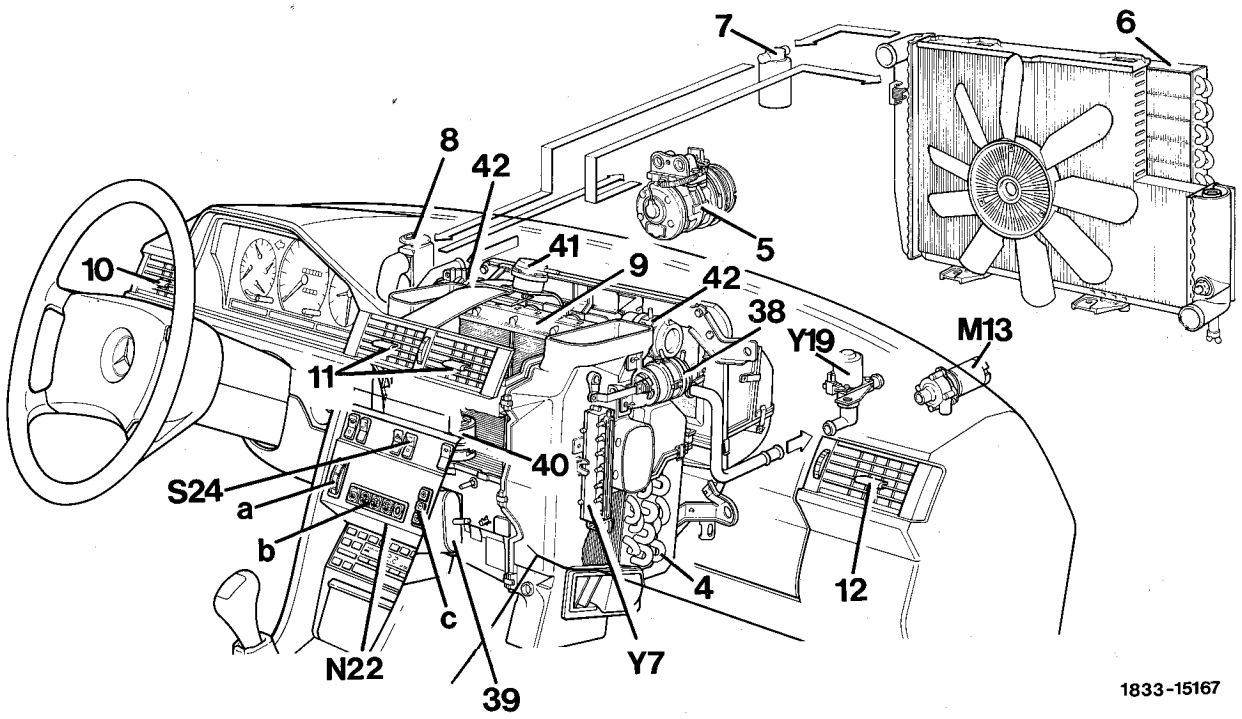
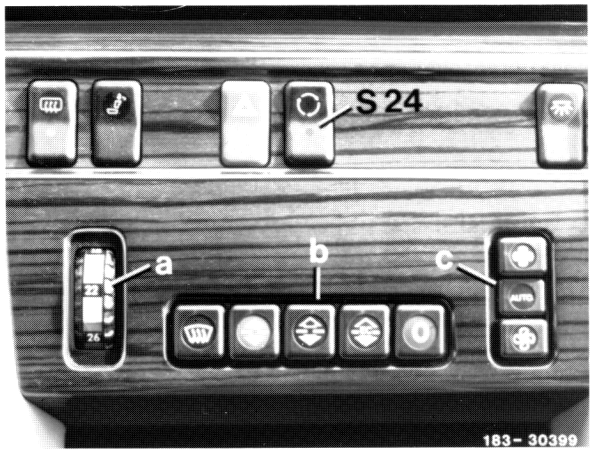


Components of the automatic climate control

4	Evaporator
5	Refrigerant compressor
6	Condenser
7	Fluid tank
8	Expansion valve
9	Heat exchanger
10	Air entry left
11	Air entry center
12	Air entry right
38	Vacuum element for defroster nozzle flaps
39	Vacuum element for footwell flaps
40	Vacuum element for center nozzle flap
41	Vacuum element for diverter air flap
42	Vacuum element for fresh air/circulated air flap
M13	Circulating pump
N22	Automatic climate control unit
a	Temperature selector wheel
b	Pushbutton switch
c	Blower switch
S24	Fresh/recirculated air switch
Y7	Switchover valve block
Y19	Mono valve

A. General

The models 124 are provided with an automatic climate control as special equipment. It operates according to the same principle as that in the models 123, except for the continuous blower control.



Control unit comprising:

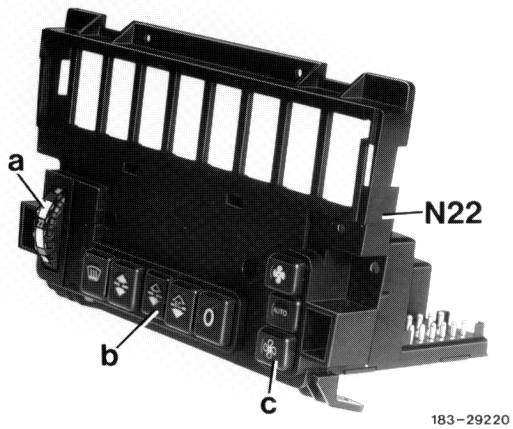
a	Temperature selector wheel
b	Pushbutton switch with 5 functions
c	Blower switch
S24	Fresh/recirculated air switch

B. Automatic climate control unit (N22)

This consists of a temperature selector wheel (a), pushbutton switch (b) with five pushbuttons and the blower switch (c).

The control unit houses electronics with the following functions:

1. Control of the interior temperature and activation of the refrigerant compressor with ground via the control unit compressor shut-off.
2. Control of the blower control unit.
3. Control of the circulated air operation.
4. Control of the air flaps.



The respective outputs of the control unit are designed short-circuit proof. This feature protects the conductor boards in the control unit during a short-circuit.

The function of the short-circuit safety feature is designed differently by the respective manufacturers of the control unit.

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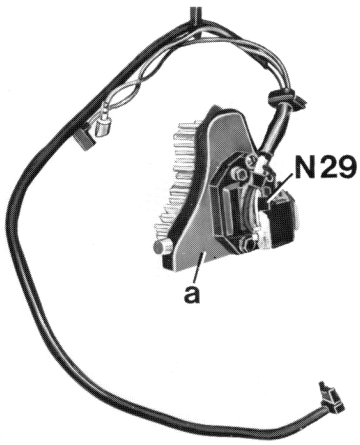
Kammerer control unit
During a short-circuit, this unit switches the respective output off and immediately on again as soon as the short-circuit no longer exists.

Bosch control unit
During short-circuit, switches off all outputs except blower control. After the short-circuit has been rectified, all outputs are switched on again within 30 seconds.

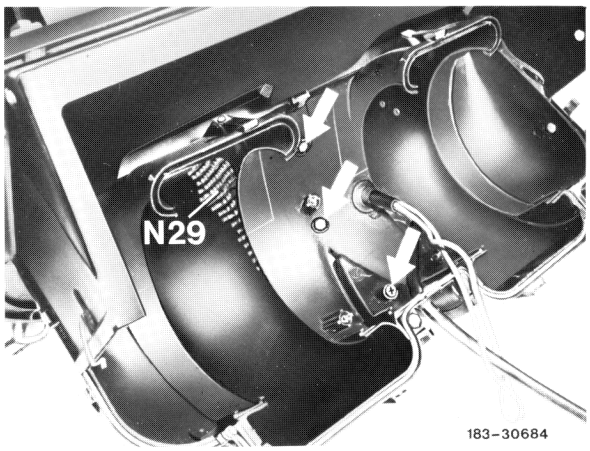
C. Electronic blower regulator (N29)

The electronic blower regulator is a transistor-controlled constant current regulator. It consists of a heat sink and an electronic unit and regulates the blower motor continuously. During a short-circuit or excessive temperature, the blower regulator switches off the blower motor.



183-30683

The blower motor (N29) is located in the blower housing behind the blower motor. With the blower motor running, the blower regulator is therefore constantly cooled.



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D. Function of blower regulation with various function selections

The blower regulator permits a continuous blower speed regulation. The blower regulator is connected to the main fuse box and ground and is supplied with battery voltage as soon as the ignition has been switched on. In addition, the blower regulator is connected to the automatic climate control unit by means of a control cable. Depending on the function selection of the blower switch, the control unit continuously sends a control voltage of between 0.4 to 9 volt to the blower regulator. The regulator continuously supplies a current between 2.0 to 28 amps to the blower motor, in this way regulating the blower speed.

Control voltage at various function selections of the blower switch:

Fixed minimum speed: approx. 1.0 volt (5 amps blower current).

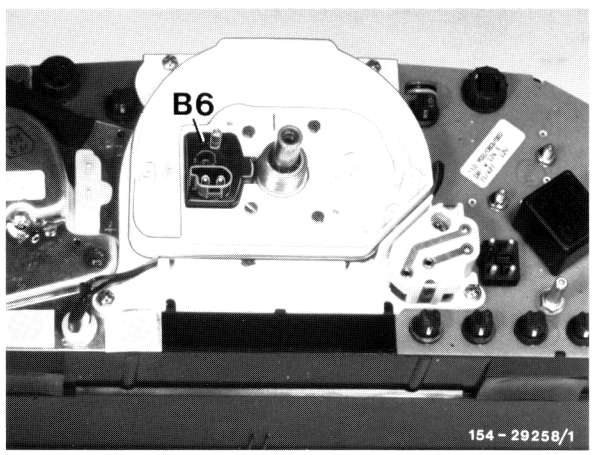
Automatic stage: approx. 1.4 to 4.7 volt (7.5 to 22 amps blower current).

Fixed maximum speed: above 6 volt (28 amps blower current).

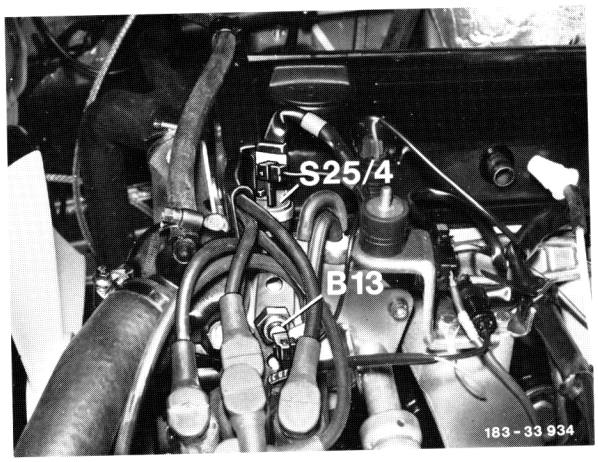
With all functions of the blower switch, except when the system has switched to 100% recirculated air, the control voltages are influenced by the driving speed of the vehicle by means of the Hall sensor (B6) on the speedometer. Up to a speed of 200 km/h the control voltage is continuously reduced by a maximum of 0.6 volt. This reduces somewhat the air volume increase resulting from the dynamic pressure.

With the blower switch in the automatic function, the control voltages are additionally influenced:

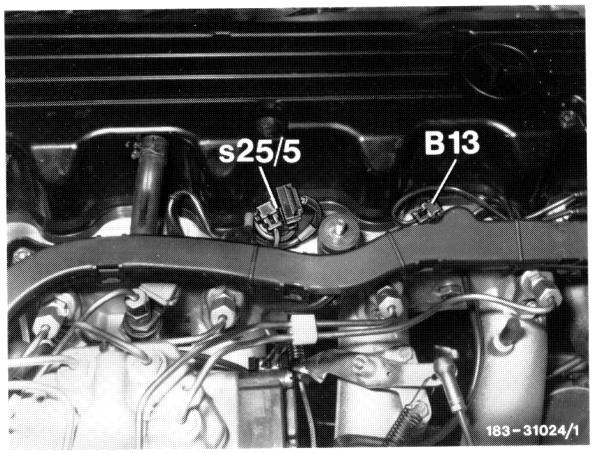
- By the nominal and actual values of the interior temperature (via temperature sensor interior air and the temperature selector wheel).
- By the outside temperature (via the outside air temperature sensor on the blower housing).
- By the operating condition of the system (heating or cooling).
- By the coolant temperature (up to 03/87 by the temperature sensor coolant indication B13, as of 09/87 by the temperature sensor B11/7 or B10/8).



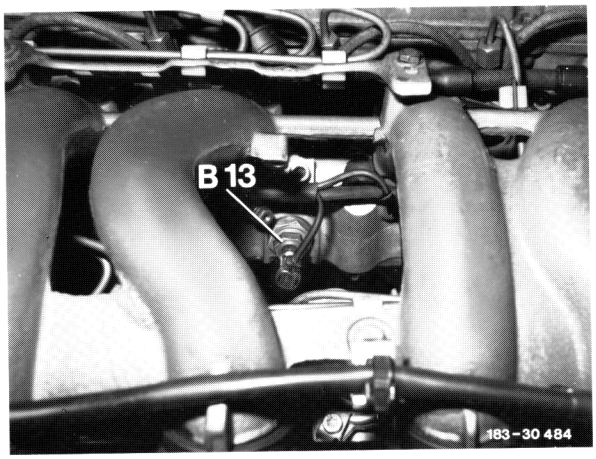
Arrangement of temperature sensor coolant indication (B13)



Engine 102 up to 08/87

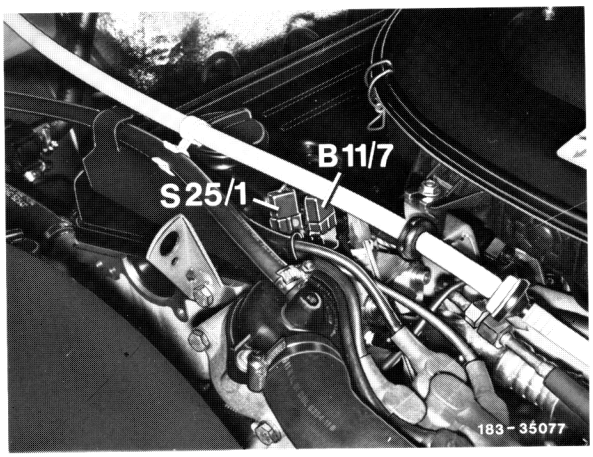


Engine 103 up to 08/87



Engines 601, 602 and 603 up to 08/87

Arrangement of temperature sensor coolant (B11/7 or B10/8)



Engine 102 as of 09/87

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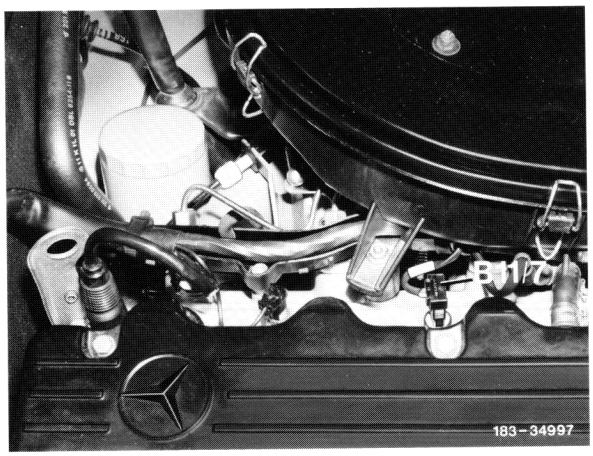
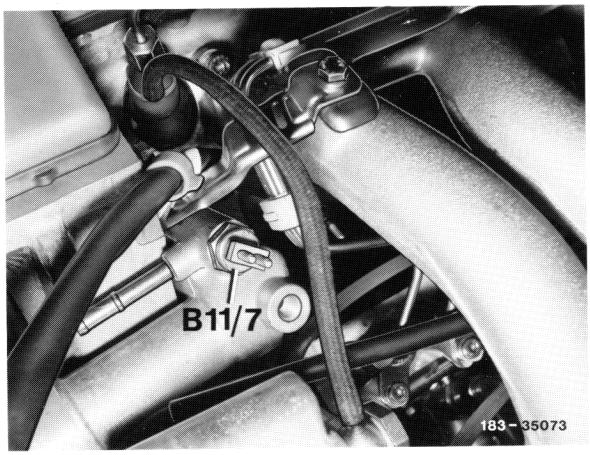


Engine 103 as of 09/87



Engines 601, 602 and 603 as of 09/87

Blower regulator with the function selection or and AUTO.

a) With coolant temperatures below 40°C the blower does not start if the outside temperature is below 20°C and the interior temperature is lower than the temperature adjusted on the temperature selector wheel (cold engine lockout via temperature sensor coolant indication B13 up to 08/87 or B11/7 or B10/8 as of 09/87).

As from a coolant temperature of 40°C up to 80°C, the control voltage is increased from 1.2 volt (when selecting the function or 2.0 volt) up to a maximum of 4.7 volt, resulting in a continuous increase of the blower speed.

b) With coolant temperatures below 40°C the blower starts **immediately** if the outside temperature is above 20°C or the interior temperature is higher than the temperature adjusted on the temperature selector wheel.

The control voltage of the blower regulator is dependent on the interior or outside temperature (up to a maximum of 4.7 volt).

Blower regulation with the function selection and or

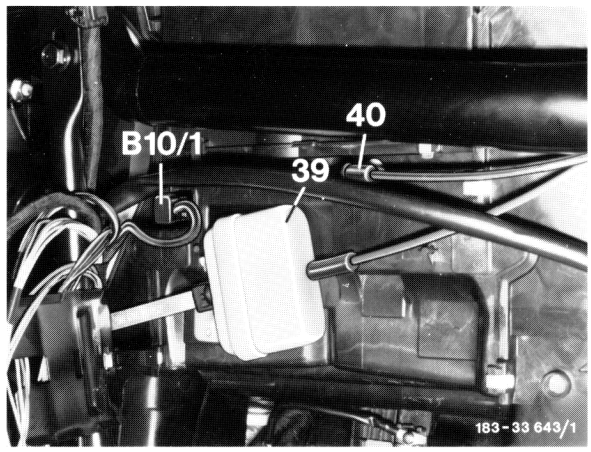
The blower starts immediately below a coolant temperature of 40°C. After switching over to or or , the blower continues and can only be switched off by means of the 0 button.

Blower regulation with the function selection and

The blower starts immediately below a coolant temperature of 40°C and, also as a function of the coolant temperature, is regulated upwards, however not up to the maximum blower output. The control voltage is between 1.4 to 5 volt. If the fixed maximum speed switch is also pressed on the blower switch, the blower runs with a maximum speed independent of the coolant temperature (via 6 volt control voltage and approx. 28 amps blower current).

E. Control of air flaps and air flow

The control of the air flaps is influenced by the temperature sensor for the heat exchanger (B10/1).



The mode change only occurs when the functions or are selected.
The mode change is the switching over of the air flaps during the transition from heating to cooling as well as from cooling to heating. During this process several air flaps open and the transition is less perceptible.

The control of the air flaps is shown in the following table:

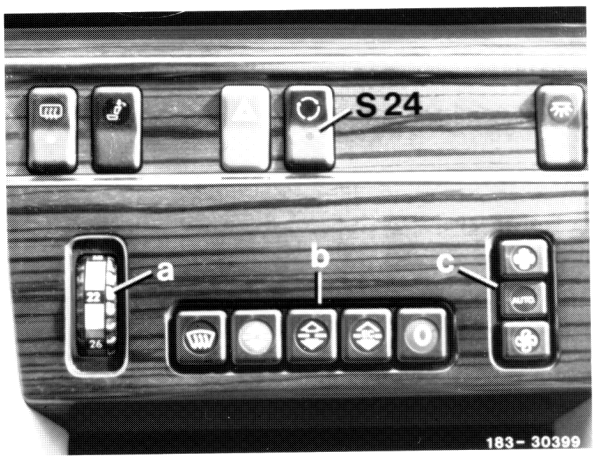
Operating condition of the system		Temperature on temperature sensor heat exchanger as of approx. °C over a period of at least 15s	Air flap positions: Defroster nozzles[1])	Center nozzle	Footwell nozzles
Direction cooling	Heating	40 °C	Leak air	closed	open
	Mode change	31 °C	opens	closed	open
		29 °C	open	opens	open
		26 °C	open	open	closes
		15 °C	closes (leak air)	open	closed
		10 °C	closes (closed)	open	closed
	Cooling	8 °C	closed	open	closed
Direction heating	Mode change	15 °C	opens (leak air)	open	closed
		34 °C	Leak air	open	opens
		37 °C	Leak air	closes	open
	Heating	40 °C	Leak air	closed	open

[1]) On model 124.0 as of 08/87 and model 124/1 as of 08/85, the defroster nozzle flaps remain fully opened for approx. 30 seconds after starting the engine. This largely prevents misting up of the windshield.

Control of the fresh/recirculated air flap

The fresh/recirculated air flap is controlled:

- Manually via the recirculated air switch (S24, 100% recirculated air).
- Manually by the automatic climate control unit (80% or 100% recirculated air).



Function of the recirculated air operation

Manual recirculated air operation (100% with air pollution).

In the function selection or at outside temperatures above 7°C provided that the refrigerant compressor will still be switched on, the recirculated air flap will switch to fresh air or automatic operation after 30 minutes following the actuation of the recirculated air switch. If the outside air temperature is below 7°C and the compressor will no longer cut in, or with the function selection , fresh air or automatic operation is switched on even after 5 minutes. With renewed actuation of the recirculated air switch, this process is repeated.

If the recirculated air switch or the ignition is switched off or the function is selected, the recirculated air flap moves into the fresh air position.

Automatic recirculated air operation (to improve the cooling capacity).

The automatic recirculated air operation is dependent on the interior temperature (temperature sensor interior air) and on the temperature differential of the temperature adjusted on the temperature selector wheel and the outside temperature (temperature sensor outside air).

This means that, the higher the interior temperature or the greater the temperature differential, the earlier the system will switch to recirculated air operation, see figure recirculated air flap control.

Note

1. The operation with 100% recirculated air is limited to 30 minutes. Irrespective of the temperature differential, the system will thereafter change to 80% recirculated air.

2. Manually it is possible to switch the system to 100% recirculated air for an unlimited period, if with outside temperatures above 20°C the temperature selector wheel is engaged in "Min" position.

Control of the recirculated air flap (when adjusting the temperature selector wheel 22)

Temperature on the temperature sensor interior air °C	Temperature sensor outside air °C				
	Outside temperature rises Recirculated air flap in position			Outside temperature reduces Recirculated air flap in position	
	Fresh air	Recirculated air 80%	Recirculated air 100% [1]	Recirculated air	Fresh air
+25	< +30	from +30 to +45	> +45	+40 to +27	< +27
+30	< +28	from +28 to +41	> +41	+36 to +25	< +25
+35	< +27	from +27 to +38	> +38	+32 to +24	< +24
+40	< +25	from +25 to +35	> +35	+29 to +22	< +22

[1]) For 30 minutes. These 30 minutes are repeated after the ignition has been switched off and on again.
> warmer than
< colder than

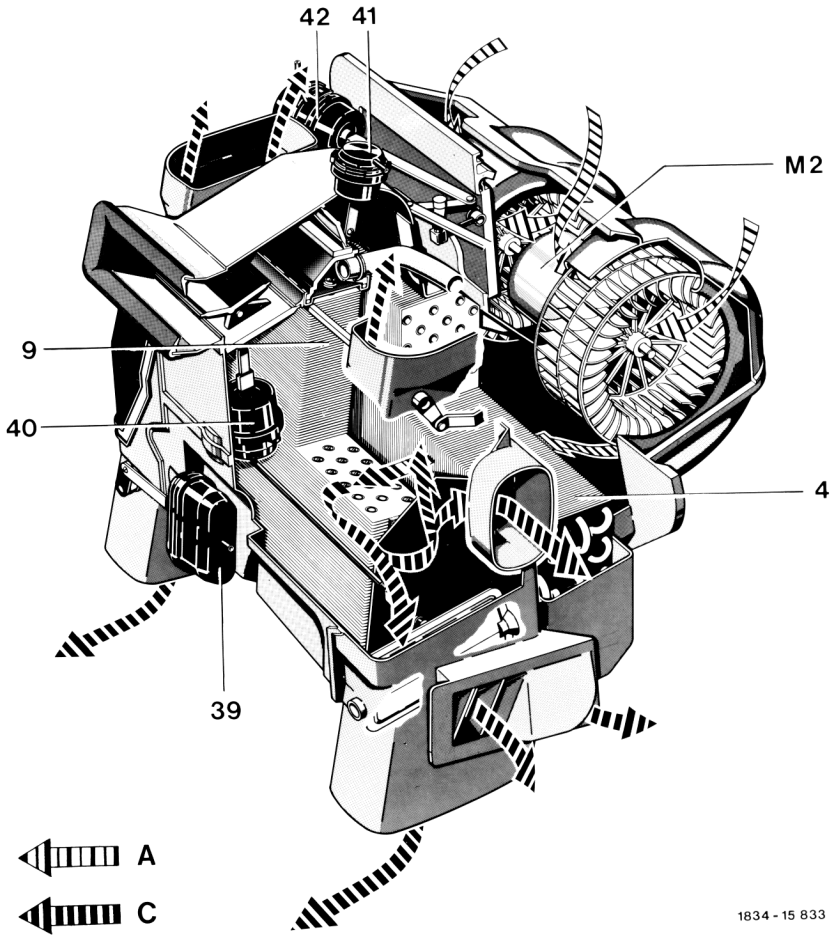
Control of the diverter air flap

The function of the diverter air flap is dependent:

- On the temperature adjusted on the temperature selector wheel and on the interior room temperature.
- On the outside temperature.

The higher the outside temperature, the sooner will the diverter air flap be switched on, regardless of the recirculated air operation.

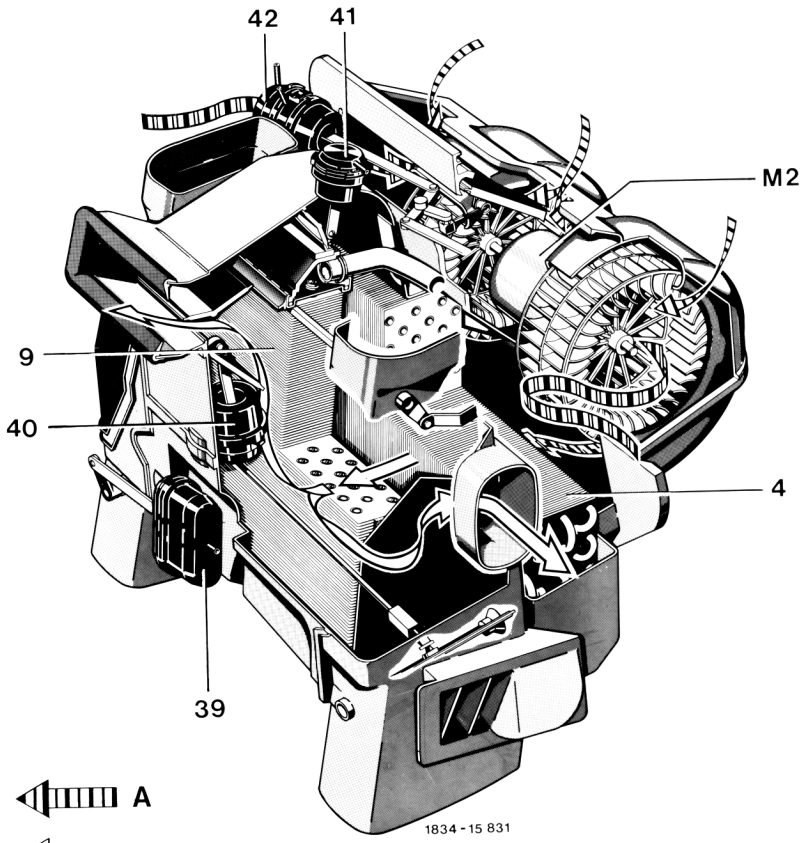
Air flow



A Fresh air
C Heated air

1. Heating operation and fresh air

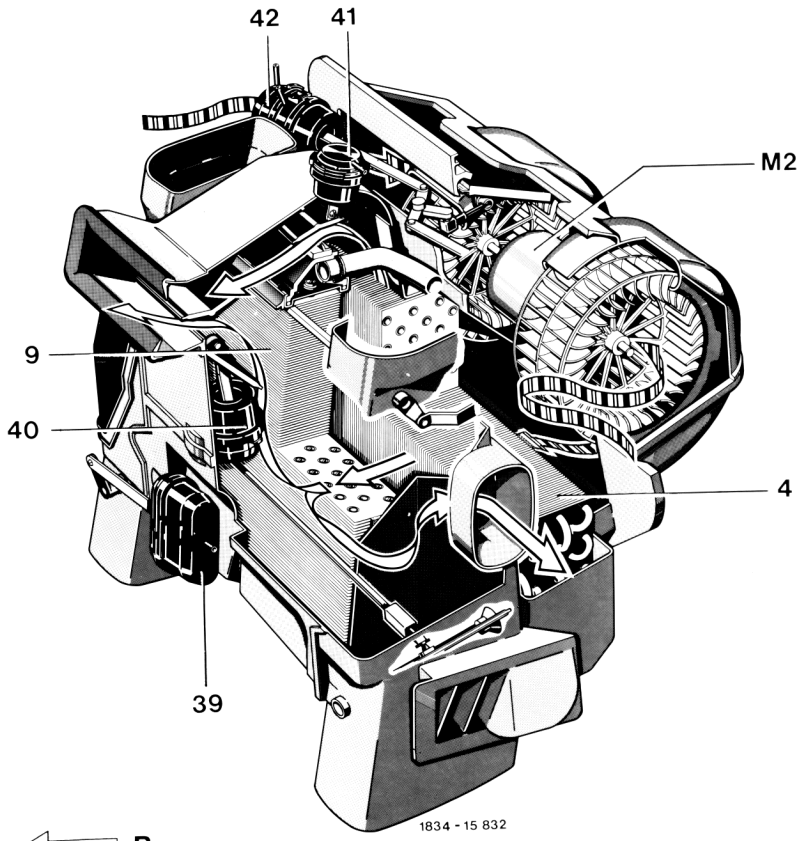
4	Evaporator
9	Heat exchanger
39	Vacuum element for footwell flaps (flaps open)
40	Vacuum element for center nozzle flap (flap closed)
41	Vacuum element for diverter air flap (flap closed)
42	Vacuum element for fresh/recirculated air flap (flap in fresh air position)
M2	Blower motor



A Fresh air
B Cooled air
D Recirculated air

2. Cooling operation and 80% recirculated air

4 Evaporator
9 Heat exchanger
39 Vacuum element for footwell flaps (flaps closed)
40 Vacuum element for center nozzle flap (flap open)
41 Vacuum element for diverter air flap (flap closed)
42 Vacuum element for fresh/recirculated air flap (flap in position 80% recirculated air)
M2 Blower motor

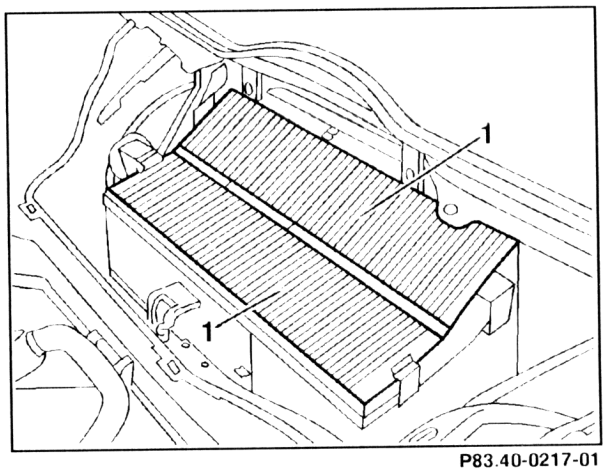


B Cooled air
D Recirculated air

3. Cooling operation and 100% recirculated air

4	Evaporator
9	Heat exchanger
39	Vacuum element for footwell flaps (flaps closed)
40	Vacuum element for center nozzle flap (flap open)
41	Vacuum element for diverter air flap (flap open)
42	Vacuum element for fresh/recirculated air flap (flap in position 100% recirculated air)
M2	Blower motor

It is possible that dust filters have been fitted since 04/93. Dust filters have be fitted as standard in conjunction with automatic climate control as of 06/93.



Arrangement of dust filter (1, wiper system removed)

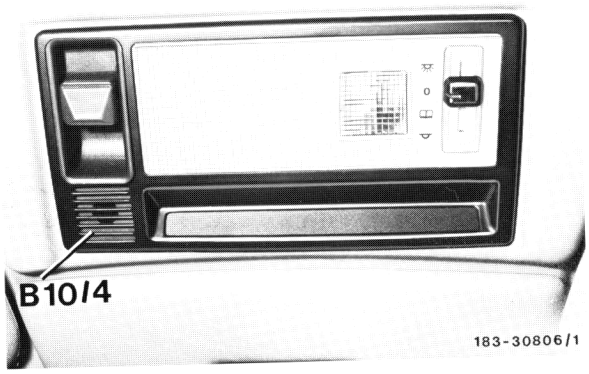
F. Temperature sensor interior air and ventilation blower

The temperature sensor interior air (B10/4) senses the temperature in the passenger compartment and changes its resistance correspondingly. This resistance value is fed into the automatic climate control unit.

Arrangement temperature sensor interior air (B10/4)

up to 07/85

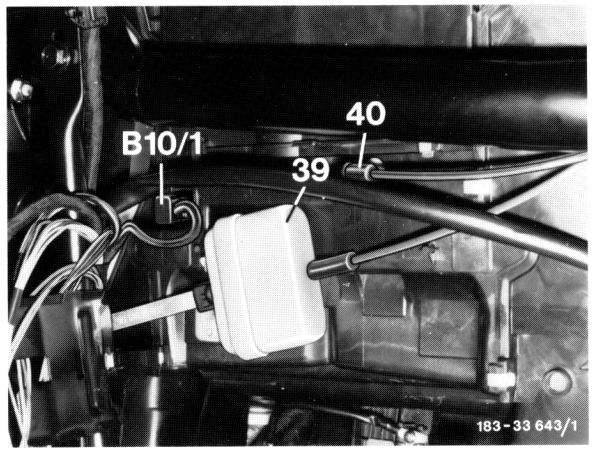
as of 08/85



The ventilation blower (M9) - arranged below the lateral nozzle right, on RHD vehicles left - is connected with the temperature sensor interior air by a hose and is in constant operation with the ignition switched on. This increases the regulating accuracy of the temperature in the passenger compartment.

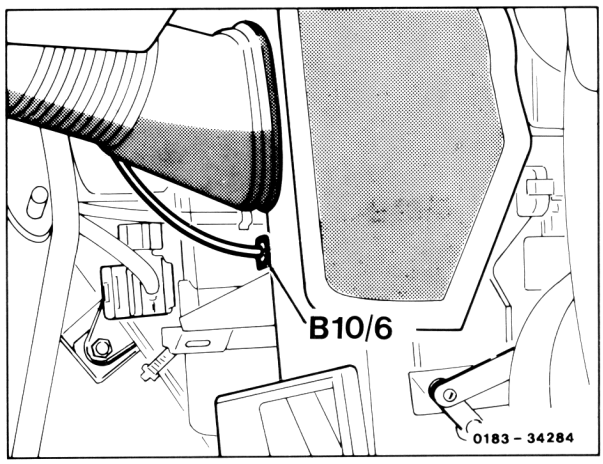
Temperature sensor heat exchanger

The temperature sensor for the heat exchanger (B10/1) is located in the housing of the heat exchanger.



Temperature sensor evaporator

The temperature sensor evaporator (B10/6) is located in the air flow behind the evaporator. Depending on the temperature on the evaporator, it feeds its resistance value to the control unit. This temperature sensor causes the compressor to switch more frequently on and off in cooling operating mode. Consequently there is only a minor fluctuation of the nozzle outlet air temperature. In addition, it prevents icing-up of the evaporator.

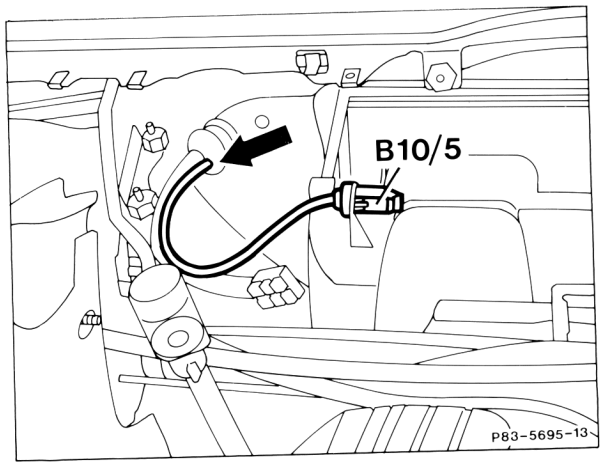


Note

On vehicles as of 09/87, the refrigerant compressor is switched off by the control unit after 2 minutes of operation if there is a short-circuit in the temperature sensor evaporator (resistance value below 2.5 kΩ). This prevents continuous refrigerant compressor operation and subsequent icing-up of the evaporator. The refrigerant compressor is only switched on again after the engine has been switched off and on again.

Temperature sensor outside air

The temperature sensor outside air (B10/5) ensures an accurate temperature regulation.



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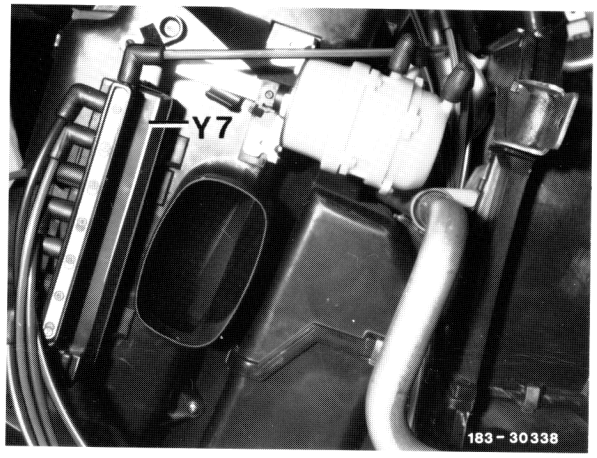
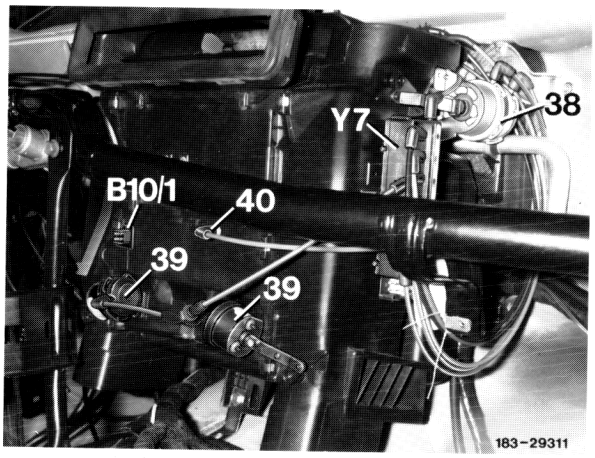
G. Arrangement of vacuum elements and switchover valve block for the control of the air flaps, mono valve and circulating pump

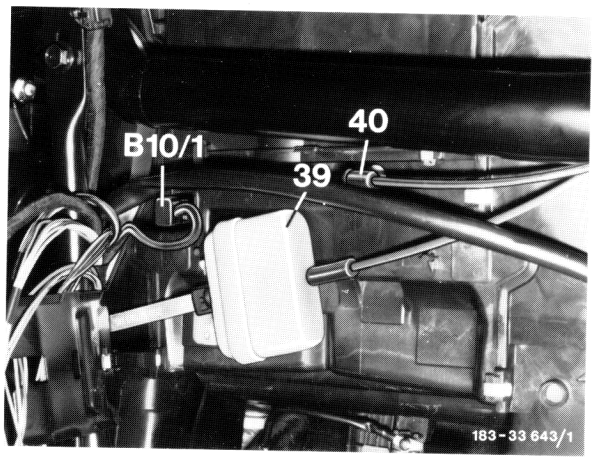
The switchover valve block (Y7) consists of a unit with 7 switchover valves.

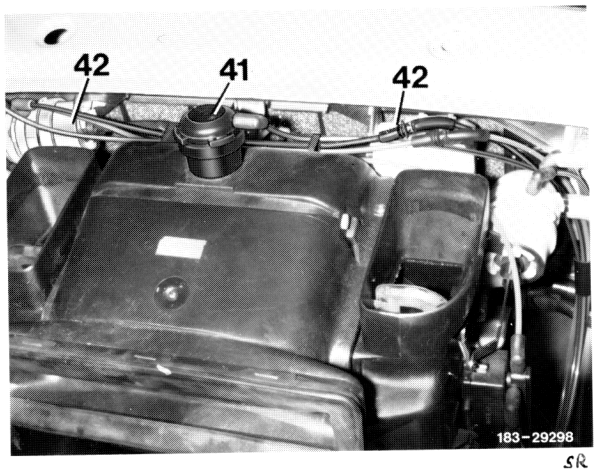


38 Vacuum element for defroster nozzle flaps (without vacuum, flaps open)
39 Vacuum element for footwell flaps up to 8/86 (without vacuum, flaps closed)
40 Connection vacuum element for center nozzle flap (without vacuum, flap closed)



39 Vacuum element for footwell flaps up to 9/86

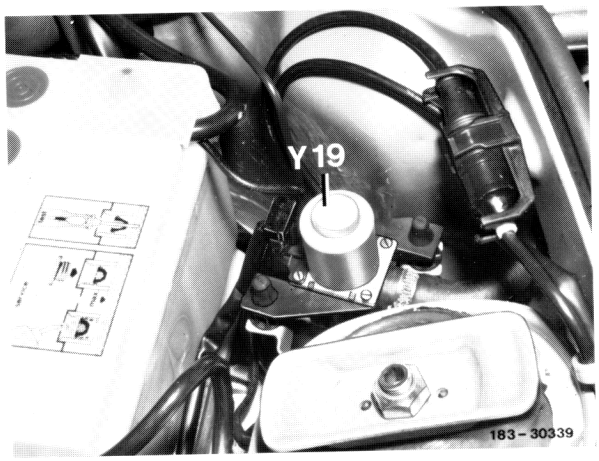




41 Vacuum element for diverter air flap (without vacuum, flap closed)
42 Vacuum element for fresh/recirculated air flap (without vacuum, flap in fresh air position)

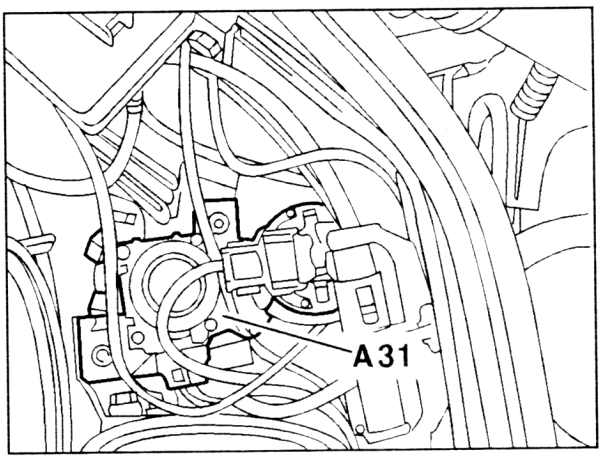
Mono valve and heating water circulating pump up to 11/92

The mono valve (Y19) is located in the return of the heating water circuit and controls the water flow through the heat exchanger. Without voltage it is fully open and closed if voltage is present.



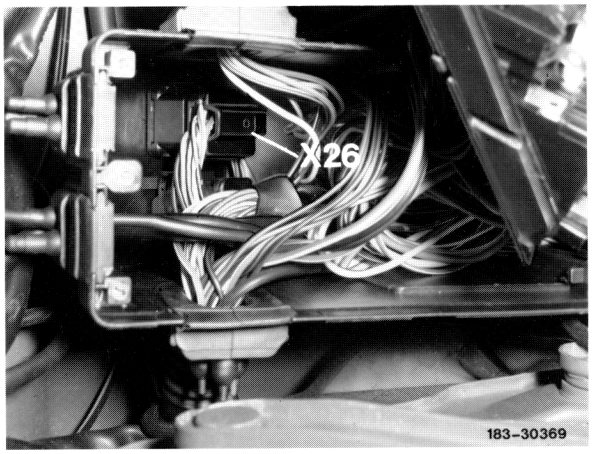
A circulating pump is located in the return flow of the heating water circuit. The circulating pump (M13) operates in the heating mode, if the mono valve is fully open or cycles in control range.

As of 12/92, the mono valve and the heating water circulating pump are combined in the heating system supply unit (A31).

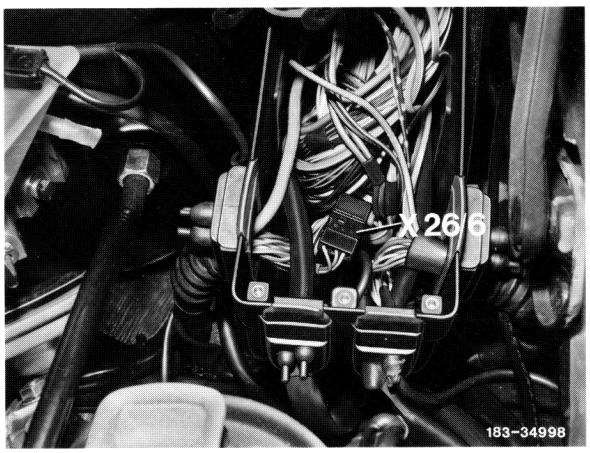


H. Arrangement of plug connectors (X26, X26/6 and X64) on cable harness

The plug connector (X26) is located on the base of the fuse box. This connector serves to direct the refrigerant compressor activation, the voltage supply for the compressor shut-off control unit and the auxiliary fan control.



As of 09/87, a 3-pole connector (X26/6) is located in the fuse and relay box. Activation of the temperature sensor coolant and the relay for the auxiliary fan 2nd stage is directed via this connector.

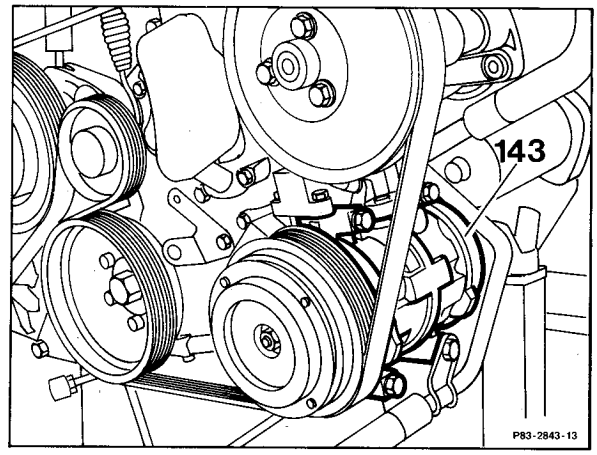


The connector (X64) for the electronic blower regulator is located next to the fuse box on the front wall.

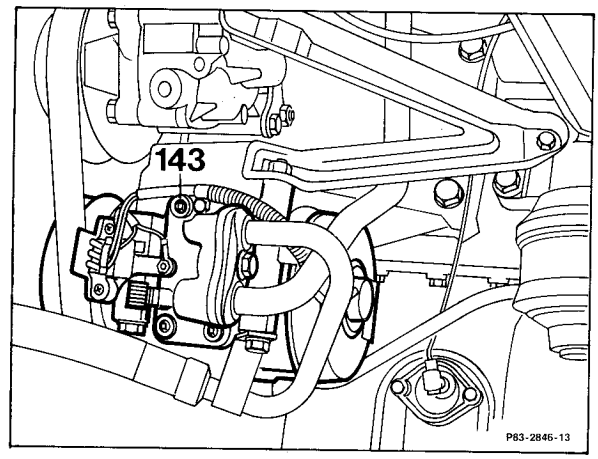
I. Refrigerant compressor and function of the compressor shut-off

The rotary swash-plate refrigerant compressor, make Nippondenso, is installed in all models 124.
The filling capacity of the air conditioner is 1.1 kg refrigerant R12.
If the compressor labors, it is switched off to protect the single-belt drive.

Arrangement refrigerant compressor (143)



on the diesel engine



on the gasoline engine

Function of the compressor shut-off

General

In order to protect the single-belt drive, the electromagnetic coupling is switched off via a control unit for instance if the refrigerant compressor seizes up.

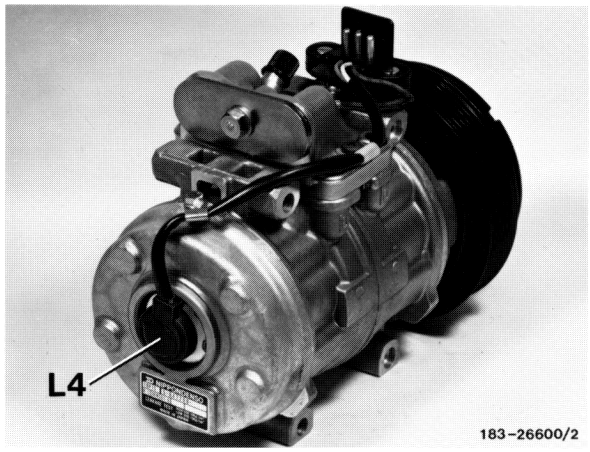
Layout of the compressor shut-off circuit:

1. Speed sensor
2. Control unit
3. Microswitch (only on vehicles with diesel engine and automatic transmission)

83.0742-600/19

1. Speed sensor

Speed sensors measure the speeds of the engine and the refrigerant compressor. They consist of a magnetic core and a coil. If the ring gear or the shaft of the refrigerant compressor turns, an alternating voltage is induced in the coils of the speed sensor which is fed into the control unit (N6).

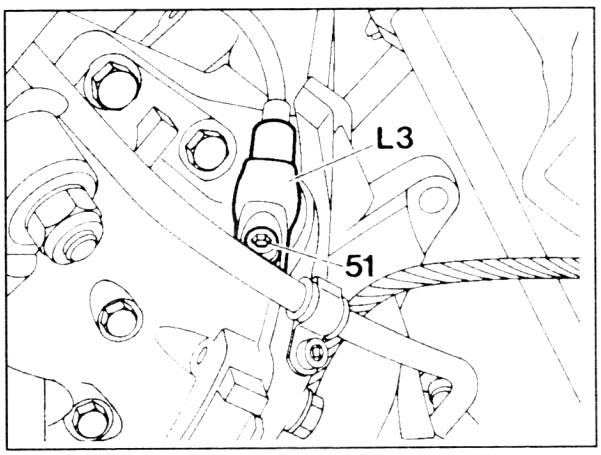


L4 A/C compressor speed sensor

Depending on the speed, the alternating voltage and consequently the frequency rises or drops.

Note

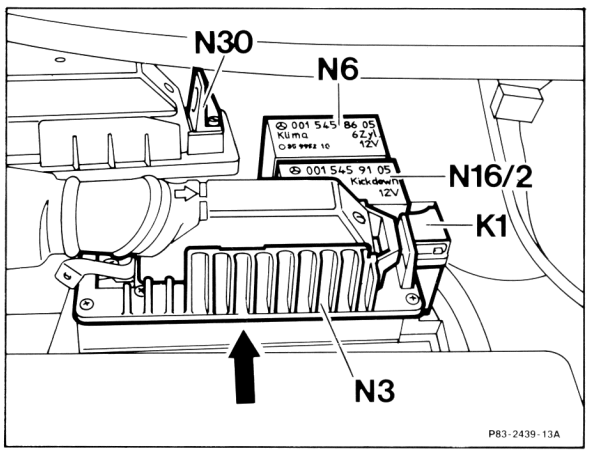
The engine speed on the gasoline engine is tapped off the terminal TD on the cable connector of the diagnostic plug.



L3 Speed sensor starter ring gear (on the diesel engine on the ring gear of the flywheel)

2. A/C compressor cutoff control unit (N6)

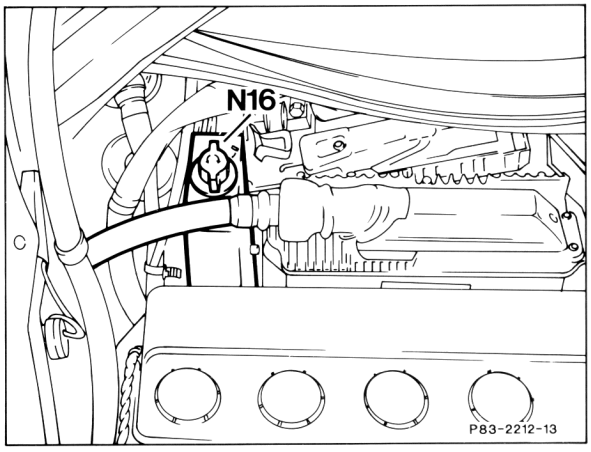
The control unit compares the two speeds of the engine and the refrigerant compressor and switches off the refrigerant compressor at a speed differential of approx. 30%.



N6 A/C compressor cutoff control unit

Engine systems control unit (N16, engine 104)

In this control unit the familiar components, such as "Fuel pump relay and compressor cutoff", are combined into one unit with extended functions. See 83-605 for testing and fault table.

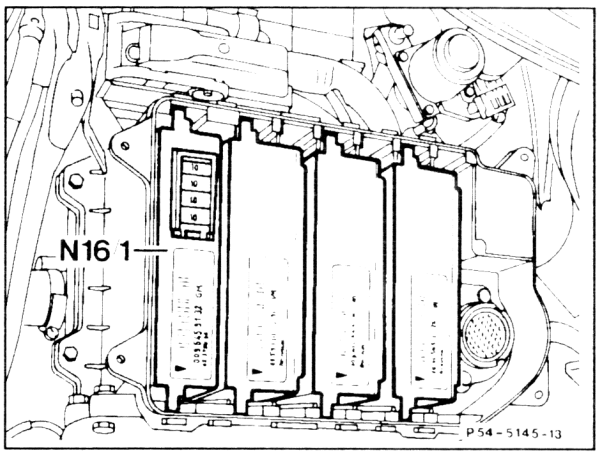


N16 Engine systems control unit (MAS)

83.0742-600/20

Base module (N16/1, engine 119)

In addition to further functions, the compressor cutoff is integrated in this control unit. The electrical control of the refrigerant compressor is, as in the case of the control units (N6/N16), unchanged. (See diagnosis manual for testing).

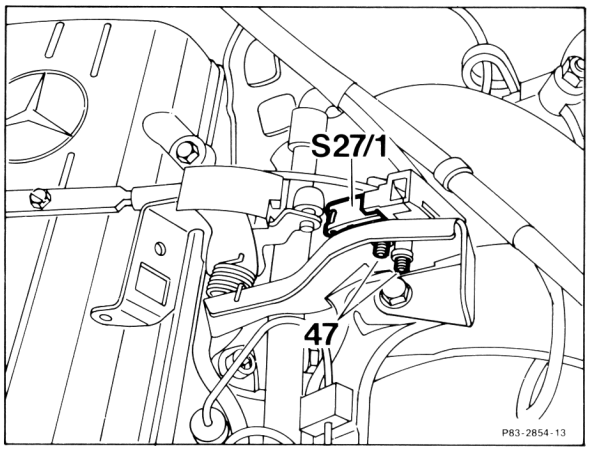


P54-5145-13

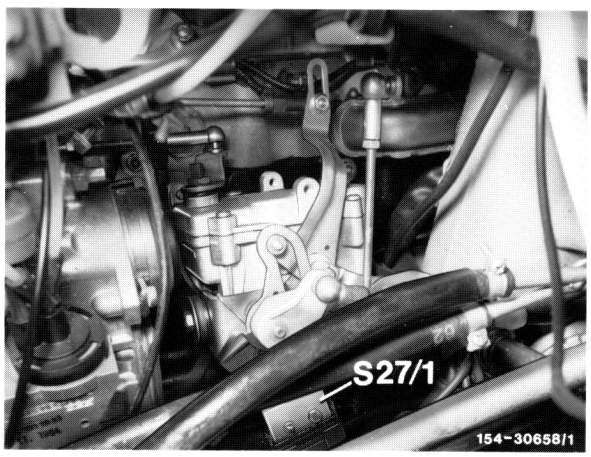
N16/1 Base module (GM) in the module box

3. Microswitch (S27/1), on model 124.1 with automatic transmission only

The microswitch switches off the refrigerant compressor at full throttle below an engine speed of approx. 1050 rpm to approx. 2150 rpm via the control unit (N6) (improved starting-off characteristics).



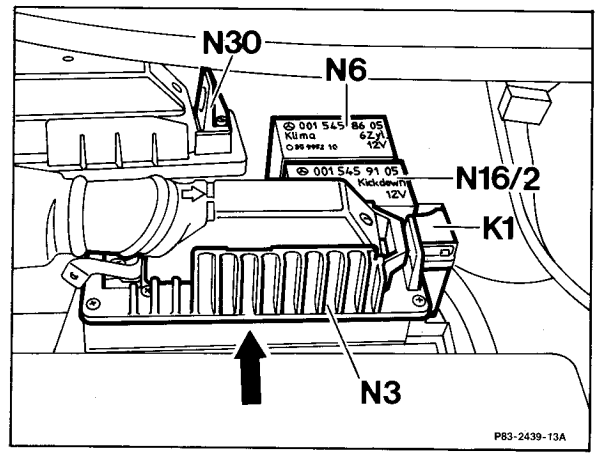
S27/1 Microswitch, model 124.1 except TURBO



S27/1 Microswitch, model 124.1/3 TURBO

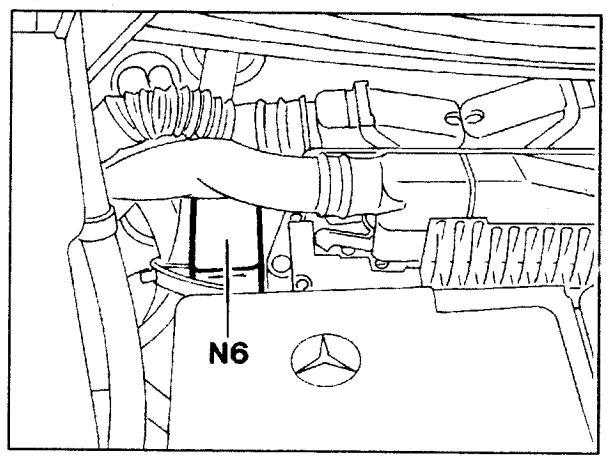
Functional description of the compressor cutoff

On vehicles up to 08/87, the refrigerant compressor is only switched on approx. 10 seconds after reaching an engine speed of approx. 600/min (for engine speed stabilization). On vehicles as of 02/88, the refrigerant compressor on model 124.0 is switched on after 4 seconds and on model 124.1 immediately. The control unit (N6) compares the two speeds of the ring gear and the refrigerant compressor only 2 seconds after the refrigerant compressor has switched on (because of the coupling slip during switching on). If a speed differential of more than 30% exists when the refrigerant compressor switches on, this condition is checked for 200 milliseconds. If the speed differential no longer exists after 200 milliseconds, the refrigerant compressor remains switched on. If the speed differential remains because of hard refrigerant compressor operation, the control unit (N6) immediately switches off the refrigerant compressor. This process is repeated only when the ignition is switched off and the engine will be started.



The function has been modified as follows from 07/92:

- On vehicles with 4-cylinder engines, the refrigerant compressor is switched on 4 sec after starting the engine. (Stabilization of the engine speed)
- On vehicles with 6-cylinder engines, the refrigerant compressor is switched on as soon as the engine is started.
- If slip is recognised after the refrigerant compressor is switched on, the refrigerant compressor is switched off and after 2 min. the refrigerant compressor is switched on for 4 sec. If the control unit (N6) recognises slip again, the refrigerant compressor is switched off for 2 min. After slip is recognised for a third time, the compressor remains switched off until the ignition is switched off.



Refrigerant compressor emergency cutoff from 09/85 to 08/87

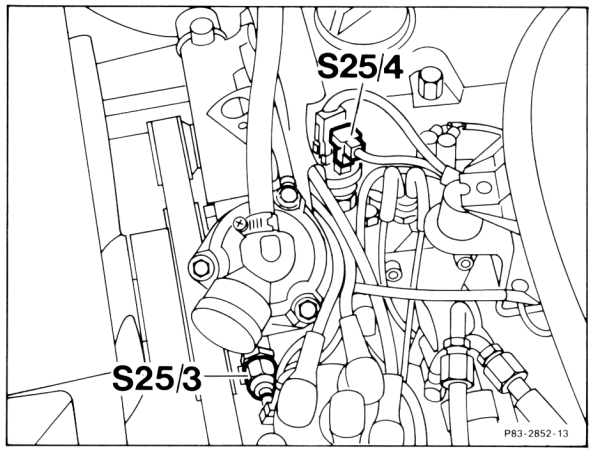
In order to avoid thermal overload on the engines, the refrigerant compressor is switched off as follows:

a) On vehicles from 09/85 to 08/87 (except with engine 102 without RÜF/KAT and engine 601), the cutoff takes place by means of a temperature switch (S25/3 - S25/11) via the compressor cutoff control unit. At a coolant temperature (see table) the temperature switch is shorted to ground, resulting in the refrigerant compressor being switched off by the compressor cutoff control unit. If the engine temperature drops (see table), the temperature switch opens and the refrigerant compressor is immediately switched on again by the compressor cutoff control unit.

On model 124.1/3 TURBO, the switching on period of the refrigerant compressor is additionally reduced by 50% at approx. 122°C coolant temperature. During this process, the compressor is switched in cycles, i.e. approx. 20 seconds off, 20 seconds on. If the coolant temperature drops to below 117°C, the compressor is again switched on permanently. This control is effected by the temperature sensor coolant indication (B13) via the control unit of the automatic climate control.

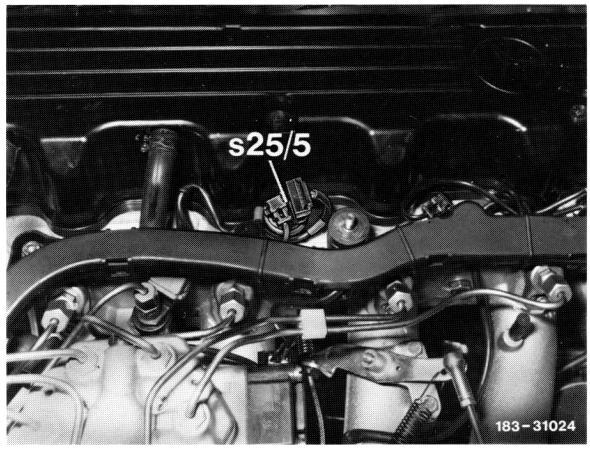
Vehicle with engine	Temperature switch	Switching-on temperature approx. °C	Switching-off temperature approx. °C
102 RÜF/KAT	S25/3	110	103
103	S25/5	115	108
602	S25/5	115	108
603	S25/5	115	108
603 TURBO	S25/11	128	118

Arrangement of temperature switch (S25/3)

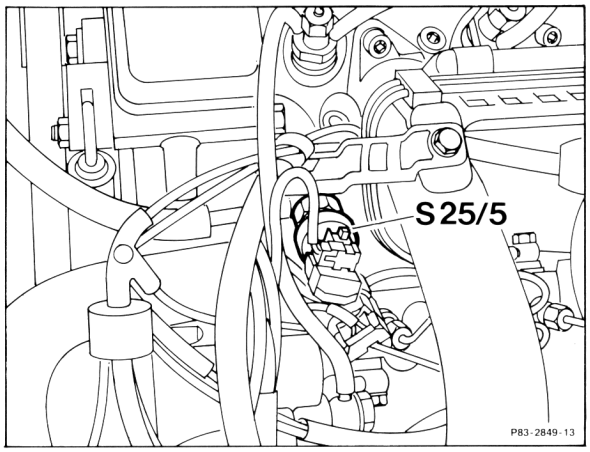


Engine 102 RÜF/KAT up to 08/87

Arrangement of temperature switch (S25/5)

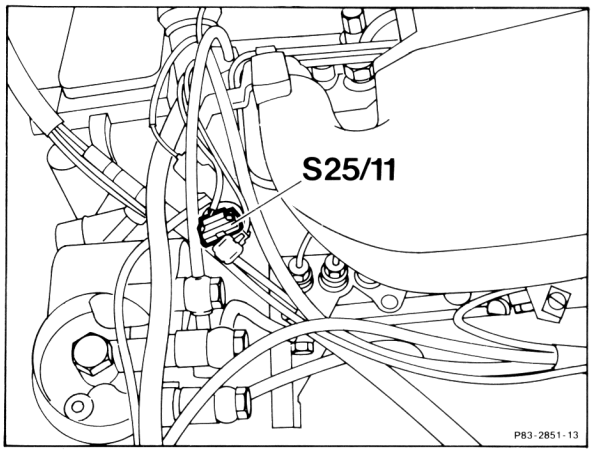


Engine 103 to 08/87



Engine 602 and 603 except TURBO up to 08/87

Arrangement temperature switch (S25/11)



Engine 603 TURBO up to 08/87

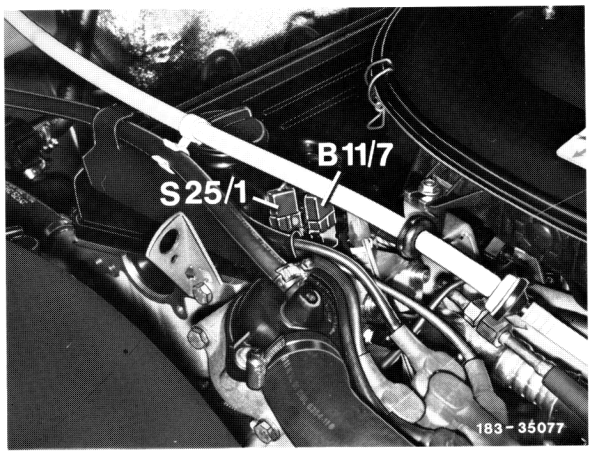
83.0742-600/24

b) On vehicles as of 09/87, the emergency cutoff is controlled by a temperature sensor (B11/7 or B10/8). This temperature sensor transmits its resistance value corresponding to the coolant temperature to the control unit, which processes the value and switches off the refrigerant compressor in 2 stages as follows:

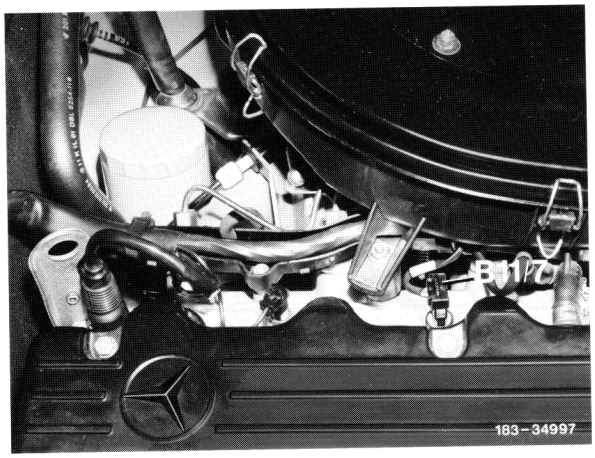
1st stage
At a coolant temperature of 122°C in the case of the diesel vehicle, the operating time is reduced by 50%. In this process the compressor works in cycles, i.e. approx. 20 seconds off and 20 seconds on.
If the coolant temperature drops to 117°C, the compressor is switched fully on again.

2nd stage
The refrigerant compressor is switched off completely at a coolant temperature of 128°C .
If the coolant temperature drops to 122°C, the compressor is switched again on in cycles (1st stage).

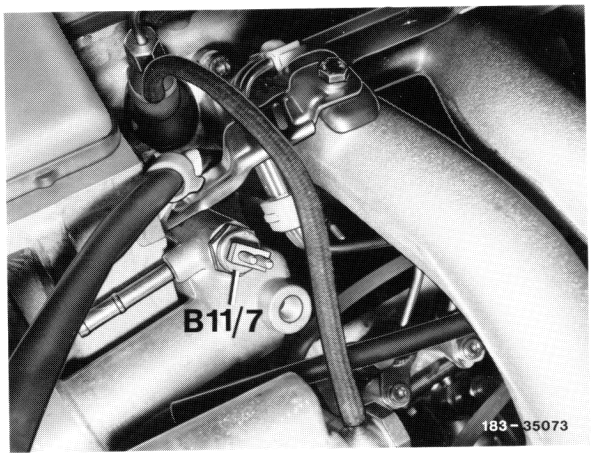
Arrangement of temperature sensor coolant (B11/7 or B10/8)



Engine 102 as of 09/87



Engine 103 as of 09/87

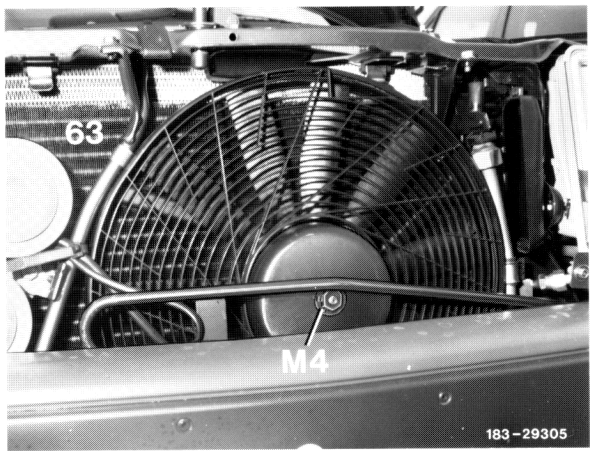


Engines 601-603 as of 09/87

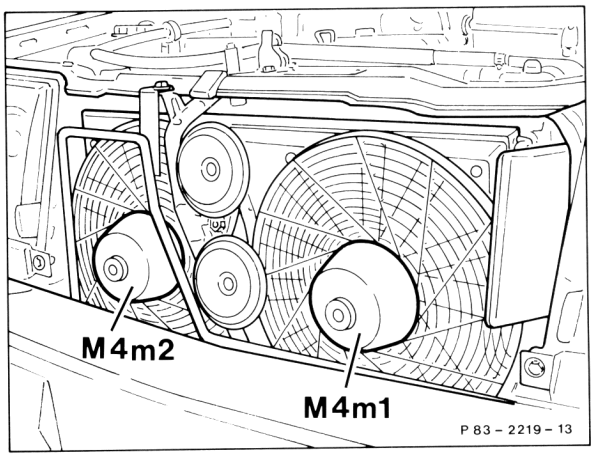
83.0742-600/26

K. Auxiliary fan and control of auxiliary fan

Up to 08/89 all models are equipped with a large electrical auxiliary fan (M4). The power consumption at maximum speed is approx. 17.5 amps at a battery voltage of 13 volt.



Models 124 with 6- or 8-cylinder engines and models 124.127, 128 are equipped with 2 auxiliary fans, fan shroud and condenser with a higher output. The power consumption in the 2nd stage is 25 amps at a battery voltage of 13 volt.

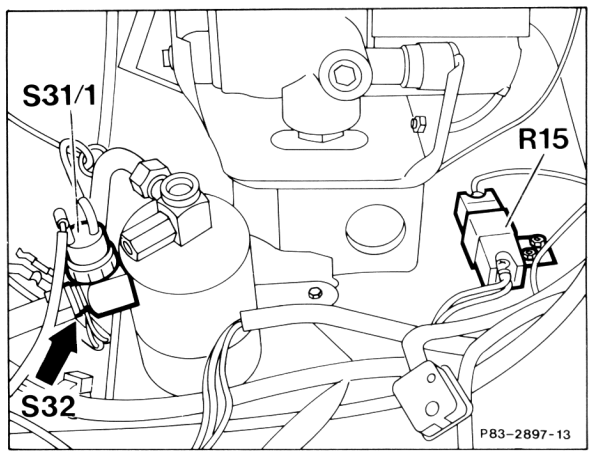


Arrangement of auxiliary fan M4m1 and M4m2

The auxiliary fan is controlled in two stages:

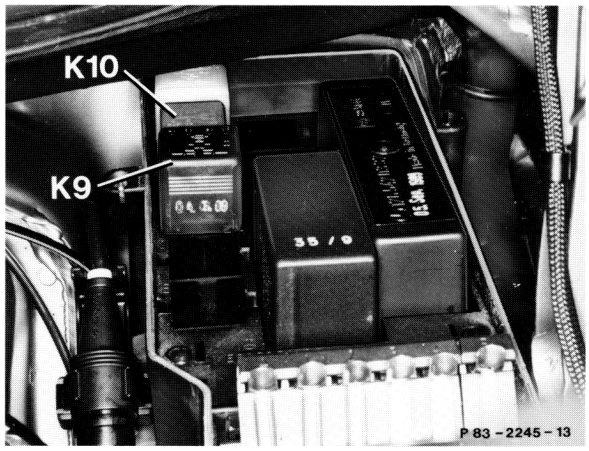
1st stage
By the pressure switch (S32 or S32/1), at a refrigerant pressure of 20 bar, via the relay (K10) and preresistor (R15).

Arrangement of receiver/drier and preresistor (R15):



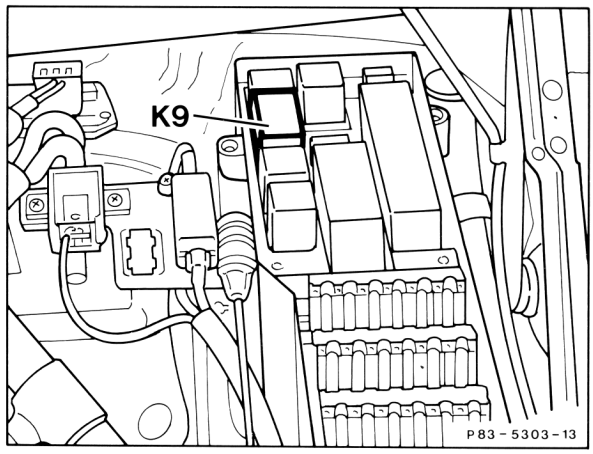
Arrangement of receiver/drier and preresistor (R15):
S31 Pressure switch refrigerant compressor
S32 Pressure switch for auxiliary fan
On 20 bar/Off 15 bar

Arrangement of all models 124 up to 05/92



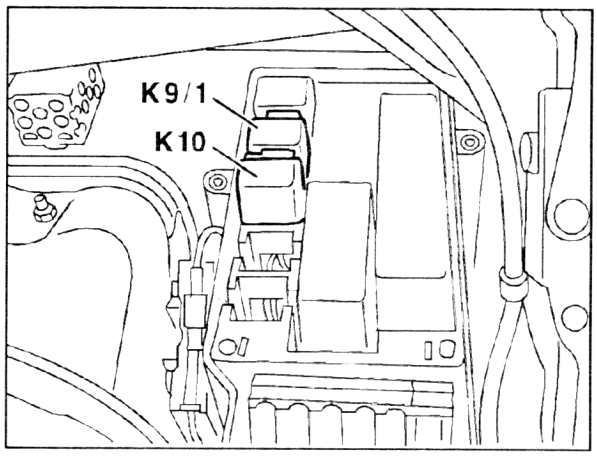
K9 Relay auxiliary fan
K10 Relay auxiliary fan preresistor

Arrangement on models 124.034/036 as of 07/91 up to 05/92



K9 Relay auxiliary fan

Arrangement of all models 124 as of 06/92



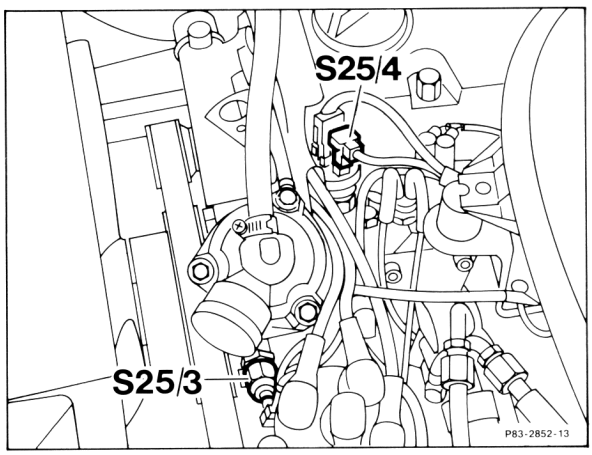
P83.30-0214-01

K9/1 Relay auxiliary fan, 1st stage
K10 Relay auxiliary fan, 2nd stage

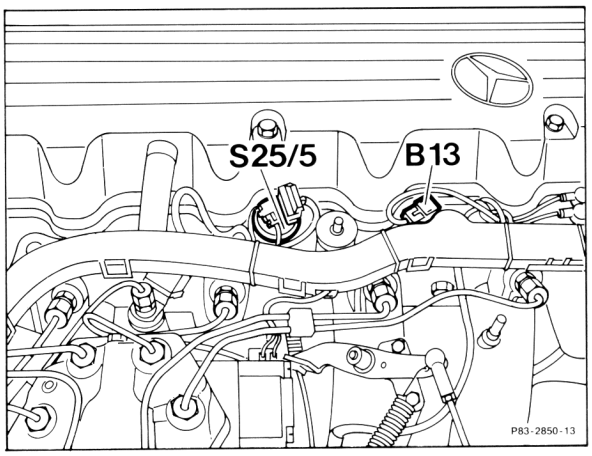
2nd stage

On vehicles up to 08/87, by the temperature switch (S25/4) at 110°C or (S25/5, S25/11) at 105°C coolant temperature via the relay (K9) direct.

On vehicles as of 09/87, the relay (K9) is directly activated by the temperature sensor (B11/7 or B10/8) at a coolant temperature of 107°C via the pushbutton control unit.



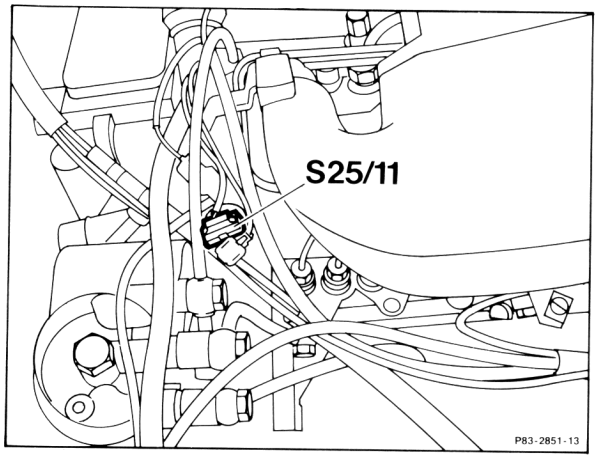
S25/4 Temperature switch 100/110°C
Engine 102 up to 08/87



S25/5 Temperature switch 105/115°C
Engine 103 up to 08/87

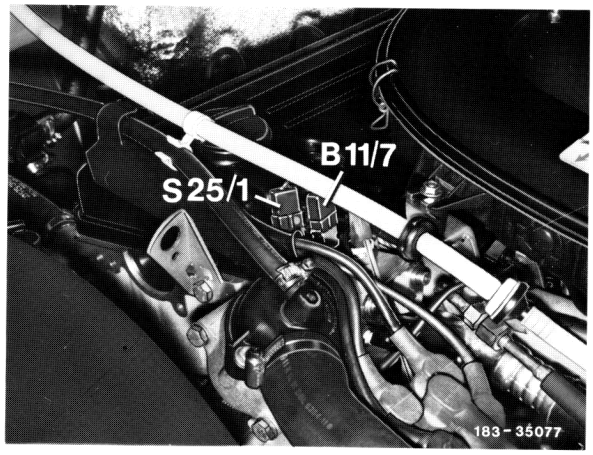
S25/4 Temperature switch 100/110°C
S25/5 Temperature switch 105/115°C
Engines 601-603 except TURBO up to 08/87

83.0742-600/29

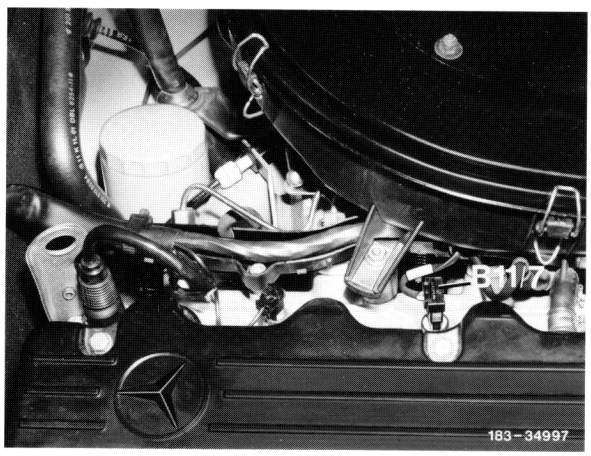


S25/11 Temperature switch 105/120°C
Auxiliary fan 2nd stage
Engine 603 TURBO up to 08/87

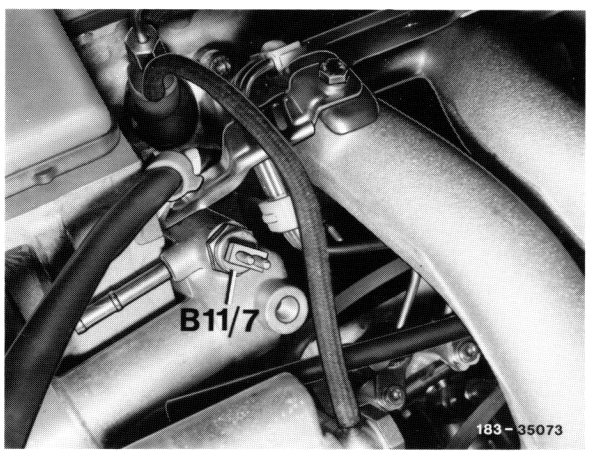
Arrangement temperature sensor (B11/7)



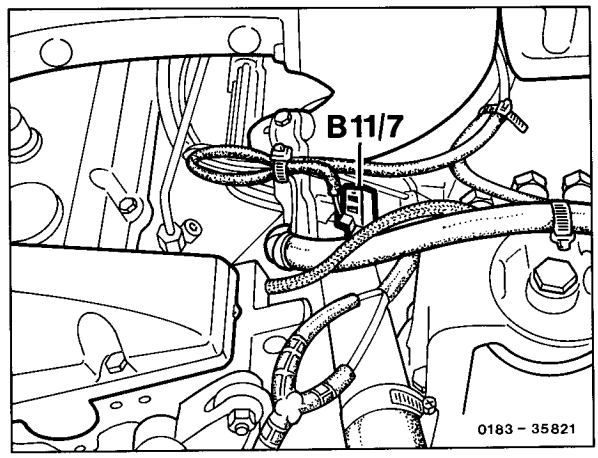
Engine 102 as of 09/87



Engine 103 as of 09/87



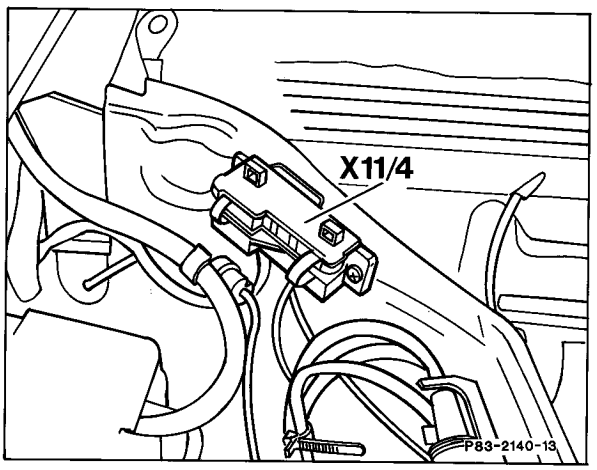
Engines 601-603 except TURBO
as of 09/87



Engine 603 TURBO as of 09/87

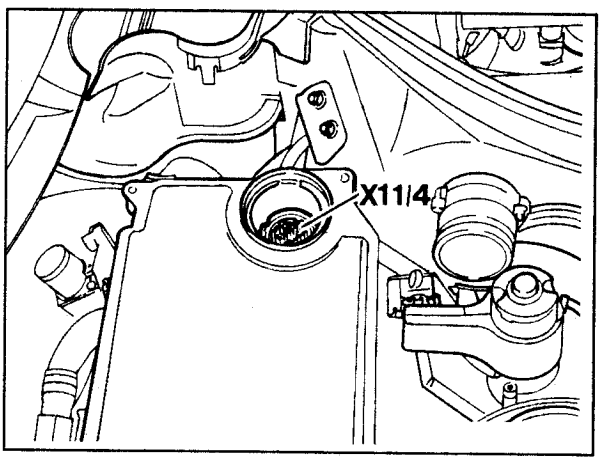
L. Fault display by impulse output (as of 09/87)

Constant malfunctions due to interruption or short-circuit, e.g. of temperature sensors, switchover valves and circulating pump, are recorded by the pushbutton control unit, evaluated and passed on to the test coupling (X92 or X11/4) in the form of voltage impulses (battery voltage). These faults are not stored but can be read out with an impulse counter. Depending on the display on the impulse counter it is possible to determine the faulty component or its supply cables (see testing the air conditioner/automatic climate control with impulse counter 83-503).



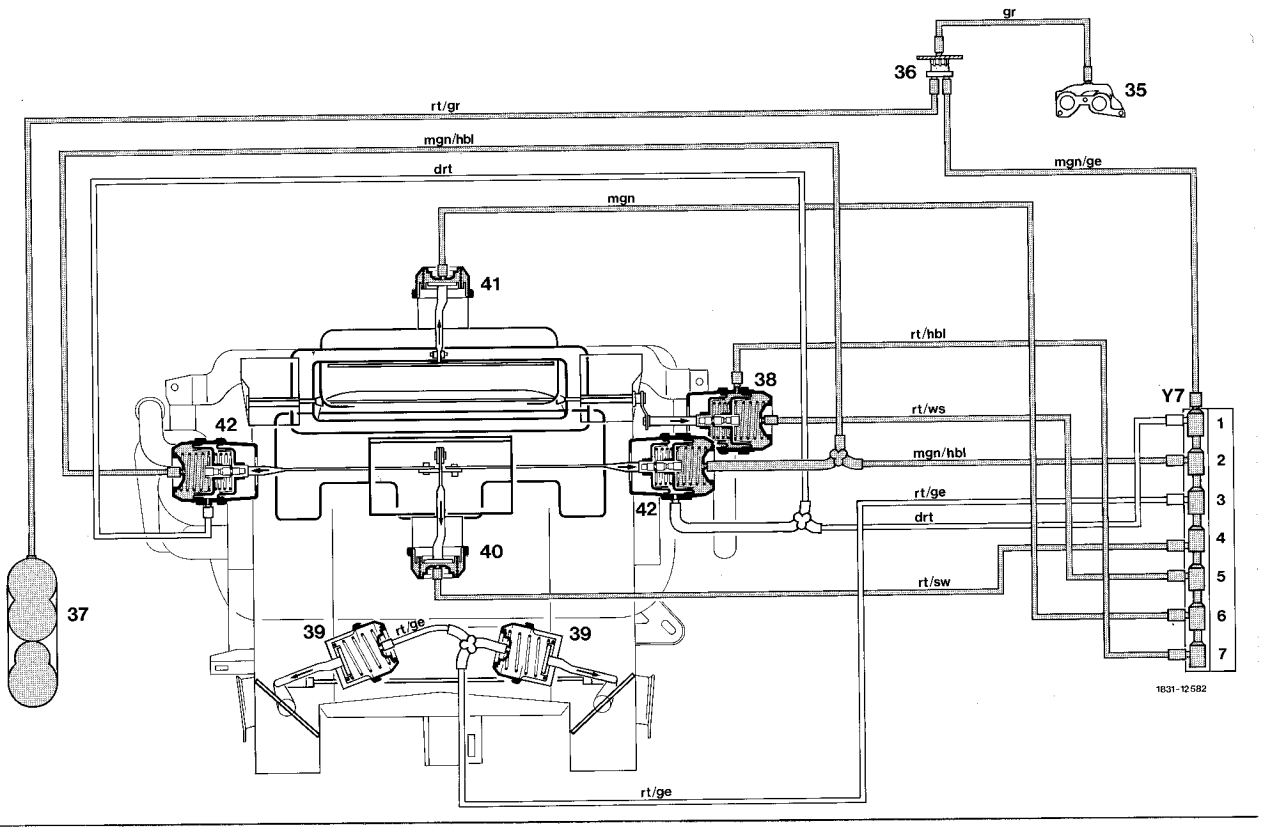
X11/4 Test coupling for diagnosis, 8-pin (flash code)

On models 124.034/036 the fault impulse is output via the test coupling (X11/4) for diagnosis in the module box.



P07-2603-13

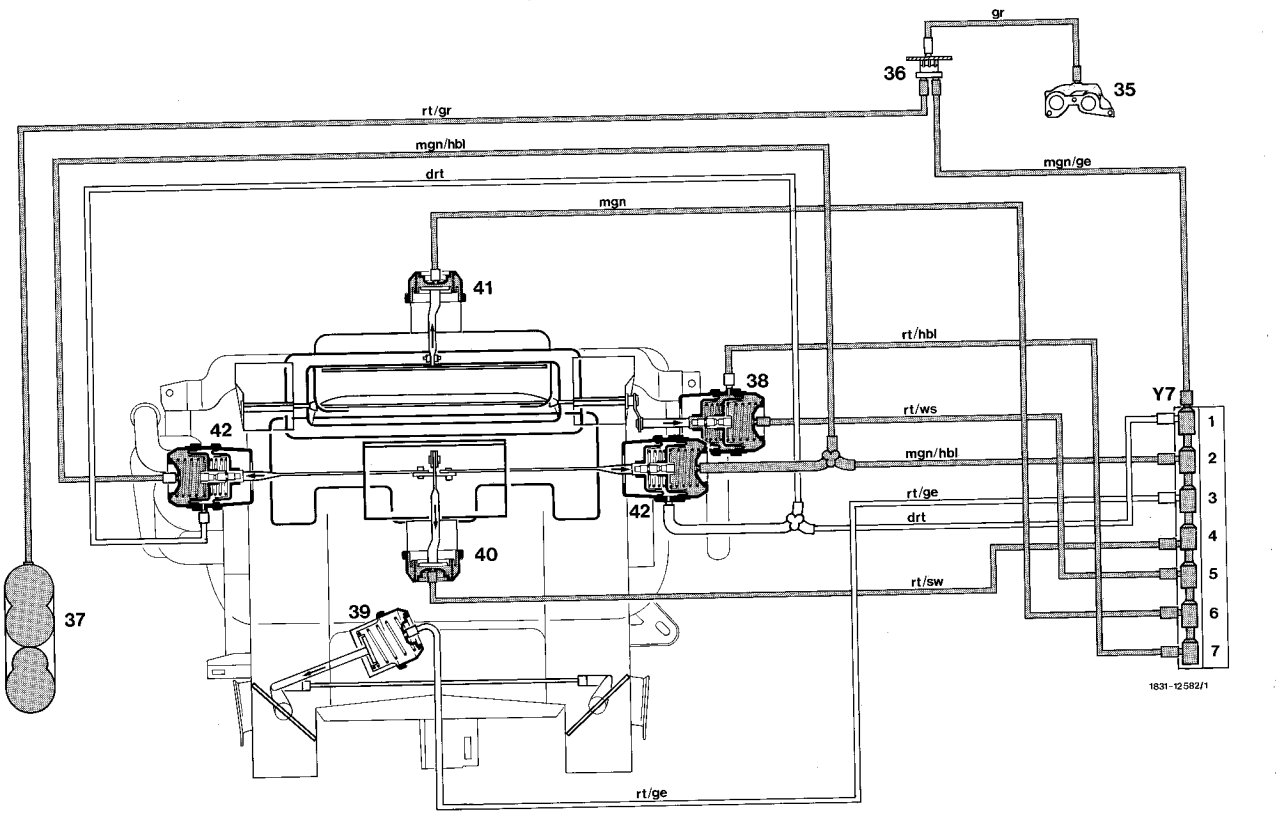
M. Vacuum function diagrams



Vacuum function diagram up to 08/86
Function selection cooling - recirculated air

Y7		Switchover valve strip 7-times	hbl	light blue
	y1	Switchover valve for fresh/recirculated air flap (small lift)	drt	dark red
	y2	Switchover valve for fresh/recirculated air flap (large lift)	ge	yellow
	y3	Switchover valve for footwell flaps	mgn	medium green
	y4	Switchover valve for center nozzle flap	gr	grey
	y5	Switchover valve for defroster nozzle flaps (large lift)	rt	red
	y6	Switchover valve for diverter air flap	ws	white
	y7	Switchover valve for defroster nozzle flaps (small lift)	sw	black

35	Vacuum connection to intake manifold
36	Check valve
37	Vacuum reservoir (except on diesel models)
38	Vacuum element for defroster nozzle flaps (flaps "closed")
39	Vacuum element for footwell flaps (flaps "closed")
40	Vacuum element for center nozzle flap (flap "open")
41	Vacuum element for diverter air flap (flap "open")
42	Vacuum element for fresh/recirculated air flap (flap in position 20% fresh air)



Vacuum function diagram as of 09/86
Function selection cooling - recirculated air

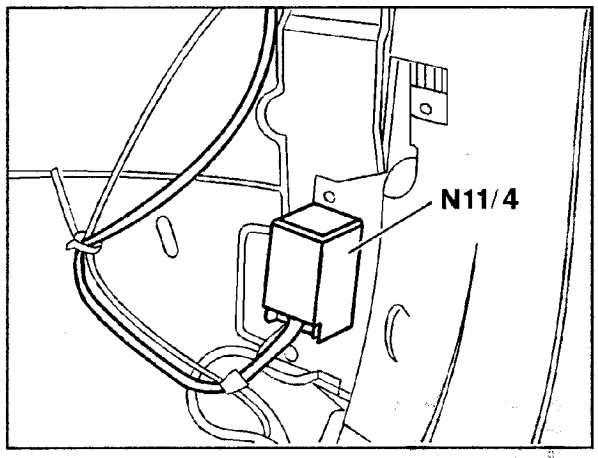
Y7		Switchover valve strip 7-times
	y1	Switchover valve for fresh/recirculated air flap (small lift)
	y2	Switchover valve for fresh/recirculated air flap (large lift)
	y3	Switchover valve for footwell flaps
	y4	Switchover valve for center nozzle flap
	y5	Switchover valve for defroster nozzle flaps (large lift)
	y6	Switchover valve for diverter air flap
	y7	Switchover valve for defroster nozzle flaps (small lift)

35	Vacuum connection to intake manifold
36	Check valve
37	Vacuum reservoir (except on diesel models)
38	Vacuum element for defroster nozzle flaps (flaps "closed")
39	Vacuum element for footwell flaps (flaps "closed")
40	Vacuum element for center nozzle flap (flap "open")
41	Vacuum element for diverter air flap (flap "open")
42	Vacuum element for fresh/recirculated air flap (flap in position 20% fresh air)

hbl	light blue
drt	dark red
ge	yellow
mgn	medium green
gr	grey
rt	red
ws	white
sw	black

N. Residual engine heat utilization (MRA)

Arrangement of engine time-limit relay for residual engine heat utilization (N14/4) as of 09/92 installed in the extension of the A-pillar behind the plastic cover in the front passenger footwell.



P83.25-0250-01

Residual heat operation REST

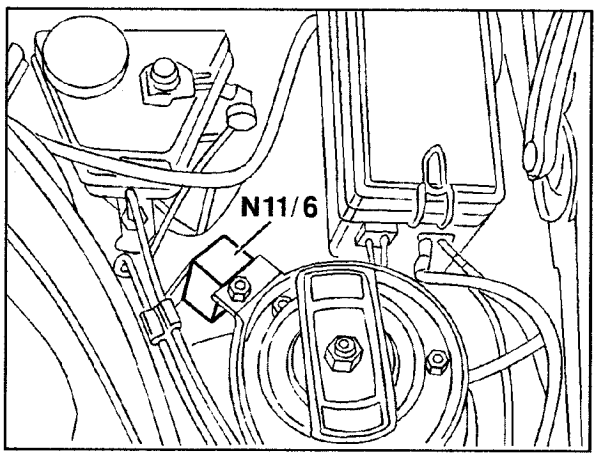
Only switch on the system after ignition OFF

After operating the switch, the system works automatically in the following operating condition:

- Passenger compartment temperature depending on the setting of the temperature selector wheel
- Blower on low stage
- Flap position depending on preselected passenger compartment temperature
- Battery voltage > 11.8 V
- Time limitation of 30 min. or ignition ON

Residual engine heat utilization - taxi

All taxis with diesel engines as of vehicle ident. nos. 1C 022 727 or 1F 265 041 have an automatic heater control (HAU) time-limit relay (N11/6) installed to avoid post-heating, located next to the fuse and relay box.



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