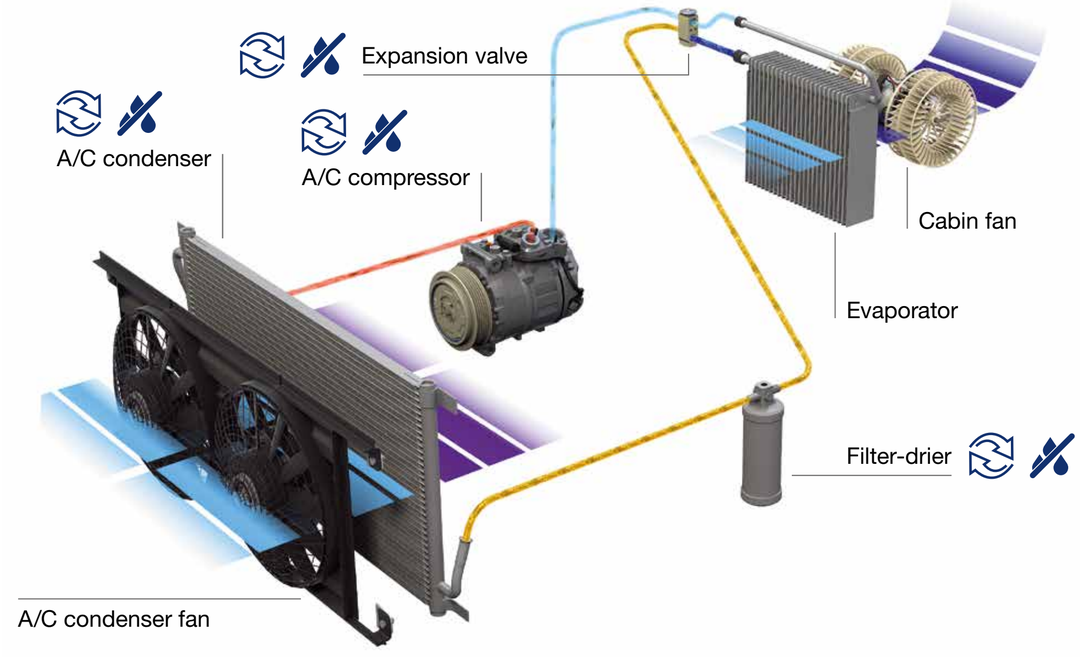
Flushing the A/C system

Refrigerant circuit with expansion valve



Why is flushing required?

Flushing the air conditioning system is one of the most important process steps during repair work or when an air conditioning compressor is damaged. Flushing removes contamination and harmful substances (such as metal abrasion and chips) from the air conditioning circuit. This is necessary to carry out repairs properly and avoid expensive follow-up work. However, **air conditioning compressors**, **filter-driers (accumulators)**, and **expansion** or **throttle valves** cannot be flushed. Depending on the design (parallel flow), the **air conditioning condenser** must not be flushed either.

What has to be flushed?

Possible contamination:

- **Carbonized oil particles**, e.g., if oil is exposed to high operating temperatures
- **Elastomer/rubber particles**, e.g., due to aggressive acids
- **Moisture**, e.g., due to leakage, improper vacuum, poor-quality additives
- **Metal swarf**, e.g., due to a seized air conditioning compressor or wear on parts
- **Aggressive acids**, e.g., due to the chemical reaction of moisture, coolant, and oil
- **Various particles**, e.g., due to sludge or a poor-quality contrast agent or oil blend

How is flushing performed?

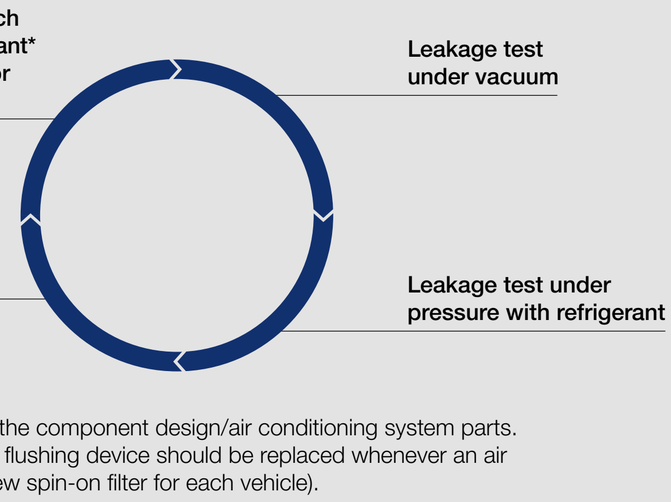
MAHLE Aftermarket and most vehicle manufacturers recommend the following:

- Flushing with refrigerant and service unit
- Using an air conditioning service unit—e.g., a MAHLE (ACX) or BRAIN BEE (AIR-NEX) product—and an additional flushing device with filters and adapters to flush the system components against the direction of the refrigerant flow (accessories available separately)

General flushing process with refrigerant:

1. Recover all refrigerant.
2. Remove and bypass air conditioning compressor, filter-drier/accumulator, expansion or throttle valve.
3. Also remove and bypass certain air conditioning condensers (parallel flow).
4. Attach connecting hose from flushing kit to high-pressure line on vehicle.
5. Connect red service hose to low-pressure line on vehicle.
6. Connect blue service hose to flushing kit outlet (filter).
7. Flush circuit against direction of refrigerant flow.
8. Replace removed parts, fit new seals.
9. Evacuate system and fill with refrigerant.
10. Carry out final performance and leakage test.

Flushing process in air conditioning service units under the MAHLE (ACX) and BRAIN BEE (AIR-NEX) brands



* Duration may vary depending on the component design/air conditioning system parts. Important: the spin-on filter in the flushing device should be replaced whenever an air conditioning system is flushed (new spin-on filter for each vehicle).

Safety notice:
Safety goggles and protective gloves must be worn when flushing an air conditioning system or replacing an air conditioning compressor!

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