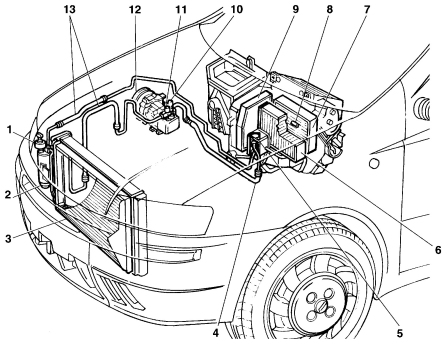

Punto 188 Mk2 1999
MANUALLY OPERATED CLIMATE CONTROL

LOCATION OF CLIMATE CONTROL SYSTEM COMPONENTS

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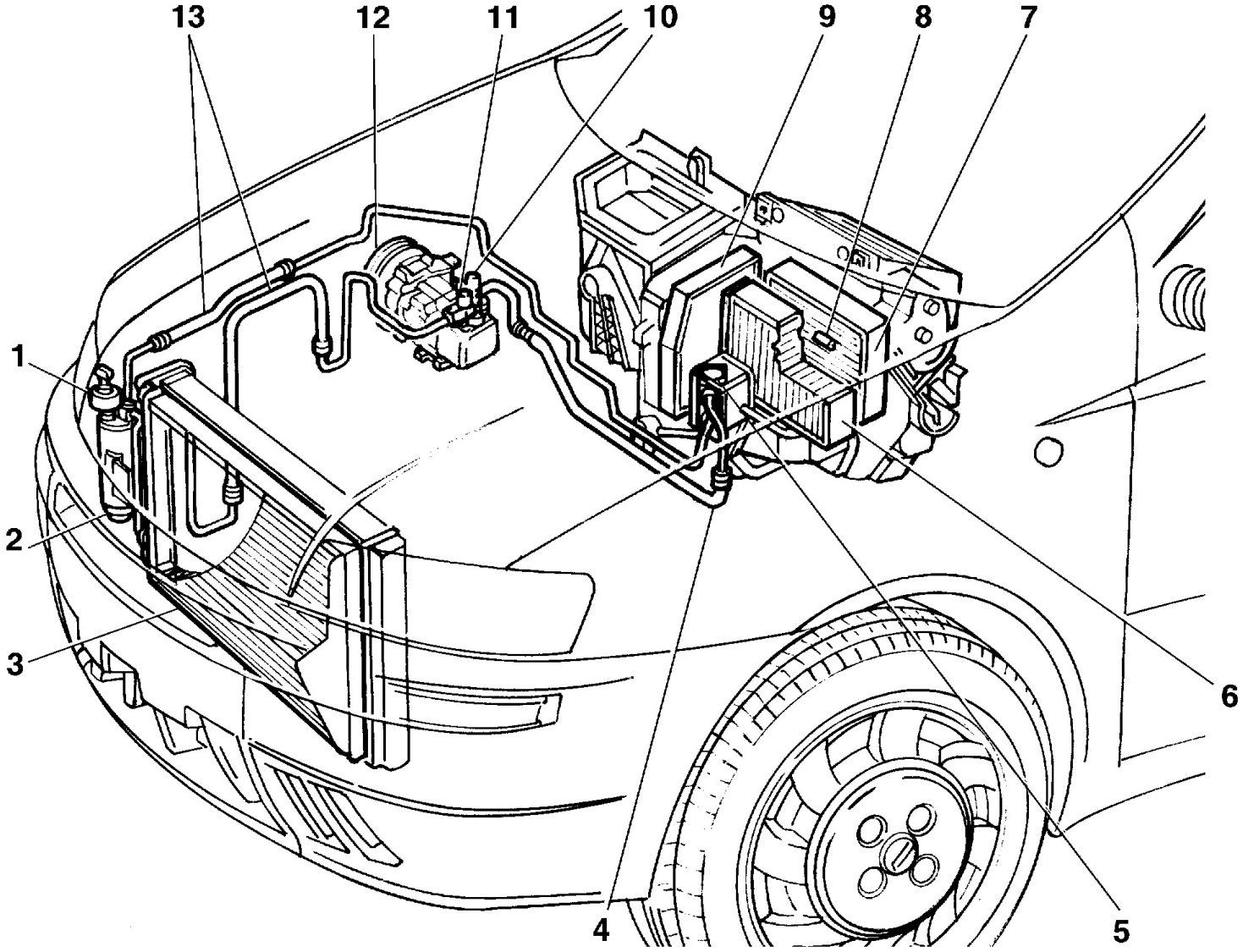
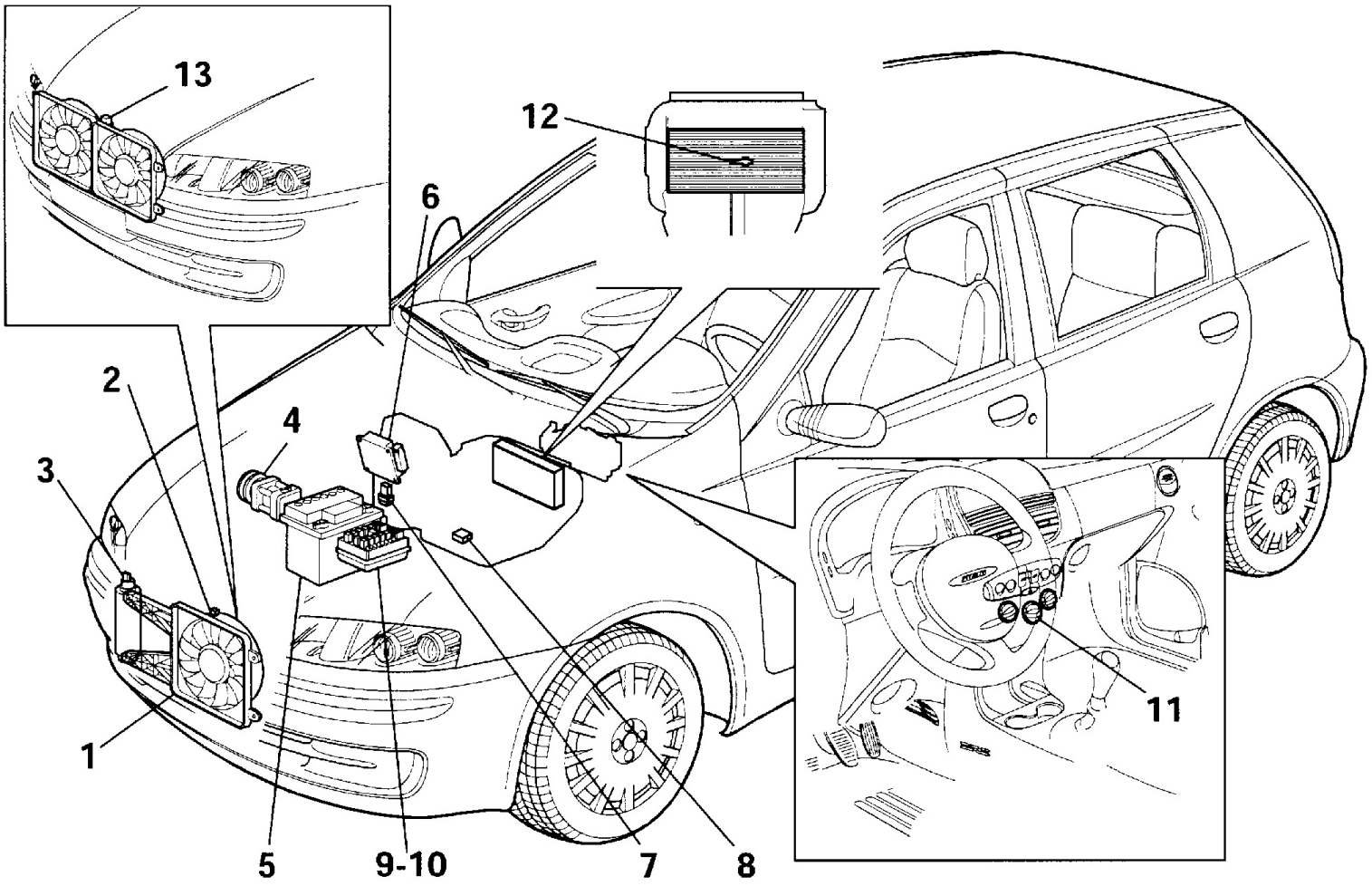


1, Four stage pressure switch
2, Drier filter
3, Condenser
4, Low pressure pipe
5, Expansion valve
6, Heater radiator
7, Evaporator
8, Temperature sensor
9, Pollen filter
10, LOW PRESSURE connector for re-pressurizing equipment
11, HIGH PRESSURE connector for re-pressurizing equipment
12, Compressor
13, High pressure pipe

LOCATION OF ELECTRICAL COMPONENTS FOR CLIMATE CONTROL SYSTEM

-

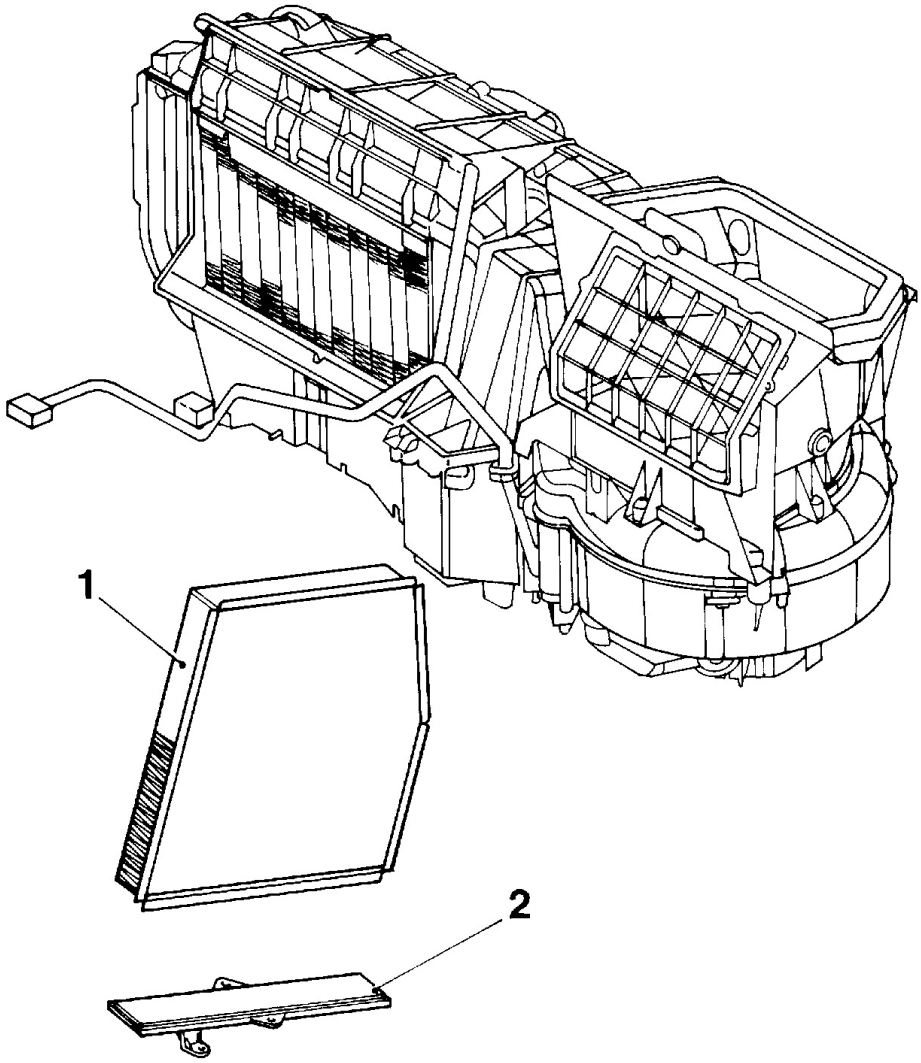


1, Radiator/condenser cooling fan
2, First fan speed resistance
3, Four stage pressure switch
4, Compressor
5, Battery
6, Injection control unit
7, Resistance divider for fan speed adjustment
8, Compressor control unit (frost)
9, 7.5 A fuse for compressor coupling
10, Relay for engaging first fan speed when air conditioning is switched on
11, Controls
12, Air temperature sensor on evaporator
13, Relay for engaging first fan speed when air conditioning is switched on (1.8 16V, 1.9 D, 1.9-JTD versions)

MODIFICATIONS AND RESULTS

On previous versions the climate control was one of the main causes of dissatisfaction in the Quality Tracking where the poor efficiency of the heating system, the demisting and the excessive noise came o light.
This has motivated the New Care system to define new objectives from a customer standpoint which have resulted in the design of the new climate control system.
Adoption of a new type radiating mass which has made it possible to increase the heat exchange by 20%.The use of larger section ducts.New layout of the unit.Replacement of the rotary vane compressor (R12SC) with the SCROLL SC08 type with orbital spirals.Improved fan motorAdoption of a new air recirculation flap, in the shape of a circular sector, to cancel the closing noise.
All these operations have made it possible for the system to achieve ventilation figures with a maximum passenger compartment flow rate of 380 m3/h with noise levels of 64 dbA at top speed.
A fixed centre vent.Two moving centre vents.Two rotating side vents.Two side vents in the front panel covers.
There are two further vents, on the HLX, Sporting and HGT versions, which take in air directed from a duct in the floor and direct it to the crossmember under the seat to supply air to the rear passenger footwells.
On the other versions, the air sent to the rear seats comes out of slits in the side of the centre console, being directed along the tunnel and in the

On the other versions, the air sent to the rear seats comes out of slits in the side of the centre console, being directed along the tunnel and in the area under the seat.
It has also been decided, to improve comfort on air conditioned vehicles, to adop a combination type passenger compartment air filter (PARTICLES + ACTIVE CHARCOAL); this makes it possible both to prevent the intake of pollen and pollutant particles into the passenger compartment and to reduce the tiresome unpleasant smell caused by substances and humidity
The pollen filter is available for versions with heaters.



1, Filter
2, Cover

A comparison with our competitors shows the current position in relation to that of the PUNTO and highlights being top of the segment for several performance parameters.

MARQUE AND MODEL	AIR CAPACITY ($m^{3/h}$)	NOISE (dbA)
FIAT 188	380*	64
FIAT PUNTO	350	71
LANCIA Y	350	67
OPEL CORSA	350	n.a.
FORD FIESTA	350	n.a.
RENAULT CLIO I	350	n.a.
NISSAN MICRA	345	63
SEAT IBIZA	320	n.a.
VW POLO	350	n.a.

*=value obtained with combination filter

Values expressed in °C "Celsius"

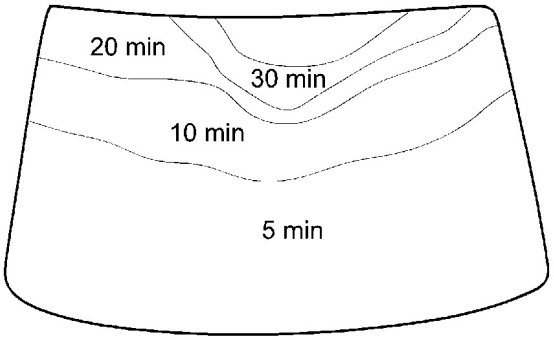
MARQUE	HEATER Temp. initial -	HEATER Temp. initial -	HEATER Temp. initical -

AND MODEL	10°C After 10 minutes	10°C After 20 minutes	10°C After 30 minutes
FIAT 188	11	24	22
FIAT PUNTO	8	20	23
LANCIA Y	9	20	23
OPEL CORSA	10	23	25
FORD FIESTA	7	17	23
RENAULT CLIO I	8	n.a.	27
NISSAN MICRA	7	19	25
SEAT IBIZA	13	26	25
VW POLO	13	25	25

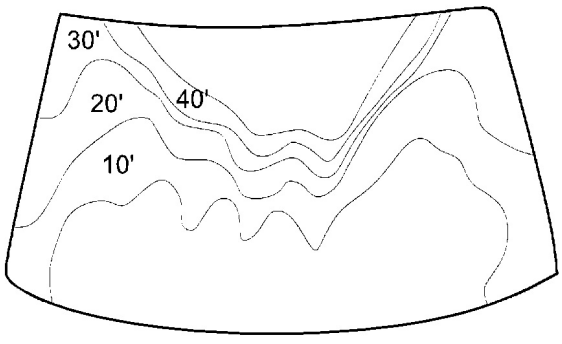
Values expressed as a % Demisting after 5 minutes at Te = 15°C

MARQUE AND MODEL	WINDSCREEN	AVERAGE LEFT AND RIGHT SIDES
FIAT 188	60	22
FIAT PUNTO	38	0
LANCIA Y	48	12
OPEL CORSA	50	1
FORD FIESTA	58	8
RENAULT CLIO I	46	7
NISSAN MICRA	40	5
SEAT IBIZA	47	12
VW POLO	47	6

The figures below, record the demisting areas as a percentage of the glass, comparing them with those for the Punto.

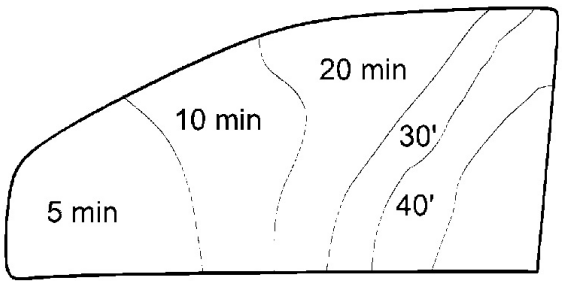


a

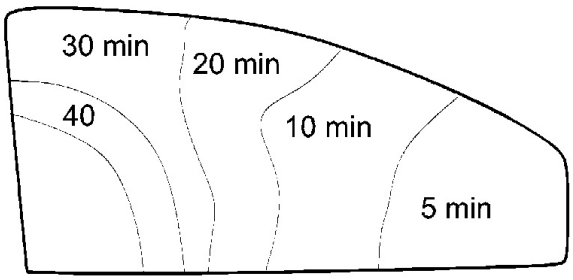


b

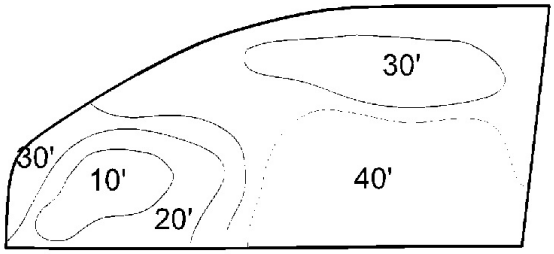
a, New vehicle 1242 16V windscreen demisting
b, Previous model 1242 16 V windscreen demisting
-



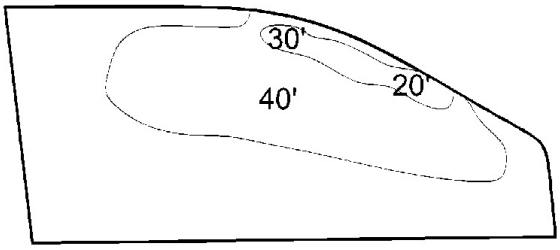
c1



c2



d1

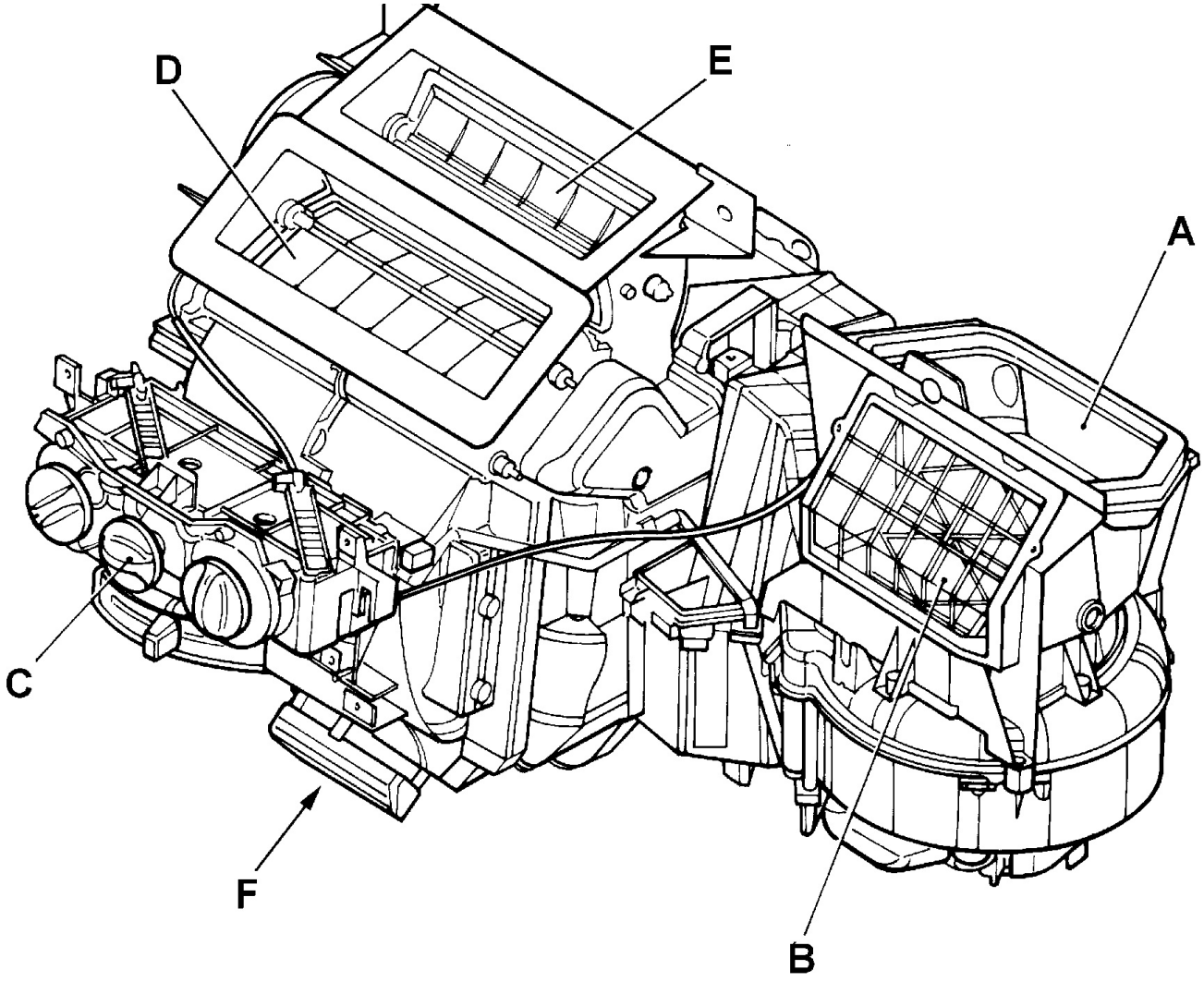


d2

c1, New vehicle 1242 16v left front demisting
c2, New vehicle 1242 16V right front demisting
d1, Previous model 1242 16V left front demisting
d2, Previous model 1242 16V front demisting

MANUALLY OPERATED AIR CONDITIONING - HEATER ASSEMBLY

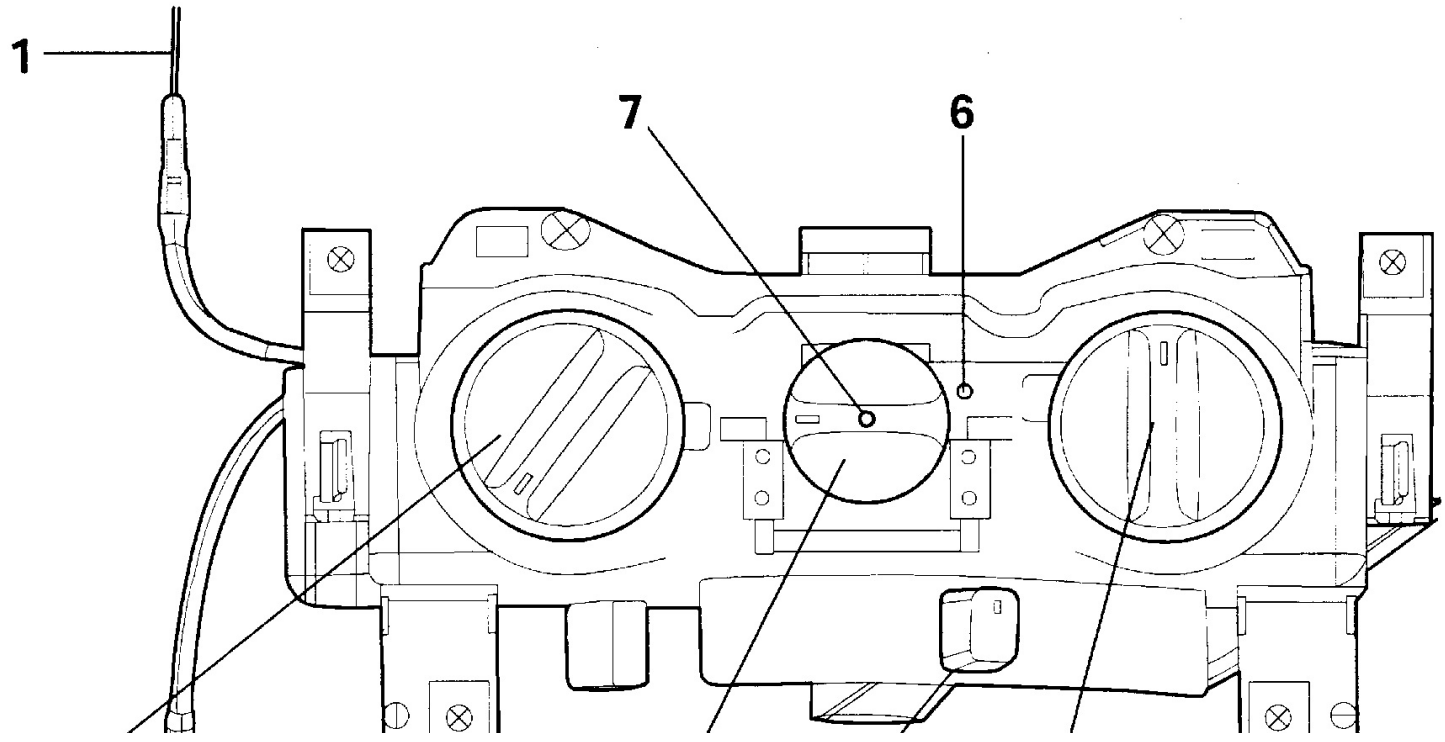
The evaporator - heater - distributor assembly represents the main component in the manually operated climate control and heating system.

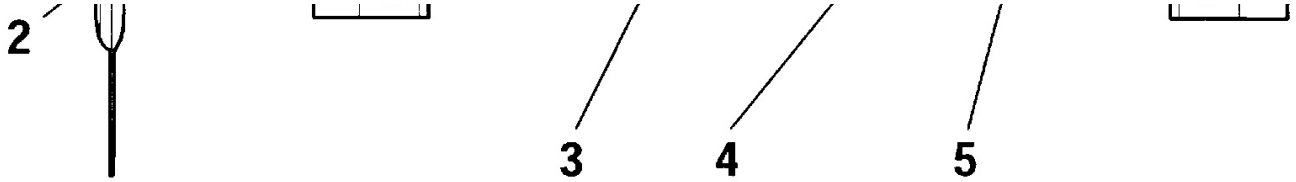


A, Outside air intake
B, Inside air intake (recirculation)
C, Controls
D, Defroster air vent flap
E, Front air vent flap
F, Footwell air vent flap

The evaporator (not present on the heater)Electronic thermostat (not present on the heater)Green centre compressor on LED on the fan speed control (not present on the heater) Compressor engagement control on the fan speed control (not present on the heater).

The adjustment of the system functions is entrusted to three rotary controls and one lower centre sliding control, as illustrated.



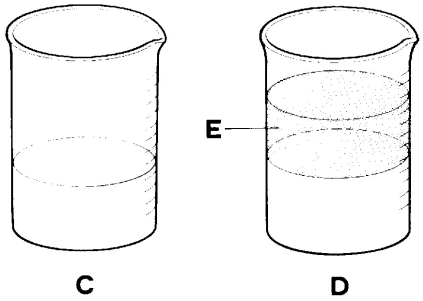


1, Flexible cable
2, Hot/cold air blend knob
3, Fan/compressor knob
4, Recirculation knob
5, Air distribution knob
6, Air conditioning ideogram
7, Air conditioning on LED

The controls for the air temperature (2), air distribution (5) and air recirculation (4) are connected to the flaps via flexible cables. The fan speed centre control (3), on the other hand, is an electrical sliding device.
WARNING: on the version with climate control only, the air speed control (3) incorporates the compressor control and a green compressor on centre LED.
Pressure must be exerted on the air speed control (3) to switch the compressor on and off.
Air temperature (2), by blending the hot and cold airFan speed (3), via the four speed fanAir distribution (5), this control is designed to allow the air introduced into the vehicle to reach all areas of the passenger compartment making use of special vents according to the trim level.

R 134A AIR CONDITIONING SYSTEM COOLANT

The gas used in this system is a TETRAFLUOROETHANE type which is considere environmentally friendly in accordance with EC rulings. R134a gas cannot be used in systems which run on Freon on account of its different molecular composition which makes several components permeable (e.g. seals, pipes, etc.). For this reason systems in which ecological gases are used ARE ABSOLUTELY NOT INTERCHANGEABLE with those designed to run on Freon.
For this reason the operation of pressurizing/draining the system must only be carried out using the recommended equipment (Clear 134 produced by ICF).
WARNING: The quantity of R134a gas required for this system is: 650 +/- 25 grams.
(ND - Oil 8) for SC08 and SCS08 compressors(ND - Oil 9) for TV 12 SC compressorsDrier filter: 15cc of oil;Pipes: 5cc of oil per metreEvaporator: 40cc of oil;Condenser: 40cc of oil;Compressor: 80cc +/- of oil (quantity for the entire air conditioning system);
WARNING: if only the compressor is being replaced, carry out the procedure described below. Pour the compressor fluid which should be changed into test tube A. Repeat the same operation for the new compressor, pouring the fluid into test tube B. Introduce the same quantity of fluid into the new compressor as was removed from the old one (test tube A), taking it from test tube B.



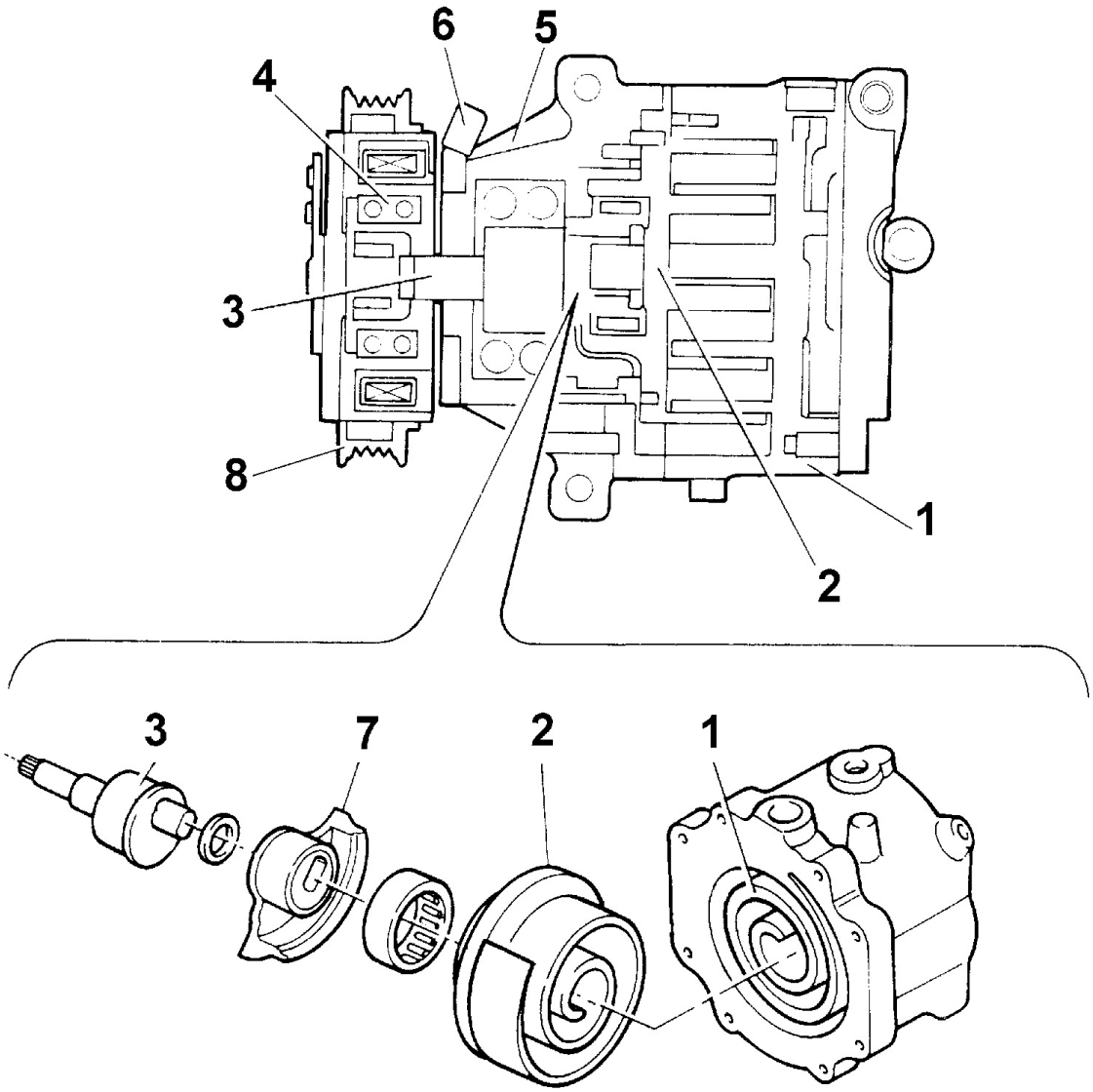
A, Quantity of old compressor fluid
B, Quantity of new compressor fluid
E, Excess quantity of fluid (already contained in the system).

COMPRESSOR

Drive the coolant through the circuit;Increase the pressure of the coolant;Increase the temperature of the coolant;SCROLL SC - 08 with orbital spirals (for Fire engines);SCROLL SCS - 08 with orbital spirals (for Diesel engines);TV 12 SC (per motorizzazioni 1.8 benzina).

SC - 08 AND SCS - 08 COMPRESSOR

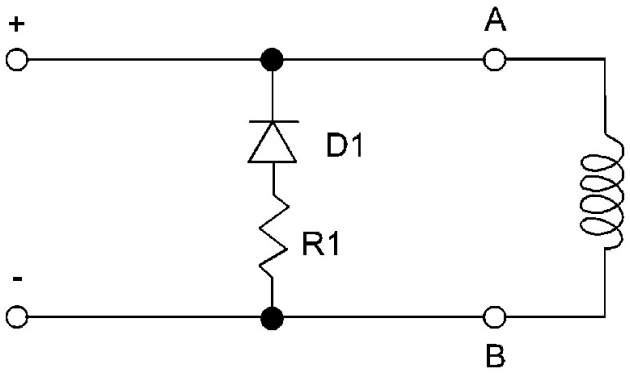
The SC-08 and SCS-08 compressors are the orbital spiral type, known as SCROLL.
The compressors consist of a fixed scroll (1) which is an integral part of the compressor casing and a moving scroll (2).
- The revolving movement of the moving scroll is achieved by means of a camshaft (3) conneted to the pulley (8) creating a chamber whose volume is reduced during the oribting motion.



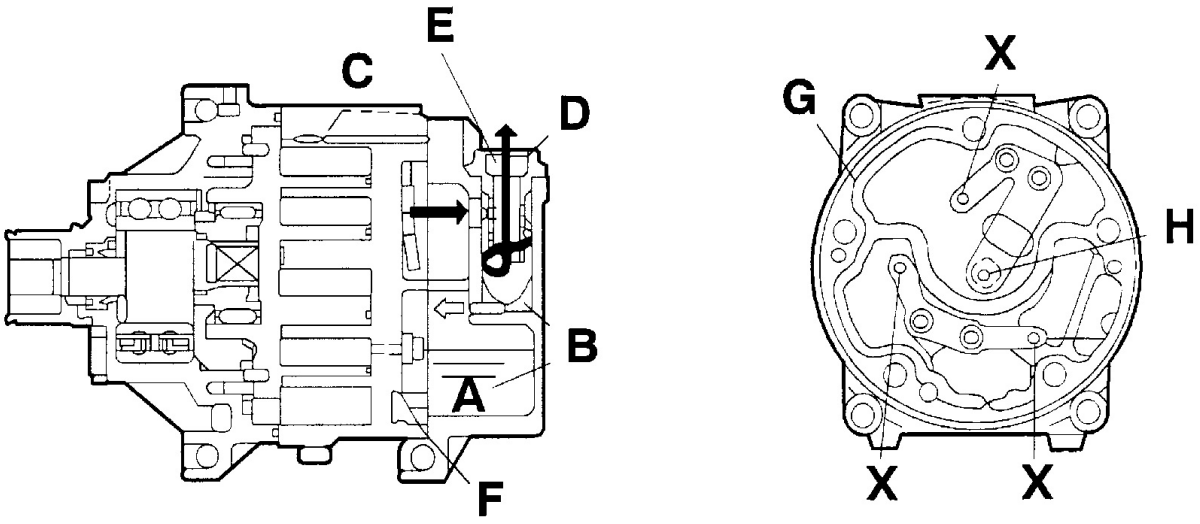
1, Fixed scroll (casing)
2, Orbiting scroll
3, Camshaft
4, Camshaft seal
5, Shield
6, Compressor supply electrical connection
7, Balancing mass
8, Pulley

No gaskets are required.There are no radial or axial leaks.Low load leaks through the absence of internal pipes and valves.The use of scrolls produces an improvement in the seal at the sides.The absence of valves, knocking and oscillations reduces noise.

Compressor electro-magnet



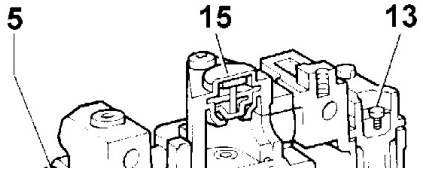
The compressor electro-magnet coupling supply wiring now includes an electromagetic diode D1 and a resistance R1 (in series to one another and in parallel to the electro-magnet) in order to eliminate the electromagnetic interference produced. In the future, when the compressor is developed further, the diode will be inserted inside the electro-magnet coupling.
From a compression mechanism point of view, compressors SCS - 08 and SC - 08 are identical, the only difference being that compressor SC - 08 has an oil separator device (E), fitted in the gas outlet connector, which separates the gas from the oil which ends up in the bottom of the chamber (A) through the effect of gravity, whilst the gas escapes through the connector (D).
This device makes it possible to keep the quantity of oil introduced into the air conditioning system to a minimum.
In effect, by reducing the quantity of oil in the air conditioning system, the film of oil which is deposited on the walls of the heat exchangers (evaporator and condenser) is also reduced with a consequent improvement in thermal efficiency (it is possible to achieve improvements in the cooling of the air at the vent outlets of around 12 degrees Celsius).
If a quantity of oil is introduced into the air conditioning system and ends up in the gas compression chamber, since the oil cannot be compressed, it risks ruining the compressor.
With this in mind, the compressor has three valves (X), located along the gas compression route which, if the pressure in the supply chamber is too high, open, recycling the oil through the return port (C) into the inlet circuit.

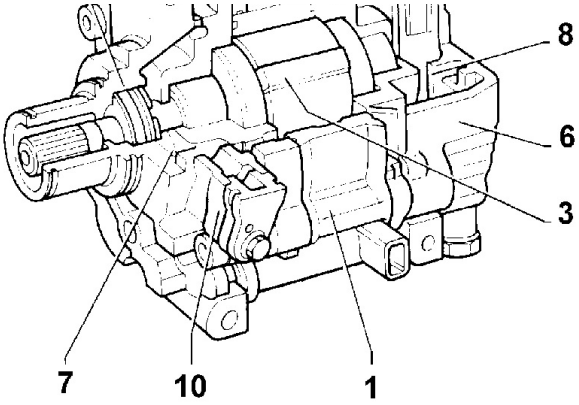


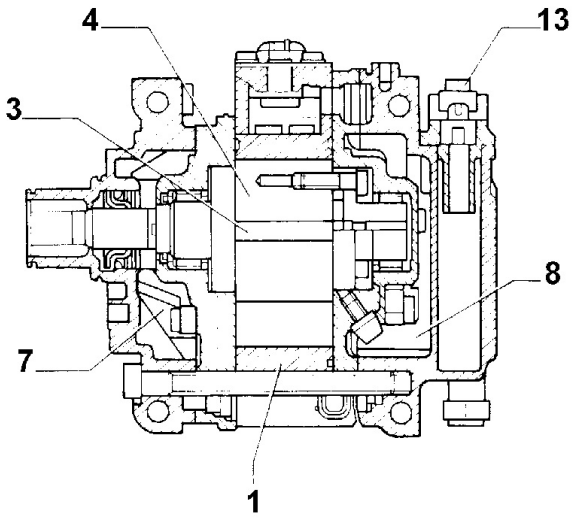
A, Oil
B, Oil
C, Oil return port
D, Connector
E, CS separator
F, Filter
G, Oil recirculation route
X, Safety valve

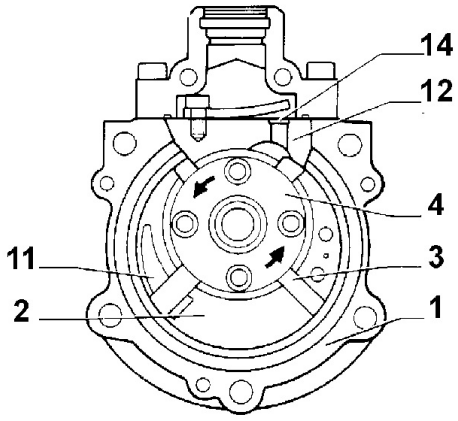
RV 12 SC DENSO COMPRESSOR

The NIPPONDENSO TV 12 SC compressor is the vane type and is equipped with a pressure regulator which varies the flow rate when the temperature of the evaporator reaches values where it is possible that it might freeze, a condition detected by the decrease in the inlet pressure of the actual compressor.
The compressor basically consists of a casing (1) which contains a chamber (2) in which four vanes (3), driven by a hub (4), whose rotation axis does not coincide with the theoretical chamber axis, rotate. Due to the special chamber geometry, the vanes stay in contact with the inner surface of the chamber as they turn. The assembly thereby allows the variation of the volume of the vanes between one blade and another during rotation.
Case (1) is fitted with two covers, front cover (5) and rear cover (6). These contain an intake or low pressure chamber (7) and a high pressure chamber (8). Gas taken in through fitting (10) on cover (5) flows through low pressure chamber (7) and slot (11) in case (1).
The gas is then compressed and then expelled through duct (12) in high pressure chamber (8) and admitted to the system through fitting (13).
Plate valve (14) prevents high pressure gas from flowing into the compressor. Themal contact (15) fitted to the top part of the case is connected in line with the electromagnetic coupling. When the temperature reaches dangerous levels (around 180 MASCC) the thermal contact (15) switches off the pulley electro-magnet coupling.



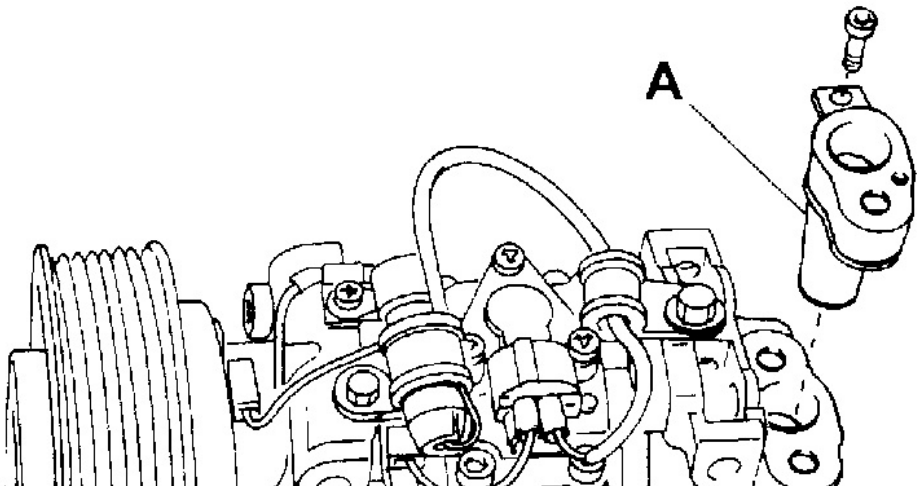


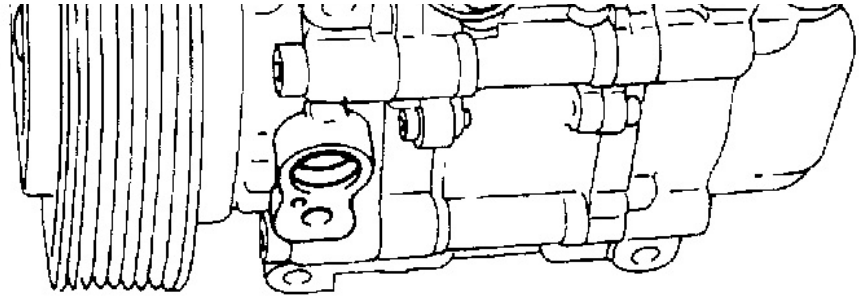




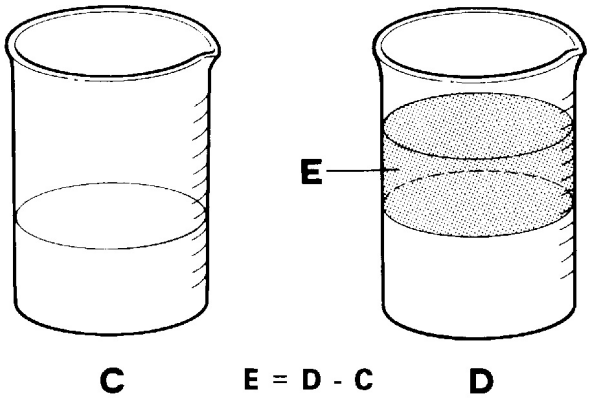
MAINTENANCE AND SERVICING OPERATIONS

WARNING: The compressor is lubricated by 150 20 cc of ND9 type oil. Only use ND9 type oil for topping up and oil changes.
In the case of servicing operations which involve replacing some of the system components such as the condenser or the evaporator, 40 cc of oil must be added for each of the components replaced. If the compressor is being replaced, it is available as spares containing the recommended amount of oil. For this reason, before fitting it on the vehicle, the amount of oil which corresponds to that remaining in the system must be removed.
In order to do this it is necessary to:
WARNING: The compressor is supplied as spares pressurized with nitrogen to prevent the intake of humidity and impurities; therefore when fitting it the plugs for the inlet and outlet connectors must be removed slowly with the compressor in exactly the position illustrated in the diagram below (with the cover facing upwards).
1, Remove the oil separator (A) fixed near the outlet connector of the compressor which is being replaced.





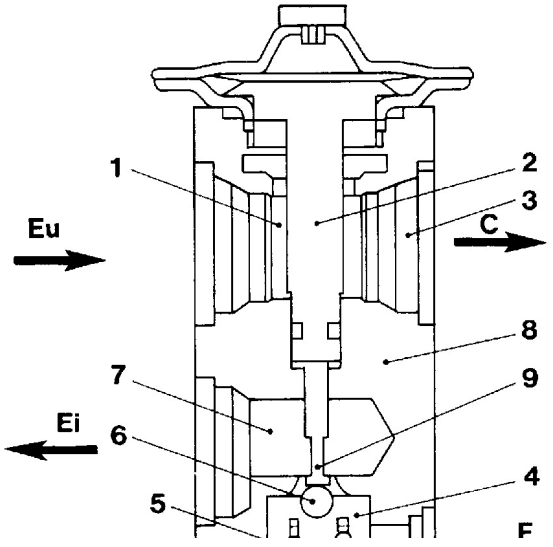
2, Pour the quantity of oil present in the compressor into a graduated test tube (C), taking care to let the contents drain well.
3, Remove the oil separator (A) from the new compressor and introduce the amount of oil contained in the graduated test tube (D), taking care to let it drain well.
4, Remove the excess amount of oil (E) corresponding to the difference between the quantity of oil contained in test tube (C) and test tube (D) (E=D-C).
WARNING: ND9 oil is extremely hygroscopic therefore avoid leaving the containers open and leaving the compressor or any other component disconnected from the open system for any longer than is strictly necessary (a few minutes). Never turn the compressor over or upsidedown when the oil separator (A) is not fitted.
Determining the quantity of lubricant oil to be introduced into the compressor

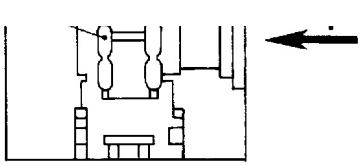


C, Quantity of oil for the old compressor
D, Quantity of oil for the new compressor
E, Excess quantity of oil (already contained in the system)

EXPANSION VALVE

The diagram below shows a section of the expansion valve and identifies the main components.





1, Fluid outlet duct from the evaporator
2, Heat sensitive element
3, To the compressor inlet connector
4, Pressurized fluid
5, Opposing spring
6, Ball and calibrated port
7, Expanded fluid (to the evaporator inlet connector)
8, Valve casing
9, Rod
C, To the compressor
F, To the drier filter
Ei, Evaporator intake
Eu, Evaporator outlet

Separate the high pressure circuit from the low pressure circuit;Expand the coolant (change from liquid state to gaseous state);Regulate the evaporation process (flow rate);Regulate the evaporation temperature;Protect the compressor from the coolant.

The thermostatic expansion valve, fitted on the evaporator inlet/outlet ducts has the task of regulating the flow and expasion (fall in pressure) of the R134a fluid before it enters the evaporator.

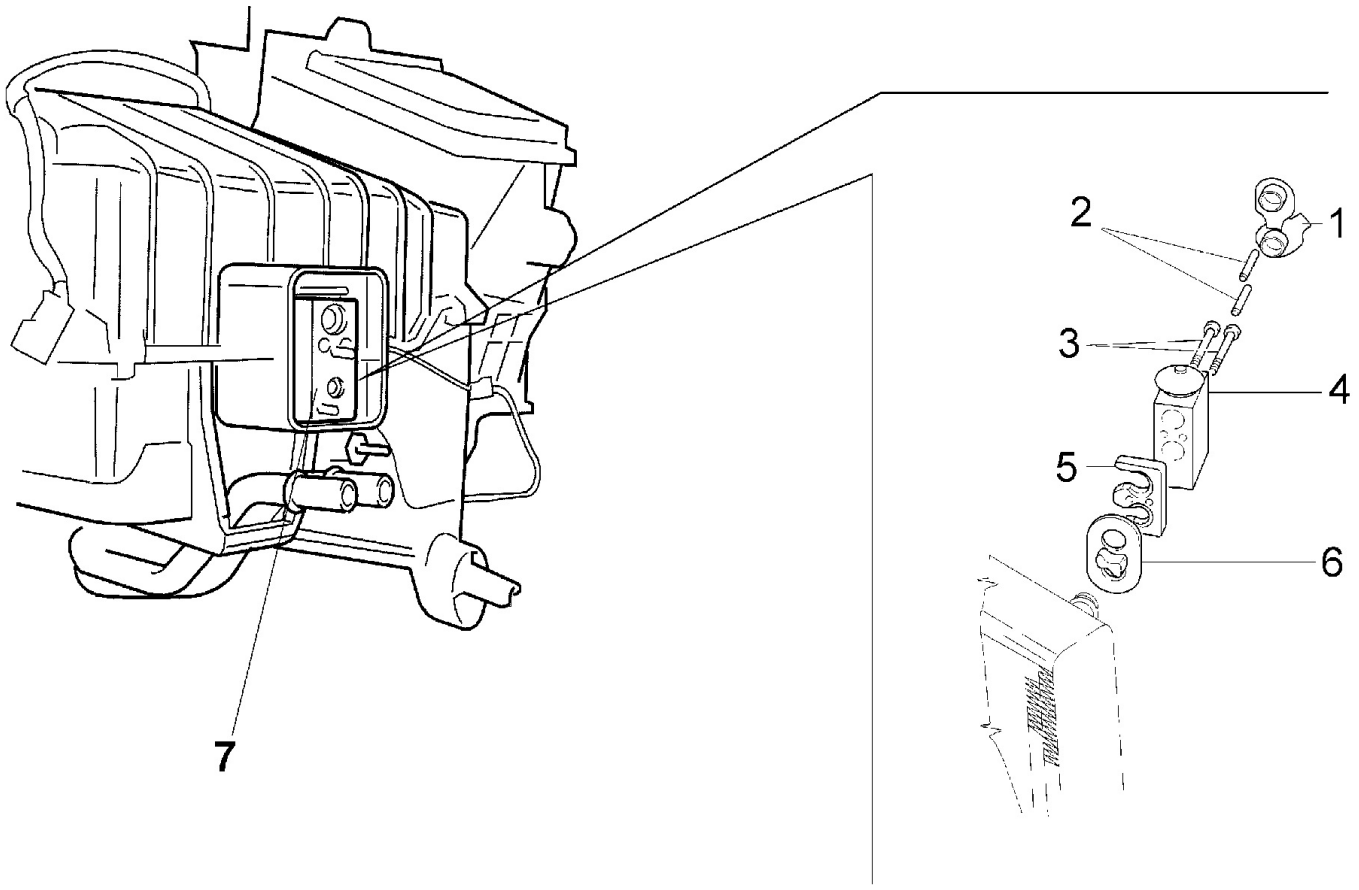
The automatic regulation of the passage section for the gas inside the expansion valve is carried out by a sensitive bulb which, according to the temperature of fluid, suitably adjusts the size of the gas port acting on a special spring which moves a shutter, determining the extent of the expansion.

The increase in temperature at the evaporator outlet, measured by the bulb, causes the opening of the valve with a consequent increase in the flow rate of the fluid to the evaporator.

Conversely, at low temperatures, there is a reduction in the size of the gas port, causing a decrease in the gas flow.

WARNING: The valve adjustment screw is calibrated in production and should NOT be tampered with to avoid a decrease in the efficiency of the air conditioning system.

The expansion valve is directly accessible from the engine compartment, see diagram below:



1, Expansion valve cap
2, M6x22 bolt
3, M5x50 bolt
4, Expansion valve
5, Plate fixing Valve/pipes

5, Plate fixing valve/pipes
6, Freon pipe seal
7, Valve
This type of expansion valve has two different routes for the coolant:
1, Lower passage, from point (4), gas coming from the drier filter, to point (7), gas outlet towards the evaporator, containing the overheating spring (5) and the modulating element which, in this case, is the ball (6) housed in the calibrated duct.
2, Upper passage, from point (1), gas coming from the evaporator, to point (3), gas outlet towards the compressor, containing the thermostatic sensor (2) which is connected to the upper part of the diaphragm and to the ball (6).
The flow rate control function is exerted through the movement of the ball (6), connected via the rod (9), to the thermostatic sensor (2).
The action of the ball (6) is opposed by the suitably calibrated spring (5) so that the coolant in the evaporator is in a gaseous state, without the presence of any liquid which, if drawn in by the compressor, could damage it.
The position of the ball (6) depends on the difference in pressure acting on the diaphragm inside the sensor (2); this, in turn, depends on the evaporator coolant outlet temperature (upper valve passage).
High temperatures of the gas leaving the evaporator (1) corresponding to conditions where large amounts of heat are dissipated cause the pressure inside the thermostatic sensor (2) to increase; this involves a movement of the rod (9) and the ball (6) connected to it which increases the passage section and, consequently, the coolant (7) flow rate.
The reverse takes place at low evaporator (1) gas outlet temperatures.

ELECTRICAL CIRCUIT COMPONENTS

4 speed rotary switch with A/C control;4 speed additional resistance;Interior air fan motor;Electronic thermostat with external NTC (frost) sensor;4 stage pressure switch;Coolant compressor.

AIR CONDITIONING WIRING DIAGRAM

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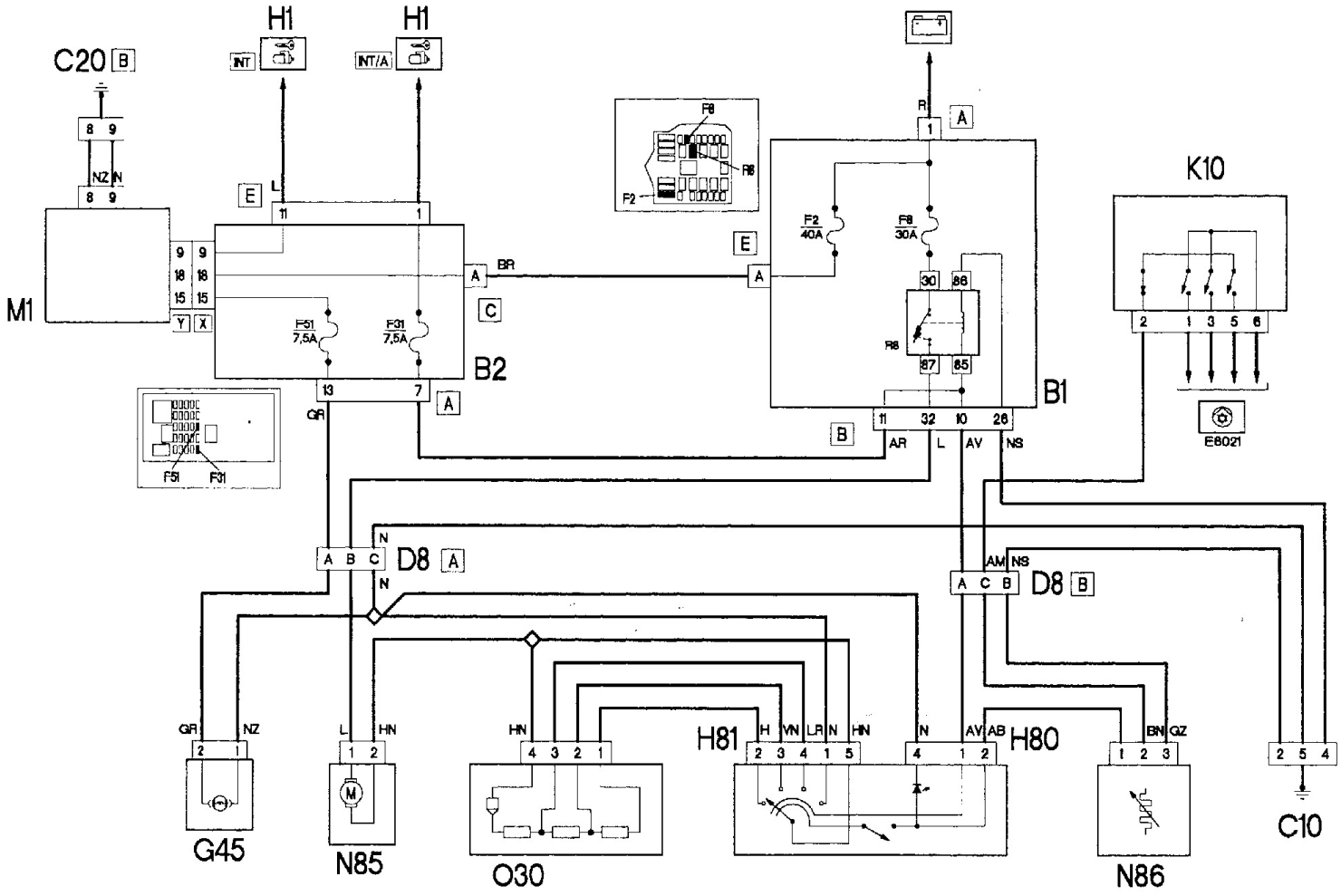

030, Passenger compartment air fan adjustment resistance
B1, Junction unit

C10, Left front earth
D08, Air conditioning - heater/front coupling
G45, Air conditioning/heater controls light
H1, Ignition switch
H81, Climate control controls
K10, 4 stage pressure switch
M1, Body computer
N85, Passenger compartment air fan
N86, Electronic thermostat

COMPRESSOR 1.2 8 V ENGAGEMENT WIRING DIAGRAM

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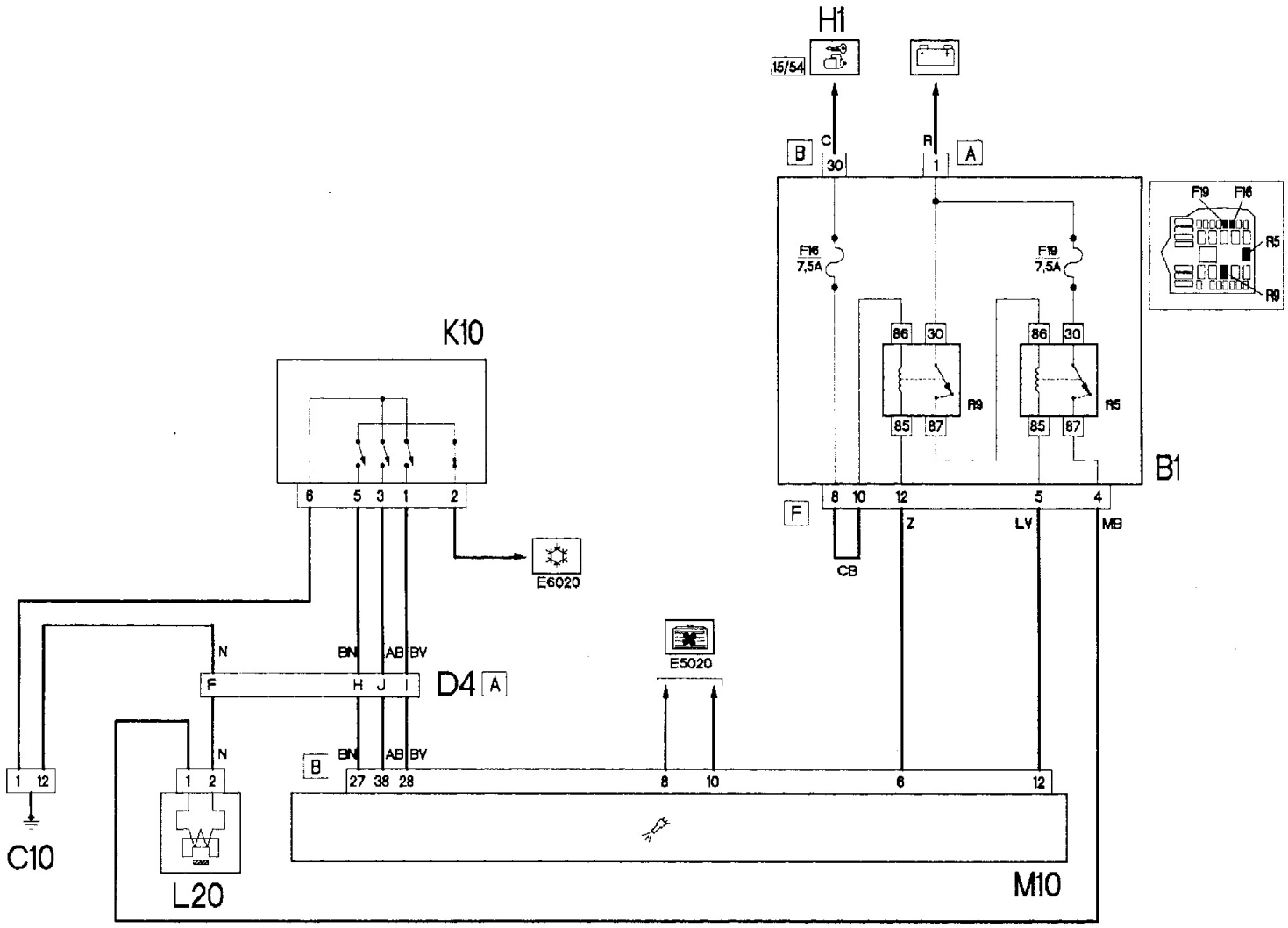

D04, Front/dashboard coupling
C10, Left front earth
F16, Engine cooling system circuit remote control switch
F19, Air conditioning system compressor
K10, 4 stage pressure switch
L20, Air conditioning compressor electro-magnet
M10, Engine management control unit
R5, Air conditioning system compressor
R9, Engine control system

1.2 8V FIRE ENGINE - WEBER F2

Connector pin D04	Engine control unit pin	Description
F	----	Compressor coupling operation

H	27	Compressor engagment request
I	28	Fan 1° speed engagement request
J	38	Fan 2° speed engagement request
----	12	Compressor relay operation
----	8	Fan 1° speed relay operation
----	18	Fan 2° speed relay operation

COMPRESSOR 1.2 16 V ENGAGEMENT WIRING DIAGRAM

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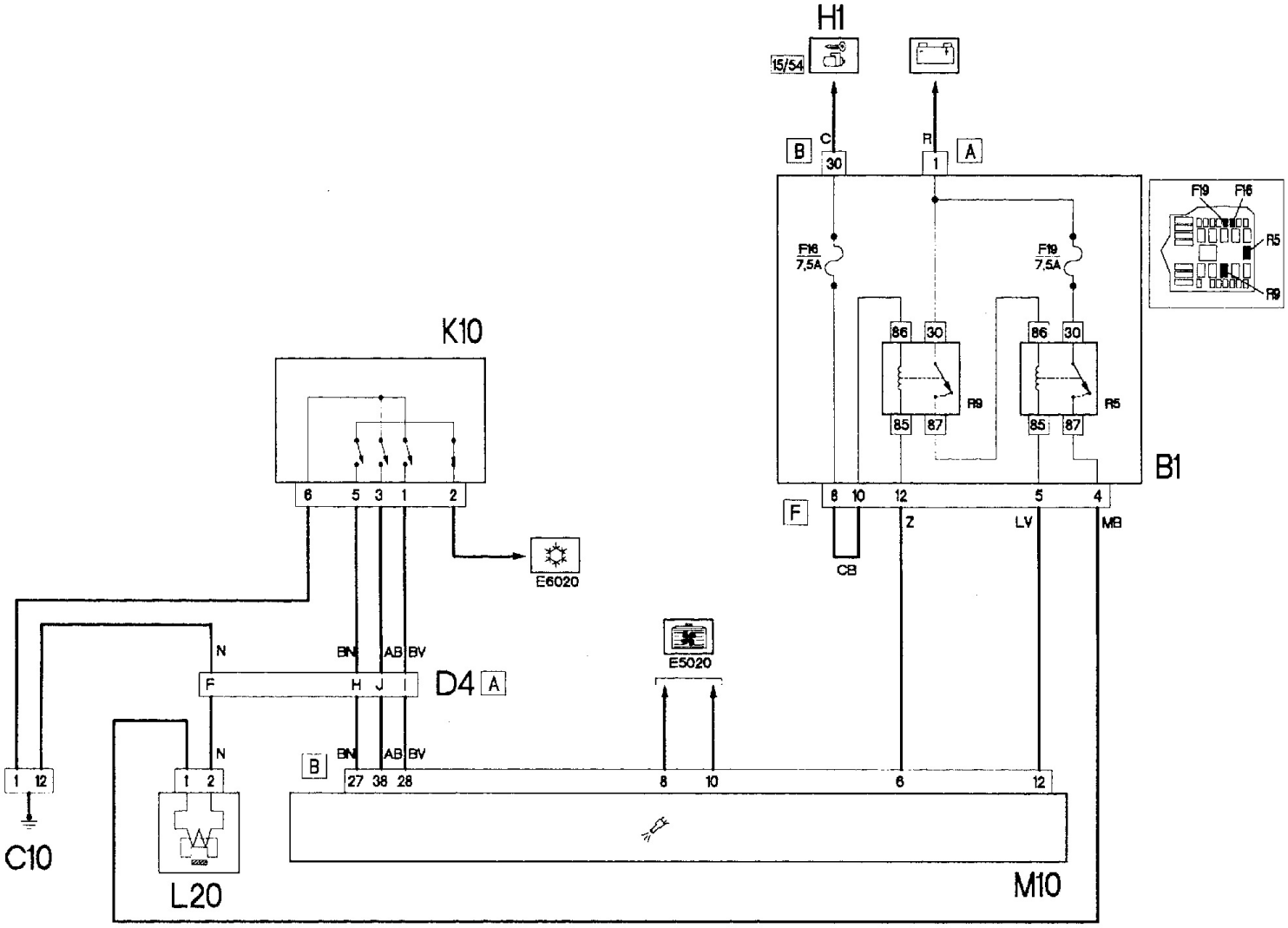

B1, Junction unit
D04, Front/dashboard coupling
C10, Left front earth
F16, Engine cooling system circuit remot control switch
F19, Air conditioning system compressor
K10, 4 stage pressure switch
L20, Air conditioning compressor electro-magnet
M10, Engine management control unit
R5, Air conditioning system compressor
R9, Engine control system

1.2 16V FIRE ENGINE - BOSCH F2

Connector pin D04	Engine control unit pin	Description

F	----	Compressor coupling operation
H	40	Compressor engagment request
I	56	Fan 1° speed engagement request
J	24	Fan 2° speed engagment request
----	46	Compressor relay feed
----	14	Fan 1° speed relay feed
----	30	Fan 2° speed relay feed

1.8 16 V COMPRESSOR ENGAGEMENT WIRING DIAGRAM

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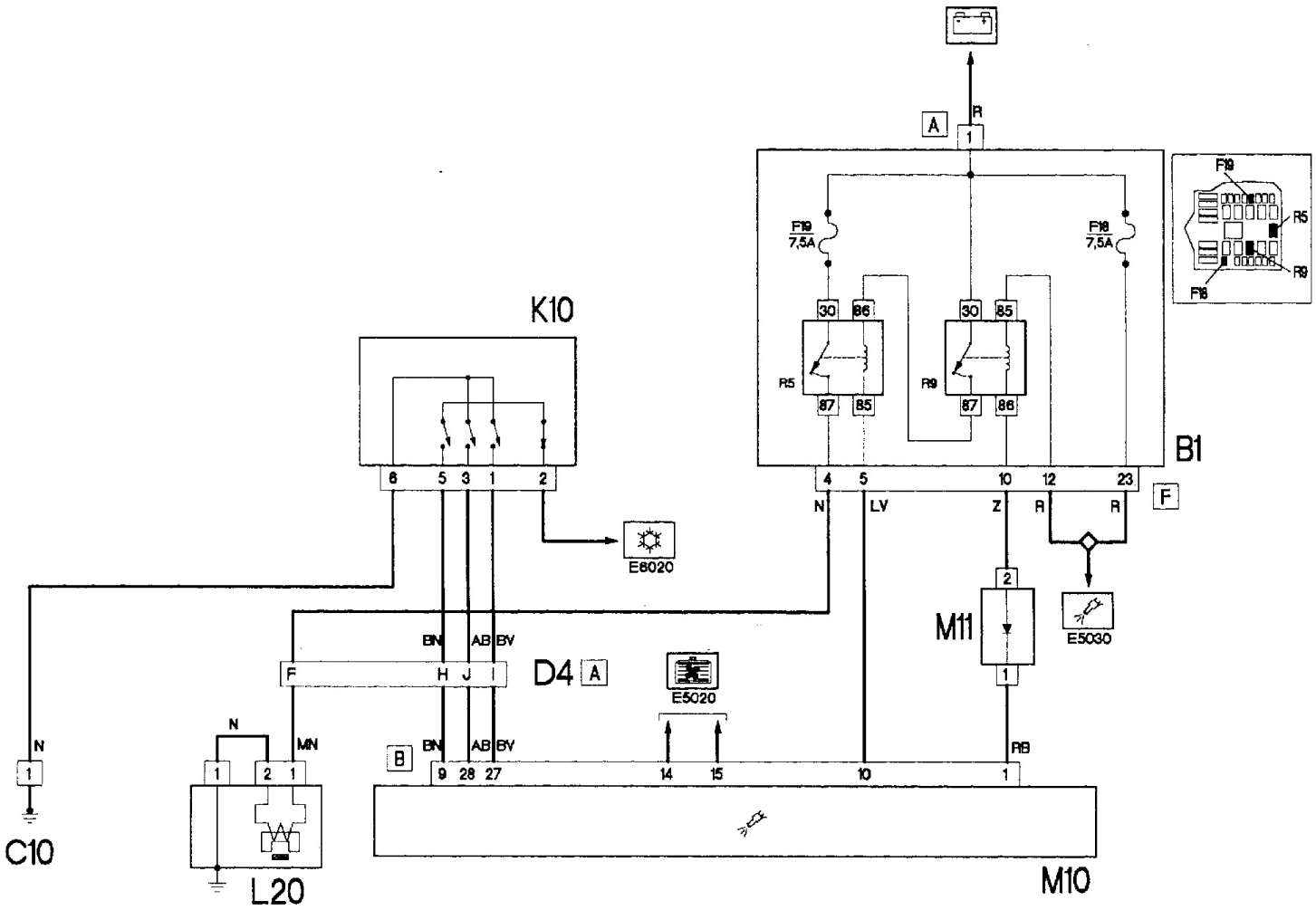

B1, Junction unit
D04, Front/dashboard coupling
K10, 4 stage pressure switch
F18, Fuse protecting injection/automatic transmission control unit
F19, Air conditioning system compressor
L20, Air conditioning compressor electro-magnet
M10, Engine management control unit
M11, Main injection relay diode
R5, Air conditioning system compressor
R9, Engine control system

1.8 16 ENGINE - HITACHI

Connector pin D04	Engine control unit pin	Description

Connector pin D04	Engine control unit pin	Description
F	----	Compressor coupling relay pin 87
H	9	Compressor engagment request
I	27	Fan 1° speed engagement request
J	28	Fan 2° speed engagment request
----	10	Compressor relay feed
----	14	Fan 1° speed relay feed
----	15	Fan 2° speed relay feed

1.9 D COMPRESSOR ENGAGEMENT WIRING DIAGRAM

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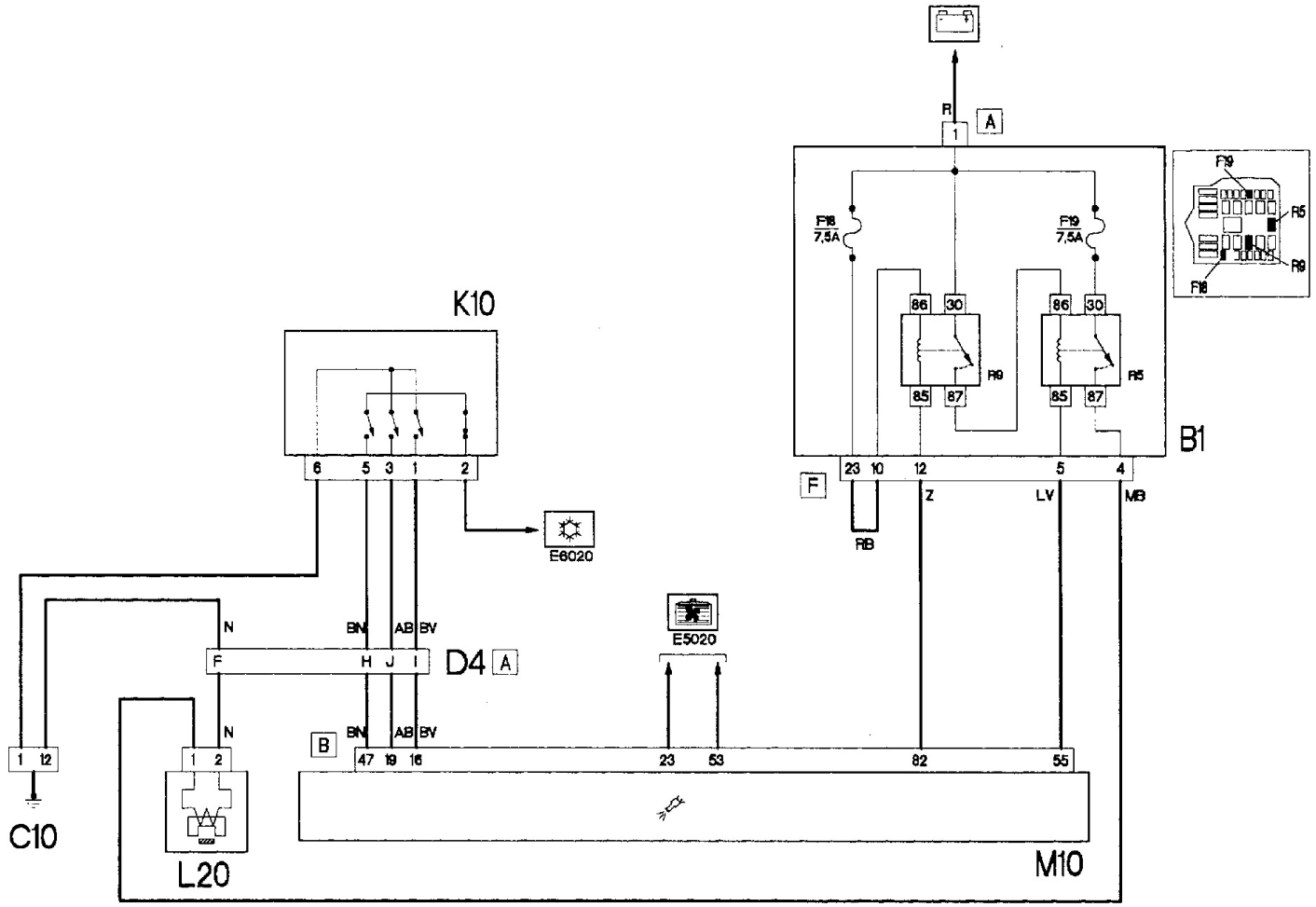

B1, Junction unit
D04, Front/dashboard coupling
C10, Left front earth
F18, Fuse protecting injection/automatic transmission control unit
F19, Air conditioning system compressor
K10, 4 stage pressure switch
L20, Air conditioning compressor electro-magnet
M10, Engine management control unit
R5, Air conditioning system compressor
R9, Engine control system

1.9 DIESEL ENGINE - LUCAS

Connector pin D04	Engine control unit pin	Description
F	----	Compressor coupling earth
H	47	Compressor engagment request
I	16	Fan 1° speed engagement request
J	19	Fan 2° speed engagement request
----	55	Compressor relay feed
----	53	Fan 1° speed relay feed
----	23	Fan 2° speed relay feed

1.9-JTD COMPRESSOR ENGAGEMENT WIRING DIAGRAM

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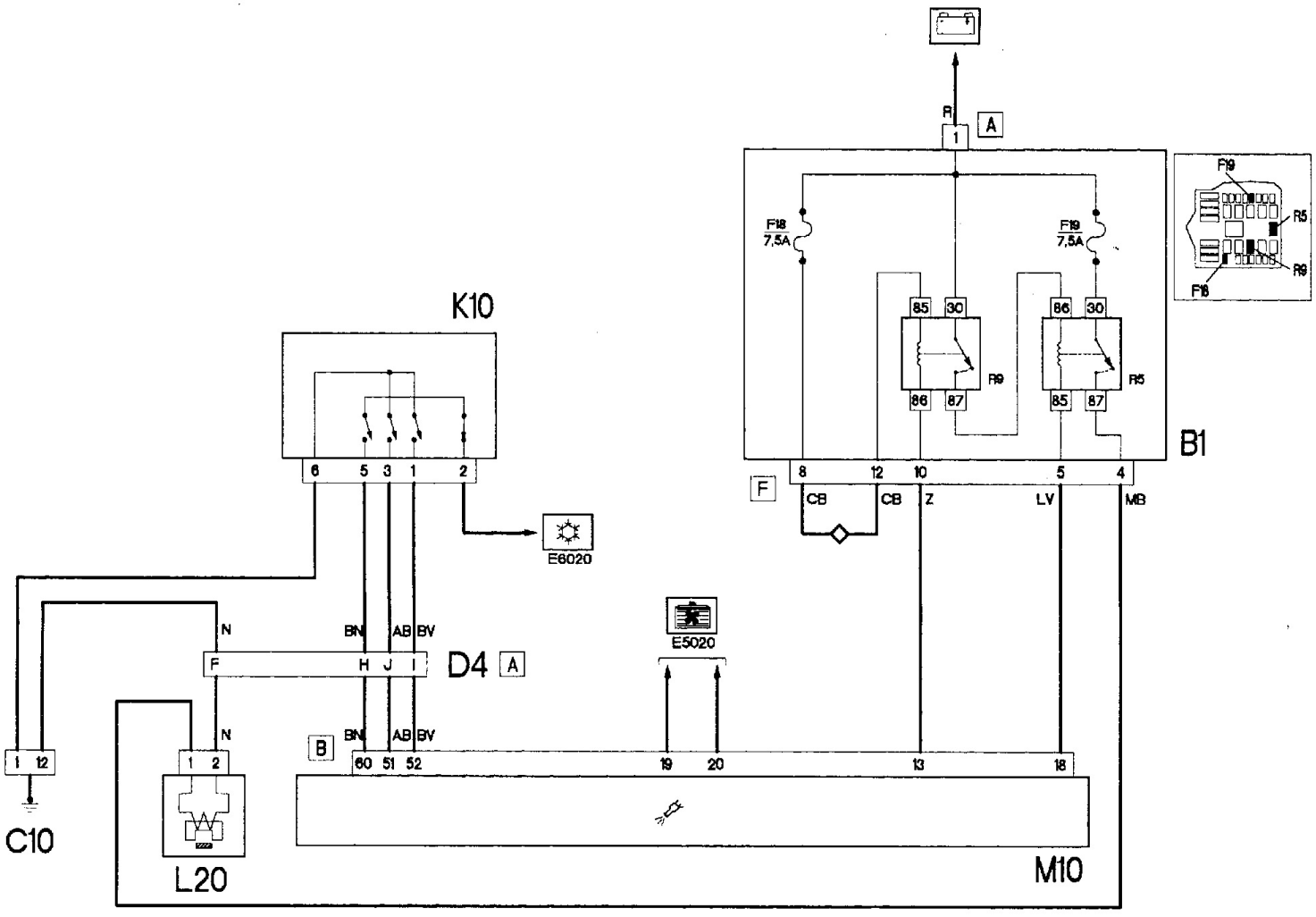


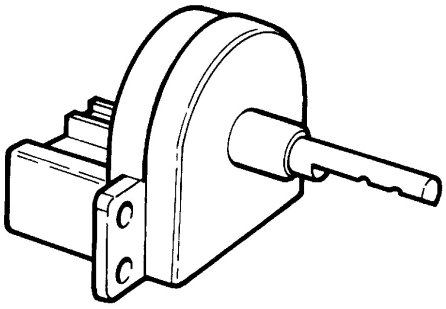
B1, Junction unit
D04, Front/dashboard coupling
C10, Left front earth
F18, Fuse protecting automatic transmission/injection control unit
F19, Air conditioning system compressor
K10, 4 stage pressure switch
L20, Air conditioning compressor electro-magnet
M10, Engine management control unit
R5, Air conditioning system compressor
R9, Engine control system
E6020, N86 Electronic thermostat

1.9-JTD TURBO DIESEL ENGINE - BOSCH

Connector pin D04	Engine control unit pin	Description
F	----	Compressor coupling earth
H	60	Compressor engagement request
I	52	Fan 1° speed engagement request
J	51	Fan 2° speed engagement request
----	18	Compressor relay feed
----	20	Fan 1° speed relay feed
----	19	Fan 2° speed relay feed

4 SPEED ROTARY SWITCH WITH A/C CONTROL

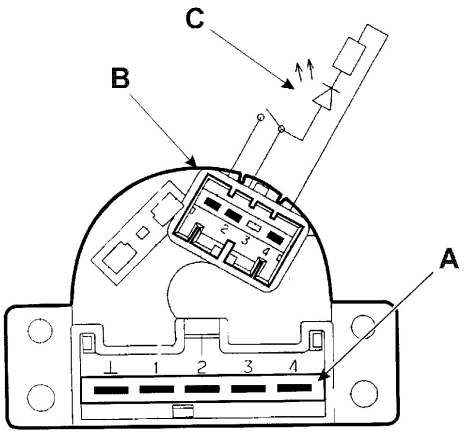
The A/C control is only present on versions with air conditioning. The diagram shows a view of the switch.



Allow the fan speed to be altered;Engage the compressor (only for the air conditioning system).

The switch control shaft can only be pressed to engage the A/C function in positions 1 - 2- 3 - 4, whilst in position "0" this function is not permitted, either mechanically or electrically. When the A/C function is activated a green LED (C) in the switch is lit up.

The diagram below identifies the position of the switch connectors.



The pin out for connector A is represented diagrammatically.

Wiring diagram

Pos.	^	1	2	3	4		Function
0	X						Open
1	X	X					Closed/open
2	X		X				Closed/open
3	X			X			Closed/open
4	X				X		Closed/open

The pin out for connector B is represented diagrammatically.

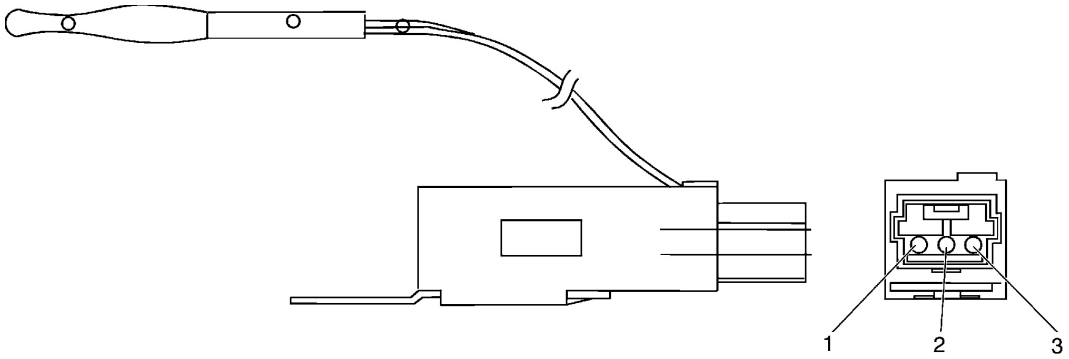
1	+15 INT/A

1	+15 INT/A
2	A/C signal output
3	Free (not connected)
4	LED earth

Max interruption current: 25 Ampere;Manoeuvre torque: 8 +/- 1 Ncm;Control pin: polycarbonateConnection base: (1) + 15 INT/A; (2) A/C signal ouput and LED on; (3) nc; (4) LED earth.

ELECTRONIC THERMOSTAT

The diagram below shows a view of the thermostat and connector:

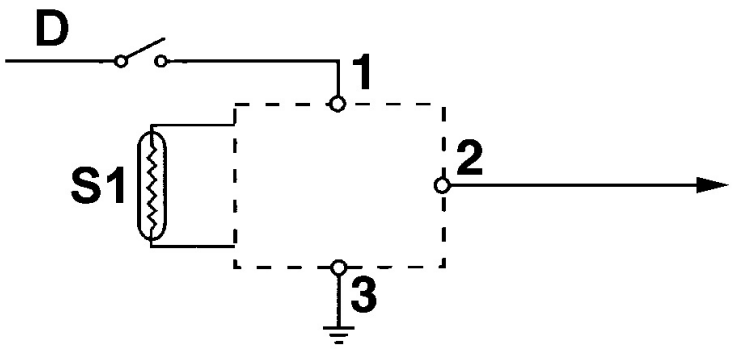


1, Aux supply
2, Signal to 4 stage pressure switch
3, Earth
Control the temperature of the evaporator.Prevent the formation of too much ice on the evaporator.Activate and deactivate the compressor

Electrical specifications

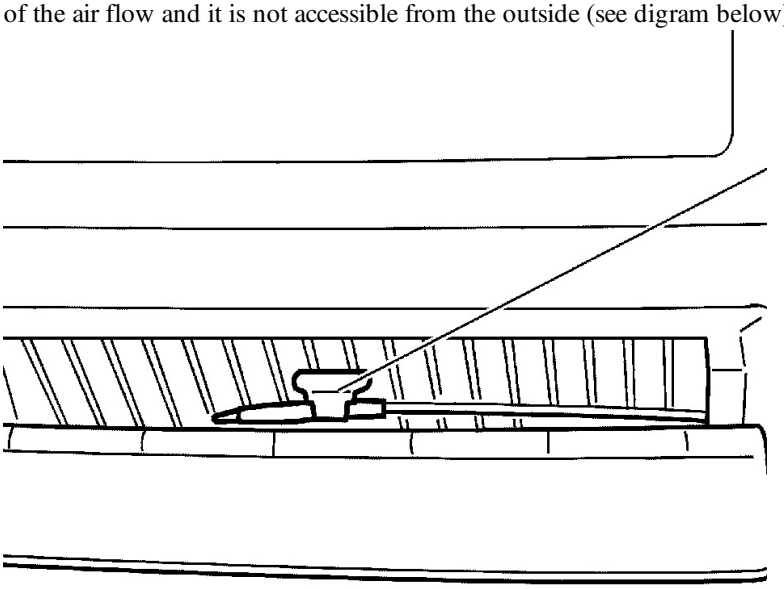
Rated voltage	13.5 Volt
Operating voltge	10 Volt: 16 Volt
Insulation resistance	At 500 Volt > 10 MW
Destructive discharge voltage	1000 Volt for 1 minute
Operating temperature	-40 °C: +85°C
Response time	4+/- 1s
Sensor	NTC with dual component epoxide resin impermeable coating or similar

Electronic thermostat operation:

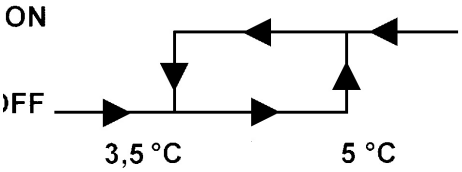


1, Aux supply
2, Signal to 4 stage pressure switch
3, Earth
D, +15 INT/A
S1, NTC sensor
The system controlling the activation/deactivation of the compressor is operated by an electronic thermostat which acts on the compressor

The system controlling the activation/deactivation of the compressor is operated by an electronic thermostat which acts on the compressor clutch relay according to the temperature of the evaporator, measured by an NTC sensor located on the evaporator fins on the side downstream of the air flow and it is not accessible from the outside (see digram below).



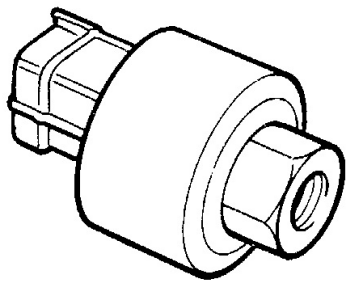
A, NTC sensor
The electronic thermostat activates and deactivtes the compressor as outlined in the table below:



From the table it can be deduced that at temperatures above 5° Celsius the compressor is activated, whilst at temperature below 3.5° Celsius the compressor is deactivated.
The electronic thermostat NTC sensor has a tolerance of +/- 0.5° Celsius.

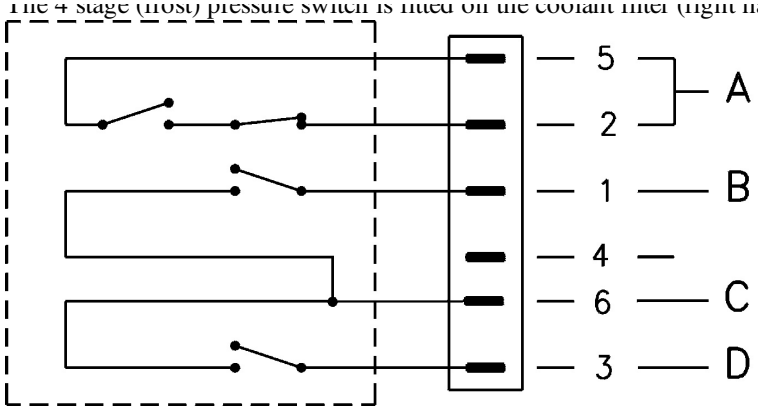
4 STAGE PRESSURE SWITCH

-



Deactivate the compressor is the coolant pressure is below around 2.45 bar (level I°) or above around 28 bar (level IV°).Activate the I° engine cooling fan speed if the pressure of the coolant is above around 15 bar (level II°).Activate the II° enging cooling fan speed if the pressure of the
coolant is above around 20 bar (level III°).
The 4 stage (frost) pressure switch is fitted on the coolant filter (right hand side, near the lamp)

The 4 stage (frost) pressure switch is fitted on the coolant filter (right hand side, near the lamp).



A, First and fourth levels (2 - 5)
B, Second level (6 - 1)
C, Shared
D, Third level (6 - 3)

The pressure setting figures for the intervention of the various levels are summarized in the table below:

4 STAGE PRESSURE SWITCH SETTING FIGURES (BAR)

LEVEL	OPENS	CLOSES	DIFFERENTIAL
I°	2.45 +/- 0.35	3.5	----
II°	----	15 +/- 1	4 +/- 1
III°	----	20 +/- 1.2	4 +/- 1
IV°	28 +/- 2	----	6 +/- 2

The 4 stage pressure switch has an interface with the injection wiring via an intermediate coupling D04.