

AIR CONDITIONING COMPRESSOR

Model no. 73566

A. General

Cooling systems which regulate the temperatures in the passenger compartment of passenger cars, omnibuses and lorries along with the ventilation and heating system are termed air-conditioning. The cooling output in passenger cars amounts to 3 to 5 KW, in omnibuses between 20 and 35 KW.

B. Mode of action

A heat circulation takes place in the cooling unit, in which a refrigerant circulates. The compressor sucks in the refrigerant, which is gaseous and in the vaporiser and pushes it into the condenser at high pressure.

The increase in pressure results in a large increase in temperature. Heat is removed from the refrigerant when it cools in the condenser. It becomes fluid. The refrigerant which is under pressure now passes via the filter dryer and the expansion valve into the vaporiser. The pressure drops which results in a condensation of the refrigerant. In this process the refrigerant removes heat from its surroundings with the result that a temperature of about minus 10 degrees Celsius comes about in the vaporiser.

The fan sucks the air out of the passenger compartment and pushes it back into the passenger compartment via fins on the vaporiser. Thanks to the lower temperature of the vaporiser the air and thus the passenger compartment are cooled.

C. How to operate the model

Air conditioning compressors for motor vehicles are mainly produced as axial piston pumps. They can be designed as single-acting piston pumps or as double-acting pumps. When turning the handle, you see how the swash plate moves the plungers to and fro.

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C. How to operate the model

On the front there are the inlet and outlet diaphragms. In the forward stroke the outlet valve reeds open and the inlet valve reeds close and vice versa in the reverse stroke. In this way, the compressor sucks the refrigerant out of the condenser and pushes it into the condenser under high pressure. If the set temperature is exceeded in the passenger compartment, the air conditioning compressor is switched on via a magnetic clutch (on the right side of the model). The propulsion from the engine is done via a ribbed V-belt.

