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**2.8i  
SUPPLEMENTARY  
HAND BOOK**

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## 2.8i Supplement

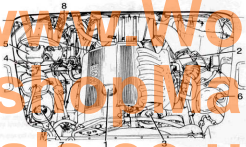
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**ENGINE COMPARTMENT LAYOUT**

1. Engine oil filler cap
2. Engine oil dipstick
3. Engine oil filter housing
4. Coolant level equalising tank
5. Brake fluid reservoir
6. Windscreen washer fluid reservoir
7. Oil reservoir for steering hydraulics
8. Clutch fluid reservoir

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### CHECKING ENGINE OIL

Like fuel consumption, engine oil consumption depends on driving style and operating conditions. You should therefore check oil level regularly, every 1 000 km or more often if loads are severe. The oil level should be checked when the engine is cold (before it is started), while the vehicle is standing on a level surface. Examine the oil level; it must be between the two marks on the dipstick.



### CLUTCH FLUID RESERVOIR

Fill to the upper (max) mark (the level can be checked from the outside). Only use brake fluid approved by the manufacturer.



WINDSCREEN WASHER RESERVOIR



ENGINE OIL FILTER  
Tighten torque 25 Nm



**INERTIA SWITCH**

The switch will be triggered by excessive body roll in order to switch off the fuel pump (fuel supply) to prevent fire hazard in the event of a roll over. To reset, press the switch on the rubber cap.



- 30 Amp - Lighting
- 60 Amp - Ignition
- 60 Amp - Heated rear window & aircon
- 20 Amp - Engine electrics

**MAIN FUSES**

If an electrical consumer fails, switch it off and check its fuse. Only replace a blown fuse with the same amperes rating.

## 2.8i Supplement



### TYRE SIZE AND PRESSURES

#### 90 models

Normal - all load conditions  
235/85 R16

#### Front

1,9 bar  
2,0 kgf/cm<sup>2</sup>  
28 lb/in<sup>2</sup>

#### Rear

2,4 bar  
2,5 kgf/cm<sup>2</sup>  
35 lb/in<sup>2</sup>

#### 110 models

Normal - all load conditions  
235/85 R16

#### Front

1,9 bar  
2,0 kgf/cm<sup>2</sup>  
28 lb/in<sup>2</sup>

#### Rear

3,3 bar  
3,4 kgf/cm<sup>2</sup>  
48 lb/in<sup>2</sup>

265/85 R16 Goodrich (Optional)

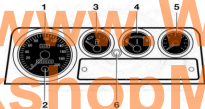


### FUEL FILLER

Unlock - Turn key 1/4 turn clockwise, then back and remove key.

Warning: After hissing stops, remove cap.

Lock - Turn cap clockwise three times.



### 1. SPEEDOMETER

The speedometer (1) incorporates a total and trip distance indicators (2).

### 2. SPEEDOMETER TRIP INDICATOR

Reset the trip indicator by pressing the black knob (2).

### 3. FUEL LEVEL INDICATOR

The fuel indicator (3) shows the appropriate contents of the fuel tank.

### 4. COOLANT TEMPERATURE INDICATOR

Under normal running conditions the temperature indicator needle (4) should register in the white band. If the needle moves to the red band during normal running, the vehicle should be stopped and the cause investigated. The design of the fuel level and water temperature indicators ensures that the needle does not fluctuate, but there is a time delay of a few seconds before they register after the ignition or electrical services are switched on.

### 5. REVOLUTION COUNTER

Never allow the engine to run into the red zone of the revolution counter. To protect the engine, the fuel supply is interrupted in this zone, and will cause the engine to run irregularly.

### 6. ALARM PILOT LIGHT

The alarm pilot light will show when the alarm is activated.



## 2.8i General Data

### Lubricants and fluids

Recommendations for all climates and conditions.

| COMPONENTS<br>Specification  | SAE   | AMBIENT TEMPERATURE °C |       |       |       |       |       |       |       |
|--|---|------------------------|-------|-------|-------|-------|-------|-------|-------|
|  |   | -30                    | -20   | -10   | 0     | 20    | 30    | 40    | 50    |
| Petrol engine sump<br>Oils must meet<br>RES.22, OL, G4 or<br>CCMC G4<br>or API service levels SG or SH | 5W/40, 5W/50<br>10W/30<br>10W/40<br>10W/40,<br>10W/50<br>20W/50 | _____                  | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Main gearbox<br>TEXACO   | MTF94   | _____                  | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Transfer gearbox<br>ML-L-2105 or<br>ML-L-2105B, C & D  | 90W EP<br>80W EP  | _____                  | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Final drive units, swivel pin housings<br>ML-L-2105 or<br>ML-L-2105B, C & D                            | 90W EP<br>80W EP  | _____                  | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Power steering<br>ATF M2C 33 (F or G) or L<br>ATF Dexron II D  |   | _____                  | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

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## 2.8i General Data

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### **Lubrication nipples** (hubs, ball joints, prop. shafts, etc.)

NLGI-2 Multipurpose Lithium based grease

### **Brake and clutch reservoirs**

Universal brake fluids or any fluid having a minimum boiling point of 260° C (500° F) and complying with FMVSS 116 DOT4

### **Windscreen washers**

Screen washer fluid

### **Engine cooling system**

Ethylene glycol based anti-freeze (containing no methanol) with non-phosphate corrosion inhibitors suitable for use in aluminium engines. Use one part anti-freeze to one part water for protection down to -33° F (-36° C)

### **Air conditioning compressor**

Nippondenso ND-8

### **Door locks (anti-burst) and inertia reels**

**DO NOT LUBRICATE.** These components are lubricated for life during manufacture

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## 2.8i General Data

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The following capacities are approximate and provide as a guide only. All oil levels must be set using the dipstick or level plugs as applicable.

### Fuel tank - usable capacity

|                       |            |
|-----------------------|------------|
| Rear (90 2.8i) .....  | 59.1 Litre |
| Rear (110 2.8i) ..... | 80 Litre   |

### Engine sump

|            |            |
|------------|------------|
| 2.8i ..... | 5.85 Litre |
|------------|------------|

### Additional capacity after fitting new oil filter

|            |            |
|------------|------------|
| 2.8i ..... | 0.65 Litre |
|------------|------------|

### Gearbox

|             |                     |
|-------------|---------------------|
| 1C390 ..... | 2.4 Litre (4.70 pt) |
|-------------|---------------------|

|                    |                      |
|--------------------|----------------------|
| Transfer box ..... | 2.30 Litre (4.00 pt) |
|--------------------|----------------------|

|                          |                      |
|--------------------------|----------------------|
| Front differential ..... | 1.70 Litre (3.00 pt) |
|--------------------------|----------------------|

|                         |                      |
|-------------------------|----------------------|
| Rear differential ..... | 1.70 Litre (3.00 pt) |
|-------------------------|----------------------|

### Cooling system

|                         |                      |
|-------------------------|----------------------|
| 6-cylinder models ..... | 7.5 Litre (13.20 pt) |
|-------------------------|----------------------|

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## 2.8i General Data

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|                            |                                    |
|----------------------------|------------------------------------|
| Bore .....                 | 84                                 |
| Stroke .....               | 84                                 |
| Number of cylinders .....  | 6                                  |
| Cylinder capacity .....    | 2793                               |
| Compression ratio .....    | 10.2:1                             |
| Maximum power output ..... | 143 kW<br>(193 BHP)<br>@ 5,300 RPM |
| Maximum torque .....       | 280 Nm<br>@ 3950 RPM               |
| Mixture control .....      | Digital Motor Electronics          |

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## 2.8i General Data

### Steering (lock to lock)

|                              |            |
|------------------------------|------------|
| Manual .....                 | 4.3 turns  |
| Power assisted .....         | 3.38 turns |
| Camber angle .....           | Zero       |
| Castor Angle .....           | 3°         |
| Swivel pin inclination ..... | 3°         |
| Front wheel toe-out .....    | 0 to 2 mm  |

### Turning circle between kerbs :

|                       |       |
|-----------------------|-------|
| 90 models :           |       |
| Tyres 235/85 16 ..... | 13.24 |
| 110 models :          |       |
| Tyres 235/85 16 ..... | 14.36 |

### Electrical System

|                        |                    |
|------------------------|--------------------|
| Type .....             | Negative earth     |
| Voltage .....          | 12                 |
| Battery .....          | 12v 85 amp / h     |
| Charging circuit ..... | Alternator         |
| Ignition system .....  |                    |
| patrol models .....    | Siemens electronic |

### Replacement Bulbs

|                                  |                      |
|----------------------------------|----------------------|
| Headlights .....                 | 60/55 W Halogen bulb |
| Front side lights .....          | 12 V 5 W             |
| Side repeater lights .....       | 12 V 5 W             |
| Stop lights .....                | 12 V 21 W            |
| Tail lights .....                | 12 V 5 W             |
| Direction indicator lights ..... | 12 V 21 W            |
| Number plate lights .....        | 12 V 4 W             |
| Reversing Lights .....           | 12 V 21 W            |
| Rear fog guard lights .....      | 12 V 21 W            |
| Interior lights .....            | 12 V 10 W            |

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## 2.8i General Data

### Dimensions

#### 90 models

|                                     |                    |
|-------------------------------------|--------------------|
| Overall length: Station Wagon ..... | 3883 mm (152.9 in) |
| Overall width .....                 | 1790 mm (70.50 in) |
| Overall height: Station Wagon ..... | 1963 mm (77.3 in)  |
| Wheelbase .....                     | 2360 mm (92.9 in)  |
| Track front/rear .....              | 1486 mm (58.5 in)  |
| Width between wheel bases .....     | 825 mm (32.4 in)   |

#### 110 models

|                                       |                   |
|---------------------------------------|-------------------|
| Overall length: Pick-up .....         | 4438 mm (173 in)  |
| High capacity pick-up .....           | 4631 mm (182 in)  |
| Hard top/Station wagon & County ..... | 4589 mm (181 in)  |
| Overall width .....                   | 1790 mm (70.5 in) |
| Overall height .....                  | 2035 mm (80.1 in) |
| Wheelbase .....                       | 2794 mm (110 in)  |
| Track front/rear .....                | 1486 mm (58.5 in) |

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## 2.8i General Data

### Off-road performance

#### 90 models

|  |                 |
|--|-----------------|
| Max. gradient (EEC kerb weight) .....            | 45°             |
| Approach angle :                                 |                 |
| Soft top & Pick-up (EEC kerb weight) .....       | 48°             |
| Hard top & Station wagon (EEC kerb weight) ..... | 51.5°           |
| Departure angle :                                |                 |
| Soft top & Pick-up (EEC kerb weight) .....       | 49°             |
| Hard top & Station wagon (EEC kerb weight) ..... | 53°             |
| Wading depth .....                               | 500 mm (20 in)  |
| Min. ground clearance (unladen) :                |                 |
| Soft top & Pick-up .....                         | 191 mm (7.5 in) |
| Hard top & Station wagon .....                   | 229 mm (9.0 in) |

#### 110 models

|   |                 |
|---|-----------------|
| Max. gradient (EEC kerb weight) .....   | 45°             |
| Approach angle (EEC kerb weight) .....  | 50°             |
| Departure angle (EEC kerb weight) ..... |                 |
| 110 models .....                        | 38°             |
| Wading depth .....                      | 600 mm (20 in)  |
| Min. ground clearance .....             | 215 mm (8.5 in) |

*NOTE : Departure angles do not account for the addition of a tow hitch.*

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## 2.8i General Data

### Towing weights

#### Defender 2.8i axle & towing weights

|     | Vehicle weights |           |      | Towing   |        |
|-----|-----------------|-----------|------|----------|--------|
|     | Front axle      | Rear axle | GVW  | Unbraked | Braked |
| 90  | 1200            | 1500      | 2550 | 750      | 3250   |
| 110 | 1200            | 1850      | 3050 | 750      | 2750   |

### Fuel Consumption

#### MPG (L/100 km)

|     | Urban       | Extra Urban  | Combined    |
|-----|-------------|--------------|-------------|
| 90  | 13.6 (20.7) | 23.2 (12.18) | 18.4 (15.3) |
| 110 | 13.3 (21.3) | 21.8 (12.9)  | 17.6 (16.0) |

Always use a 10 minute 100 mile (160 km) driving test to obtain maximum fuel economy.

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## 2.8i General Data

### Tyre size and pressures

#### 90 models :

Normal - all load conditions  
235/85 R16

#### Front

1.9 bar  
2.0 kg/cm<sup>2</sup>  
28 lb/in<sup>2</sup>

#### Rear

2.4 bar  
2.5 kg/cm<sup>2</sup>  
35 lb/in<sup>2</sup>

#### 110 models :

Normal - all load conditions  
235/85 R16

#### Front

1.9 bar  
2.0 kg/cm<sup>2</sup>  
28 lb/in<sup>2</sup>

#### Rear

3.3 bar  
3.4 kg/cm<sup>2</sup>  
48 lb/in<sup>2</sup>

#### WARNING

*Tyre pressures must be checked with the tyres cold, as the pressure is about 0.21 bar (3 lb/in<sup>2</sup>) 0.2 kg/cm<sup>2</sup> higher at running temperature. If the vehicle has been parked in the sun or high ambient temperatures, DO NOT reduce the tyre pressures, move the vehicle into the shade and wait for the tyres to cool before checking the pressures.*

#### WARNING

*ALWAYS use the same make and type of radial-ply tyres, front and rear. DO NOT use cross-ply tyres, or interchange tyres from front to rear.*

- If the wheel is marked 'TUBED', an inner tube *Must* be fitted, even with a tubeless tyre.
- If the wheel is marked 'TUBELESS', an inner tube *must NOT* be fitted.

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## 2.8i General Data



Air-conditioner



Air direction vents



Left Right



Up Down



(Inner) 3-Position Fan Speed


Rotary Control for Temperature  
Max Min



**Note:** The vehicle is fitted with an electronic auxiliary fan that will only operate when the A/C pressure is high or low.

  
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