

This manual is effective for all filters of the type DU 2005, 3005, 4005 and related specifications. It contains certain requirements and instructions which ensure unobjectionable operation of the filter. It can be completed with specific additional instructions by the operator himself if necessary.

1. Safety instructions

- Prior to operating the filter, manual and maintenance instructions have to be read carefully.
- Follow the instructions of this manual under any circumstances!
- The manufacturer does not assume liability for any damage, which occurs due to disregarding these instructions.
- If operations are carried out differently, the safety of the pressurized device cannot be assured!
- Operating conditions given in the data sheet, especially excess pressure, temperature range and operating fluid, have to be followed unconditionally. Variation of these parameters can cause damage to important pressure holding parts and sealing. Also take in consideration the compatibility of filter components with the operating fluid.
- Under working conditions the filter housing is pressurized. Do not try to loosen or remove any part of the filter or the filter housing during operation. The operating fluid could escape at high pressure and high temperatures.
This does not apply for parts of the decompressed or the turned off side of the filter (see „Maintenance“).
- Leaking operating fluid always bears the danger of injuries and burns!
- Do not open the filter housing until you made sure it is not pressurized anymore!
- Touching parts of the filter may cause burning, depending on the operating temperature.
- When exchanging the filter keep in mind that it might have operating temperature. Danger of burning!
- Always wear safety goggles and gloves when working on the filter!
- If you come into contact with the operating fluid please follow the instructions of the fluid manufacturer!!
- Only use original spare parts.

For filters being used in hazardous locations the Eaton documentation N° 41269 "Supplementation of the Operating Manual for the use of filters in potential explosive areas.

2. Installation

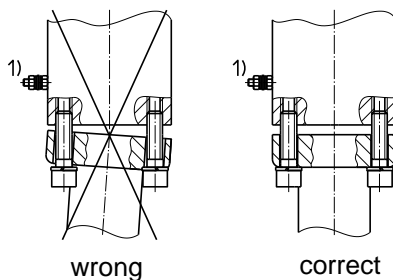
Note safety instructions!

When removing a new filter from its box it is ready for installation. It is placed on a level area and screwed to it. Afterwards remove protective caps from connections and connect those to the present pipe work. Appropriate pipe work (pipes, hoses) ensures that drain and air-bleed valves are connected to proper containers.

When installing the filter please make sure, that:

- sufficient fixation of the filter is assured
- the clogging indicator is accessible and can be checked easily.
- the connections for draining and air-bleeding can be accessed easily.
- there is enough room above the filter to remove and replace elements.
- no dirt, particles, other contamination or fluids enter the filter.
- both inlet and outlet of the filter are connected to the pipe work correctly.
- counter flanges or screw joints of the pipe system and the filter have to be angled precisely and connected that same way (if counter flanges or pipe joints are canted or under tension switching filters can be aggravated and it might harm pressure tightness)

Fitting the counter flanges



1) Connection for the potential equalization, only for application in the explosive area

- the following torque must be applied when fastening the counter flanges

Type	DU 2005/3005/4005
Moment [Nm]	100 ±25

- sufficient measures were taken to prevent corrosion.
- the filter is protected from other mechanical influences (such as impacts and hits).

3. Initial operation

3.1 Prior to initial operation

Prior to the initial operation of the system or the machine, which means prior to filling in any fluid, check the internal condition of the filter. Proceed as follows:

- Do a visual inspection of the inside (in accessible places) and the outer surface of the filter.
- Open the filter housing by removing the lid. Check the cleanness of the housing, the presence of an element, the sealing, etc..
- Close the housing tight.

3.2 Filling and air-bleeding

Prior to the initial operation, the filter has to air-bleed as follows:

- Turn the switch of the filter to the middle position.
- Fill both sides of the filter housing the regular operating fluid flow.
- Open the screw plugs for air bleeding. Observe until bubble-free operating medium is emerging and no air bleeding noises can be heard anymore.
- Afterwards tighten the locking screws again.

3.3 Technical inspection

During the primary technical inspection of the container it is necessary:

- Performing a visual and measurement inspection of the inner (if available) and the outer surface of the container;
- Carrying out a conformity test of the assembly, pipelines, equipment with test devices and safety devices of the filter in accordance with the requirements of the project and technical documentation;
- hydraulic test (it is permissible not to carry out inspection of the inner surface and hydraulic test of the tank, which is delivered assembled, if the storage conditions specified by the manufacturer are not violated).

The surface of the container must be cleaned of deposits and dirt before the inspection begins, so that a visual and measurement check can be carried out.

The scope, the methods and the periodicity of the technical tests within the service life are to be taken according to the table:

External and internal inspection of the filter	Test pressure test
6 Years	12 Years

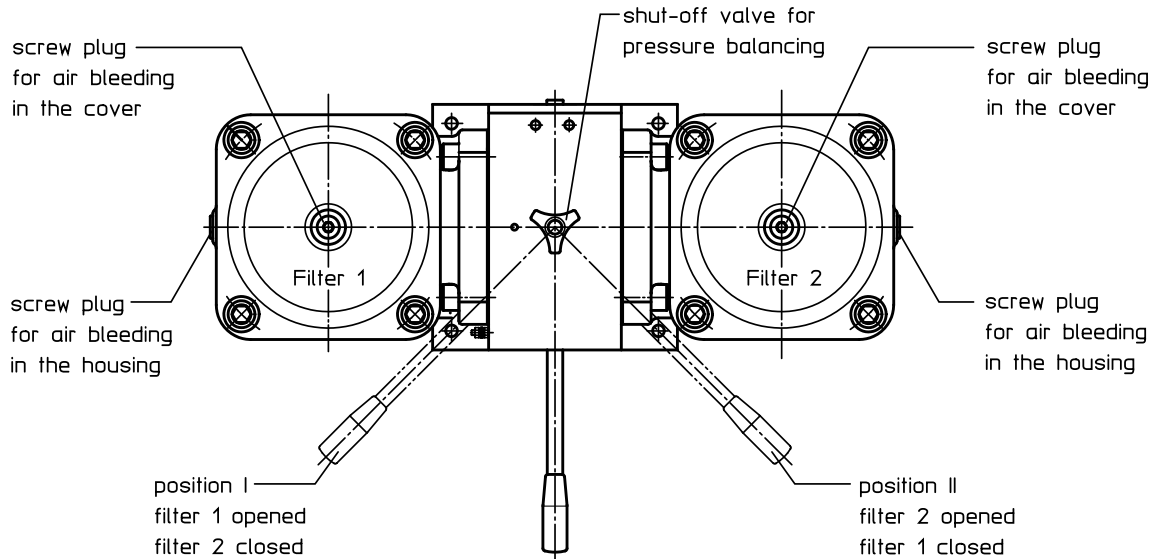
Manual and maintenance instructions

for Eaton duplex filters, change over
DU 2005, 3005, 4005, related specifications

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43972-4B
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After this process you can direct the flow of the fluid, which is supposed to be filtered, to pass through either side of the filter. This is done simply by turning the lever or the switch. To recognize which side is operating at the moment, just note the following:

illustration switch lever frontside



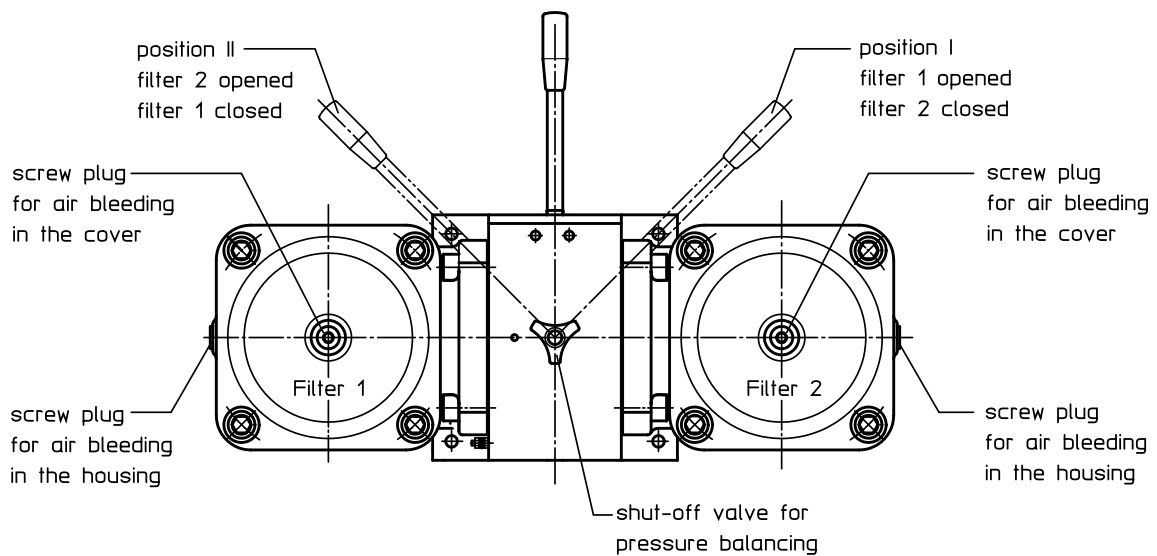
switching lever in middle position,
filter 1 and filter 2 opened.

No operating state I

illustration switch lever backside, opposite to inlet and outlet

switching lever in middle position,
filter 1 and filter 2 opened.

No operating state I



4. Maintenance / Inspection

Also please note all particular site-related instructions for inspection.

Using filters equipped with clogging indicators it is necessary to exchange or clean the element if the signal "Clogged filter" is emitted (also note the data sheet or the instructions of the clogging indicators).
Contaminated elements have to be replaced as soon as possible! If a clogged element is not removed it may cause severe damage to the entire system!

Attention!

Always exchange elements with sealing. If a cleaned metal mesh element type „G“ is reused replace its sealing. The exact markings can be found in spare part lists for each element.

4.1 Replacing the filter element

Maintenance or the exchange of contaminated filter elements has to be performed as follows:

- Open the shut-off valve for pressure equalization.
- Switch the filter to the opposite side.
- Close the shut-off valve.
- Open the air-bleed valve of the discharged side of the housing in order to equalize the pressure with the surrounding atmosphere.
- Open the drain-valves to drain the filter
- Open the lid of the discharged side of the filter housing.
- Loosen and remove the element by light swaying and pulling.
- If necessary cover or close the adaptor end inside the housing and clean the entire inside.
- Close the drain valve and remove the cover of the adaptor end if present.
- Check the sealing of the filter lid and replace the O-ring if necessary.
- Take the replacing element, make sure the serial number matches the number of the old element, and insert it into the housing (prior check if the elements sealing are undamaged and tighten them)
- Mount filter cover; following tightness power had been fixed for the screw connections on the filter covers: M12 → 65...70 Nm
- finally perform the steps described in 3.2 "Filling and air-bleeding"

4.2 Cleaning the filter element

Metal mesh filter elements can be recycled after cleaning. This cleaning procedure can be performed based on the cleaning instructions for Eaton metal mesh filter elements on sheets no. 21070-4 and 39448-4.
When removing and reinserting the element please proceed as described in 4.1 "Replacing the filter element".

The maintained side of the filter is now ready to operate at full strain again.

Attention!

Independent from a necessary change of the element, the switching armature has to be actuated at least once per three weeks in order to maintain full operatibility.

5. Service

The service will be performed by

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Special questions about the operation of the filter will also be answered within this area.
Spare parts respectively wearing parts have to be ordered according to the spare part list of the filter-data-sheet.