



# Flushing Kit

**Flushing the refrigerant circuit for A/C systems with R1234yf and R134a refrigerant**

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ENG Original Operating Manual





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## General

These operating instructions contain important information for the safety of the user. Familiarise yourself with the product before operating it for the first time. To this end, read the following operating instructions and the safety instructions carefully. Use the unit only as described and only for the specified range of application.

Retain these instructions for future reference. Hand over all documents when forwarding the product to third parties.

The manufacturer reserves the right without prior notification to make changes to this document and to the product; it is therefore recommended to refer to any existing revised versions. <http://www.wow-portal.com/service>.

## 1 Important information about the product

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### 1.1 Intended use

The product serves exclusively to clean the refrigerant circuit of vehicle air conditioning systems with the R1234yf or R134a refrigerants. The product can and may only be used in combination with suitable A/C system service units.

### 1.2 Conformity

The product was manufactured in compliance with the applicable provisions set out in PED Standard Directive 2014/68/EU.

### 1.3 Safety instructions

The product is state of the art and complies with the recognised safety regulations, but hazards may still arise in spite of this. For this reason please always observe the following instructions:

- Work on A/C systems may only be carried out by a qualified expert. All workshop personnel who carry out activities in connection with A/C systems in motor vehicles require a training certificate in the form of an attestation of competence in accordance with Commission Regulation (EC) No. 307/2008 of 2 April 2008. An additional attestation of competence is not required for working with the R1234yf refrigerant.
- Read through these instructions carefully before the unit is operated for the first time. If you are unclear about individual points in these instructions, contact your sales or service partner or the manufacturer.
- This unit may only be operated by personnel who have been trained to do so!
- The operator must have adequate knowledge of handling air conditioning and cooling systems and must also have received training in handling pressurised refrigerants and systems.
- Personnel handling refrigerant are exposed to a risk of injury. Always wear suitable protective clothing and safety goggles.
- Avoid inhaling refrigerant or oil fumes. The unit may only be used in well ventilated rooms.
- This unit may only be used for R1234yf or R134a refrigerant.



**Wear safety gloves.**

Avoid contact with the skin; the low boiling point (around  $-26^{\circ}\text{C}$  for R134a and around  $-30^{\circ}\text{C}$  for R1234yf) causes cold burns.



**Wear safety goggles.**

Refrigerant can cause injury to the eyes and lead to blindness.

Avoid contact by refrigerant with the eyes.



**To avoid damage to the A/C system to be serviced:**

Before carrying out any work on the A/C system always read the Owner's Manual and Service Manual of the vehicle manufacturer to determine the type of coolant that is used in the A/C system.



**Fire hazard**

Do not smoke and avoid heat and naked flames in the vicinity of the unit and when working.

## 2 Product description

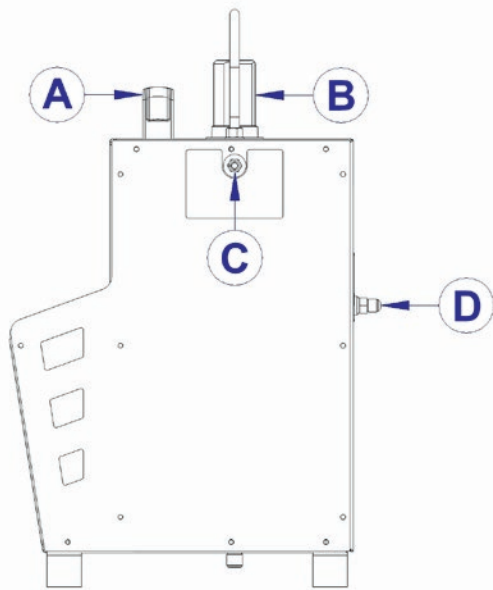


fig. 001

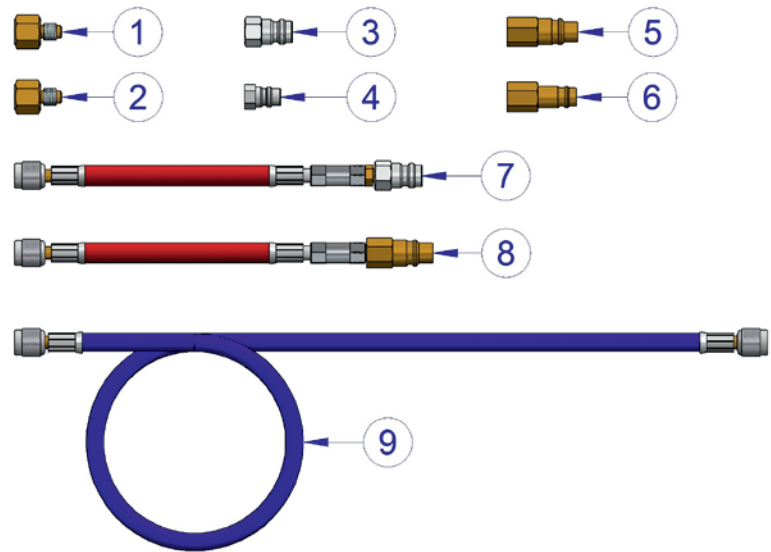


fig. 002

A	Handle	1	Adapter 3/8 SAE Female - 1/4 SAE Male
B	Transparent bowl for filter stage	2	Adapter 3/8 SAE Female - 1/4 SAE Male
C	OUT port (to A/C Equipment)	3	Adapter 1/4 SAE Female - R134a HP
D	IN port (to A/C System)	4	Adapter 1/4 SAE Female - R134a LP
		5	Adapter 1/4 SAE Female - R1234yf HP
		6	Adapter 1/4 SAE Female - R1234yf LP
		7	Hose 1/4 SAE Female - R134a HP with CHECK VALVE
		8	Hose 1/4 SAE Female - R1234yf HP with CHECK VALVE
		9	Hose 1/4 SAE Female - 1/4 SAE Female

### 2.1 Technical data

Articlenumber	W067100010
Designation	Flushing kit
Type	FK 500
Article number	W067 100 010
Refrigerant	R134a, R1234yf
Maximum capacity	~5000 ml
Maximum operating temperature	50 °C
Maximum operating pressure	10 bar

## 2.2 Spare parts

W052100086	SP-EXTERNAL WHITE FILTER	White filter (20µ pore size)
W067100009	AC-ADAPTER-KIT-FOR-FLUSHING-KIT-ALL-AC	Adapter Kit for Flushing

## 2.3 How does flushing the A/C system work?

The refrigerant circuit is cleaned by flushing liquid refrigerant through against the direction of flow at a high flow rate. The high flow rate is achieved through removal of the components by the high pressure in the refrigerant bottle on the one side in the system and by the vacuum in the flushing reservoir on the opposite side of the system.

A flushing reservoir of 5 L capacity is used to maintain the high flow rate for as long as possible. The components such as e.g. compressor, expansion valve, dryer etc. are replaced by adapters with large through-holes to avoid a throttling effect. Suitably sized adapters, *See Siehe "4.3 Manufacturer-specific adapters S. 12"*, can be obtained from the vehicle manufacturer.



### WARNING

The A/C service unit and the flushing kit may only be connected via the manufacturer-specific ports of the compressor to the refrigerant circuit, **never** at the service ports of the A/C system.

The **high-pressure port** of the A/C service unit is connected for this purpose to the **low-pressure side** of the A/C system's refrigerant circuit.

The **low-pressure port** of the A/C service unit is connected at the other end via the flushing kit to the **high-pressure side** of the refrigerant circuit.

## 2.4 Preparing the A/C service unit for the flushing operation

The following settings for flushing are recommended:

- Number of flushing operations min. 4
- Duration of vacuum time min. 30 minutes



### NOTE

Observe the minimum filling capacity of the refrigerant bottle; refer to the A/C service unit operating instructions for this purpose. See also [www.wow-portal.com/Service](http://www.wow-portal.com/Service)

The following requirements are satisfied when the A/C service units mentioned in Section „4.1 Suitable A/C service units“ and the described flushing kit are used.

- Flushing with liquid R1234yf or R134a refrigerant in the circuit against the direction of flow.
- High flow rate to achieve optimal cleaning.
- Freely selectable number of flushing operations.
- Logging of the amount of drained oil (paper printout).

## Flushing operation sequence

After the flushing function is started the refrigerant circuit is initially subjected to a vacuum (evacuated). Then, once the leak test has been passed, the system is flushed with liquid refrigerant at a high flow rate. Then all the refrigerant is drawn off again from the entire refrigerant circuit via a microfilter with 20 µ pore size.

This procedure is automatically repeated accordingly, depending on the "number of flushing operations" set by the operator in the A/C service unit's menu.

### 3 Connecting the flushing kit and performing flushing

#### 3.1 Diagram of the complete refrigerant circuit

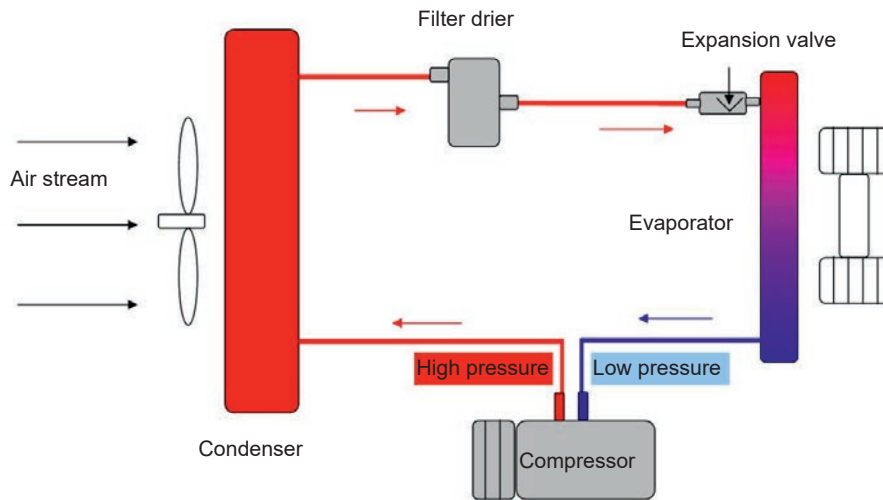


fig. 003



### 3.2 Step 1: Removing the components of the A/C systems



**WARNING**  
Observe the vehicle manufacturer's specifications

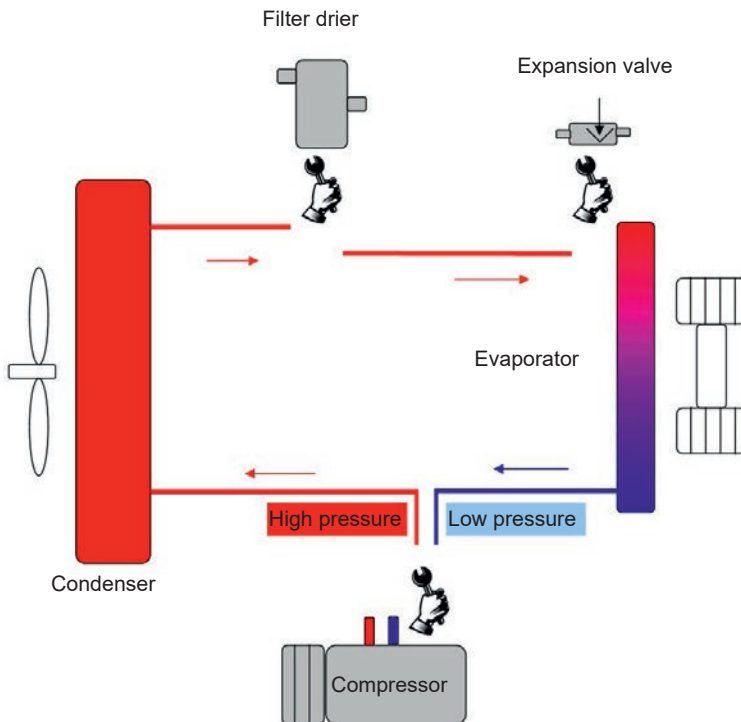


fig. 004

Remove the components compressor, expansion valve, filter drier, possibly condenser and replace with adapter.  
Observe manufacturer's instructions!

### 3.3 Step 2: Replacing the A/C system components with manufacturer-specific adapters

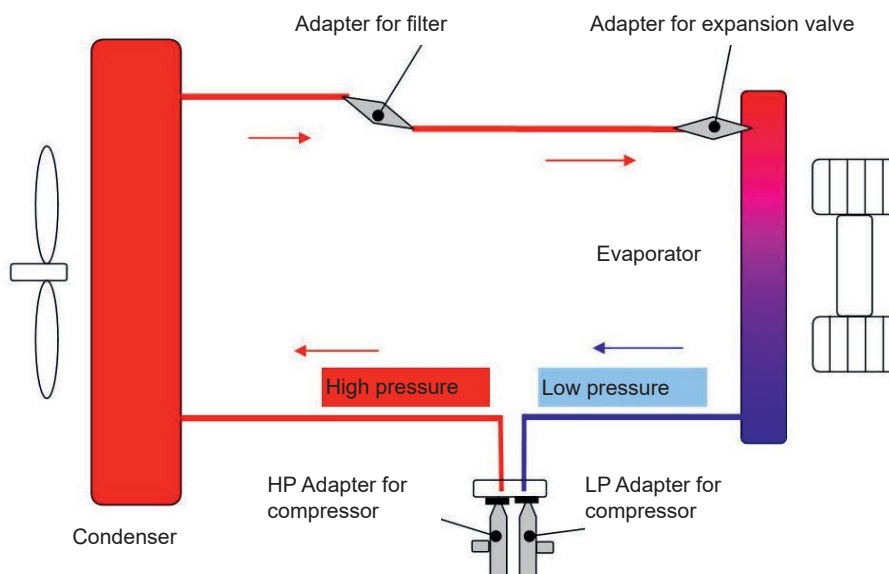


fig. 005

### 3.4 Step 3: Connecting the flushing kit and A/C service unit

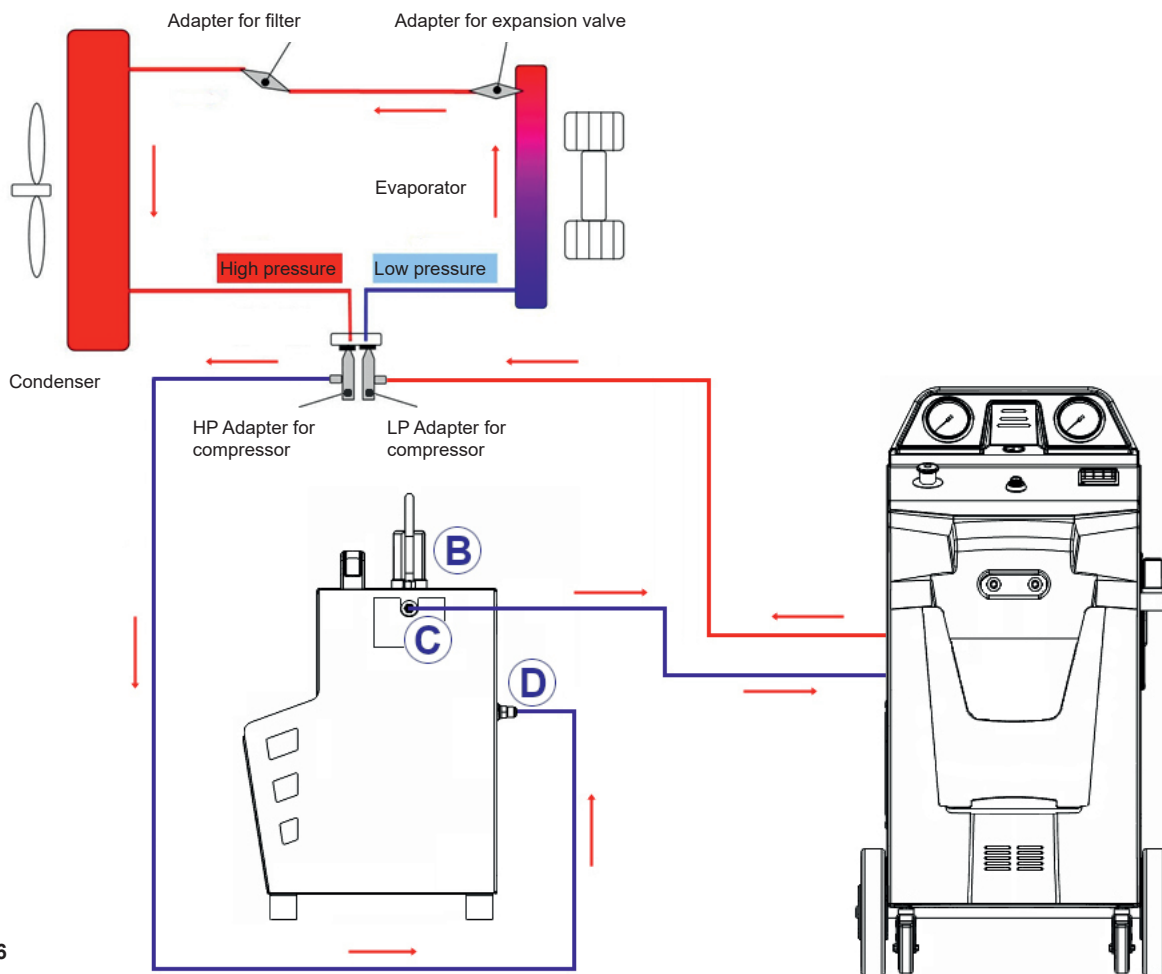


fig. 006

1. Connect the **red service hose (high pressure)** of the A/C service unit to the manufacturer-specific adapter of the **blue low-pressure side** of the A/C system compressor *fig. 006*.
2. Connect the **blue service hose (low pressure)** of the A/C service unit to the OUT port **C** *fig. 006* of the flushing kit.
3. Connect the blue hose from the supplied flushing kit **9** *fig. 002* to the IN port **D** *fig. 006* of the flushing kit.
4. Connect the other end of the **blue hose 9** *fig. 002* from the flushing kit to the manufacturer-specific adapter of the **red high-pressure side** of the A/C system compressor port.
5. Start the "**Flushing**" function on the A/C service unit. Refer to the A/C service unit operating instructions.
6. Check the quality of the refrigerant in the transparent bowl for filter stage **B** *fig. 006* during the flushing operation.
7. If after the flushing operation has finished the refrigerant is not clear enough, repeat the flushing operation.
8. At the end of the flushing operation you can remove and dispose of possible solid particle residues from the transparent bowl for filter stage **B** *fig. 006*.



#### IMPORTANT

The system is preset for 1/4 SAE connections. If the A/C service unit has 3/8" SAE connections, use the adapters **1** and **2** *fig. 002* from the supplied flushing kit.

### 3.5 Step 3: Connecting the flushing kit and A/C service unit (A/C service units with hand valves)

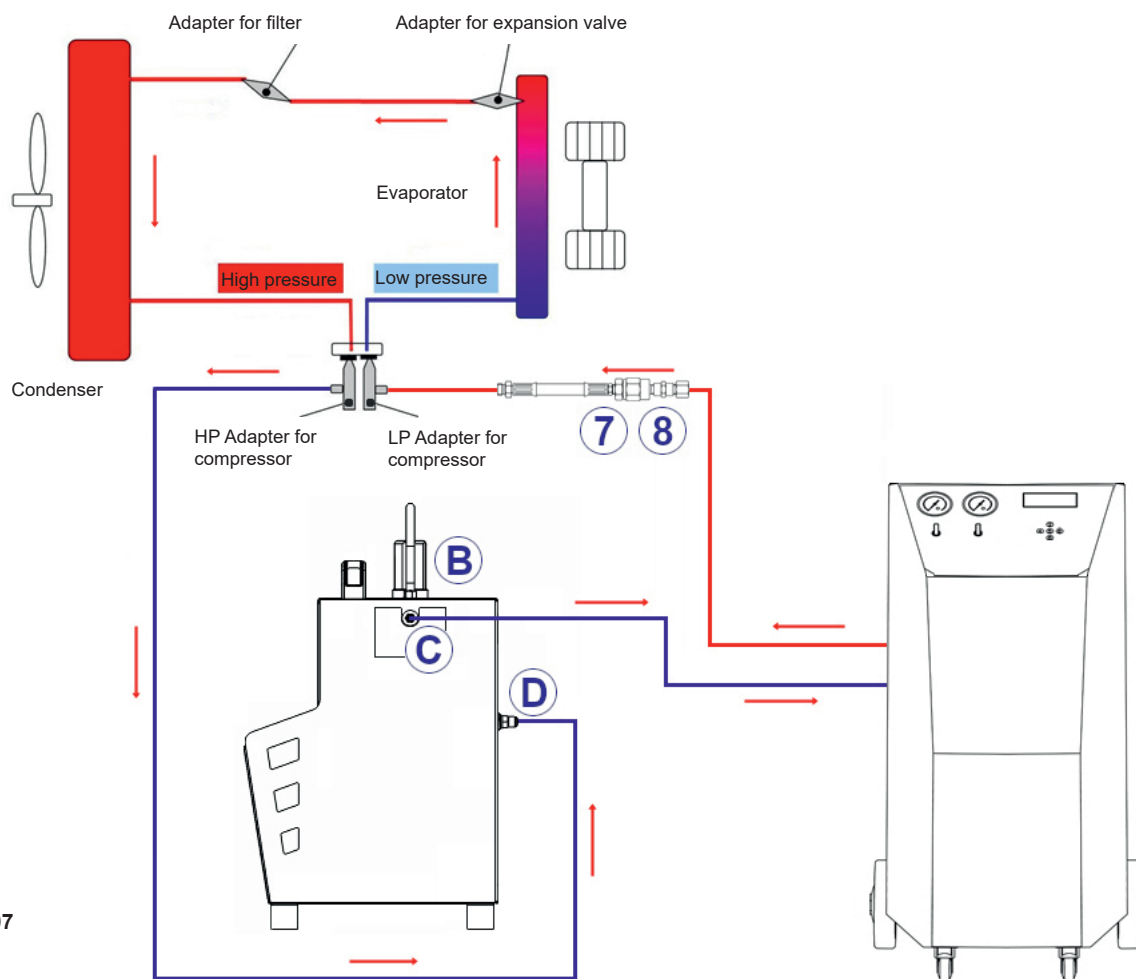


fig. 007

1. Connect the adapter (7) or (8) *fig. 002* from the supplied flushing kit on the red service hose (high pressure).
2. Connect the prepared **red service hose (high pressure)** of the A/C service unit to the manufacturer-specific adapter of the A/C system compressor port, **low-pressure side**.
3. Connect the **blue service hose (low pressure)** of the A/C service unit to the OUT port (C) *fig. 007* of the flushing kit.
4. Connect the blue hose from the supplied flushing kit (9) *fig. 002* to the IN port (D) *fig. 006* of the flushing kit.
5. Connect the other end of the **blue hose (9)** *fig. 002* from the flushing kit to the manufacturer-specific adapter of the **red high-pressure side** of the A/C system compressor port.
6. Start the "**Flushing**" function on the A/C service unit. Refer to the A/C service unit operating instructions.
7. Check the quality of the refrigerant in the transparent bowl for filter stage (B) *fig. 006* *fig. 007* during the flushing operation.
8. If after the flushing operation has finished the refrigerant is not clear enough, repeat the flushing operation.
9. At the end of the flushing operation you can remove and dispose of possible solid particle residues from the transparent bowl for filter stage (B) *fig. 007*.

## 4 Service

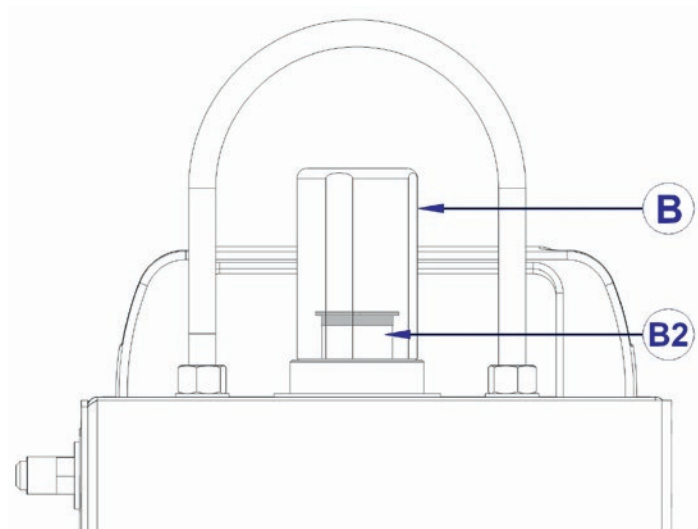
### 4.1 Suitable A/C service units

All A/C service units of the Coolius series and other manufacturers with integrated flushing function of A/C systems are suitable for automatic flushing.

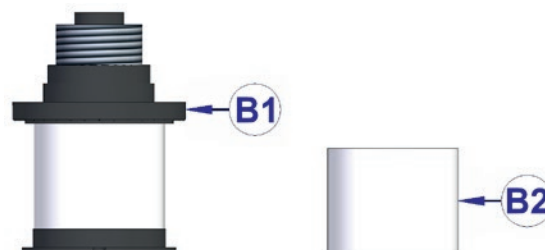
### 4.2 Maintaining the flushing kit

We recommend that you change the white filter (20 $\mu$  pore size), article no.: W052100086, after 5 flushing operations on vehicle A/C systems.

You can obtain replacement filters from the service partner of your national subsidiary.



B	Transparent bowl for filter stage
B1	White filter (20 $\mu$ ) group
B2	White filter (20 $\mu$ )



### 4.3 Manufacturer-specific adapters

As the adapters for connecting the flush kit to the air conditioning systems differ from manufacturer to manufacturer, the appropriate original adapters from the manufacturers or corresponding accessory adapters can be used.



fig. 008 Example of a manufacturer-specific adapter case

## 5 Disposal

### 5.1 Storage for long periods

The machine should be positioned in a safe area, disconnected from the supply and protected from excessive temperatures and humidity.

### 5.2 Disposal of used fluids



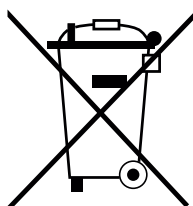
**NOTE!** Used oil is hazardous waste. *Do not mix used oil with other fluids.*  
*Keep used oil in suitable containers prior to disposal.*

The lubricants extracted from A/C system must be delivered to used oil collection centre!

### 5.3 Disposal of packaging material

- The cardboard packaging material should be disposed of with other waste paper.
- Plastic packaging material should be added to other recyclable waste.

### 5.4 Scrapping the old unit



If you wish to scrap the Machine, first completely drain it of all liquids and dispose of them in an environmentally responsible manner.

Take the old unit to your nearest recycling centre or contact the customer service.





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