83–510 Function test of air conditioning system

Data

Angle of rotation temperature switch	315° ± 5°
Difference between coldest and warmest outlet temperature max	3 °C
Coldest air outlet temperature	1 °C
Conventional tools	
1 suction pressure gauge or assembly tester	1 bar vacuum (atü) to 10 bar gauge pressure (atü)
1 high-pressure gauge	0–40 bar gauge pressure (atü)
5 thermometer	–20 °C + 70 °C
1 hygrometer	

Note

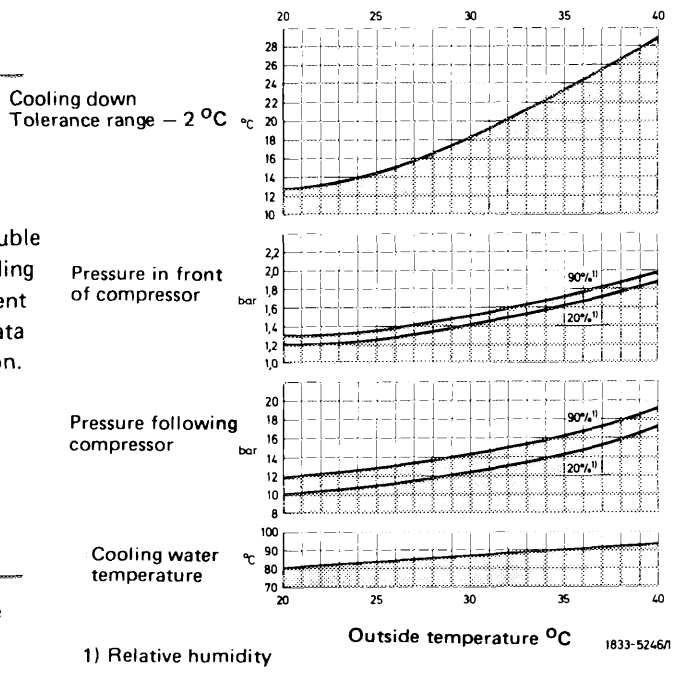
When working on air conditioning system, pay attention to safety rules (83–504).

For a workshop check with regard to complaints about insufficient cooling efficiency or during a trouble diagnosis on air conditioning system proceed according to the following test method which applies to ambient temperatures from + 20 °C to + 40 °C. All check data can be read after 15 minutes of continuous operation.

Test conditions

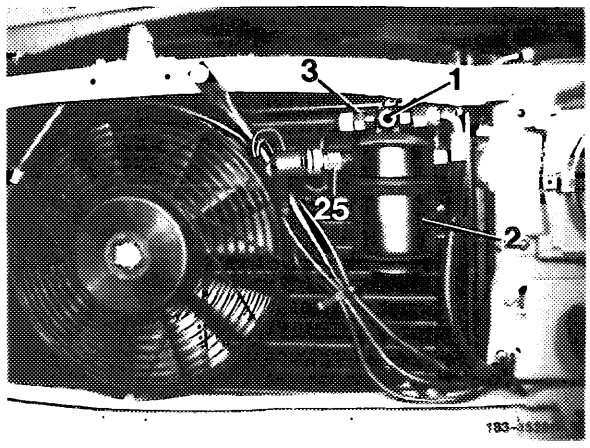
1 Vehicle should not be exposed to sunlight before and during test.

2 Check tension of V-belt driving compressor.



1) Relative humidity

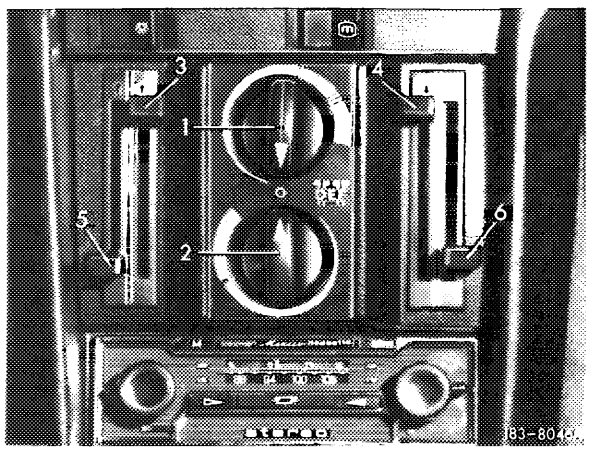
3 Engage air conditioning system and check receiver dehydrator through sight-glass (1) whether refrigerant flows free of bubbles when the electromagnetic clutch has been engaged. Add refrigerant to system if insufficiently filled. Check for leaks if refrigerant loss is above 200 g (83–512).



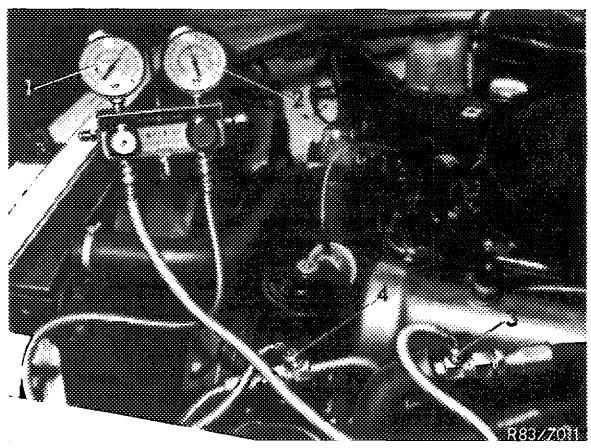
4 Close operating levers (3 and 4) for air in upward and downward direction. Set operating levers (5 and 6) for heating completely down (to off).

5 Insert one thermometer each into side nozzles and into summer air nozzles.

6 Attach one thermometer for fresh air temperature (ambient temperature) approx. 2 m from driver's position.



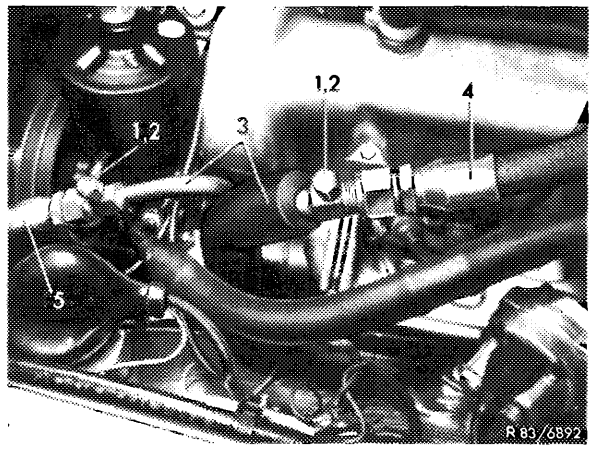
7 Check angle of rotation of temperature switch by turning knob of temperature vacuum switch (2) clockwise up to stop. The marking on knob of temperature vacuum switch should arrive at end of green key. If the angle of rotation of the temperature vacuum switch is smaller, replace temperature switch.

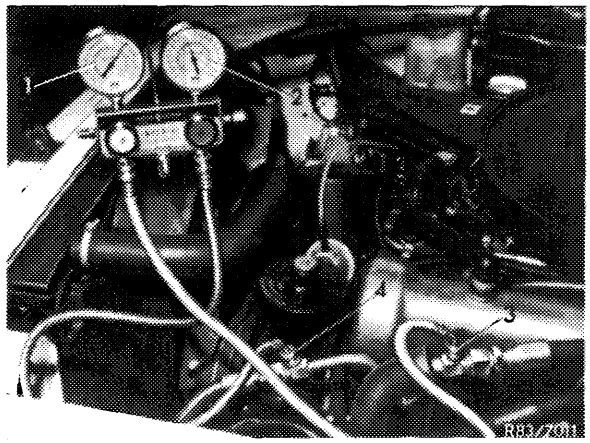


8 Set temperature vacuum switch (2) to full cooling capacity, and set blower switch (1) to full blower speed (DEF).

9 Place one hygrometer into tray of center console.

10 Unscrew closing caps (1) on pipe line (3). Then connect hose lines from assembly tester to service valves (3 and 4). Make sure that the connecting nipple of hose lines has a thrust pin in center.





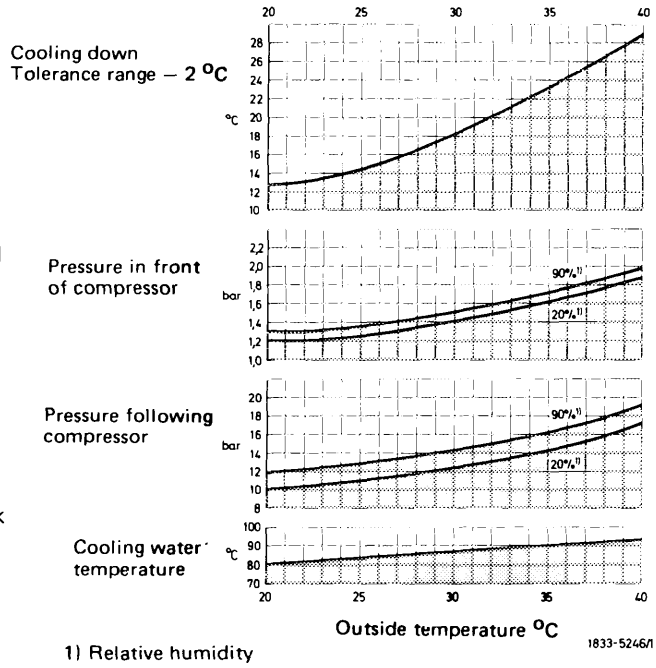
11 Open window and close vehicle doors.

12 Run engine at approx. 2000/min.

13 After approx. 15 minutes of operation, read values on thermometers and pressure gauges, as well as on hygrometer.

Note: Cooling = difference between medium value of recirculating air intake temperature on blower and medium value cold air outlet temperature.

14 Check intake and high pressure in dependence of the ambient temperature by means of table. Check air outlet temperature (mean value of the four cold air outlet temperatures) also according to values on table. The difference between the coldest and the warmest outlet temperature should not be more than 3 °C.



1) Relative humidity

15 Check shutoff temperature of temperature regulator by inserting 1 thermometer into center nozzle (4). Set blower switch (2) to stage 1 and temperature vacuum switch (1) to full cooling capacity. Keep engine running.
Following the 3rd cutout of electromagnetic clutch, the air outlet temperature should amount to approx. + 3 °C, but should not be below + 1 °C.

16 Adjust temperature switch (83–542).

17 The supplementary fan of condenser (not on model 116.028/029) which is switched via coolant temperature (100 °C) and coolant temperature (62 °C) will switch on at higher outside temperatures.

18 Remove hose lines on service valves and close service valves again with closing caps.

19 Remove thermometer and hygrometer from vehicle.