

Note

If there is no clear cut complaint and possible cause, it is recommended to complete the quick test without tester first. The test is performed at workshop temperature.

During all tests the vehicle engine should be running (except test step 1) at idle. The nozzles for lateral venting should be opened, the doors and windows closed. Note that the operating period of the regulating valve from max. cold to max. warm amounts to approx. 1 minute.

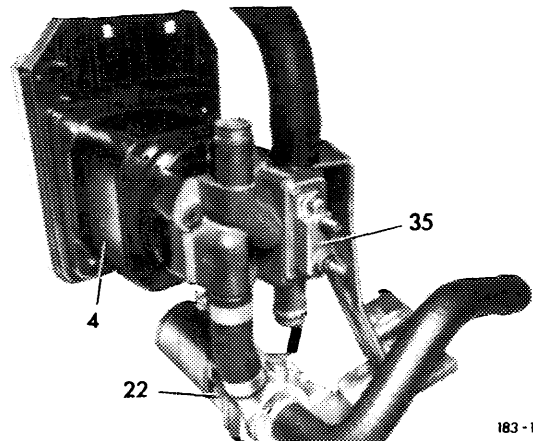
Test program

Test step 1

Check temperature switch (35) in regulating valve (cold engine lock) for function.

- 1 Switch on ignition, but do not yet start engine.
- 2 Actuate pushbutton switch in the following sequence, while paying attention to respective function of blower.

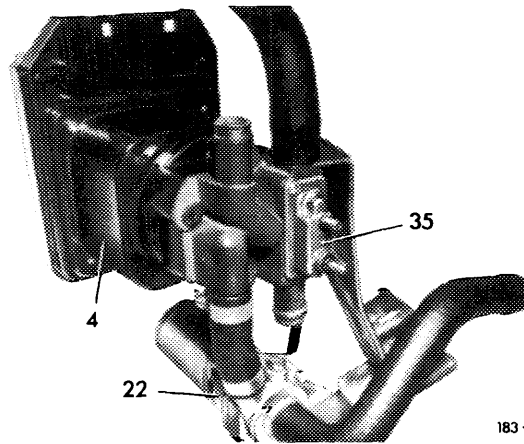
Pushbutton switch	Blower
1. „DEF“	should start
2. „OFF“	off
3. „AUTO-HI“	off
4. „AUTO-HI“ and start engine	should start not before approx. 40 °C (104 °F) coolant temperature



183 - 10872

Remedy following indication of defect

- 1 Check vacuum system according to function diagram (function diagram 2,83–604).
- 2 Pull black vacuum line from temperature switch (35) and check for vacuum. If there is no vacuum, test vacuum circuit I, II, III, IV and VI (refer to job no.83–620, 622 and 624).

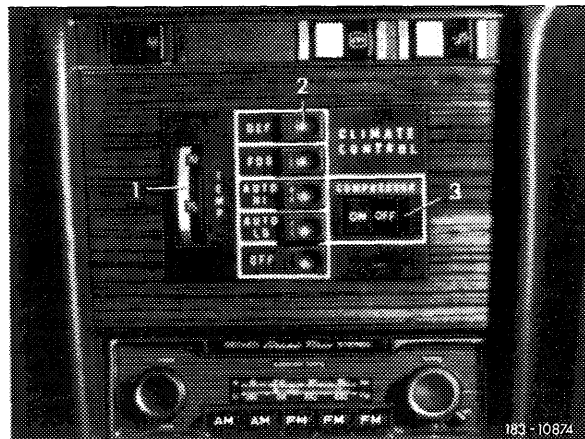


183-10872

Test step 2

Push button „DEF“ and run engine up to operating temperature. Then run engine at approx. 2500/min.

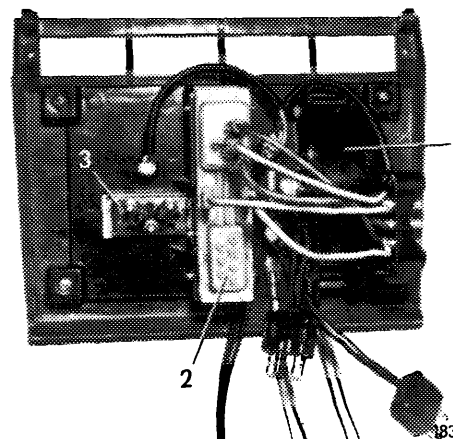
System moves to full heating capacity. Warm air flows out of defroster nozzle and out of nozzles for lateral ventilation. Blower runs at max. stage, legroom flaps are closed. Refrigerant compressor should run along (except at evaporator temperatures below 2 °C (36 °F)). „ON/OFF“ switch has no influence on refrigerant compressor.



183-10874

Remedy following indication of defect

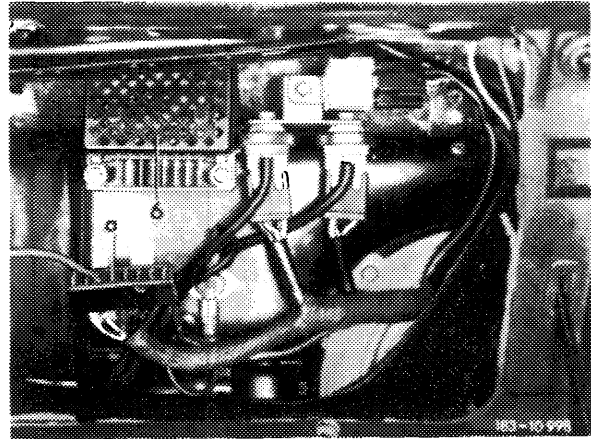
- 1 Test vacuum system according to function diagram (function diagram 9,83–604).
- 2 Test vacuum circuit III and IV (83–622).
- 3 Test electrical system according to wiring diagram (wiring diagram 10,83–605).
- 4 Test with voltmeter whether at terminal 8 of plug connection (5) for tester at least 11 volts are available.
- 5 Test diode in 6-point coupling from harness of push-button switch (2).



183-10871

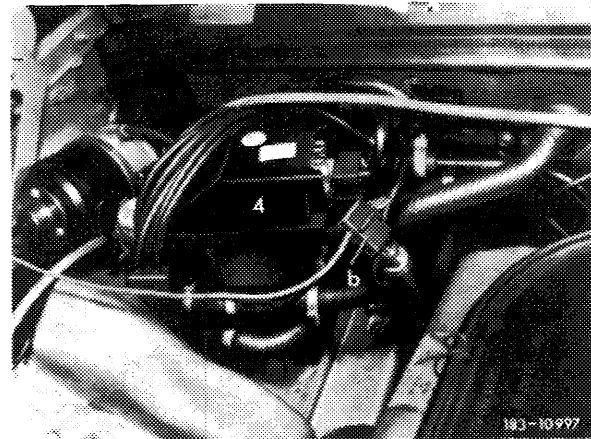
- 1 Temperature dial with potentiometer
- 2 Pushbutton switch
- 2 „ON/OFF“ switch of refrigerant compressor

6 Connect new amplifier (6) for tryout.



a 8-point plug connection
6 Amplifier

7 Exchange regulating valve (4).



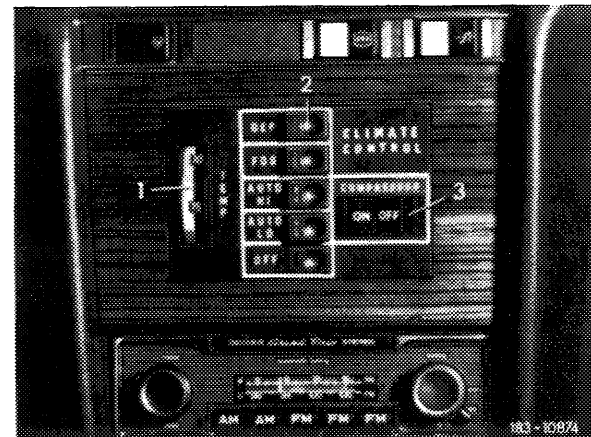
b 5-point plug connection front
4 Regulating valve

Test step 3

Push button „BI-LEVEL“ and set temperature dial to 65 °F.

Blower switches back by one to two steps compared with „DEF“.

All the air enters legroom via defroster nozzles, via nozzles of lateral ventilation and in addition at center nozzles during „cooling“.



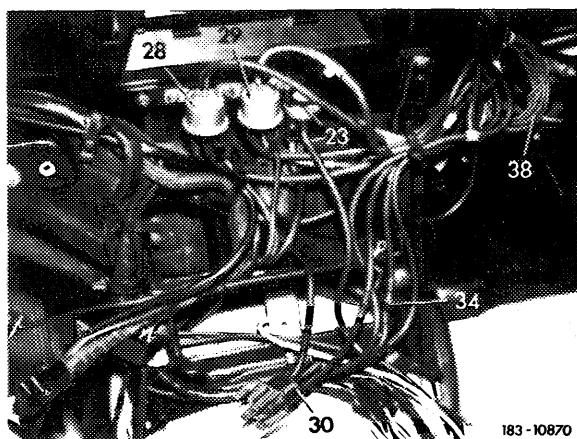
The outlet temperature is controlled depending on in-car temperature, that is, in this case following a previous „DEF“ test the outlet temperatures should be clearly lower than during „DEF“ test. The refrigerant compressor runs along, except at evaporator temperatures below 2 °C (36 °F), independent of the position of the „ON/OFF“ switch of refrigerant compressor.

Remedys following indication of defect

- 1 Test vacuum system according to function diagram (function diagram 6 and 7, 83–604).
- 2 Switch (23) for refrigerant compressor activated with vacuum.
- 3 Test vacuum circuit III and IV (83–622).
- 4 Test electrical system according to wiring diagram (wiring diagram 7, 8 and 8 a, 83–605).
- 5 Check refrigerant charge on sight glass of receiver dehydrator.
- 6 Check switch (23) for refrigerant compressor.

Layout of switchover valves with vacuum switch

23 Vacuum switch for refrigerant compressor only at BI-LEVEL	29 Switchover valve
28 Switchover valve	30 Vacuum lines
	34 Check valve
	38 Specified leak point

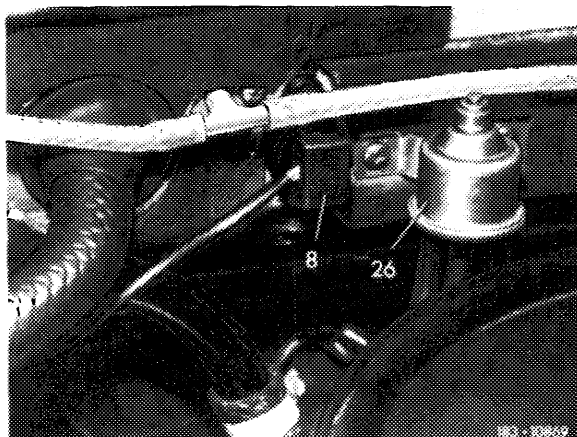


Test step 4

Push button „AUTO-HI“ and move „ON/OFF“ switch of refrigerant compressor into position „ON“. Pull off 2-point plug on ambient temperature sensor (8).

System should run up to full heating capacity. Warm air will flow out of legroom openings and out of nozzles for lateral ventilation. The center nozzles and the flaps for the defroster nozzles are closed. When attaining full heating capacity, the blower runs in 2nd stage „HI“.

8 Ambient temperature sensor

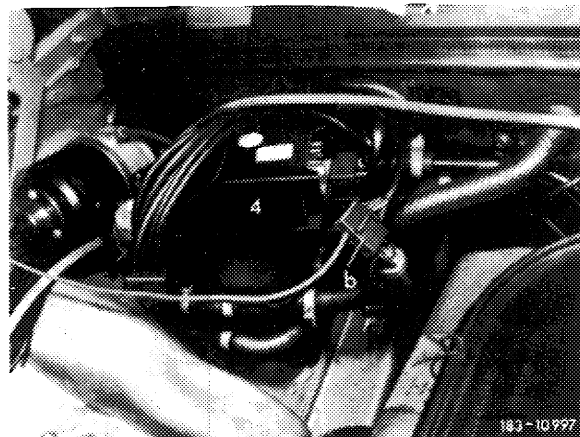


Remedy following indication of defect

- 1 Test vacuum system according to function diagram (function diagram 5,83–604).
- 2 Test vacuum circuit I, II, III, IV and V (83–620, 622 and 624).
- 3 Test electrical system according to wiring diagram (wiring diagram 16,83–605).

4 Connect regulating valve (4) for tryout.

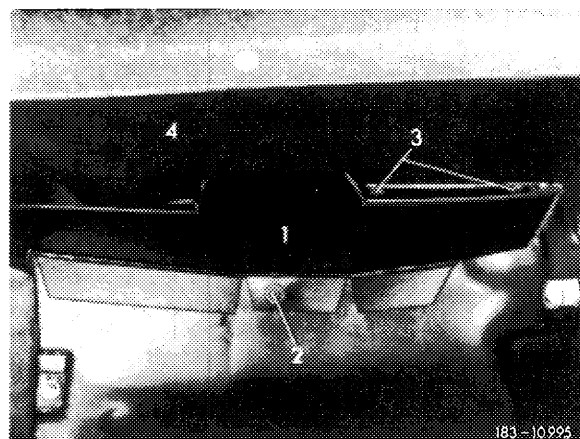
- 4 Regulating valve
- b 5-point plug connection front



Test step 5

Reattach 2-point plug to ambient temperature sensor and set temperature dial to 65 °F (up to stop). For visual checkup of fresh air-recirculating air flap, remove cover (1) below right (83-602).

- 1 Cover
- 2 Screw
- 3 Clips
- 4 Air duct



The system is now running at „cooling“, with the blower speed switched down in steps until the mode change is attained. The center nozzles will be opened and the legroom flaps will slowly close.

The air outlet temperatures will drop and the blower will again be switched up in steps. With a previously well-heated vehicle interior, > 30 °C (86 °F), the system should move to recirculating air mode.

Remedy following indication of defect

- 1 Test vacuum system according to function diagram (function diagram 3,83-604).
- 2 Test vacuum circuit I, II, III and VI (83-620 and 622).
- 3 Test electrical system according to wiring diagram (wiring diagram 6,83-605).

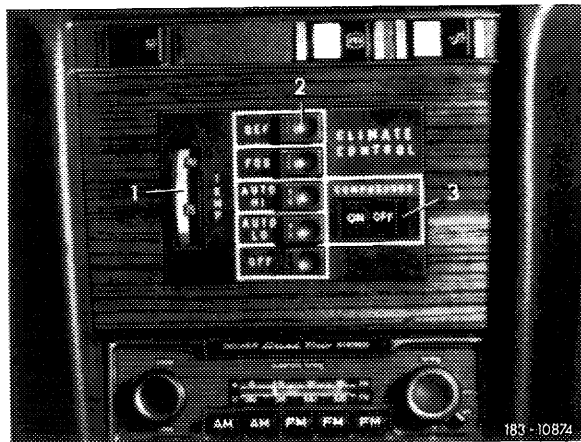
Test step 6

Move „ON/OFF” switch (3) of refrigerant compressor into position „OFF”.

The legroom flaps will be opened and the fresh air-recirculating air flap moves into position 100 % fresh air.

Layout of control unit

- 1 Temperature dial
- 2 Pushbutton switch
- 3 „ON/OFF” switch of refrigerant compressor



Remedy following indication of defect

- 1 Test vacuum system according to function diagram (function diagram 4, 83–604).
- 2 Test vacuum circuit I, II, III, IV, V and VI (83–620, 622 and 624).
- 3 Test electrical system according to wiring diagram (wiring diagram 4, 83–605).

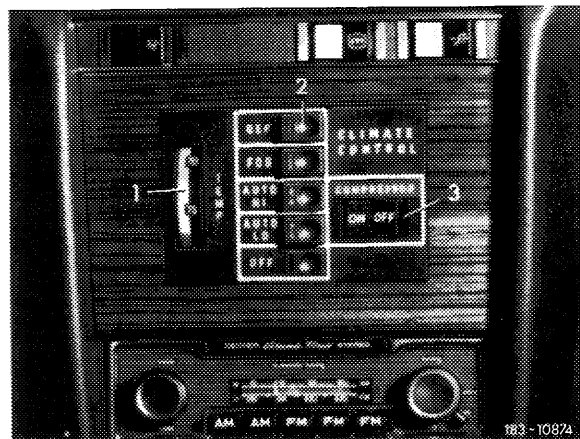
Test step 7

Move „ON/OFF” switch (3) of refrigerant compressor into position „ON”.

Legroom flaps are again closed.

Layout of control unit

- 1 Temperature dial
- 2 Pushbutton switch
- 3 „ON/OFF” switch refrigerant compressor



Remedy following indication of defect

- 1 Test vacuum system according to function diagram (function diagram 3, 83–604).
- 2 Test vacuum circuit I, II, III and VI (83–620, 622 and 624).

Test step 8

Push button „AUTO-LO“, set refrigerant compressor switch to position „ON“ and temperature dial to 65 °F.

Blower speed will clearly drop when switching to „LO“ in relation to former „HI“.

Remedy following indication of defect

- 1 Test vacuum system according to function diagram (function diagram 2 and 3, 83–604).
- 2 Test vacuum circuit I, II, III, IV and VI (83–620, 622 and 624).
- 3 Test electrical system according to wiring diagram (wiring diagram 2, 83–605).

Test step 9

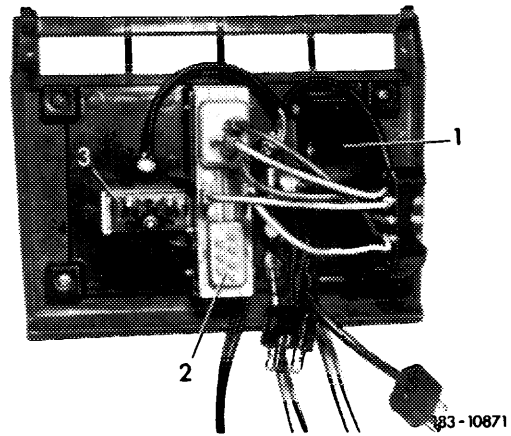
Set temperature dial to 85 °F (pushbutton at „AUTO-LO“).

Air outlet temperatures are increasing, blower speed is reduced in steps. When the mode change is attained (approx. 1 minute, closing of center nozzles and simultaneous opening of legroom flaps), the blower will again be switched up in steps depending on outside temperature conditions.

Remedy following indication of defect

- 1 Test vacuum system according to function diagram (function diagram 5, 83–604).
- 2 Test vacuum circuit I, II, III, IV and V (83–620, 622 and 624).
- 3 Test electrical system according to wiring diagram (wiring diagram 5, 83–605).

4 If system remains in position „cooling“, test diode in 6-point coupling from harness of pushbutton switch (2). Connect new amplifier or new regulating valve for tryout.

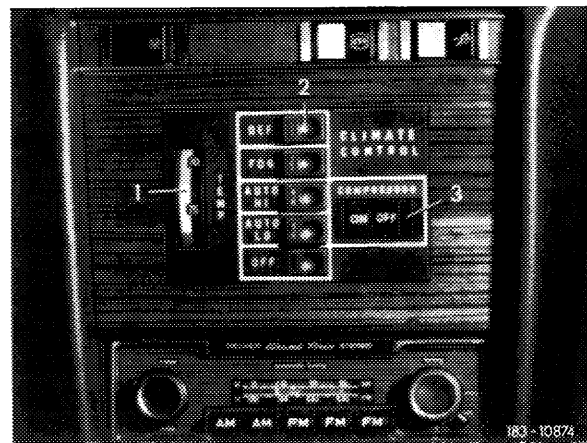


- 1 Temperature dial with potentiometer
- 2 Pushbutton switch
- 3 „ON/OFF“ switch of refrigerant compressor

Test step 10

Push button „OFF“.

Blower and refrigerant compressor are switched off after approx. 10 seconds at the latest.



- 1 Temperature dial
- 2 Pushbutton switch
- 3 „ON/OFF“ switch of refrigerant compressor

Remedy following indication of defect

1 Test vacuum system according to function diagram (function diagram 1, 83–604).

2 Test vacuum circuit I, II and VI (83–620 and 624).

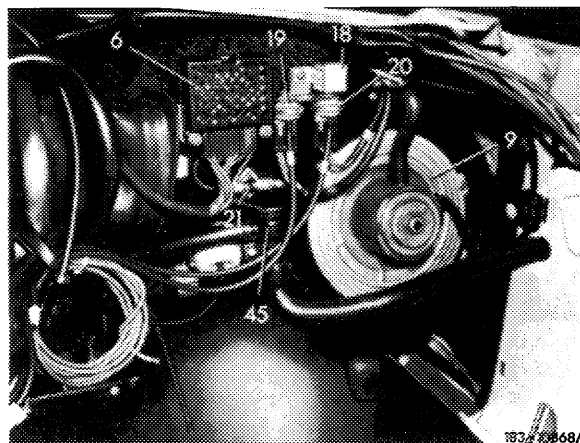
3 Test black vacuum line from connection 3 of pushbutton switch to connection 1 of regulating valve or vent line (39) for passage. Possibly no ventilation via pushbutton switch connection 3.

4 Test electrical system according to wiring diagram (wiring diagram 1 and 1a, 83–605).

5 Pull plugs from switches (19, 20 and 23), test with ohmmeter, no passage.

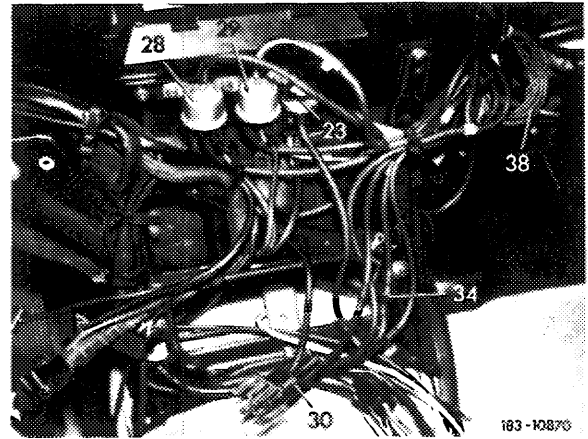
Layout of blower with amplifier

- 6 Amplifier
- 9 Blower
- 18 Double contact relay
- 19 Vacuum switch (main switch, green)
- 20 Vacuum switch (refrigerant compressor, yellow)
- 21 Temperature switch for heating water pump
- 45 Air jet nozzle



Layout of switchover valves with vacuum switch

- | | |
|--|-------------------------|
| 23 Vacuum switch for refrigerant compressor only at „BI-LEVEL“ | 29 Switchover valve |
| 28 Switchover valve | 30 Vacuum lines |
| | 34 Check valve |
| | 38 Specified leak point |

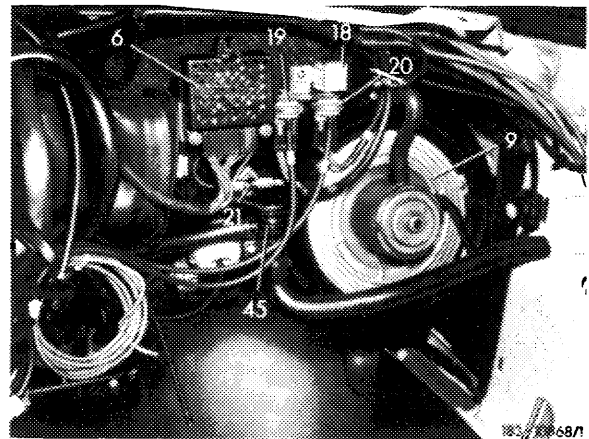


Test step 11

Start engine and accelerate shortly several times (coolant temperature $> 40^{\circ}\text{C}$, 104°F). This will evacuate the vacuum system.

Move automatic climate control to „AUTO-HI“, blower should start.

Switch off ignition. After approx. 10 minutes, switch-on ignition again without starting vehicle engine. Blower should start immediately. (Main switch [19] still activated with a vacuum). If the blower is not starting, a leak in line system is responsible.



Remedy following indication of defect

- 1 Test vacuum system (83–614 to 628).