Compressor. Responsible for refrigerant circulation. The compressor draws in gaseous refrigerant and compresses it. The in gaseous refrigerant, now heated from pressurization, is fed to the condenser at a pressure of about **16 bar**.

The piston stroke is generated by a swash plate that, depending on its design, actuates **3** to **10 pistons**. If the angle of the swash plate changes, the length of stroke is altered and with it the delivery rate of the compressor (volume control).

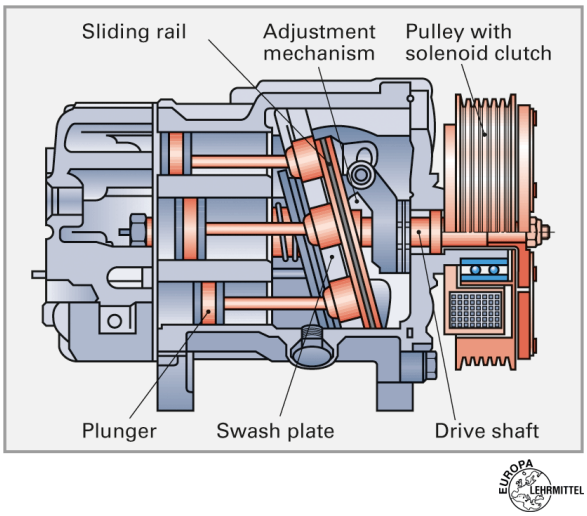
The cooling output of the compressor is influenced by the delivery rate. It is determined by the following variables:

- Temperature selected by driver
- Exterior and interior temperature
- Evaporator temperature
- Refrigerant pressure, refrigerant temperature

The compressor operates only when the engine is running and the air conditioning system is switched on. Only gaseous refrigerant may be drawn in. If liquid refrigerant were to be drawn in, the compressor would be damaged beyond repair because fluid cannot be compressed. For lubrication of the compressors, oil is added to refrigerant.

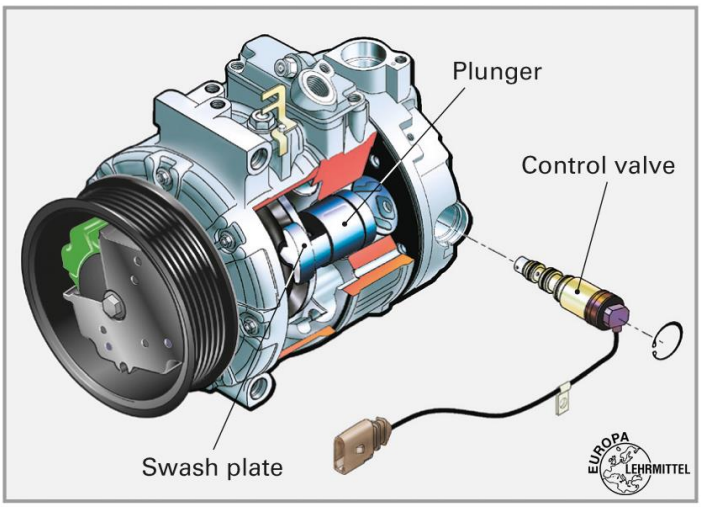
The piston-type or swash plate compressors used for climate control in motor vehicles can be categorised, depending on the type of control system, into internally controlled compressors and externally controlled compressors.

Internally controlled A/C compressor. Driven by a poly V-belt drive. Integrated in the belt pulley is a solenoid clutch, with which the compressor can be switched on or off as required. The position of the swash plate and thereby the delivery rate of refrigerant is determined by the pressure conditions within the compressor.



Internal controlled A/C compressor

External A/C compressor. Integrated in the belt pulley of the compressor is an overload protection device. It does not feature a solenoid clutch and continues running even when the cooling function is switched off. The delivery volume of the refrigerant is restricted to under **2%**. The pressure conditions inside the compressor are determined by a control valve, which is actuated by the air conditioning control unit. In this way, the position of the swash plate and thereby the delivery rate of the refrigerant can be influenced.



Externally controlled A/C compressor

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