

A/C compressors

Replacement work process

Safety notice:
Safety goggles and protective gloves must be worn when replacing an A/C compressor!

1 Drawing off the refrigerant:

- Evacuate the refrigerant completely.
- Depressurize the system: Even after the refrigerant has been drawn off, gases may still be released from the refrigerant bound up in the A/C compressor oil. The refrigerant circuit should therefore be opened immediately after evacuation to prevent a renewed increase in pressure.

2 Removing the air conditioning compressor:

- Remove the drive belt and disconnect the couplers and screw connections on the A/C compressor.
- Crimp the connecting cables to prevent the ingress of dirt and moisture.

3 Inspecting the system:

Visually inspect all components for leaks and damage, e.g., stone chips on the A/C condenser, porous V-belts, leaky pressure lines, or damaged cables and connector plugs.

4 Flushing the system:

Important: When replacing the A/C compressor, it is imperative that the entire A/C system is flushed and that the consumables and nonflushable components are replaced. Dirt particles in the A/C circuit can only be removed by thoroughly flushing the entire system. Depending on the contamination level, we recommend using R134a or R1234yf refrigerants, or a special flushing solution. Air conditioning compressors, filter-driers/accumulators, and expansion or throttle valves cannot be flushed.

Since you must always assume—or cannot rule out—that there is system contamination (abrasion particles, chips) when the A/C compressor is defective, the system must always be flushed when replacing these components.

5 Replacing expansion or throttle valves, filter-driers/accumulators, and O-rings:

- Replace all gaskets on the opened connections and coat with clean compressor oil.
- Remove sealing caps from accumulators/filter-driers immediately prior to assembly.

6 Correct filling of air conditioning compressors:

- Breakdown of oil quantities (see chart below)**
Refrigerant oil is found in every component of the A/C system. In the event of a repair, oil is removed along with the component being replaced. It is therefore imperative to top up the system again with the corresponding quantity of oil.
- Adhere to the oil type and specification**
Before installing a new A/C compressor, always check the oil quantity and viscosity in accordance with the manufacturer specifications and top up if necessary.

6 Correct filling of air conditioning compressors:

- Correct quantities of system oil**
As one A/C compressor may be used for different vehicles or systems, it is crucial to check or correct the oil filling quantity before installing the A/C compressor. To do this, all of the oil must be drained from the A/C compressor and collected. The A/C compressor must then be refilled with the total quantity of oil specified by the vehicle manufacturer (system oil volume).

To ensure that the oil is distributed evenly, the A/C compressor must be positioned upright (with the belt pulley facing downward) for 3 minutes before installation, and then rotated ten times by hand.

7 Installing the new air conditioning compressor:

- Observe the exact alignment and running direction of the drive belts.
- Connect the cables and hose lines.
- Practical tip for A/C compressor filter screens: before assembly, install the filter screen in the suction line of the A/C compressor, if necessary.

8 Filling the system:

- Evacuate the refrigerant circuit using an A/C service unit (this removes any remaining moisture). You should not use this for less than the minimum 20-minute duration.
- The refrigerant must only be filled via the A/C service unit using the service connection on the high-pressure side to prevent refrigerant hammering in the A/C compressor.
- You should only use the appropriate refrigerant in the quantity/specification stated by the vehicle manufacturer.

9 Commissioning:

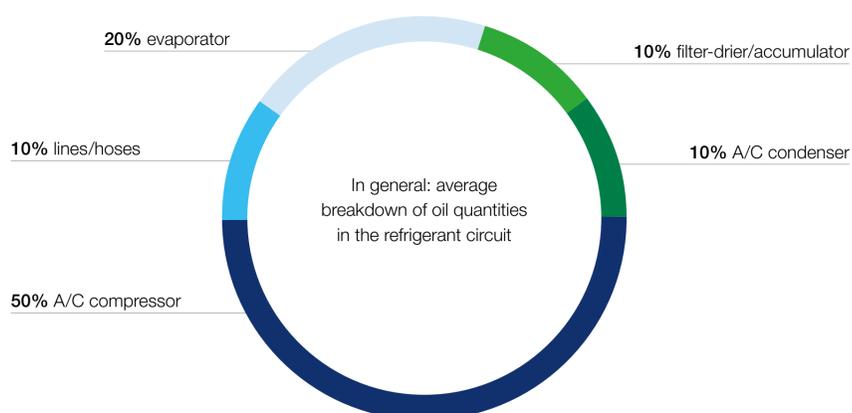
- Set the air distribution to the "center nozzles" position and open all center nozzles.
- Set the fresh air blowers switch to the central position.
- Set the temperature to maximum cooling performance.
- Start the engine (without running the A/C system) and let the engine run uninterrupted at idle-running speed for at least 2 minutes.
- Switch on the A/C system for about 10 seconds at idle-running speed, then turn it off for about 10 seconds.
- Repeat this process at least five times.

10 System pressure and leaktightness test:

- Check the cooling performance and function, as well as the system for leaktightness.
- Compare the high- and low-pressure readings on the A/C service unit against target specifications.
- If a contrast agent was added, check for leakage using a UV lamp.

11 Final work:

- Carry out a test drive.
- Affix a service sticker.
- Document the work performed.



mahle-aftermarket.com

BEHR®

MAHLE