

# PUNTO eMANUAL

Electrical Equipment

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# 55.

## INTRODUCTION

The distribution of the voltage in the vehicle electrical circuit is carried out by means of wiring of a suitable size to support the current absorbed by the relevant consumers, with a suitable safety coefficient oversize.

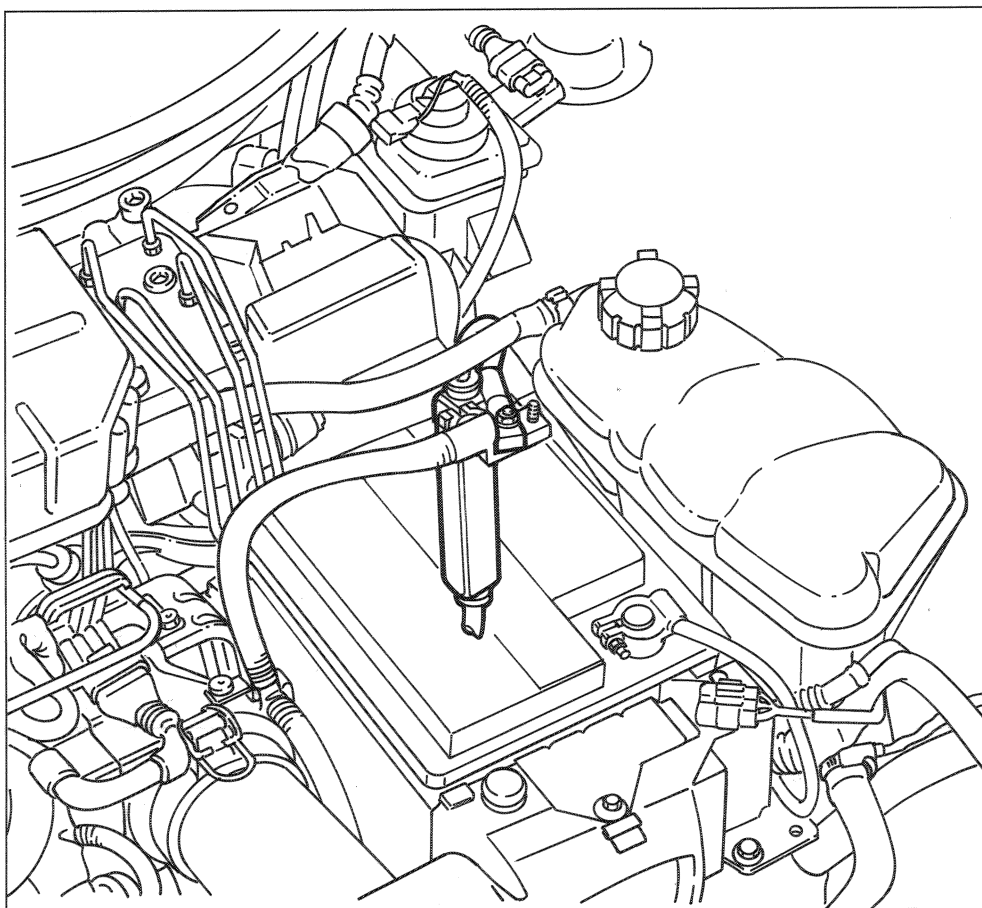
All the circuits on the vehicle are normally protected by appropriate fuses of a suitable size for the planned loads, located mainly in the junction unit or in other specific housings.

However, certain sections of the electrical equipment, supplied directly by the battery, are not conventionally protected from short circuits: recent experience has shown that there is a risk of the primary circuit cables (usually wide), present above all in the engine compartment and the area of the steering column, causing short circuits capable of producing a fire in the case of an accident or other problems.

### 1372 Version

To prevent this, on new vehicles, a high amperage fuse (125 A) is fitted between the battery and the connector block, which has the function of protecting the main supply cables from critical short circuits (with high current values).

The cables not protected by the general fuse (cable between fuse and battery, cable between battery and alternator, cable between battery and starter motor) are now the screened type, mechanically and thermally protected from short circuit; in addition the routing of all the main cables has been improved to reduce the risk of damage in the case of an accident, with pre-fixed anchorages and specific connections (for example on the starter motor and alternator) which allow connections with set angles.



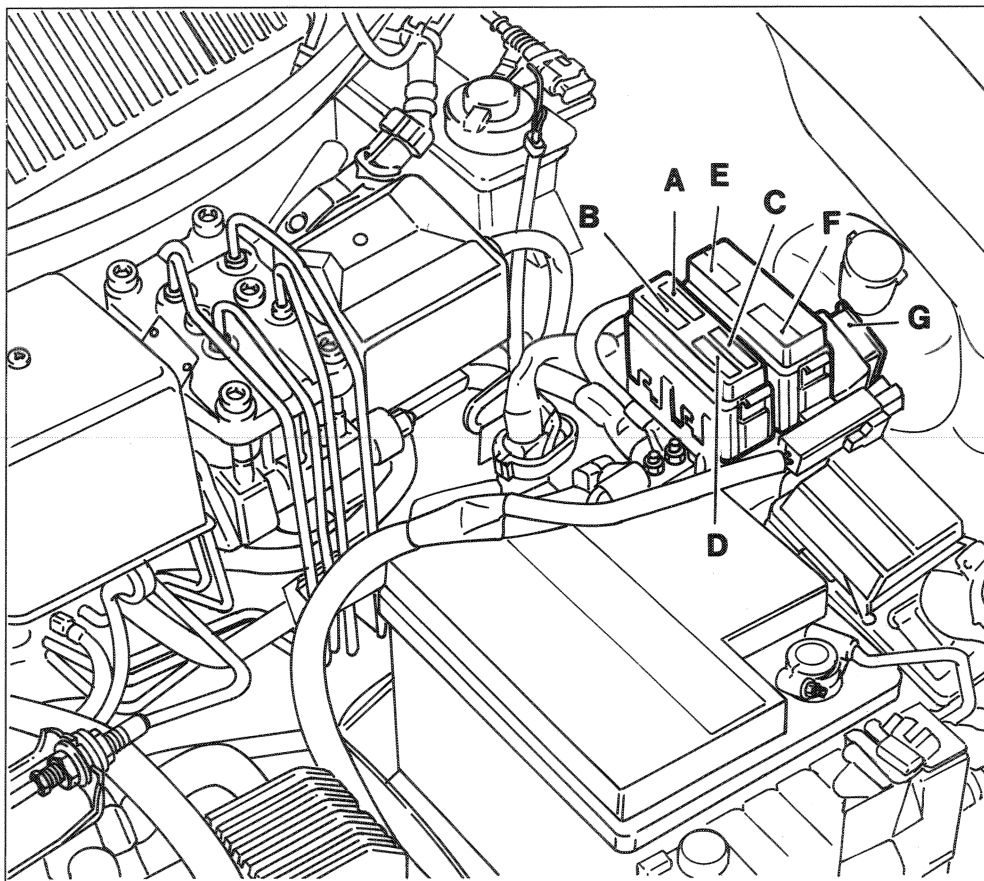
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**Location on vehicle of general system protective fuse**

**1108 - 1242 - 1581 - 1698 D and TD Versions**

On these versions a protection system has been adopted which uses a maxi fuse box (containing six fuses, three of which are optional according to the vehicle trim level).

This system differs from previous ones, which use a single fuse, because it manages the different activities separately in order to avoid the vehicle being stuck if a breakdown occurs.



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**Location on vehicle of maxi fuse box**

- |   |   |
|---|---|
| A. Injection (30 A)*                    | E. Antiskid (60 A)                                  |
| B. Ignition (40 A)                      | F. Radiator additional fan (TD version only) (30 A) |
| C. Additional optional equipment (50 A) | G. Radiator fan (30 A) (40 A)**                     |
| D. Junction unit (80 A)                 |   |

(\*) Pre-heating protection for TD versions (60 A)

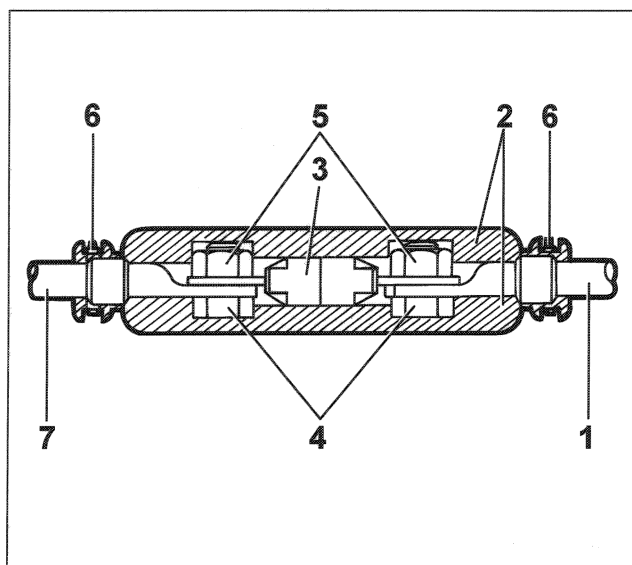
(\*\*) For versions with climate control and Diesel versions

The term "hot wires" refers to those cables which connect the battery positive with the consumer without the assistance of protection by a fuse; this is possible thanks to the special outer casing which covers them.

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#### Replacing the general fuse (for 1372 version)

Before proceeding with the replacement of the general protective fuse, it is necessary to thoroughly check the electrical equipment and eliminate any causes of its intervention.



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1. Disconnect the fuse container from the vehicle and cut the two bands (6) at the ends of the actual container (2).
2. Separate the two halves of the container (2) pressing on the tabs as shown in detail A.
3. Undo the two nuts (5) and remove the fuse (3).
4. Fit the new fuse (3), after having checked that the amperate of the new fuse corresponds to that of the fuse replaced, using the new bolts (4) and nuts (5) which are part of the Spares Kit.

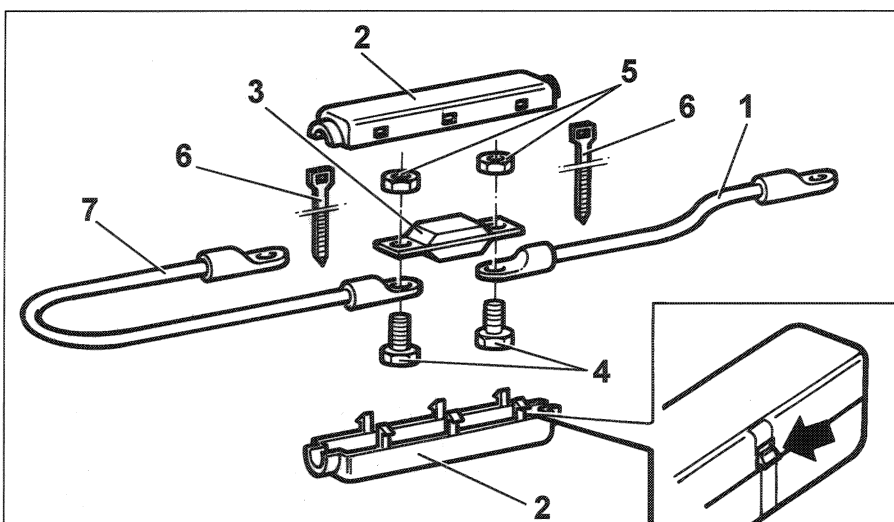


*Take special care during the fitting to avoid mechanical stresses on the new fuse, which could damage it irreparably.*



*Tightening torque of nuts (5) : 2.5 daNm*

5. Close the container (2), lock it with the pull in bands (6), return it to its position and secure it to the vehicle.



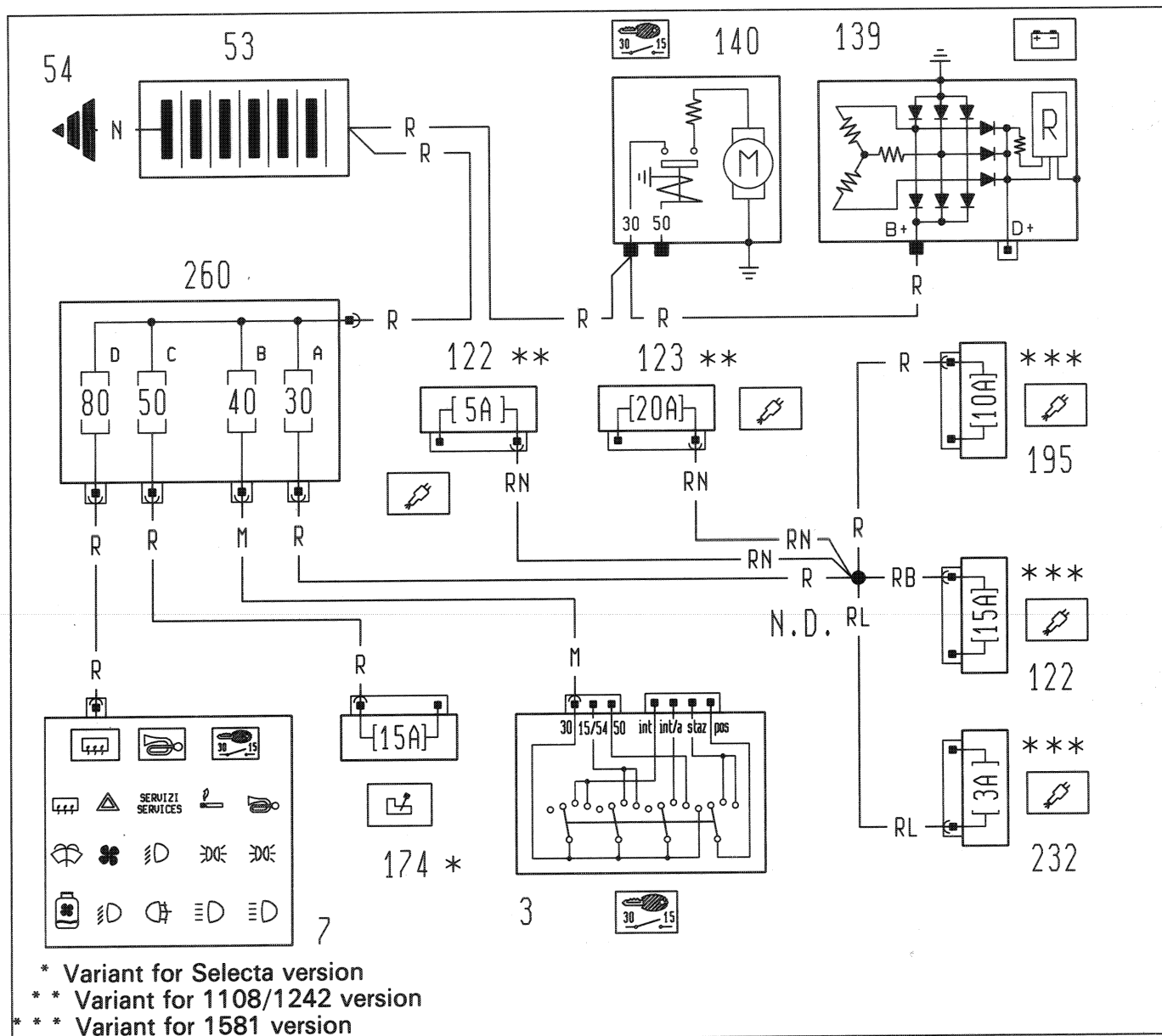
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1. Cable connecting fuse/battery
2. Fuse container
3. General fuse
4. Bolt
5. Self-locking nut
6. Pull in band
7. Cable connecting fuse/-connector block

**NOTE** The following components: fuse (3), bolt (4), self-locking nut (5) and pull in band (6) are available as spares in a single Kit, because if the fuse breaks it can cause damage to the fixing elements connected. The individual connecting cables (1) and (7) and the container (2) are available separately as spares.

The configuration of the container (2) may vary according to the version; the instructions for replacing the general fuse are, however, the same, irrespective of the configuration of the container.

**Wiring diagram (1108 - 1242 - 1581 versions)**



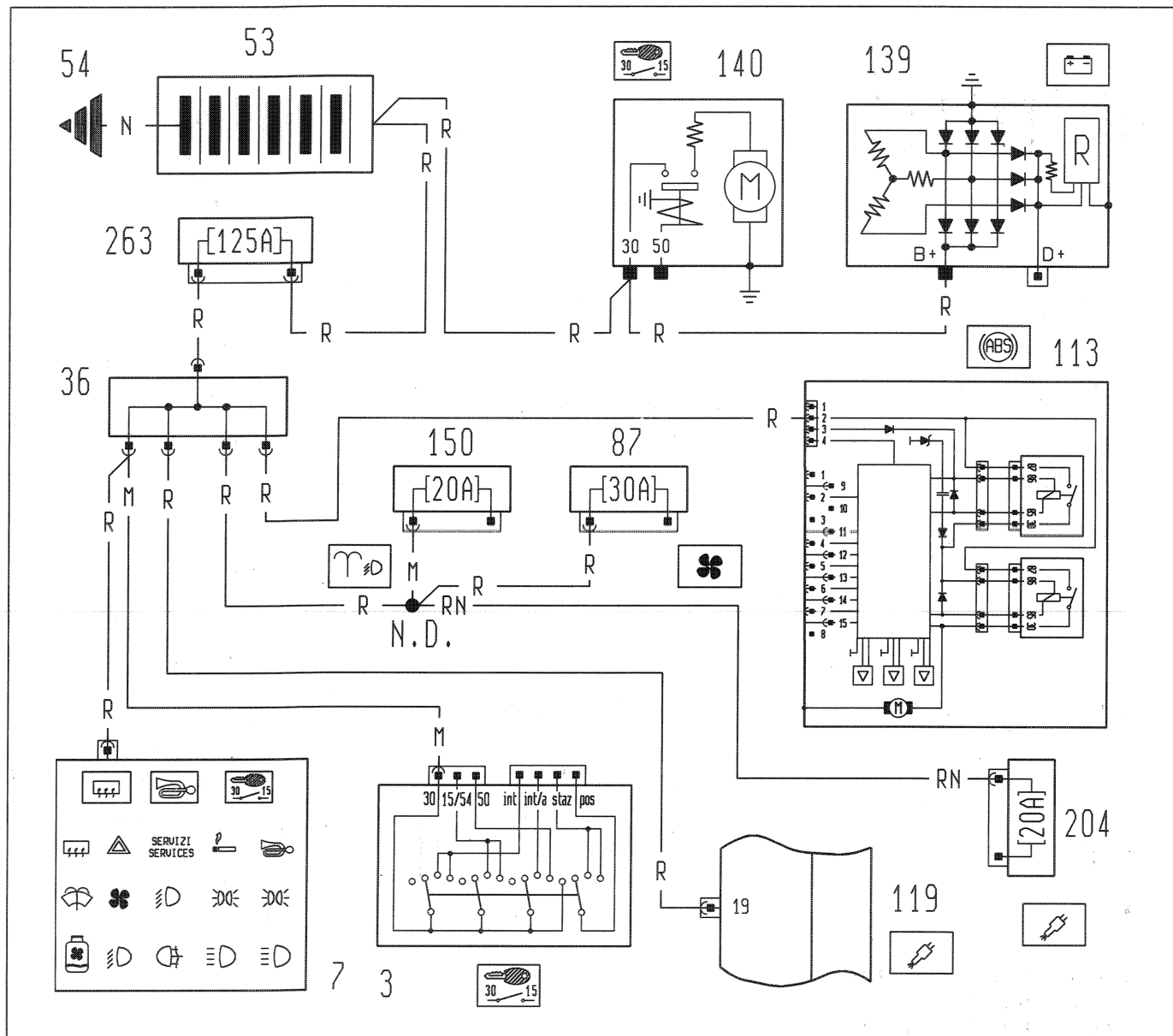
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- 3. Ignition switch
- 7. Junction unit
- 53. Battery
- 54. Earth for battery
- 122. Injection system 5A protective fuse (15A for 1581 version)
- 123. Injection electric pump, Lambda sensor and injectors 20A protective fuse (25A for 1242 version)
- 139. Alternator
- 140. Starter motor
- 174. 15A fuse protecting automatic transmission
- 195. 10A protective fuse for electric fuel pump

- 232. 3A fuse protecting injection memory
- 260. Power fuse box:
  - A 30A protective fuse for injection system
  - B 40A protective fuse for ignition system
  - C 50A protective fuse for additional de-  
vices system
  - D 80A protective fuse for junction unit
- N.D. Ultrasound welding taped in cable loom

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#### Wiring diagram (1372 version)

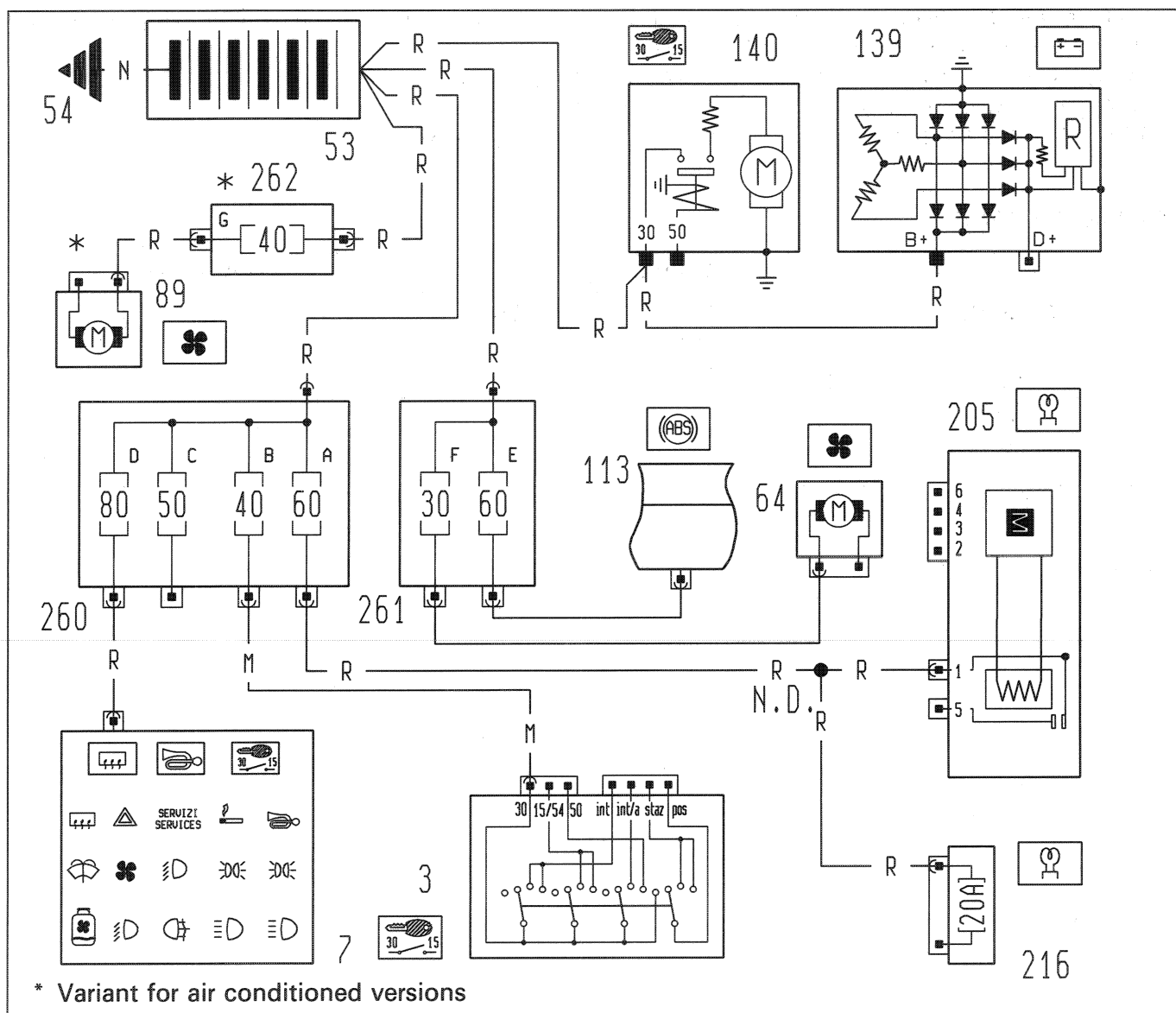


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- 3. Ignition switch
- 7. Junction unit
- 36. Connector block
- 53. Battery
- 54. Earth for battery
- 87. 30A fuse protecting engine cooling fan
- 113. Anti-lock brakes (A.B.S.) electronic control unit
- 119. Bosch electronic injection/ignition control unit

- 139. Alternator
- 140. Starter motor
- 150. 20A protective fuse for headlamp washer
- 204. 20A fuse protecting injector cooling
- 263. General 125A system protective maxi fuse
- N.D. Ultrasound welding taped in cable loom

**Wiring diagram (Diesel Version)**



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- |  |   |
|--|---|
| 3. Ignition switch                             | B 40A protective fuse for ignition system |
| 7. Junction unit                               | C 50A fuse protecting supplementary de-   |
| 53. Battery                                    | vices system                              |
| 54. Earth for battery                          | D 80A protective fuse for junction unit   |
| 64. Engine cooling fan                         | 261. Power fuse box:                      |
| 89. Engine cooling fan                         | E 60A fuse protecting A.B.S.              |
| 113. Anti-lock brakes (A.B.S.) electronic con- | F 30A fuse protecting cooling system      |
| trol unit                                      | 263. Power fuse box:                      |
| 139. Alternator                                | G 40A fuse protecting additional fan      |
| 140. Starter motor                             | N.D. Ultrasound welding taped in ca-      |
| 205. Pre-heating electronic control unit       | ble loom                                  |
| 216. 20A fuse protecting heated fuel filter    |   |
| 260. Power fuse box:                           |   |
| A 30A protective fuse for injection system     |   |

## 55.

### BATTERY CABLE ANTI-ROTATION RESTRAINT

The battery cable anti-rotation restraint is a plastic device placed between the solenoid valve cap and the battery cable. It has the following characteristics:

- it ensures the optimum angular position of the battery cable;
- it prevents accidental contact which could cause a short circuit;
- in the case of an impact, it prevents the battery cable from fraying.

#### Anti-rotation device

Engines	Starter motors		Alternators	
	+ 30	+ 50	B +	D +
1108		*		*
1242		*		*
1372		*		*
1581		*		-
1698 D		*		*
1698 TD		*		*

\* Anti-rotation device fitted