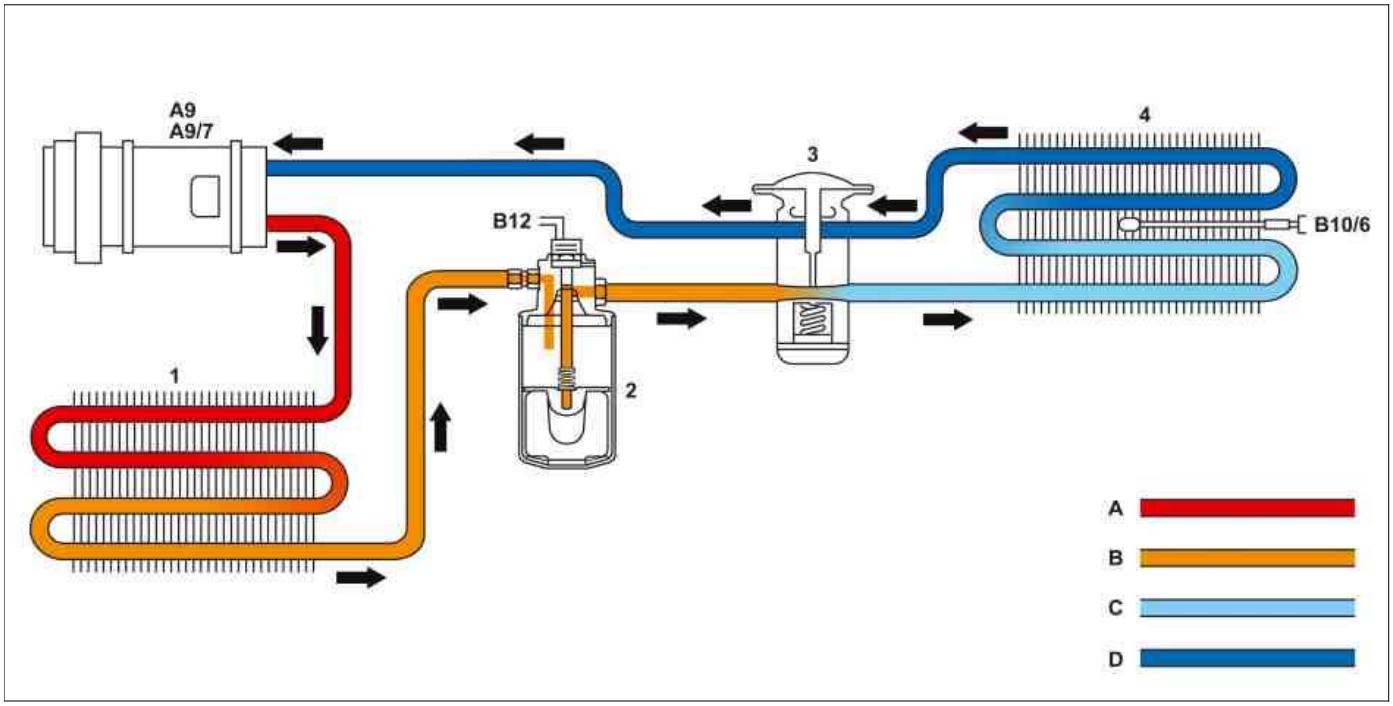
MODEL 231



P83.40-4773-79

1	*Condenser*
2	*Accumulator (drier)*
3	*Expansion valve*
4	*Evaporator*
A	*High pressure, gaseous*
B	*High pressure, liquid*
C	*Low pressure, liquid*
D	*Low pressure, gaseous*
A9	*Refrigerant compressor (without code (B09) Refrigerant compressor with magnetic clutch)*
A9/7	*Refrigerant compressor with magnetic clutch (with code (B09) Refrigerant compressor with magnetic clutch)*
B10/6	*Evaporator temperature sensor*
B12	*Refrigerant pressure sensor*

Function requirements, general

- Engine running
- Automatic air conditioning switched on

i The ME-SFI [ME] control unit (N3/10) sends the "Engine running" signal via chassis CAN 1 (CAN E1) to the front SAM control unit with fuse and relay module (N10/1) and interior CAN (CAN B) to the automatic air conditioning control and operating unit (N22/7).

Refrigerant circuit in general

Control of the refrigerant circuit is performed by the automatic air conditioning control and operating unit. The air in the vehicle interior is cooled down depending on the setting on the automatic air conditioning control and operating unit.

The refrigeration circuit basically consists of the following components:

- Refrigerant compressor
- Condenser
- Accumulator (drier)
- Expansion valve
- Evaporator

The refrigerant circuit is split up as follows:

- **High-pressure side**
- **Low-pressure side**

i The separation points for this are the valve plate at the refrigerant compressor and the injection valve at the expansion valve.

High-pressure side

The refrigerant compressor driven by the engine draws in the cold gaseous refrigerant from the evaporator, compresses it, whereby it is heated, and delivers it to the condenser. The compressed hot refrigerant is cooled in the condenser. This either occurs by means of the outside air blowing by or additionally, for example with the vehicle at a standstill, via the fan motor (M4/7). On reaching the dew point dependent on the pressure, the refrigerant condenses and changes in terms of its physical state from gaseous to fluid.

The refrigerant then flows into the accumulator (drier). While it is flowing through the fluid reservoir, moisture is removed from the refrigerant, vapor locks in the refrigerant are separated and any mechanical impurities are removed from the refrigerant. The cleaned refrigerant then flows to the expansion valve. The liquid refrigerant, which is under high pressure, is injected into the evaporator.

Low-pressure side

The liquid refrigerant decompresses in the evaporator and changes again in terms of its physical state from fluid to gaseous. The evaporation heat required for the evaporation is removed from the air flowing past at the evaporator fins, cooling it down in the process.

The refrigerant, which is completely gaseous once more, is drawn in again and compressed by the refrigerant compressor.

The cooled air is routed to the vehicle interior.

To prevent the evaporator from icing up, the automatic air conditioning control and operating unit switches off the refrigerant compressor if the evaporator temperature drops below a specific value.

The temperature at the evaporator is recorded by the evaporator temperature sensor. The automatic air conditioning control and operating unit reads in the signals of the evaporator temperature sensor directly.

	Electrical function schematic for climate control input signals		PE83.40-P-2056-97RKA
	Electrical function schematic for climate control actuation		PE83.40-P-2057-97RKA
	Overview of system components for climate control		GF83.40-P-9994RK