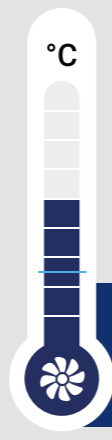


Failure diagnostics on the A/C system using the A/C service unit



Scenario 1: Air conditioning "OFF"

- When the air conditioning is switched off, high pressure and low pressure indicate the same value. At an ambient temperature of 20°C, this is around 5 bar. This means that there is refrigerant in the system. However, it is not possible to say how much refrigerant is in the system—whether there is too little, too much, or just the right amount.

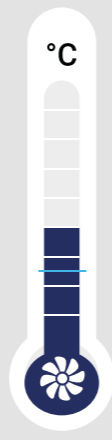
Temperature display scenarios 1 to 7 refer to the temperature at the middle air outlet nozzle at an ambient temperature of 20°C.



Scenario 2: Air conditioning "ON"

- Set the air conditioning to the coldest level "LO". High pressure 12 to 15 bar, low pressure 1.5 to 2.1 bar, temperature at middle air outlet nozzles +2°C to +8°C. Air conditioning is working well. We recommend checking the refrigerant volume every two years (A/C service).

Refrigerant and A/C compressor oil filling quantities

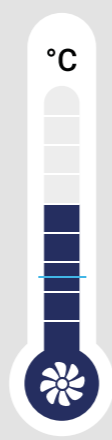


Scenario 3: Too little refrigerant in system

- Low cooling capacity. High pressure varies between 7 and 12 bar (too low), low pressure approx. 0 bar (too low).

Common causes:

- An A/C service has not been performed for a very long time
- Damage and leakage in the air conditioning system

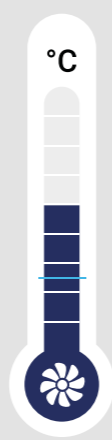


Scenario 4: No refrigerant in system

- No cooling capacity; compressor magnetic clutch does not switch on. High pressure and low pressure 0 bar.

Common causes:

- Condenser (e.g., stone chip)
- Broken line (e.g., accident or vibration breakage)
- Defective seals (e.g., seals have become brittle because A/C system has not been used during winter months)

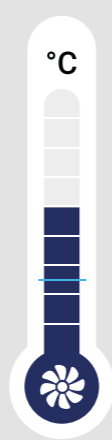


Scenario 5: Air conditioning compressor defective

- No cooling capacity. High pressure and low pressure 5 bar.

Common causes:

- Piston seizing due to too little refrigerant in the system
- Magnetic clutch overheated/burnt
- Poor electrical contact (e.g., corrosion) on the plug connection, solenoid, or control valve
- Worn teeth at the hub of the belt pulley due to vibrations
- Overload clutch has been triggered by overload or belt vibrations
- Control valve jammed by foreign objects in the circuit
- Valve plate damaged by hydraulic shock

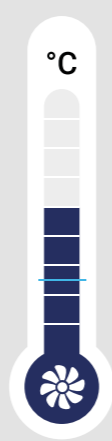


Scenario 6: Reduced heat transfer in the air conditioning condenser

- Low cooling capacity. High pressure and low pressure too high.

Common causes:

- Dirt on the outside of the air conditioning condenser
- Rusted fins
- Pipes in the condenser internally contaminated by sealant



Scenario 7: Clogged filter-drier

- No cooling capacity. High pressure and low pressure far too low. Line between the filter-drier and the expansion valve iced up on the outside.

Common causes:

- Filter-drier clogged as it was not replaced following an air conditioning system repair
- Sealant has entered the system and clogged the filter-drier