Manual and maintenance instructions

for Eaton-Pressure Filters PN > 100 single or banked

This manual is effective for all filters of the type series

- HP/HP3	- HPW	- HPY	- HNU	- MLO	- MNL
- HPP	- FHP	- HNL	- HPU	- ML	- MDV
- HPF	- HPZ	- HNLP	- HPV	- MFO	- BHP
-HPFO	- HPX	- HNLF	- MNU	- MF	

- EH
- EHP
- EHPF
- EBHP

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
The pressure filters listed above are intended for the filtering of liquid media.

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 the disregarding of 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 and temperature range, 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.
- Leaking operating fluid always brings a danger of injuries and burns!
- Do not open the filter housing until you made sure that 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 Eaton documentation N° 41269 "Supplementation of the Operating Manual for the use of filters in potential explosive areas.

2. Details Regarding Point of Installation

For information regarding space requirements for the operation and maintenance of a filter,
fitting or connection requirements for the installation, and permissible operating environments, see the corresponding data sheet.

When using a filter which provides an electrical output signal, the electrical connection requirements can be found on the data sheet for the clogging indicator.

When exchanging filter elements, the release of some remaining oil is to be expected, and this should be disposed of in the proper environmentally acceptable manner.

3. Packaging, Transportation, Storage and Installation

The filter is packed so that, under normal conditions, no demage can occour during transportation. The packaging is not weather resistant, however, so that storage of the filter in closed premisesa is necessary. The filter is delivered ready-to-install. It should be fitted in the orientation shown on the data sheet in such a manner as to avoid any possible strain on the filter housing.
When connecting a pipe to the filter, take care that:

- no dirt or foreign bodies or liquids enter the filter.
- the direction of flow IN - OUT is adhered to.
- the pipe connections to the filter are under the least possible strain.
- space is allowed for access to serviceable parts and for their removal.

Filter with electrical or electronic clogging indicators should be connected in accordance with individual system requirements and in accordance with the technical parameters given on the relevant data sheets.

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4. Commissioning

Before first time use, check that no parts are missing from the filter (filter and sealing elements) and that all the parts are clean. Should the filter or the filter unit possess air outlets, bleed off the air as follows:

- Connect suitable bleed lines (e.g. high pressure hoses of type M16 according to data sheet 1650) and have a vessel ready to catch the system fluid.
- Set the system fluid in motion (preferably not more than 10-50 l/min (2.6 to 13 gal/min)) until the fluid emerging from the air bleed lines is free of bubbles.
- Stop the flow of fluid.
- Remove bleed lines and close the air outlets.

5. Maintenance

5.1. Element Exchange

The filter element should be exchanged once the pressure difference specified for the particular system has been reached across the filter, or when the maximum pressure difference stated on the clogging indicator has been reached. If nothing is specified for the particular system, the filter element should be changed at max. Δp = 6 bar (87 PSI).
Exchange the filter element as follows:

- Turn off the system and release the pressure in it.
- Open any air or drainage outlets before unscrewing the filter housing or filter closing cap (as on HP 901)
- Catch any fluid ermitted from the system in a suitable vessel.
- Remove the filter element.
- Clean the filter housing or closing cap.
- Install a new, or restored filter element.
- Screwed the filter bowl or filter tube end cap on and tighten it.

  For stainless steel filters of the series EH/EHP/EHPF/EBHP the following must be observed:
  - Before assembling the filter bowl/tube, apply anti-seize lubricant to bowl threads (Part-No. 355135)!

  Tightening torque:

NG 30	NG 40-150 / NG 61-151	NG 170/171-450/451	NG 601-1351
70 Nm [52 lb.-ft.]	80 Nm [59 lb.-ft.]	120 Nm [89 lb.-ft.]	140 Nm [103 lb.-ft.]

- Let any air out of the system as in 4.

The filter is now ready for use.

In general, always pay attention to cleanliness during change, so that no dirt or harmful substances enter it. For this reason, replacement elements should only be removed from their packing the moment they are needed for installation in the filter housing. Always protect them from physical damage.
During an element change, check for the presence and the quality of the seals. Worn seals should be replaced by new ones.
Filter connected as a bank should have their elements changed in all operating filters together.

5.2. Cleaning the Filter Element

Filter elements with filter materials consisting of microglass (VG) or paper (P) cannot be cleaned and must be replaced by new elements once they are saturated with dirt. Filter elements with filter material made of a metal mesh (G) may be cleaned and used again. The cleaning of these elements must be carried out in accordance with the cleaning directions from Filter for metal mesh filter elements, sheet-no. 21070-4 and 39448-4.

5.3. Pressure Difference Measurement

The clogging indicator of the filters provides a permanent measurement of pressure difference. The method of indication depends on the type of clogging indicator - visual, or visual and electrical resp. electronic.
For filters connected as a bank, the terminals IN and OUT are provided on the connector plate to allow a pressure difference measurement for the whole group.

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.

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