

**Conventional tools**

1 suction pressure gauge	or assembly tester	1 bar gauge pressure (atü) to 10 bar gauge pressure (atü)
1 high-pressure gauge		0 – 40 bar gauge pressure (atü)
3 thermometers		20 °C + 70 °C
1 hygrometer		
1 tester ATC 331		made by Deutsche Ranco GmbH Postfach 1560 6832 Hockenheim

**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 15 minutes of constant operation.

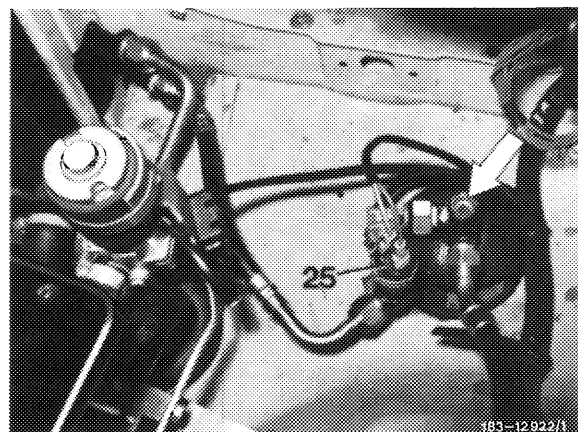
**A. Refrigerant capacity**

**Test**

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

1 Test tension of V-belt for compressor drive.

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

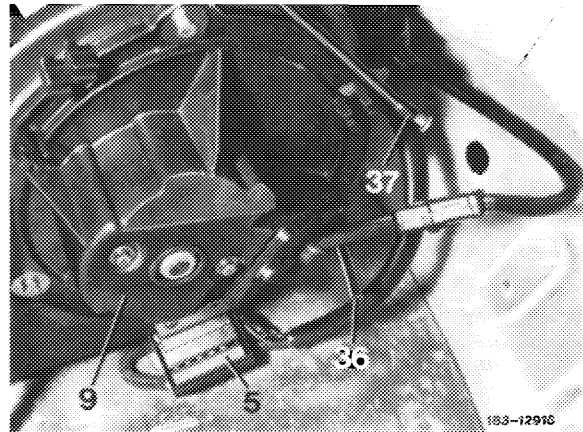


Layout of pressure switch in receiver dehydrator  
25 Pressure switch for refrigerant compressor

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

4 Place a hygrometer into tray of center console.

5 Connect tester (83-602).



Layout of 10-point plug connection for tester

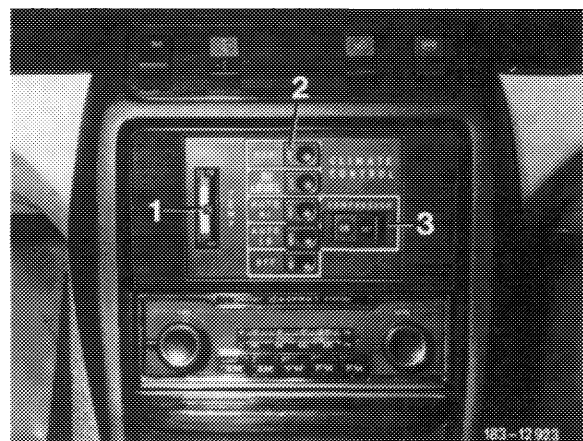
- 5 10-point plug connection for tester
- 9 Blower
- 36 Vent line for legroom flaps
- 37 Vacuum connection for tester

6 Connect suction and pressure gauges to service valves.

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

8 Open windows and close vehicle doors as well as engine hood.

9 On tester, move mode switch to position "AC" and voltmeter switch to "blower volts". Set push-button switch on control unit to position "HI", "ON/OFF" switch of refrigerant compressor to position "ON". Run engine at 2500 to 3000/min.

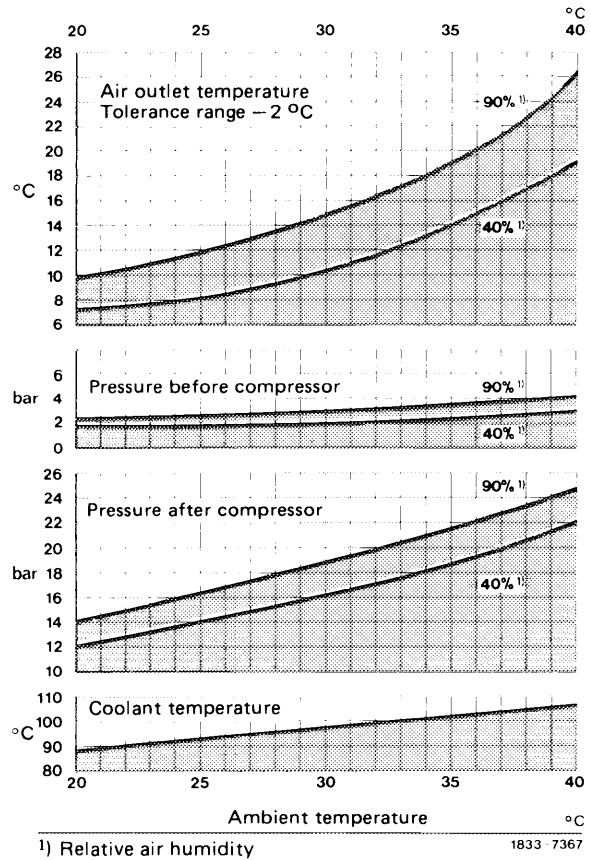


Layout of control unit

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

10 Read air outlet temperatures and refrigerant pressures after 15 minutes (refer to table).

Specified air outlet temperatures are max. values and should not be exceeded. However, air outlet temperature should not be below 4 °C.



## B. Heating capacity

### Test

- 1 Start vehicle engine.
- 2 Push "DEF" button.  
If the tester is not yet connected, move mode switch on tester into position "HEAT", voltmeter switch to "blower volts" and pushbutton switch on control unit to position "DEF".
- 3 Plug thermometer into defroster nozzle at left.
- 4 After attaining operating temperature, run engine at 2500 to 3000/min.
- 5 Read thermometer after approx. 5 minutes. Thermometer should indicate at least 60 °C (140 °F).

