



| | Type | Section |
|---------------------|-------------|---------|
| RENAULT Clio | B57 6L 4C U | 88 |
| | C57 6L 4C U | 88 |
| | S57 6L | 88 |

88 THE PRINCIPLE OF OPERATION OF THE POWER STEERING SYSTEM ELECTRIC PUMP

Other Sub-sections concerned : **13** **36**

• Engine : F8Q - F2N - F3P

• Gearbox : XXX

Basic Manual :

MR 295

Modifications to the power steering pump wiring harness.

* The repair methods given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The methods may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which his vehicles are constructed.

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Power steering system electric pump

ELECTRICAL ARRANGEMENT

Several different types of arrangement have been fitted to different types of vehicle.

- the arrangement with 3 relays
- the arrangement with 4 relays (latest version).

A - The 3 relay arrangement

With the ignition on but the engine not running, the oil pressure switch closes the circuit and forms an earth circuit to line 2 of the pump unit authorisation relay (595).

As line 1 on the relay winding (595) is supplied with a + 12 Volt current from the output side of the ignition switch, the relay is energised and thus breaks the circuit connecting it to the 2 power steering pump unit relays (409-1) and (409-2) (see wiring diagrams). The power steering pump motor will therefore not run.

During the starting phase, the oil pressure switch opens. The earth circuit through line 2 of the relay (595) is broken, the relay is no longer energised and this allows the + 12 Volt current from the output side of the ignition switch to pass to the power supply wire joint to reach line 2 on both of the power steering pump relays (409-1) and (409-2).

When the engine is running, the relay (595) is de-energised. This closes an earth circuit from the power supply wire joint to line 2 on each of the two pump unit relays (409). The + 12 Volt supply from the output side of the ignition switch still reaches lines 1 and both relays (409) are energised. The + 12 Volt supplies from the input side of the ignition switch arriving at their lines 3 also provides a supply to the (+) terminal on the power steering pump motor (186) via wire joint (FC). The power steering pump motor will then run.

CAPTIONS TO WIRING DIAGRAM M6 ML

Components

| | |
|-----|-----------------------------------|
| 104 | : Anti-theft switch |
| 107 | : Battery |
| 163 | : Starter |
| 186 | : Power steering pump unit |
| 205 | : Pressure switch |
| 247 | : Instrument panel |
| 257 | : Pre-heater unit |
| 258 | : Pre-heater plugs |
| 260 | : Fusebox |
| 406 | : Pre-heater temperature switch |
| 409 | : Power steering pump relays |
| 578 | : Emission control solenoid valve |
| 589 | : Injection pump |
| 595 | : Pump motor authorisation relay |

Junctions

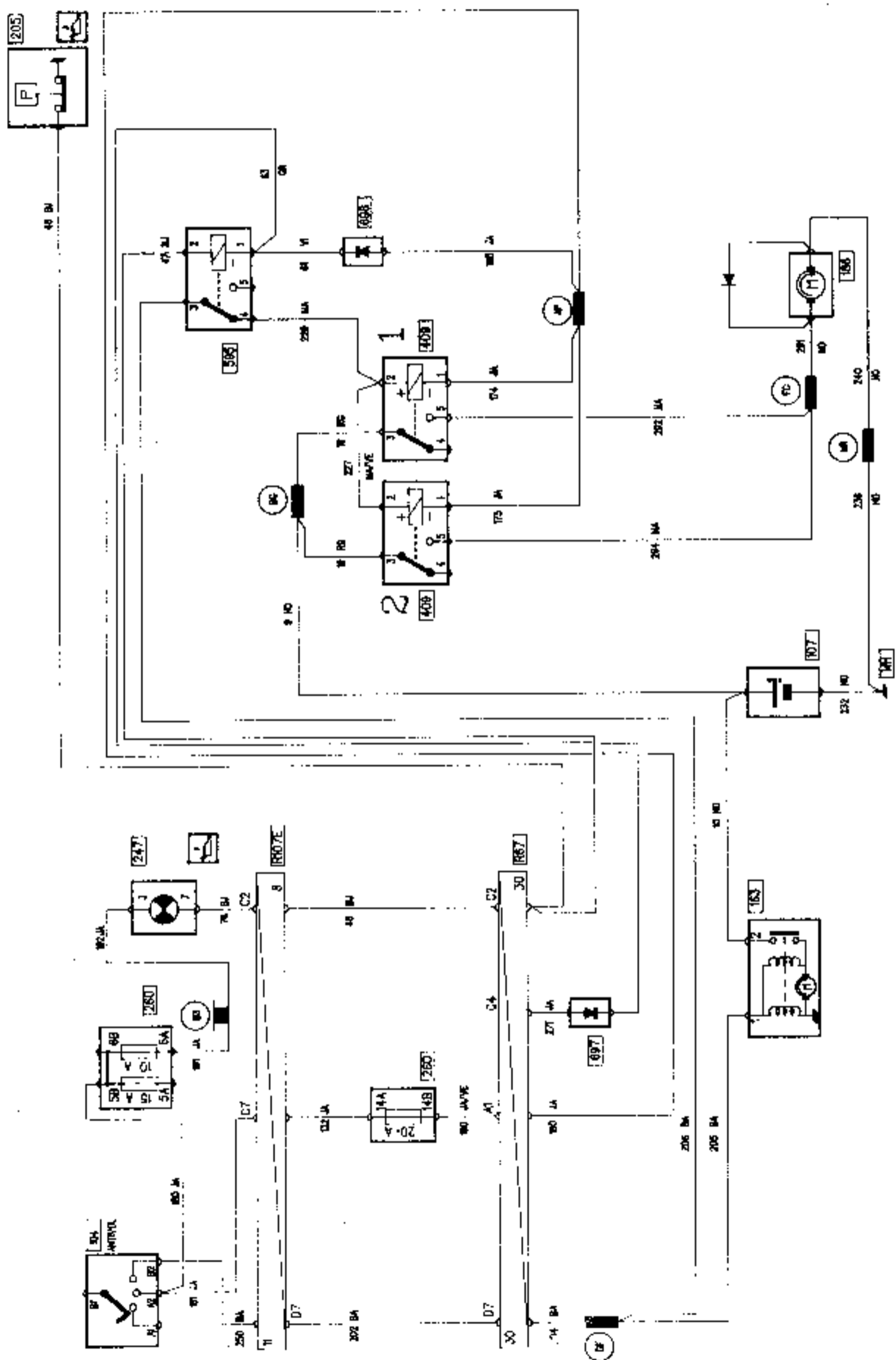
| | |
|------|--|
| R67 | : Engine front/engine harnesses |
| R107 | : Dashboard/engine front harnesses |
| R142 | : Engine/diesel injection pump harnesses |

Earths (Grounds)

| | |
|----|---------------------------|
| ME | : Bodywork earth |
| MH | : Engine electrical earth |

Power steering system electric pump

WIRING DIAGRAM : FOR VEHICLES WITH TYPE M4 ENGINE, AIR CONDITIONING AND POWER STEERING



Power steering system electric pump**WIRING DIAGRAM CAPTIONS****M4 - MC - MU WITH AIR CONDITIONING AND POWER STEERING****Components**

| | | |
|------------|---|----------------------------|
| 104 | : | Anti theft switch |
| 107 | : | Battery |
| 120 | : | Injection computer |
| 163 | : | Starter |
| 186 | : | Power steering pump |
| 205 | : | Pressure switch |
| 242 | : | Oxygen sensor |
| 247 | : | Instrument panel |
| 260 | : | Fusebox |
| 409 | : | Power steering pump relays |
| 595 | : | Pump authorisation relay |

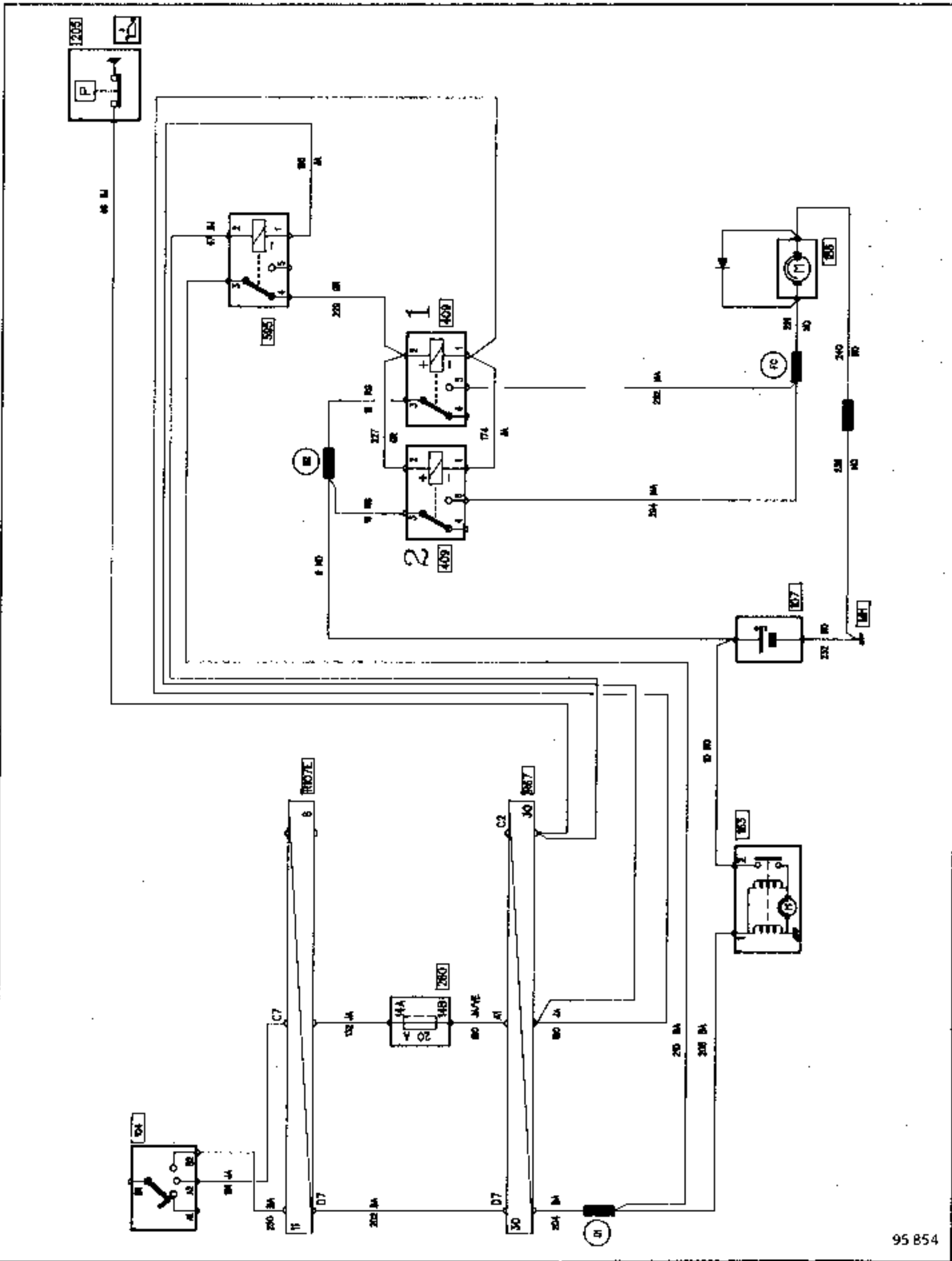
Junctions

| | | |
|-------------|---|----------------------------------|
| R67 | : | Avant engine / engine |
| R107 | : | Dashboard de bord / avant engine |

Earths (Grounds)

| | | |
|-----------|---|-------------------------|
| ME | : | Bodywork earth |
| MH | : | Engine electrical earth |

WIRING DIAGRAM : VEHICLES WITH TYPE MC AND MU ENGINES



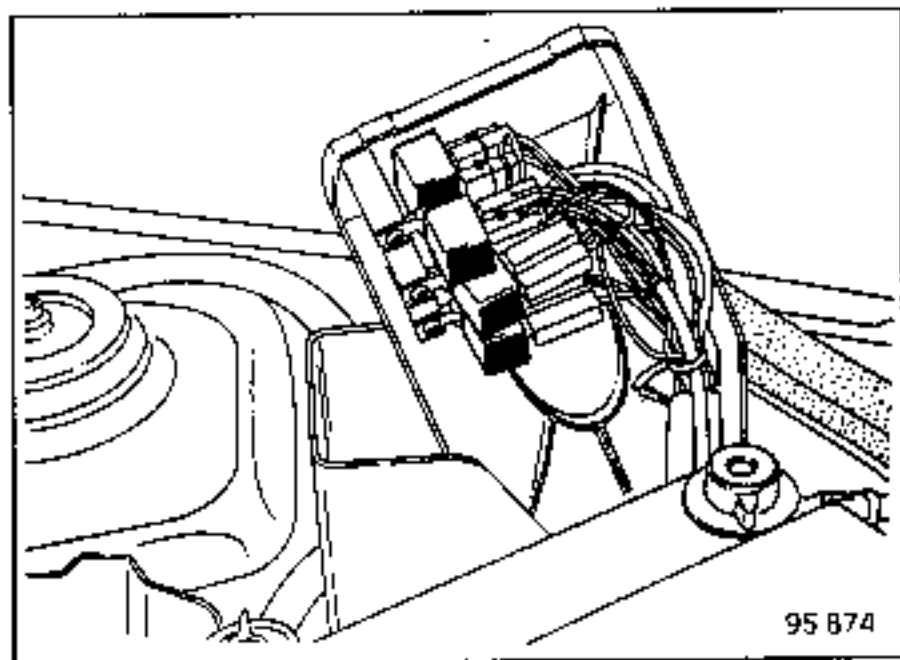
3 relay
arrange-
ment

Power steering system electric pump

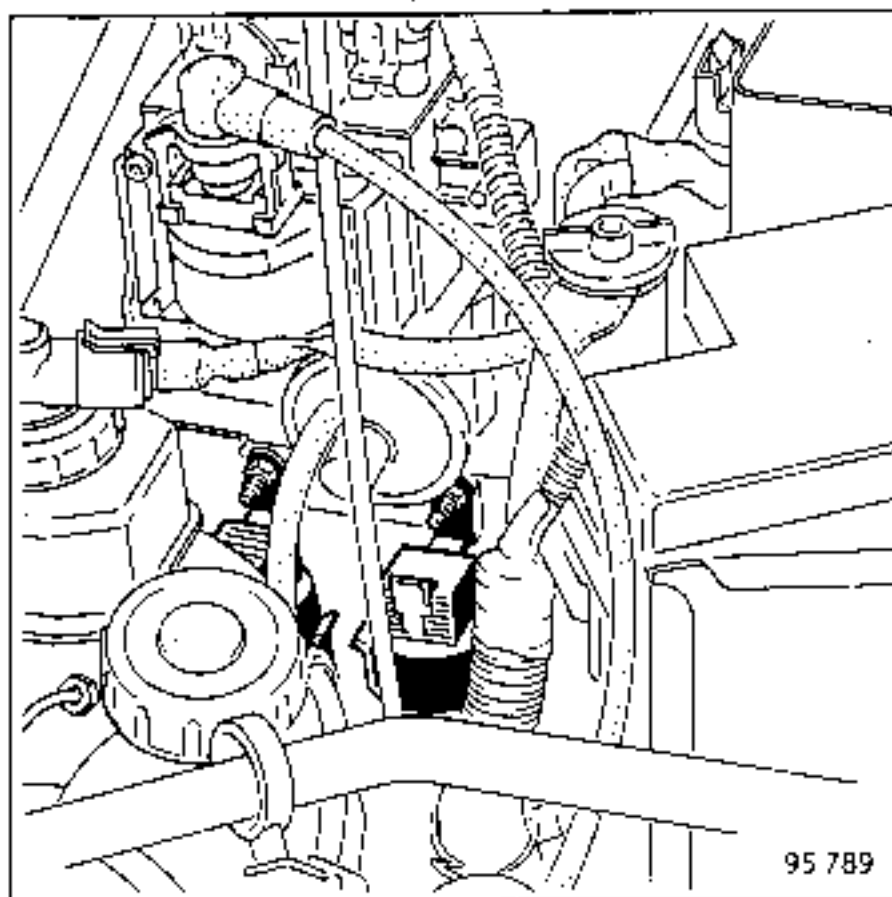
POSITIONS OF RELAYS

VEHICLES WITH TYPE M4 - MC ENGINES, AIR CONDITIONING AND POWER STEERING

The power steering pump control relay (595) is mounted under the junction box cover. This box is mounted on the front left hand wheel arch and also contains the wiring for two diodes (697) and (698).

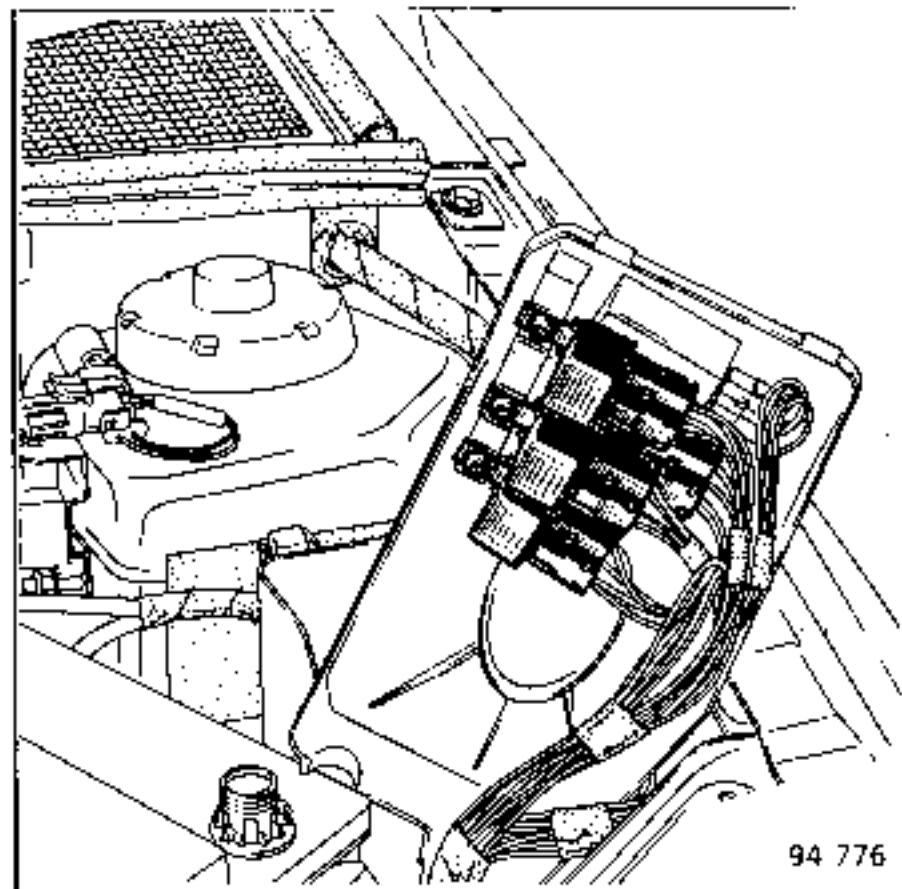


The two power steering pump relays (409-1) and (409-2) are contained within sealed casings secured to the front left hand shock absorber turret.



VEHICLES WITH TYPE M6- ML ENGINES AND POWER STEERING

The control relay (595) and the two power steering pump relays (409-1) and (409-2) are mounted under the junction box cover. This box is on the front left hand wheel arch.



Power steering system electric pump

B - Arrangement with 4 relays

With the ignition on, but the engine not running, the oil pressure switch closes the circuit to connect line 2 of the power steering pump control relay (595-1) to earth.

As line 1 on the relay coil (591-1) is supplied with + 12 Volt current from the output side of the ignition switch, the relay is energised and thus breaks the circuit connecting it to the two power steering relays (409-1) and (490-2) (see wiring diagrams).

The power steering pump motor will not run.

During the starting phase, the oil pressure switch breaks the circuit. Line 2 on relay (595-1) is no longer connected to earth and the relay is de-energised.

As line 1 of relay (595-2) is provided with a + 12 Volt supply from the output side of the ignition switch and line 2 of its coil is connected directly to earth, the relay is energised and this breaks the circuit between the two power steering pump control relays (595). The circuit is broken.

The power steering pump will not run.

When the engine is running,

The power steering pump motor relay (595-1) is de-energised and lines 3 and 4 on the relay are inter-connected.

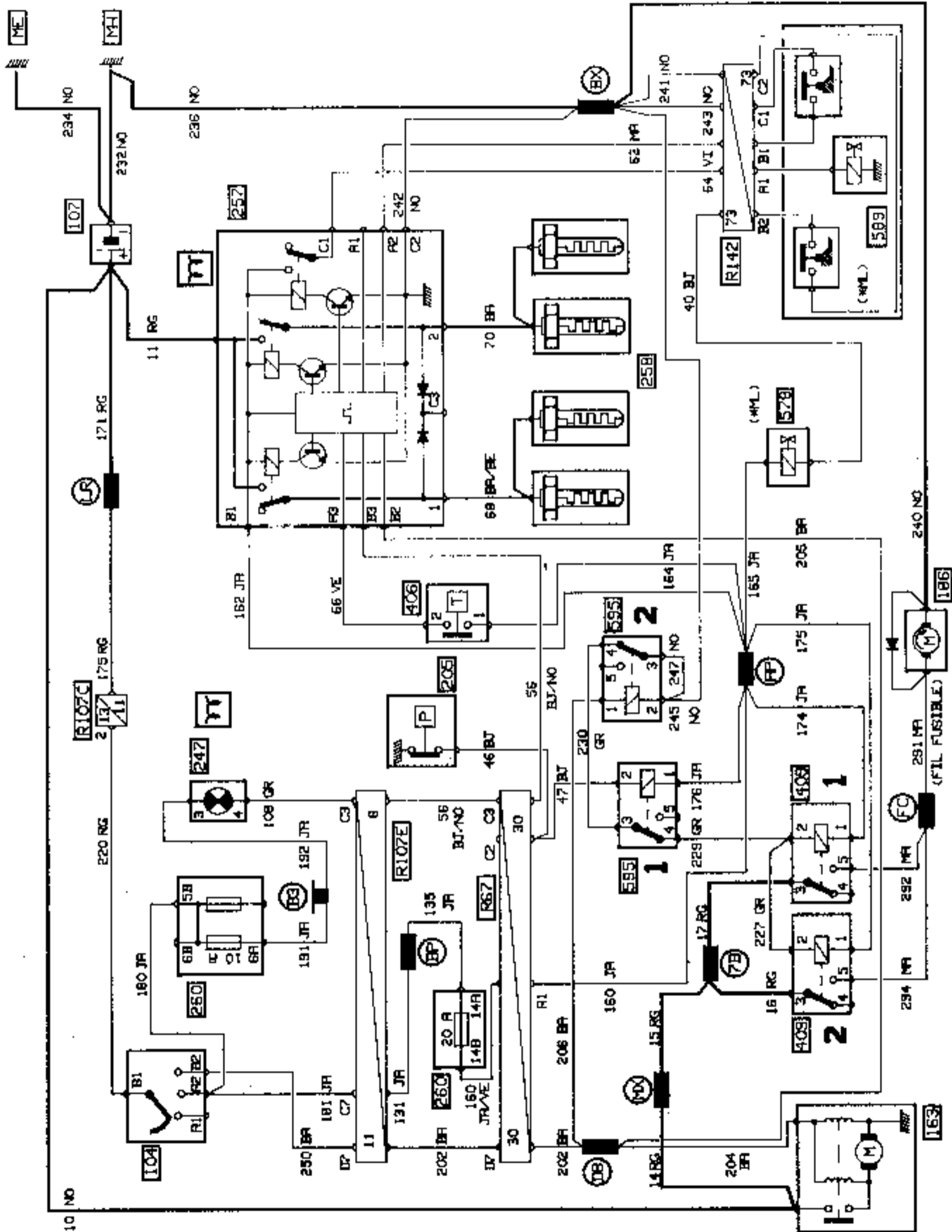
Line 1 of the power steering pump control relay (595-2) is connected to the earth circuit on the starter power supply line wire joint (this will depend on the engine type). As line 2 of the relay is connected permanently to a direct earth, the relay is de-energised and lines 3 and 4 are therefore inter-connected.

The earth circuit via line 3 of the power steering pump control relay (595-2) is therefore connected through to line 2 on each of the two power steering relays (409-1) and (409-2).

Line 1 on each of the two power steering relays (409) is supplied with a + 12 Volt current from the output side of the ignition switch via the wire joint (AP). Both relays (409) are therefore energised and provide a circuit to carry a + 12 Volt supply from the input side of the ignition switch to the (+) terminal on the power steering pump motor (186) through wire joint (FC) or (FF) depending on the engine type.

The power steering pump motor will then run.

WIRING DIAGRAM : FOR VEHICLES WITH TYPE M6-ML ENGINES AND POWER STEERING



WIRING DIAGRAM CAPTIONS

Components

| | | |
|-----|---|---------------------------------|
| 104 | : | Anti-theft switch |
| 107 | : | Battery |
| 163 | : | Starter |
| 186 | : | Power steering pump |
| 205 | : | Pressure switch |
| 247 | : | Instrument panel |
| 257 | : | Pre-heater unit |
| 258 | : | Pre-heater plugs |
| 260 | : | Fusebox |
| 406 | : | Pre-heater temperature switch |
| 409 | : | Power steering pump relay |
| 578 | : | Emission control solenoid valve |
| 589 | : | Injection pump |
| 595 | : | Pump authorisation relay |

Junctions

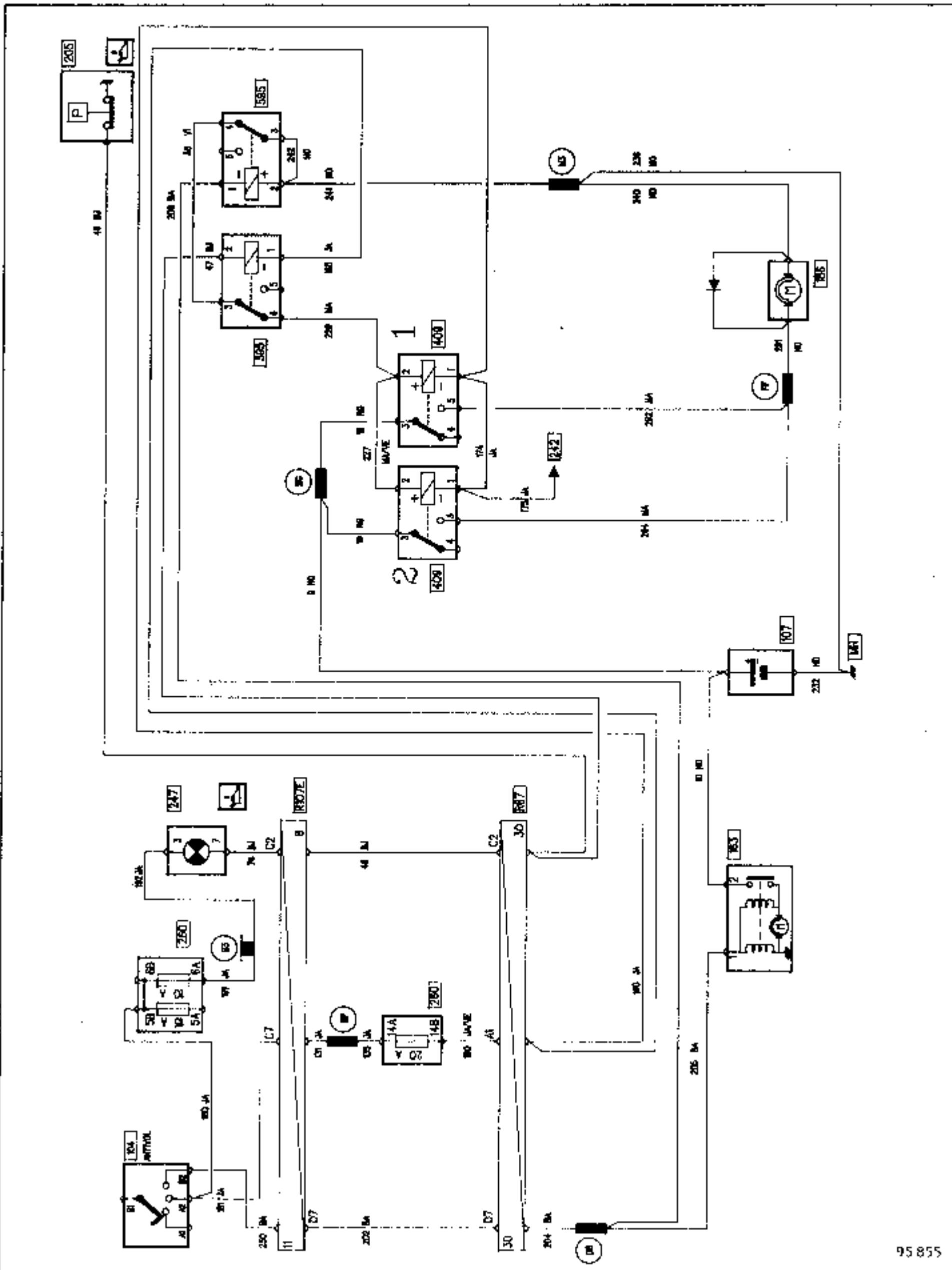
| | | |
|------|---|--|
| R67 | : | Engine front/engine harnesses |
| R107 | : | Dashboard/engine front harnesses |
| R142 | : | Engine/diesel injection pump harnesses |

Earths (Grounds)

| | | |
|----|---|-------------------------|
| ME | : | Bodywork earth |
| MH | : | Engine electrical earth |

Power steering system electric pump

WIRING DIAGRAM : VEHICLES WITH ENGINE TYPES MC AND MU

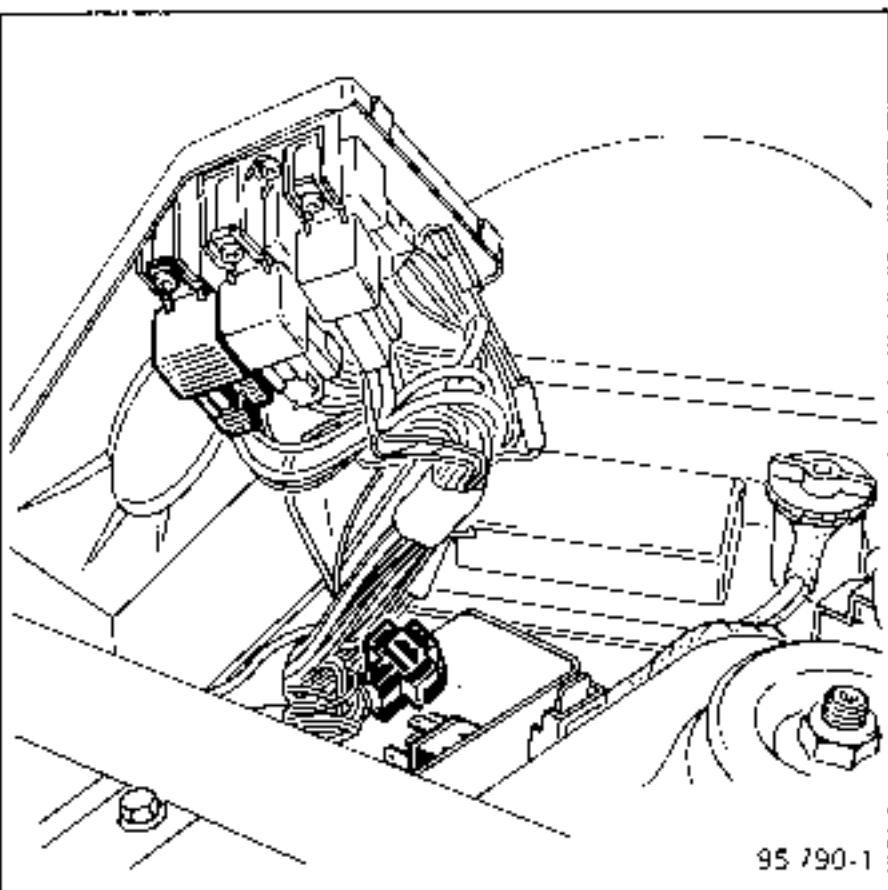


Power steering system electric pump

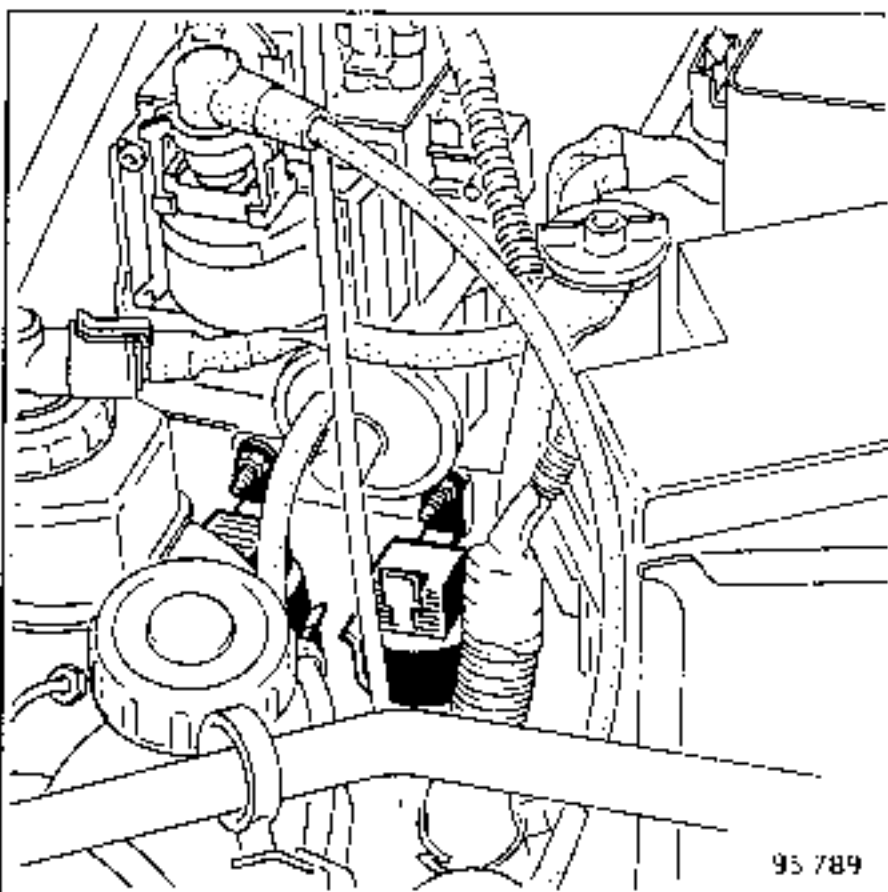
POSITIONS OF THE RELAYS

VEHICLES WITH TYPE M4-MC ENGINES, AIR
CONDITIONING AND POWER STEERING

The control relay (595-1) is mounted under the cover of the junction box which is secured to the front left hand wheel arch.



The power steering pump relay (595-2) is mounted at the bottom of the junction box. The two power steering pump relays (409-1) and (409-2) are contained in sealed casings secured to the front left hand shock absorber turret.

VEHICLES WITH TYPE M6 - ML ENGINES AND POWER
STEERING

The control relay (595-1) and the two power steering pump relays (409) are mounted under the cover of the junction box which is secured to the front left hand wheel arch. The control relay (595-2) is mounted at the bottom of this same box

Power steering system electric pump

REMOVING - REFITTING

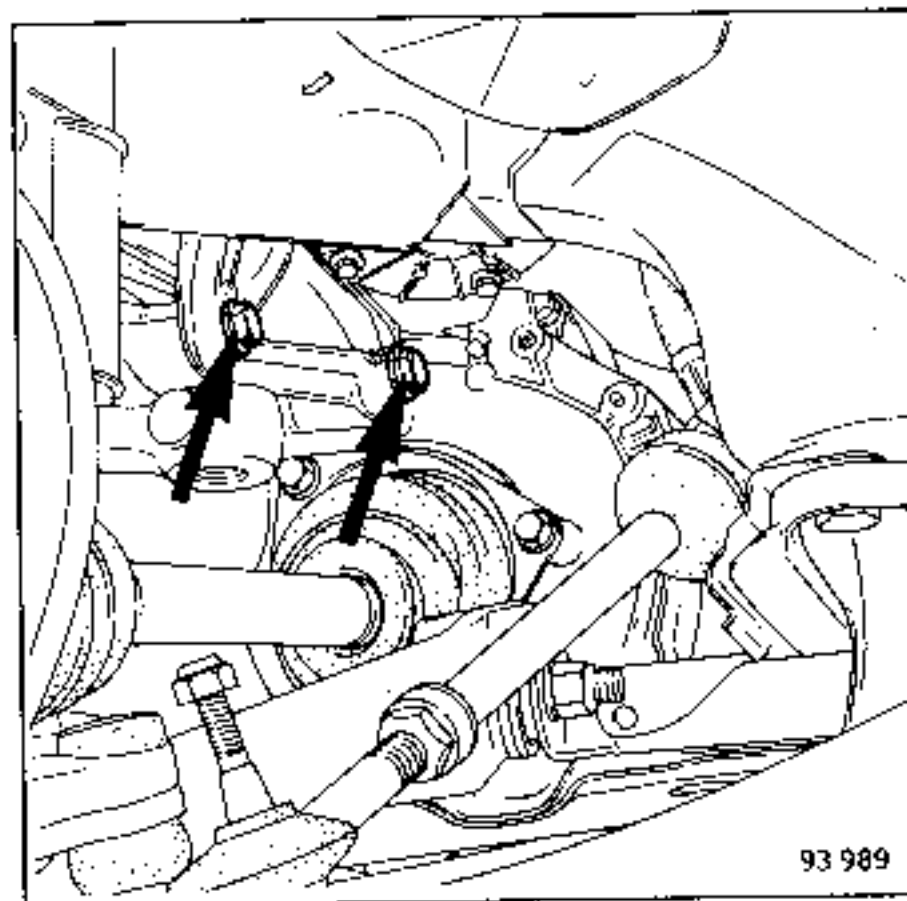
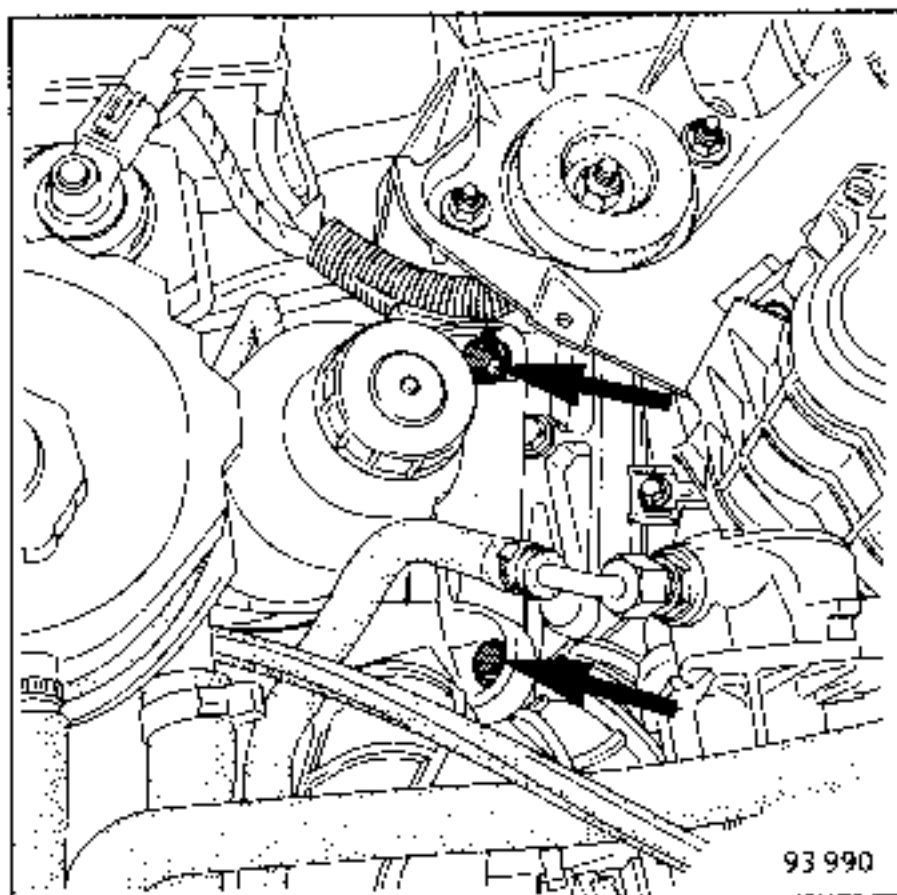
General

| ESSENTIAL SPECIAL TOOLING | |
|---------------------------|-------------|
| Mot. 453-01 | Hose clamps |

| TIGHTENING TORQUES (in daN.m.) | | ⚠ |
|-----------------------------------|-----|---|
| 16mm pipe unions | 2.5 | |
| 18 mm pipe unions | 3 | |
| Power steering pump bolts | 4 | |
| Screws securing reservoir to pump | 0.9 | |

Removing

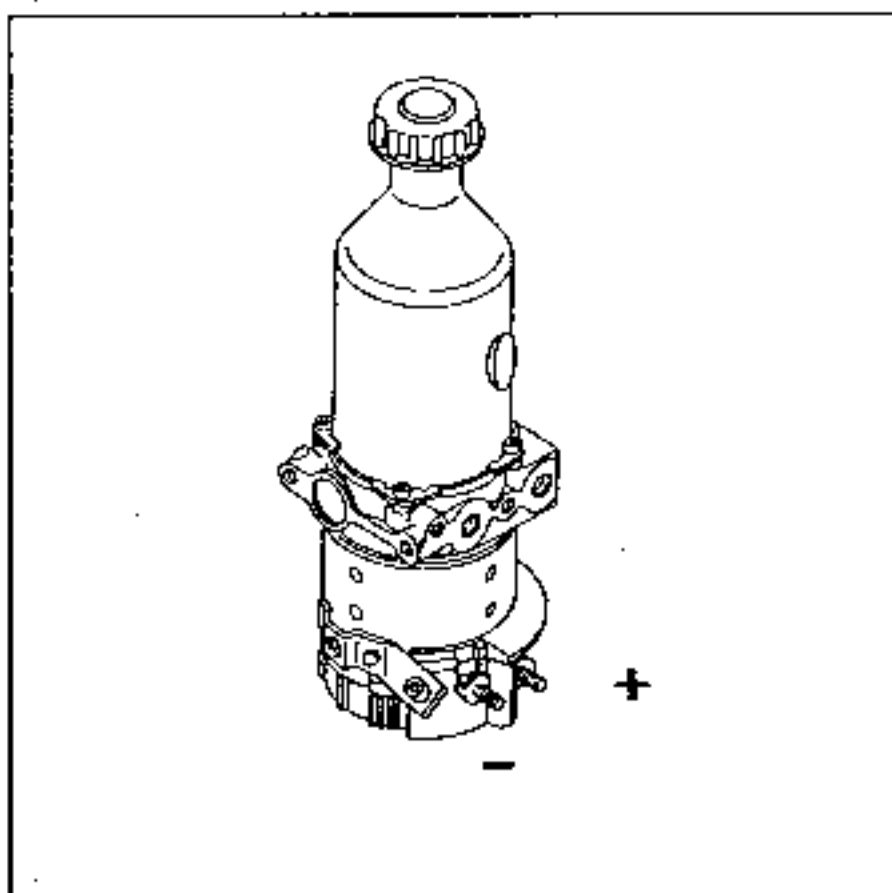
- Remove the battery and clamp the pump low pressure hose with a clamp **Mot. 453-01**.
- Unscrew the 4 pump securing bolts.



- Disconnect the high and low pressure hoses (have a container ready to catch the oil).

Power steering system electric pump

- Disconnect the pump power supply wires.



- Remove the support - pump assembly.

Refitting

- Reconnect the pump power supply wires.
- Reposition the pump - support assembly and screw up its 4 bolts
- Remove clamp Mot. 453-01.
- Fill and bleed the system.