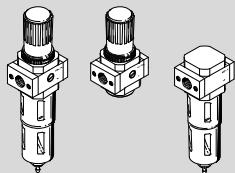


# LFR(S)-/LR(S)-/LF-/LFM...-/LFX...-D-MINI/ MIDI/MAXI



**FESTO**

Festo AG & Co. KG  
Ritter Straße 82  
73734 Esslingen  
Germany  
+49 711 347-0  
www.festo.com

Operating instructions  
(Translation of the original instructions)

8093024  
2018-08j  
[8093026]

Filter regulator LFR(S), pressure regulator LR(S), filter LF, fine/micro filter LFM..., activated carbon filter LFX ..... English



## Warning

Products under pressure can cause injury to human beings and damage to property.

- Before carrying out installation and maintenance work always switch off the compressed air supply.
- Use shut-off valves in the compressed air tubing for exhausting the system.



## Note

Fitting and commissioning to be carried out only by qualified personnel in accordance with the operating instructions.

This product is designed to be operated with compressed air only. The product is not suitable for use with other media (liquids or gases).

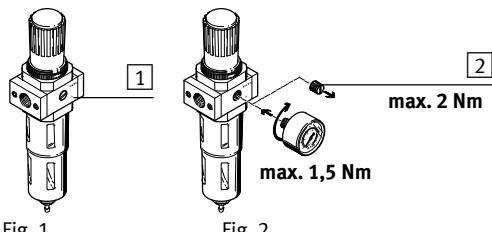


Fig. 1 Fig. 2

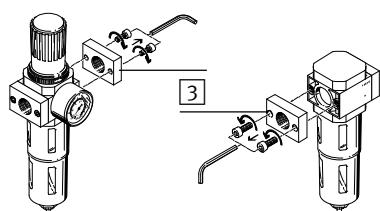


Fig. 3

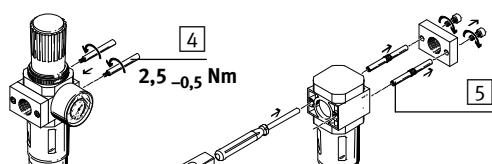


Fig. 4 Fig. 5

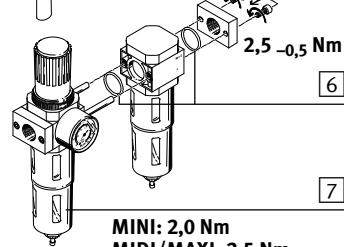


Fig. 6

## 1 Application

The filter regulator LFR(S) and the pressure regulator LR(S) regulate compressed air in the subsequent line to the set output pressure p2. The LFR(S)/LR(S) thereby smoothes out pressure fluctuations. The output pressure p2 can be set within the pressure regulating range (→ “Technical specifications”).

The filter regulator LFR(S) and filter LF with water separator remove dirt particles and condensate, the fine/ultrafine filter LFM... dirt particles and oil drops, and the activated carbon filter LFX gaseous oil components from the compressed air blown through it.

## 2 Conditions for the safe use of the product

Improper handling can result in malfunctions. Make sure that the following specifications are always observed:

- Compare the limit values specified in these operating instructions with your actual application (e.g. operating media, pressures, temperatures, masses, flow rates).
- Take into consideration the ambient conditions at the location of use.
- Unauthorised product modification is not permitted.
- Remove dirt particles in the supply lines by blowing out the tubing with compressed air. In this way you will protect the device from premature failure or heavy wear (→ DIN ISO 4414, section 9.4).

## 3 Installation

### 3.1 Mechanical

- Note the direction of flow from 1 to 2. The arrow 1 on the product housing serves as an orientation (→ Fig. 1).
- Place the LF... with sufficient space below the filter bowl (min. 90 mm).
- Adjust the LF... when it is standing vertically ( $\pm 5^\circ$ ).

### Fitting together a filter combination

- Note the sequence of filters in the direction of flow.  
If fitted correctly, the fine filter LFMB (1 µm) comes first, then the micro filter LFMA (0.01 µm) and last the active carbon filter LFX.

### Mounting pressure gauge (→ Fig. 2)

1. With LFR(S)/LR(S)...-O:

- Remove the screw plug 2 on the pressure gauge connection or alternatively on the connection on the rear of the device.

For LFR(S)/LR(S), supplied with pressure gauge:

- Place the screw plug on the other connection if you wish to use the alternative connection on the rear of the device for the pressure gauge.

2. Turn the pressure gauge MA clockwise into the LRB(S)/LR(S) up to the stop. The pressure gauge seal is preassembled on the threaded connection journal.

### Fitting together with an existing service unit of the same size → Fig. 3 ... 6

1. Remove sub-base 3 (if present) of the two units on the sides to be fitted together.

2. Turn threaded pin FRB-D 4 (order separately, if needed) into the basic unit.

3. Remove sub-base (if present) on the respective unit to be attached and push out the related spacer bolt 5 (push out in the direction of flow).

4. Mount unit to be attached with sub-base. There must be one seal 6 each between the individual units as well as the sub-base.

### 3.2 Pneumatic

If using screw connectors:

- Screw the connectors into the pneumatic connections using a suitable sealing material.

## 4 Commissioning

1. Unlock the turning knob.

LFR/LR-D	LFRS/LRS-D
– Pull the turning knob up and away from the housing.	– Turn the key in an anti-clockwise direction until the end position is reached.

- Fig. 1
2. Turn the turning knob completely closed in the direction of “-”.

3. Pressurise your system slowly.

4. Turn the turning knob in the “+” direction until the desired pressure is displayed on the pressure gauge.

The permitted pressure regulating range (→ “Technical specifications”) must not be exceeded.

Correctly pressurised, the input pressure p1 is at least 1 bar higher than the output pressure p2.

5. Lock the turning knob.

LFR/LR-D	LFRS/LRS-D
– Press the turning knob down to the housing.	– Turn the key in a clockwise direction until the end position is reached. If necessary: <ul style="list-style-type: none"><li>• Pull the key out.</li></ul>

Fig. 2

## 5 Care and maintenance

When there is a condensate level of approx. 10 mm below the filter element.

Manual outlet	Full-automatic outlet LFR(S)/LF...-....A
Unscrew the outlet screw in an anti-clockwise direction (as seen from below).	Filter empties automatically. (manual emptying: Unscrew the outlet screw in an anti-clockwise direction as seen from below).

Fig. 3

### Replacing the filter cartridges

- Replace the filter cartridge if it shows signs of the following:

LFR(S)/LF	LMF...	LFX
Low flow rate despite unmodified pressure setting	Drop in pressure: $\Delta p$ greater than 0.35 bar	We recommend that the filter be replaced after every 1000 operating hours

Fig. 4

- Exhaust the device.
- Unscrew the filter bowl 7 anti-clockwise.
- For LFR(S)/LF: Unscrew the filter plate anti-clockwise and remove the used filter cartridge.  
For LFM.../LFX: Unscrew the used filter cartridge anti-clockwise.
- For LFR(S)/LF: Place the new filter cartridge onto the filter plate and tighten it hand-tight.  
For LFM.../LFX: Hold the new filter cartridge only at the lower end and tighten it hand-tight.
- Screw the filter bowl in tight (tightening torque → Fig. 6).
- Carry out commissioning again in accordance with chapter 4 "Commissioning."

### Cleaning

- If the device is dirty, clean the exterior with a soft cloth. Permitted cleaning agents are soap suds (max. +60 °C) or petroleum ether (free of aromatic compounds).

## 6 Eliminating malfunctions

Malfunction	Possible cause	Remedy
Low flow (operating pressure breaks down at air pressure)	Filter cartridge is dirty	Replace filter cartridge
	Restriction between shut-off valve and service unit	Check tubing
Pressure increases above the set working pressure	Valve plate defective at sealing seat	Replace device
Audible blow-off at the turning knob	Valve seat damaged	Replace device
Blowing can be heard at the outlet screw	Outlet screw leaks	Tighten or replace

Fig. 5

## 7 Technical specifications

Type	LFR(S)/LF	LMF...	LFX
Supply pressure [bar]	Max. 16 without fully automatic condensate drain Max. 12 with fully automatic condensate drain		
Pressure regulation range [bar]	0.5 ... 7 (for LFR(S)/LR(S)-...-D-7) 0.5 ... 12 (for LFR(S)/LR(S)-...-D-7)		
Operating medium	Compressed air to ISO 8573-1:2010 [-9:-] [6:8:4] [1:4:2]	Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60	+1,5 ... +60	+5 ... +30

Fig. 6