Manual and maintenance instructions

for Eaton-line filters
LF 101, 251, 401, 631, 1001, 1950, 2200, 2005, 3005, 4005 related specifications

This manual is effective for all filters of the type series LF 101/251/401/631/1001/1100/1950/2200/2005/3005/4005 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 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 documentation N° 41269 "Supplementation of the Operating Manual for the use of filters in potential explosive areas.

2. Installation of the filter

Note the safety instructions!

The filter has to be installed without any potential in an upright position using the fixing installations intended for these purposes.
Also make sure, that

- sufficient fixation of the element is ensured.
- the clogging indicator is accessible and can be checked easily.
- the drain valve (G ½ A, bottom), air bleeding valve (2x G ½ A, top) and pressure measuring connections (2x G¼ A) can be accessed easily.
- there is enough room above the filter to remove and replace elements (also check the data sheet).
- sufficient measures were taken to prevent corrosion
- the filter is protected from other mechanical influences (such as impacts and hits).

Counterflanges of the pipe-system have to be connected properly to the „In“ and the “Out” flanges of the filter, in order to prevent any force to be applied onto the filter from the pipes. When performing these steps make sure no contamination or other particles enter the filter.

Following fastening torques are suggested for the counter flanges and filter cover:

M8	M10	M12	M16	M24
20 ± 5 Nm	45 ± 5 Nm	60 ± 5 Nm	130 ± 10 Nm	250 ± 25 Nm

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

Filters with electric or electronic clogging indicators require the connection of these devices to suitable power supply. Please note the data sheet and the instructions of the clogging indicators.

3. Initial operation

Note the safety instructions!

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 lit. Check the cleanness of the housing, the presence of an element, the sealing, etc..
- Close the housing tight.

3.2 Filling and bleeding

- Open the air-bleed valve
- Fill the filter until the operating fluid leaks from the air-bleed valve free of bubbles.
- Close the air-bleed valve

Afterwards the filter is ready for operation.

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4. Maintenance and 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!

Caution!

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 Installing the filter element

Note safety instructions!

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

- Shut down the entire machine and relieve the system pressure from the filter. Equalize the pressure with the surrounding atmosphere.
- Open the drain valve,
- Remove the lit of the filter and lead off the escaping operating fluid into qualified containers.
- Remove the element by light swaying and pulling.
- 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.
- Check the sealing of the filter lit 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 lit,
- finally perform the steps described in 3.2 “Filling and 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 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 “Installing the filter element”.

Caution!

When using a filter with single-service elements always keep enough replacing elements in stock!

5. Measuring pressure difference

Note safety instructions!

The pressure drop on the filter, which indicates the contamination of the element, is measured using the installed clogging indicator. If a certain limit value (also see specification of the element) is reached, a signal (visual or electrical) will be emitted.
In addition to that, the pressure loss can be determined externally using the measuring connections G ¼ A based on DIN 3852 T2 on both inlet and outlet of the filter. Miniature measuring connections EMA 3/R ¼ Ermeto are preferred as the connecting elements for pressure difference detection.

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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