

This manual is effective for all filters of the type DUV 635, 1050, 2050, 2005, 3005, 4005 and related specifications DU-vertical. 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 can not 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 any more!
- 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 INTERNORMEN documentation N° 41269 "Supplementation of the Operating Manual for the use of filters in potential explosive areas.

## 2. Installation

### Note safety instructions!

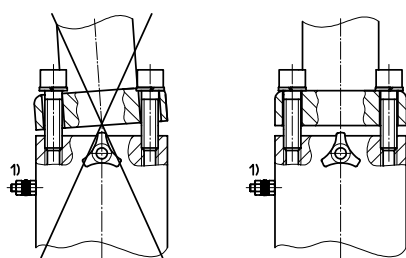
When removing a new filter from its box it is ready for installation. It is placed on a level area and screwed to it. Afterwards remove protective caps from connections and connect those to the present pipe work.

Appropriate pipe work (pipes, hoses) ensures that drain and air-bleed valves are connected to proper containers. For these purposes original INTERNORMEN drain and air-bleed valves can be used.

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, air-bleeding and pressure measurements 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.
- counterflanges or screw joints of the pipe system and the filter have to be angled precisely and connected that same way (if counterflanges or pipe joints are canted or under tension switching filters can be aggravated and it might harm pressure tightness)

Fitting the counterflanges



wrong

correct

1) connection for the potential equalisation,  
only for application in he explosive area

- the following torques have to be applied when fastening the counterflanges

Type	DU/DUV 635	DU/DUV 1050/2050/2005/3005/4005
Moment [Nm]	40 ±8	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:

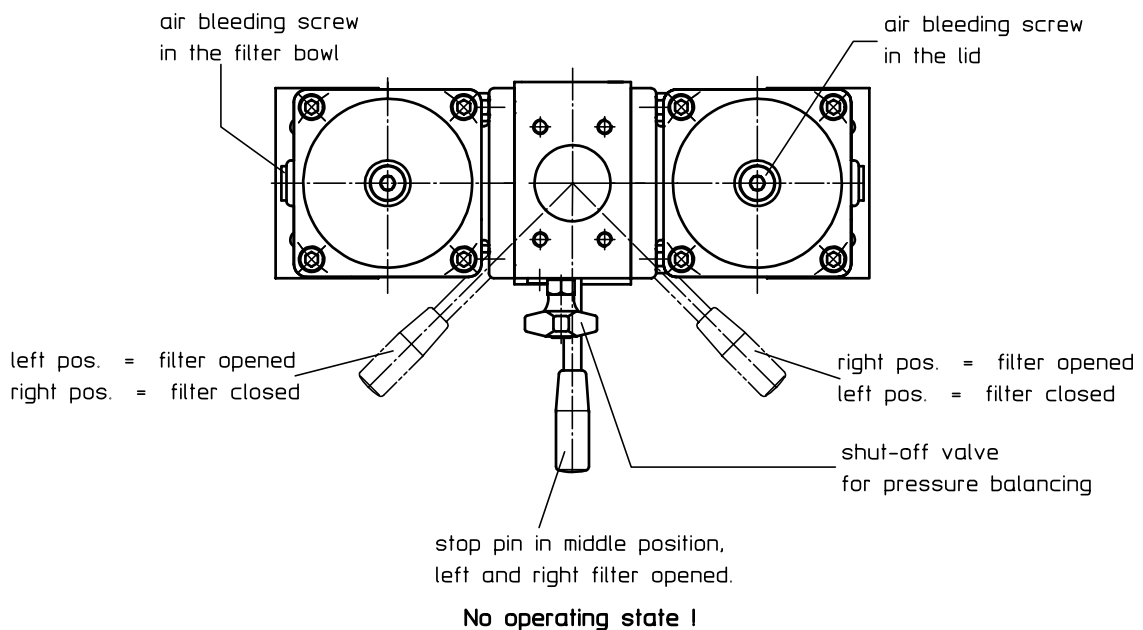
- Open the filter housing by removing the lid. Check the cleanness of the housing, the presence of an element, the sealing, etc..
- Close the housing tight.

### **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 using the regular operating fluid flow.
- Open the locking screws on the top of the filter lid. Wait until it leaks fluid without any bubbles and there is no more sound of air escaping.
- afterwards tighten the locking screws again.

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:



## 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)
- Close the filter with it's lid.
- 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 INTERNORMEN 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 operability.**

## **5. Additional information**

In addition to the regular clogging indication, the pressure drop, which is evidence for contamination, can be monitored and checked. On filters certain miniature measuring devices with a G ¼ A inside thread can be connected to the switch housing. For this purpose it is necessary to install measuring connections with M16 screw joints.

## **6. 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.