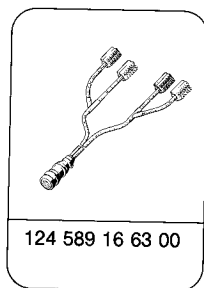
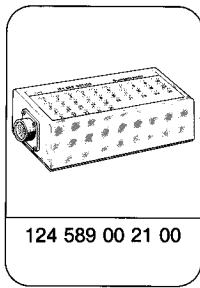


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Note and test preparation	Observe
Check temperature sensor interior air (B10/4) with cables	Test step 1
Check temperature sensor outside air (B10/5) with cables	Test step 2
Check temperature sensor evaporator (B10/6) with cables	Test step 3
Check temperature sensor heat exchanger (B10/1) with cables	Test step 4
Check temperature sensor coolant indication (B13) up to 08/87 or temperature sensor coolant (B11/7 or B10/8) as of 9/87 with cables	Test step 5
Check switchover valve block 7-fold (Y7) and cables	Test step 6
Check mono valve (Y19) and cables	Test step 7
Preparation for test step 8-21	Observe
Check voltage supply for control unit	Test step 8
Check Hall sensor (B6) with cable	Test step 9
Check ground activation by the recirculated air switch (S24)	Test step 10
Check ground activation for mono valve (Y19)	Test step 11
Check ground activation for circulating pump (M13)	Test step 12
Check ground activation for switchover valve of the fresh/recirculated air flap, small lift (Y7.1)	Test step 13
Check ground activation for switchover valve for the fresh/recirculated air flap, large lift (Y7.2)	Test step 14
Check ground activation for switchover valve of the footwell flaps (Y7.3)	Test step 15

Check ground activation for switchover valve of the center nozzle flap (Y7.4)	Test step 16
Check ground activation for switchover valve of the defroster nozzle flaps, large lift (Y7.5)	Test step 17
Check ground activation for switchover valve of the diverter air flap (Y7.6)	Test step 18
Check ground activation for switchover valve of the defroster nozzle flaps, small lift (Y7.7)	Test step 19
Check control voltage for blower regulator (N29)	Test step 20
Check ground activation for refrigerant compressor (Y5)	Test step 21

Special tools



Conventional tester

Multimeter

e.g. Sun, DMM 5

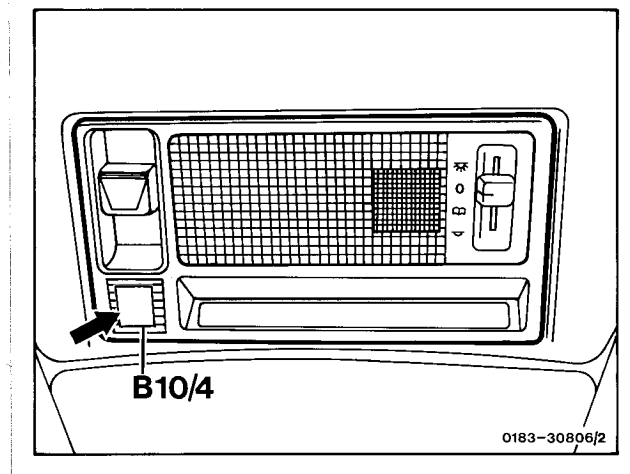
Note

The test program should be conducted if the cause of the fault is unknown or if the interior temperature selected with the selector wheel is not obtained, or the air flaps (e.g. footwell flaps) fail to open.

Before carrying out the following test, check fuses 5, 7 and 12. In addition it is advisable to manually check the blower and flap control according to (83-601).

Preparation for testing

Before the test, check the ventilation blower for the temperature sensor interior air. To do so, switch on ignition and place a small piece of paper approx. 1cm² (arrow) against the grid of the temperature sensor interior air. The paper must stay in this position. If not, remove glove box and check ventilation blower (connections and function).



- 1 Remove control unit (83-635).
- 2 Connect socket box to cable harness for the control unit. The control unit must remain disconnected until test step 7.



Test step 1

Check temperature sensor interior air (B10/4) with cables.

Ohmmeter on jacks	Ambient temperature in °C	Nominal value in kΩ
1 and 17	+ 10	18.3 – 21.5
	+ 15	15.2 – 17.2
	+ 20	11.5 – 13.5
	+ 25	9.5 – 10.5
	+ 30	7.5 – 8.5
	+ 35	6.0 – 7.0
	+ 40	4.5 – 5.5
	+ 45	3.5 – 4.5



Yes	No
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1. Check cable 2 (grey/yellow) and 10 (brown/yellow) of the right coupling for interruption and cable 2 for ground short.
2. Renew temperature sensor interior air (B10/4).

Test step 2

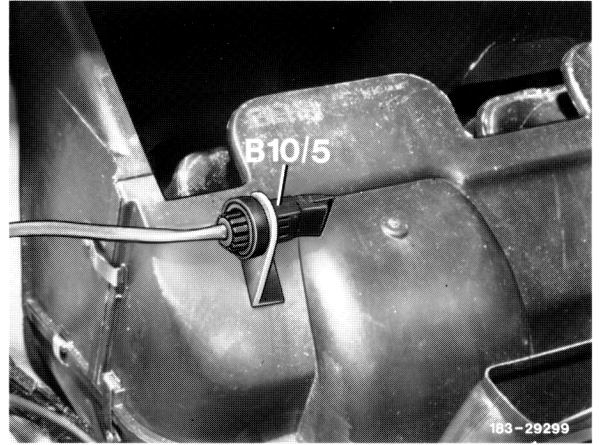
Check temperature sensor outside air (B10/5) with cables.

Ohmmeter on jacks	Ambient temperature in °C	Nominal value in kΩ
1 and 24	+ 10	5.0 – 6.0
	+ 15	4.0 – 4.6
	+ 20	3.1 – 3.9
	+ 25	2.4 – 3.0
	+ 30	1.9 – 2.3
	+ 35	1.6 – 2.0
	+ 40	1.4 – 1.6
	+ 45	1.1 – 1.3

Yes

No

1. Check cable 9 (grey/black) of the right coupling for interruption or ground short.
2. Renew temperature sensor outside air (B10/5).



Test step 3'

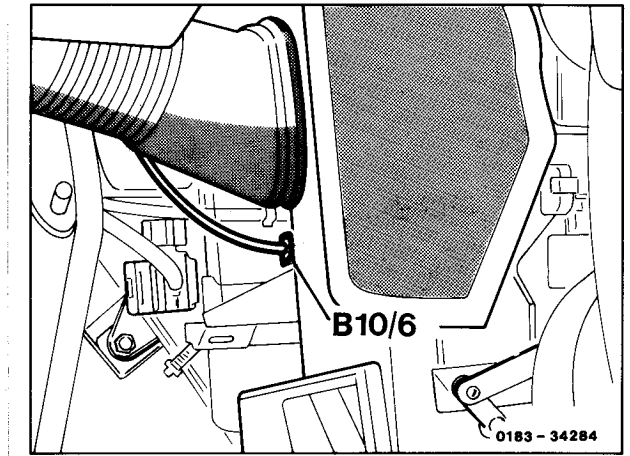
Check temperature sensor evaporator (B10/6) with cables.

Ohmmeter on jacks	Ambient temperature in °C	Nominal value in kΩ
1 and 19	+ 10	18.3 – 21.5
	+ 15	15.2 – 17.2
	+ 20	11.5 – 13.5
	+ 25	9.5 – 10.5
	+ 30	7.5 – 8.5
	+ 35	6.0 – 7.0
	+ 40	4.5 – 5.5
	+ 45	3.5 – 4.5

Yes

No

1. Check cable 4 (grey/red) of the right coupling for interruption and ground short.
2. Renew temperature sensor evaporator (B10/6).



Test step 4

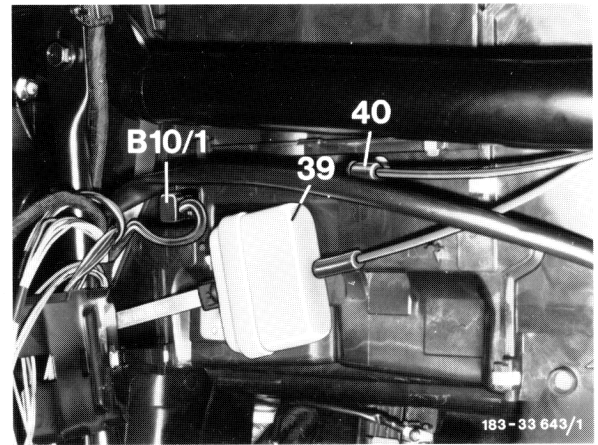
Check temperature sensor heat exchanger (B10/1) with cables.

Ohmmeter on jacks	Ambient temperature in °C	Nominal value in kΩ
1 and 22	+ 10	18.3 – 21.5
	+ 15	15.2 – 17.2
	+ 20	11.5 – 13.5
	+ 25	9.5 – 10.5
	+ 30	7.5 – 8.5
	+ 35	6.0 – 7.0
	+ 40	4.5 – 5.5
	+ 45	3.5 – 4.5

Yes

No

1. Check cable 7 (grey/green) of the right coupling for interruption and ground short.
2. Renew temperature sensor heat exchanger (B10/1).



Test step 5

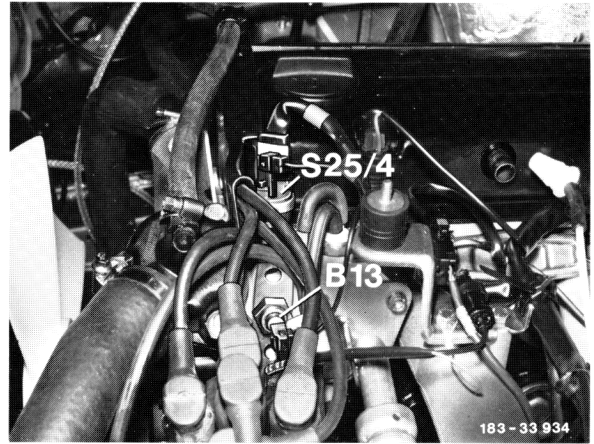
On vehicles up to 08/87, check temperature sensor coolant indication (B13) with cables.
On vehicles as of 09/87, check temperature sensor coolant (B11/7 or B10/8) with cables.

Ohm-meter on jacks	Coolant temperat. in °C	Nominal value up to 08/87	Nominal value as of 09/87
1 and 23	20	100 – 120 Ω	5.0 – 8.0 kΩ
	60	60 – 70 Ω	900 – 1800 Ω
	85	30 – 45 Ω	460 – 650 Ω
	100	15 – 25 Ω	300 – 400 Ω
	110	12 – 18 Ω	230 – 290 Ω
	120	9 – 15 Ω	180 – 220 Ω
	130	5 – 10 Ω	135 – 175 Ω

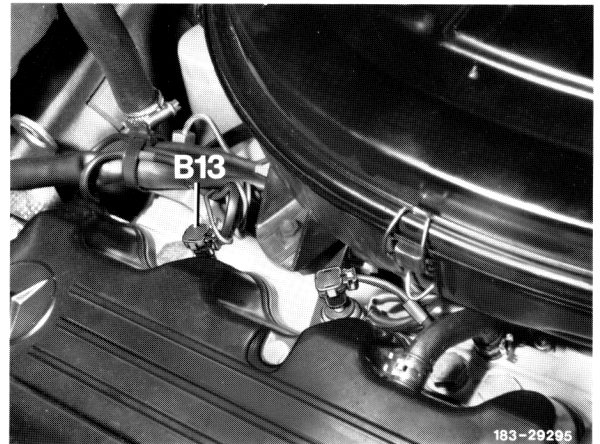
Yes

No

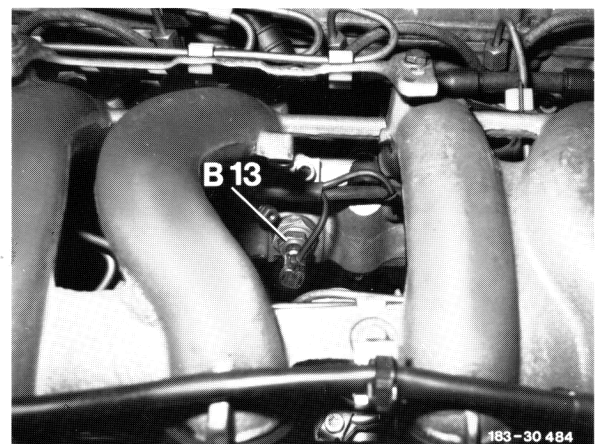
1. Check cable 8 (green or blue/grey) of the right coupling for interruption and ground short.
2. Renew temperature sensor coolant indication (B13) or temperature sensor coolant (B11/7 or B10/8).



Engine 102 up to 08/87

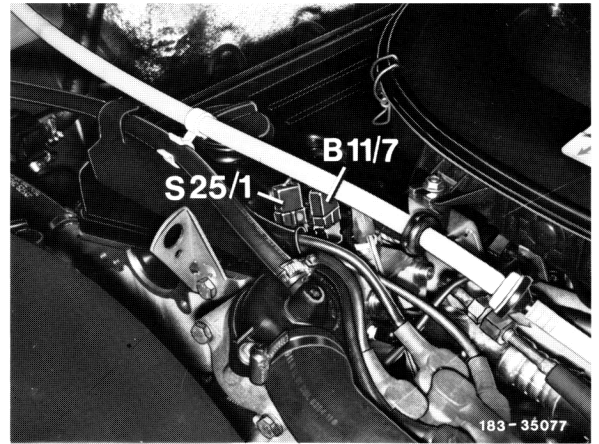


Engine 103 up to 08/87

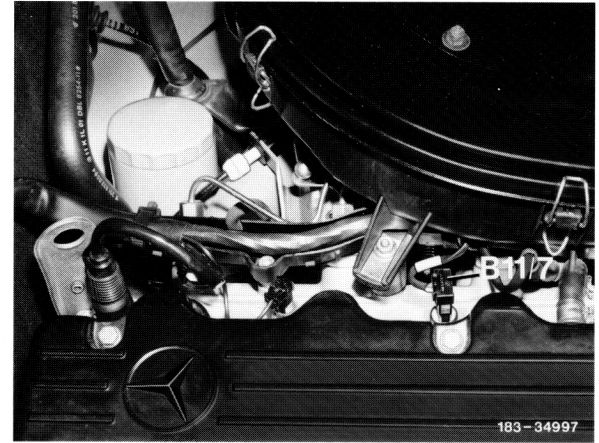


Engines 601, 602, 603 up to 08/87

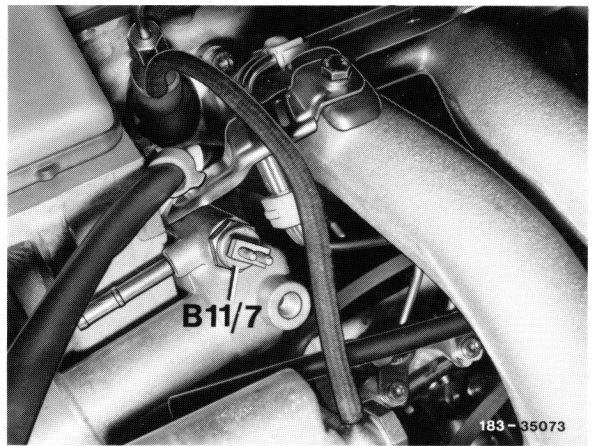
Engine 102 as of 09/87



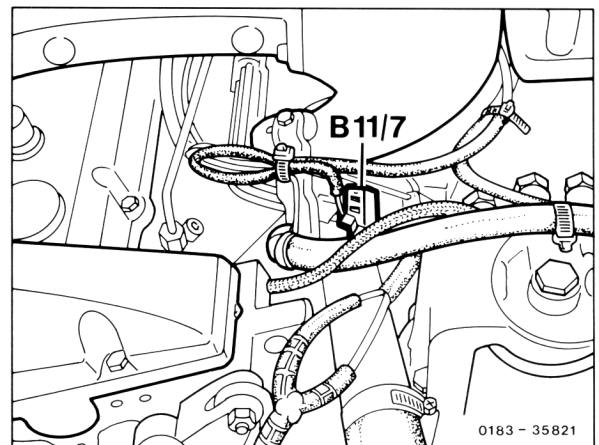
Engine 103 as of 09/87



Engines 601, 602, 603
except TURBO as of 09/87



Engine 603 TURBO as of 09/87



Test step 6

Check switchover valve block 7-fold (Y7) and cables for interruption and ground short.

Ohmmeter on jacks	Nominal value in Ω
13 and 2	50 – 80
13 and 3	
13 and 4	
13 and 5	
13 and 6	
13 and 8	
13 and 15	

Yes

No

1. Check cables 1 to 6 and 8 of the left coupling for interruption and ground short.
2. Renew switchover valve block 7-fold (Y7).

Test step 7

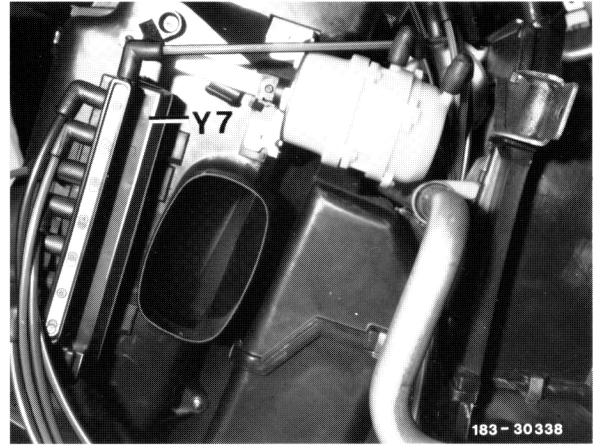
Check mono valve (Y19) and cables for interruption and ground short.

Ohmmeter on jacks	Nominal value in Ω
9 and 13	11–19

Yes

No

1. Check cable 9 (yellow/green) of the left coupling for interruption and ground short.
2. Renew mono valve (Y19).



Preparation for test step 8 - 21

Connect both couplings of the test cable to the automatic climate control unit and run engine at idle speed.

Test step 8

Check voltage supply for control unit.

Voltmeter on jacks	Nominal value
1 (-)	> 11 V
13 (+)	

Yes

No

Fuse no. 7 defective or cable interrupted.

Test step 9

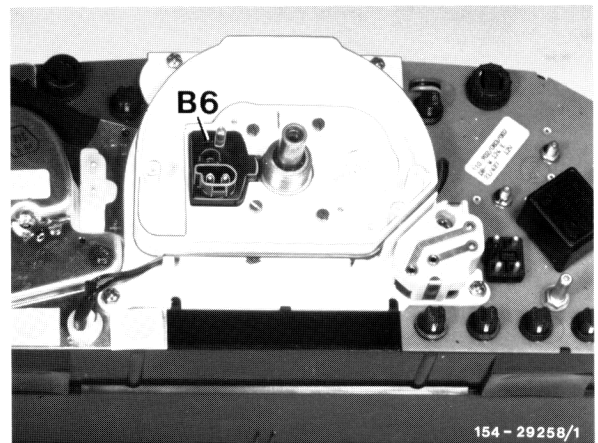
Check Hall-sensor (B6) with cable.

Voltmeter on jacks	Roll vehicle approx. 1 m	Alternating nominal value
18 (-)		> 11 V
13 (+)		< 1.0 V

Yes

No

1. Check cable 3 (green/yellow) of the right coupling for interruption and ground short.
2. Renew Hall-sensor (B6) on speedometer.

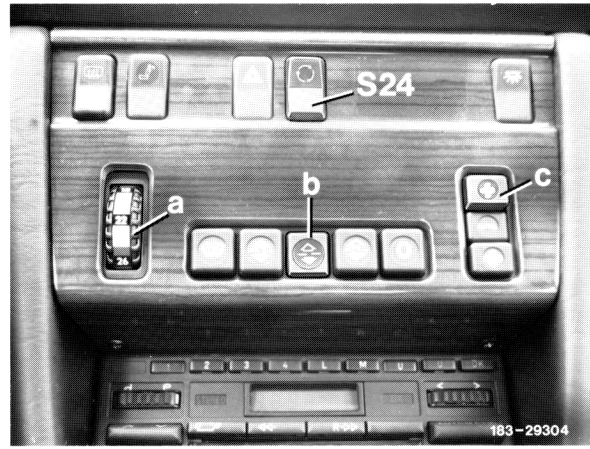


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Test step 10
Check ground activation of recirculated air switch (S24).

Voltmeter on jacks	Press recirculated air switch (S24) and hold	Nominal value
21 (-) 13 (+)		> 11 V

Yes	No
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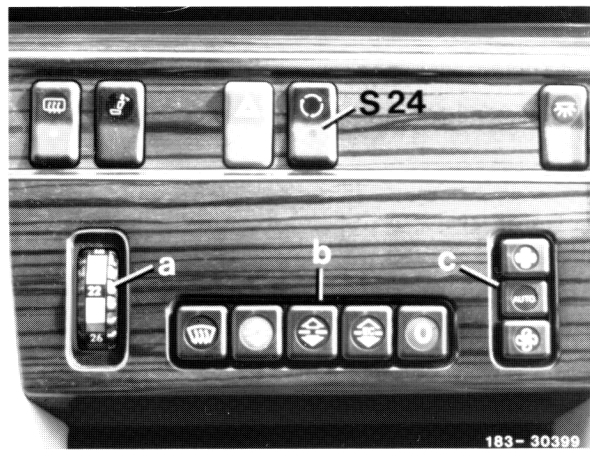


1. Check cable 6 (grey/purple) for interruption.
2. Renew recirculated air switch (S24).

Test step 11
Check ground activation for mono valve (Y19).


Voltmeter on jacks	Function selection button	Nominal value
9 (-) 13 (+)	0	> 11 V

Yes	No
-----	----



1. Mono valve short circuit.
2. Renew control unit.

Test step 12
Check ground activation for circulating pump (M13).


Voltmeter on jacks	Function selection button	Nominal value
10 (-) 13 (+)		> 11 V

Yes	No
-----	----

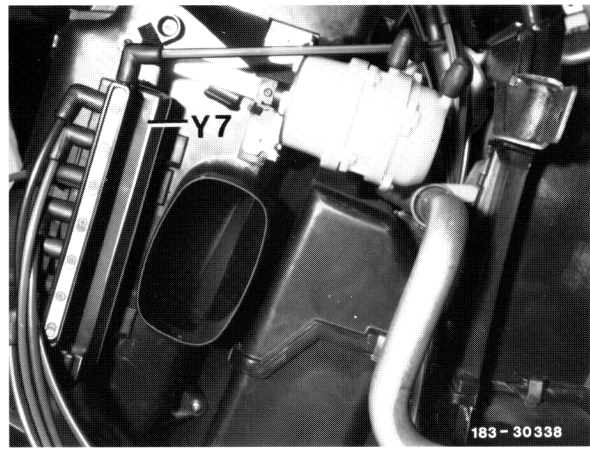


<p>Additionally test the circulating pump operation by feeling with the hand.</p>	<ol style="list-style-type: none"> 1. Circulating pump short circuit (renew) 2. Renew control unit.
---	---

Test step 13
Check ground activation for switchover valve of the fresh/recirculated air flap, small lift (Y7.1).

Voltmeter on jacks	Function selection button	Nominal value
15 (-) 13 (+)		> 11 V


Yes	No
-----	----



<ol style="list-style-type: none"> 1. Switchover valve block short circuit (renew). 2. Renew control unit.
--

Test step 14

Check ground activation for switchover valve of the fresh/recirculated air flap, large lift, (Y7.2).

Voltmeter on jacks	Function selection button	Nominal value
2 (-) 13 (+)		> 11 V



Yes

No

1. Switchover valve block short circuit (renew).
2. Renew control unit.

Test step 15

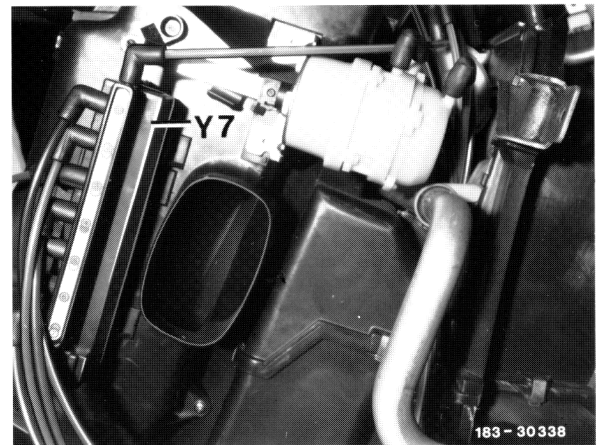
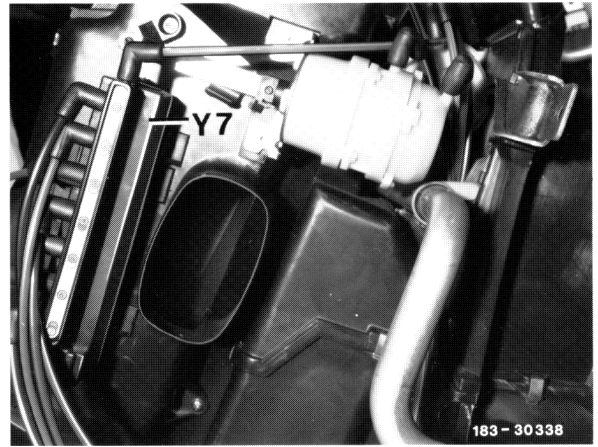
Check ground activation for switchover valve of the footwell flaps (Y7.3).

Voltmeter on jacks	Function selection button	Nominal value each
3 (-) 13 (+)	 then  and selector wheel in "MAX"	> 11 V

Yes


No

1. Switchover valve block short circuit (renew).
2. Renew control unit.



Test step 16

Check ground activation for switchover valve of the center nozzle flap (Y7.4).

Voltmeter on jacks	Function selection button	Nominal value
4 (-) 13 (+)	 selector wheel in "MIN"	> 11 V

Yes	No
-----	----

- 1. Switchover valve block short circuit (renew).
- 2. Renew control unit.

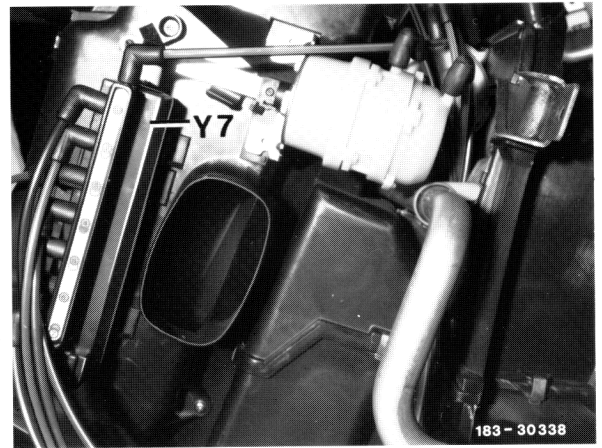
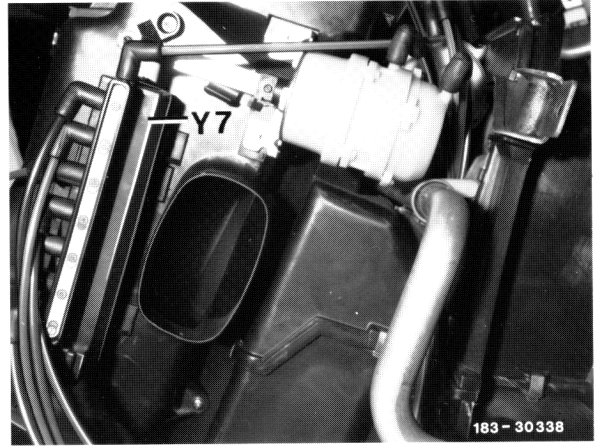
Test step 17

Check ground activation for switchover valve of the defroster nozzle flaps, large lift (Y7.5).

Voltmeter on jacks	Function selection button	Nominal value each
5 (-) 13 (+)	 selector wheel in "MIN"	> 11 V


Yes	No
-----	----

- 1. Switchover valve block short circuit (renew).
- 2. Renew control unit.



Test step 18

Check ground activation for switchover valve of the diverter air flap (Y7.6).

Voltmeter on jacks	Function selection button	Nominal value
6 (-)		> 11 V
13 (+)	Engage selector wheel in "MIN" (at room temperature > + 20°C)	


Yes

No

1. Switchover valve block short circuit (renew).
2. Renew control unit.

Test step 19

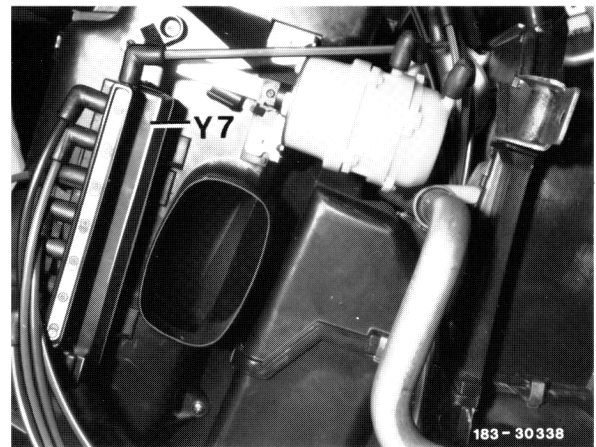
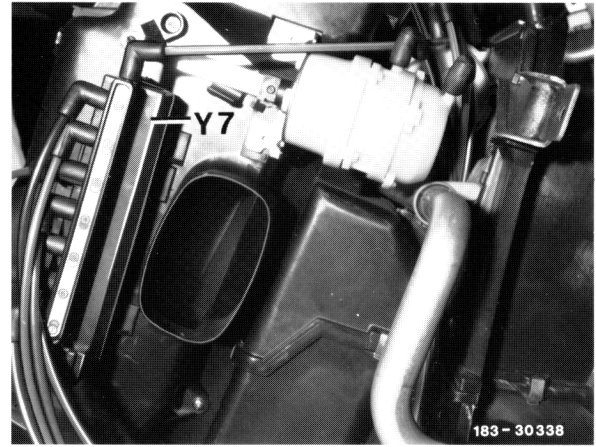
Check ground activation for switchover valve of the defroster nozzle flaps, small lift, (Y7.7).

Voltmeter on jacks	Function selection button	Nominal value
8 (-)		> 11 V
13 (+)	Selector wheel engaged in "MIN"	

Yes








No

1. Switchover valve block short-circuit (renew).
2. Renew control unit.



Test step 20

Check control voltage for blower regulator (N29).


Volt-meter on jacks	Function selection button	Nominal value
1 (-)		1-1.2 V
12 (+)		1-1.2 V
	 and selector wheel "MAX"	after approx. 10 s up to 4.7 V
	 and adjust selector wheel according to the interior room temperature	after approx. 60 s approx. 1.2 V
	 6.0-10 V	
	 and  approx. 5 V	

Yes	No
-----	----

Renew control unit.

Test step 21

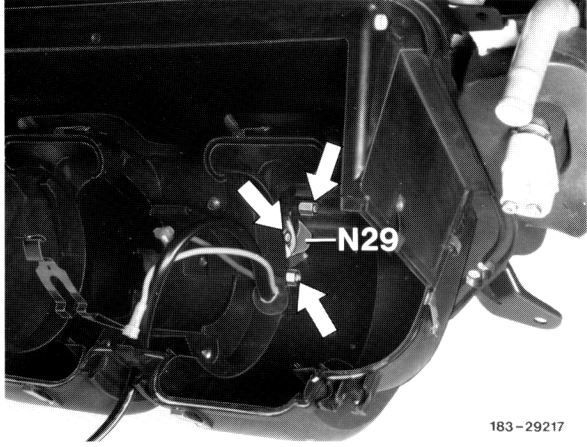
Check ground activation for control unit compressor cutoff (N6).

Voltmeter on jacks	Function selection button	Nominal value after 20 s
7 (-) 13 (+)	 and selector wheel to "MIN"	> 11 V

Yes	No
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End of the test

Renew control unit.



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