

Refrigerant System Test Program - Preparation for Test

1. Prior to hooking up and using test equipment: review section 0
2. Review 11, 12, 13, 14, 15, 20, 21, 22, 31, 32, 41, 42
3. Review special tools, see below.
4. Perform complete Function Test, see: 11/1
5. Refrigerant fill level must be correct (refer to fill level chart).
6. Connect gauges to low and high pressure test connections.
7. Engine at operating temperature.
8. Center and side air outlets open.
9. Test duration > 3 minutes.
10. Press **AUTO** button (should illuminate).
11. Vehicle should not be parked in the sun before or during the test.
12. Open doors and windows.

Test equipment; See MBUSA Standard Service Equipment Program

Description	Brand, model, etc.
Multimeter ¹⁾	Fluke models 23, 83, 85, 87 with thermocouple Module 80TK
Manifold gauge set (for R134a only)	Local purchase
R134a Recovery/Recycling/Recharging Service Equipment	Local purchase

1) Available through the MBUSA Standard Equipment Program.

Refrigerant System - Test



- Pushbutton control module display "LO".
- Blower motor at highest setting.
- Air distribution 
- Press 
- Engine speed 1500 rpm
- Read diagram

Figure 1

- 1) Relative humidity
 TA Ambient temperature (°C)
 A Center air outlet temperature (°C)
 B Low pressure (bar)
 C High pressure (bar)
 D Refrigerant temperature (°C)

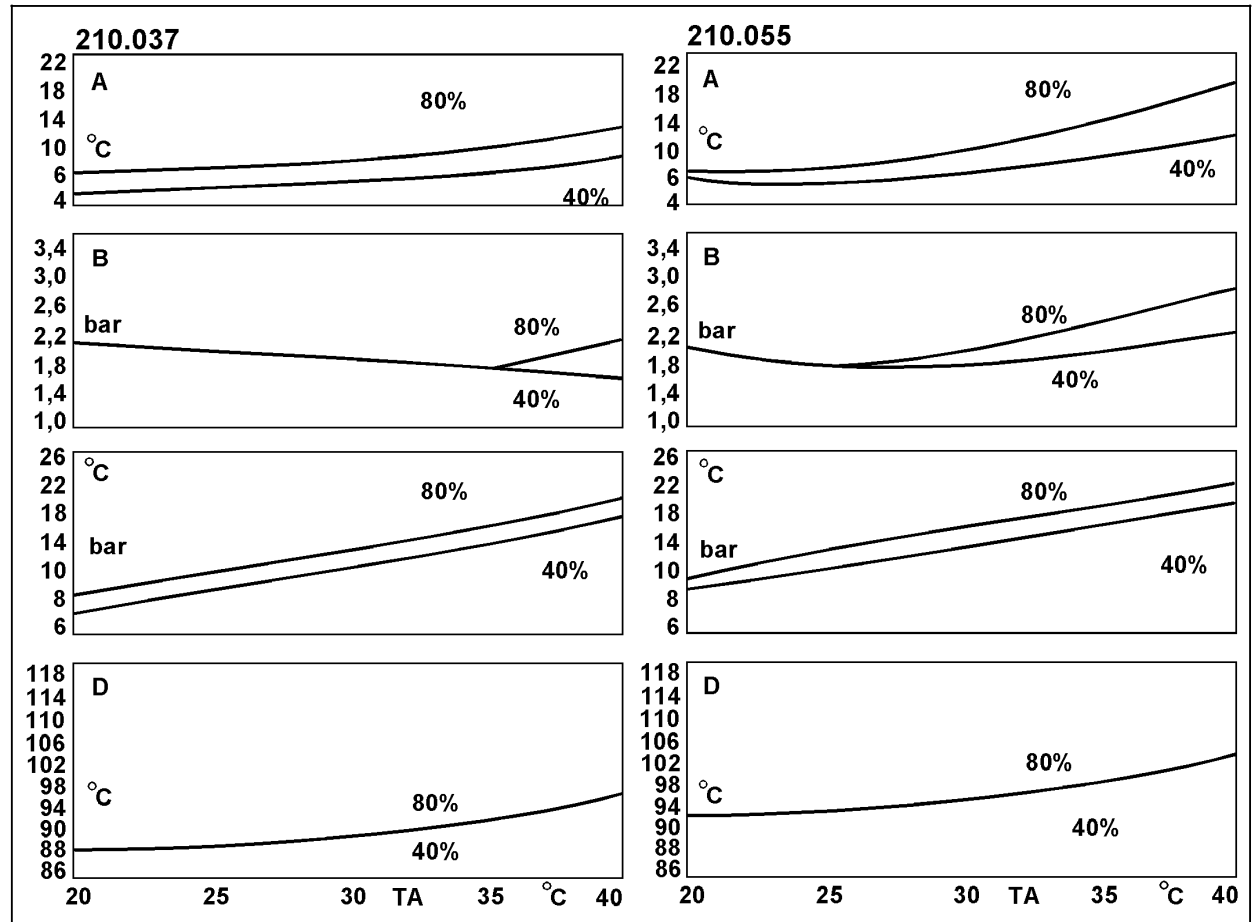
Note:

If the values such as

- Center air outlet temperature,
- Low refrigerant pressure,
- High refrigerant pressure,
- Refrigerant temperature




are obtained, the system is in order.

Tolerances of $\pm 20\%$ are permissible. If the deviations are larger, continue with the test program 42/3.



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Refrigeration System Test Program – Test

Test condition	Low pressure (bar, B)	High pressure (bar, C)	Center air outlet temperature (A)	Auxiliary fan	Damaged component (cause of failure)	Remedy
Blower at highest setting Display "LO", Center and side air outlets open, Engine speed 3000 rpm.	1 bar higher as in diagram 42/2	As in diagram 42/2	> as in diagram 42/2	Possibly for a short period	A/C compressor (Insufficient delivery capacity)	Replace A/C compressor (AR83.55-P-5300F)
Blower at middle output setting. Press  Engine speed 1500 rpm	> as in diagram 42/2	17 - 22 bar	Starting at 5 - 8 °C increasing depending on ambient temp.	I or II stage depending on pressure and temperature	Expansion valve (continuously open)	Replace expansion valve (AR83.30-P-5520E)
Display "HI", Press  Engine speed 1500 rpm	Pulsates	< as in diagram 42/2	Heated air	Only via engine coolant temperature	Expansion valve (continuously closed) Low pressure lines (insufficient flow)	Replace expansion valve (AR83.30-P-5520E)
Display "HI", Blower stage 3, Press  Engine speed 1500 rpm	< as in diagram	significantly > as in diagram pressure A	as in diagram 42/2	On (runs).	High pressure line blocked; up to refrigerant pressure sensor (B12)	High pressure line(s)