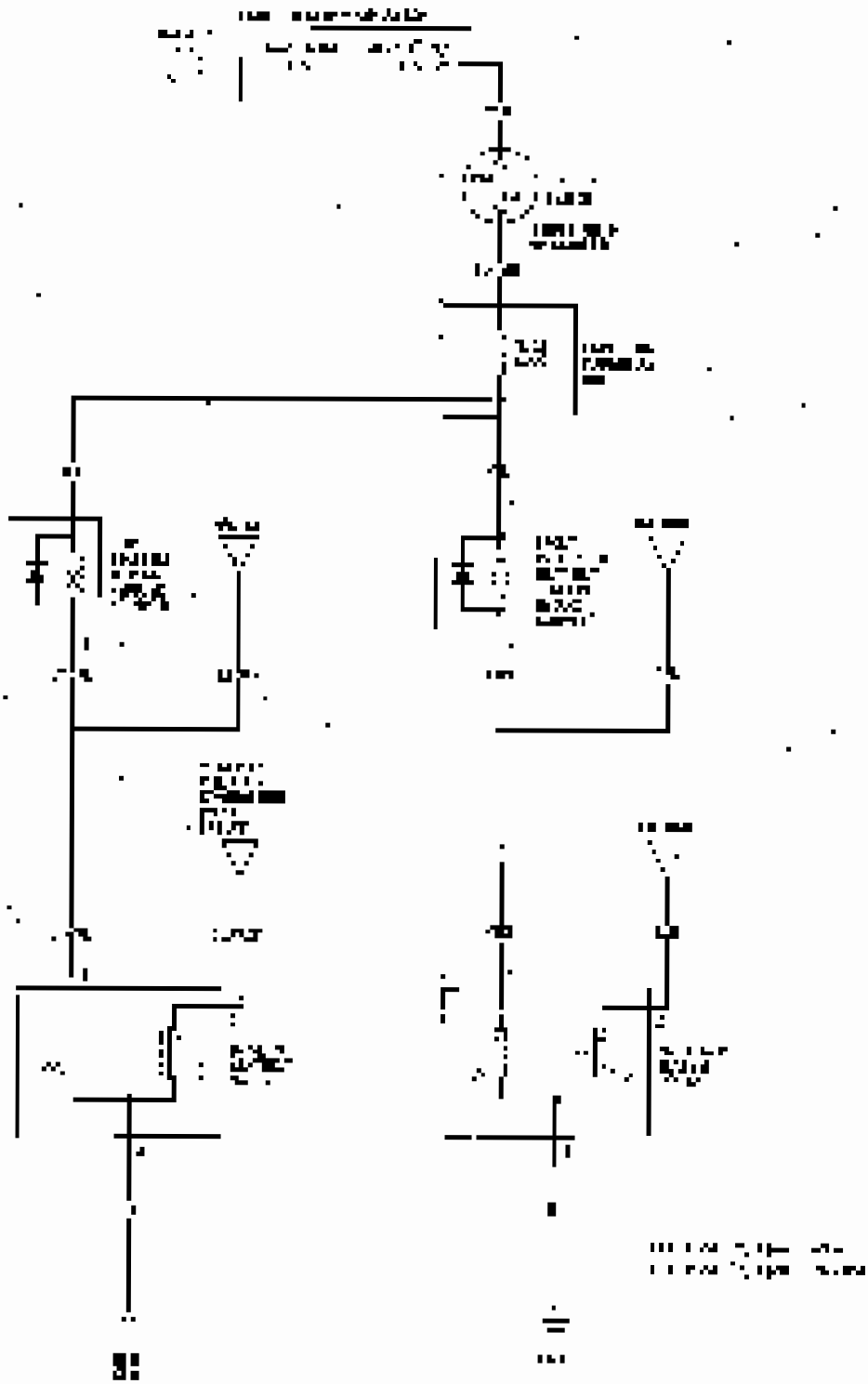


Test/Replacement



Seat Belt Tension Reducer

Circuit Diagram

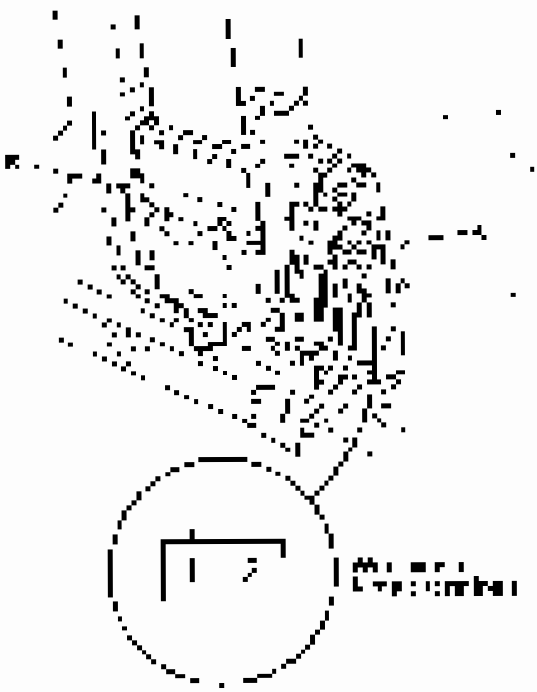


Seat Belt Tension Reducer

Test

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

5. [illegible]

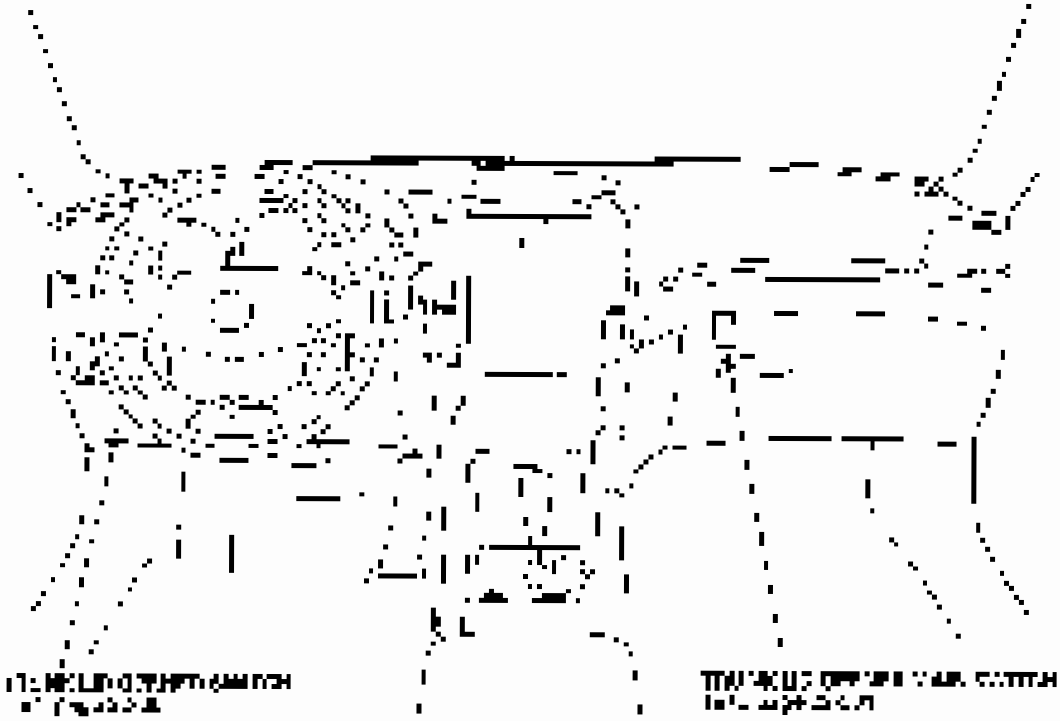
6. [illegible]

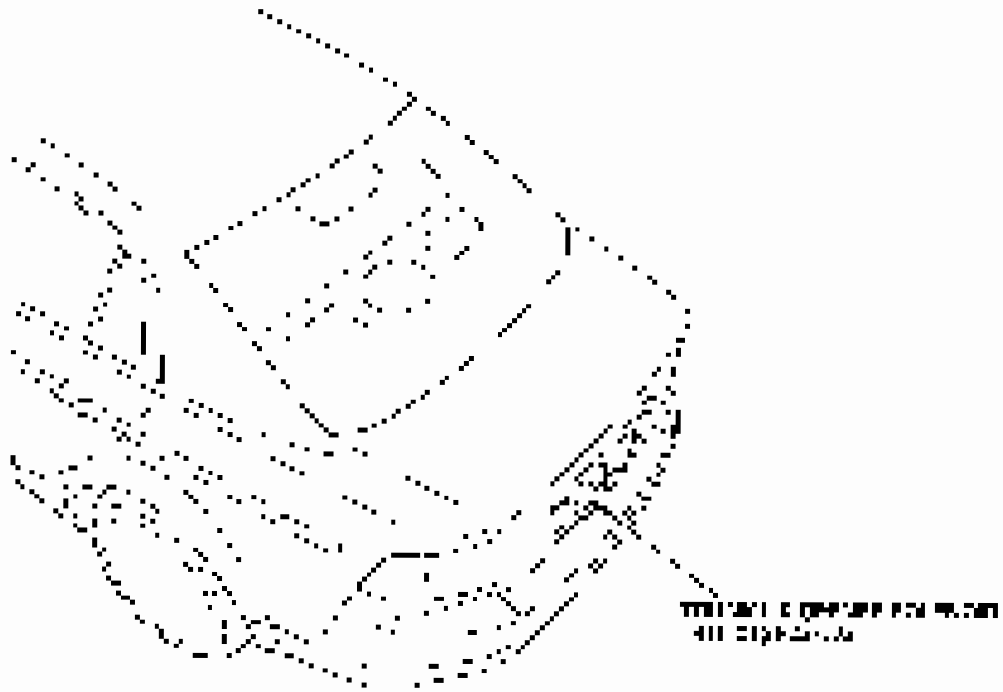
7. [illegible]

8. [illegible]

Trunk Lid Opener

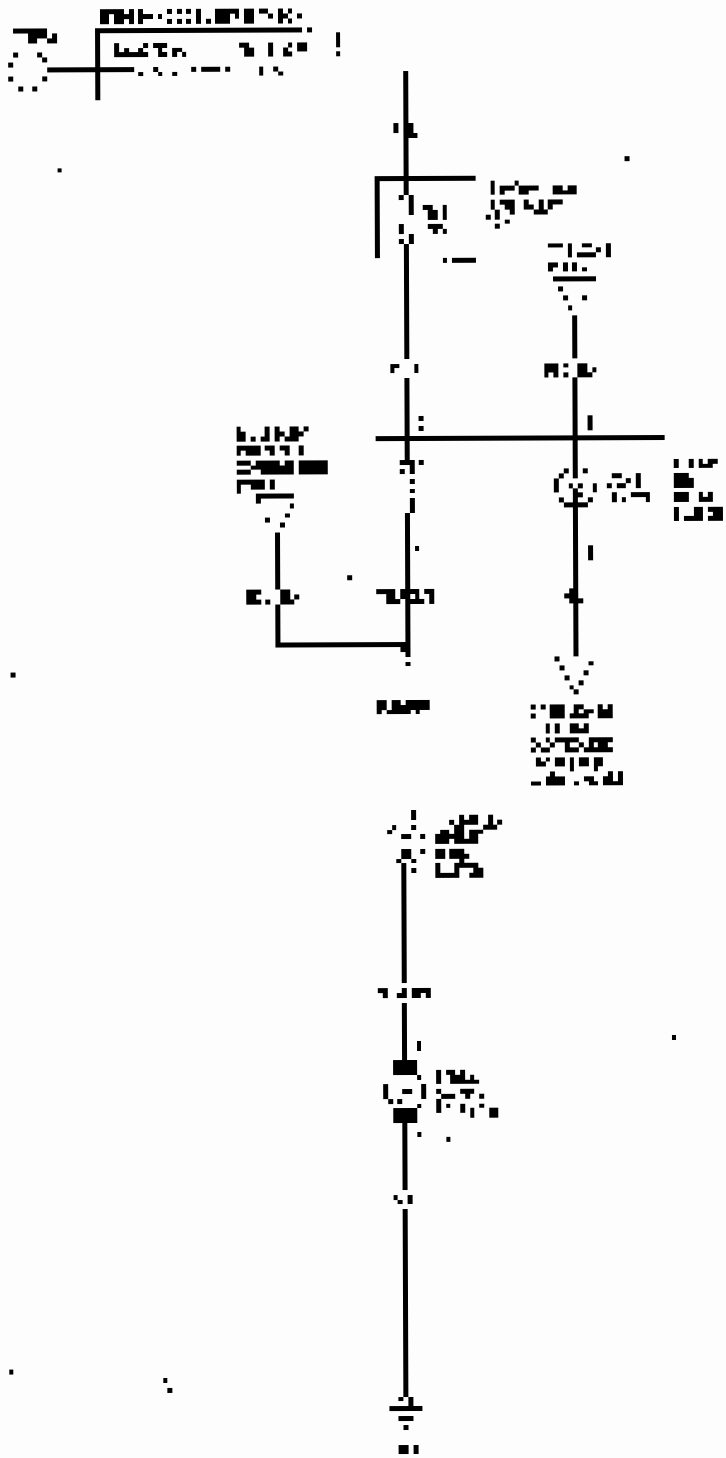
Component Location Index





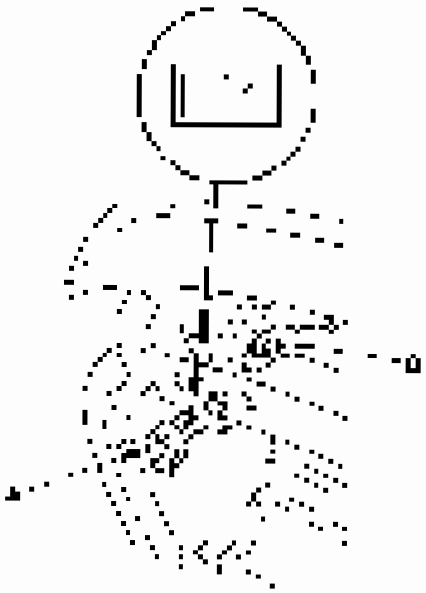
Trunk Lid Opener

Circuit Diagram



Main Switch Test

1. Remove the glovebox housing (see page 20-54).
2. Disconnect the 5P connector (A) from the main switch (B).



3. Check for continuity between the terminals in the main switch connector.

Terminal	Switch position	Color
1	ON	Red
2	OFF	Red/white
3	ON	Red/yellow
4	OFF	Red/blue

- If the continuity is not as specified, replace the main switch.

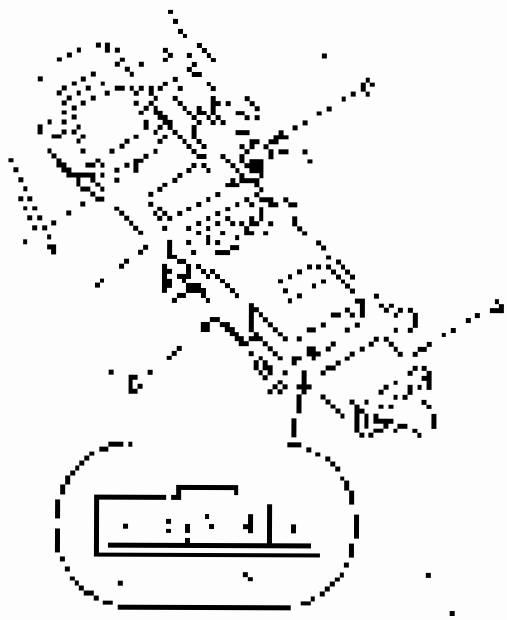
4. Check for continuity between the main switch connector terminals and ground.

Terminal	Switch position	Color
1	ON	Red
3	ON	Red/yellow

- If the continuity is not as specified, replace the main switch.

Switch Test

1. Remove the [illegible] (see page [illegible]).
2. Disconnect the [illegible] connector (A) from the [illegible] (B).



3. Check for continuity between the terminals in the [illegible] connector.

Terminal	Switch position	Color
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

- If the continuity is not as specified, inspect the [illegible] for [illegible]. If the [illegible] are normal, replace the [illegible].

4. Check for continuity between the [illegible] connector terminals and ground.

Terminal	Switch position	Color
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

- If the continuity is not as specified, [illegible].

Trunk Lid Opener Solenoid Test

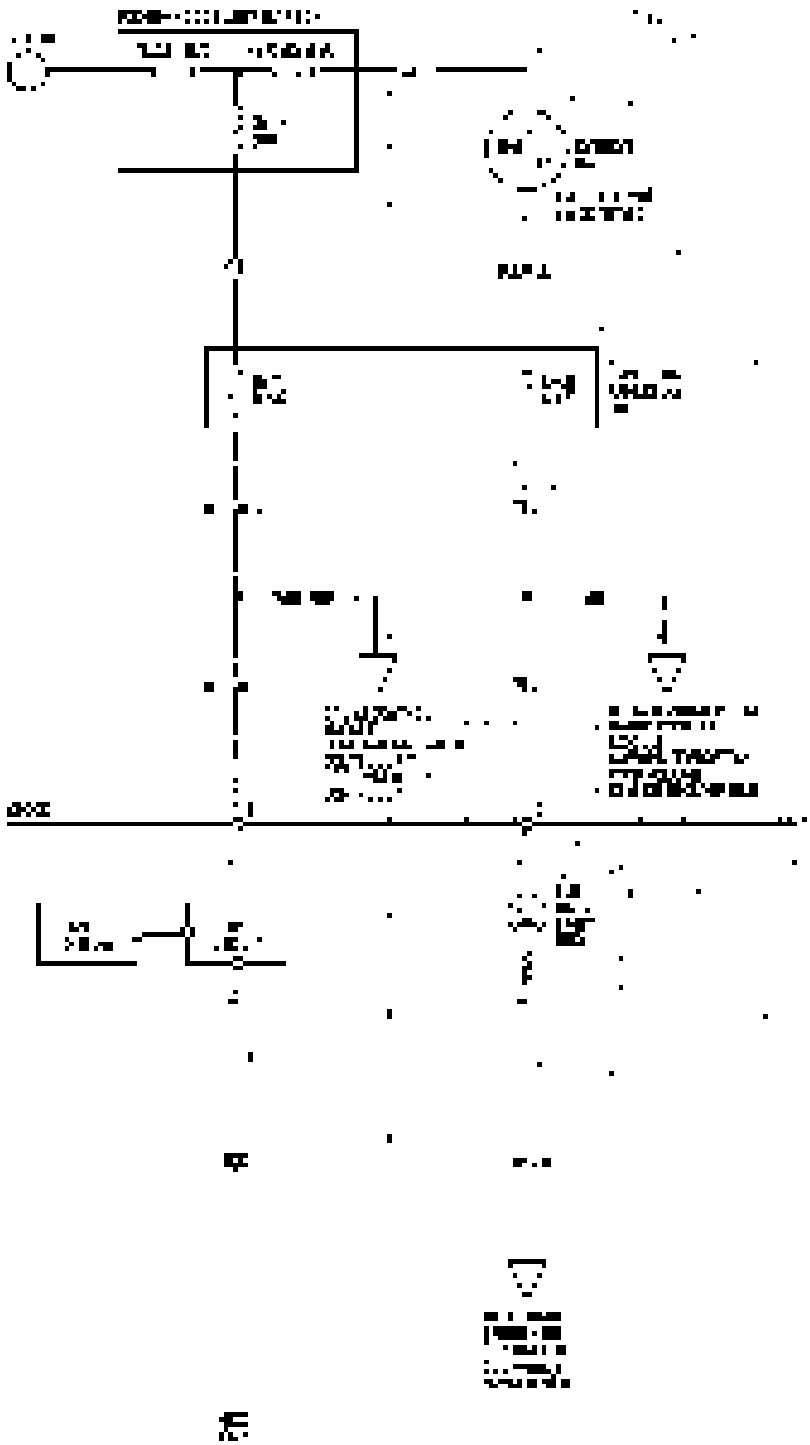
1. [illegible]

2. [illegible]

[illegible]	1	2
[illegible]	[illegible]	[illegible]

3. [illegible]

Circuit Diagram



Replacement

Without Navigation

NOTE: [illegible]
[illegible]

1. [illegible]

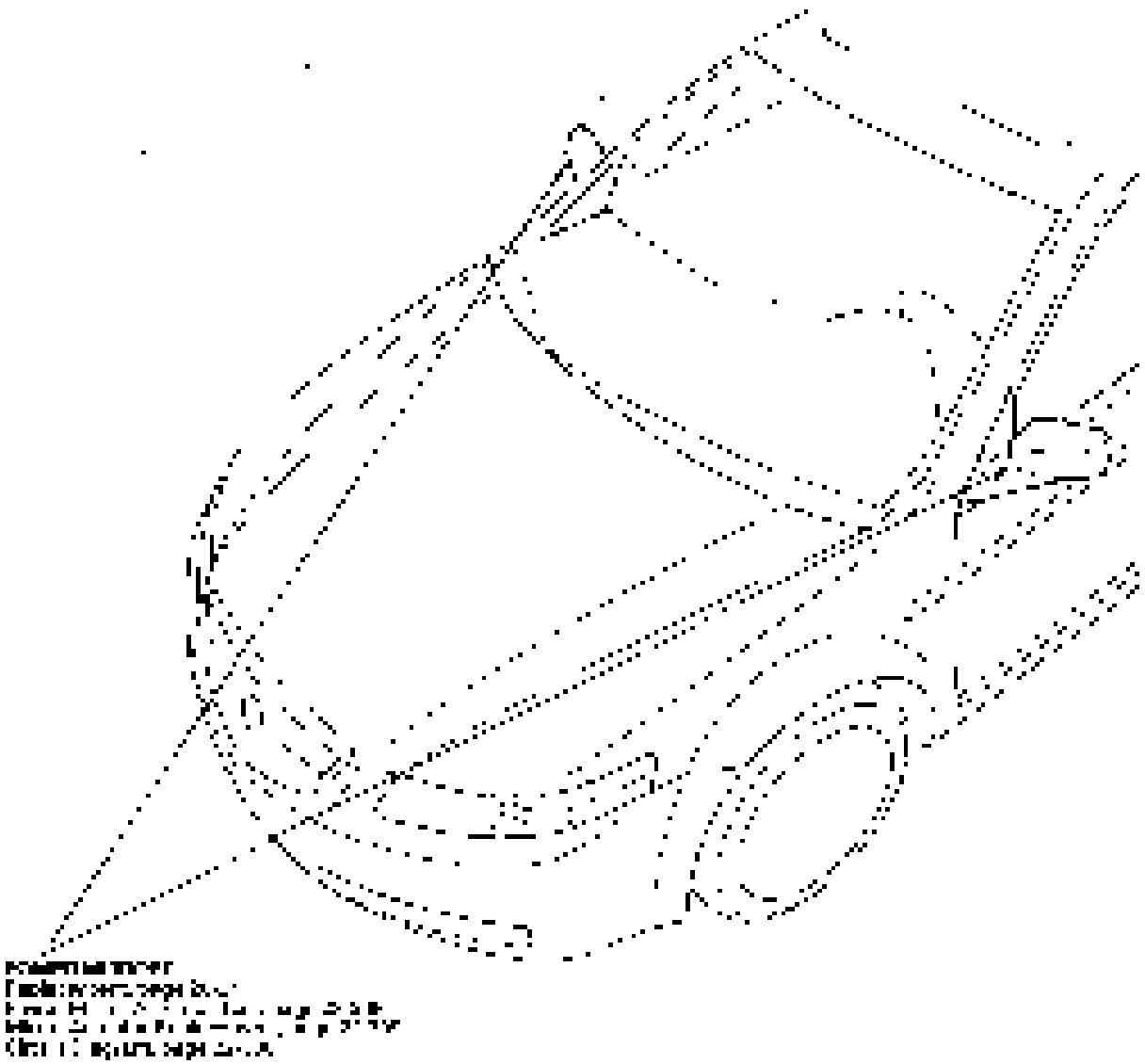
2. [illegible]

3. [illegible]

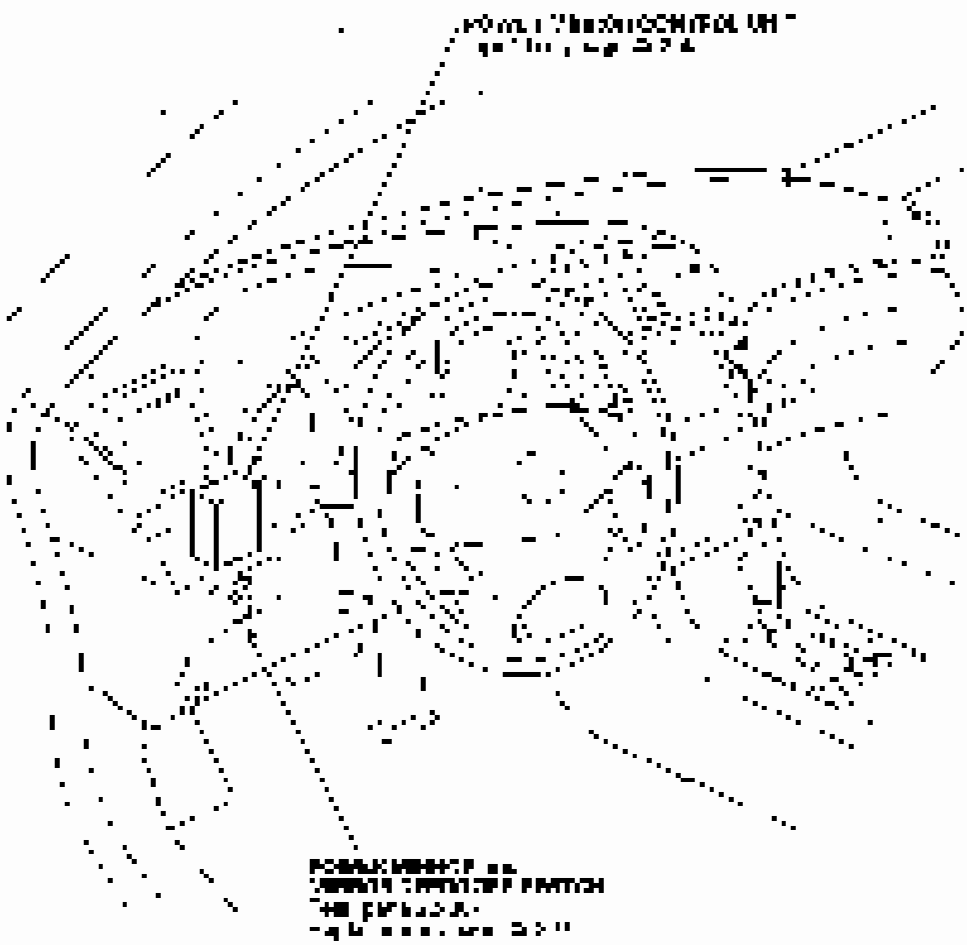
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]		[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

4. [illegible]

Component Location Index

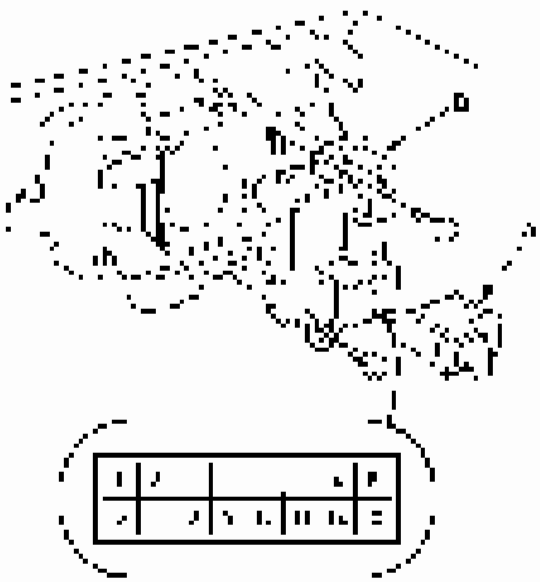


Component Location Index (cont'd)



Power Mirror Switch Test/Replacement

1. Remove the [illegible] and disconnect the negative battery cable (page 23-[illegible]).
2. Disconnect the 12P connector from the power mirror switch (2).



3. Check for continuity between the terminals in each switch position according to the table.

Mirror Switch

Terminal / Position						
UP						
DOWN						
[illegible]						
[illegible]						
LEFT						
[illegible]						
RIGHT						
[illegible]						

Mirror Switch

Terminal / Position			
[illegible]			
[illegible]			

4. [illegible]

Power Mirror Actuator Test

NOTE: [illegible]

- [illegible]
- [illegible]

[illegible]

2. [illegible]

3. [illegible]

[illegible]			
[illegible]			
[illegible]			
[illegible]			
[illegible]			

4. [illegible]

[illegible]

- [illegible]

Power Mirror Actuator Replacement

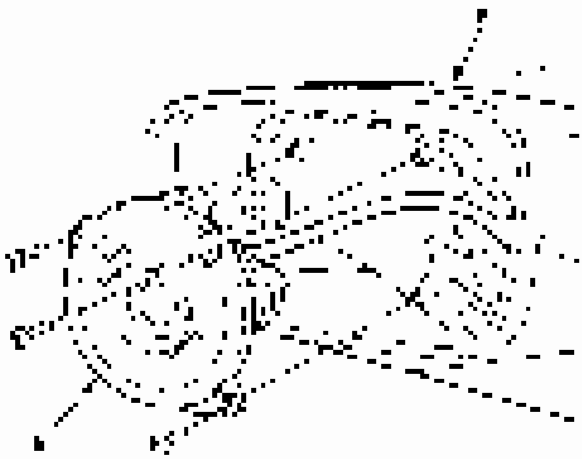
Removal:

1. Remove the trim cover (see page 22-301 power mirror switch page 22-310) and disconnect the connector.

2. Remove the power mirror.

3. Record the control lever position and note how the wires are routed for correct installation.

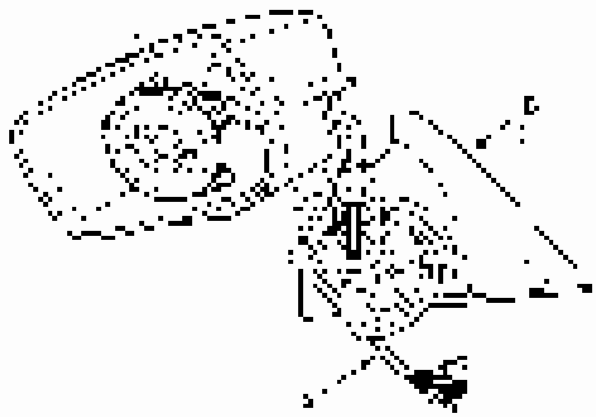
4. Remove the screws securing the mirror glass, then remove the mirror glass.



5. Remove the screws and separate the mirror holder (A) and mirror base (B).

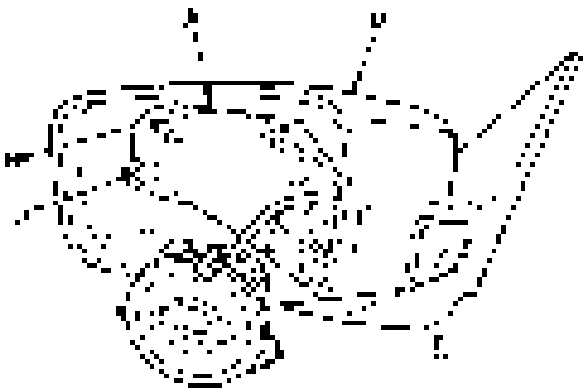
Installation:

6. Install in the reverse order of removal. Be sure to route the wires correctly.



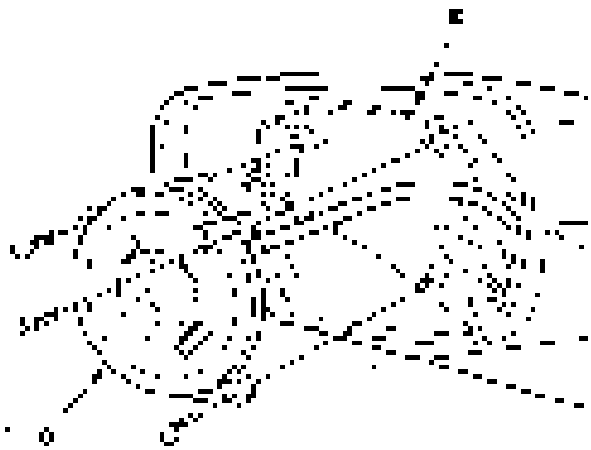
Power Mirror Actuator Replacement (cont'd)

7. [illegible]

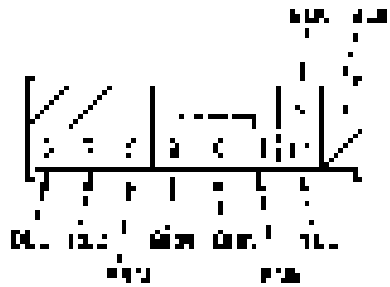


8. [illegible]

9. [illegible]



10. [illegible]

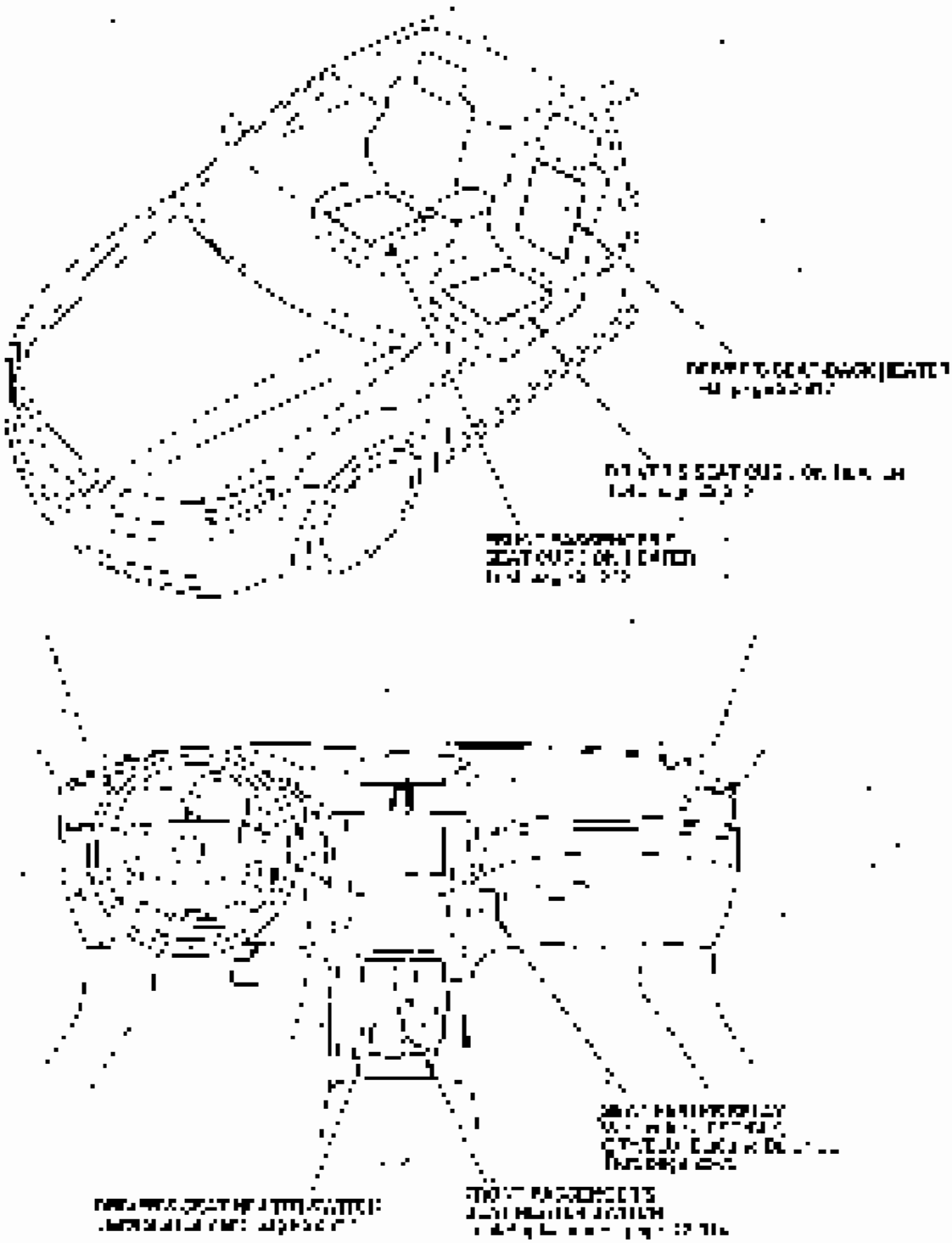


11. [illegible]

12. [illegible]

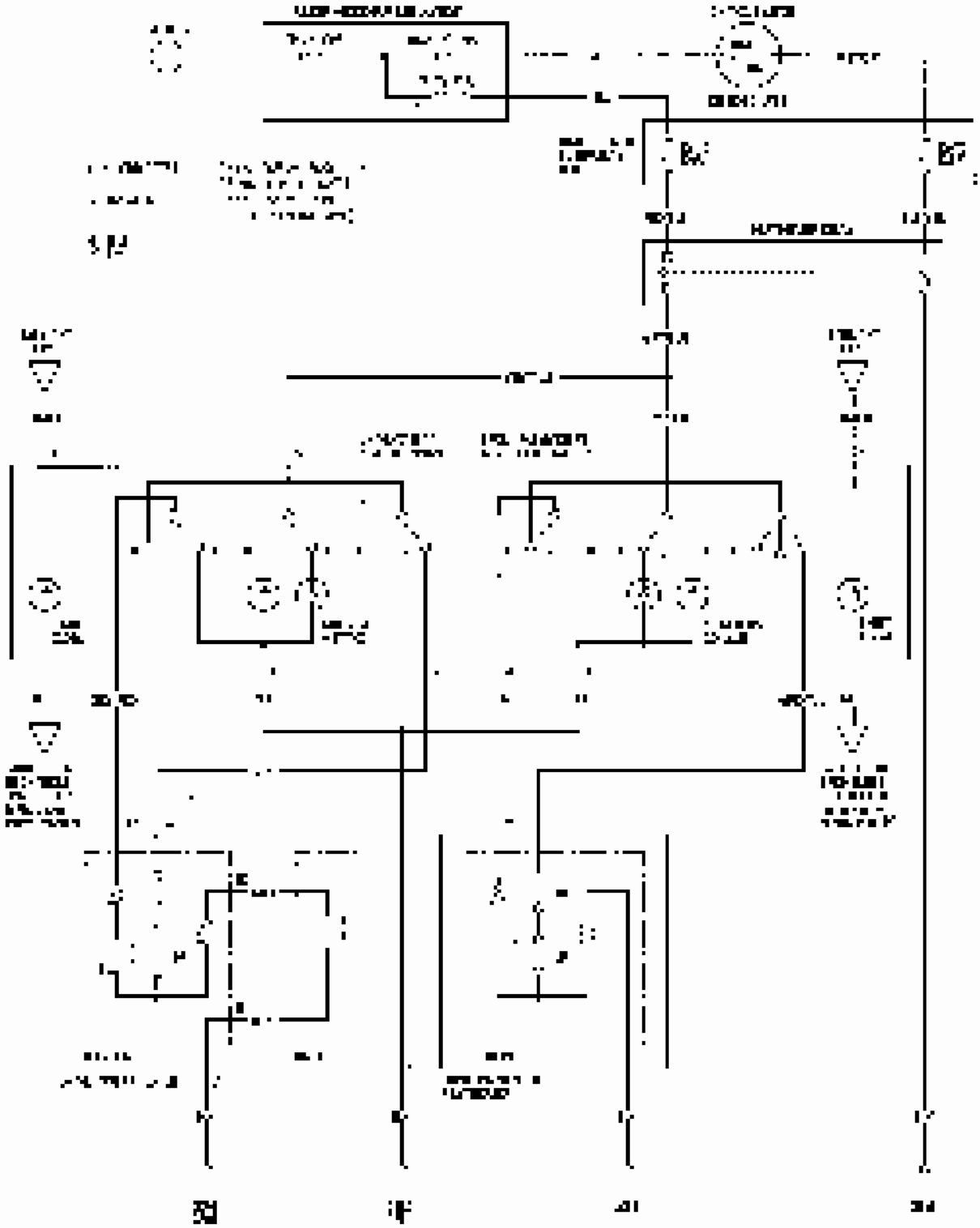
13. [illegible]

Component Location Index



Seat Heaters

Circuit Diagram



Seat Heater Test

Driver's Seat

1. [illegible]

2. [illegible]

3. [illegible]

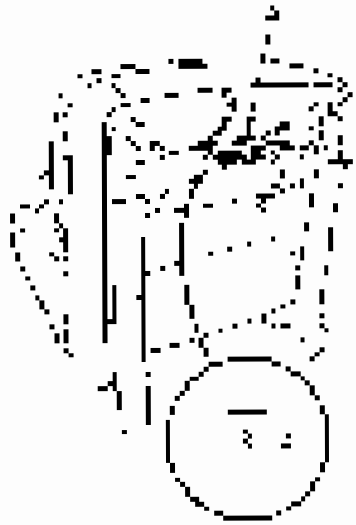
4. [illegible]

5. [illegible]

Front Passenger's Seat

1. [illegible]

2. [illegible]



3. [illegible]

4. [illegible]

Switch Test

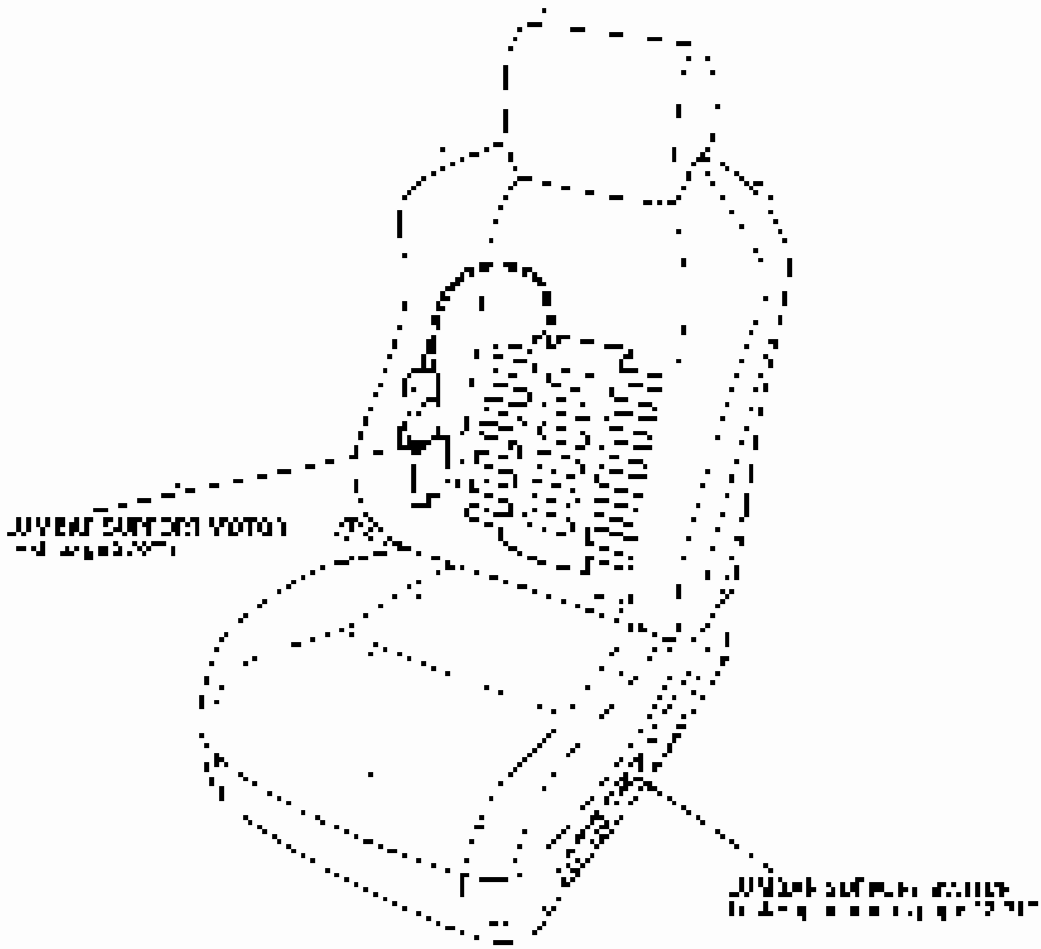
1. [illegible]
2. [illegible]

3. [illegible]
4. [illegible]

Terminal / Position					
OFF	HIGH				
	LOW				
HIGH					

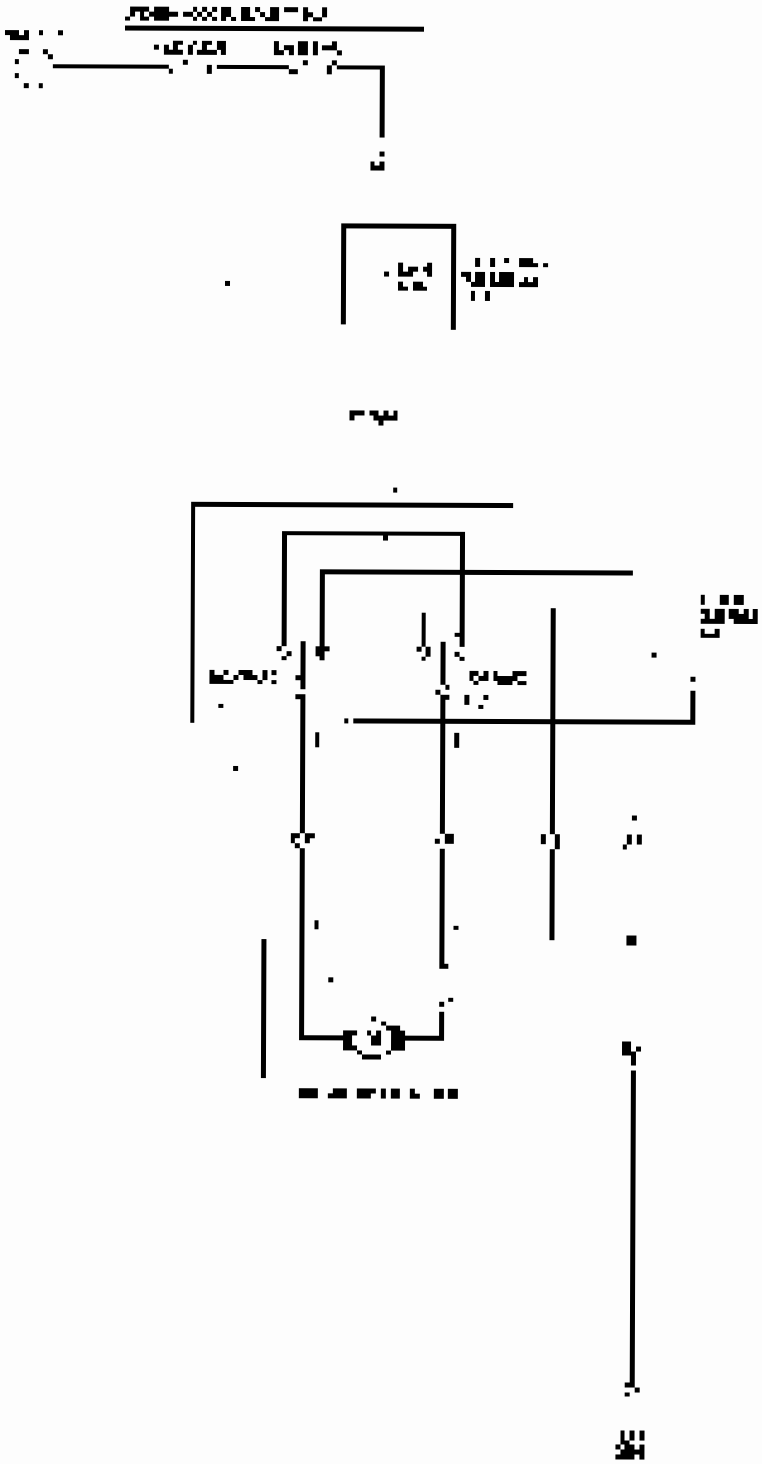
- [illegible]

Component Location Index



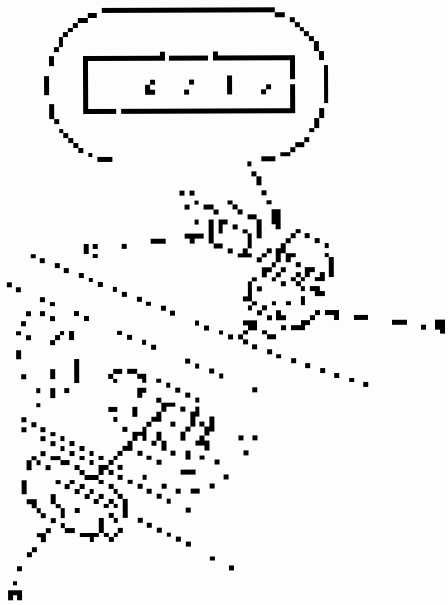
Power Lumbar Support

Circuit Diagram



Switch Test/Replacement

1. Separate the center support console (Refer to [illegible])



2. Disconnect the connector from the [illegible]

3. Check continuity between each pair of terminals in each switch position according to the table below.

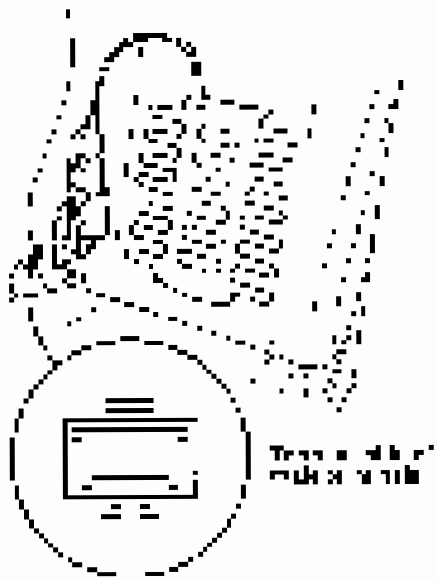
Tester connection / Switch position				
[illegible]				
[illegible]				

4. If [illegible] replace the [illegible]

Motor Test

1. Remove [illegible]

2. Disconnect [illegible]

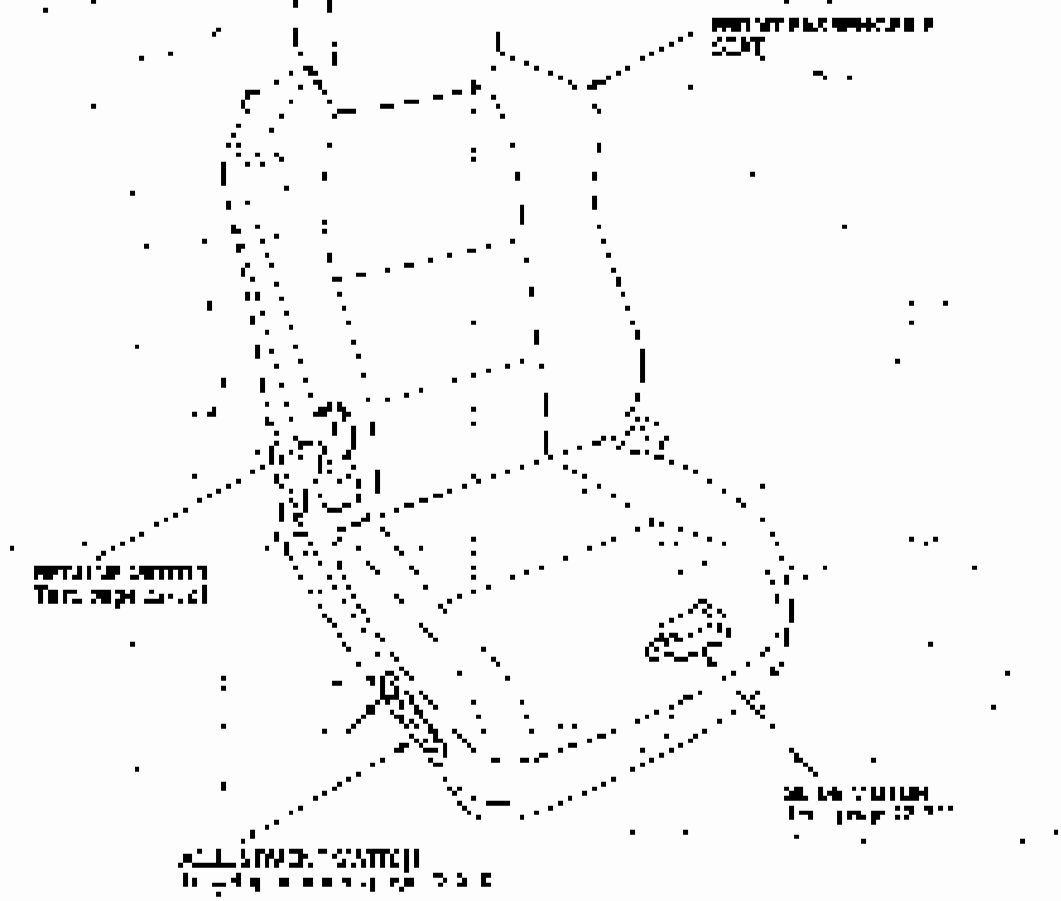


3. Check each motor by applying battery voltage and body ground to the terminals.

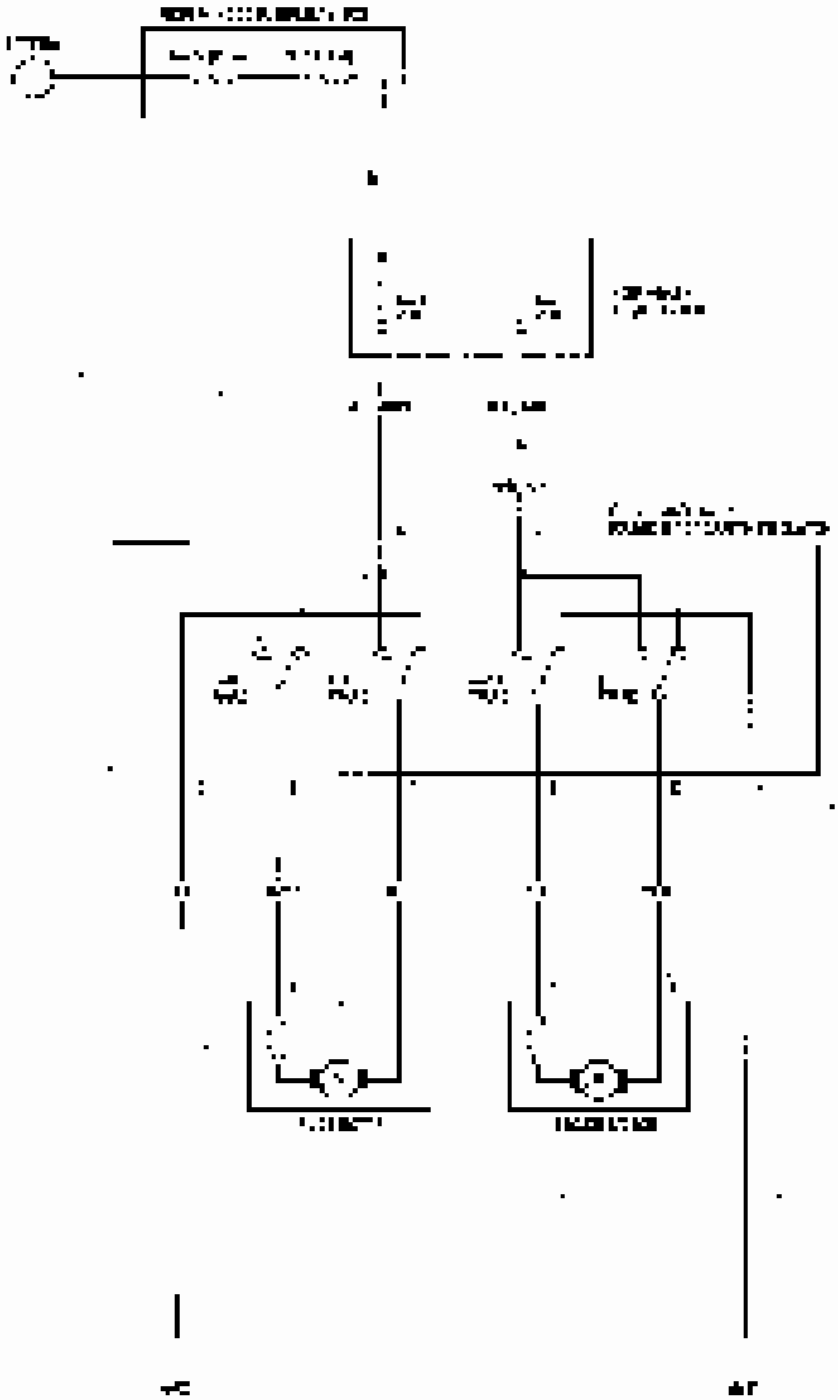
Terminal / Position		
[illegible]		
[illegible]		

4. If the motor does not run smoothly, replace it.

Component Location Index



Circuit Diagram - Front Passenger's Power Seat

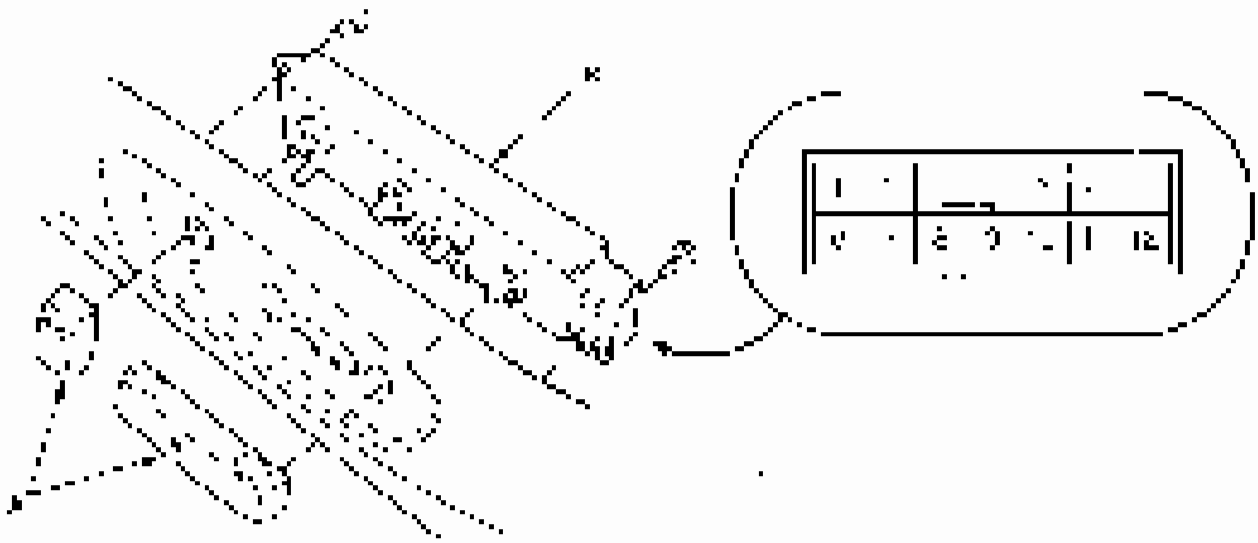


Switch Test/Replacement

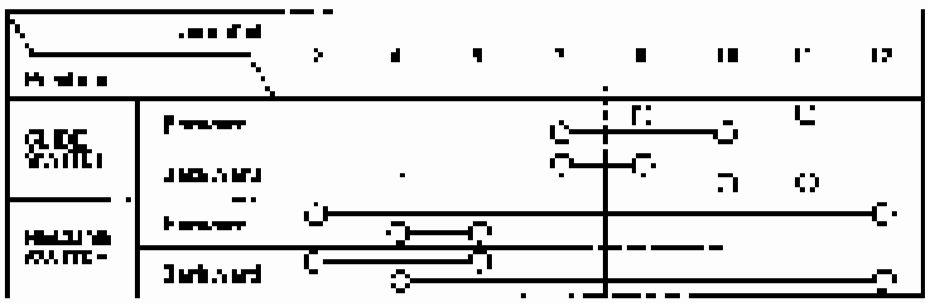
NOTE: For driver's power seat, refer to the Driving Position Memory System (DPMS) section page 22-321.

Front Passenger's Seat

1. Remove the power seat control switch bezel (1) and the switch (2) with the switch connector (3) from the passenger's power seat (page 22-319).



2. Disconnect the 12P switch connector from the switch.
3. Test all the switch terminals for continuity.
4. Check for continuity between the terminals in each switch position according to the table.



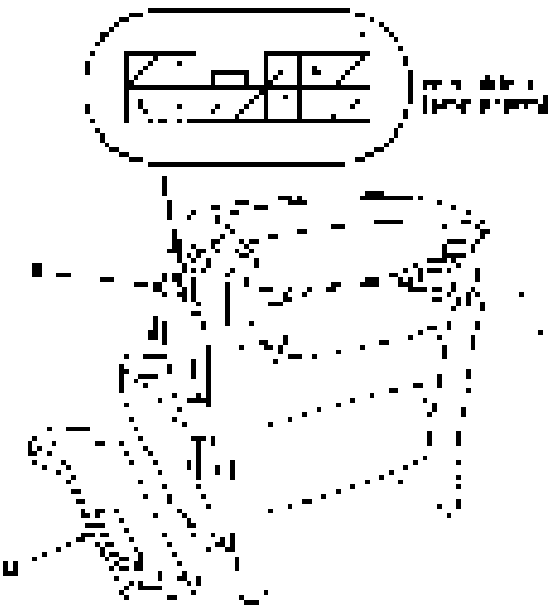
5. If there is no continuity as specified, replace the switch.

Motor Test

Front Passenger's Seat

1. [illegible]

2. Disconnect the 12P connector (A) from the power seat switch assembly connector (B).



4. Test each motor by applying battery voltage and body ground to the terminals as shown below.

Motor test A

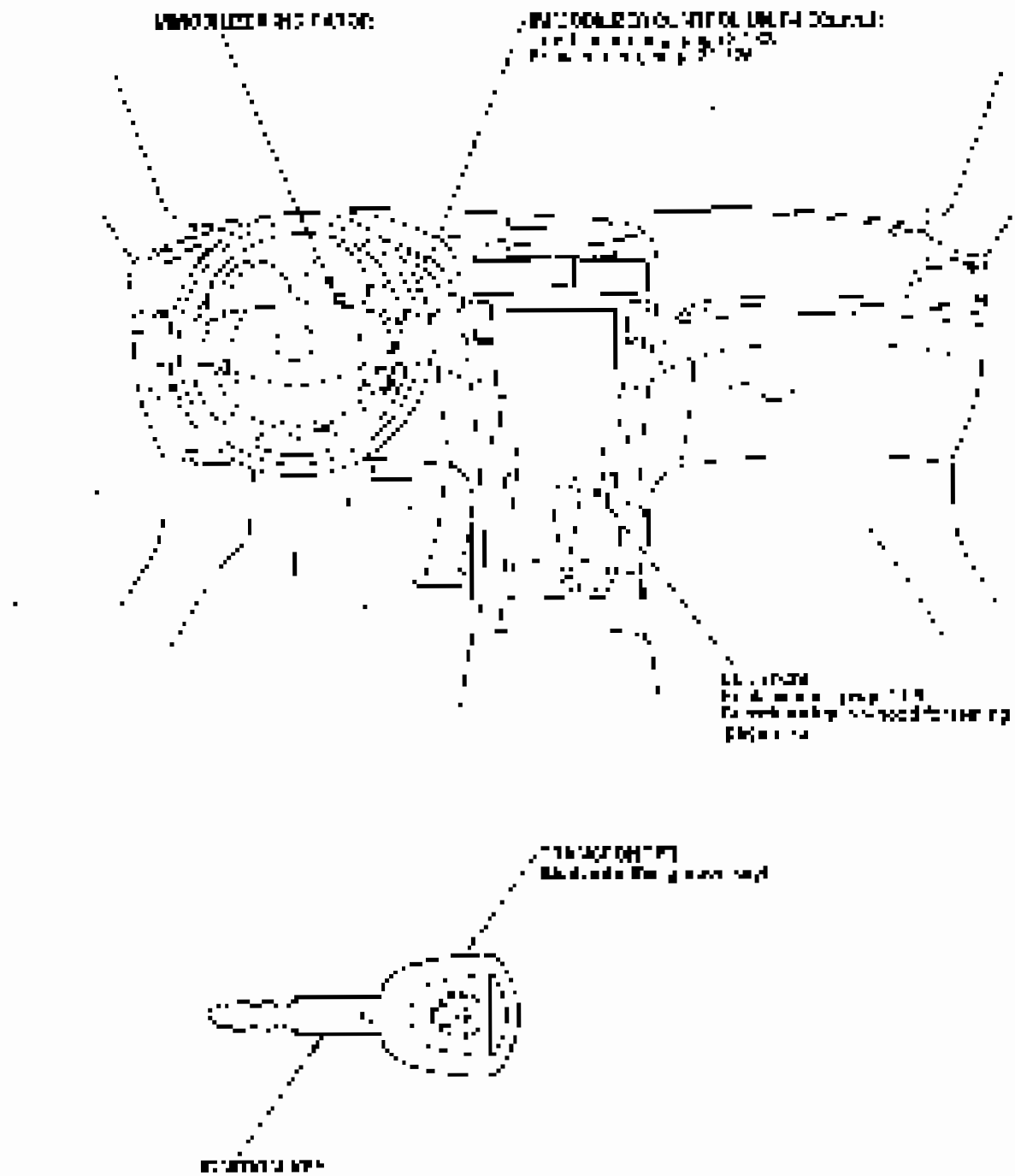
Terminal / Position	1	7
Forward	⊖	⊕
Rearward	⊕	⊖

Motor test B

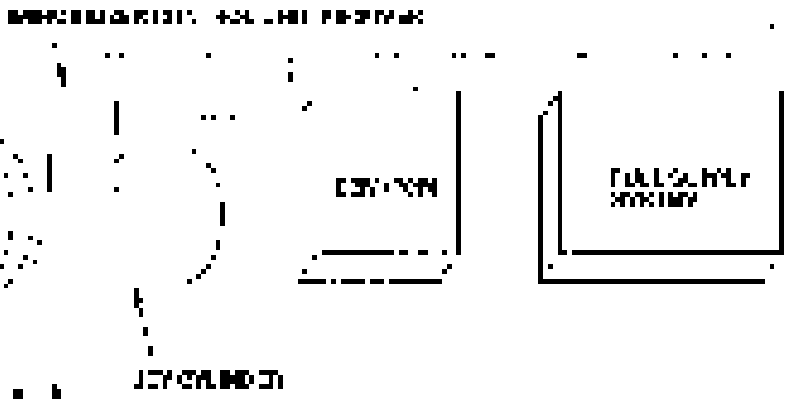
Terminal / Position	9	10
Forward	⊖	⊕
Rearward	⊕	⊖

5. [illegible]

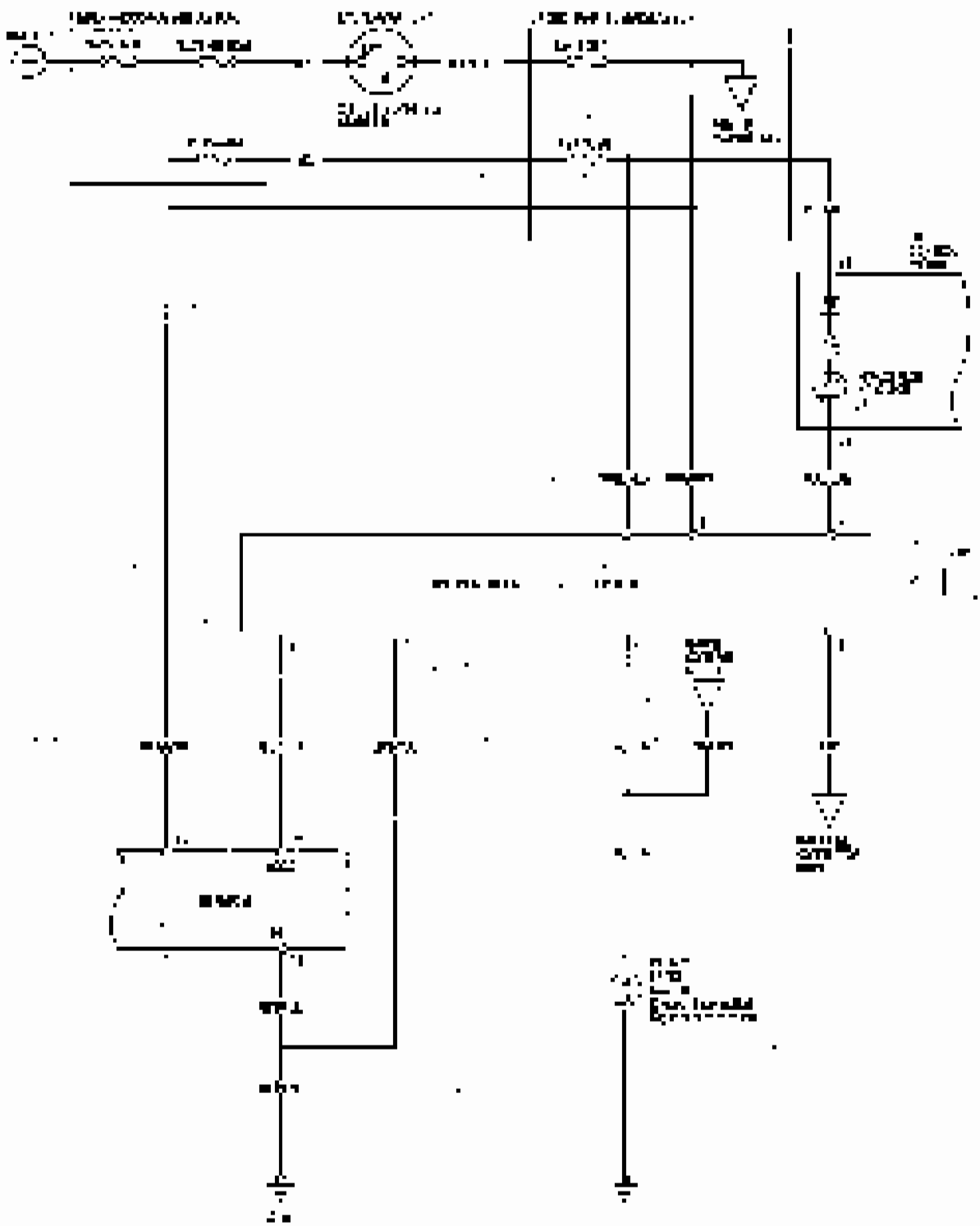
Component Location Index



System Description



Circuit Diagram



Without consult-II Perform trouble diagnosis when no self-diagnostic results appear on CONSULT-II unit or GST.

With CONSULT-II or GST

- Due to the characteristics of the control unit, it takes a few seconds for the ABS warning lamp to turn off after the ignition switch is turned ON. This is normal and does not indicate a malfunction.
- When the vehicle is normal and the engine speed is between approximately 10 km/h (6 MPH) and 30 km/h (19 MPH), the ABS warning lamp may turn on for 2 seconds. This is normal and does not indicate a malfunction.
- If the ABS warning lamp remains ON or comes on while driving, refer to [illegible] to perform self-diagnostic results. Then repair or replace the malfunctioning parts.
- Check the ABS [illegible] for proper connection.

1. Turn ignition switch OFF and disconnect battery cable from the negative terminal. Wait at least 90 seconds.

2. Disconnect the 27-connector (C1) from the control unit. Check terminals for bend and damage.

3. Turn ignition switch ON. Check voltage between terminal [illegible] and ground.

4. Check battery terminals for loose connection.

Does the voltage exceed [illegible]?

YES [illegible]

NO [illegible]

5. Check voltage between [illegible] terminal and ground. Check [illegible] terminals for bend and damage.

Is the voltage [illegible]?

YES [illegible]

NO [illegible]

- Adjust the [illegible] to the specified value.
- Adjust the [illegible] to the specified value.
- Refer to the [illegible] manual.

6. Check voltage between [illegible] terminal and ground. Check [illegible] terminals for bend and damage. Also check harness for short circuit to power supply.

Is the voltage [illegible]?

YES [illegible]

NO [illegible]

- [illegible]
- [illegible]
- [illegible]

7. Check for open circuit between the harness for [illegible] terminal and [illegible] terminal.

Is there continuity between [illegible]?

YES [illegible]

NO [illegible]

Troubleshooting (cont'd)

8. [illegible]

   YES – [illegible]

   NO – Check for intermittent problems.

   - Are codes in the DLC (SCS) data stream? If so, go to the appropriate symptom troubleshooting table. If not, go to the applicable [illegible]
   - A DTC is stored in the [illegible]
   - A [illegible] is stored in the [illegible]

9. Check for voltage between the immobilizer control unit connector B terminal and body ground with the ignition switch ON (II).

   Is there battery voltage?

   YES – Go to step 10.

   NO – Repair open in the wire between the immobilizer control unit connector B terminal and the [illegible]

10. Check for continuity between the immobilizer control unit connector A terminal and body ground. If the connector is [illegible] check the terminals for [illegible]

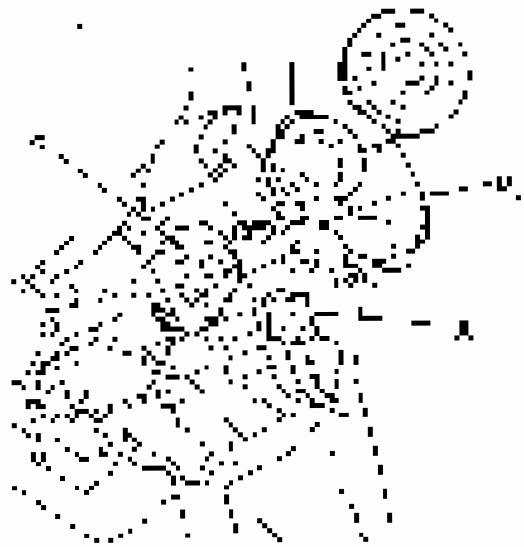
    Is there continuity?

    YES – Replace the immobilizer control unit with a new one, then register the immobilizer control unit memories (see page 22-[illegible]) with the HDS.

    NO – Repair the open in the wire between the immobilizer control unit connector A terminal and [illegible]

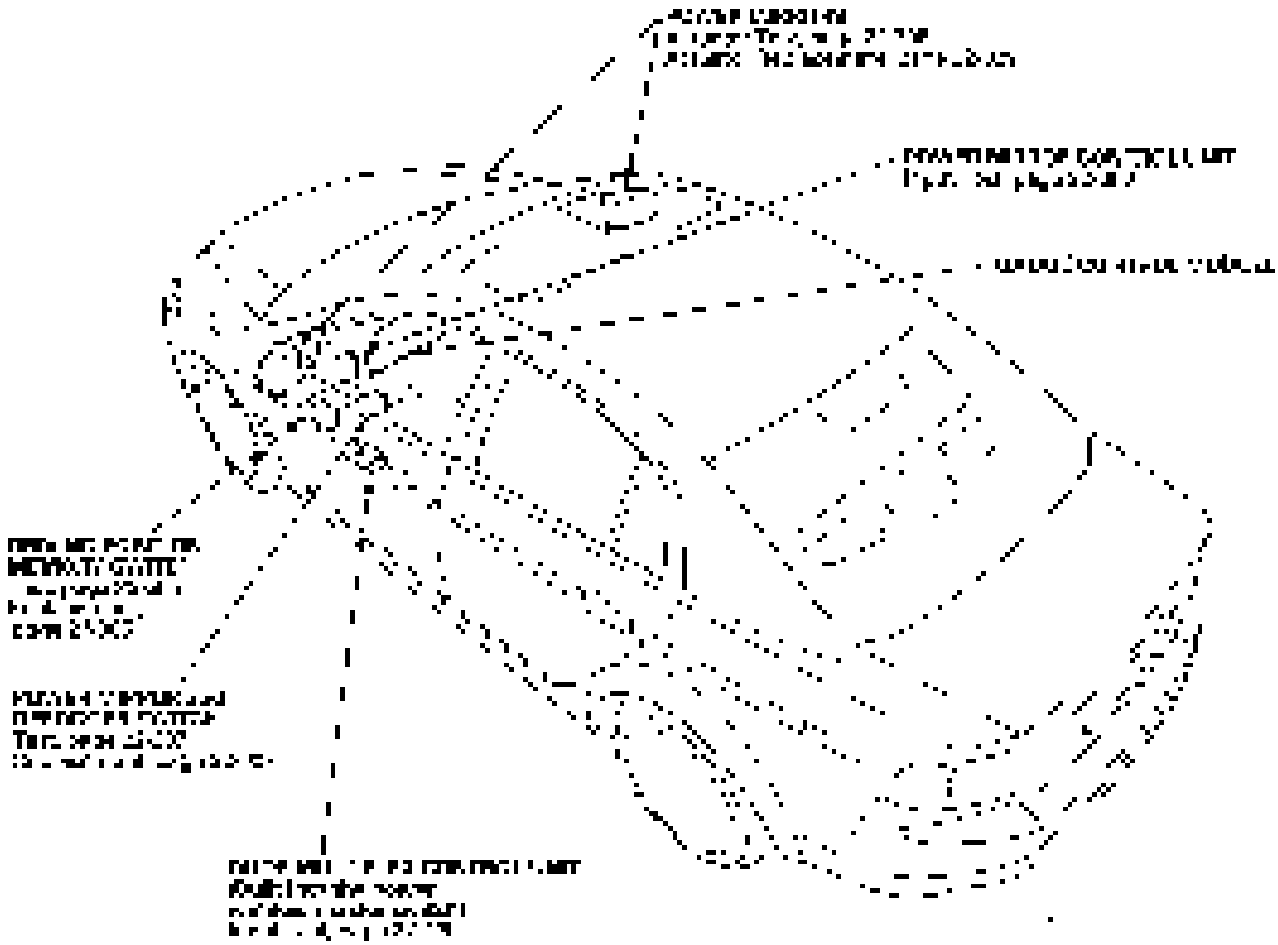
Immobilizer Control Unit-Receiver Replacement

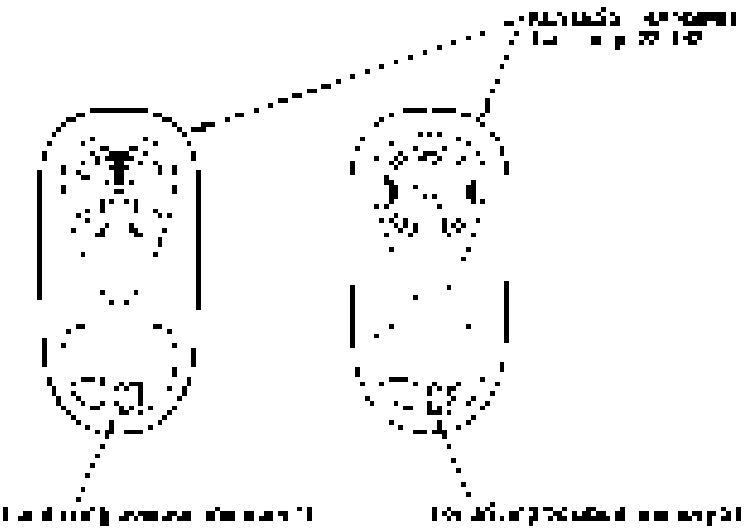
1. [illegible] (see page 22-[illegible])
2. Remove the [illegible] (see page 22-[illegible]).
3. Disconnect the [illegible] connector from the immobilizer control unit.



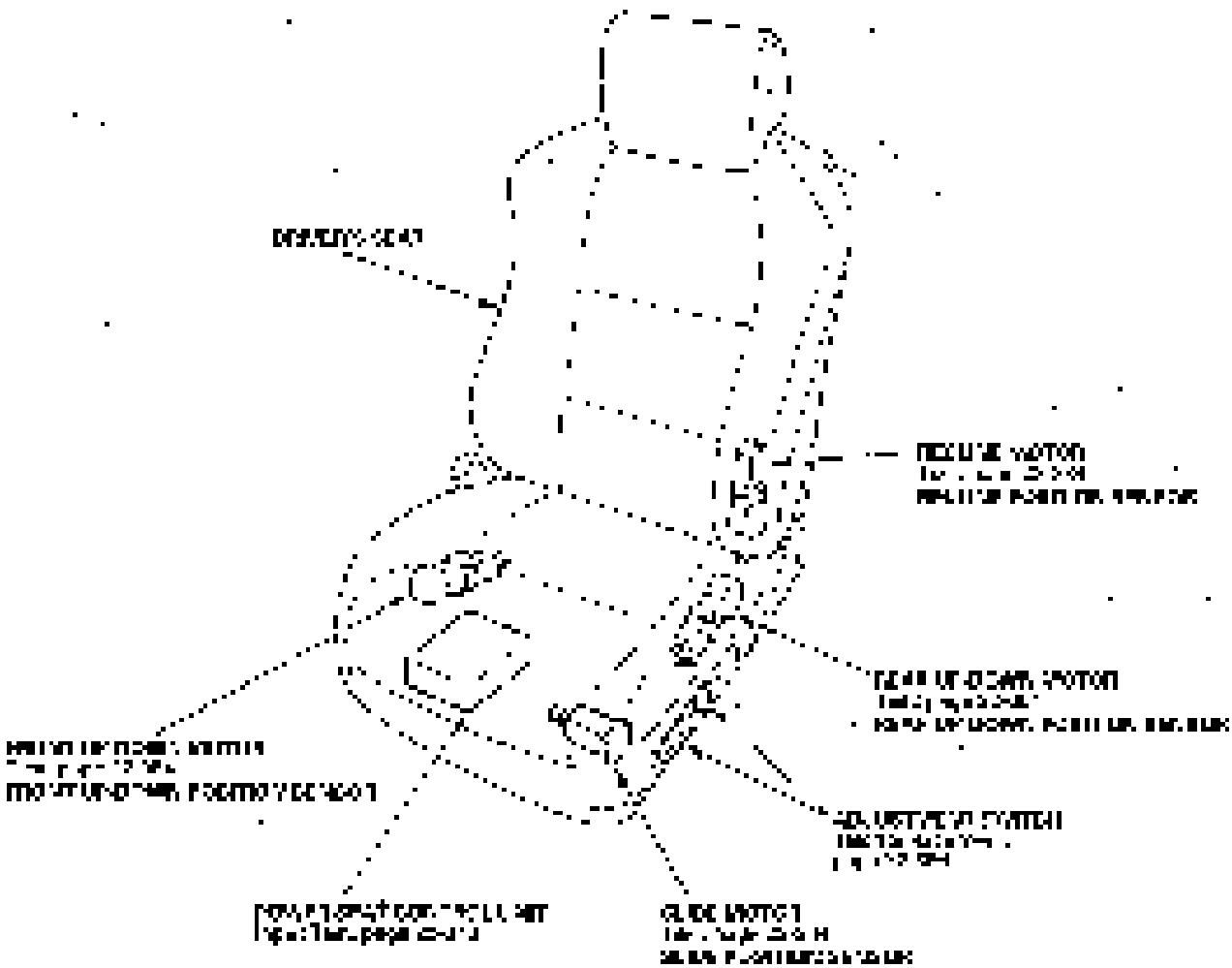
4. Remove the [illegible] from the immobilizer control unit.
5. Install the immobilizer control unit in the reverse order of removal.
6. After replacing the [illegible]

Component Location Index





Component Location Index (cont'd)



System Description

[illegible]

[illegible]

Memory Recall

[illegible]

Power Seat Position Sensors

[illegible]

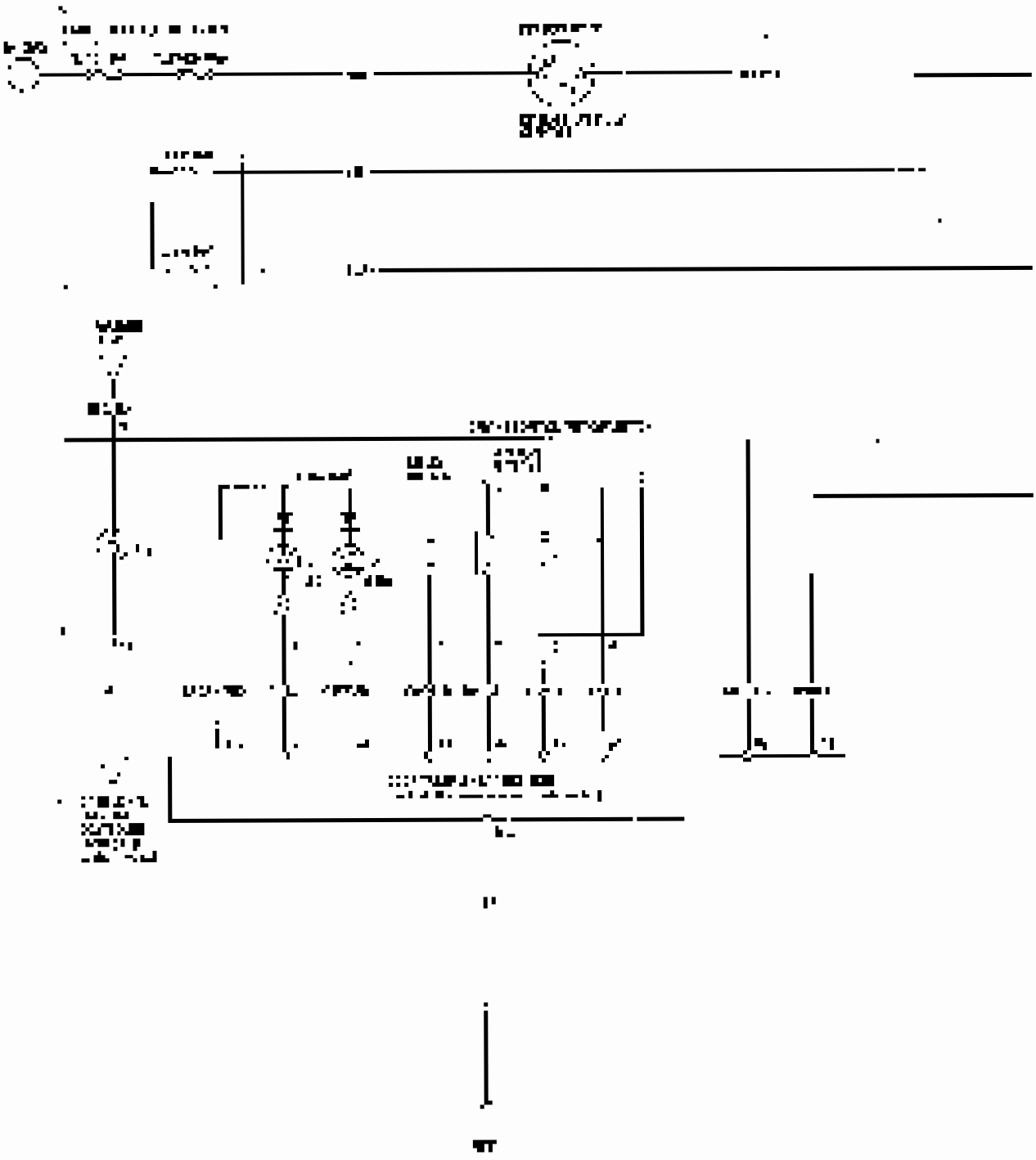
Power Mirror Position Sensors

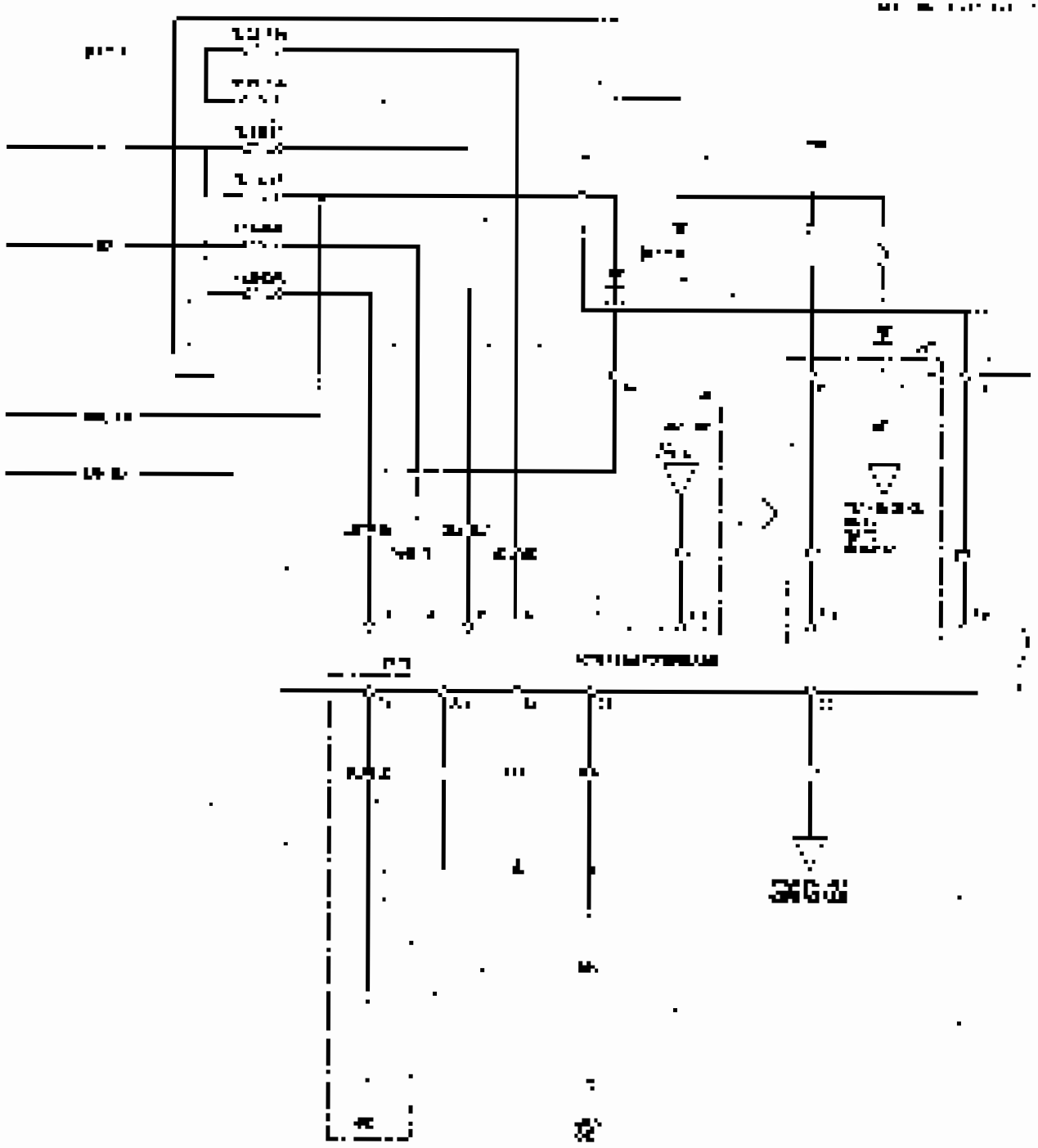
[illegible]

Reverse Mirror Control

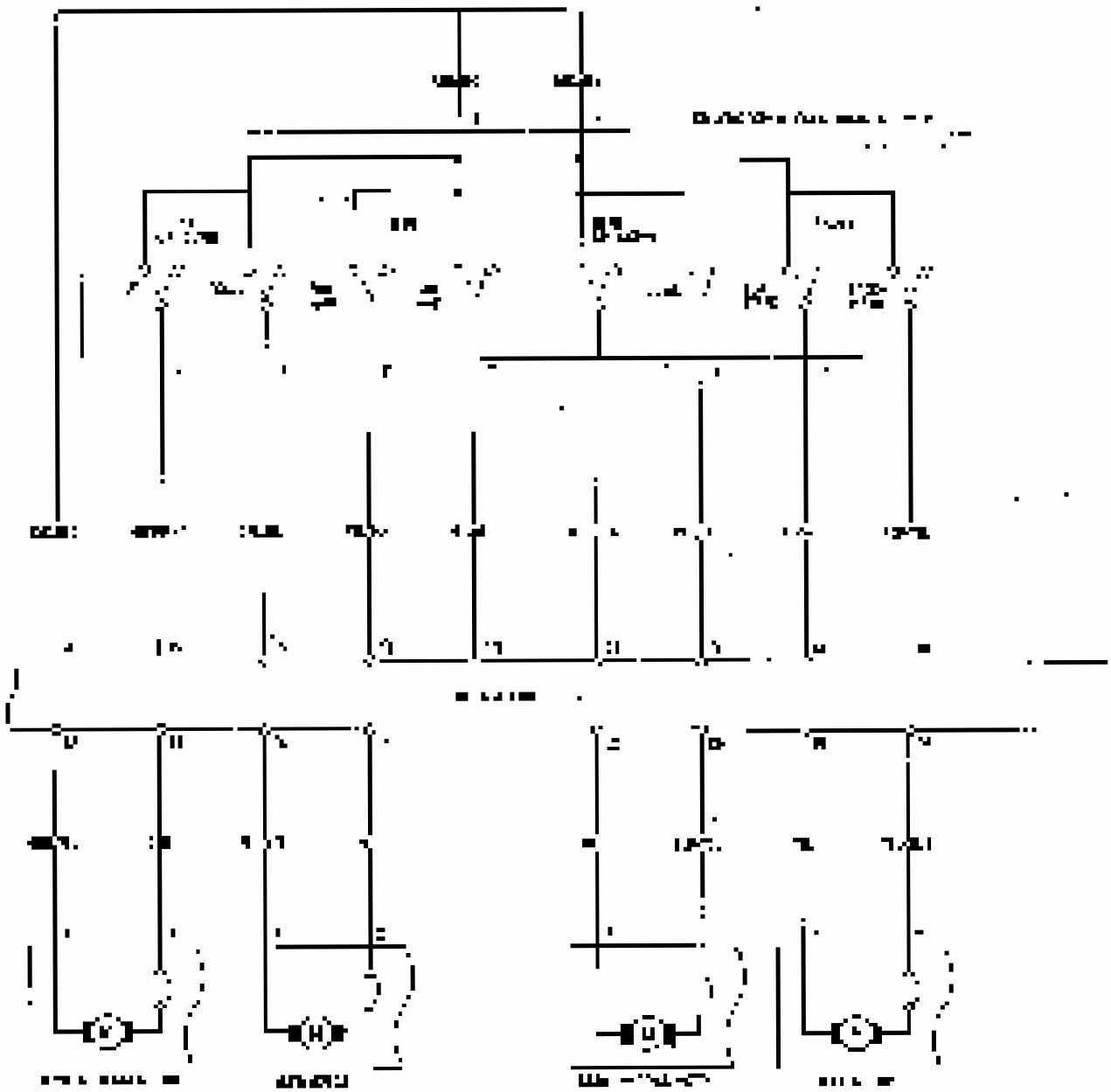
[illegible]

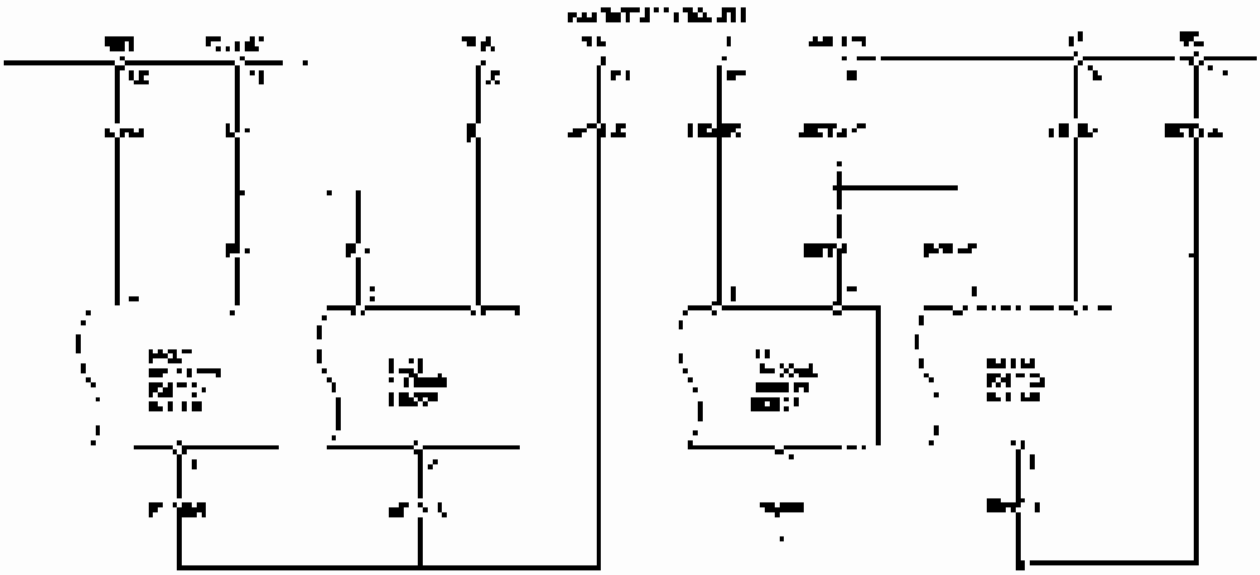
Circuit Diagram - Power Seat



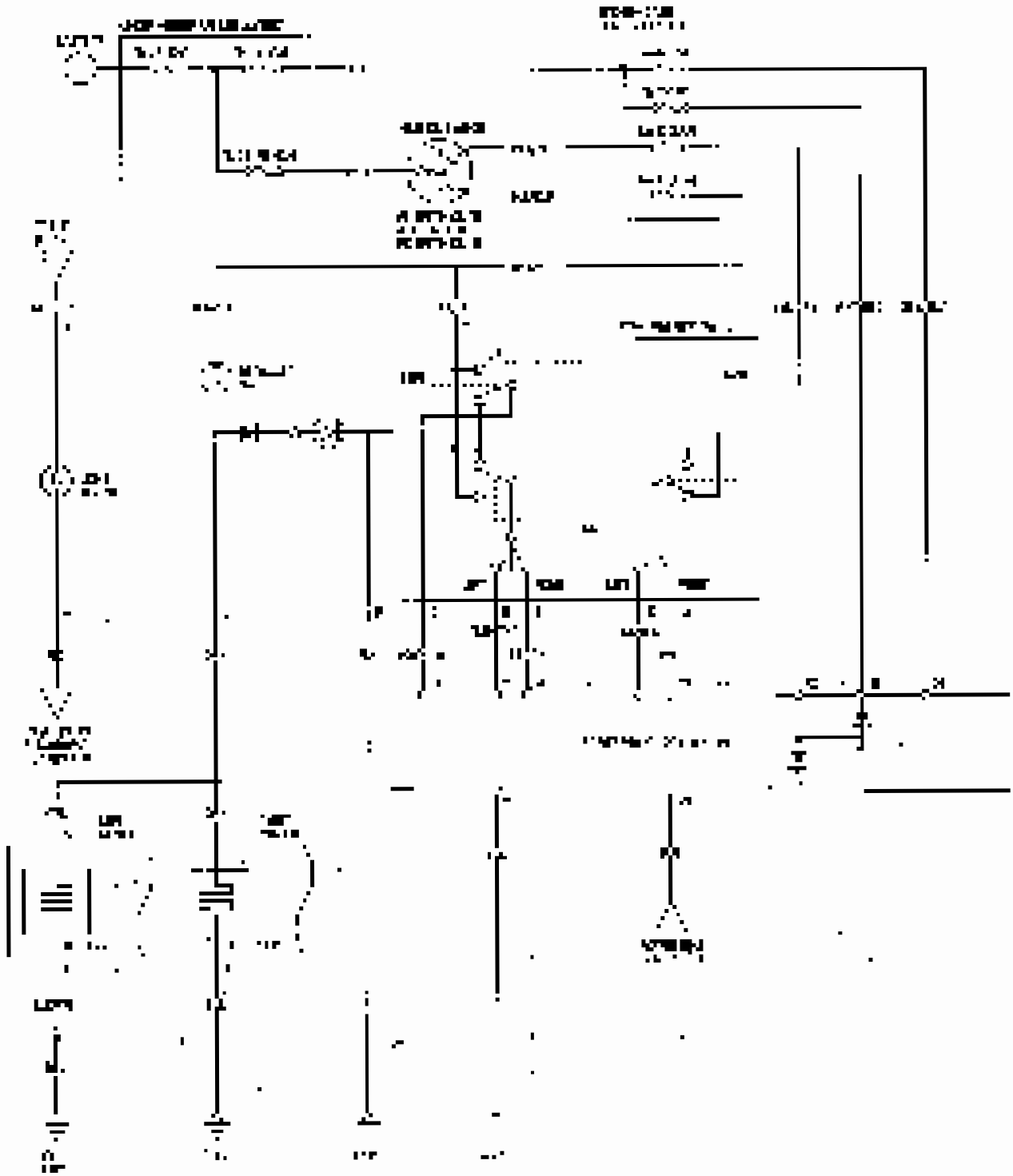


Circuit Diagram - Power Seat [cont'd]





Circuit Diagram - Power Mirror



General Precautions

- [illegible]
- [illegible]
- [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

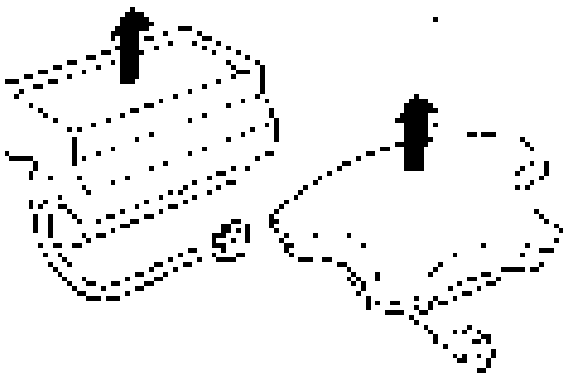
Supplemental Restraint System (SRS) Precautions

- [illegible]
- [illegible]
- [illegible]
- [illegible]

Precautions and Procedures (cont'd)

Airbag Handling and Storage

- [illegible]

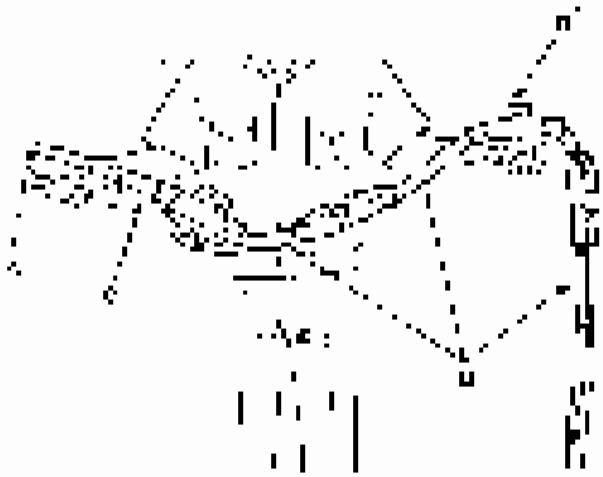


- [illegible]

- [illegible]

- [illegible]
- [illegible]

- [illegible]



Precautions and Procedures (cont'd)

SRS Unit, Front Impact Sensors, and Side Impact Sensors

- [illegible]

- During installation of the covers, be careful not to pinch wires between the SRS unit and the covers. Pinched wires could cause the SRS to malfunction, and could prevent the airbag from deploying properly in the event of a collision.

- After installing the front passenger airbag, turn the SRS unit cover over and check the warning label. Make sure the label is not damaged. If the label is damaged, replace it with a new one. Refer to the warning label on page 23-135. After installing the airbag, check the airbag indicator light. Refer to the indicator light check on page 23-137. If the indicator light does not function properly, refer to the SRS troubleshooting on page 23-138.

- Do not disassemble the SRS [illegible]

- [illegible]

- Be sure the SRS unit and front impact sensors are up. Impact sensors may not be able to detect a collision if [illegible]

- [illegible]

- [illegible]

Wiring Precautions

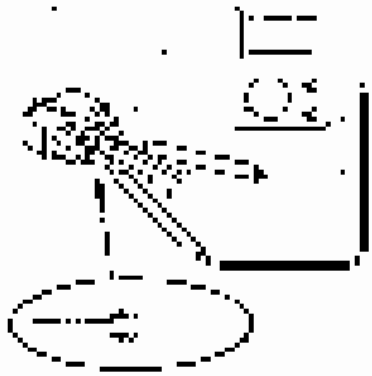
- Never connect a [illegible] to the [illegible] wiring. [illegible] wiring harness.

- Be sure to install the harness in such a way that it will not be [illegible] other moving parts or sharp edges.

- [illegible]

Precautions for Electrical Inspections

- [illegible]



- [illegible]

Use special service connectors in troubleshooting. Using improper tools can damage wires and cause poor connections.

Precautions and Procedures (cont'd)

Spring Loaded Lock Connector

Some SRS system connectors have a spring loaded lock...

Female Mating Connector

Disconnecting

...

Connecting

1. ...

2. ...

Male Mating Connector

Disconnecting

...

Connecting

...

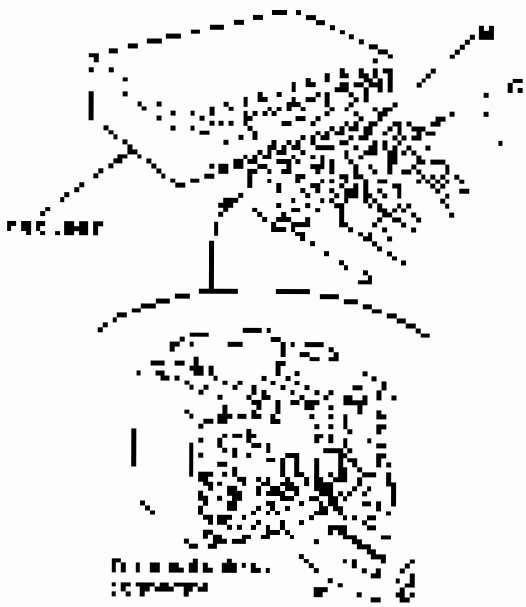
Opening the SRS Unit Shorting Connectors for Diagnosis

NOTE:

- To [illegible], switch the connectors only, leave the ignition switch in the [illegible] position.
- [illegible]
- Do not use the special tool for [illegible].
- Make sure to remove the special tool from the [illegible] connector.

[illegible]

[illegible]



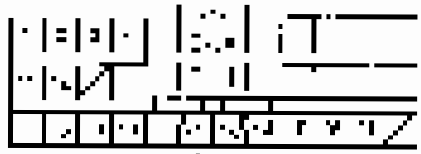
SRS Front Control Unit
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]



[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Precautions and Procedures (cont'd)

Backprobing Spring-Loaded Lock Connectors

[illegible]

NOTE: Do not backprobe the connector. Doing so may damage the connector housing.

[illegible]

Seats with Side Airbags

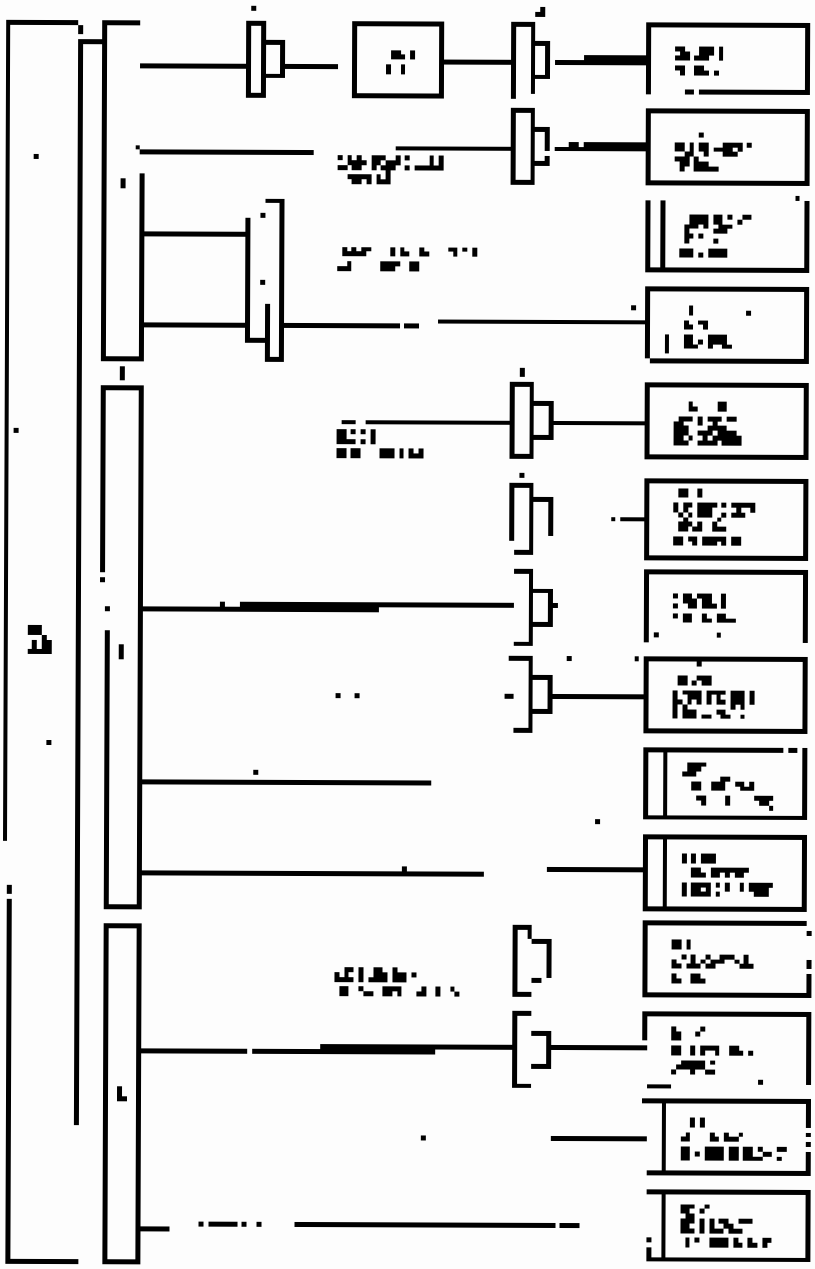
[illegible]

- [illegible]
- [illegible]
- [illegible] unit. Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this manual. Special wire harnesses are available to backprobe the connectors. Use them when necessary to avoid damage to the connectors.
- Never use electrical test equipment on or near the yellow connectors or terminals. [illegible]

Disconnecting System Connectors

[illegible]

- [illegible]
- [illegible]



Precautions and Procedures (cont'd)

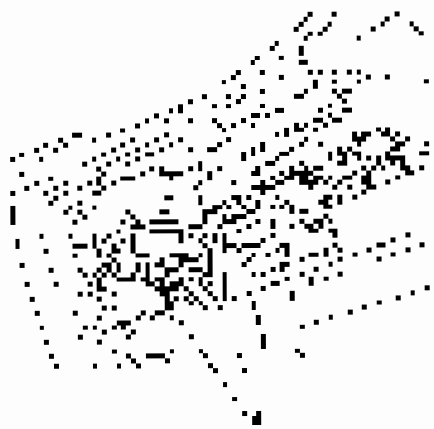
1. [illegible]

[illegible]

2. Remove the [illegible] from the steering wheel (see section [illegible]) and disconnect the driver's airbag 4P connector (2) from the cable reel.

Front Passenger's Airbag

3. Remove the glove box (see page 20-63), then the glove box housing (see page 20-63), the passenger's side lower panel, the driver's side lower panel, and the [illegible] connector (1) from the cable reel.



Installation

4. Connect the driver's airbag 2P connector (1) to the cable reel connector.

Rear Curtain Airbag

5. Disconnect the rear curtain airbag 2P connector (1) from the side curtain airbag harness.

General Troubleshooting Information

DTC (Diagnostic Trouble Codes)

- When you turn the ignition switch to position ON (II) without starting the engine, the SRS indicator will illuminate. If the system passes the self-diagnosis, the indicator will go out after approximately 6 seconds.
- If the SRS indicator does not illuminate when the ignition switch is turned to position ON (II), or if it remains on after approximately 6 seconds, there is a problem in the system. In this case, you must connect SUZUKI scan tool to the data link connector and check DTC.
- DTC is stored in memory and diagnosis service code (DTC).
- DTC is cleared when the ignition switch is turned to position OFF.
- When repairing or removing the SRS parts, refer to "Precautions for Service Operation" in the "General Description" section.
- After repairing and removing the SRS, perform the pre-check in the "Pre-Check System" section.

Precautions

- Before you begin any repair work, you should first check the SRS indicator to see if the system is operating properly. If the SRS indicator is not illuminated when the ignition switch is turned to position ON (II), or if it remains on after approximately 6 seconds, there is a problem in the system. A visual check of the SRS wiring harness connectors, harness routing, and ground connections should be performed before any diagnostic procedures are attempted.
- After you turn the ignition switch to position OFF, disconnect the battery negative cable and wait for at least 3 minutes before you begin any work on the SRS. Even though the ignition switch is turned to position OFF, battery voltage is still supplied to the SRS. If you begin work on the SRS before the battery negative cable is disconnected, the SRS may be activated.
- Before you remove the SRS parts, you must disconnect the battery negative cable and wait for at least 3 minutes. Even though the ignition switch is turned to position OFF, battery voltage is still supplied to the SRS. If you begin work on the SRS before the battery negative cable is disconnected, the SRS may be activated.
- When you handle the SRS parts, be careful not to apply impact to them. If impact is applied to the SRS parts, they may malfunction.
- Do not use electrical test equipment on any SRS circuit. Unless instructed to do so in this manual. Before you begin any work on the SRS, you must disconnect the battery negative cable. (See page 23-30.)

Reading the DTC

M/T

1. Make sure the ignition switch is turned to OFF.
2. Connect the SUZUKI scan tool.

3. Turn the ignition switch ON (II).
4. Read the DTC on the SUZUKI scan tool.
5. Check the chart for the DTC.
6. Repair the malfunctioning area.
7. Erase the DTC from the PCM.
8. Do a final check to make sure the malfunction has been repaired successfully.

Erasing the DTC Memory with HDS

1. Make sure the ignition switch is OFF.
2. Connect the HDS to the DLC (A).

3. Turn the ignition switch ON (II).
4. Select "ATA" (1), then "TEST MODE" (2), then the HDS displays the DTC.
5. [illegible]
6. Disconnect the HDS from the DLC.

Erasing the DTC Memory with Service Mode

Special Tool is Required
SCS service connector: 070AZ-0010100

To erase the DTC(s) from the ECM/PCM, use the HDS, or follow this procedure.

[illegible]

2. Connect jumper wire (1) between the [illegible] terminal of the 3P connector (2) and body ground (3).

3. [illegible]
4. The SRS indicator will come on for about 2 seconds, and then go out. Then the SRS indicator will flash the DTC. Count the number of flashes and write down each code.
5. [illegible]
6. When the SRS indicator has stopped flashing the DTC(s), remove the jumper wire from the [illegible] terminal.
7. The SRS indicator will blink several times indicating that the memory has been erased.
8. [illegible]
9. Turn the ignition switch to LOCK (0). Disconnect the SCS service connector and other special tools.

[illegible]

General Troubleshooting Information (cont'd)

Initializing the OPDS (Occupant Position Detection System) Unit

...

NOTE: ...

1. ...
2. ...
3. ...
4. ...
5. ...

6. ...

7. ...

8. ...

NOTE: ...

Troubleshooting Intermittent Failures

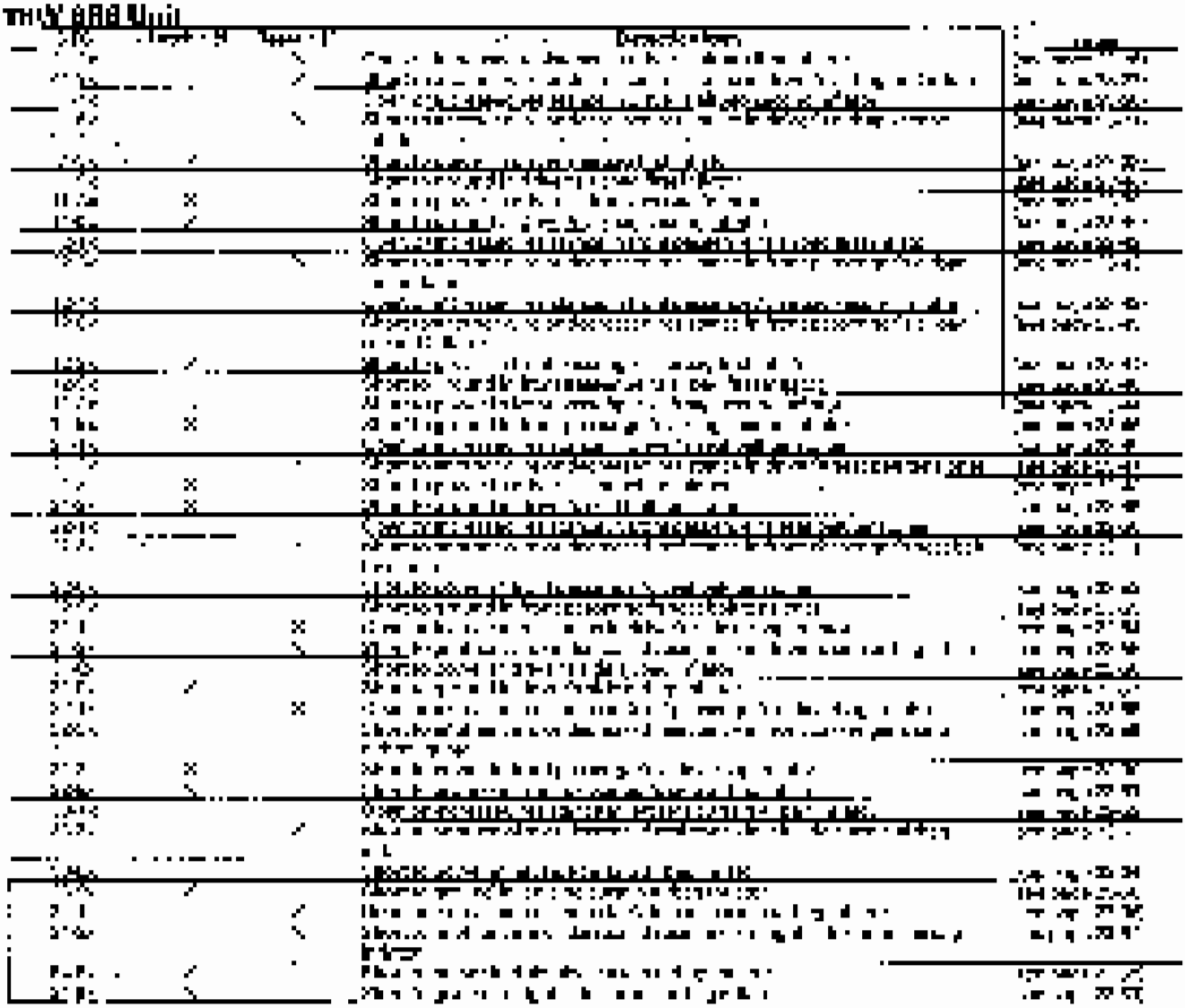
...

To do a short circuit test:

1. ...
2. ...
3. ...
4. ...
5. ...
6. ...
7. ...
8. ...

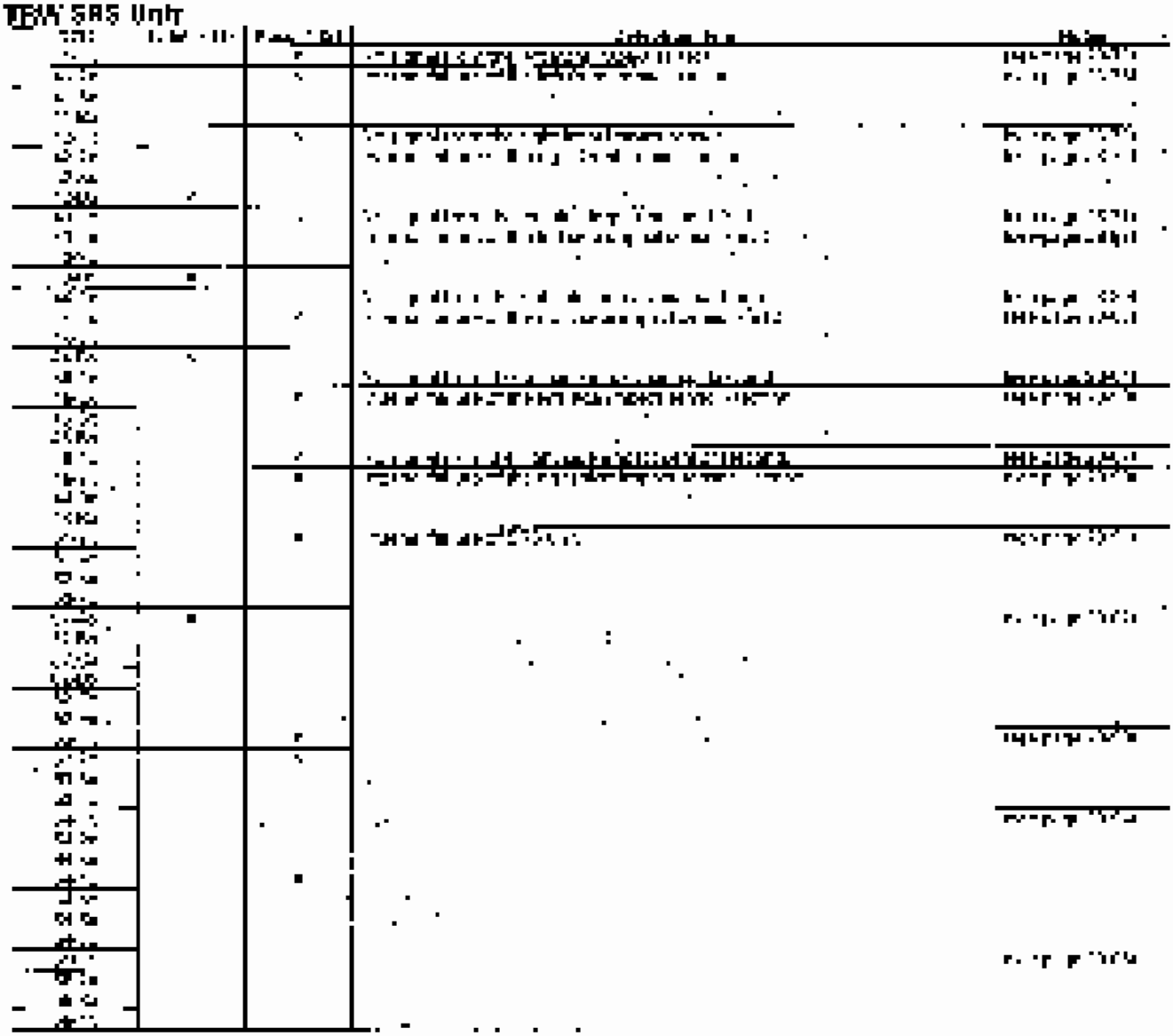
DTC Troubleshooting Index

TH(V 888 Unit

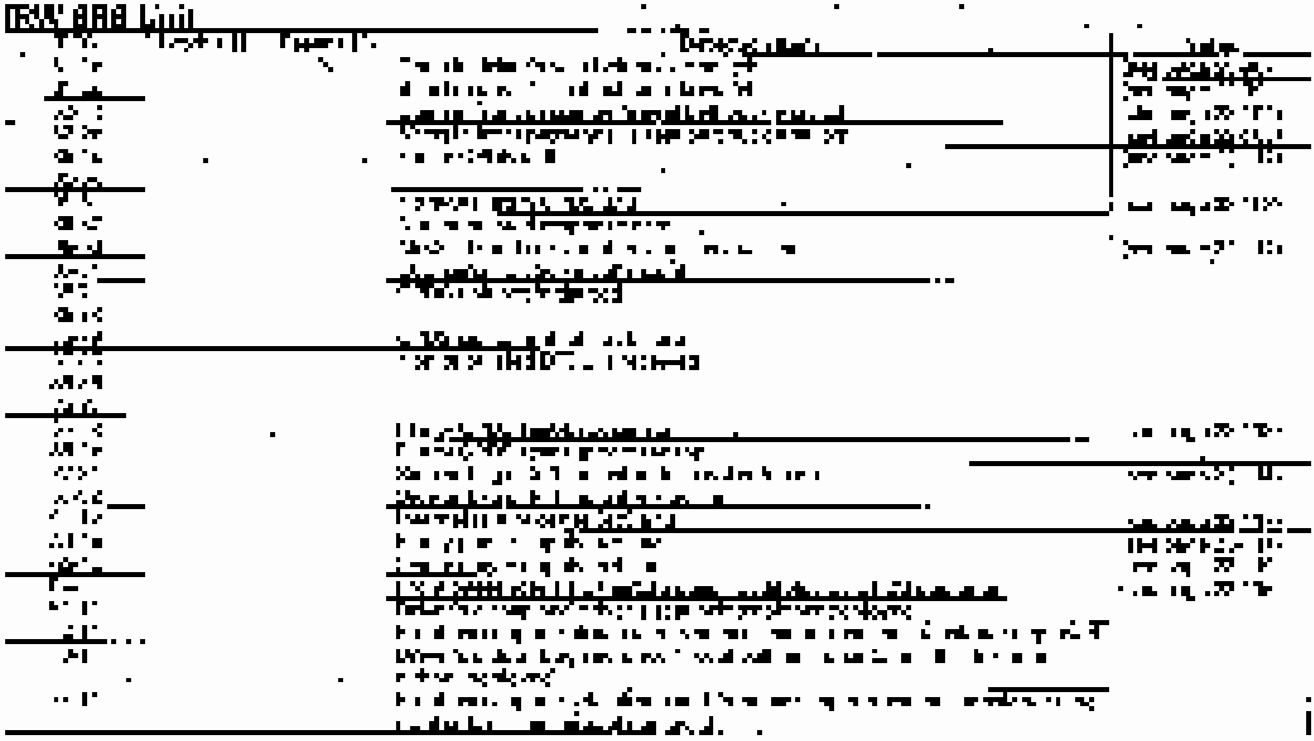


DTC Troubleshooting Index (cont'd)

TEW SRS Unit



TEVC 888 Limit



Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Reference
SRS indicator does not come on.	Symptom Troubleshooting See page 23-121	
SRS indicator stays on due to DTC(s) stored.	Symptom Troubleshooting See page 23-122	
[illegible]	- [illegible]	DTC 37-22 Troubleshooting
[illegible]	- [illegible]	DTC 37-22 Troubleshooting

System Description

SRS Components

Side Airbags

Front Passenger Airbag

Seat Belt Tensioners

Clock Spring

System Description (cont'd)

SRS Operation

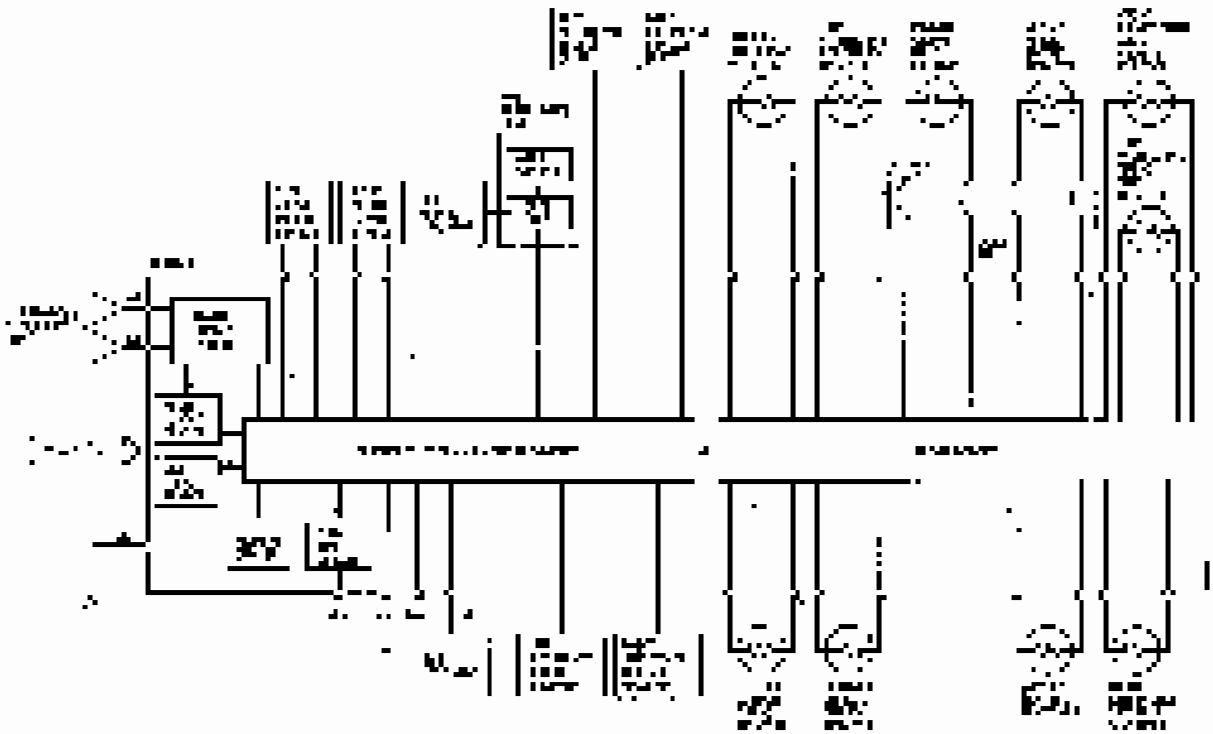
Redundant Operation

Drive Bay and Front Panel Assembly

Rear Assembly

Side Cover Assembly

Disk Array Controller and SRS Operation



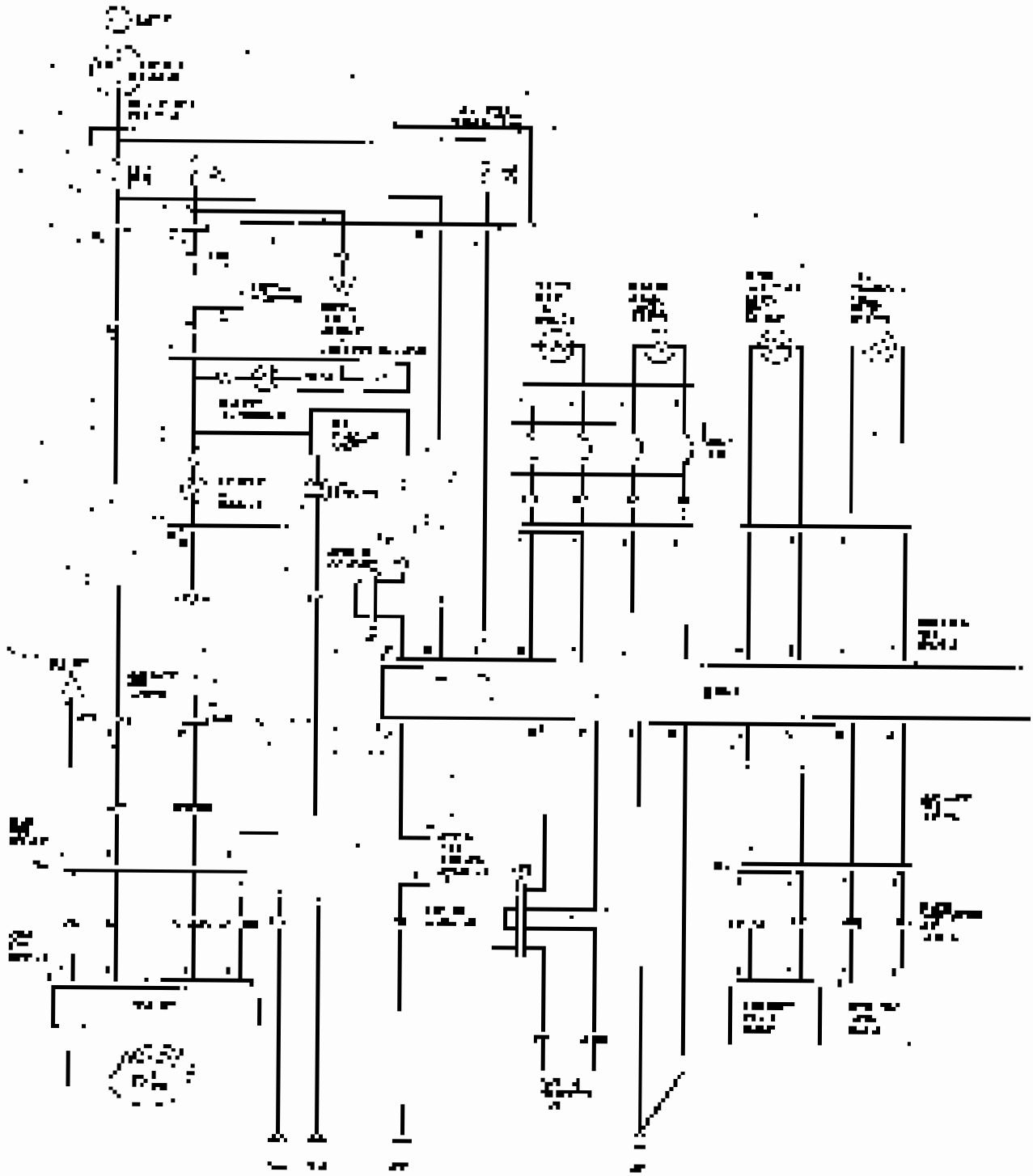
Multi-Injection System

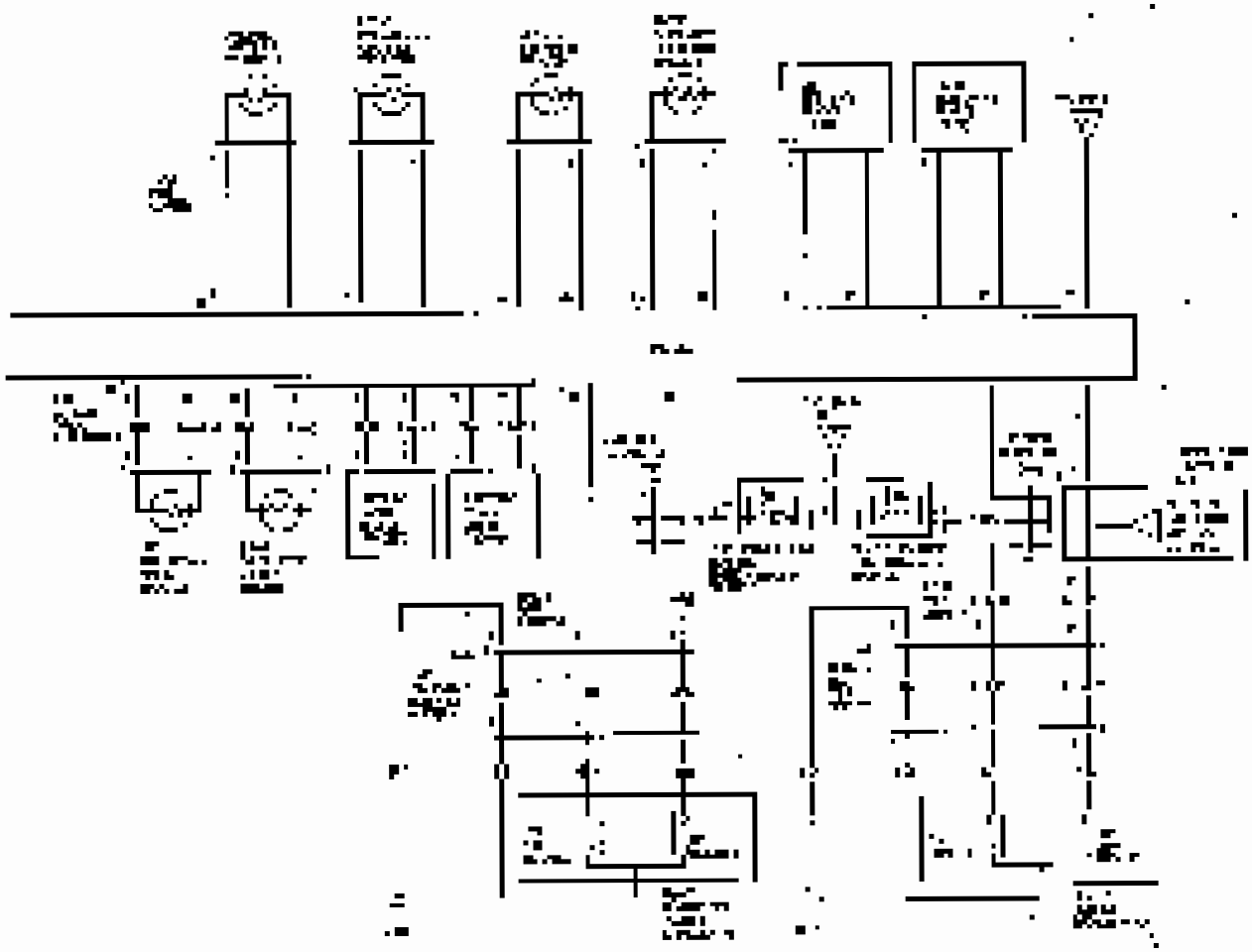
[illegible]

NOTE: [illegible]

- [illegible]
- [illegible]
- [illegible]

Circuit Diagram





DTC Troubleshooting

DTC 11-1x (11-10 to 11-19, 11-1A to 11-1F):
Open or Increased Resistance in Driver's
Airbag Circuit

DTC 11-4x (11-40 to 11-49, 11-4A to 11-4F):
Open or Increased Resistance in Passenger
Airbag Squib Circuit

Special Tools Required
SCS Service Connector Kit P/N
Airbag Simulator Tester

1. Connect the SCS connector to the DLC.

2. Turn the ignition switch ON (II). Record any DTC(s) and freeze data. Then clear the DTC(s).

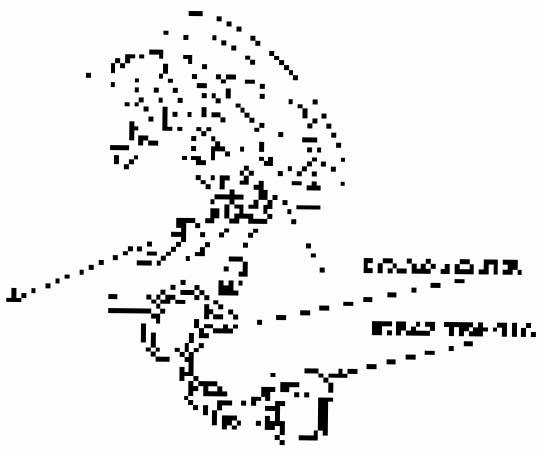
   Does the SCS indicate DTC 11-1x or 11-4x?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the airbag squib circuit. Refer to the troubleshooting index.

3. Turn the ignition switch OFF. Disconnect the battery negative cable and wait for 3 minutes.

4. Disconnect the connector from the driver's side airbag squib.



5. Connect the airbag simulator tester to the airbag squib circuit.

6. Reconnect the battery negative cable.

7. Clear the DTC memory.

8. Repeat self-diagnosis procedure.

   Is DTC 11-1x or 11-4x indicated?

   YES - Go to step 9.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the airbag squib circuit. Refer to the troubleshooting index.

9. Turn the ignition switch OFF. Disconnect the battery negative cable and wait for 3 minutes.

10. Disconnect the connector from the airbag simulator tester.

11. Connect the SCS connector to the connector that was disconnected from the airbag squib circuit.

12. Reconnect the battery negative cable.

13. Clear the DTC memory.

11. Read the DTC.

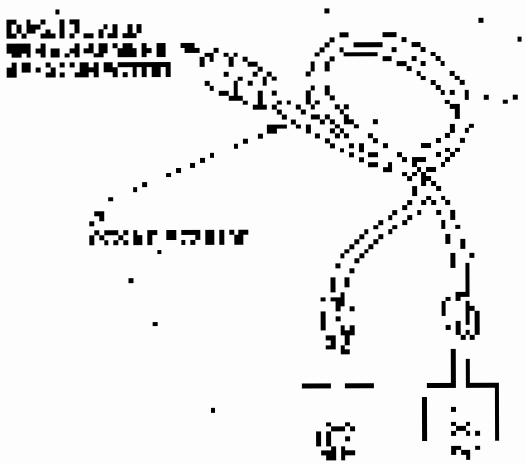
Is DTC 11-8A (11-20 to 11-89, 11-9A to 11-9F) indicated?

YES—Go to step 12.

NO—Intermittent failure, the system is normal at this time. Check for poor connection. See page 23-4 if necessary.

12. Turn the ignition switch OFF. Disconnect the harness side connector A (32P) from the SRS unit. Check for poor connection at the harness side connector. If the connection is OK, replace the SRS unit.

13. Disconnect the SRS unit connector A (32P) from the SRS unit. Check for continuity between the harness side connector A (32P) terminal and body ground.



Is there continuity?

YES—Short in the harness between the SRS unit connector A (32P) and the SRS unit. Check for poor connection at the harness side connector and the SRS unit. If the connection is OK, replace the SRS unit. See page 23-41.

NO—Check for open circuit in the harness between the SRS unit connector A (32P) and the driver's airbag (squib terminal) or passenger's airbag (squib terminal).

DTC 11-8A (11-20 to 11-89, 11-9A to 11-9F): Short to Another Wire or Decreased Resistance in Driver's Airbag (squib terminal)

DTC 11-8A (11-20 to 11-89, 11-9A to 11-9F): Short to Another Wire or Decreased Resistance in Passenger's Airbag (squib terminal)

Special Tools Required
- SRS unit test harness (07ZAZ-S5C1A)
- SRS unit test harness (07ZAZ-S5C0100)
- SRS unit test harness (07ZAZ-S5A0100)

1. Review the DTC information (see page 23-xx).

2. Turn the ignition switch OFF. Disconnect the negative cable from the battery, wait at least 3 minutes.

Was the negative cable disconnected and SRS unit connector A (32P) disconnected?

YES—Go to step 3.

NO—Disconnect the negative cable from the battery and the SRS unit connector A (32P). Go to the applicable DTC troubleshooting procedure. Refer to page 23-30. If another DTC is indicated, go to the applicable DTC in the table of contents.

3. Turn the ignition switch ON (II). Measure the voltage between the battery negative terminal and the SRS unit connector A (32P) terminal.

4. Turn the ignition switch OFF. Disconnect the driver's airbag (squib terminal) and passenger's airbag (squib terminal) connectors.

5. Connect the SRS unit test harness (07ZAZ-S5C1A) between the SRS unit and the SRS unit connector A (32P).

(cont'd)

DTC Troubleshooting (cont'd)

11. Recheck for the DTC.

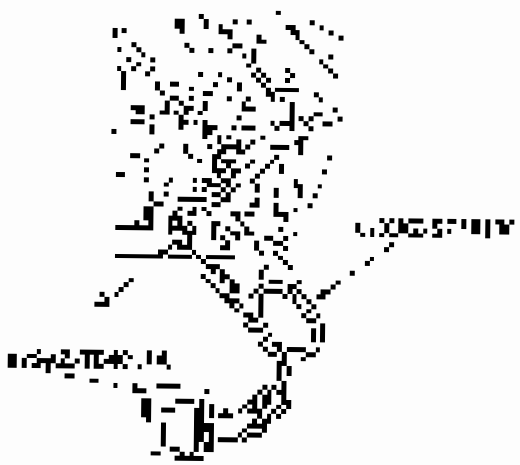
Is the DTC indicated?

YES: Go to step 12.

NO: Intermittent failure, system is normal at this time. Check for poor connections or loose terminals.

12. Turn the ignition switch OFF. Disconnect the battery negative cable, and wait for 3 minutes.

13. Disconnect only one front SRS impact sensor 4P connector. Do not disconnect the other sensor.



14. Connect a jumper wire between terminals 2 and 3 of the disconnected sensor connector.

15. Reconnect the battery negative cable.

16. Erase the DTC memory.

17. Repeat the DTC.

Is the DTC indicated?

YES: Go to step 18.

NO: Check for poor connections or loose terminals at the SRS unit connectors. If the connections are OK, replace the SRS unit (see page 23-42).

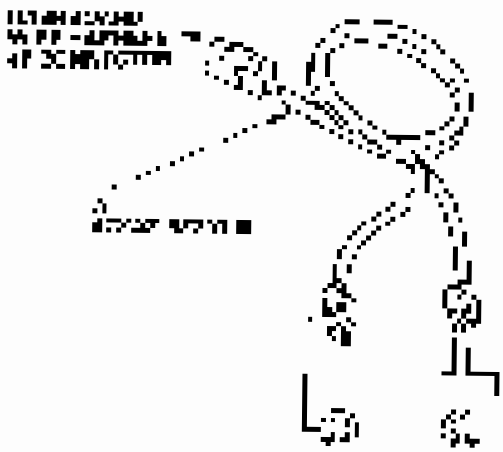
18. Turn the ignition switch OFF. Disconnect the battery negative cable, and wait for 3 minutes.

19. Disconnect the SRS unit connector A (32P) from the SRS unit (see page 23-42). Do not disconnect the other connectors. Jumper wire terminal 1 of the disconnected connector to body ground.

20. Reconnect the battery negative cable.

21. Connect an SRS multimeter (07ZAJ-S6A0110A or equivalent) to the terminal No. 1 of the harness side connector. Do not connect the SRS unit connector A (32P) (see page 23-42).

22. Check the voltage between terminal No. 1 of the SRS unit harness side connector and body ground.



Is there battery voltage?

YES: Replace the SRS unit (see page 23-42).

NO: Check for an open in the wire between the SRS unit and the driver's side front impact sensor.

DTC 11-8a (11-8J to 11-8Q, 11-8A to 11-8H): Short to Power in Driver's Airbag Final Enabler

DTC 11-8b (11-8J to 11-8Q, 11-8A to 11-8H): Short to Ground in Driver's Airbag Squib Final Enabler

Special Tools Required
•S151 Harness Adapter Set 07HAZ-SY30100A
•S155 Adapter Set 07HAZ-SZ30100

1. Turn the ignition switch OFF.

2. Disconnect the 2-pin connector from the driver's airbag squib, and short the 2 terminals.

   Does the SCS indicator stay on and a DTC (11-8J or 11-8A) remain stored?

   YES - Go to step 3.

   NO - Intermittent failure, the system is working properly at this time. Check for poor connections or loose terminals at the driver's airbag squib. If the connections are good, go to the applicable DTC troubleshooting.

3. Turn the ignition switch OFF. Disconnect the battery negative cable and wait for 3 minutes.

4. Disconnect the driver's airbag 2P connector from the driver's airbag.

5. Disconnect the SRS terminal number 3 connector and the terminal number 4 connector.

6. Reconnect the battery negative cable.

7. Turn the ignition switch ON (II).

8. Check the 2-pin connector on the driver's airbag squib.

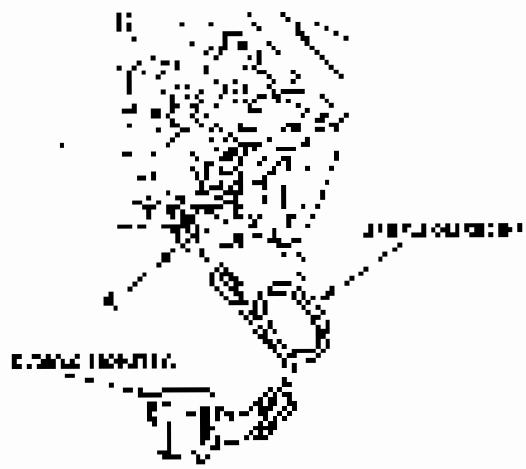
   Is there 0 V?

   YES - Go to step 9.

   NO - Go to step 6.

9. Turn the ignition switch OFF. Disconnect the battery negative cable, and wait for 3 minutes.

10. Disconnect the driver's airbag 2P connector from the driver's airbag.



11. Connect the S151 harness adapter B to the driver's airbag connector and the wire harness side connector with a jumper wire.

12. Reconnect the battery negative cable.

13. Go to step 14.

DTC Troubleshooting (cont'd)

14. [illegible]

[illegible]

YES: [illegible]

NO: [illegible]

15. [illegible]

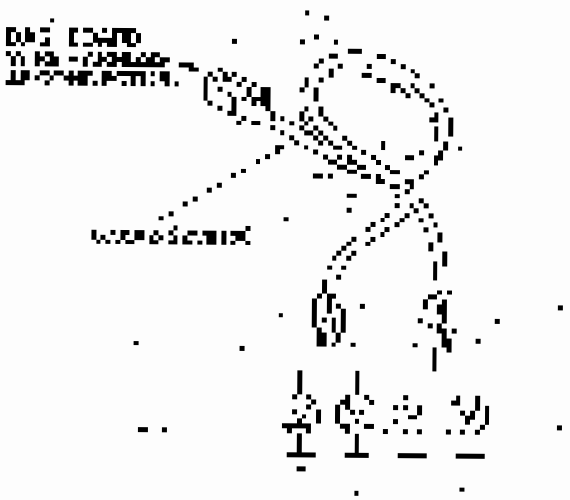
16. [illegible]

17. [illegible]

18. [illegible]

19. [illegible]

20. Check for any tool(s) left in the vehicle that could short the SRS airbag circuit(s) when the battery is reconnected. There should be no tool(s).



[illegible]

YES: [illegible]

NO: [illegible]

DTC 11-6A (11-60 to 11-63, 11-64 to 11-68): Short to Ground in Driver's Airbag Circuit; Initial

DTC 11-6A (11-60 to 11-63, 11-64 to 11-68, 11-6A to 11-6F): Short to Ground in Driver's Airbag Circuit; Initial

[illegible]

1. [illegible]

2. Turn the ignition switch to the LOCK (0) position. Disconnect the SRS backup power source. Wait at least 3 minutes for the other goals.

Did you find the SRS backup power source disconnected?

[illegible]

NO: [illegible]

3. Turn the ignition switch to the LOCK (0) position. Disconnect the driver's airbag connector.

4. Disconnect the [illegible] connector from the driver's airbag.

5. Connect the SRS [illegible]

6. Disconnect the battery negative cable.

7. [illegible]

8. [illegible]

[illegible]

NOTE: Carefully pull the connector straight out.

CAUTION: Do not damage the terminals or the plastic connector housing. If the terminals are damaged, the entire wiring harness must be replaced.

9. [illegible]

10. Disconnect the 4P connector from the ABS modulator.

11. [illegible]

12. Reconnect the battery negative cable.

13. Clear the DTC from memory.

14. Road test the vehicle.

[illegible]

Was the problem corrected?

YES - Go to step 15.

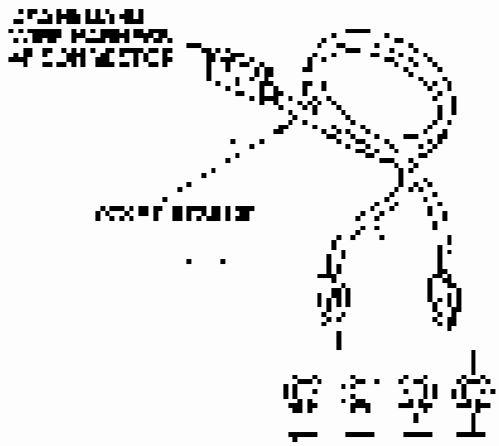
NO - Replace the ABS modulator. See the ABS modulator replacement procedure in this section.

15. Turn the ignition switch to OFF. Disconnect the battery negative cable, and reconnect the connector.

16. Clear the DTC from memory. Perform the ABS self-test. Make sure no DTC is indicated.

17. Disconnect the SCS unit connector from the ABS modulator connector.

18. Check resistance between each terminal of the SCS unit connector and body ground. The resistance should be infinity (∞) at all times.



Is the resistance as specified?

YES - Go to step 19.

NO - Replace the SCS unit. See the SCS unit replacement procedure in this section.

DTC Troubleshooting (cont'd)

DTC 12-1x (12-10 to 12-18, 12-1A to 12-1F): Open or Intermittent Problem in Front Passenger's Airbag Electrical Circuit

DTC 12-4x (12-40 to 12-48, 12-49 to 12-4F): Open or Intermittent Problem in Front Passenger's Airbag Squib Circuit

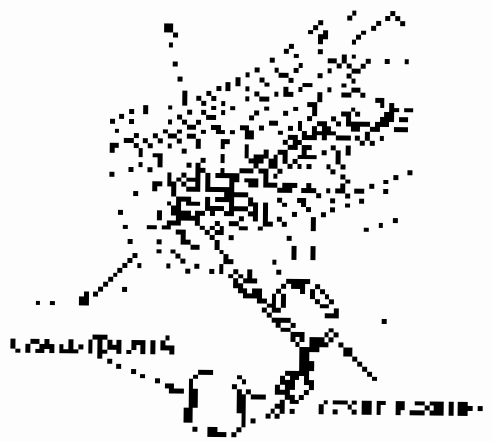
Special Tools Required
- SRS Inspection Unit
- SRS Simulation Unit

1. Perform DTC Verification (see page 23-).
2. Turn the ignition switch OFF (LOCK), and disconnect the negative cable from the battery. Wait at least 3 minutes.

   Check the SRS connectors for poor connections or loose terminals.

   YES - Connect it?

   NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals. Also try to reproduce the DTC by wiggling the wiring harness. Refer to the troubleshooting index.
3. Turn the ignition switch OFF. Disconnect the battery negative cable, and wait at least 3 minutes.
4. Disconnect the front passenger's airbag (2P) connector. Connect the special tool SRS inspection unit.



5. Connect the battery negative cable. Turn the ignition switch ON (II).
6. Measure voltage between the special tool SRS inspection unit terminals.

   Is there battery voltage?

   YES - Go to step 7.

   NO - Check for an open in the wire between the front passenger's airbag (2P) connector and the SRS unit connector. If the wire is OK, replace the SRS unit (see page 23-).
7. Turn the ignition switch OFF. Disconnect the SRS unit connector.
8. Measure resistance between the special tool SRS inspection unit terminals.

   Is there 1 - 10 Ω?

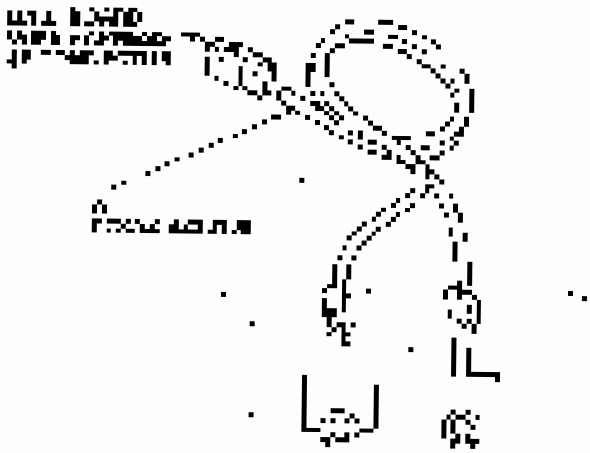
   YES - Go to step 9.

   NO - Check for an open in the wire between the front passenger's airbag (2P) connector and the SRS unit connector. If the wire is OK, replace the front passenger's airbag inflator (see page 23-).
9. Measure resistance between the special tool SRS inspection unit terminals.

   Is there 1 - 10 Ω?

   YES - Go to step 10.

   NO - Check for an open in the wire between the front passenger's airbag (2P) connector and the SRS unit connector. If the wire is OK, replace the front passenger's airbag inflator (see page 23-).
10. Turn the ignition switch OFF. Disconnect the battery negative cable, and wait at least 3 minutes.
11. Disconnect the SRS unit connector (14P). Connect the SRS simulation unit to the harness side of the SRS unit connector. Connect the SRS inspection unit to the harness side of the front passenger's airbag (2P) connector.
12. Connect the battery negative cable. Turn the ignition switch ON (II).
13. Check the SRS inspection unit indicator.



   Is the indicator on?

   YES - Faulty SRS unit. Replace the SRS unit connector. If DTC 12-1x (12-10 to 12-18, 12-1A to 12-1F) reappears, replace the front passenger's airbag inflator (see page 23-). If DTC 12-4x (12-40 to 12-48, 12-49 to 12-4F) reappears, replace the front passenger's airbag inflator (see page 23-).

   NO - Open in the wire between the SRS unit connector and the front passenger's airbag (2P) connector. If the wire is OK, replace the front passenger's airbag inflator (see page 23-).

DTC B2-8x (12-30 to 12-39, 12-7A to 12-7H): Short to Another Wire or Increased Resistance in Front Passenger's Airbag Circuit

DTC B2-8x (12-60 to 12-69, 12-6A to 12-6H): Short to Another Wire or Open Circuit or Resistance in Front Passenger's Airbag Squib Circuit

Special Tools Required
- [illegible]
- [illegible]
- [illegible]

1. Check the DTC memory. See page 23-25.

2. Turn the ignition switch to LOCK (0). Look and check inside the SRS fuse box. Make sure the above fuses and relays are installed correctly.

   Is your vehicle equipped with [illegible]?

   YES - Go to step 3.

   NO - Install the fuse or relay. Go to the SRS diagnostic trouble code chart. See page 23-25. Clear the DTC. Recheck for DTC. Is the same DTC indicated?

3. [illegible]

4. Disconnect the front passenger's airbag connector. Remove the steering wheel. See page 18-[illegible]

5. Disconnect the battery negative cable.

6. Reconnect the battery negative cable.

7. Erase the DTC memory.

8. [illegible]

   Is the DTC (B2-8x) indicated?

   YES - Go to step 9.

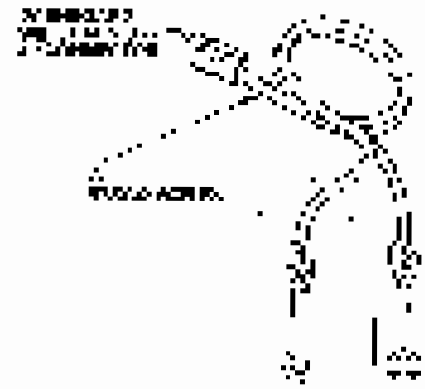
   NO - Short in the front passenger's airbag connector or wire harness. Replace the front passenger's airbag module. See page 23-[illegible].

9. [illegible]

10. Disconnect SRS unit connector A (26P) from the SRS unit. See page 23-27. Do not disconnect the D15 connector (red) from the red/blue wire harness connector.

11. Reconnect the SRS fuse. Turn the ignition switch to ON (II).

12. Measure the voltage between the terminals of SRS unit connector A. There should be [illegible] V.



    Is the voltage as specified?

    YES - Faulty SRS unit. Replace the SRS unit. See page 23-[illegible].

    NO - Short or [illegible]

DTC Troubleshooting (cont'd)

DTC 12-6A (12-6A to 12-6B, 12-6A to 12-6F): Short to Power in Front Passenger's Airbag Squib Circuit

DTC 12-6A (12-6A to 12-6B, 12-6A to 12-6F): Short to Power in Front Passenger's Airbag Squib Circuit

Special Tools Required
- SRS Wire Harness Set 07SAZ-T5A0110
- SRS Inspection Tool 07HAZ-SDS0100

1. Perform the SRS self-diagnostic procedure.

2. Turn the ignition switch OFF. Disconnect the SRS main wire harness connector. Turn the ignition switch ON (II). Check the front passenger's airbag squib circuit for short to power.

   Is there short to power?

   YES - Go to step 3.

   NO - Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the SRS main wire harness connector. If the connections are good, refer to the SRS Circuit Diagram, page 23-31, and perform the circuit inspection. If you cannot find the cause of the problem, replace the SRS unit.

3. Turn the ignition switch OFF. Disconnect the front passenger's airbag squib connector, and short the harness side connector terminals together.

4. Disconnect the front passenger's airbag squib connector from the SRS main wire harness connector, and check for short between the harness side connector terminals and body ground.

5. Reconnect the SRS main wire harness connector. Clear the DTC with the HDS, and recheck for DTC.

   Is DTC 12-6A indicated?

   YES - Replace the SRS unit.

   NO - Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the SRS main wire harness connector. If the connections are good, refer to the SRS Circuit Diagram, page 23-31, and perform the circuit inspection. If you cannot find the cause of the problem, replace the SRS unit.

6. Repeat step 1 of this troubleshooting procedure.

7. Record the DTC(s) and freeze data.

   Is DTC 12-6A indicated?

   YES - Go to step 8.

   NO - Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the front passenger's airbag squib connector. If the connections are good, refer to the SRS Circuit Diagram, page 23-31, and perform the circuit inspection. If you cannot find the cause of the problem, replace the SRS unit.

8. Turn the ignition switch OFF. Disconnect the front passenger's airbag squib connector, and short the harness side connector terminals together.

9. Turn the ignition switch ON (II). Check the front passenger's airbag squib circuit for short to power.

   Is there short to power?

   YES - Go to step 10.

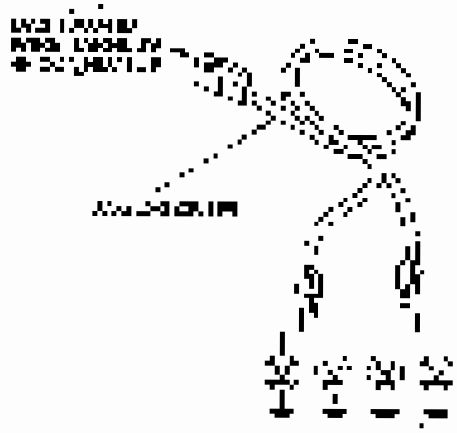
   NO - Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the front passenger's airbag squib connector. If the connections are good, refer to the SRS Circuit Diagram, page 23-31, and perform the circuit inspection. If you cannot find the cause of the problem, replace the SRS unit.

10. Disconnect the driver's side connector from the clockspring.

11. Disconnect the battery negative cable.

12. Turn the ignition switch ON (II).

13. Check the front passenger's airbag squib circuit for short to power. The voltage should be 0 V.



   Is the voltage reading correct?

   YES - Replace the clockspring. See the SRS Service Manual, page 23-XX.

   NO - Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the clockspring connector. If the connections are good, refer to the SRS Circuit Diagram, page 23-31, and perform the circuit inspection. If you cannot find the cause of the problem, replace the SRS unit.

DTC 12-8x [12-8] to 82-88, 12-8A to 12-8F]: Short to Ground in Driver Seatbelt Airbag Front Initiator

DTC 12 8x [12 80 to 12 88, 12 8A to 12 8F]: Short to Ground in Front Passenger's Airbag Squib Initiator

Special Tools Required
- [illegible]

1. [illegible]

2. [illegible]

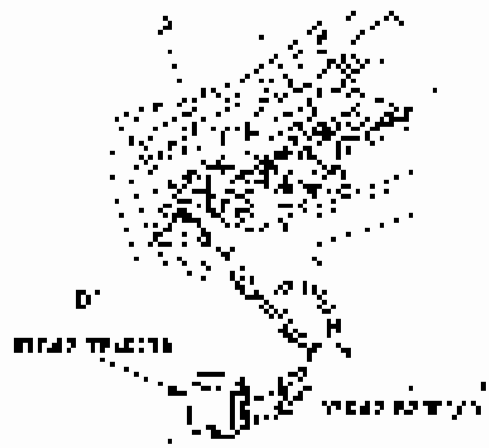
   Does the SRS indicator stay on and does DTC 12-8x or 12-8A reset?

   Yes → [illegible]

   NO → [illegible] page 23-[illegible] [illegible]

3. Turn the ignition switch to OFF. Disconnect the harness negative cable from the battery. Wait 3 minutes.

4. [illegible]



5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

   VSS → [illegible]

   NO → [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

    YES → [illegible] page 23-[illegible]

    NO → [illegible]

DTC Troubleshooting (cont'd)

DTC 21-8, 21-10 to 21-19, 21-1A to 21-1F: Open or short in engine compartment harness in Driver's Side Knee Bolster Module

Special Tools Required
- SRS wiring breakout box (07HAZ-SG70100)
- SRS simulator test harness (07HAZ-SG70110)

1. Turn the ignition switch OFF.
2. Disconnect the 2P connector from the driver's side knee bolster module.
3. Turn the ignition switch ON (II).
4. Check for DTC 21-8, 21-10 to 21-19, 21-1A to 21-1F.

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the driver's side knee bolster module connector.
5. Turn the ignition switch OFF.
6. Disconnect the 2P connector from the passenger's side knee bolster module.
7. Disconnect the 2P connector from the SRS unit.
8. Check for DTC 21-8, 21-10 to 21-19, 21-1A to 21-1F.

   YES - Go to step 9.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the passenger's side knee bolster module connector.
9. Turn the ignition switch OFF.
10. Disconnect the 2P connector from the passenger's side knee bolster module.
11. Disconnect the SRS unit connector 2 (16P) from the SRS unit. (See page 23-43). Do not disconnect the white connector from the SRS unit. (See page 23-43).
12. Check resistance between terminal No. 1 and terminal No. 2 of the SRS unit connector 2 (16P).

    Is there continuity?

    YES - Go to step 13.

    NO - Repair open in wire between terminal No. 1 of the SRS unit connector 2 (16P) and terminal No. 1 of the driver's side knee bolster module connector. Then go to step 13. (See page 23-43).
13. Check for continuity between terminal No. 2 of the SRS unit connector 2 (16P) and body ground.

    Is there continuity?

    YES - Repair short in wire between terminal No. 2 of the SRS unit connector 2 (16P) and terminal No. 2 of the driver's side knee bolster module connector. Then go to step 13. (See page 23-43).

    NO - Open or intermittent failure in the wire between terminal No. 2 of the SRS unit connector 2 (16P) and body ground. Repair as necessary.

DTC 21 Sx 21 Sh to 21 89, 21 8A to 21 8R: Short to Ground or Open in Circuit

Special Tools Required
•
•

1. [illegible]

2. [illegible] Scan Tool [illegible] Select [illegible] Read DTC Information [illegible] Stored DTCs [illegible] Is DTC [illegible] stored?

   [illegible]

   NO — [illegible]

   YES — [illegible] Go to Step 3.

3. Turn the ignition switch OFF. Disconnect the [illegible] harness connector. Inspect for poor connection. Refer to Wiring Repair Procedures in this section. Was a problem found?

   YES — [illegible] Repair as necessary. Clear DTC. Go to Step 11.

   NO — [illegible] Go to Step 4.

4. Turn the ignition switch OFF. Disconnect the [illegible] harness connector. Measure resistance between [illegible] terminal and ground.

   [illegible]

   Is the resistance [illegible]?

   YES — [illegible] Go to Step 5.

   NO — [illegible] Go to Step 6.

5. Turn the ignition switch ON. Measure voltage between [illegible] terminal and ground.

   [illegible]

   Is the voltage [illegible]?

   YES — [illegible] Go to Step 7.

   NO — [illegible] Go to Step 8.

6. Repair [illegible] for [illegible]. Was [illegible]?

   YES — [illegible] Go to Step 11.

   NO — [illegible] Go to Step 10.

7. Check the DTC history.

8. Read the DTC. Is DTC [illegible] stored?

   YES — [illegible] Go to Step 9.

   NO — [illegible]

   NOTE: [illegible] Refer to [illegible] page 23-[illegible].

9. Turn the ignition switch OFF. Disconnect the [illegible] harness connector. Inspect for poor connection. Refer to Wiring Repair Procedures in this section. Was a problem found?

   YES — [illegible] Repair as necessary. Clear DTC. Go to Step 11.

   NO — [illegible] Go to Step 10.

10. Replace [illegible] Refer to [illegible] page 23-[illegible]. Clear DTC. Go to Step 11.

11. Check [illegible] harness for [illegible] and for [illegible] with Scan Tool. Is DTC [illegible] stored? Refer to [illegible] page 23-[illegible].

    [illegible]

    [illegible]

    [illegible]

    [illegible]

    Is [illegible] stored?

    YES — [illegible] Go to Step 3.

    NO — [illegible]

DTC Troubleshooting (cont'd)

D. DTC 21-9A, 21-9B or 21-9C: Short to Power in Driver's Seat Belt Tensioner

Applicable Tools Required

1. [illegible]

2. [illegible] Is the SRS indicator on the driver's side kick panel and the passenger's IP.

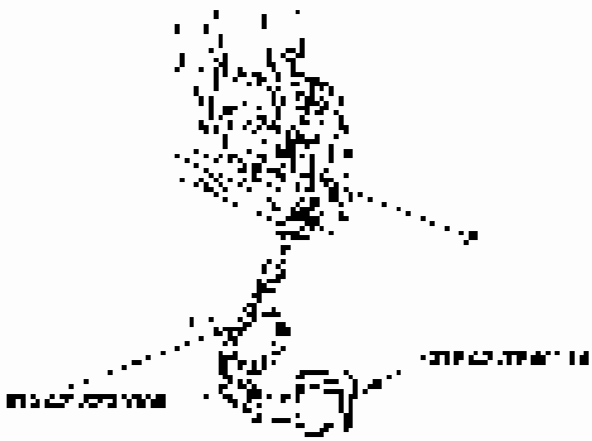
   Does the SRS indicator come on for about 6 seconds, then go out?

   YES—Go to step 3.

   NO—Check the SRS indicator circuit. If the circuit is OK, replace the SRS indicator. Go to the DTC troubleshooting index.

3. Turn the ignition switch to LOCK (0). Disconnect the battery negative cable, and wait [illegible]

4. [illegible]



5. Connect the SRS unit connector. Reconnect the battery negative cable.

6. Clear the DTC memory.

7. Read the DTC [illegible]

   Will [illegible]

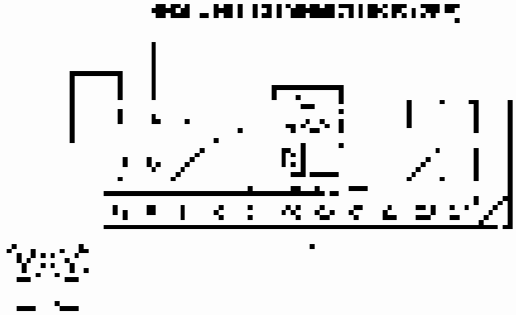
   YES—Intermittent failure. Check for poor connection in the [illegible] Inspection, page 23-[illegible]

8. Turn the ignition switch to LOCK (0). Disconnect the battery negative cable, and wait [illegible]

9. Disconnect the [illegible] Measure the resistance between [illegible]

10. [illegible] Is there [illegible]

11. [illegible] Measure the voltage between [illegible]



[illegible]

Is there [illegible]

YES—Replace the SRS unit with a new one. Go to page 23-[illegible]

NO—Check for poor connection or [illegible] replace the [illegible]

DTC [illegible] to 21-35, 21-38 to 21-5F: Short to Ground in Vehicle Speed Sensor (VSS) Circuit

Special Tools Required
- [illegible]
- [illegible]

1. Check the DTC in the [illegible] page 23-23).

2. Turn the ignition switch OFF. Lift, and check that the [illegible] connector is [illegible]

Is the [illegible] connector OK?

YES - Go to step 3.

NO - Repair the [illegible] connector. Then go to [illegible] page 23-23).

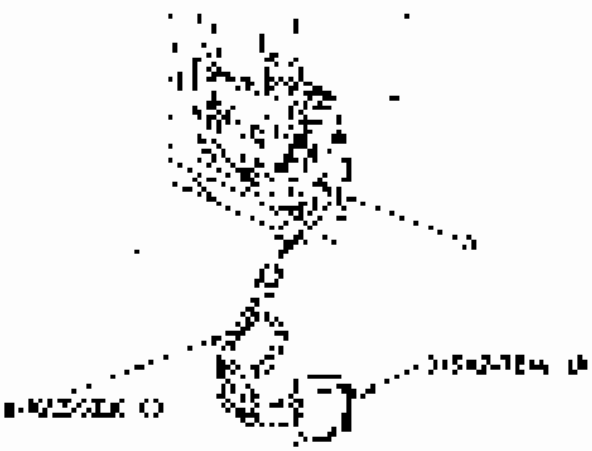
3. Turn the ignition switch ON (II). Measure the [illegible]

Is the voltage [illegible]

YES - Go to step 4.

NO - Repair the [illegible] Then go to [illegible] page 23-23).

4. Turn the ignition switch OFF. Disconnect the [illegible] connector from the [illegible] Jumper wire between [illegible]



5. Connect the [illegible] Jumper wire between the [illegible] terminal and [illegible] Measure the [illegible]

Is the [illegible]

6. Reconnect the [illegible]

7. Clear the DTC [illegible]

8. Check for DTC [illegible] page 23-23).

Was DTC [illegible]

YES - Go to step 9.

NO - Intermittent failure, [illegible] page 23-23).

9. Turn the ignition switch OFF. Disconnect the [illegible]

10. Disconnect the [illegible] connector 2 (20P) from the [illegible] Jumper wire between [illegible]

11. Disconnect the [illegible] connector from the [illegible]

12. Connect the [illegible] Jumper wire between [illegible] Then measure the [illegible]

Is the [illegible]

YES - Replace the [illegible]

NO - Check for [illegible] Repair as necessary. Then replace the [illegible]

DTC Troubleshooting (cont'd)

DTC 22-1 (22-41 to 22-11), 22-1A (to 22-1R): Driver's Inflator Unit Deployment Malfunction in Front Passenger's Side (Built-in Inflator)

Special Tools Required
- SRS simulation harness (07HAJ-PW10100)
- SRS simulation test box (07HAJ-PW10200)

1. Troubleshoot DTC (see page 23-25).

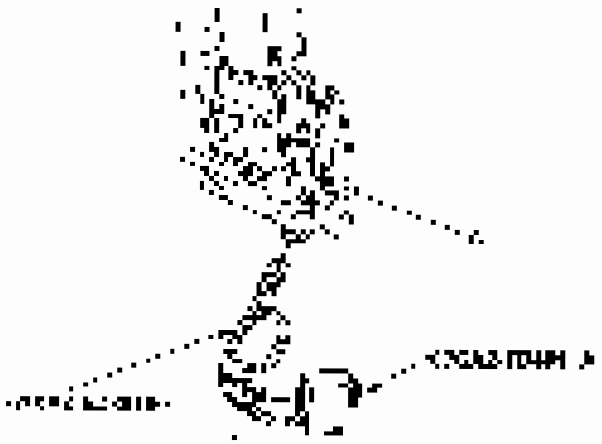
2. Is DTC 22-1 (22-41 to 22-11), 22-1A (to 22-1R) indicated?

YES—Go to step 3.

NO—Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at SRS unit connector 2 (22P). If DTC is indicated, go to the applicable troubleshooting procedure.

3. Turn the ignition switch OFF and disconnect the battery negative cable. Wait at least 3 minutes before proceeding to the next step.

4. Disconnect the front passenger's side SRS connector 1 (2P) from the front passenger's side inflator unit.



5. Connect the SRS simulation harness (2P) between the front passenger's side inflator unit and the SRS unit connector 1 (22P).

6. Turn the ignition switch ON (II).

7. Erase the DTC (see page 23-24).

8. Recheck the DTC (see page 23-24).

Is DTC 22-1 indicated?

YES—Go to step 9.

NO—Replace the front passenger's side inflator unit with a new one (see page 24-41). Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at SRS unit connector 2 (22P).

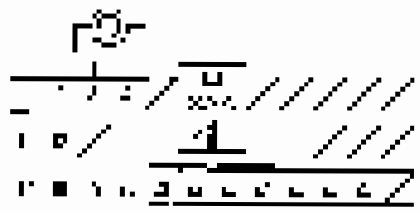
9. Turn the ignition switch OFF (0). Disconnect the harness negative cable and wait at least 3 minutes.

10. Disconnect the SRS unit connector 1 (22P).

11. Disconnect the SRS simulation harness (2P) from the SRS unit connector 1 (22P). Then connect the front passenger's side inflator unit connector 1 (2P) and the SRS unit connector 1 (22P).

12. Check resistance between the No. 1 and No. 2 terminals of SRS unit connector 2 (22P). There should be open (1 MΩ or more).

SRS unit connector 2 (22P)



SRS unit connector 2 (22P)

Is the resistance as specified?

YES—Temporarily connect SRS unit connector 2 (22P) to the SRS unit. Check the SRS indicator. If the indicator comes on, replace the SRS unit (see page 24-41).

NO—There is a short in the front passenger's side inflator unit. Replace the inflator unit (see page 24-41).

DTC B2191 (B2190 to B2199, B2285 and B2287): Short to Battery or Open in Front Passenger's Seat Belt Tensioner

Special Tools Required
- Scan tool (see Appendix A)
- Digital multimeter (see Appendix A)

1. Ensure the ignition switch is OFF.

2. Turn the ignition switch to ON. Verify that the SRS indicator comes on for about 6 seconds, then goes off.

   Does the SRS indicator stay on or fail to come on?

   YES – Go to step 3.

   NO – Intermittent fault. Check for poor connections or loose terminals at the SRS control unit. See page 23-20. If no problem is found, refer to the DTC troubleshooting index.

3. Turn the ignition switch to LOCK. Disconnect the battery negative cable and wait for 3 minutes.

4. Disconnect the front passenger's seat belt tensioner connector. Measure the resistance between terminals A and B.

   Is the resistance between 0.5 and 2.5 Ω?

   YES – Go to step 5.

   NO – Replace the front passenger's seat belt tensioner. See page 23-143.

5. Disconnect the SRS control unit connector. Check for continuity between terminal B of the front passenger's seat belt tensioner connector and body ground.

   Is there continuity?

   YES – Repair short to ground in the wire between the SRS control unit and the front passenger's seat belt tensioner.

   NO – Go to step 6.

6. Reconnect the battery negative cable.

7. Erase the DTC from memory.

8. Repeat the DTC confirmation procedure.

   Is DTC B2191 indicated?

   YES – Go to step 9.

   NO – Intermittent fault. Check for poor connections or loose terminals at the SRS control unit. See page 23-20.

9. Turn the ignition switch to LOCK. Disconnect the battery negative cable and wait for 3 minutes.

10. Disconnect the SRS control unit connector.

11. Disconnect the SRS control unit connector C-402P from the SRS control unit. See page 23-20.

12. Check for open circuit in wire between terminal B of the front passenger's seat belt tensioner connector and terminal C-402P of the SRS control unit connector. See page 23-20. If the wire is OK, replace the SRS control unit. See page 23-143.

DTC Troubleshooting (cont'd)

DTC 22-4[illegible] [illegible]: [illegible] Seat Belt Tensioner

[illegible]

1. [illegible] DTC [illegible]

2. [illegible]

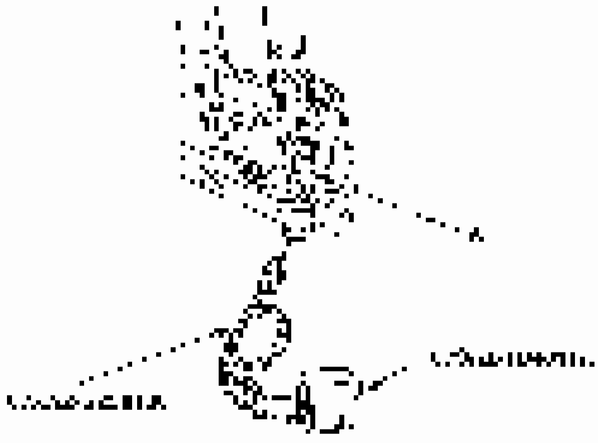
   [illegible]?

   YES – [illegible]

   NO – [illegible]

3. [illegible]

4. [illegible]



5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible] DTC [illegible]

   [illegible]?

   YES – [illegible]

   NO – [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

[illegible]

[illegible]?

YES – [illegible]

NO – [illegible]

DTC 22-9(, 22-10(, 22-38, 22-39, 22-3A, 22-3B, 22-3F): Short to Ground in Front Passenger's Seat Belt Tensioner

Special Tools Required
- SRS Inflator Simulator 07HAZ-S540110
- SRS Unit Tester and 07HAZ-S5200 00

Refer to DTC Troubleshooting Flowchart on page 23-42.

2. Turn the ignition switch OFF. Disconnect the 3P (Red) connector from the front passenger's seat belt tensioner.

Does the SRS indicator stay on or blink?

YES - Go to step 3.

NO - Intermittent short to body ground in the SRS circuit. Check the wire harness and connectors between the front passenger's seat belt tensioner and the SRS unit. If the wire harness and connectors are OK, replace the SRS unit, then recheck.

3. Turn the ignition switch OFF. Disconnect the driver's seat belt tensioner 3P connector. Check for continuity between the front passenger's seat belt tensioner 3P connector terminals and body ground.

4. Disconnect the front passenger's seat belt tensioner 3P connector. Check for continuity between the terminals.

5. Connect the SRS Inflator Simulator to the front passenger's seat belt tensioner and the wire harness side of the floor wire.

6. Reconnect the connectors.

7. Refer to DTC Troubleshooting Flowchart on page 23-42.

8. Reset the SRS indicator.

Is the SRS indicator on?

YES - Go to step 9.

NO - Short to ground in the front passenger's seat belt tensioner circuit. Replace the front passenger's seat belt tensioner. Refer to page 23-61.

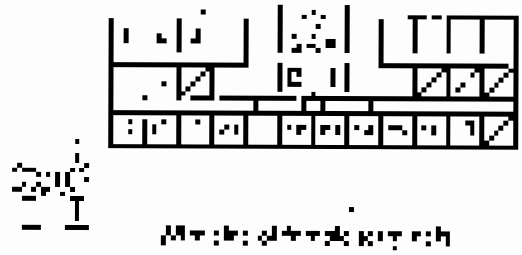
9. Turn the ignition switch OFF. Disconnect the SRS unit connector. Refer to page 23-62.

10. Disconnect the SRS unit connector C (26P) from the SRS unit. Refer to page 23-62.

11. Check for continuity between each terminal of the connector and body ground.

12. Check for continuity between the SRS unit connector C (26P) terminals and connector terminals. Refer to the SRS unit terminal layout. Refer to page 23-62.

SRS unit connector terminal side



Wire side of female terminals

Is there continuity?

YES - Replace the SRS unit. Refer to page 23-62.

NO - Short to ground in the floor wire or the connector.

DTC Troubleshooting (cont'd)

DTC 51-1x (51-10 to 51-13, 51-1A to 51-1F): Open or Increased Resistance in Driver's Side Airbag Inflator

Special Tools Required
- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead E 07SAZ-SP40200

1. Erase the DTC memory (see page 23-27).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

   Does the SRS indicator stay on, and does DTC 51-1x indicate?

   YES - Go to step 3.

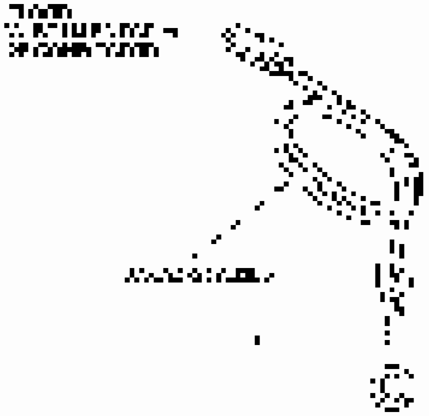
   NO - Intermittent failure, system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 23-26). If any other DTCs indicate, go to the indicated DTC's troubleshooting.
3. Turn the ignition switch OFF. Disconnect the battery negative cable, and wait for 3 minutes.
4. Disconnect the driver's side airbag 2P connector (A) from the driver's side airbag.

5. Connect the SRS inflator simulator to the [illegible] connector [illegible] and [illegible].
6. Reconnect the battery negative cable.
7. Erase the DTC memory.
8. Read the DTC (see page 23-24).

   Is DTC 51-1x indicated?

   YES - Go to step 9.

   NO - [illegible] (see page 23-1[illegible]).
9. Turn the ignition switch OFF. Disconnect the battery negative cable, and wait for 3 minutes.
10. Disconnect both seat connectors [illegible] connectors [illegible] (see page 23-35).
11. [illegible] SRS [illegible] (see page 23-1[illegible]) [illegible] SRS [illegible].
12. Disconnect the SRS inflator simulator from SRS simulator lead E.
13. Check resistance between the terminals of SRS simulator lead E. There should be 1.0 Ω or less.



Is the resistance as specified?

YES - Faulty SRS unit or poor contact at SRS unit connector B (30P) and the SRS unit. Check the connection. If the connection is OK, replace the SRS unit (see page 23-1[illegible]). ■

NO - [illegible] ■

DTC P1148 (21-38) or P1149 (21-39), P1168 (21-9A) or P1169 (21-9B): Closed Loop Another Malfunction Occurs Before Engine Coolant Temperature Reaches Closed Loop Activation Value

Special Tools Required
- [illegible]
- [illegible]
- [illegible]

1. Check for DTC memory (see page 23-25)

2. [illegible]

   YES - Go to step 3.

   NO - [illegible]

3. [illegible]

4. Disconnect the [illegible]

5. [illegible]

6. Reconnect the [illegible]

7. Erase the DTC memory.

8. [illegible]

   (P1270, 21-70) (see page 23-[illegible])

   YES - Go to step 9.

   NO - [illegible]

9. [illegible]

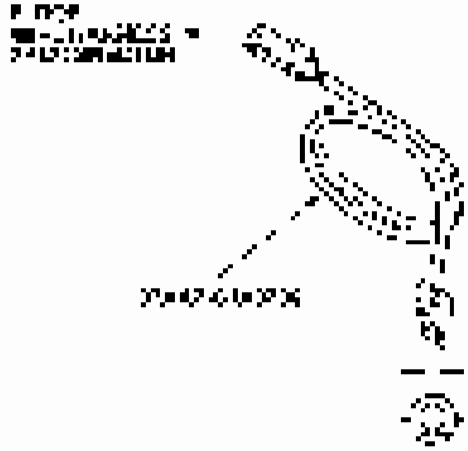
10. Check for [illegible] (see page 23-[illegible])

11. Disconnect the [illegible]

12. Disconnect the [illegible]

13. Connect the [illegible]

14. [illegible]



    Is the [illegible]?

    YES - [illegible]

    NO - [illegible]

DTC Troubleshooting (cont'd)

DTC 31-R1 (31-80) to 31-8R, 31-R3 to 31-8R: Short to Power in Driver's Side Pretensioner Circuit

Special Tools Required
- SRS Inflator simulator 07HAZ-SD40100
- SRS simulator test harness 07HAZ-SD40200

1. Turn the ignition switch to LOCK (0). Disconnect the negative cable from the battery, and wait for 3 minutes.
2. Does the SRS indicator stay on after you do DTC 31-82 troubleshooting?

   YES - Go to step 3.

   NO - Intermittent failure, the system is normal at this time. Check for poor connections or loose terminals at the driver's pretensioner connector. If the connections are good, refer to the symptom-to-component chart.

3. Turn the ignition switch to LOCK (0). Disconnect the battery negative cable and wait for 3 minutes.
4. Disconnect the 2-pin connector from the driver's pretensioner.

5. Connect the SRS inflator simulator to the driver's pretensioner and the simulator test harness to the vehicle harness.
6. Reconnect the battery negative cable.
7. Turn the ignition switch to ON (II).
8. Read the DTC, and go to the indicated page.

   DTC 31-R1 (31-80): Go to page 23-58

   DTC 31-R3 (31-8R): Go to page 23-59

   NEXT - Go to step 9.

9. Turn the ignition switch to LOCK (0). Disconnect the battery negative cable and wait for 3 minutes.
10. Disconnect the SRS inflator simulator from the vehicle harness, and reconnect the driver's pretensioner connector.
11. Turn the ignition switch to ON (II). Clear the DTC, then recheck for DTC 31-82.

    YES - Replace the driver's pretensioner with a new one.

    NO - Intermittent failure, the system is normal at this time. Check for poor connections or loose terminals at the driver's pretensioner connector. If the connections are good, refer to the symptom-to-component chart.

12. Disconnect the SRS inflator simulator from the vehicle harness, and reconnect the driver's pretensioner connector.
13. Turn the ignition switch to ON (II).
14. Clear the DTC, and recheck for DTC 31-82.
15. Measure the resistance between terminals No. 1 and No. 2 of the SRS unit 16-pin connector. The resistance should be 0.5 Ω or less.

Is the resistance as specified?

YES - Replace the SRS unit (see page 23-61).

NO - Check for poor connections or loose terminals at the driver's pretensioner connector. If the connections are good, replace the driver's pretensioner.

DTC 31-02 [31-01] to 31-05, 31-08 to 31-0F:
Short to Ground in Driver's Side Airbag
Indicator

Special Tools Required
• SRS breakout box (P/N [illegible])
• SRS simulator adapter harness (P/N [illegible])

1. Review the DTC conditions on page 23-55.

2. Turn the ignition switch OFF. Verify that the driver's side airbag connector is properly connected to the clockspring.

   Does the SRS indicator come on steadily when the ignition switch is turned ON (II)?

   YES - Go to step 3.

   NO - If the SRS indicator comes on steadily, it's OK at this time. Refer to Troubleshooting Intermittent DTCs on page [illegible] to check for poor connections or intermittent problems.

3. Turn the ignition switch OFF. Disconnect the passenger's side airbag connector on the steering wheel.

4. Disconnect the connector from the driver's side airbag.

5. Connect the SRS breakout box and adapter harness between the clockspring and the main wire harness. Do not turn the ignition switch ON.

6. Turn the ignition switch ON (II).

7. Clear the DTC memory.

8. Read the DTC. Is page 23-[illegible]

   YES - [illegible]

   [illegible] proceed to the appropriate symptom, system or component test. If you don't find a problem, see page 23-[illegible]

9. Turn the ignition switch OFF. Disconnect the jumper wire and the SRS breakout box. Reconnect the harnesses.

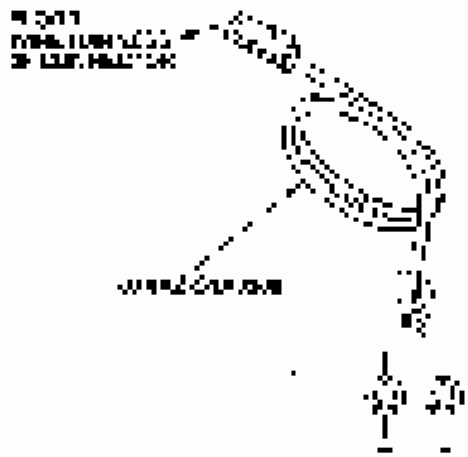
10. Clear the DTC memory. Start the engine. Drive the car at [illegible] mph (40 km/h) or more for [illegible] seconds.

11. Repeat step 8. Is the same DTC [illegible] the [illegible] and has not been [illegible] Does the SRS indicator come on steadily when the ignition switch is turned ON (II)?

    YES - Substitute a known-good clockspring and recheck. If the symptom/indication goes away, replace the original clockspring.

12. Disconnect the SRS breakout box from the SRS simulator adapter harness.

13. [illegible] the driver's side airbag connector to the clockspring. Reconnect the battery negative cable. Make sure the SRS indicator operates properly. See page 23-[illegible]



[illegible]

[illegible] page 23-[illegible]

NO - Check for poor connections or intermittent problems. If necessary, substitute a known-good clockspring.

DTC Troubleshooting (cont'd)

DTC 32-10, 32-18 to 32-18, 32-1A to 32-1F: Open or Short in Front Passenger's Side Airbag Circuit

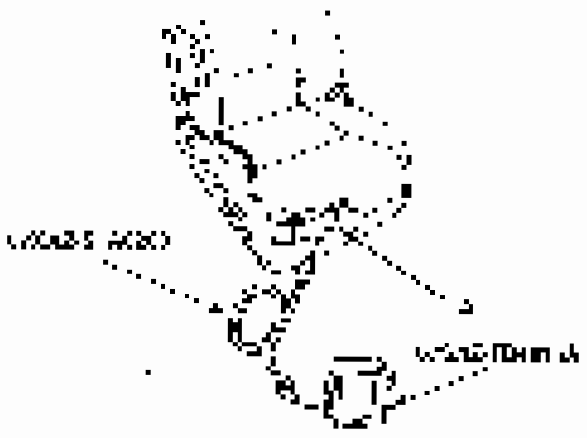
Special Tools Required
- SRS simulator 07S42-0010110
- SRS check harness 07X42-0010200

1. Perform the Initial Inspection (see page 23-51).
2. Turn the ignition switch OFF. Disconnect the SRS 31-pin connector from the driver's airbag. Connect the SRS simulator to the harness side of the 31-pin connector.

   Does the SRS indicator stay on and the DTC 32-10 continue?

   YES—Go to step 3.

   NO—Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the SRS 31-pin connector (see page 23-33). Clear the DTC (see page 23-23), then recheck for DTC. If no other DTC is indicated, troubleshooting is complete.
3. Turn the ignition switch OFF. Disconnect the battery negative cable and wait for 3 minutes.
4. Disconnect all the electrical connectors from the front passenger's airbag.

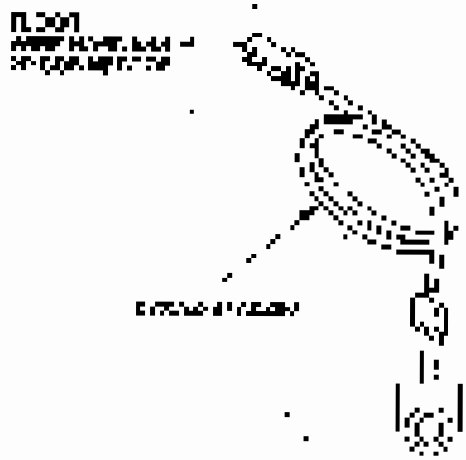


5. Connect the SRS simulator 2 connectors to the connectors on the harness side of the front passenger's airbag.
6. Reconnect the battery negative cable.
7. Erase the DTC from memory.
8. Recheck for DTC (see page 23-51).

   Is DTC 32-10 indicated?

   YES—Go to step 9.

   NO—Open or intermittent malfunction in the front passenger's side airbag squib circuit, replace the front passenger's side airbag (see page 23-71).
9. Turn the ignition switch OFF. Disconnect the battery negative cable and wait for 3 minutes.
10. Disconnect the SRS simulator from the front passenger's airbag (see page 23-71).
11. Disconnect SRS unit connector B (20P) from the SRS unit (see page 23-33). Do not disconnect the SRS unit connector from the harness side.
12. Reconnect the battery negative cable. Turn the ignition switch ON (II).
13. Check continuity between terminal 2 of the front SRS airbag connector B and terminal 2 of the SRS unit connector B.



   Is there continuity?

   YES—Faulty SRS unit or poor connection at SRS unit connector B (20P) and the SRS unit. Check for poor connection. If the connection is OK, replace the SRS unit (see page 23-71).

   NO—Open in the wire between the front passenger's airbag connector and the SRS unit.

DTC 12-3x (12-31 thru 12-38, 12-39 thru 12-41), Short to Ground or Open in Front Passenger's Side Air Bag Initiator

Special Tools Required
- SRS inflator simulator 07SAZ-T0401[illegible]
- SRS simulator tool D07XAZ-S[illegible]
- SRS simulator tool 07[illegible]

1. Turn the ignition switch OFF.

2. [illegible] SRS inflator simulator 07SAZ-T0401[illegible] to the [illegible] harness side connector.

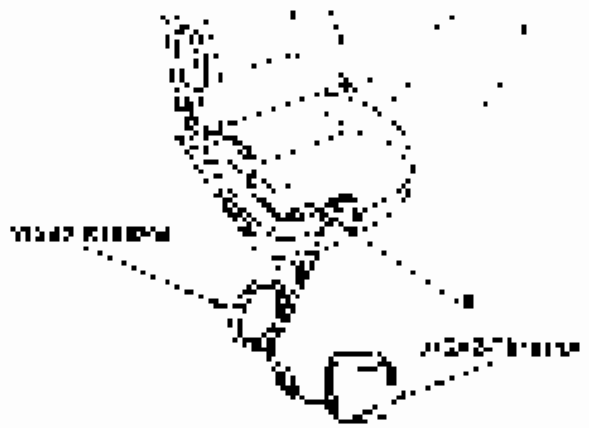
   Does the SRS indicator stay on and the DTC 12-3x remain?

   YES - Go to step 3.

   NO - [illegible] Go to the DTC troubleshooting index and find the DTC that you recorded in step 1. Then go to the troubleshooting flow chart for that DTC. If you cannot find the DTC, go to the DTC troubleshooting index.

3. Turn the ignition switch OFF. Disconnect the battery negative cable and wait for 3 minutes.

4. Disconnect the front passenger's side air bag initiator 2P connector.



5. Connect the SRS inflator simulator 07SAZ-T0401[illegible] to the front passenger's side air bag initiator harness side connector.

6. Reconnect the battery negative cable.

7. Turn the ignition switch ON (II).

8. Wait for [illegible] seconds.

   Does the SRS indicator stay on?

   YES - Go to step 9.

   NO - Check for poor connection at the front passenger's side air bag initiator. If the connection is OK, replace the front passenger's side air bag initiator. See page 23-[illegible]

9. Turn the ignition switch OFF. Disconnect the SRS inflator simulator 07SAZ-T0401[illegible] from the harness side connector.

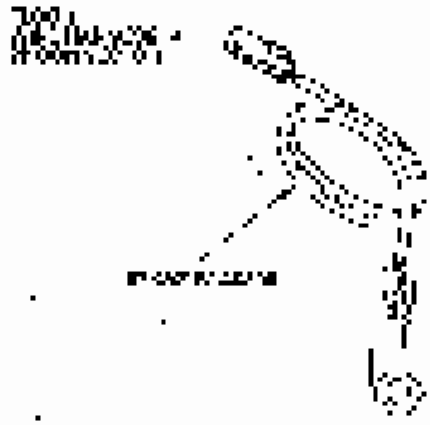
10. Disconnect the [illegible] connector from the SRS unit. See page 23-[illegible]

11. Disconnect SRS unit connector B (32P) from the SRS unit. See page 23-[illegible]. Do not disconnect the 8P sub-harness connector. Check for poor connection at the SRS unit connector. Repair if necessary.

12. Disconnect the [illegible] connector from the SRS unit harness side.

13. Connect the SRS simulator tool 07SAZ-S[illegible] to the No. 23 and No. 24 terminals of SRS unit connector B (32P). See page 23-[illegible]

14. Check for continuity between [illegible] and body ground.



   Is there continuity?

   YES - Replace the SRS unit. See page 23-[illegible]

   NO - Repair open in the wire between the SRS unit and the front passenger's side air bag initiator. If the wire is OK, check for poor connection at the SRS unit connector. If the connection is OK, replace the front passenger's side air bag initiator. See page 23-[illegible]

DTC Troubleshooting (cont'd)

DTC 52-6a (52-6B or 52-6R, 52-6A in the 52-6H): Driver's or Passenger's Side Squib Circuit Malfunction

Special Tools Required
- SRS unit connector 2P terminal kit 07ZAZ-SB4A010
- SRS unit connector kit 07ZAZ-SB40020

1. Check for DTC (see page 23-33).

2. Turn the ignition switch OFF, and check that the SRS indicator comes on about 6 seconds after the ignition switch is turned ON (II).

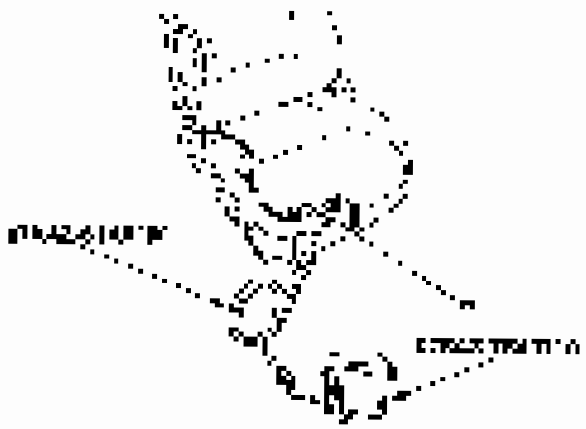
   Does the SRS indicator light up as described?

   YES—Go to step 3.

   NO—Intermittent failure, system is OK at this time. Check for poor connections or loose terminals (see page 23-28). If no connections are found, perform the DTC troubleshooting procedure.

3. Turn the ignition switch OFF, disconnect the negative cable from the battery, and wait for 3 minutes.

4. Remove the driver's or passenger's side airbag.



5. Disconnect the SRS unit connector 2P connector, and inspect it for poor contact.

   Is the connector OK?

   YES—Go to step 6.

   NO—Repair as necessary.

6. Measure the resistance between the terminals in the driver's or passenger's side squib connector.

   Standard: 1.0 – 3.0 Ω

   Is the resistance within the standard?

   YES—Substitute a known-good driver's or passenger's side airbag assembly, and recheck (see page 23-33). If the problem is still there, replace the SRS unit.

   NO—Replace the driver's or passenger's side airbag assembly.

7. Remove the SRS unit.

8. Replace the SRS unit connector 2P terminal kit.

   Terminal No. 1: [illegible]

   Terminal No. 2: [illegible]

   Note—Install the new SRS unit connector 2P terminal kit in the driver's or passenger's side airbag assembly, not in the wire harness (see page 23-33).

9. Turn the ignition switch OFF, and connect the harness-side connector to the SRS unit.

10. Disconnect and reconnect the negative cable to the battery.

11. Measure the resistance between the terminals in the SRS unit connector (see page 23-33). Be sure to measure the resistance on the terminal side of the connector, not the harness side.

12. Disconnect the negative cable from the battery.

13. Reconnect the battery negative cable.

14. Turn the ignition switch ON (II).

15. Check the airbag system indicator light. The light should go off in about 6 seconds. There should be no DTC.

   Is the voltage as specified?

   YES—Go to the DTC troubleshooting. If the SRS unit is faulty, replace the SRS unit.

   NO—Check for poor connections or loose terminals. If no connections are found, replace the SRS unit.

DTC 32-6x (32-90 to 32-98, 32-9A to 32-9F): Short to Ground in Front Passenger's Side Airbag Inflator

Special Tools Required

1. [illegible]

2. [illegible]

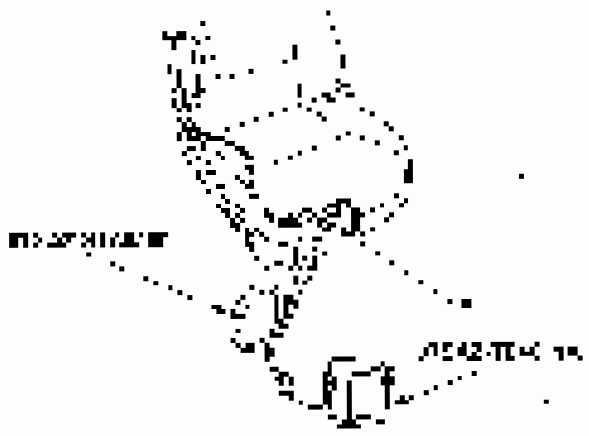
   Does the SRS indicator stay on after DTC 32-6x is cleared?

   YES - [illegible]

   NO - [illegible]

3. Turn the ignition switch OFF. Disconnect the battery negative cable and wait 3 minutes.

4. Disconnect the front passenger's side airbag connector.



5. Connect the SRS inflator simulator connector to the front passenger's side airbag connector.

6. Reconnect the battery negative cable.

7. Clear the DTC. [illegible]

8. Install the [illegible] page 23-[illegible]

   Is DTC 32-6x indicated?

   YES - Go to step 9.

   NO - [illegible]

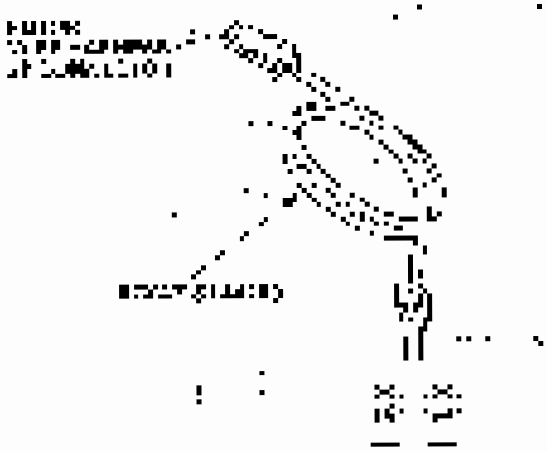
9. Turn the ignition switch ON (II). Disconnect the passenger's side airbag connector.

10. Check for voltage between [illegible]

11. Turn the ignition switch OFF. [illegible]

12. Disconnect the SRS inflator simulator from the SRS airbag connector.

13. Check resistance between [illegible]



   Is the resistance as specified?

   YES - [illegible]

   NO - [illegible]

DTC Troubleshooting (cont'd)

DTC 83-1C, 83-1D, 83-1E, 83-1A to 83-1F: Open or short in connector terminals in Left Side Curtain Air bag (SAB)

Special Tools Required
- SRS Inflator Simulator 07HAZ-0010100
- SRS Unit Wiring Harness Adapter

1. Perform the SRS pre-inspection (see page 23-23).

2. Turn the ignition switch OFF, and check that the SRS indicator comes on for about 6 seconds and then goes out.

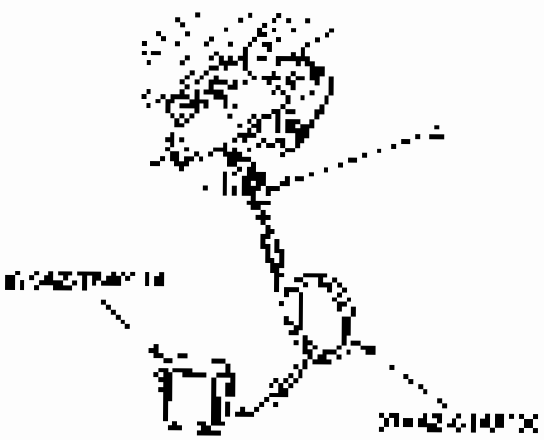
   Does the SRS indicator operate as described?

   YES - Go to step 3.

   NO - Open or short in the wire harness or SRS unit. Repair or replace as necessary. Then perform the DTC troubleshooting procedure.

3. Turn the ignition switch OFF, disconnect the battery negative cable, and wait 3 minutes.

4. Disconnect the connector from the driver's seat belt buckle (DS).



5. Connect the special tool (A) between the wire harness side connector and the main wire harness side connector, as follows:

6. Reconnect the battery negative cable.

7. Turn the ignition switch ON (II).

   Is the SRS indicator blinking?

   YES - Go to step 8.

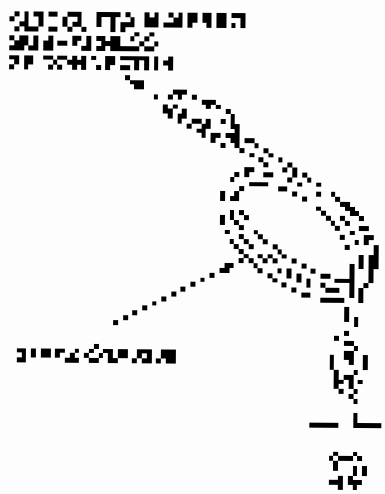
   NO - Open or short in the wire harness between the SRS unit and the driver's seat belt buckle. Repair as necessary. Then perform the DTC troubleshooting procedure.

8. Turn the ignition switch OFF. Disconnect the negative cable and wait 3 minutes.

9. Disconnect the SRS unit connector. Then fully connect the special tool (B) between the SRS unit and the wire harness side connector.

10. Reconnect the negative cable. Then turn the ignition switch ON (II).

11. Clear the DTC, and recheck the indicator as follows:



   Is the SRS indicator blinking?

   YES - Intermittent failure, the system is normal at this time. Check the connector terminals for poor connection. Then perform the SRS unit check (see page 23-143).

   NO - Open or short in the wire harness between the SRS unit and the driver's seat belt buckle. Repair as necessary. Then perform the DTC troubleshooting procedure.

DTC 23-42, 23-50 or 23-55, 24-24 or 24-55 SRS Control Unit Wiring Or Connector Problem (Without Side Curtain Airbag Inflator)

Special Tools Required
- SRS Inflator Circuit Tester (
- SRS
- SRS

1. Read the DTC. Erase page 23-24.

2. Turn the ignition switch to OFF. Disconnect the battery negative cable and wait for 3 minutes.

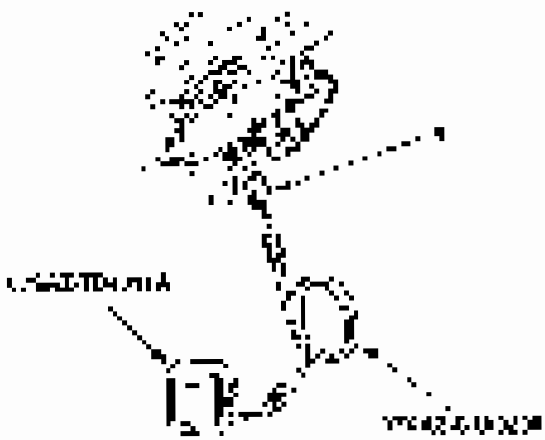
   Disconnect the SRS inflator connector (

   Wait at least

   NOTE: If you do not wait

3. Turn the ignition switch to OFF. Disconnect the battery negative cable and wait for 3 minutes.

4. Check for poor connection at the SRS control unit connector (



5. Connect the SRS inflator connector (

6. Connect the battery negative cable. Turn the ignition switch to ON (II).

7. Check for DTC

   Do not

8. Replace the SRS control unit with a new one (page 23-

9. Check the SRS operation (page 23-

10. Clear the DTC (page 23-

11. Check for DTC

    Do not

12. Replace the SRS control unit with a new one (page 23-

13. Check the SRS operation (page 23-

14. Clear the DTC (page 23-

15. Check for DTC

    Do not

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17. Check the SRS operation (page 23-

18. Clear the DTC (page 23-

19. Check for DTC

    Do not

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21. Check the SRS operation (page 23-

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23. Check for DTC

    Do not

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27. Check for DTC

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346. Clear the DTC (page 23-

347. Check for DTC

     Do not

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349. Check the SRS operation (page 23-

350. Clear the DTC (page 23-

351. Check for DTC

     Do not

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930. Clear the DTC (page 23-

931. Check for DTC

     Do not

932. Replace the SRS control unit with a new one (page 23-

933. Check the SRS operation (page 23-

934. Clear the DTC (page 23-

935. Check for DTC

     Do not

936. Replace the SRS control unit with a new one (page 23-

937. Check the SRS operation (page 23-

938. Clear the DTC (page 23-

939. Check for DTC

     Do not

940. Replace the SRS control unit with a new one (page 23-

941. Check

DTC Troubleshooting (cont'd)

DTC 55-53, 53-80 to 53-89, 31-40 to 31-81: Seat Belt Pretensioner (LH) Side Curtain Airbag Initiator

Special Tools Required
- [illegible]
- [illegible]

1. [illegible]

2. Turn the ignition switch OFF. Disconnect the SRS multiple connector between the SRS unit and the wire harness, then reconnect it.

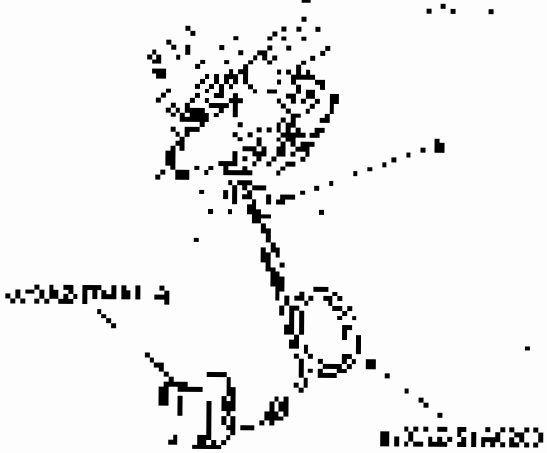
   Is the same DTC indicated as when you first retrieved the DTC?

   YES—Go to step 3.

   NO—Intermittent failure, the system is OK at this time. Check the connections for poor contact (see page 23-62). If the connections are OK, replace the SRS unit, then recheck the DTC. If the DTC is indicated, go to step 3.

4. Turn the ignition switch OFF. Disconnect the harness side connector from the seat belt pretensioner (LH).

5. Measure the resistance between the terminals of the harness side connector as shown.



6. Connect the SRS multiple connector, then turn the ignition switch ON (II). Measure the voltage between the terminals of the harness side connector as shown.

7. [illegible]

8. [illegible]

   Is DTC 55-53 indicated?

   YES—Go to step 9.

   NO—Intermittent failure, the system is OK at this time. Check the connections for poor contact (see page 23-62). If the connections are OK, replace the SRS unit, then recheck the DTC. If the DTC is indicated, go to step 9.

9. [illegible]

10. Turn the ignition switch OFF. Disconnect the SRS multiple connector from the SRS unit.

11. Check for continuity between each terminal of the harness side connector and body ground.

    Is there continuity?

    YES—Short in the wire harness between the SRS unit and the seat belt pretensioner (LH). Repair it.

    NO—Go to step 12.

12. [illegible]

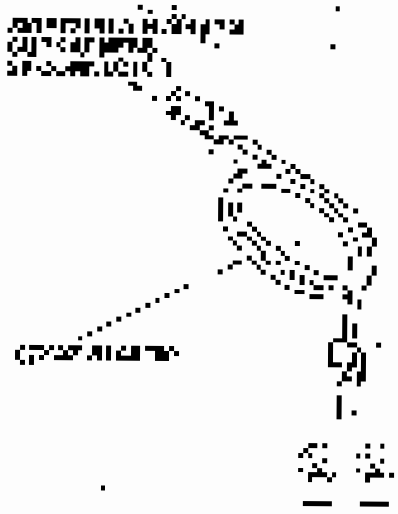
13. Check for continuity between each terminal of the harness side connector and body ground.

    Is there continuity?

    YES—Short in the wire harness between the SRS unit and the seat belt pretensioner (LH). Repair it.

    NO—Go to step 14.

14. Check for voltage between each terminal of the harness side connector and body ground.



    Is there voltage at any terminal?

    YES—Short in the wire harness between the SRS unit and the seat belt pretensioner (LH). Repair it.

    NO—Go to step 15.

DTC 23-4[illegible] [23-6[illegible] A1-88, 23-88 (n 23-9F): Short to Ground in Left Side Curtain Airbag Initiator

Special Tools Required
- SRS Inflator Simulator (TSA2-TB-0114)
- SRS Diagnostic Tool (DTX/C-SRT-100)

1. Disconnect the [illegible]

** [illegible]

Is the SRS indicator lamp on?

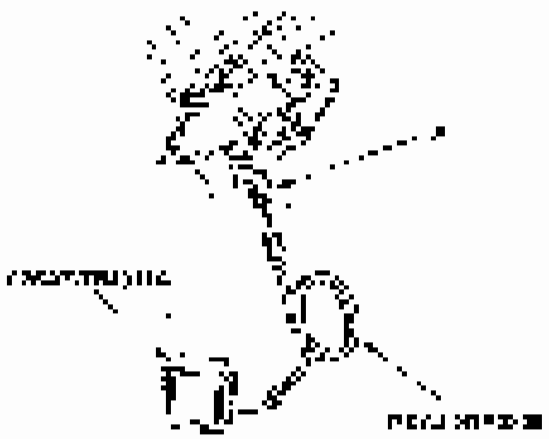
YES - Go to step 3.

NO - [illegible]

2. [illegible]

3. Disconnect the left side curtain airbag initiator connector.

4. Disconnect the wire harness connector from the left side curtain airbag initiator. Inspect for [illegible]



5. Connect the SRS inflator simulator to the left side curtain airbag initiator connector and the wire harness connector. Is the SRS indicator lamp illuminated?

YES - Replace the SRS inflator simulator.

NO - Check for a short to ground in the wire harness between the left side curtain airbag initiator connector and the [illegible]

6. Disconnect the SRS unit connector C1[illegible] from the SRS unit. See page 23-87. Does the disconnected SRS unit connector have [illegible]

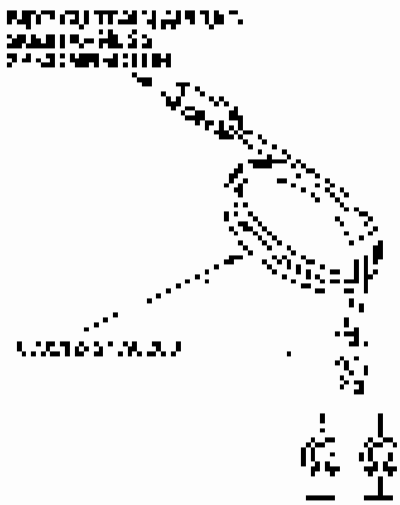
YES - Replace the SRS unit. See page 23-87.

NO - Check for a short to ground in the wire harness between the SRS unit connector and the [illegible]

7. Disconnect the [illegible]

** [illegible]

[illegible]



[illegible]

YES - Replace the SRS unit. See page 23-87.

NO - Check for a short to ground in the wire harness between the [illegible]

DTC Troubleshooting (cont'd)

DTC 34-1A (34-10 to 34-19, 34-1A to 34-1F): Open or Short-to-Ground in Right SIR Coupler Airbag Initiator

Check the following:
- SRS 10A fuse in the under-dash fuse/relay box
- SRS unit 32P connector

Clear the DTC memory (see page 23-62).

2. Turn the ignition switch ON (II). Check the SRS indicator on the ABS/brake system control unit for about 6 seconds after the ignition switch is turned ON (II).

Is the indicator light on for about 6 seconds and is DTC 34-1A still indicated?

YES - Go to step 3.

NO - Intermittent failure, probably a poor connection or wire harness. Refer to Troubleshooting Intermittent Failures, page 23-65. If no poor connection or wire harness is found, replace the SRS unit.

3. Turn the ignition switch OFF. Disconnect the 32P connector from the SRS unit, and check for poor connections or loose terminals.

4. Disconnect the 2P connector from the right SIR coupler, and check for poor connections or loose terminals.

5. Connect the 2P connector to the wire harness side 2P connector, and check for poor connections or loose terminals.

6. Turn the ignition switch ON (II).

7. Clear the DTC memory.

8. Check the DTC (see page 23-62).

Is DTC 34-1A indicated?

YES - Go to step 9.

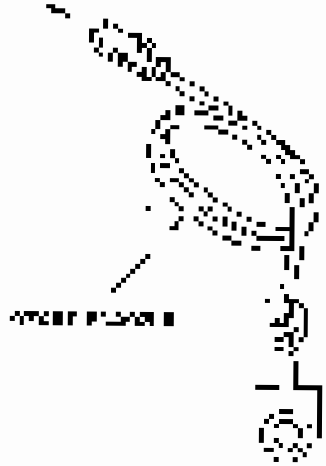
NO - Intermittent failure, probably caused by poor connections or loose terminals. Check the connectors and terminals at the right SIR coupler. If no poor connections or loose terminals are found, replace the SRS unit.

9. Turn the ignition switch OFF.

10. Disconnect the SRS unit connector. Refer to the SRS unit connector terminal layout on page 23-61. Check for poor connections or loose terminals at the SRS unit connector.

11. Check for continuity between the wire harness side 2P connector terminals. Refer to the terminal arrangement of the 2P connector.

2P CONNECTOR
Wire harness side connector



Is there continuity between the terminals?

YES - Faulty SRS unit. Replace the SRS unit, then clear the DTC and the SRS unit. Check the system operation. If poor connections or loose terminals are found, repair the connections or terminals.

NO - Open in wire harness. Repair or replace the wire harness between the SRS unit and the right SIR coupler.

DTC B1435 (54-31) to B1437 (54-33), B1441 (54-37) to B1443 (54-39):
Driver's Side Passenger Compartment Discriminating Sensor Circuit Malfunction; Driver's Side Passenger Compartment Discriminating Sensor Circuit Short; Driver's Side Passenger Compartment Discriminating Sensor Circuit Open

Special Tools Required:
- [illegible]
- [illegible]
- [illegible]

1. Erase the DTC from memory (see page 23-21).

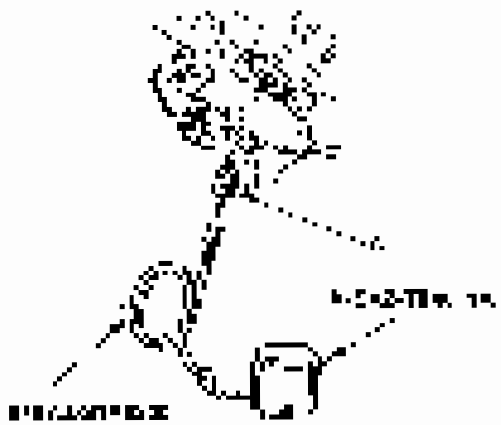
2. Turn the ignition switch to ON (II) and wait for at least 60 seconds. Do not start the engine. Does the SRS indicator light come on for approximately 6 seconds and then go off?

YES - Go to step 3.

NO - [illegible]

3. [illegible]

4. Disconnect the right side curtain airbag connector from the side curtain airbag subharness (A).



5. Connect the SRS "I" wire simulator kit 2 connector and the simulator lead to the side curtain airbag subharness.

6. Check for an intermittent problem.

7. Do you still [illegible]

8. [illegible]

YES - [illegible]

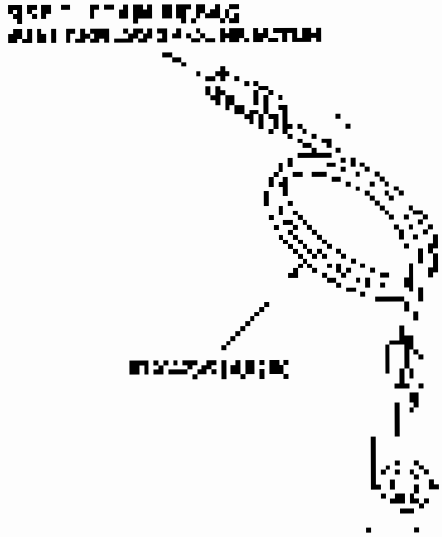
NO - Short in the right side curtain airbag subharness, replace the right side curtain airbag subharness (see page 23-142).

9. [illegible]

10. [illegible] (see page 23-22). Do not short between the SRS simulator lead D (+) terminal and body ground. Is the [illegible]

11. [illegible]

12. Disconnect the SRS simulator kit 2 connector (see page 23-22). Check resistance between the simulator lead D (+) terminal and body ground. Is there [illegible]



YES - [illegible]

NO - [illegible]

DTC Troubleshooting (cont'd)

DTC 36-01, 01-11 or 36-02, 34-BA or 36-BF: Slip Indicator Control Unit Internal Malfunction

Special Tools Required
- SRS tester
- SRS simulator

1. Turn the ignition switch OFF.
2. Disconnect the SRS unit 32P connector.
3. Connect the SRS simulator to the SRS unit 32P connector.
4. Turn the ignition switch ON (II).
5. Wait 60 seconds.
6. Turn the ignition switch OFF (0).
7. Disconnect the SRS simulator from the SRS unit 32P connector.
8. Connect the SRS unit 32P connector.
9. Clear the DTC from the SRS unit memory.
10. Turn the ignition switch ON (II).
11. Check the SRS indicator light.

Does the SRS indicator light go off?

YES - Go to step 12.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the SRS unit 32P connector. If no poor connections or loose terminals are found, replace the SRS unit.

12. Turn the ignition switch OFF (0).
13. Disconnect the SRS unit 32P connector.
14. Check for an open between the SRS unit 32P connector and body ground.

Is there an open?

YES - Repair open in the wire between the SRS unit 32P connector and body ground.

NO - Check for poor connections or loose terminals at the SRS unit 32P connector. If no poor connections or loose terminals are found, replace the SRS unit.

15. Check the SRS indicator light.

Does the SRS indicator light go off?

YES - Go to step 16.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the SRS unit 32P connector. If no poor connections or loose terminals are found, replace the SRS unit.

16. Turn the ignition switch OFF (0).
17. Disconnect the SRS unit 32P connector.
18. Check for an open between the SRS unit 32P connector and body ground.

Is there an open?

YES - Repair open in the wire between the SRS unit 32P connector and body ground.

NO - Check for poor connections or loose terminals at the SRS unit 32P connector. If no poor connections or loose terminals are found, replace the SRS unit.

DTC 24-8x (24-48 thru 24-53, 24-56 or 24-57): Shorted Circuit in Right Side Curtain Air Bag Inflator

Special Tools Required
- SRS breakout harness D016Z0-TB-0174
- SRS breakout box D016Z0-TB-0173

1. Observe the DTC history (see page 23-13).

2. Turn the ignition switch to LOCK (0). Disconnect the negative battery cable and wait two minutes before proceeding.

   Is the DTC 24-48 thru 24-53, 24-56 or 24-57 still present?

   YES - Continue with this procedure.

   NO - Intermittent failure, the system is operating correctly at this time. Check for poor connections or loose terminals at the right side curtain air bag inflator. Refer to the wiring diagram for the SRS. Clear the DTC from memory (see page 23-13). Test the system operation.

3. Turn the ignition switch to LOCK (0). Disconnect the negative battery cable and wait two minutes before proceeding.

4. Disconnect the right side curtain air bag inflator connector from the connector on the right side of the vehicle.

5. Connect the SRS breakout harness D016Z0-TB-0174 between the right side curtain air bag inflator and the vehicle harness.

6. Reconnect the battery negative cable.

7. Observe the DTC history.

8. Refer to the DTC table (see page 23-21).

   Is DTC 24-8x still present?

   YES - Continue with this procedure.

   NO - Intermittent failure, the right side curtain air bag inflator circuit is operating correctly at this time. Check for poor connections or loose terminals at the right side curtain air bag inflator. Refer to the wiring diagram for the SRS. Clear the DTC from memory (see page 23-13). Test the system operation.

9. Turn the ignition switch to LOCK (0). Disconnect the negative battery cable and wait two minutes before proceeding.

10. Disconnect the SRS breakout harness D016Z0-TB-0174 from the vehicle harness. Connect the SRS breakout box D016Z0-TB-0173 between the breakout harness and the vehicle harness.

11. Reconnect the battery negative cable. Turn the ignition switch to ON (II).

12. Check the resistance between terminal 1 of the SRS breakout box and body ground. Refer to the SRS breakout box operating instructions for terminal locations.

   Is the resistance as specified?

   YES - Refer to DTC table, the short is in the right side curtain air bag inflator circuit (see page 23-21).

   NO - Short in the wiring harness between the SRS breakout box and the vehicle harness. Refer to the wiring diagram for the SRS. Repair as necessary. Clear the DTC from memory (see page 23-13). Test the system operation.

DTC Troubleshooting (cont'd)

DTC 41-1x (41-10 to 41-18, 41-1A to 41-1F): [illegible]

Special Tools Required
- SRS [illegible] 07AAZ-SDAA100
- SRS [illegible] 07HAZ-SDAA100

1. [illegible] DTC, [illegible] page 23-[illegible].

2. [illegible] Disconnect [illegible] and check for [illegible] between SRS unit harness side connector terminal and body ground:

   Is there [illegible] SRS [illegible] connected?

   YES - Go to step 3.

   NO - [illegible] Check for [illegible] between SRS unit harness side connector terminal [illegible] and body ground. If there is [illegible] repair [illegible] harness.

3. [illegible] Disconnect [illegible] connector A (20P) and SRS unit [illegible] connector A (32P). Check for [illegible] between [illegible] connector A terminal [illegible] and body ground:

   Is there [illegible]?

   YES - [illegible]

   NO - Repair [illegible] harness. [illegible] DTC 41-1x troubleshooting, step 4.

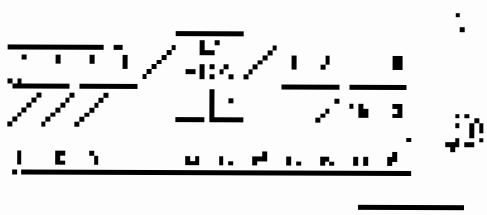
4. Disconnect the [illegible] connector from the [illegible].

5. Disconnect the engine control module/transmission control module (ECM/TCM) connector A from the ECM/TCM. Check for [illegible] between ECM/TCM connector A terminal [illegible] and body ground:

6. Disconnect [illegible] connector from the SRS unit. Check for [illegible] between SRS unit harness side connector terminal [illegible] and body ground:

7. Check for [illegible] between the [illegible] terminal of SRS unit connector A (32P). There should be an open circuit, short and [illegible]

[illegible]



[illegible]

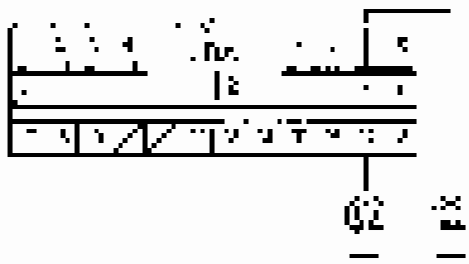
Is [illegible]?

YES - [illegible]

NO - Go to step 8.

6. Check the resistance between the [illegible] terminal and body ground.

[illegible]



[illegible]

Is the resistance less than 1 Ω?

YES: Go to step 8.

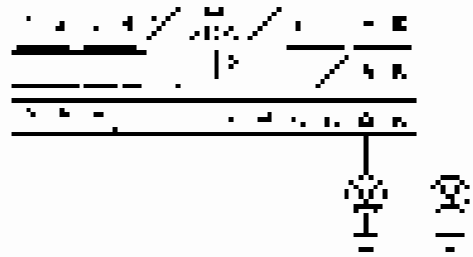
NO: Repair the open circuit between the [illegible] terminal and body ground.

8. Measure the battery voltage between [illegible].

10. Turn the ignition switch to [illegible].

11. Check the voltage between [illegible] terminal and body ground.

[illegible]



[illegible]

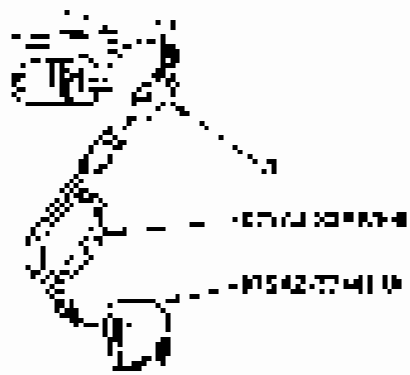
Is the voltage less than 1 V?

YES: Go to step 13.

NO: Repair the open circuit between the [illegible] terminal and the [illegible] terminal.

12. Turn the ignition switch to [illegible].

13. Connect the [illegible] terminal jumper connector and the [illegible] terminal jumper connector to the [illegible] connector.

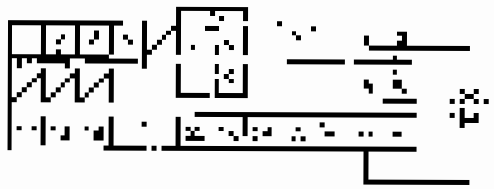


[illegible]

DTC Troubleshooting (cont'd)

14. [illegible]

[illegible]



[illegible]

[illegible]

YES - [illegible] page 23-[illegible]. [illegible] page 23-[illegible].

NO - [illegible]

DTC 42-1a, 42-1b to 42-1g, 42-1j, 42-1k to 42-1p:
No Signal from Throttle Position Sensor

1. Check for DTC memory. See page 23-25.

2. Turn the ignition switch OFF. Disconnect connector B (31P) from the ECM. Inspect connector for loose or poor contact.

   Is connector OK?

   YES - Go to step 3.

   NO - If connector is OK, replace the ECM. After replacing the ECM, go to the ECM replacement procedure on page 23-232. If problem persists, go to the DTC troubleshooting index.

3. Turn the ignition switch ON (II). Measure voltage between terminal B-3 (+) and body ground.

   Is there 4.5 – 5.5 V?

   YES - Go to step 4.

   NO - Check for open in wire between terminal B-3 and sensor 5 V terminal. If wire is OK, replace the ECM. After replacing the ECM, go to the ECM replacement procedure on page 23-232.

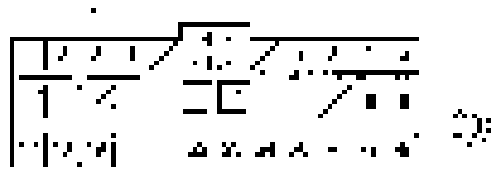
4. Check for open in wire between terminal B-2 and sensor ground terminal. If wire is OK, replace the ECM. After replacing the ECM, go to the ECM replacement procedure on page 23-232.

5. Disconnect vacuum hose from the throttle body. Start the engine and let it idle.

6. Reconnect the vacuum hose. Connect a scan tool to the data link connector. See page 23-22.

7. Check for any pending codes. Clear the codes. See the scan tool instruction manual. Drive the vehicle at more than 40 mph (64 km/h) for 10 minutes.

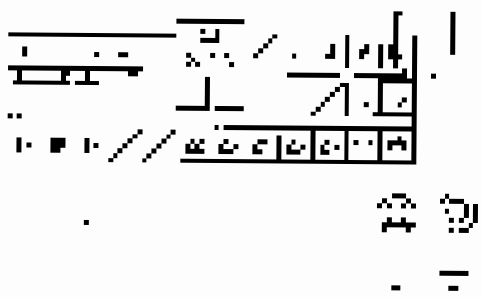
   Is DTC P0121 indicated?

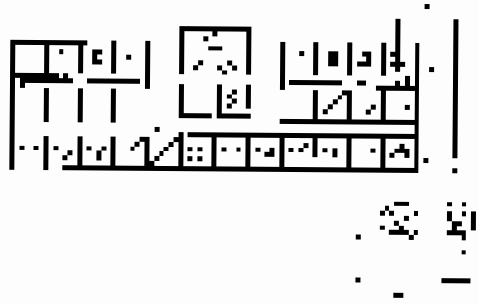


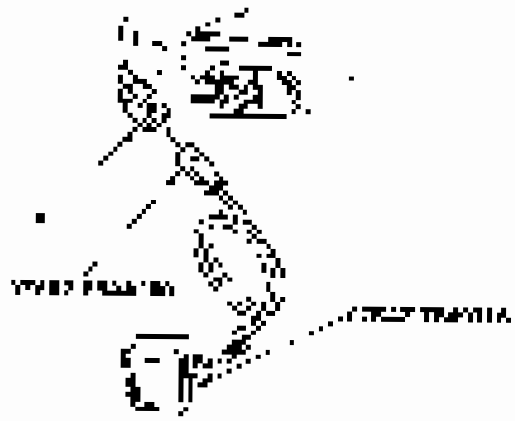
   YES - Go to step 8.

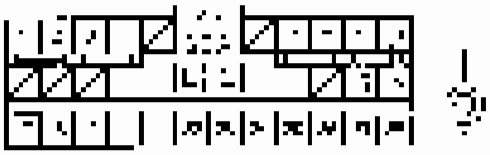
   NO - Check for poor contact in the ECM connector. If the connector is OK, replace the ECM. After replacing the ECM, go to the ECM replacement procedure on page 23-232.

DTC Troubleshooting (cont'd)









DTC Troubleshooting (cont'd)

DTC 41-2x (41-20 to 41-22, 41-24 to 41-2F), 41-3x (41-30 to 41-38, 41-3A to 41-3F), 41-4x (41-40 to 41-48, 41-4A to 41-4F): Frontal Failure of Front Left Impact Sensor

1. Check the DTC history (see page 23-73).

2. Turn the ignition switch to LOCK (0). Disconnect the SRS unit 32P connector. Inspect the connector for poor contact, bent terminals, corrosion, damage, and backed-out terminals.

   Is the connector in good condition?

   YES - Replace the front left impact sensor (see page 23-111). Is the DTC cleared when you perform the DTC confirmation procedure?

   NO - Repair as necessary. Clear the DTC, and perform the DTC confirmation procedure. If you have any questions about this procedure, contact your dealer's technical assistance department for information.

DTC 42-2x (42-20 to 42-22, 42-24 to 42-2F), 42-3x (42-30 to 42-38, 42-3A to 42-3F), 42-4x (42-40 to 42-48, 42-4A to 42-4F): Frontal Failure of the Right Front Impact Sensor

1. Check the DTC history (see page 23-73).

2. Turn the ignition switch to LOCK (0). Disconnect the SRS unit 32P connector. Inspect the connector for poor contact, bent terminals, corrosion, damage, and backed-out terminals.

   Is the connector in good condition?

   YES - Replace the front right impact sensor (see page 23-111). Is the DTC cleared when you perform the DTC confirmation procedure?

   NO - Repair as necessary. Clear the DTC, and perform the DTC confirmation procedure. If you have any questions about this procedure, contact your dealer's technical assistance department for information.

DTC 43-1x/43-10 or 43-1B, 43-30 to 43-1F1:
Sub-Circuit Incorrect, Intermittent or Poor Signal

Special Tools Required
-SRS Diagnostic Tool (T83A-14017-AH)
-SRS Breakout Box (T83A-14B642-AH)

1 Perform Quick Test.

2 Turn the ignition switch OFF. Disconnect the battery negative cable and wait for 3 minutes. Disconnect the 32-way SRS connector. Visually inspect the connector.

Does the SRS indicator stay on or the DTC 43-1x remain?

YES - Go to step 3.

NO - Intermittent. Refer to Wiring Systems Diagnosis and Testing, page 23-10. Check for intermittent conditions. If no problem found, clear DTC and return vehicle to customer.

3 Turn the ignition switch OFF. Disconnect the battery negative cable and wait for 3 minutes.

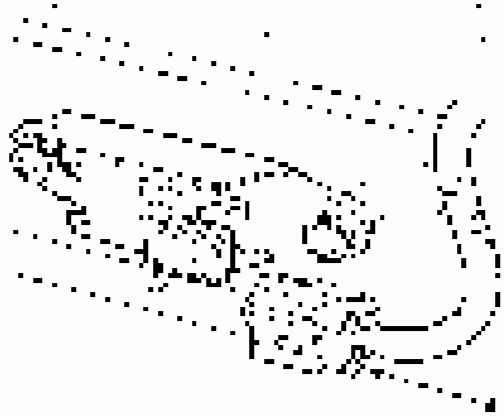
4 Check for poor connection between the floor wiring harness SRS connector and the SRS unit. Inspect connector.

Is connector OK?

YES - Go to step 5.

NO - Repair the poor connection and recheck. If the DTC 43-1x can't be removed, go to step 5.

5 Disconnect the floor wiring harness SRS connector from the SRS unit. Inspect connector.

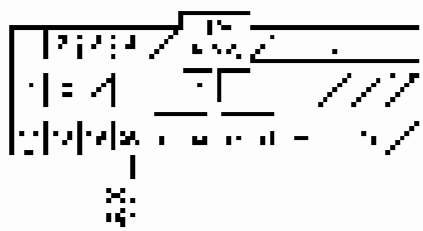


Is connector OK?

YES - Go to step 6.

NO - Repair the poor connection and recheck. If the DTC 43-1x can't be removed, go to step 6.

6 Check for continuity between the Yellow/Red and Yellow/Black wires at the floor wiring harness SRS connector. There should be continuity (less than 5 ohms).



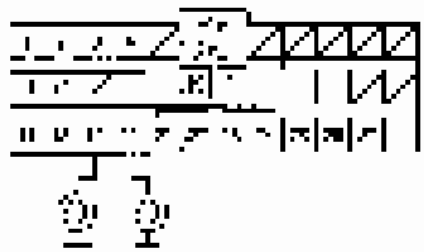
Is there continuity?

YES - Go to step 7.

NO - Check for a short to ground in the Yellow/Red or Yellow/Black wire between the floor wiring harness SRS connector and the SRS unit. If OK, replace the floor wiring harness.

DTC Troubleshooting (cont'd)

9. Check resistance between the No. 1 terminal of the SRS main connector B (SDM) and body ground, and between the No. 2 terminal and body ground. There should be no continuity (1 MΩ or more).



SRS main connector B (SDM)

Is the resistance as specified?

YES - Go to step 10.

NO - Check for poor contact in the connectors and harness. If no fault is found, replace the SDM.

10. Reconnect the battery negative cable.

11. Turn the ignition switch ON (II).

12. Check for voltage between the No. 1 terminal of the SRS main connector B (SDM) and body ground, and between the No. 2 terminal and body ground. There should be 11 V or more.

SRS main connector B (SDM)

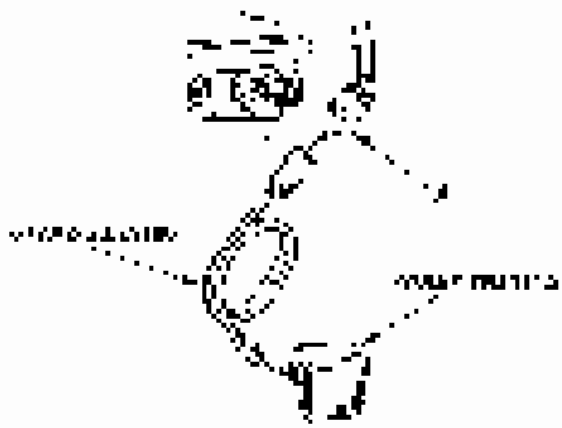
Is the voltage as specified?

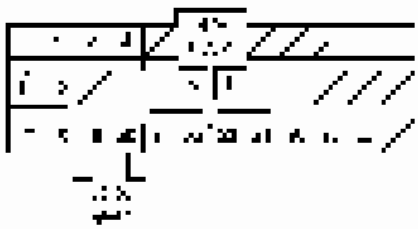
YES - Go to step 13.

NO - Check for poor contact in the connectors and harness. If no fault is found, replace the floor wire harness.

13. Turn the ignition switch OFF.

14. Disconnect the SRS [illegible]





DTC Troubleshooting (cont'd)

DTC 44-1x (44-10 to 44-13, 44-1A to 44-1F: No Signal from the Right Side Impact Sensor)

Special Tools Required
- [illegible]
- [illegible]

1. [illegible]

2. Turn the ignition switch to ON (II), and wait for 60 seconds or more. Is the indicator on?

   Does the SRS indicator stay on and is DTC [illegible]?

   Yes—Go to step 3.

   No—[illegible] page 23-[illegible] and troubleshoot the [illegible] DTC. Then go to step 3. If you don't find any problem, go to step 3.

3. Turn the ignition switch to OFF. Disconnect the battery negative cable, and wait for 3 minutes.

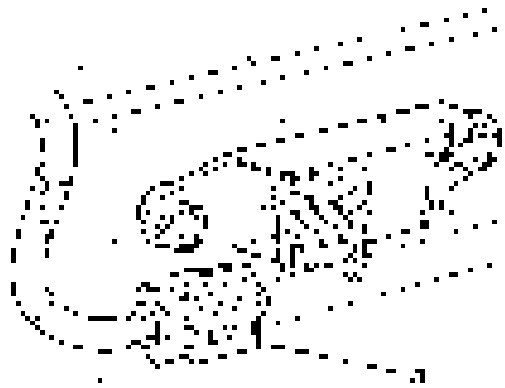
4. [illegible]

   Is the connector OK?

   YES—Go to step 5.

   NO—Repair the poor connection. Then erase the DTC. Go to step 6.

5. Disconnect the connector from the right side impact sensor. Check for poor contact between the terminals and the connector.



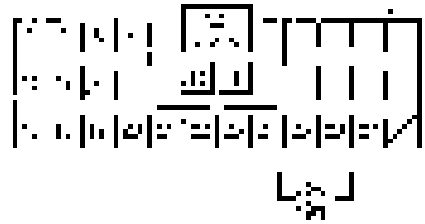
   Is the connector OK?

   YES—Go to step 6.

   NO—Repair the poor connection. Then erase the DTC. Go to step 6.

6. Check the resistance between the [illegible] terminal and body ground.

   Connector connected to part



   Is the resistance [illegible]?

   Yes—Go to step 7.

   No—Go to step 8.

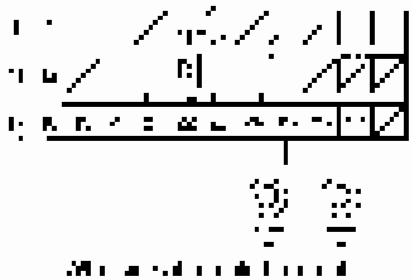
7. [illegible]

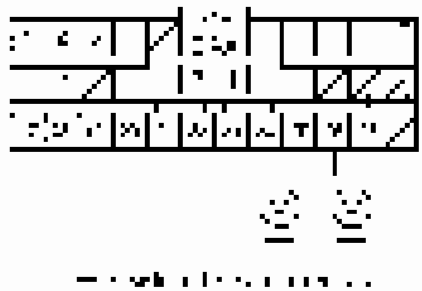
   Is the [illegible] OK?

   Yes—[illegible]

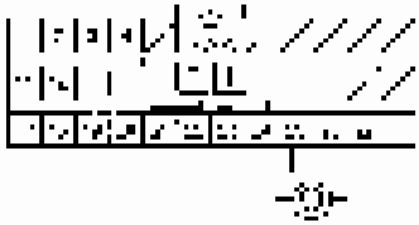
   No—Go to step 8.

8. [illegible]





DTC Troubleshooting (cont'd)



DTC 43-2x (43-20 to 43-25, 43-2A to 43-2F), 43-3x (43-30 to 43-35, 43-3A to 43-3F), 43-4x (43-40 to 43-45, 43-4A to 43-4F): Internal Failure of the Left Side Impact Sensor (Wire)

1. [illegible]

2. [illegible]

   Does the SRS indicator stay on, and is DTC 43-2x (43-20 to 43-25, 43-2A to 43-2F) stored?

   YES - Replace the left side impact sensor (see page 23-[illegible]). After the repair is complete, clear the DTC (see page 23-[illegible]). Then perform the SRS self-diagnostic system check (see page 23-[illegible]).

   NO - Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the left side impact sensor connector (see page 23-[illegible]). If necessary, DTC troubleshooting index.

DTC 44-2x (44-20 to 44-25, 44-2A to 44-2F), 44-3x (44-30 to 44-35, 44-3A to 44-3F), 44-4x (44-40 to 44-45, 44-4A to 44-4F): Internal Failure of the Right Side Impact Sensor (Wire)

1. Clear the DTC memory (see page 23-[illegible]).

2. Turn the ignition switch OFF, [illegible] and check that the SRS indicator comes on for about 6 seconds, then goes off.

   Does the SRS indicator stay on, and is DTC 44-2x (44-20 to 44-25, 44-2A to 44-2F) stored?

   YES - Replace the right side impact sensor (see page 23-[illegible]). After the repair, replace the SRS unit (see page 23-[illegible]).

   NO - [illegible]

DTC Troubleshooting [cont'd]

DTC 45-1x (45-10 to 45-19, 45-1A to 45-1F): No Signal from the Left Side [...] (Except Canada)

Required Tools: Required
- [illegible]
- [illegible]

1. [illegible]

2. [illegible]

   [illegible]

   YES - Go to step 3.

   NO - [illegible] Check for DTC 45-1x (except 45-1B) in the [illegible] Is DTC 45-1x indicated?

   YES - [illegible]

   NO - [illegible]

3. [illegible]

4. [illegible]

   [illegible]

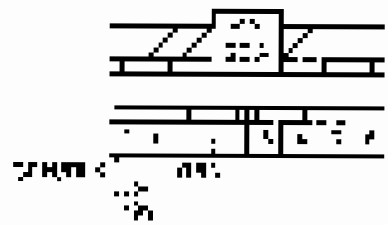
   YES - [illegible]

   NO - [illegible]

5. [illegible]

6. [illegible]

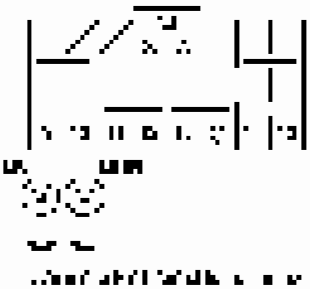
7. [illegible]



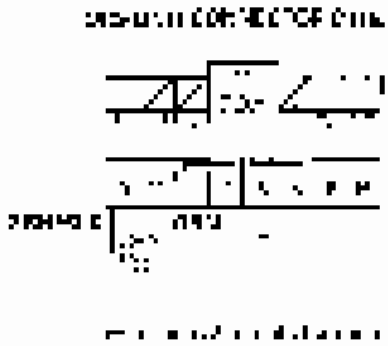
[illegible]

[illegible]

NO - [illegible]



DTC Troubleshooting (cont'd)



DTC 46-12, 46-13 or 46-18, 46-19 or 46-1F: No Signal from the Right Side Impact Sensor (code 12)

Special Tools Required
- SRS breakout box set 07HAZ-0010100
- SRS terminal set (small) 07HAZ-0020400

1. Check for DTC 46-12, 46-13 or 46-18, 46-19 or 46-1F (see page 23-23).

Was DTC 46-12, 46-13 or 46-18, 46-19 or 46-1F indicated?

YES - Go to step 2.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the right side impact sensor (see page 23-23). If the connections are good, replace the right side impact sensor (see page 23-25).

2. Turn the ignition switch OFF.

3. Check the connection between the right side impact sensor 3P connector and the right side body wire harness 3P connector.

Are the connectors OK?

YES - Go to step 4.

NO - Repair as necessary. Clear the DTC (see page 23-23). Recheck for DTC 46-12, 46-13 or 46-18, 46-19 or 46-1F. If DTC 46-12, 46-13 or 46-18, 46-19 or 46-1F is indicated, replace the right side impact sensor.

4. Disconnect the 3P connector from the right side impact sensor. Install a terminal adapter kit on the right side impact sensor 3P connector (see page 23-23).

5. Disconnect the 3P connector from the SRS unit. Install a terminal adapter kit on the SRS unit 3P connector (see page 23-23).

6. Connect the breakout box between the right side impact sensor 3P connector and the SRS unit 3P connector.

7. Connect the SRS unit connector. Turn the ignition switch ON (II).

8. Check for voltage between the terminals listed below at the breakout box.

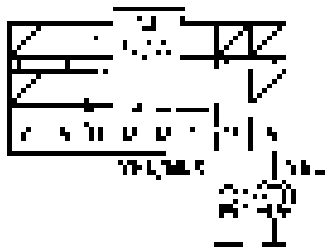
Terminal	Terminal	Voltage
[illegible]	[illegible]	[illegible]

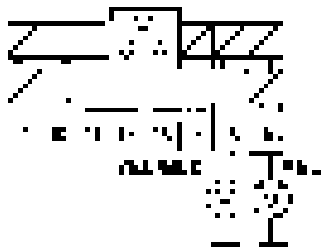
Is the voltage as specified?

YES - Go to step 9.

NO - Check for poor connections or loose terminals at the SRS unit 3P connector. If the connections are good, replace the SRS unit (see page 23-23).

DTC Troubleshooting (cont'd)





DTC Troubleshooting (cont'd)

DTC 45-2x (45-28 to 45-29, 45-2A to 45-2F, 45-3x (45-30 to 45-39, 45-3A to 45-3F), 45-Bx (45-B0 to 45-B9, 45-BA to 45-BF): Driver's Front Impact Sensor (resistor)

1. Refer to DTC troubleshooting page 23-25.
2. Turn the ignition switch OFF. Disconnect the SRS 3P (yellow) connector from the front sensor and measure resistance between the terminals.

   Does the SRS indicator stay on after you clear the DTC and cycle the ignition switch?

   YES - Replace the driver's front impact sensor with a new one. Go to step 3 after you clear the DTC and cycle the ignition switch.

   NO - Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the SRS unit. If the connections are good, refer to the DTC troubleshooting index.

DTC 46-2x (46-20 to 46-29, 46-2A to 46-2F), 46-3x (46-30 to 46-39, 46-3A to 46-3F), 46-Bx (46-B0 to 46-B9, 46-BA to 46-BF): Passenger's Front Impact Sensor (resistor)

1. Refer to DTC troubleshooting page 23-25.
2. Turn the ignition switch OFF. Disconnect the SRS 3P (yellow) connector from the front sensor and measure resistance between the terminals.

   Does the SRS indicator stay on after you clear the DTC and cycle the ignition switch?

   YES - Replace the passenger's front impact sensor with a new one. Go to step 3 after you clear the DTC and cycle the ignition switch.

   NO - Intermittent failure, system is normal at this time. Check for poor connections or loose terminals at the SRS unit. If the connections are good, refer to the DTC troubleshooting index.

DTC B1-7x, B1-7E to B1-7B, B1-7A, or B1-2F;
B1-6x, B1-40 or B1-48, B1-4A, or B1-4F:
Internal Failure of the SRS Unit

NOTE: Before you troubleshoot any of these DTCs, check the battery voltage. If the voltage is low, repair the charging system, and then troubleshoot the SRS. If the battery voltage is normal, go to the DTC troubleshooting flow chart.

1. [illegible]

2. [illegible] SRS unit connector. Is there about 2 seconds and then goes off?

   [illegible]

   [illegible]

NOTE: If you replaced the SRS unit, be sure to perform the SRS calibration procedure after the repair.

DTC B2-8x, B2-80 to B2-88, B2-8A, or B2-8F;
B2-9x, B2-90 to B2-98, B2-9A, or B2-9F:
Internal Failure of the SRS Unit

NOTE: Before you troubleshoot any of these DTCs, check the battery voltage. If the voltage is low, repair the charging system, and then troubleshoot the SRS. If the battery voltage is normal, go to the DTC troubleshooting flow chart.

1. Check for DTC memory. Is there page 23-27?

2. Turn the ignition switch OFF. Disconnect the SRS unit connector. Turn the ignition switch ON (II). Is there about 2 seconds and then goes off?

   [illegible]

   YES - Replace the SRS unit. Is there page 23-110?

NOTE: If you replaced the SRS unit, be sure to perform the SRS calibration procedure after the repair. See page 23-27. If you have DTC B2-8x, B2-80, or B2-88, go to the DTC troubleshooting flow chart.

DTC Troubleshooting (cont'd)

DTC 52-4A (52-4A to 52-4B, 52-4A to 52-4F)
52-4B (52-4C to 52-4D, 52-4A to 52-4F)
52-4C (52-4E to 52-4D, 52-4A to 52-4F)
Incomplete Collision Data Set Up

NOTE: Before you begin this troubleshooting, copy the DTC data to the data list. Check the battery terminals and fuses. Then begin troubleshooting with the charging system. If the battery terminals and fuses are OK, begin troubleshooting the SRS. If you begin troubleshooting the SRS first, the charging system may set a DTC, and then you cannot clear the DTC.

1. Refer to the DTC memory. See page 23-28

2. Turn the ignition switch to ON (II). Clear the DTC using the SCS tool or by disconnecting the battery cable and then reconnect it.

   Does the SRS indicator light up for about 6 seconds and then go off?

   YES - Refer to the SRS unit. See page 23-142

   NO - Refer to the SRS indicator. See page 23-140

DTC 52-4D (52-4D to 52-4B, 52-4D to 52-4F)
52-4E (52-4E to 52-4C, 52-4D to 52-4F)
52-4F (52-4F to 52-4E, 52-4D to 52-4F)
Impact Sensor Failure

NOTE: Before you begin this troubleshooting, copy the DTC data to the data list. Check the battery terminals and fuses. Then begin troubleshooting with the charging system. If the battery terminals and fuses are OK, begin troubleshooting the SRS. If you begin troubleshooting the SRS first, the charging system may set a DTC, and then you cannot clear the DTC.

1. Refer to the DTC memory. See page 23-28

2. Turn the ignition switch to ON (II). Clear the DTC using the SCS tool or by disconnecting the battery cable and then reconnect it.

   Does the SRS indicator light up for about 6 seconds and then go off?

   YES - Refer to the SRS unit. See page 23-142

   NO - Refer to the SRS indicator. See page 23-140

DTC P0133 (P0130 to P0134, P0136 to P0141), P0420 (P0420 to P0421, P0423 to P0424, P0426 to P0427, P0429 to P0430): Intermittent Failure of the EGR Sensor Circuit

NOTE: Before you troubleshoot, try to duplicate the problem. If the problem does not occur when you perform the following procedure, it may have been caused by a poor connection. Check for poor connections or loose terminals at the suspected circuit before you replace parts. Refer to Troubleshooting Intermittent Problems.

1. Check for DTCs (see page 23-24).

2. Turn the ignition switch ON (II). Select Data List with the HDS. Monitor the EGR sensor signal while you wiggle the sensor wire harness and connectors.

   Is the voltage fluctuating?

   YES - Replace the EGR sensor (see page 23-125).

   NO - Intermittent failure, the system is normal at this time. Check for poor connections or loose terminals at the suspected circuit. Refer to Troubleshooting Intermittent Problems.

DTC P0401: Insufficient Flow Detected in the EGR System

NOTE: Before you troubleshoot, try to duplicate the problem. If the problem does not occur when you perform the following procedure, it may have been caused by a poor connection. Check for poor connections or loose terminals at the suspected circuit before you replace parts. Refer to Troubleshooting Intermittent Problems.

1. Check for DTCs (see page 23-24).

2. Turn the ignition switch OFF (0). Disconnect the EGR valve connector. Turn the ignition switch ON (II). Measure the voltage between the EGR valve connector terminals.

   Is there 4.5 V or more?

   YES - Replace the EGR valve (see page 23-125).

   NO - Intermittent failure, the system is normal at this time. Check for poor connections or loose terminals at the suspected circuit. Refer to Troubleshooting Intermittent Problems.

DTC Troubleshooting (cont'd)

DTC B1-1x (B1-10 to B1-19, B1-1A to B1-1F),
B1-2x (B1-20 to B1-29, B1-2A to B1-2F),
B1-3x (B1-30 to B1-39, B1-3A to B1-3F),
B1-4x (B1-40 to B1-49, B1-4A to B1-4F):
Internal Failure of the SRS Unit

NOTE: Before you troubleshoot any problem, be sure to check the battery voltage and the charging system. Low battery voltage can cause malfunctions in the SRS. The battery must be fully charged before performing the following test.

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON (II), and check the SRS indicator operation. Does the SRS indicator come on about 6 seconds and then go off?

   Does the SRS indicator stay on?

   YES - Replace the SRS unit (page 23-110).

   NO - If the SRS indicator does not come on, check the SRS indicator circuit (page 23-80). If the circuit is OK, check for DTC B1-1x (B1-10 to B1-19, B1-1A to B1-1F), B1-2x (B1-20 to B1-29, B1-2A to B1-2F), B1-3x (B1-30 to B1-39, B1-3A to B1-3F), B1-4x (B1-40 to B1-49, B1-4A to B1-4F): Internal Failure of the SRS Unit

NOTE: Before you troubleshoot any problem, be sure to check the battery voltage and the charging system. Low battery voltage can cause malfunctions in the SRS. Fully charge the battery before performing the following test.

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON (II), and check the SRS indicator operation. Does the SRS indicator come on about 6 seconds and then go off?

   Does the SRS indicator stay on?

   YES - Replace the SRS unit (page 23-110).

   NO - If the SRS indicator does not come on, check the SRS indicator circuit (page 23-80). If the circuit is OK, check for DTC B1-1x (B1-10 to B1-19, B1-1A to B1-1F), B1-2x (B1-20 to B1-29, B1-2A to B1-2F), B1-3x (B1-30 to B1-39, B1-3A to B1-3F), B1-4x (B1-40 to B1-49, B1-4A to B1-4F): Internal Failure of the SRS Unit

DTC 55-1x (B55-10 to 55-13, R51-1A to 55-1F, R5-2x (R5-20 to 55-28, 55-2A to R5-2F): Immobilizer Control Unit

[illegible]

1. [illegible]

2. [illegible]

   YES - [illegible]

   NO - [illegible]

DTC 55-3x (B55-30 to 55-33, 55-3A to 55-3F, 55-4x (55-40 to 55-43, 55-44 to 55-4F): Immobilizer Control Unit

NOTE: [illegible]

1. [illegible]

2. [illegible]

   [illegible]

   YES - [illegible]

   NO - [illegible]

DTC Troubleshooting (cont'd)

DTC B1[illegible] or B1[illegible] to B1-48, B1-1A or B8-1[illegible]: Open in Driver's Side Pretensioner Squib

1. Erase the DTC memory (see page 23-[illegible]).
2. Turn the ignition switch OFF, then wait at least [illegible] minutes for the driver's side backup power source to discharge.
3. Disconnect the [illegible] connector.
4. Turn the ignition switch ON (II).
5. Measure the resistance between the [illegible] connector terminals.

YES - Go to step 6.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the [illegible] connector (see page 23-[illegible]).

6. Turn the ignition switch OFF.
7. Disconnect the [illegible] connector from the [illegible] (see page 23-[illegible]).

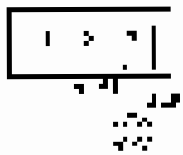
8. Disconnect the driver's side pretensioner connector.
9. Check for continuity between the [illegible] connector terminals and the same connector terminals and body ground (see page 23-[illegible]).

There should be continuity on the [illegible] terminal and no continuity on the [illegible] terminal.

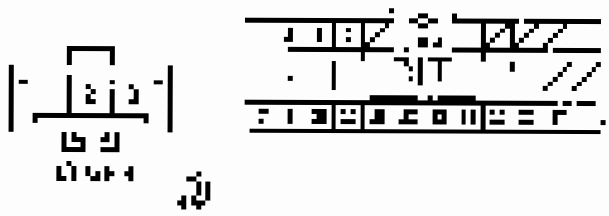
10. Reconnect the [illegible] connector.
11. Check for continuity between the [illegible] connector terminals and body ground (see page 23-[illegible]).

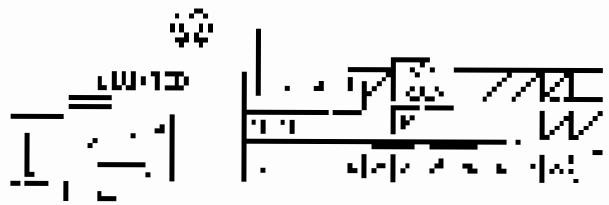
YES - Go to step 12.

NO - Replace the driver's side pretensioner with a known-good one, then recheck the DTC (see page 23-[illegible]).



DTC Troubleshooting (cont'd)





DTC B1xxx [RH-2Dr/4Dr (J1-29, J1-2F), LH-2Dr (J1-2F)
Short in Window Door Belt Switch Circuit

NOTE: If you are unsure about how to perform a power [illegible] Module (PDM) terminal, this is the best way. Start the vehicle and confirm that the DTC light does not come back on before proceeding.

1. [illegible]

2. [illegible]

3. [illegible]

   [illegible]

   YES - Continue.

   NO - [illegible]

4. [illegible]

   [illegible]

   YES - Continue.

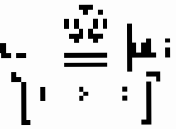
   NO - Continue.

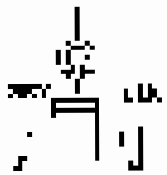
5. [illegible]

   [illegible]

6. [illegible]

   - [illegible]
   - [illegible]
   - [illegible]



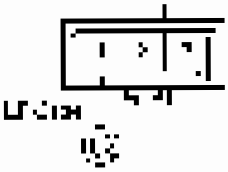


[illegible]

NOTE: [illegible]

[illegible]

DTC Troubleshooting (cont'd)



DTC Troubleshooting (cont'd)

DTC 62-1F (62-1F in 62-1B, 62-1A or 62-1F): Open in Front Passenger's Seat Belt Buckle Switch

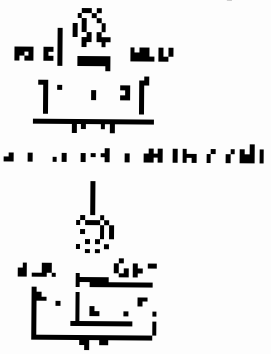
1. Connect the DI
2. Turn the ignition switch to the ON (II) position. Wait 20 seconds before the next step.
3. Read the DTC. Is page 23-[illegible] DTC 62-1F indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the front passenger's seat belt buckle switch (see page 23-[illegible]).

4. Turn the ignition switch to LOCK (0).
5. Disconnect the front passenger's seat belt switch 2P connector.

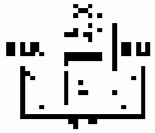
6. Check for continuity between the No. 1 and No. 2 terminals of the front passenger's seat belt switch 2P connector. There should be continuity.



Is there continuity?

YES - Go to step 7.

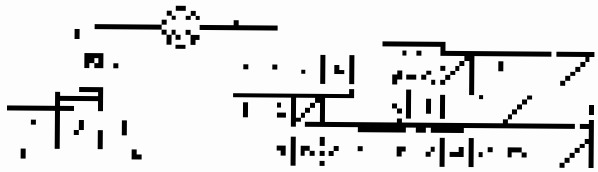
NO - Replace the front passenger's seat belt buckle with a new one (see page 23-[illegible]).



DTC Troubleshooting (cont'd)

12. [illegible]

13. [illegible]



DTC B2-5x (B2-20 to B2-2y, B2-2A to B2-2F): Short to Power, Passenger's Seat Belt Buckle Switch

NOTE: If DTC is stored, verify that the vehicle has not been in a crash. If it has been in a crash, replace the seat belt buckle switch.

1. Inspect the SRS connector.

2. Turn the ignition switch OFF. Check the connection between the passenger's seat belt buckle switch and the SRS unit.

3. Recheck for DTC (see page 23-[illegible]).

   Will the same DTC be stored?

   YES — Go to step 4.

   NO — Intermittent failure. Check for poor connection. Refer to "Troubleshooting Intermittent Failures" on page 23-[illegible].

4. Turn the ignition switch OFF.

5. Disconnect the passenger's seat belt buckle switch connector from the SRS unit. Measure resistance between the terminals.

- Between [illegible] and [illegible]: [illegible] Ω
- Between [illegible] and [illegible]: [illegible] Ω

   Is there the specified resistance?

   YES — Go to step 6.

   NO — Replace the front passenger's seat belt buckle assembly. Then recheck for DTC.

6. Check the front passenger's seat belt:

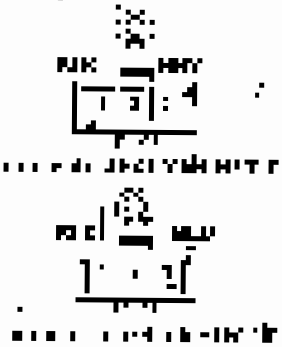
- Check for DTC [illegible] (see page [illegible]).
- Check for poor connection at the SRS unit. Then recheck for DTC (see page [illegible]).

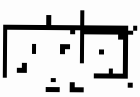
   Is there a problem?

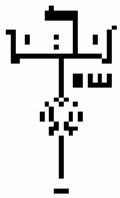
   YES — Repair as necessary.

   NO — Replace the front passenger's seat belt buckle assembly. Then recheck for DTC.

DTC Troubleshooting (cont'd)







DTC Troubleshooting (cont'd)

DTC B0 51: No Signal from CRASH Unit

DTC B0 52: Non-specified Companion Data

NOTE: If new units are installed without performing the procedure, DTC B0 51 will be set.

1. [illegible]

2. [illegible]

3. Disconnect the [illegible]

   If DTC B0 51 is set, replace the [illegible]

   YES – Go to step 4.

   NO – [illegible]

4. Check for poor connection or open circuit in the [illegible]
   Terminals of connectors in the [illegible]

   Is there poor connection or [illegible]?

   YES – [illegible]

   NO – If DTC B0 51 is set, replace the [illegible]
   If DTC B0 52 is set, [illegible]

5. Turn the ignition switch [illegible]

6. Check for voltage between the [illegible]
   Yellow/red

   Connections: [illegible]

   YES – Go to step 7.

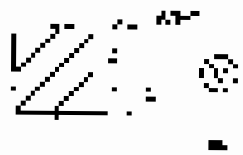
   NO – [illegible]

7. Disconnect the SRS unit and driver's side [illegible]
   from the CRASH unit.

8. Turn the ignition switch [illegible]

9. Check for voltage between the [illegible]
   DTC B0 51 is set, [illegible]
   Should be battery voltage.

   Measurement connections



   Yellow/red (+) – [illegible] (–)

   Is there battery voltage?

   YES – Go to step 10.

   NO – Go to step 10.

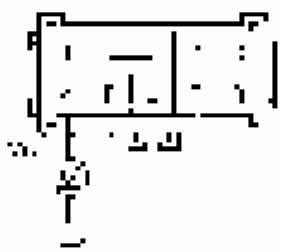
13. [illegible]

14. Disconnect door control switch harness 5P connector C232-F from wire harness side connector C232-D.

15. [illegible]

16. Check for voltage between body ground and terminal 1 of door control switch harness 5P connector C232 and body ground. There should be battery voltage.

DOES BOARD WIRE HARNESS OF DRIVER'S DOOR HAVE POWER?



[illegible]

[illegible]

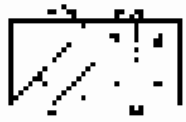
YES: Go to step 17.

NO: Check connector for loose or poor contact. If connector is OK, repair harness between [illegible] and door control switch connector C232-F.

18. [illegible]

19. Check for continuity between body ground and terminal 2 of door control switch harness 5P connector C232 and terminal 2 of door control switch connector C232-D.

CHECK UNIT OF CONNECTOR D



[illegible]

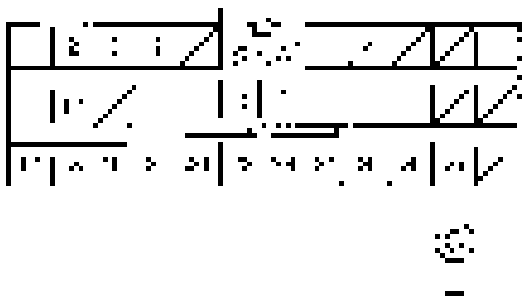
[illegible]

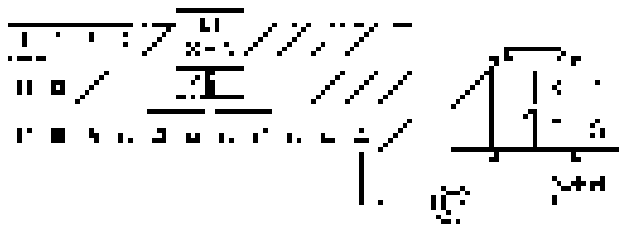
NO: Open or short circuit in harness or poor contact in connector. If harness or poor contact in C232, repair harness or replace C232-D.

20. [illegible]

21. [illegible]

DTC Troubleshooting (cont'd)



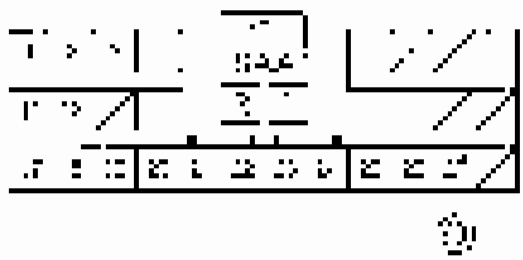


21. [illegible]

22. [illegible]

23. [illegible]

24. [illegible]



DTC Troubleshooting (cont'd)

DTC 85-40, 85-48 to 85-48, 85-4A to 85-4F, 85-50 to 85-58, 85-5A to 85-FF, 86-83, 86-84, 8E-71, 85-78, 85-85, 85-86, 85-87: Internal Failure of CPDS Unit

1. Check for any other DTCs stored in memory. If DTC 85-21 is stored, go to page 23-110.
2. Turn the ignition switch to ON (II). Check the SRS indicator on the instrument panel. Does it come on for about 6 seconds and then go off?

   YES - GO TO STEP 3.

   NO - Go to the CPDS unit connector inspection in DTC Troubleshooting Information, page 23-101. If connector is OK, replace the CPDS unit, then go to page 23-135. If problem is not corrected, go to the DTC troubleshooting index.

3. Clear the stored DTC(s) (see page 23-28).
4. Turn the ignition switch to ON (II) and check that the SRS indicator comes on for about 6 seconds and then goes off.

   YES - The system is OK.

   NO - Replace the CPDS unit, then go to page 23-135.

DTC 85-51 or 85-52: Driver's Side Squib Circuit Failure

1. Check for any other DTCs stored in memory.

   YES - Go to the indicated DTC troubleshooting.

   NO - Go to step 2.

2. Turn the ignition switch to LOCK (0). Disconnect the CPDS unit 2P connector. Check for poor contact in the connector terminals.

   NG - Repair.

   OK - Check the driver's side squib circuit for short to body ground (see page 23-113).

3. Turn the ignition switch to ON (II). Check the SRS indicator on the instrument panel. Does it come on for about 6 seconds and then go off?

   YES - Go to step 4.

   NO - Go to the CPDS unit connector inspection in DTC Troubleshooting Information, page 23-101. If connector is OK, replace the CPDS unit, then go to page 23-135. If problem is not corrected, go to the DTC troubleshooting index.

4. Clear the stored DTC(s) (see page 23-28).
5. Turn the ignition switch to ON (II). Check the SRS indicator on the instrument panel. Does it come on for about 6 seconds and then go off?

   YES - The system is OK.

   NO - Replace the CPDS unit, then go to page 23-135. If problem is not corrected, go to the DTC troubleshooting index.

DTC 88-1x (88-10 to 88-19, 88-1A to 88-1F):
Faulty CPCS Seat Lock Solenoid

DTC 88-2x (88-20 to 88-29, 88-2A to 88-2F):
Faulty CPCS Seat Occupant Sensor

[illegible]

1. [illegible]

   [illegible]

   [illegible]

   [illegible]

   [illegible]

2. [illegible]

   [illegible]

   [illegible]

   [illegible]

3. [illegible]

   [illegible]

   [illegible]

   [illegible]

DTC Troubleshooting (cont'd)

DTC 87-31, 87-32: Side Airbag Lamp/Indicator Stays ON/OFF

1. Erase the DTC memory (see page 23-25).
2. Turn the ignition switch ON (II) and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the indicator come on and go off?

YES — Intermittent failure, system is OK at this time. Check for poor connections or loose wires (see page 23-28).

NO — Go to step 3.

3. Turn the ignition switch OFF. Make sure each airbag connector is securely connected.
4. Disconnect the 3P connector from the driver's side CPD unit.

5. Turn the ignition switch ON (II).
6. Check for voltage between the No. 2 terminal of the CPD unit 3P connector and body ground. There should be battery voltage.

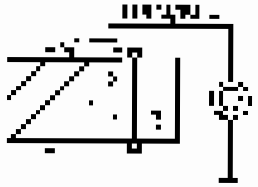
CPD UNIT CONNECTOR (CPD01)

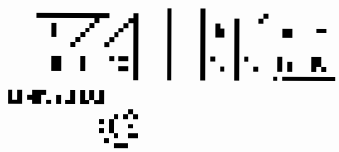
Is there battery voltage?

YES — Turn the CPD unit horn/gauge control module to check the DTC (see page 23-26). If the DTC is not displayed, the gauge control module is bad.

NO — Go to step 7.

7. Turn the ignition switch OFF.
8. Disconnect gauge control module 32P connector. Remove the gauge control module (see page 23-28).





DTC Troubleshooting (cont'd)

DTC B4-11, F1-11, P2-11, P3-11, P4-11: Buttons, Slide Antenna, Limiter Switch Circuit Open (Japan Only)

DTC 51 (x [illegible] #s to B1-18, B4-1A to B1-1F): Internal Failure of the SRS Unit

NOTE: Before you begin, check battery voltage. If the voltage is low, repair the charging system or replace the battery before troubleshooting the SRS. Low battery voltage can cause false DTCs to be stored.

1. [illegible]

2. Turn the ignition switch OFF. [illegible] Disconnect the SRS unit connector. Inspect the connector for corrosion, damaged terminals, or poor contact tension.

   Is the connector OK?

   YES - Go to step 3.

   NO - [illegible]

3. Replace the SRS unit.

4. [illegible] Clear the DTC. [illegible]

   Is DTC 51 stored again?

   YES - Intermittent failure, system is OK at this time. Check for poor connections or loose wires at the SRS unit connector. Refer to page 23-115. If no problem is found, replace the SRS unit.

   NO - [illegible]

DTC A1-1a (A1-1b to A1-1B, A1-1A to A1-1F): Battery Power Supply (Low)

1. [illegible]

   Is the fuse OK?

   YES - Go to step 2.

   NO - [illegible]

2. Replace the fuse.

3. [illegible] Turn the ignition switch ON (II). [illegible]

4. Check for the A1-1a [illegible] code.

   Is the code stored?

   YES - Intermittent failure, system is OK at this time. Check for poor connections or loose wires at the SRS unit connector. Refer to page 23-115. If no problem is found, replace the SRS unit.

   NO - Go to step 5.

5. Disconnect the 32P [illegible] connector.

6. Turn the ignition switch ON (II).

7. Measure the battery voltage between [illegible] terminals of the SRS unit connector.

   Is the voltage 9 V or more?

   YES - Go to step 8.

   NO - Have the battery charged or replaced.

8. Turn the ignition switch OFF. [illegible] Disconnect the SRS unit connector. Check for poor contact tension.

   Is the connector OK?

   YES - Replace the SRS unit.

   NO - Repair or replace as necessary.

DTC Troubleshooting (cont'd)

11. [illegible]

[illegible]

SRS connector (SRS)

NO: Go to step 12.

12. [illegible]

13. Disconnect the battery negative cable and wait for 3 minutes.

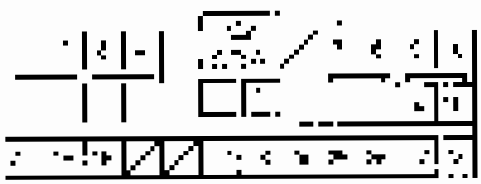
14. Disconnect SRS unit connector A (32P) from the SRS unit.

15. [illegible]

16. Connect a jumper wire between terminal No. 7 (yellow/red) and No. 8 (yellow/black) of SRS unit connector A (32P).

Reconnect the battery negative cable.

SRS unit connector A (32P)



Front of vehicle

17. [illegible]

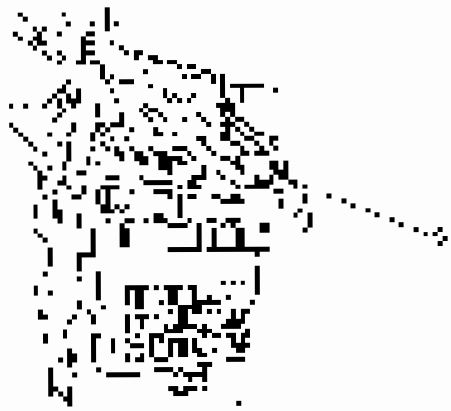
SRS connector (SRS)

YES: Replace the SRS unit. See SRS unit replacement in the SRS section (page 23-140).

NO: Go to step 18.

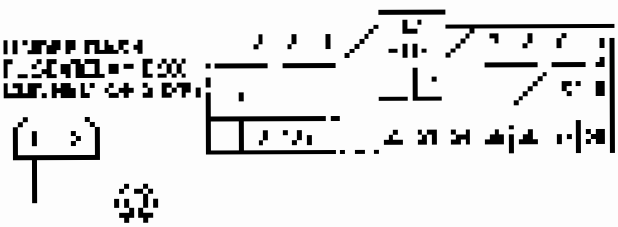
18. [illegible]

19. [illegible]



20. [illegible]

SRS unit connector A (32P)



[illegible]

21. [illegible]

YES: Replace the SRS unit. See SRS unit replacement in the SRS section (page 23-140).

NO: Check for poor connection at the SRS unit connector A (32P) terminal No. 7 (yellow/red) and No. 8 (yellow/black). If the connection is OK, replace the SRS unit. See SRS unit replacement in the SRS section (page 23-140).

22. Turn the ignition switch OFF.

[10] A2-1x, A2-10 to A2-19, A2-1A to A2-1F1: Ignition Power Supply (VE Only)

1. [illegible]

   [illegible]

   [illegible]

   NO - Go to step 2.

2. [illegible]

3. [illegible]

   [illegible]

   YES - [illegible] Go to step 4.

   NO - [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. Check for [illegible]

    [illegible]

    YES - [illegible]

    NO - [illegible]

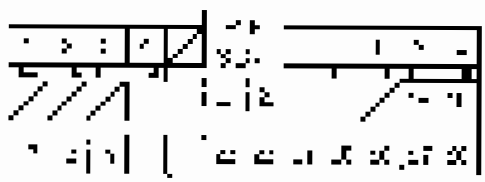
12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

    [illegible]

    [illegible]

    [illegible]

    YES - [illegible]

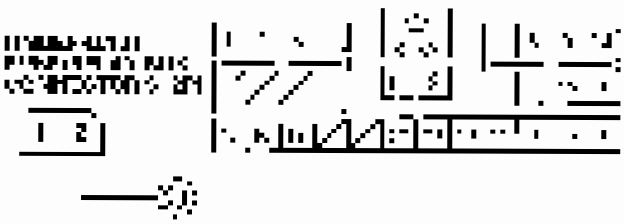
    NO - [illegible]

16. [illegible]

17. [illegible]

DTC Troubleshooting (cont'd)



SRS indicator does not come on

NOTE: Perform this test only if the SRS indicator does not come on during the self-test (see page 23-120).

1. Turn the ignition switch to ACC (I). Is the SRS indicator on the instrument panel illuminated?

   YES - Go to step 2.

   NO - Go to step 3.

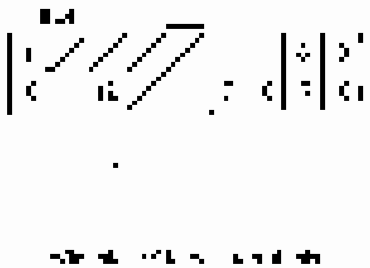
2. Turn the ignition switch to LOCK (0). Disconnect the gauge assembly 2P connector (see page 23-125). Check for continuity between body ground and terminal 4 of the gauge assembly connector.

   Is there continuity?

   YES - Replace the gauge assembly (see page 23-125).

   NO - Repair open in the wire between the gauge assembly and the SRS unit.

3. Check for an open in the wire between the gauge assembly and the SRS unit. If the wire is good, check for poor connections at the gauge assembly and SRS unit.



   Is there an open or poor connection?

   YES - Repair as necessary.

   NO - Go to step 4.

4. Check for an open in the wire between the gauge assembly and body ground. If the wire is good, check for poor connections at the gauge assembly and body ground.

   Is there an open or poor connection?

   YES - Repair as necessary.

   NO - Replace the gauge assembly (see page 23-125).

SRS indicator does not blink

YES - Go to step 4.

NOTE: If the SRS indicator comes on and stays on, the memory may have recorded a malfunction. Perform the self-diagnosis procedure (see page 23-118). If the SRS indicator blinks, the memory has recorded a malfunction. Repair as necessary.

1. Turn the ignition switch to ACC (I). Check for battery voltage between body ground and terminal 4 of the gauge assembly connector. Check for battery voltage between body ground and terminal 3 of the SRS unit connector.

   Is there battery voltage?

   YES - Go to step 2.

   NO - Repair open in the wire between the gauge assembly and the SRS unit.

2. Turn the ignition switch to LOCK (0). Disconnect the harness side connector from the SRS unit. Check for continuity between body ground and terminal 1 of the SRS unit connector.

   Is there continuity?

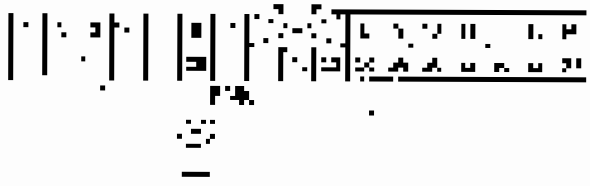
   YES - Go to step 3.

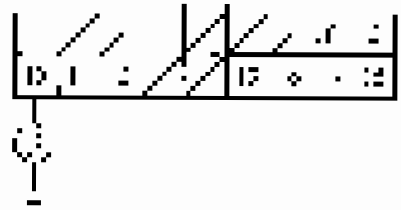
   NO - Repair open in the wire between the SRS unit and body ground.

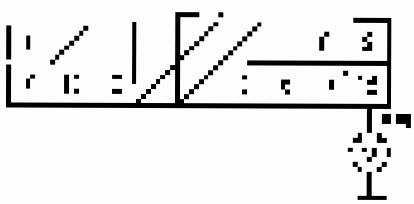
3. Replace the SRS unit with a known good one, and check the system (see page 23-118).

   Does the SRS indicator blink?

Symptom Troubleshooting (cont'd)







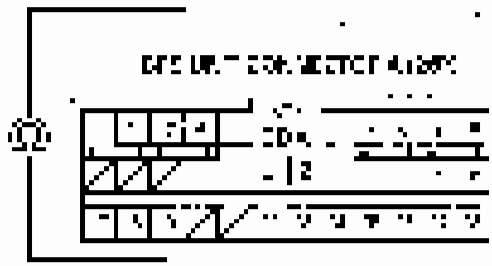
SRS indicator stays on, but no DTCs are stored

NOTE:

- If no SRS codes are stored and the system is OK but the warning light stays on, the problem may be in the combination meter. Refer to the combination meter section in this manual.
- If you replace the SRS unit, always use a new one. Never use one that has been dropped or damaged.

1. Disconnect the battery negative cable and wait three minutes.
2. Disconnect the SRS unit connector and the steering wheel connector (see page 23-[illegible]).
3. Remove the [illegible] cover (see page 23-[illegible]).

4. [illegible]

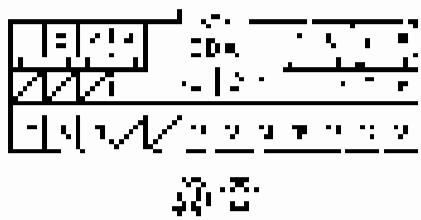


5. [illegible]

NO: Go to step 6.

YES: Replace the steering wheel contact assembly with a new one (see page 23-[illegible]).

6. Check continuity between the harness side connector terminals (SRS unit connector side) and body ground.



Standard: Continuity

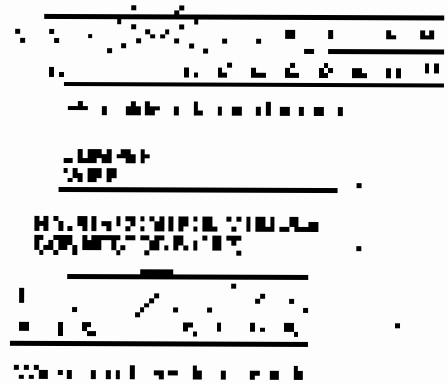
Is there continuity as specified?

YES: Go to step 7.

NO: Repair open in the wire harness between the SRS unit and body ground.

[illegible]

Symptom Troubleshooting (cont'd)



Component Replacement/Inspection After Deployment

[illegible]

[illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

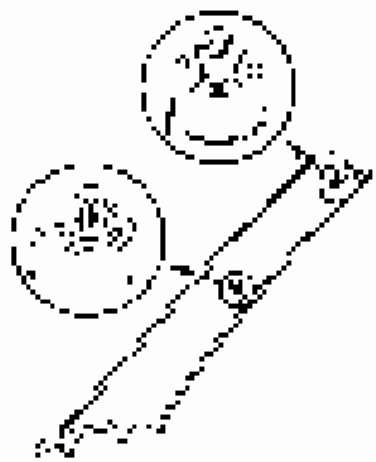
[illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

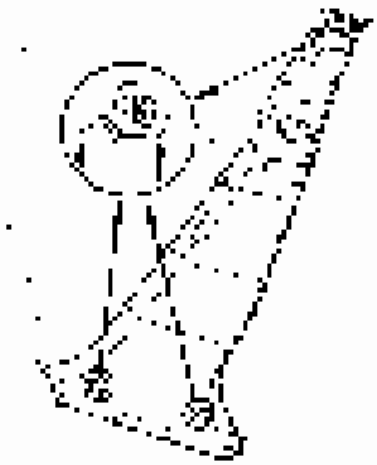
[illegible]

[illegible]

Front Pillar

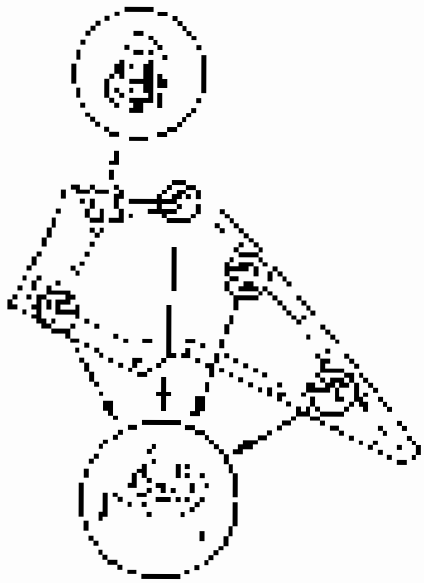


Corner Pillar



Component Replacement/Inspection After Deployment (cont'd)

Rear Pillar

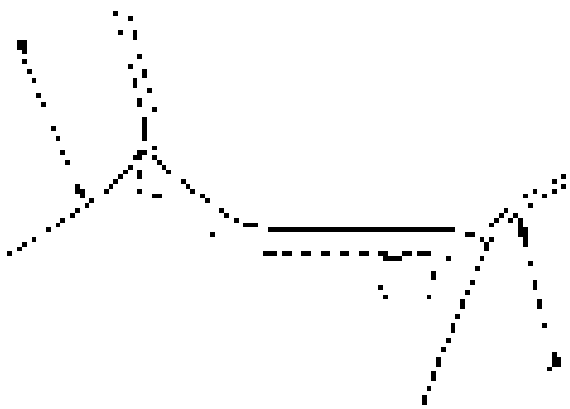


- Inspect all for SRS component damage. Replace any damaged components.
- Inspect wire harness for damage. Repair or replace harness if damaged.

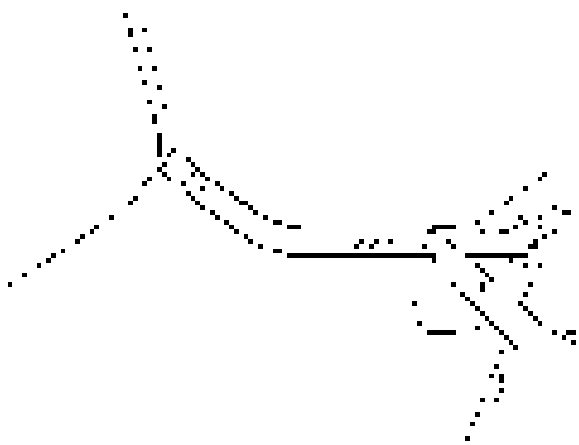
Checking and Adjusting the Headliner/Pillar Trim Overlaps

[illegible]

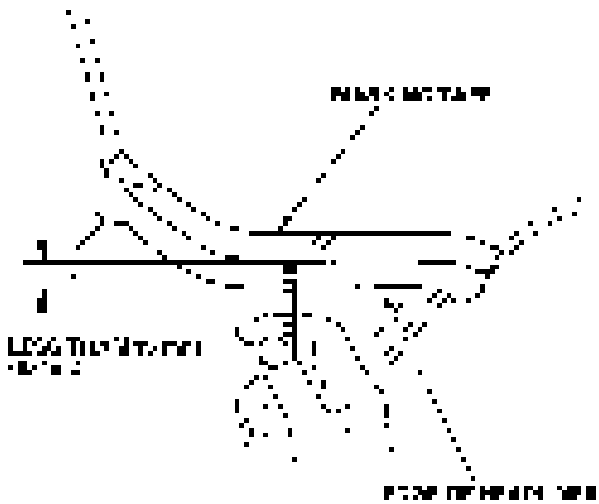
1. [illegible]



2. [illegible]



3. [illegible]



4. [illegible]

5. [illegible]

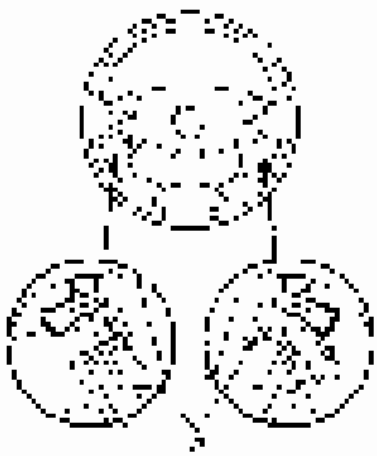
Driver's Airbag Replacement

Removal

1. [illegible]

2. Remove the [illegible]

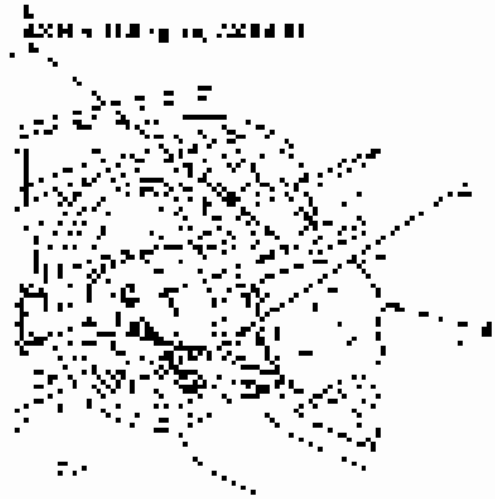
3. Remove the two bolts securing the Torx T30 bits.



4. [illegible]

Installation

1. Connect the [illegible] driver's airbag.



2. Place the [illegible] airbag [illegible] and secure it with two Torx bolts (tighten to [illegible]).

3. Connect the [illegible] connector. Press the [illegible] to lock the connector. Then reconnect the [illegible] connector (part 2) on the steering wheel.

4. [illegible]

5. Connect the [illegible] to the [illegible].

6. After the [illegible] airbag, perform the preparations as follows:

   - Install the [illegible] and [illegible] to the steering wheel. Then tighten the [illegible] to [illegible].
   - [illegible]

Front Passenger's Airbag Replacement

Removal

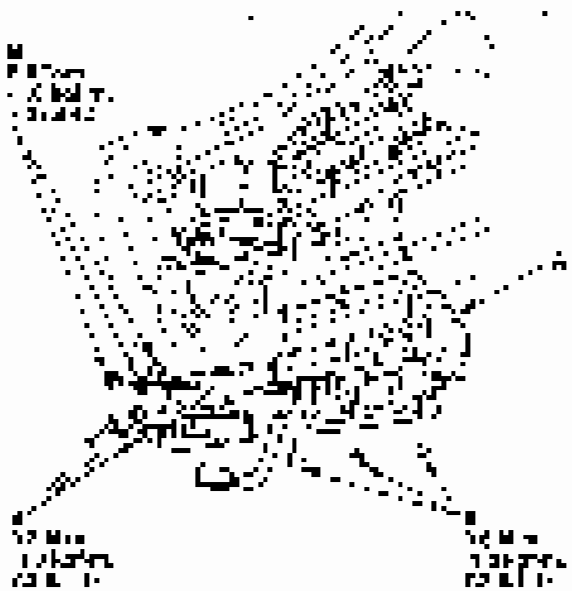
NOTE: The front passenger's airbag may not be deployed. If it is deployed, refer to Airbag Deployment. If the front passenger's airbag is deployed:

1. Disconnect the battery negative cable and wait at least 3 minutes before doing any work.
2. Remove the following:
   - Glove box (see section 50-54)
   - Front passenger's airbag module (see below)
   - Passenger's airbag connector (see page 23-128)
3. Disconnect the front passenger's airbag connector. Remove the cable tie securing the harness.

4. Remove the mounting nuts from the bottom of the front passenger's airbag module.

Installation

1. Position the front passenger's airbag module and install the mounting nuts.



2. Connect the front passenger's airbag connector. Secure the harness with a new cable tie.

3. Reconnect the battery negative cable.
4. Connect the HDS and clear the DTCs.
5. With the ignition switch in the ON (II) position, check the operation of the front passenger's airbag warning light.

Front Passenger's Airbag Replacement (cont'd)

Installation for vehicles in collision where the front passenger's airbag deployed

- [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

- [illegible]

5. [illegible]

NOTE:
- [illegible]
- [illegible]
- [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

Side Airbag Replacement

NOTE: For accurate repair, replacement procedures in the Body section before doing repairs or replacement.

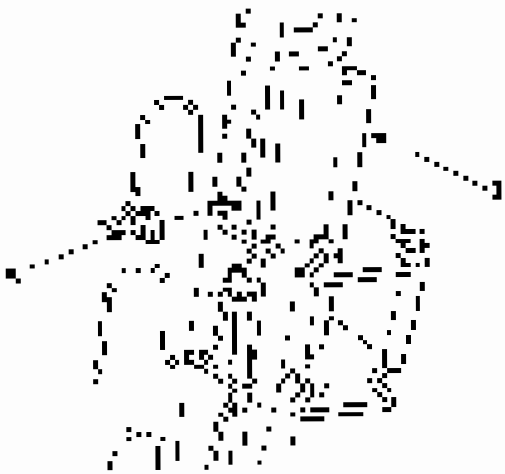
Removal

1. [illegible]

2. [illegible]

3. [illegible] page 23-[illegible] and seat belt anchor bolt page 20-[illegible].

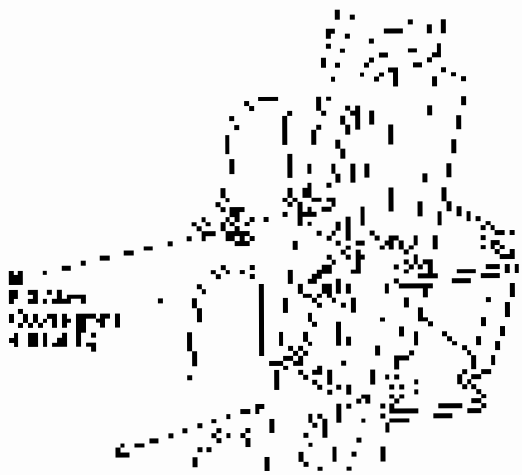
4. [illegible] mounting nuts and the side airbag (B).



Installation

NOTE:
- [illegible]
- Do not overtighten the side airbag mounting nuts.
- Use new mounting nuts to secure the side airbag.
- Make sure that the wire harness is routed properly and is not pinched when installing the side airbag.
- [illegible]

1. Place the side airbag onto the seat frame and install the side airbag mounting nuts (B).



2. [illegible] page 23-[illegible].

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. After installing the side airbag, [illegible] page [illegible]. [illegible]

Side Curtain Airbag Replacement

Removal

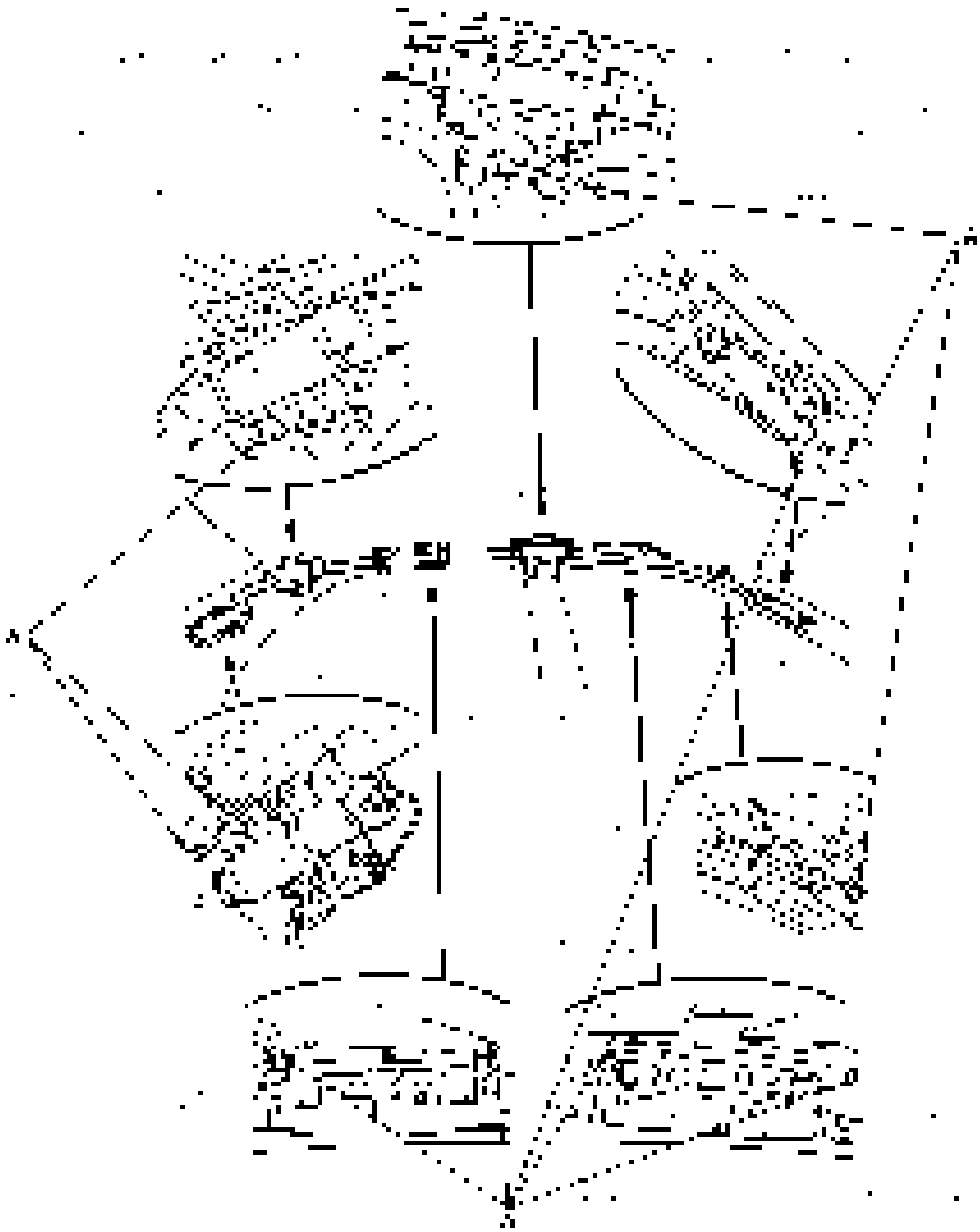
NOTE:
- [illegible]
- [illegible]
- [illegible]

[illegible]

2. [illegible]

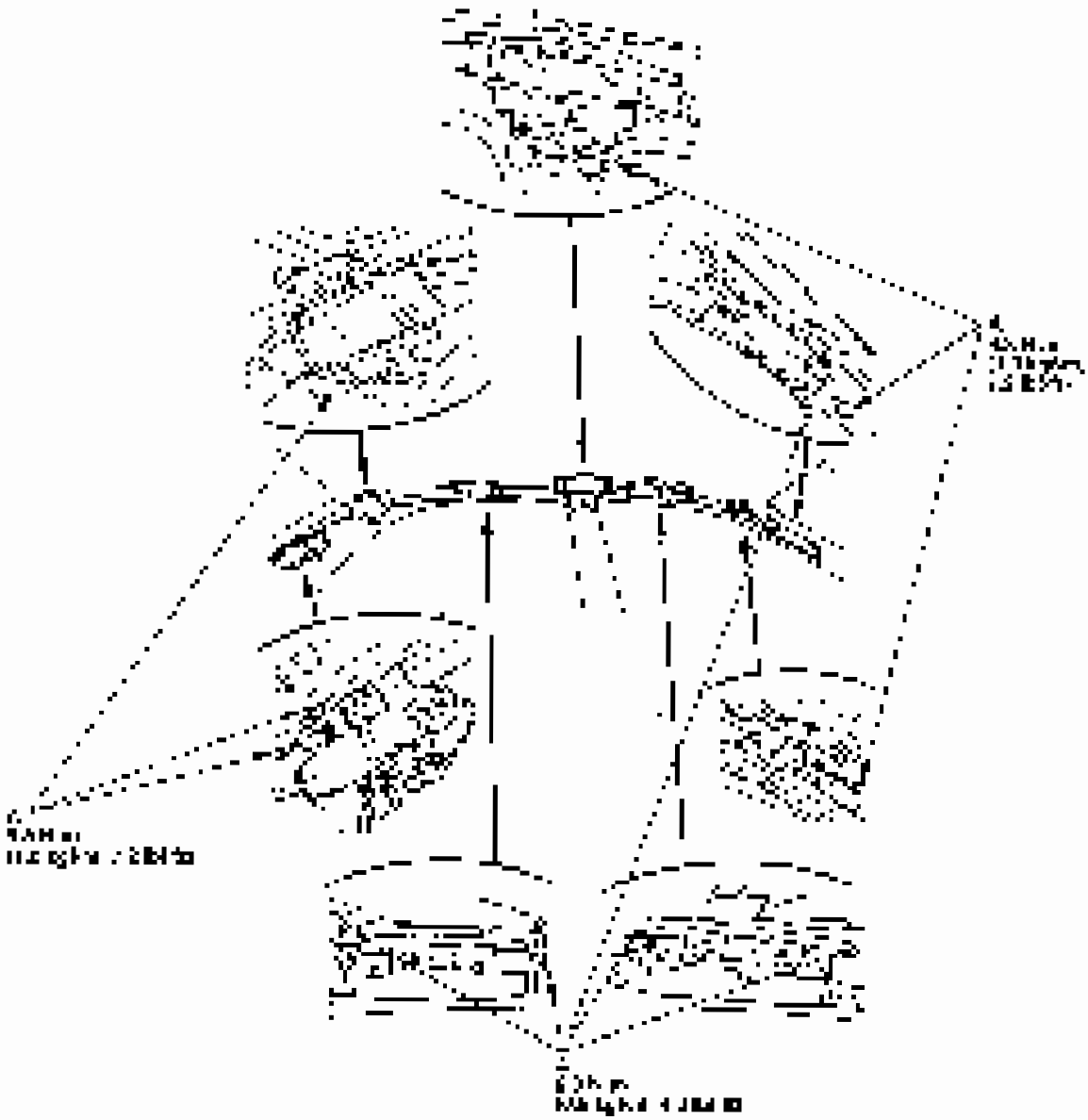
3. [illegible]

4. [illegible]



Side Curtain Airbag Replacement (cont'd)

Installation



Airbag Disposal

Special Tools Required

Disposal Precautions

Deploying Airbags in the vehicle

1. Turn the ignition switch OFF, then disconnect the negative battery cable and wait at least 3 minutes.
2. [illegible]
3. [illegible]

Driver's Airbag

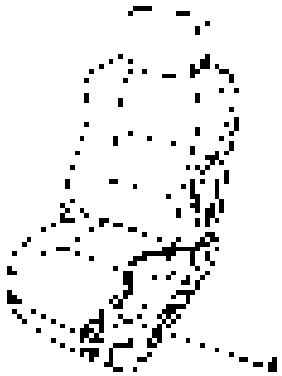
1. [illegible]

Front Passenger's Airbag

1. [illegible]

Side Airbag

6. [illegible]



Side curtain airbag

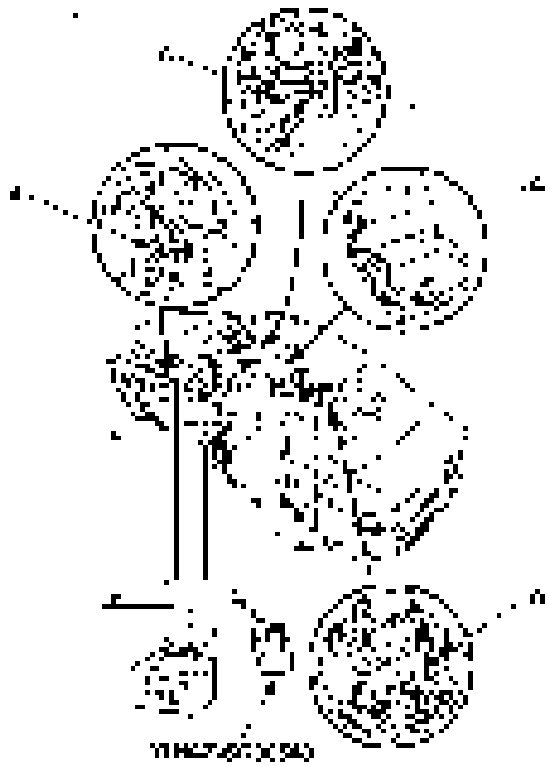
7. [illegible]

Seat belt pretensioner

8. [illegible]

9. Disconnect connectors, remove screws and remove the [illegible]

NOTE: [illegible]



Airbag Disposal [cont'd]

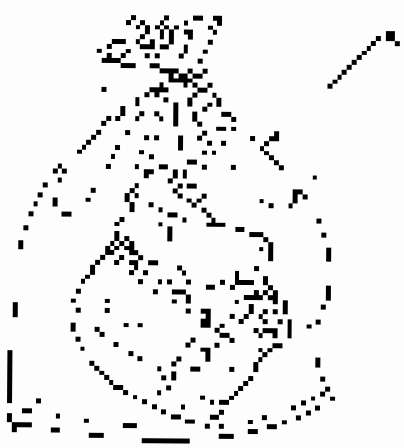
[illegible]

- [illegible]
- [illegible]

[illegible]

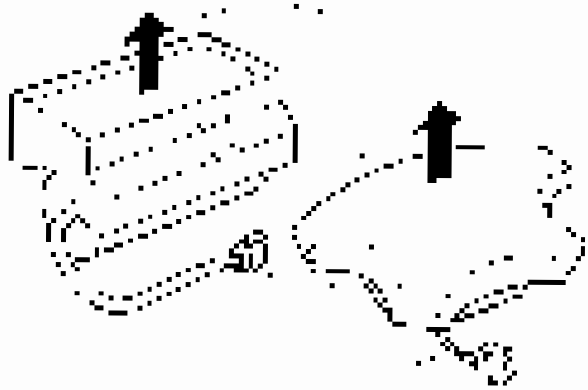
- [illegible]
- [illegible]
- [illegible]

[illegible]



Deploying Components Out of the Vehicle

[illegible]



[illegible]

2. [illegible]

3. [illegible]

NOTE: The driver's and front passenger's airbags will deploy when activated. The side airbags will deploy when activated.

Disposal of Damaged Components

1. [illegible] (see page 23-124) [illegible] (see page 23-132) [illegible] (see page 23-1[illegible]).

2. [illegible]

   NOTE: [illegible]

3. Package the components in exactly the same packaging that the new replacement part came in.

4. Mark the outside of the box "DAMAGED AIRBAG NOT DEPLOYED", "DAMAGED SIDE AIRBAG NOT DEPLOYED", "DAMAGED SEAT BELT TENSIONER NOT DEPLOYED" [illegible] so they do not get confused with new parts.

5. Contact your Acura Parts and Service Manager for how and where to return it for disposal.

Deployment Tool Check

1. [illegible]

2. Push the operating switch [illegible] the red light comes on, the tool is faulty.

3. Disconnect the battery and the yellow clips.

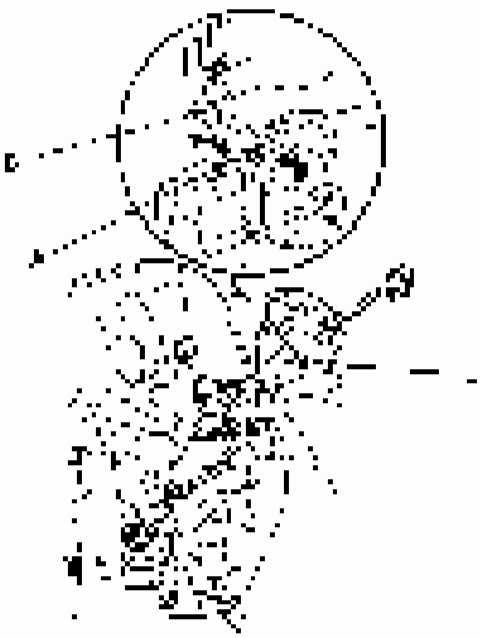
Cable Reel Replacement

Removal

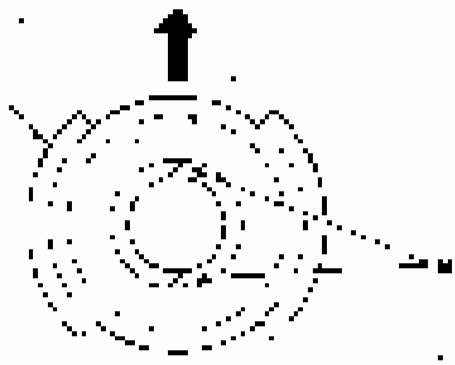
1. [illegible]
2. [illegible]
3. [illegible]
4. Disconnect the connector (A) from the cable reel and then remove the steering wheel (B).

5. [illegible]
6. Push out the ribbon lock lever (A).

7. Remove the cable reel connector (A) from the harness connector (B).



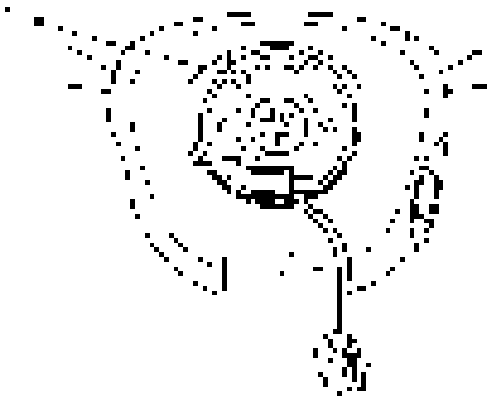
Installation



Cable Reel Replacement (cont'd)

5. Install the steering wheel assembly.

6. If the assembly contains the cable reel, keep the steering wheel centered and the cable reel locked by inserting the cable reel locking tool (or equivalent) into the hole. Then remove the steering wheel, and the cable reel will remain locked in place.



7. Align the projections on the cable reel with the notches in the steering wheel, and install the steering wheel. Install a new steering wheel bolt, then tighten to the specification.

8. Install the steering column cover.

9. Reconnect the battery negative cable.

10. Connect the HDS and clear the DTCs.

11. After all of the cable reel adjustments, perform a proper system operation.

- Confirm that the SRS indicator comes on about 6 seconds after the ignition switch is turned ON (II), then goes off.
- Also, the SRS indicator should blink and light as a result of the SRS indicator self-diagnosis function.
- Make sure the horn sounds.

SRS Unit Replacement

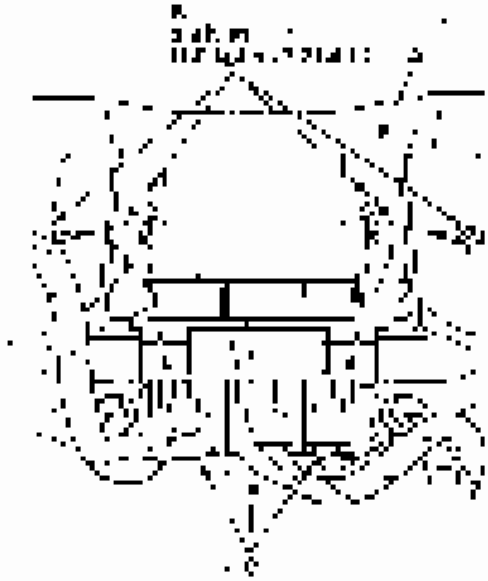
Removal

1. Disconnect the battery negative cable and wait [illegible] minutes before beginning work.
2. Disconnect the driver's side knee bolster connector [illegible].
3. [illegible]
4. Remove the [illegible]
5. Remove the steering wheel.
6. Disconnect the connector and remove the Torx bolts, then pull out the SRS unit.

Installation

1. [illegible]

   NOTE: Be sure the SRS unit has a flat against a solid surface before torquing the Torx bolts.



2. Reconnect the driver's side knee bolster connector, see [illegible].
3. [illegible]
4. [illegible]

   NOTE: Wire harness routing should be identical to that before removal.

5. After installing the SRS unit, confirm proper system operation. Turn the ignition switch ON to check the SRS indicator. Should come on for about six seconds then go off.
6. [illegible]

Side Impact Sensor (First) Replacement

NOTE: Handle the sensor carefully. Do not drop it or subject it to shock. Do not disassemble the sensor or repair the connector.

Removal

1. Disconnect the negative (-) cable from the battery. Wait at least 60 seconds before working on the system.
2. Remove the front seat. See page 20-20.
3. Remove the front door panel and the service hole cover. See page 20-43.
4. Disconnect the front side impact sensor connector.
5. Remove the front side impact sensor bolt, then remove the sensor from the door.

Installation

1. Install the front side impact sensor onto the door with the bolt. Do not overtighten the bolt or the sensor may be damaged. Torque the bolt: 78 N·m (800 kgf·cm, 58 ft·lbf)

2. Reconnect the front side impact sensor connector.
3. Install the service hole cover.
4. Install the front door panel. See page 20-43.

Side Impact Sensor (Second) Replacement

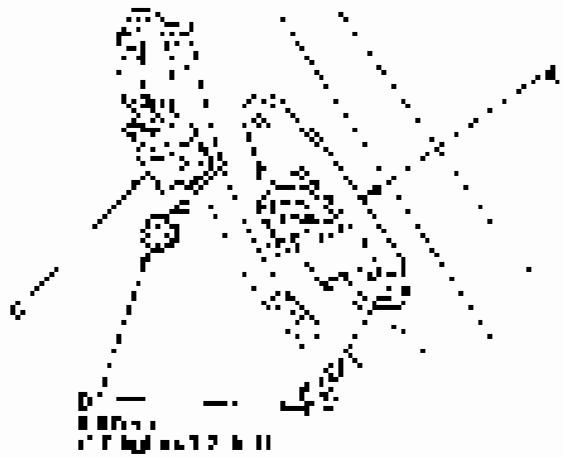
Removal

1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]

Installation

1. [illegible]



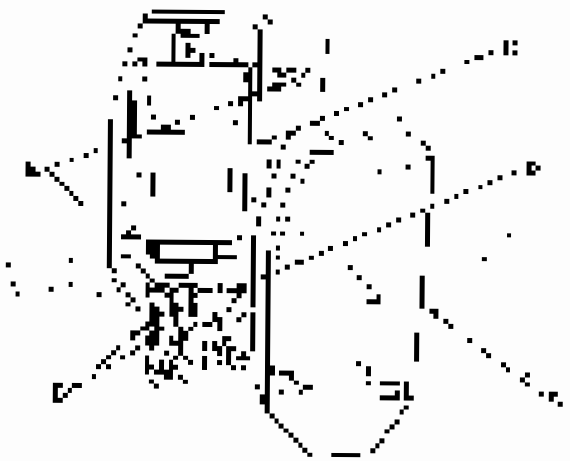
2. [illegible]
3. [illegible]
4. [illegible]

OPDS Unit Replacement

NOTE: If the vehicle has been involved in a collision, the Deployment Evaluation Test must be performed.

Removal

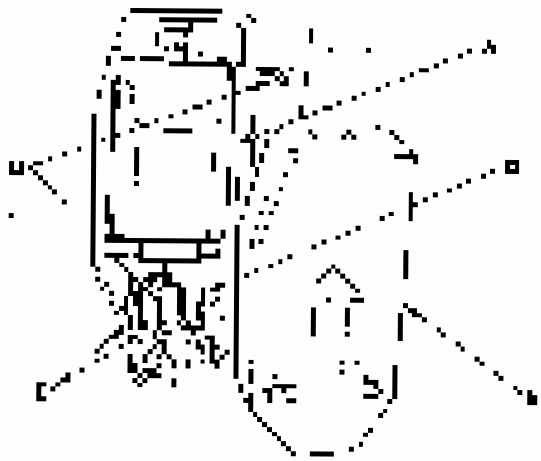
1. Disconnect the negative cable from the battery and wait at least 3 minutes before beginning work.
2. Remove the front passenger's side [illegible] (see page 23-[illegible]).
3. Remove the [illegible] assembly (see page 23-[illegible]) and the [illegible] (see page 23-[illegible]).
4. Remove the two T30 Torx screws that secure the OPDS unit. Disconnect the [illegible] connector and the [illegible] connector from the OPDS unit.



5. Remove the [illegible] from the OPDS unit.

Installation

1. Mount the new OPDS unit to the [illegible]. Tighten the Torx screws to [illegible] N·m (2.5 kgf·m, 18 lbf·ft). Connect the [illegible] connector and the [illegible] connector to the OPDS unit. Make sure the connectors are fully seated.



2. Install the [illegible] removal.
3. Install the [illegible] (see page 23-[illegible]).
4. Reconnect the [illegible].
5. Connect the negative cable to the battery. Wait at least 3 minutes before beginning the next procedure.
6. Initialize the OPDS unit (see page 23-[illegible]).
7. Perform the Engine OPDS unit [illegible] verification test (see page 23-[illegible]). If the SRS indicator does not come on as described in the test, [illegible].

Front Impact Sensor Replacement

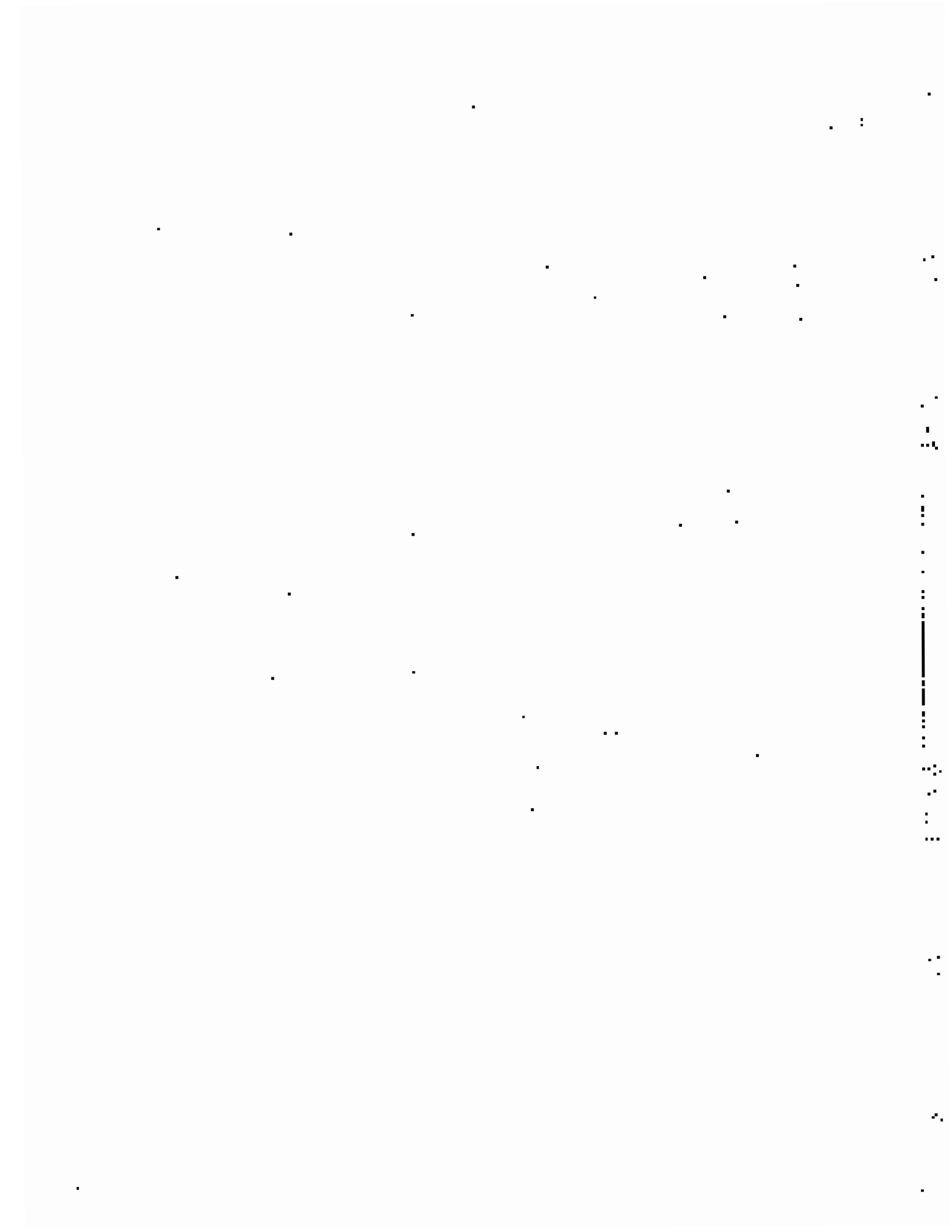
Removal

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

Installation

1. [illegible]

2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]



Service Manual Index

Service Manual Index

(cont'd)

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Service Manual Index

(cont'd)

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Y

Z

NOTES