

**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 thermometers		-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 check values can be read after 10 minutes of constant operation. The values named are max. values and should not be exceeded.

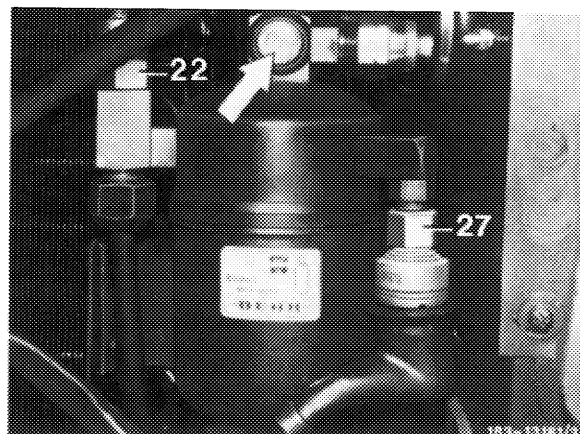
**A. Refrigerant capacity**

**Test**

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

1 Test tension of V-belt for compressor drive.

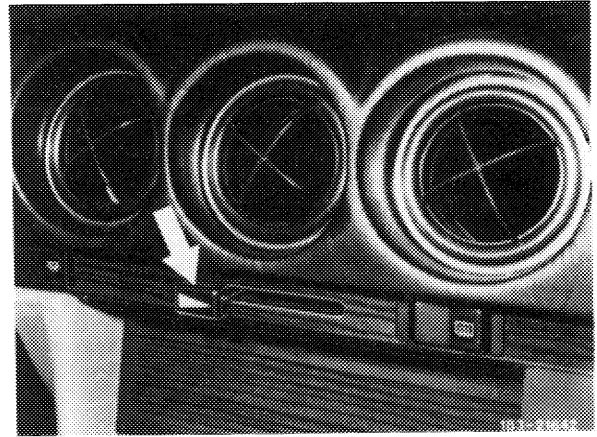
2 Push function selection button „c” and run engine at idle. On sight glass (arrow) in receiver dehydrator, check whether coolant flows through free of bubbles shortly after switching on electromagnetic clutch. If refrigerant charge is insufficient, fill up system. If refrigerant loss exceeds 200 g, check system for leaks.



3 Open lever (arrow) for center nozzles (except **J** (USA)) as well as levers for lateral nozzles left and right.

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

5 Place a hygrometer into storage tray of center console.



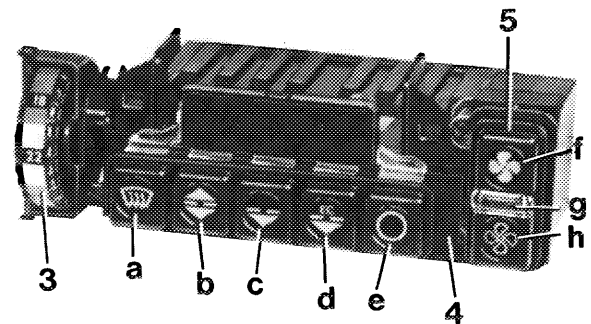
6 Connect suction and pressure gauge to service valves.

7 Plug one thermometer each into center nozzle and lefthand side nozzle.

8 Open window, close vehicle doors and engine hood.

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

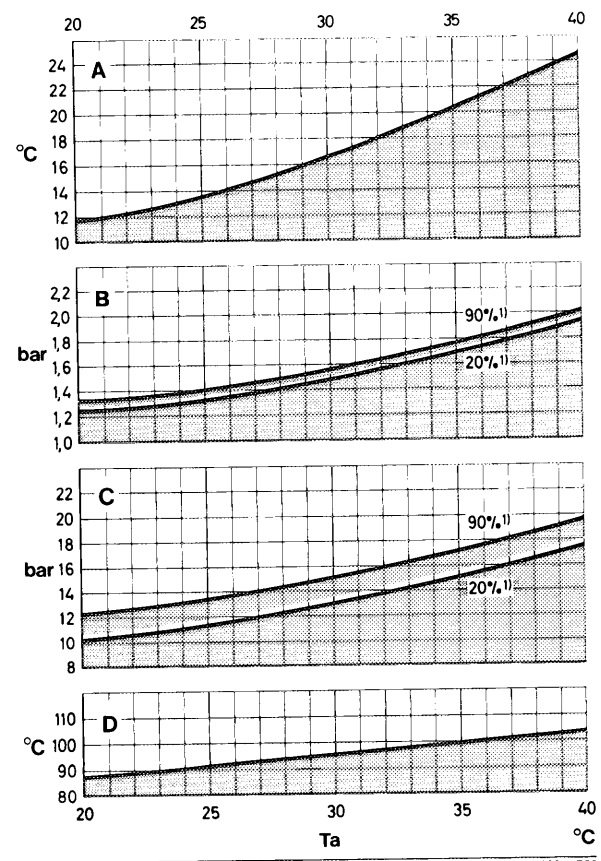
10 Run engine at approx. 2000/min.



183-17660/1

11 After approx. 10 minutes of operating time, read values on thermometers and pressure gauges, as well as on hygrometer and compare with values of table.

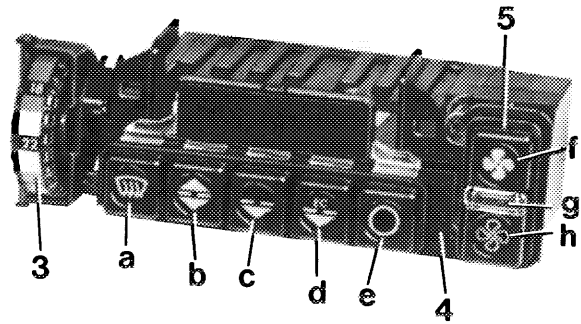
**Note:** Specified data are max. data and should not be exceeded.



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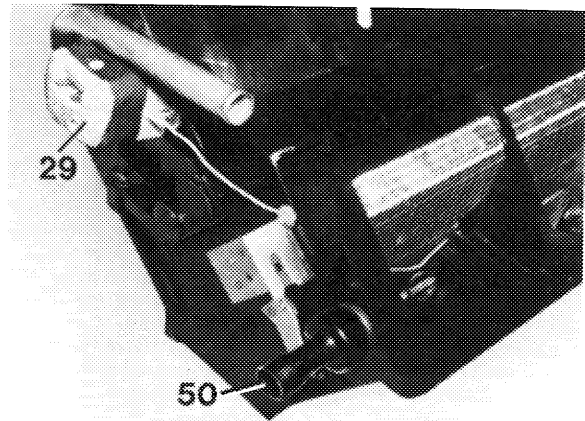
- 1) Relative humidity
- Ta Outside temperature ( °C)
- A Air outlet temperature ( °C)
- B Pressure before compressor (bar)
- C Pressure after compressor (bar)
- D Coolant temperature ( °C)

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.



183-17660/1

**Note:** If cooling capacity is insufficient or outlet temperatures are below + 3 °C, check capillary of ETR switch (29) for correct assembly (slipped in up to marking between ribs of evaporator) or replace ETR switch.

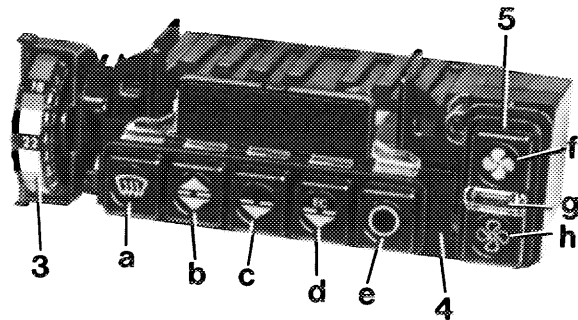


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## B. Heating capacity

### Test

- 1 Start vehicle engine.
- 2 Push function selection button „a”. Blower operates in 6th blower stage.



183-17660/1

- 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 > 55 °C.

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