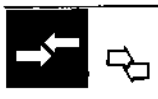
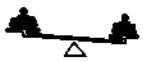
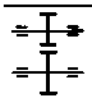
Graphic representations and symbols

	Remove Disconnect
	Refit Connect
	Dismantle Disassembly
	Refit Reassemble
	Tighten to torque
	Tighten to torque plus angle
	Tighten fully
	Stake nut
	Setting Adjustment
	Visual check Examination
	Warning
	Lubricate Damp
	Replace Genuine spare parts
	Bleed braking system
	Surface to be machined After machining
	Interference Force fit
	Dimension to be measured Measurement – Check Thickness - Clearance
	Rolling torque

	Inlet
	Exhaust
	Operation
	Tolerance Weight difference
	Preloading
	Rotation
	Compression ratio
	Selection Classes
	Oversized Oversized to .... Maximum
	Undersized Undersized to .... Idling
	Rpm
	Ratio
	Pressure
	Temperature
	Temperature <0°C Cold Winter
	Temperature >0°C Warm Summer
	Windscreen wiper with windscreen washer pump
	Rear window wiper with rear window washer pump
	Engine

Front suspension independent, MacPherson type with lower track control arms connected by means of two flexible bushes to a crossmember.
Offset coil springs and double acting, hydraulic shock absorbers.
Joints with lifetime lubrication
Anti-roll torsion bar

Coil springs

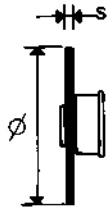
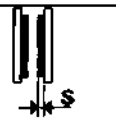
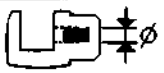
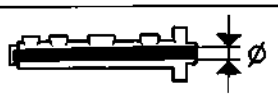
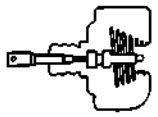
		1997 16v CF3
Order number		N.A.
Wire diameter	mm	N.A.
Number of effective coils		N.A.
Coil direction		N.A.
Released spring height	mm	N.A.
Height under a load of:	mm	N.A.
Spring are divided into two categories, identified by markings		
yellow (1) springs are loaded to:	a height of mm	N.A.
green (1) springs are loaded to:	a height of mm	N.A.

(1) Springs of the same type must be fitted.

Dampers

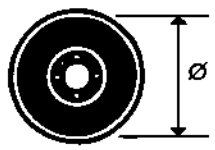
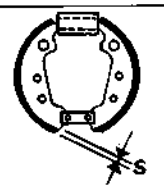
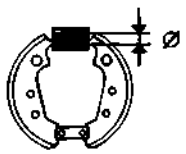
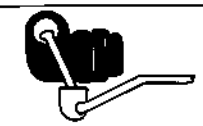
Type, telescopic double-acting		hydraulic
Order number		1307658080
Travel (beginning of damping)	mm	186.5
Maximum extension	mm	510±2

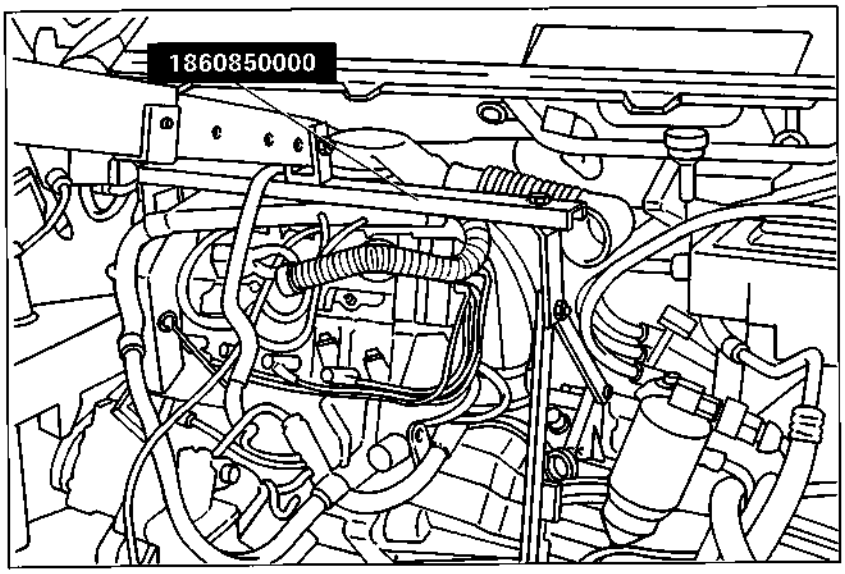
FRONT BRAKES

			1.581 SPI	1905 D	1905 TD	1905 TD (●)
			Values in mm			
	Disc	Ø	257			281
		s	20.1-19.8			25.9-26.1
		s (worn)	18.55			24.55
		s allowed	18.2			24.2
	Brake linings	s allowed	1.5			
	Caliper	Ø	57			
	Master cylinder (pump)	Ø	23.8			
	Servo brake		ISOVAC 10"			ISOVAC 11"

(●) Van 900 kg

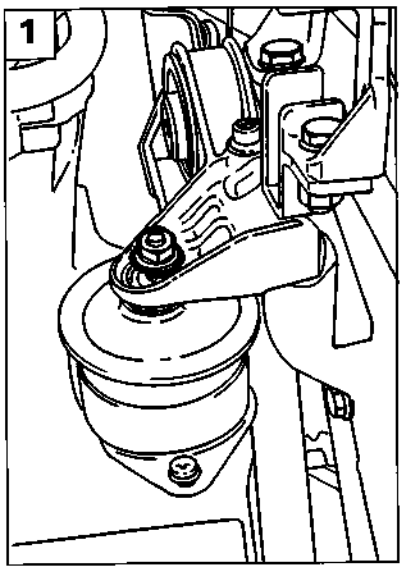
REAR BRAKES

			1.581 SPI	1905 D	1905 TD	1905 TD (●)
	Drum	Ø	255.2-255.410			
		Ø (worn)	255.6			
		Ø allowed	256			
	Shoes	s allowed	1.5			
	Wheel cylinders	Ø	19			
	Load proportioning valve		acting on rear wheels			
	Ratio (reduction)		0.3			

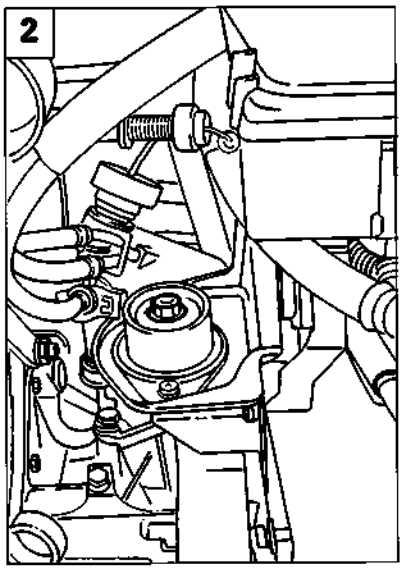


P4B17AX01

Connect the hoist to tool 1860850000, then carry out the following operations:

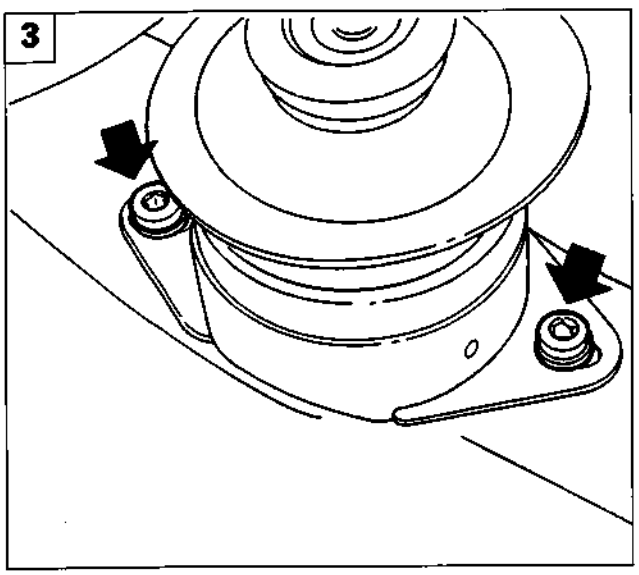


P4B17AX02

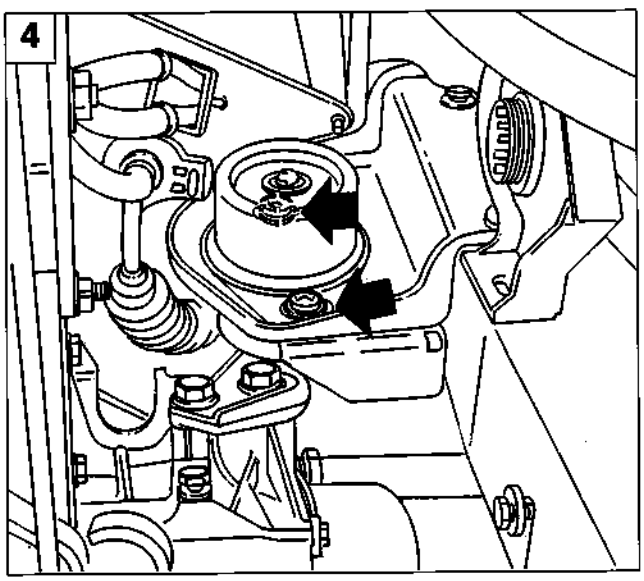


P4B17AX03

1. loosen the bolt fixing the right power unit mounting bracket;
2. place the lift under pressure to release the weight from the power unit mounting, then loosen the centre nut for the left power unit mounting;
3. undo the two bolts (arrow) fixing the right power unit mounting to the bodyshell;
4. undo the two bolts (arrow) fixing the left power unit mounting to the bodyshell.

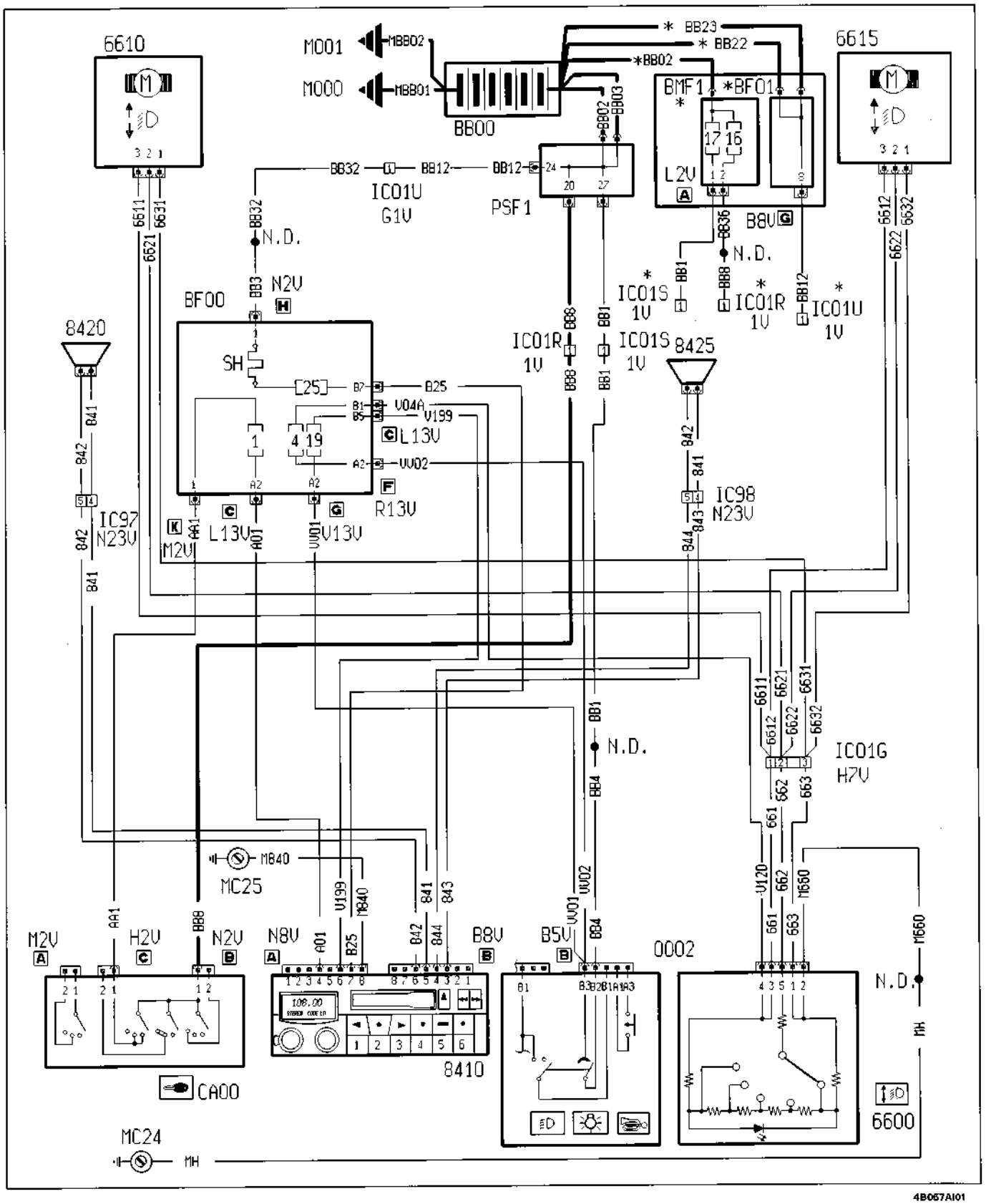


P4B17AX04



P4B17AX05

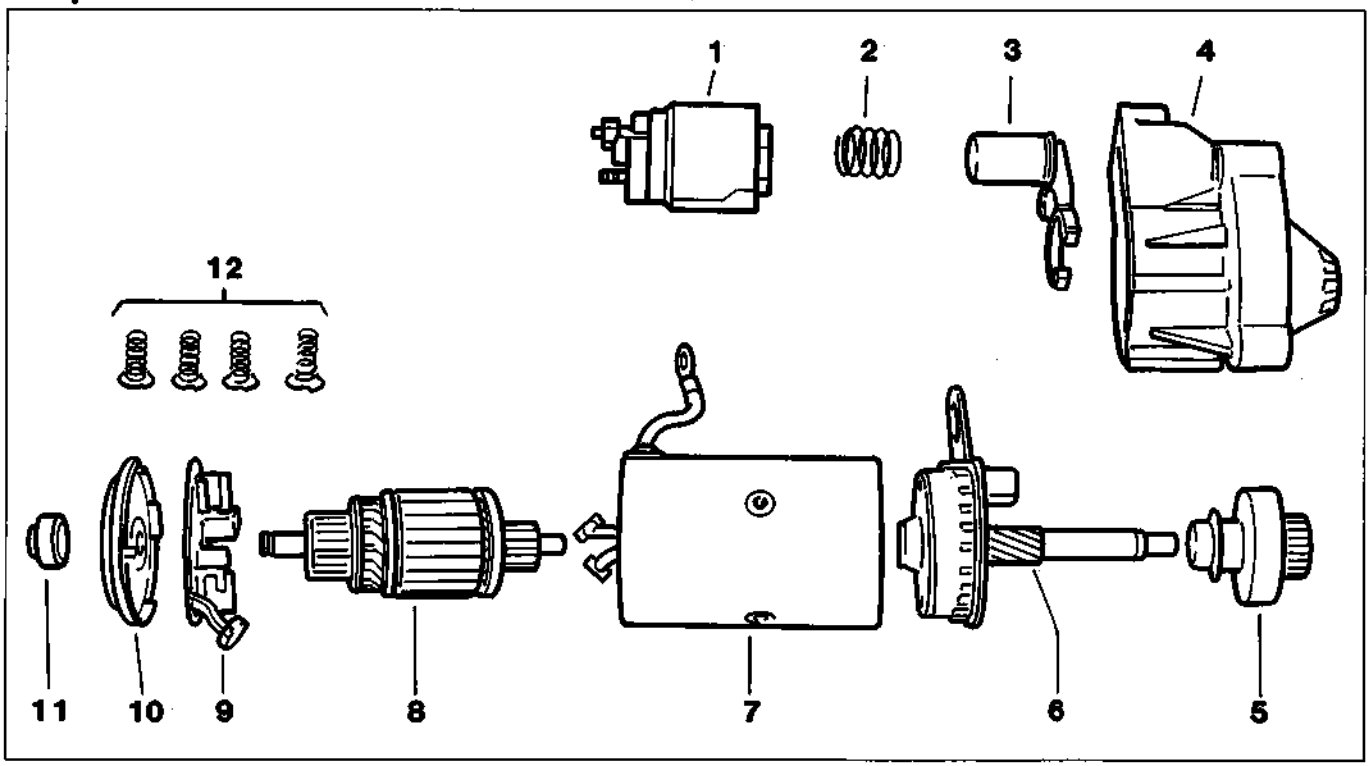
Headlamp alignment – Radio



4B057AI01

* Variant connection for versions without A.B.S.

Components of the VALEO 131 4E04 starter motor



1. Solenoid (fixed part)
2. Solenoid return spring (moving part)
3. Solenoid (moving part) with fork
4. Front end bracket
5. Pinion
6. Solenoid and reduction gear supporting plate
7. Casing complete with stator
8. Armature
9. Brush carrier
10. Brush carrier cover
11. Cover
12. Brush pressure devices

To refit, reverse the procedure for removal.

DIAGNOSIS OF OPERATING FAULTS ON STARTER MOTOR

A. The motor does not turn

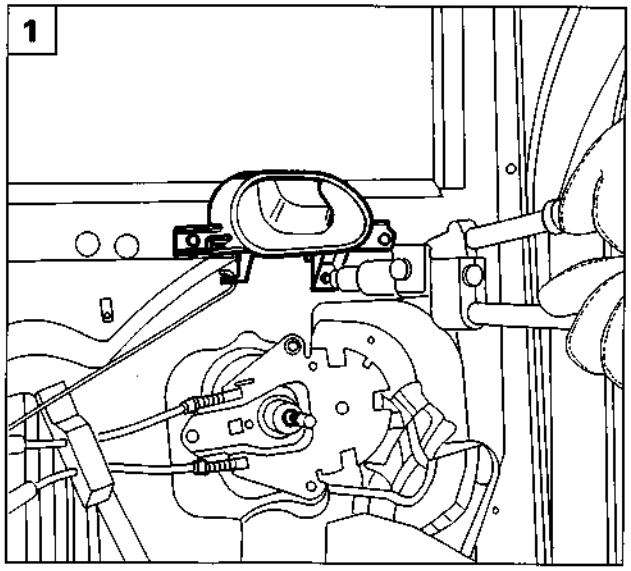
The cause may be:
- battery poles and terminals corroded
- battery-starter motor terminal slack
- terminal on electrical connector block disconnected
- battery fully discharged
- absence of contact on brush commutator or short circuit in one or both brushes
- starter switch contacts corroded, worn or insulated by the interposition of debris
- armature or stator earthed
- armature or commutator centrifuged

B. The motor turns very slowly

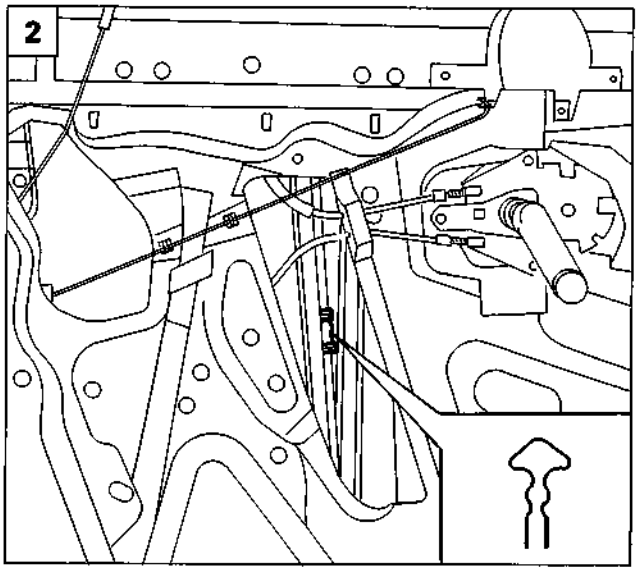
The cause may be:
- brushes and commutator blades worn
- some of the rotor winding coils short circuited
- battery poles and terminals corroded
- battery charge very low, or one or several cells are damaged

C. Excessive noise on starting

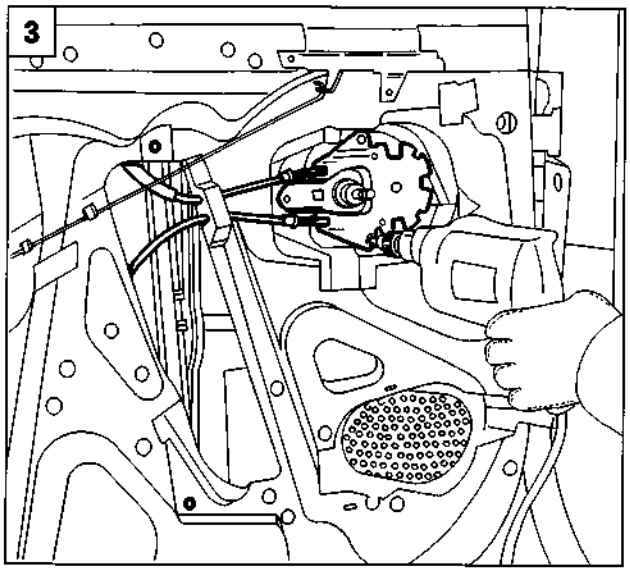
The cause may be:
- pinion roller clutch mechanism worn
- starter motor not lined up with flyweel
- somme flywheel teeth excessively worn on the engagement side



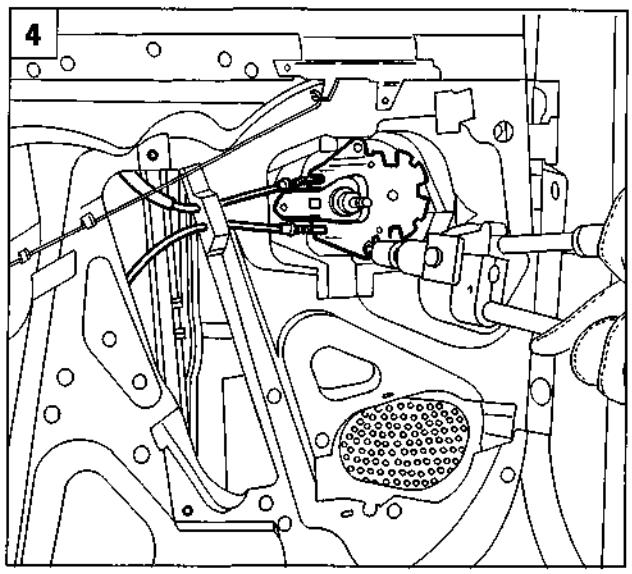
P4B004M01



P4B004M02



P4B004M03



P4B004M04

Refitting

1. When refitting suitably reverse the operations carried out for the removal, taking into account that when fixing the door opening control lever it is necessary to replace the rivets positioning them with a special riveting machine.

WINDOW OPENING DEVICE

Removing

Remove the door panel as described previously.

NOTE *Position the window opening handle in the special housing and place the window in the halfway travel position.*

2. Release the clip fixing the window to the window opening device, then release the window from its housing;

NOTE *Place the window in the end of travel position at the top.*

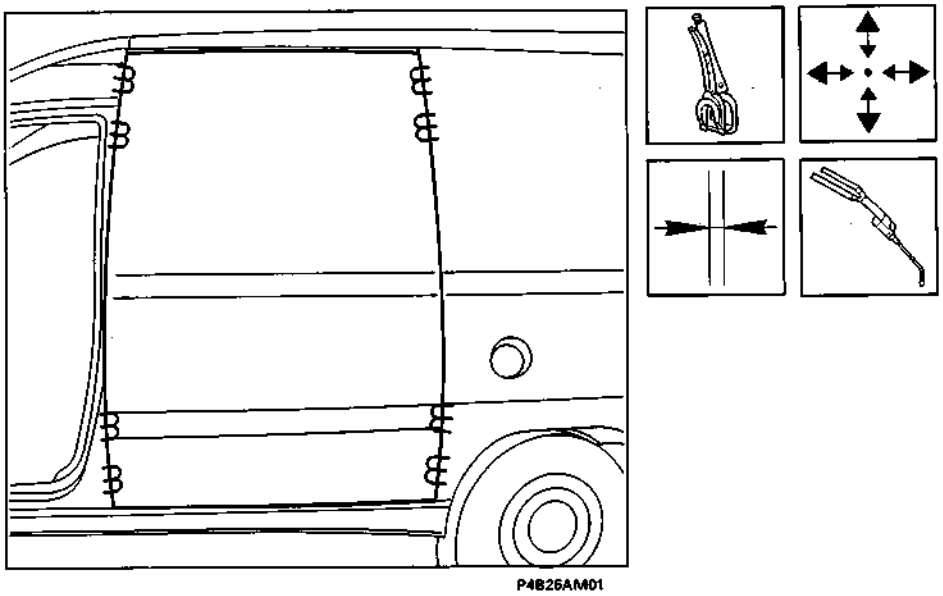
3. undo the bolts shown and remove the window opening device releasing it from the rivets fixing it to the door frame.

Refitting

4. When refitting suitably reverse the operations carried out for the removal, fixing the window opening device to the door with new rivets using the appropriate riveting machine.

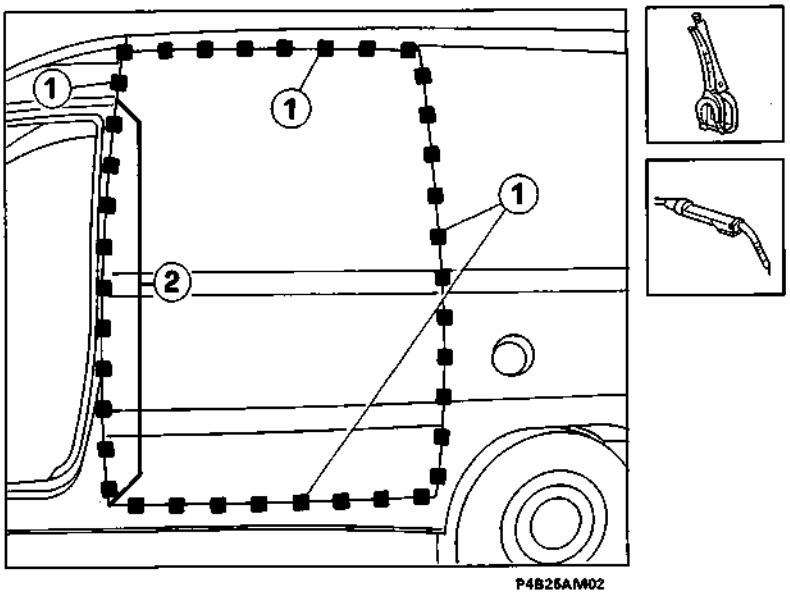
Fitting the new part (2)

1. Place the new part on the vehicle and check that it is perfectly aligned with the adjacent parts, then secure it by tacking it from inside with a few spot welds.



Welding the new part (2)

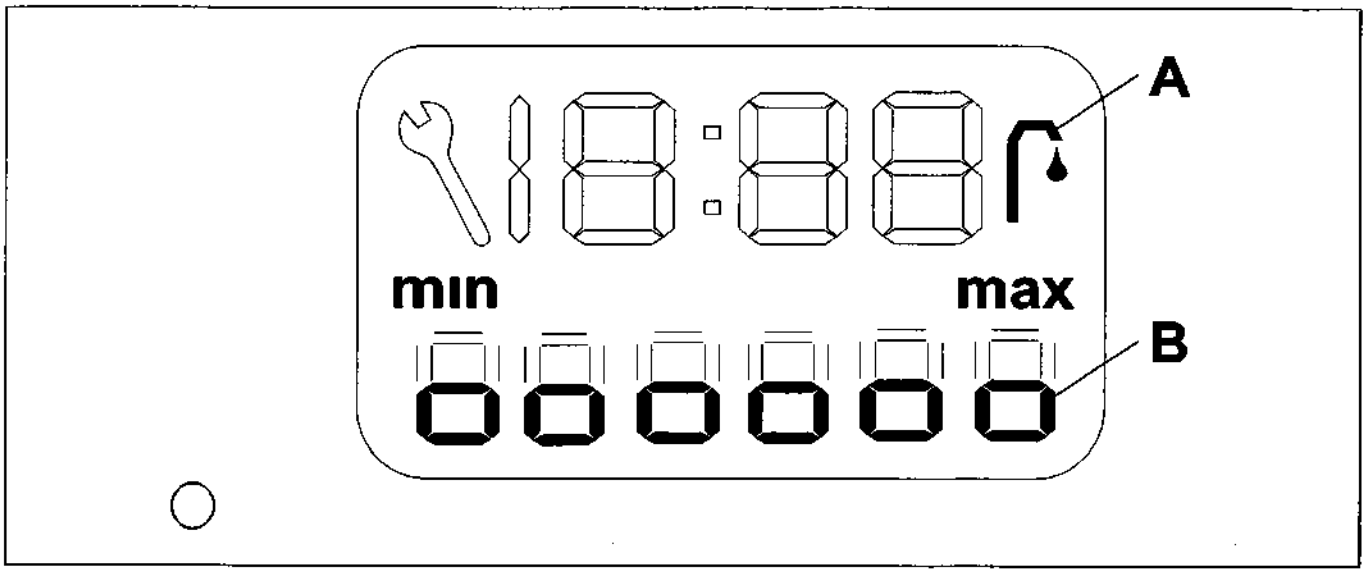
1. Carry out the bead fill weld as shown in the figure.
The weld (1) is carried out from inside the vehicle, while the weld (2) is carried out from outside the vehicle.



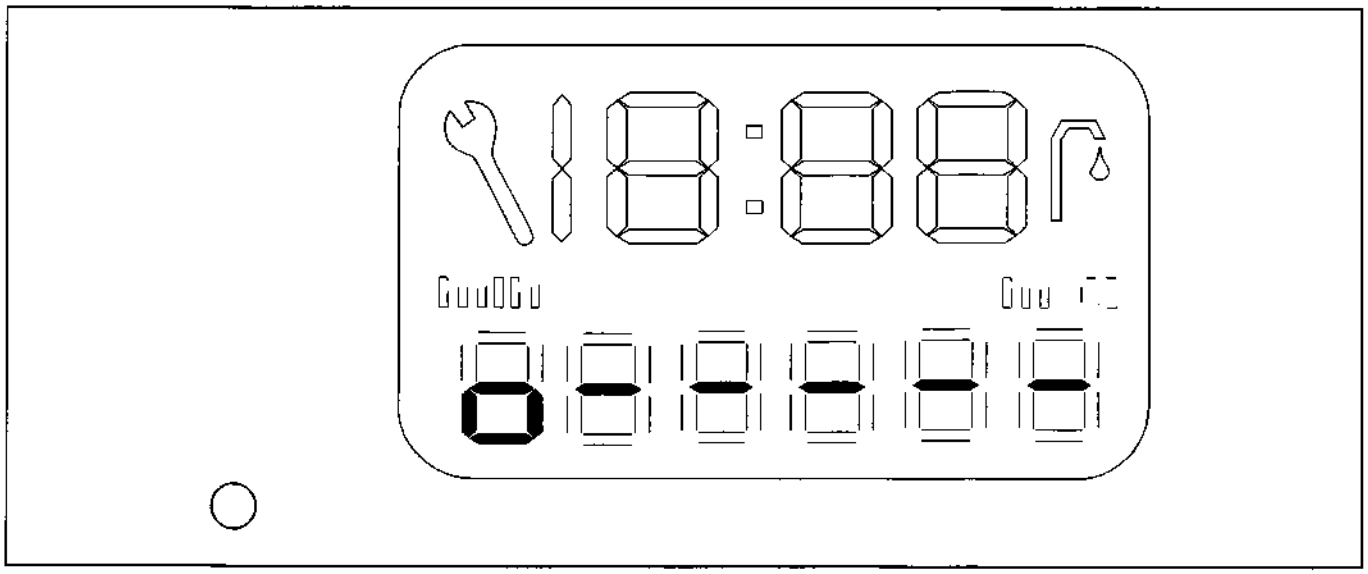
ENGINE OIL LEVEL GAUGE

The engine oil level gauge is located inside the maintenance indicator the oil level is displayed briefly when the engine is switched on
When the ignition key is turned on (M see page 4) after 5 seconds the indicator (A) and the min and max references light up the following conditions appear on the display (B) for 10 seconds

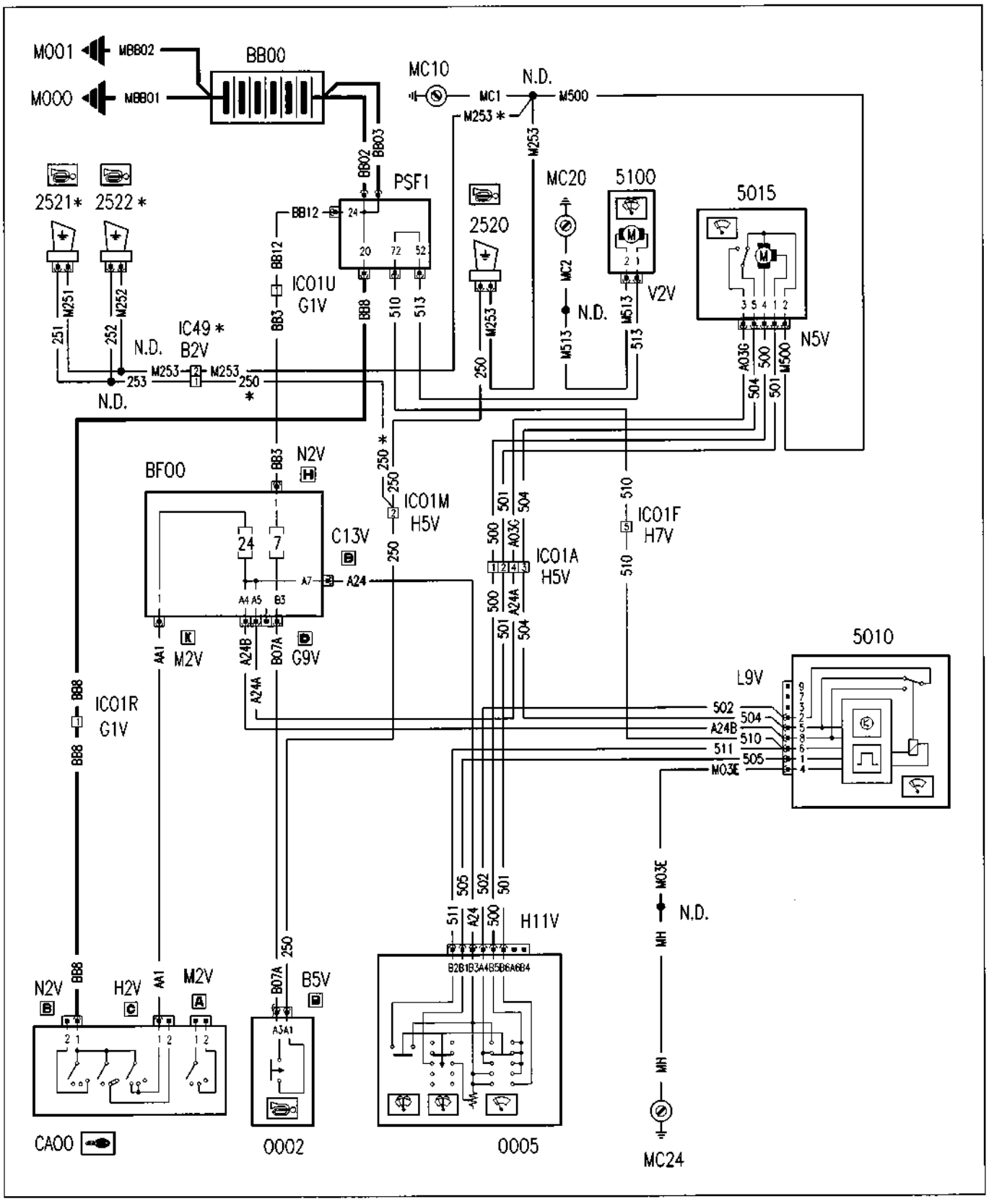
the oil level is maximum when 6 squares are lit up



the oil level is minimum when 1 square is lit up



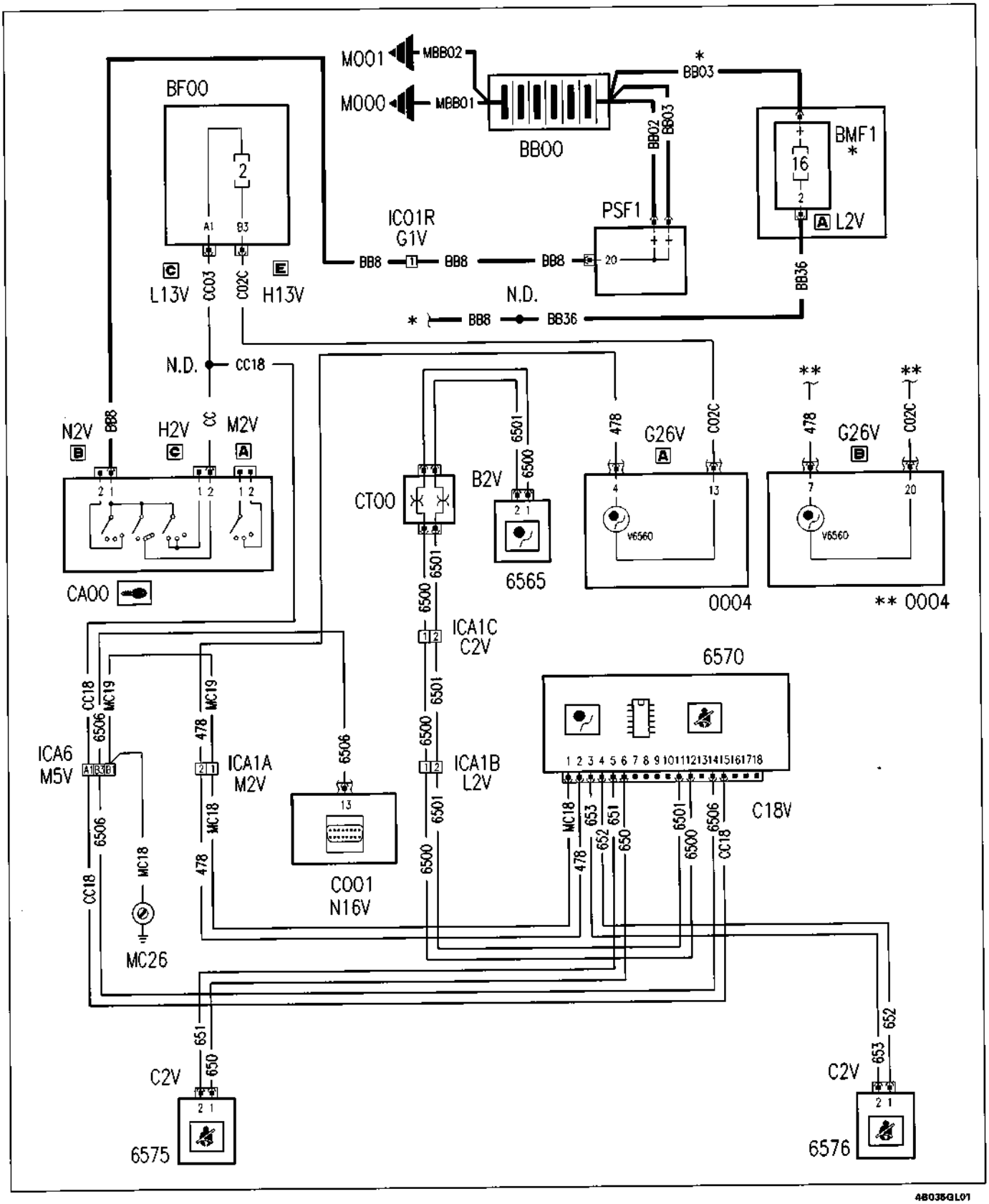
Version: with A.B.S.
Windscreen wash/wipe – Horn



4B031GL01

* Variant connection for two-tone version

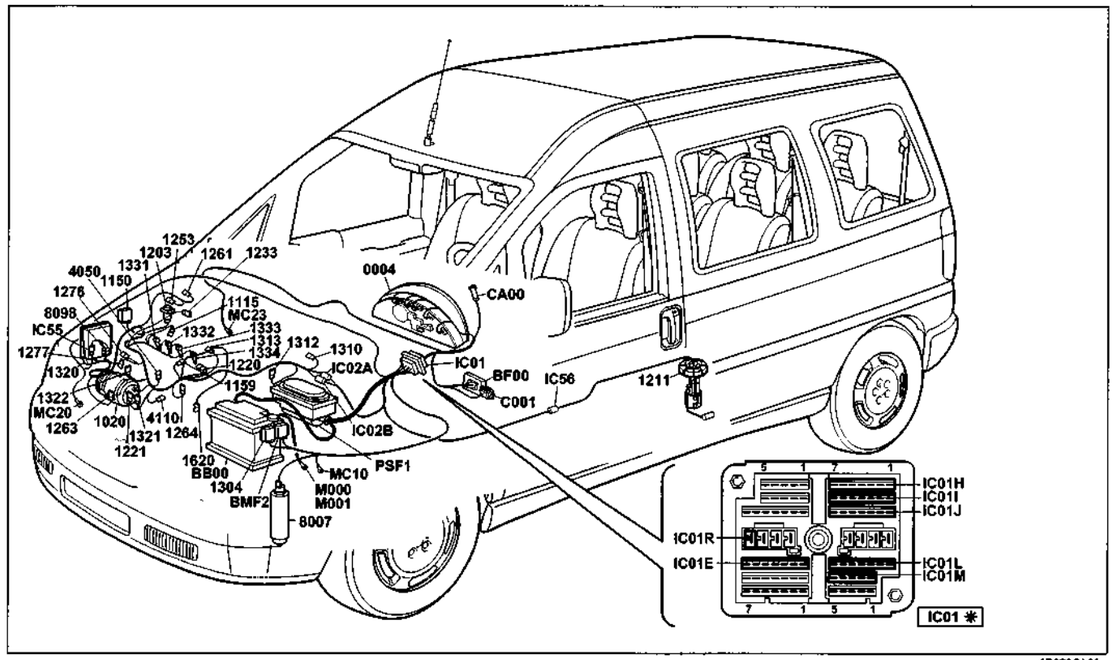
Air bag and failure warning light – Pretensioners



* Variant connection for versions with A.B.S.
** Variant connection for 1997 16V version with automatic transmission

55.

Version: with A.B.S.
Electronically-controlled diesel pump device – Injection system failure warning light – Heater plugs and warning light – Water in fuel filter warning light – Speedometer – Rev counter – Low engine oil pressure warning light



4B080GL01

Location of components on the car.

Component key

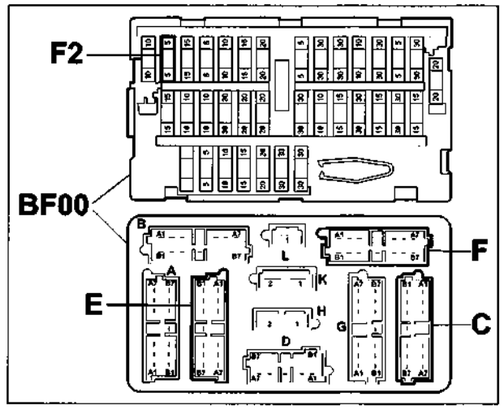
- BB00 Battery
- BF00 Junction unit (vehicle interior)
- BMF2 Maxi fuse control unit
- CA00 Ignition switch
- PSF1 Junction unit (engine compartment)
  - R3 Fan engagement remote control switch (high speed)
  - R4 Fan engagement remote control switch (low speed)
  - R7 Compressor disengagement remote control switch (from injection control unit)
  - R9 Compressor disengagement remote control switch
- 0004 Instrument panel
  - V0004 General failure warning light
  - V1150 Heater plugs warning light
  - V1300 Injection system failure warning light
  - V4050 Water in fuel filter warning light
- 1020 Alternator
- 1115 Sensor on cylinder
- 1150 Heater plugs control unit
- 1159 Heater plugs
- 1203 Inertia switch
- 1211 Fuel pump/gauge assembly
- 1220 Engine coolant temperature sensor
- 1233 Turbocharger pressure adjustment solenoid valve
- 1253 EGR solenoid valve
- 1261 Accelerator pedal position sensor
- 1263 E.G.R. solenoid valve
- 1264 SWIRL solenoid valve
- 1276 Diesel heater
- 1304 Multiple relay
- 1310 Air flow meter
- 1312 Intake manifold pressure sensor
- 1313 Engine speed sensor
- 1320 Diesel pump electronic control unit
- 1321 Fuel pressure sensor
- 1322 Fuel pressure solenoid valve
- 1331 Injector n° 1
- 1332 Injector n° 2
- 1333 Injector n° 3
- 1334 Injector n° 4
- 1620 Vehicle speed sensor
- 4000 Instrument panel electronic control module
- 4050 Water in fuel filter sensor
- 4110 Switch signalling insufficient engine oil pressure
- 4210 Rev counter
- 4630 Speedometer
- 8007 Three stage pressure switch
- 8016 Compressor disengagement remote control switch
- 8091 Additional heater engagement relay
- 8098 Additional heater

Key to connections

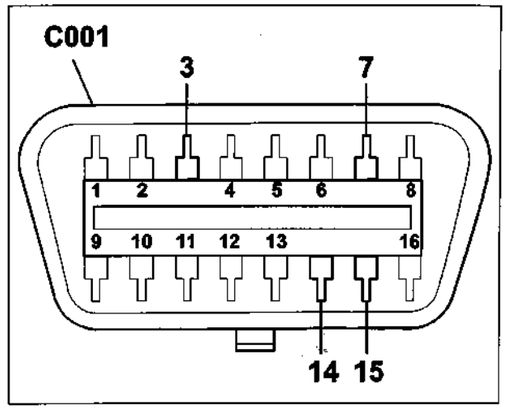
- C001 Diagnostic socket
- IC01E Connection between main and dashboard cables
- IC01H Connection between main and dashboard cables
- IC01I Connection between main and dashboard cables
- IC01J Connection between main and dashboard cables
- IC01L Connection between main and dashboard cables
- IC01M Connection between main and dashboard cables
- IC01R Connection between main and dashboard cables
- IC01U Connection between main and dashboard cables
- IC01 Interconnection between main and dashboard cables
- IC02A Connection between main and engine cables
- IC02B Connection between main and engine cables
- IC55 Connection between main and additional heater cables

Key to earths

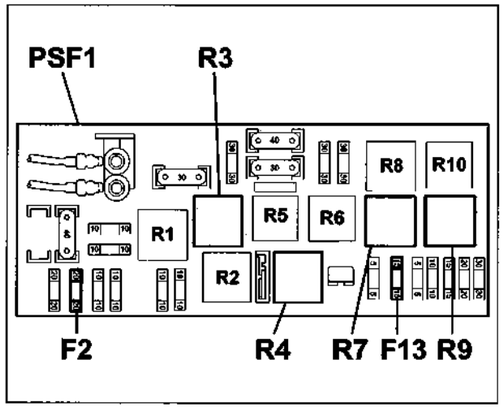
- M000 Battery earth
- M001 Battery earth
- MC10 Left front earth
- MC20 Right front earth
- MC23 Right dashboard earth
- N.D. Ultrasound welding taped in cable loom



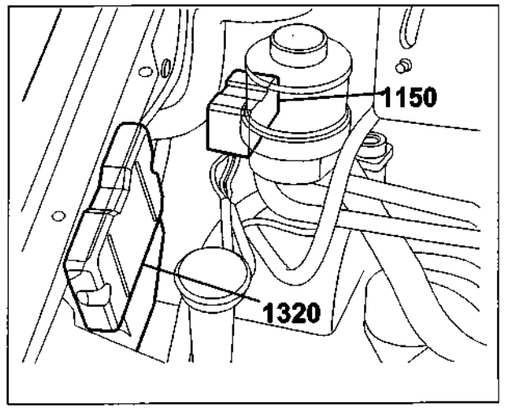
3S021ML01



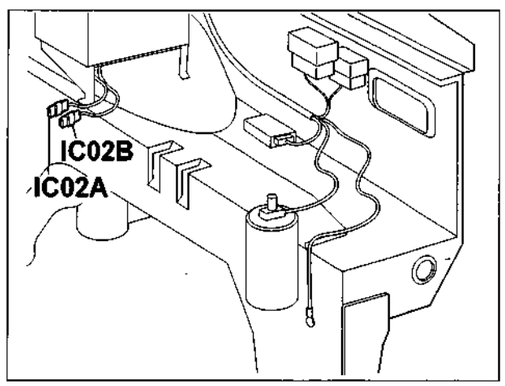
3S021ML02



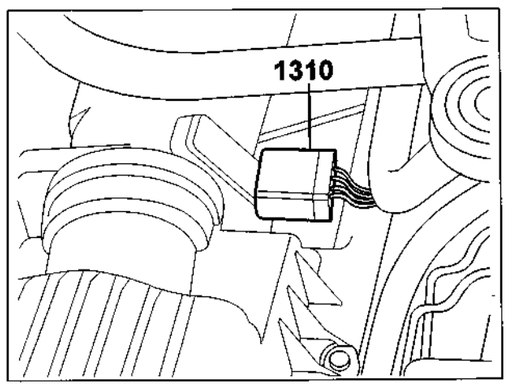
3S029ML01



4B131AI04



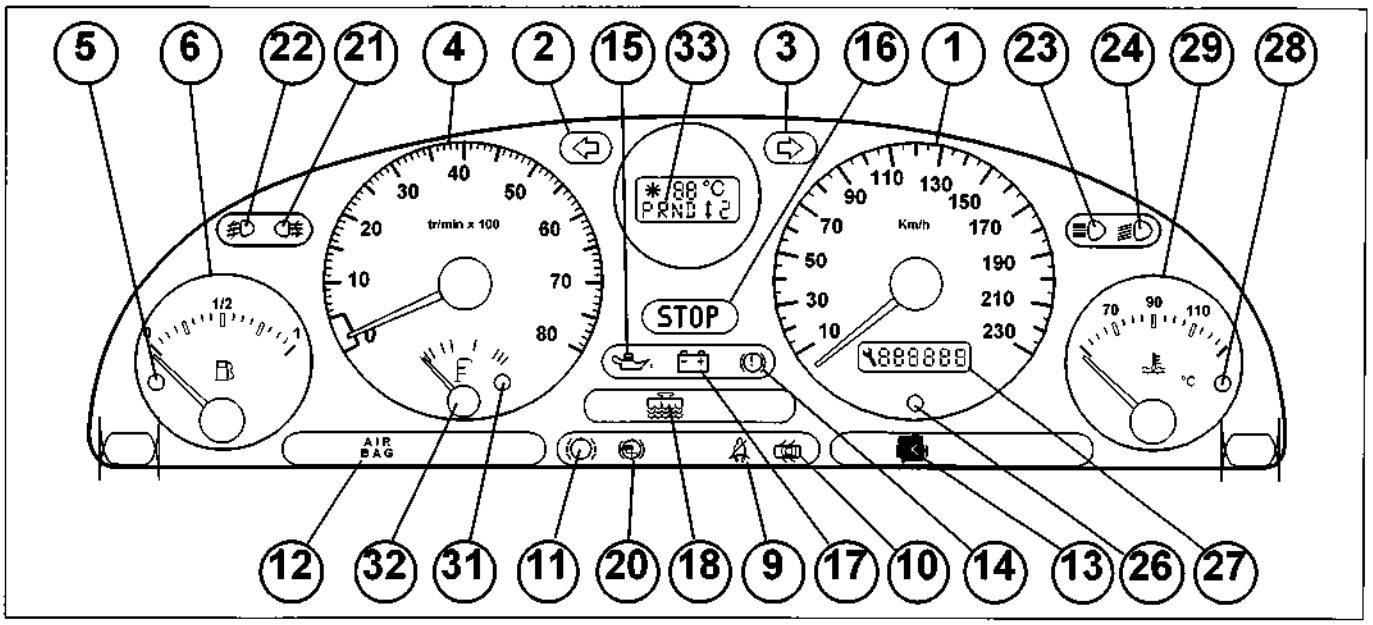
4B090GL02



4B135AI06

55.

VERSION WITH AUTOMATIC TRANSMISSION
FRONT VIEW

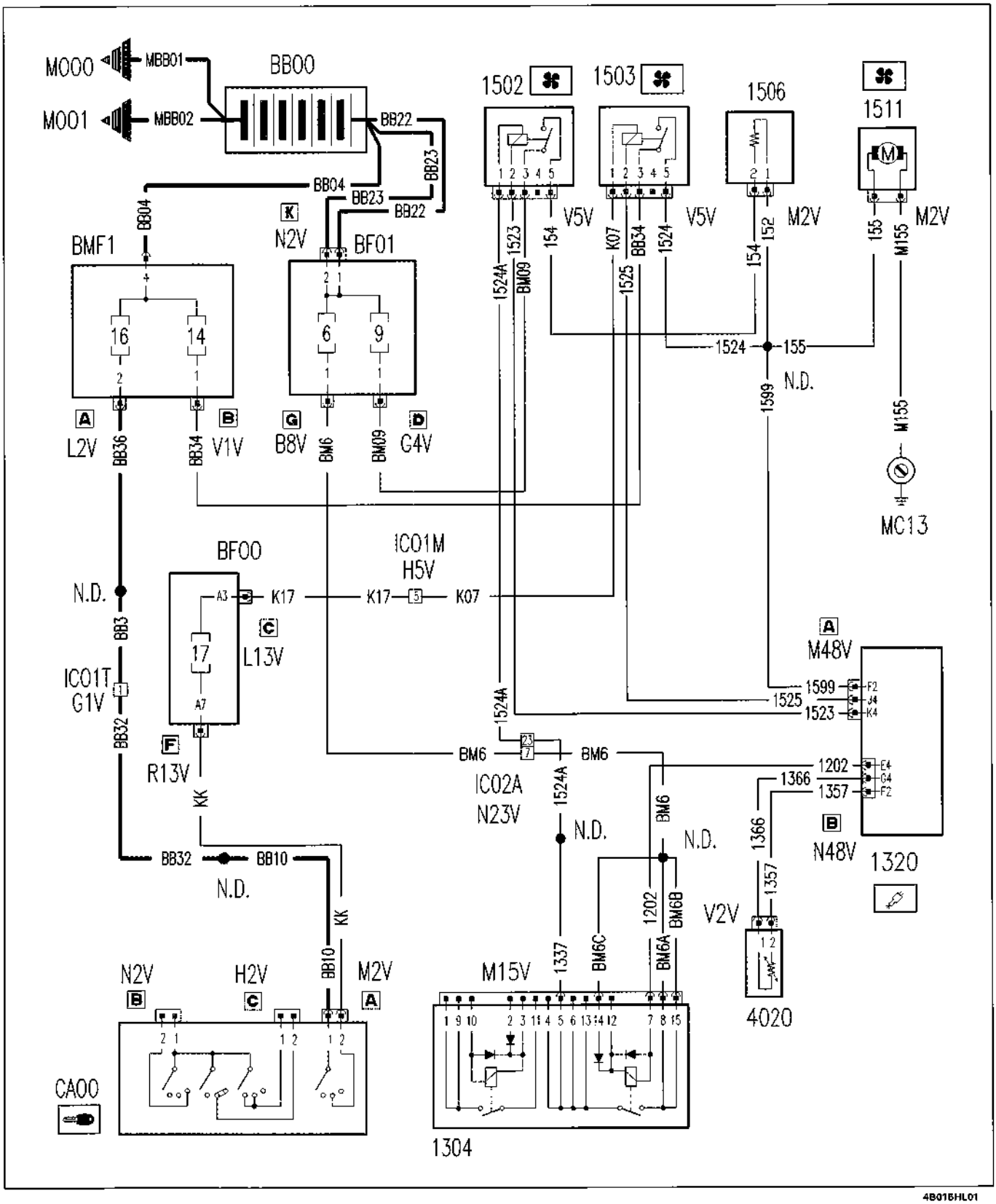


4B004IL02

KEY

1. Speedometer (4630)
2. Left direction indicator warning light (green) (V2320)
3. Right direction indicator warning light (green) (V2330)
4. Rev counter (4210)
5. Fuel reserve warning light (yellow) (V4300)
6. Fuel gauge (4310)
8. Instrument panel light dimmer and clock settings adjustment button
9. Seat belt not fastened warning light (red) (V4730)
10. Doors ajar warning light (red) (V4700)
11. Brake pad wear warning light (yellow) (V4430)
12. Air Bag system failure warning light (yellow) (V6560)
13. Injection system failure warning light (yellow) (V1300)
14. Handbrake applied and brake fluid level warning light (red) (V4420)
15. Insufficient engine oil pressure warning light (red) (V4110)
16. General failure warning light (red) (V004)
17. Battery recharging warning light (red) (V1000)
18. Insufficient engine coolant warning light (red) (V4010)
20. ABS anti-lock brakes circuit failure warning light (yellow) (V7000)
21. Rear fog lamps warning light (yellow) (V2000)
22. Fog lights warning light (yellow) (V2660)
23. Main beam headlamps warning light (blue) (V2620)
24. Dipped headlamps warning light (green) (V2610)
25. Heated rear windscreen warning light (yellow) (V8110)
26. Service indicator/trip meter zeroing button
27. Service indicator/trip meter zeroing button, clock
28. Engine coolant overheating warning light (red) (V4020)
29. Engine coolant temperature gauge (4026)
31. Insufficient engine oil level warning light (V4120)
32. Engine oil level gauge (4102)
33. Automatic transmission selector display (4605)/Outside temperature gauge (7226)

Central locking - (See key at end of wiring diagrams)

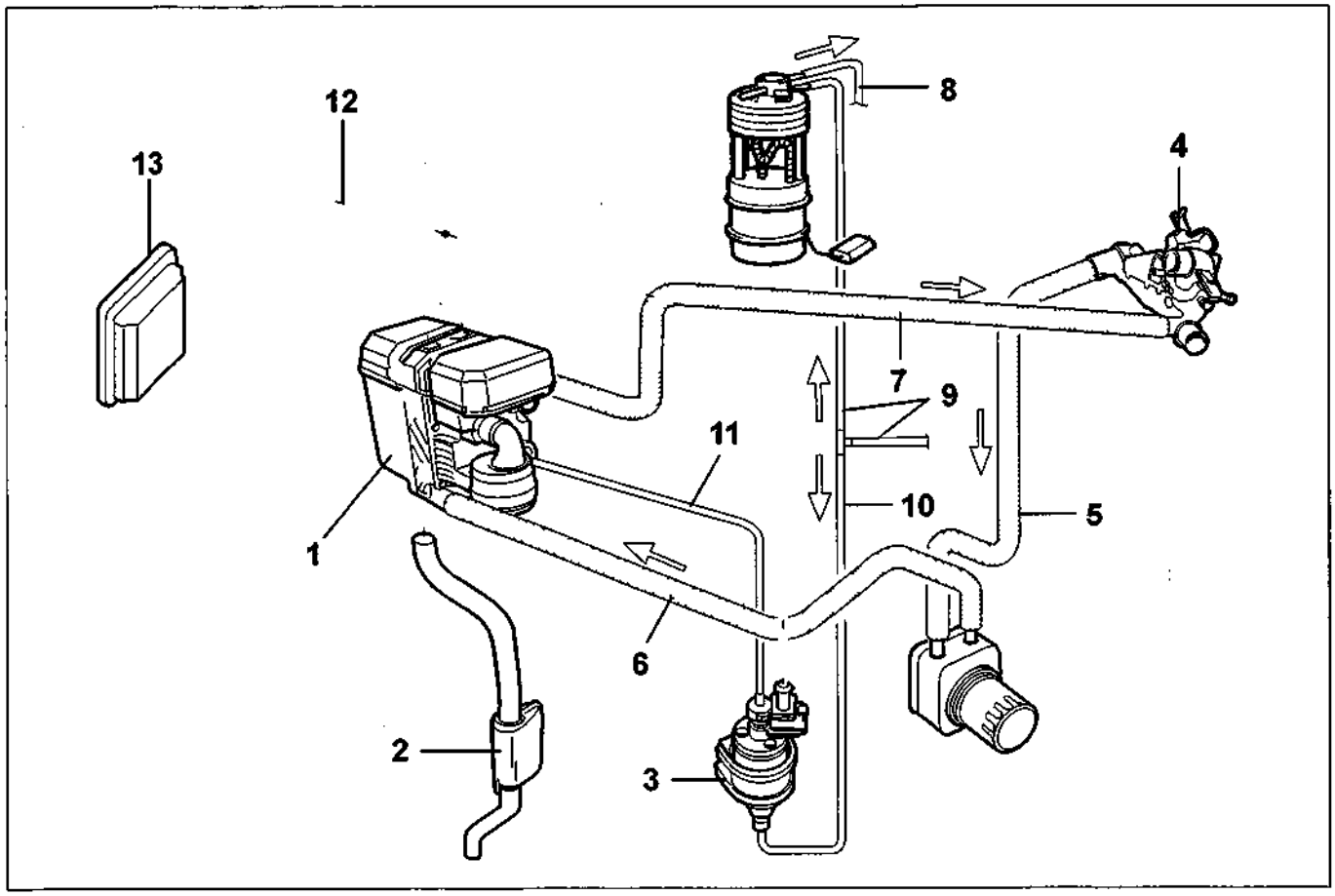


4B015HL01

DESCRIPTION OF SYSTEM

The Scudo with the 1997 JTD engine is equipped with a WEBASTO additional heater connected to the vehicle water and fuel system
This device makes it possible to pre heat the engine coolant and therefore the engine itself
The device secured to a special bracket is located in the engine compartment on the right hand side near the engine management control unit
Its operation is intermittent and completely autonomous (with the engine running) and depends on the temperature of the coolant and the outside temperature
It basically consists of

- a heater secured to the engine crankcase
- an electric fuel metering pump located on the heater mounting bracket
- an exhaust pipe connected in the lower part of the heater



Component key

1 Additional heater unit
2 Exhaust pipe
3 Electric fuel metering pump
4 Thermostat unit
5 Thermostat unit/heat exchanger water supply pipe
6 Heat exchanger/additional heater water supply pipe
7 Additional heater/thermostat unit water return pipe
8 Fuel supply pipe from tank to engine
9 Fuel return pipe from the tank supply de vices
10 Fuel supply pipe from connector to meter ing pump
11 Fuel supply pipe from metering pump to additional heater
12 Heater/engine management control unit wiring and electrical connection
13 Engine management control unit