Manual and maintenance instructions

for Eaton-Pressure filter, change-over
DSF/EDSF 1201-15001, DSF/EDSF 1205-10005

The pressure filter with change-over valve, type DSF/EDSF 1201-15001, DSF/EDSF 1205-10005 are designed for filtration of operating fluids according to the technical parameters of the data sheets (or in case of special design the corresponding data sheet).

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.

2. Installation

The filter is supplied and delivered ready to be installed. The fitting position of the filter is vertical. The filter has to be fitted with fastening screws in size and amount according to the corresponding fastening bore holes of the filter housings. The fitting of the filter has to be carried out in the way that the least possible transmission of tensible forces on the filter housing and the change-over valve is given. The connection of the pipework has to be made with flanges for pipework.
Ensure upon assembling that

- no dirt and no impurities of foreign fluids penetrate the filter
- the connections for input and output are correctly connected to the pipe system
- the pipe system is connected with the filter; as stress-free as possible
- the extension to demount and the accessibility to the service elements is guaranteed

Filter with electrical respectively electronic clogging indicators have to be installed according to the unit specific conditions and according to the technical parameters of the corresponding data sheets.

3. Commissioning

Before commissioning the completeness of the filter (filter elements and seals) and the cleanness have to be controlled.
Air bleeding of the controlled filter has to be carried out to the following instructions:

- The positioning pin of the selector shaft has to be located in the middle position
- Opening of the air-bleed screws or air-bleed connections (air-bleed connections according to data sheet 1651 and connection of suitable air bleeding tubes with coolecting pan for the flow out of the operating fluid
- Connection of the unit volume flow (reduced volume flow; from 10 to 50 l/min) until bubble-free operating fluid flows out of both air bleeding tubes
- Disconnection of the unit volume flow
- Remove the air bleeding tubes and close the air-bleed bore holes or air-bleed connections (air-bleed connections according to data sheet 1651)
- Connection to the required filter side at the positioning pin of the selector shaft (see instruction plate at filter)

4. Change of Elements

The changing of the filter elements is necessary when reaching the unit specific pressure difference respectively reaching the maximum pressure difference given by the clogging indicator. If there is no unit specific definition, the change of the elements should be done at a maximum of Δp 6 bar.
This has to be carried out as follows:

- Opening of the pressure balance valve
- Switching over the positioning pin from the operating side through the other side
- Closing the pressure balance valve
- Connect the air-bleed and the drain plug of filter side to be maintained with suitable pipes and place a collecting pan for the operating fluid flowing out
- Opening of the air-bleed and drain plugs of the filter side to be maintained until no more operating fluid flows out
- Release of the screws of the lid of the filter side to be maintained and remove the filter lid
- Remove the retaining plate for the filter elements (DSF/EDSF 1201-15001)

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- Remove the filter elements
- Cleaning of the filter housing. Pay attention, that no dirt and no cleaning fluid get to the clean side (that means through the open centering pivot into the filter elements)
- Replace the new or the cleaned filter elements
- Place the retaining plate and thightening the nuts at the threaded rod, until all filter elements are axially fixed (DSF/EDSF 1201-150001)
- Fix the filter lid onto the filter housing and tighten the screw plugs. The screw have to be tightened over cross and have to be tightened again after the first pressure load
- Closing of the drain plugs
- Opening of the pressure balance valve until bubble-free operating fluid flows out of the air-bleed connection
- Close the pressure balance valve and the air-bleeder

Now, the serviced filter side is ready for operation.
In general take care about the absolute cleanness during the changing of elements. No dirt respectively no impurities should penetrate the filter. The new elements should be taken out of their packing shortly before they are replaced in the filter housing because of mechanical damage.
During the changing of elements control the seals and their quality. Damaged seals have to be replaced by new ones.
Concerning the bolted connection at the filter lids the following turing moments are prescribed.

M16	M20	M24	M27	M30	M33
80 +/-8 Nm	160 +/-15 Nm	250 +/-25 Nm	400 +/-40 Nm	600 +/-60 NM	700 +/70 Nm

5. Cleaning of the Filter element

Filter elements with filter materials such as glass fibre (VG) or paper (P) are not cleanable. They have to be replaced after the dirt retention capacity has been reached. Filter elements with filter materials such a wire mesh (G) are cleanable and could be used again.
The cleaning of the filter elements has to be carried out according to the cleaning specification for Eaton filter elements (metal), sheet-no. 21070-4 and 39448-4.

6. Pressure Difference Measuring

In case of filters installed with clogging indicators a permanent measuring of the pressure difference takes place. The indication corresponds to the kind of clogging indicators; either visual or visual and electrical respectively electronic.
Additionally the measuring connections G ¼“ could be installed on the selector shaft to be used for external pressure gauges.
Recommended are the measuring connections according to data sheet 1650.

7. Special application

Differing from the ordinary operation of the filter the filter can be used for system-dependent special operating modes.

- Operation in explosive areas

There are additional requirements for filters that are installed in explosive areas according to the INTERNORMEN documentation No. 41269
“Addition to the operating and maintenance instructions for the application of filters in explosive areas”.

- Flushing operation for machines with an increased rate of delivery

There is an additional Eaton documentation No. 51354 which is valid for the flushing operation with an increased rate of delivery
“Addition to the operating and maintenance instructions for the flushing operation in machines”.

8. 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.

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