

**Conventional tools**

1 Suction pressure gauge	or assembly tester	1 bar gauge pressure to 10 bar gauge pressure
1 High pressure gauge		0-40 bar gauge pressure
3 Thermometer		- 20 °C + 70 °C
1 Hygrometer		

**Note**

For tests in workshop in the event of complaints due to insufficient cooling or heating capacity and for trouble diagnosis on air conditioning systems proceed according to the following test method, which is applicable for ambient temperatures from + 20 °C to + 40 °C.

All control values can be read after 10 minutes of constant operation. The values named are max. values and should not be exceeded.

**A. Refrigerant capacity**

**Test**

The vehicle should not be exposed to sunshine before and during test.

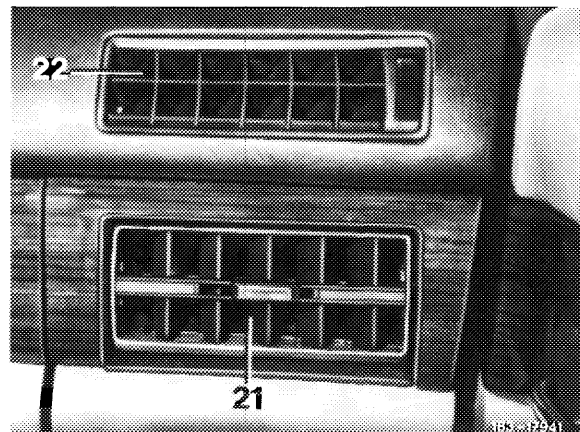
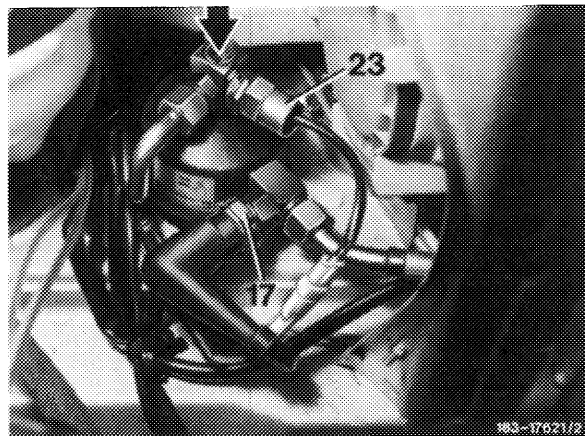
- 1 Test tension of V-belt for compressor drive.

Layout of pressure switch in receiver dehydrator

17 Pressure switch for refrigerant compressor

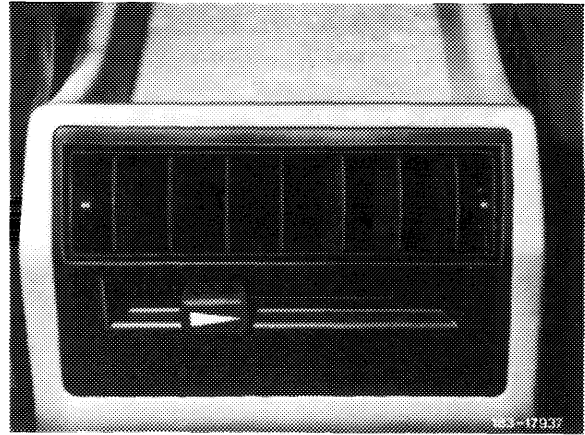
2 Engage air conditioning system and watch through sight glass (refer to arrow, Fig.) in receiver dehydrator whether the refrigerant flows free of bubbles shortly after switching-on electromagnetic clutch. Add refrigerant if system is insufficiently filled. In the event of a refrigerant loss above 200 g, check system for leaks.

- 3 Open fresh air center and side vent (21). Close side vent (22).



4 Mount a thermometer for outside air temperature (ambient temperature) approx. 2 m from driver's side.

5 Place a hygrometer into tray of center console.

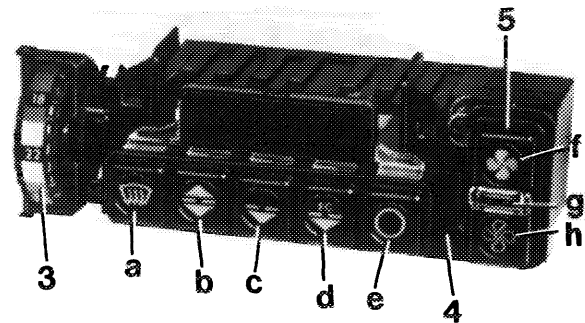


6 Connect suction and pressure gauges to service valves.

7 Plug one thermometer each into center jet and lateral jet at left.

8 Open windows and rear passenger compartment vent. Close vehicle doors and engine hood.

9 Temperature dial engaged in "MIN" position. Push blower switch (f) 6th stage.



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10 Push function selection button "c" and run engine at approx. 2000/min.



#### Layout control unit

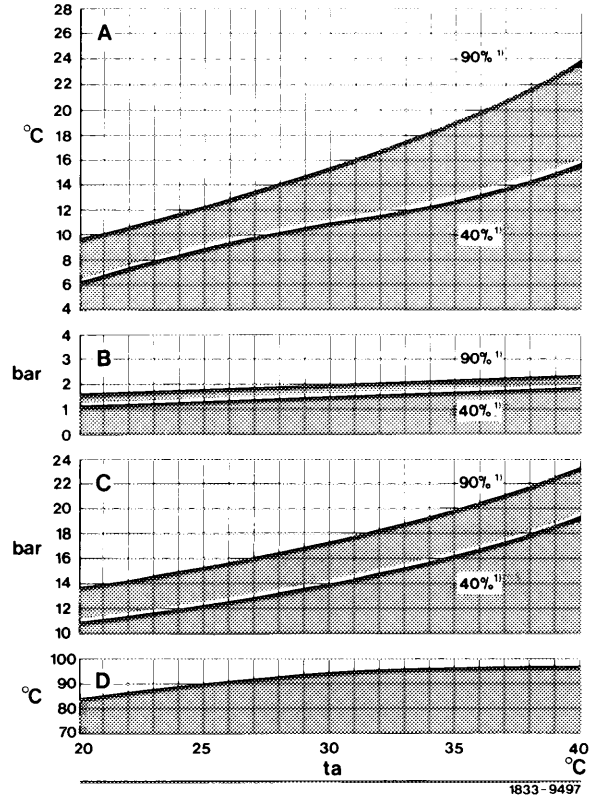
- 3 Temperature dial
- 4 Pushbutton switch with 5 function
- 5 Blower switch

11 Read data on thermometers and pressure gauges, as well as on hygrometer, after an operating period of approx. 10 minutes and compare with values on table.

**Note:** Specified data are max. data and should not be exceeded.

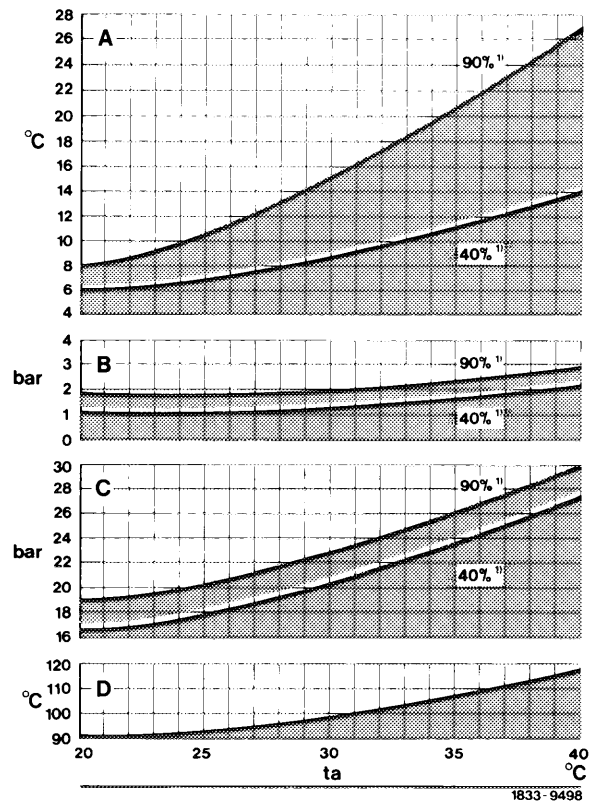
### Engine 110

- 1) Relative humidity
- ta Outside temperature (°C)
- A Air outlet temperature (°C)
- B Pressure before compressor (bar)
- C Pressure after compressor (bar)
- D Coolant temperature (°C)

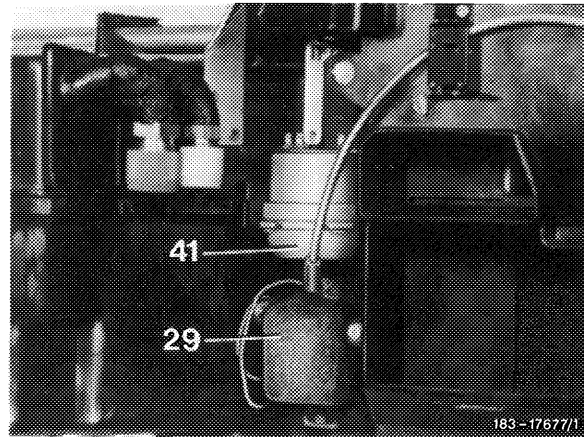


### Engine 116, 117

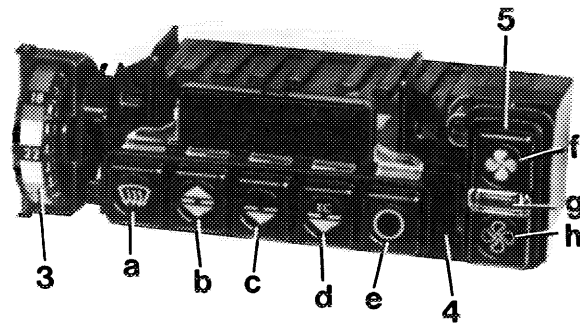
- 1) Relative humidity
- ta Outside temperature (°C)
- A Air outlet temperature (°C)
- B Pressure before compressor (bar)
- C Pressure after compressor (bar)
- D Coolant temperature (°C)



12 Check cutout temperature of ETR-switch (29) by plugging 1 thermometer into center nozzle. Push blower switch (h) 1st stage and pushbutton (c) in control unit and run engine at approx. 2000/min. After 3rd cutout of electromagnetic clutch, the outlet temperature should amount to approx. + 4 °C, but should not be less than + 3 °C.



**Note:** If cooling capacity is insufficient, check capillary of ETR-switch (29) for correct installation or replace ETR-switch, if required.



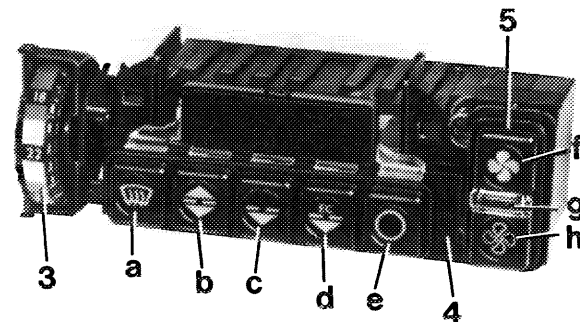
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## B. Heating capacity

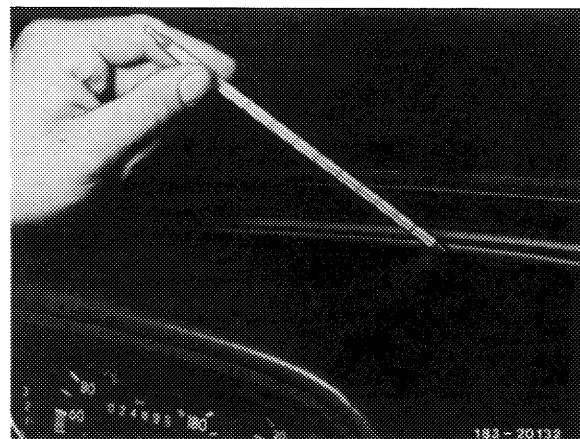
### Test

- 1 Start vehicle engine.
- 2 Push function selection button "a". Blower operates in 6th blower stage.
- 3 Plug thermometer into defroster nozzle at the left.
- 4 Keep engine running at approx. 2000/min after attaining operating temperature.
- 5 Read thermometer after approx. 5 minutes. Thermometer should indicate at least + 60 °C.

**Note:** If heating capacity is insufficient, check engine thermostat or monovalve and replace, if required.



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