

Compressed Air Filter And Regulating Valve

Type: LFRN-1/4 B



Operating instructions

Compressed air filter and regulating valve for low pressure Type LFRN-1/4-B



Application

Service equipment provides properly conditioned compressed air - the prerequisite for functional reliability and a long service life, and thus for the economy of pneumatic components and systems. Compressed air filters rid the shop air of droplets of moisture, and solid components such as dust, scale, rust, etc.

The compressed air regulating valve maintains a largely constant operating pressure independent of air consumption and pressure fluctuations in the line. The filter and regulating valve in this device are combined into one unit.

Mounting

the direction of flow has been set at the factory from left to right (note arrows on top of housing). To change the direction of flow, simply switch the brass screw [1] and the pressure gauge [2]. Screw on the mounting bracket [3] after having turned it through 180° (Fig. 1)

Mounting the pressure gauge

Slide the aluminum sealing ring [4] onto the threaded stem of the pressure gauge, and screw in the pressure gauge by hand. When a resistance is felt (contact with seal), screw in the pressure gauge by approx. 1 additional turn using a 14 mm open-end wrench, and a line the pressure gauge (the brass screw on the opposite end has a perbunan seal [5]).

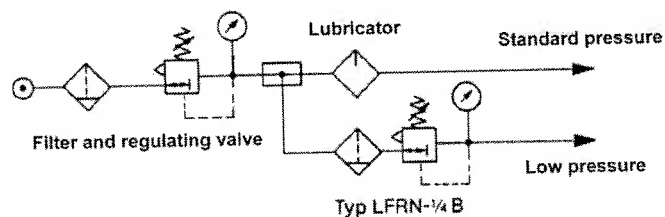
The unit can be installed in the line or mounted by means of a bracket as desired (M 6 or 6.4 mm). The unit is to be installed vertically $\pm 5^\circ$.

Note:

The filter and regulating valve must always be installed upstream of the lubricator. See application example. The use of a preliminary filter with a mesh width of 40 μm increases the service life of the filter cartridge (e.g. prefiltering with LFR-1/4-S).

Application example:

Supplying sensors with compressed air.



Compressed air filter

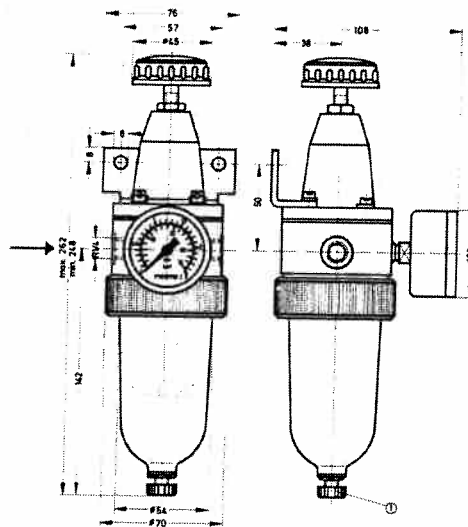
The condensate is blown out under pressure (Fig. 2) when the drain screw [7] on the filter bowl is opened. The drain screw for manually emptying the filter bowl can be replaced by an automatic condensate drain (Order Designation: Type WA-1).

Cleaning the filter bowl:

Removal or replacement of the filter cartridge:

Pressure regulating valve

Adjustment of the operating pressure is made from above (Fig. 4) using the pressure adjustment knob [12]. Turning the knob clockwise increases the pressure; turning the knob counterclockwise reduces the pressure. The pressure adjustment knob is locked by tightening the hexagonal nut [13].



Function

Compressed air filter

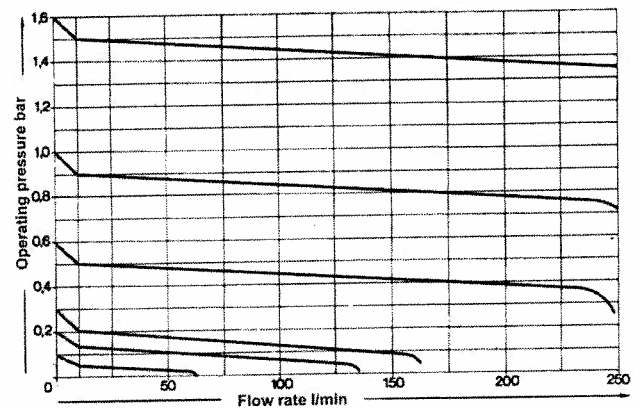
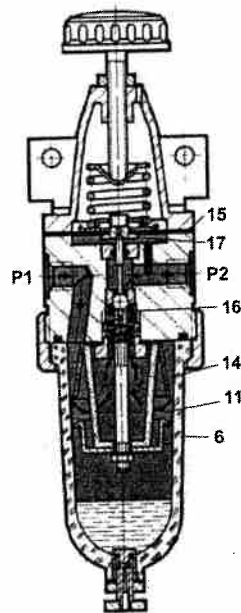
Liquid and large, solid particles are thrown against the inner wall of the filter bowl [6] via a helical cone [14]. This condensate collects in the lower section of the bowl and must be emptied from time to time (see marking). The filter cartridge [11] retains the remaining solid impurities.

Pressure regulating valve

The diaphragm [15] is at equilibrium. The spring force which is adjusted via the handwheel matches the pressure on the lower piston surface. The line pressure P_1 acts on the valve cone [16] from below and makes a seal. As air is consumed, the operating pressure P_2 is reduced and thus lowers the pressure on the bottom of the diaphragm [15]. The spring force lifts the valve cone [16] from its seat. Compressed air flows.

Secondary exhaust

If the operating pressure P_2 (secondary side) exceeds the set value (e.g. when the handwheel is turned back) the pressure acting on the bottom of the diaphragm [15] becomes greater than the spring force. The diaphragm lifts off of the valve cone [16] and compressed air escapes into the open via a hole until the operating pressure corresponds to the reset value.



Operating pressure as a function of the flow rate.

Technical Specifications

Type	LFRN-1/4-B
Connection	R 1/4
Flow range	see graph
Upstream pressure max.	10 bar
Pressure regulating range	0,1 to 1,6 bar
Air consumption rate of unit	1 l/min
Filter rating	8 µm
Temperature range	-10 to +60 °C
Materials	Housing: Al; filter bowl: special polyamide, shatter-proof; seals: perbunan
Weight	1,0 kg

Troubleshooting

Symptom	Cause	Remedy
No pressure indication	Main cock closed Pressure not set	Open main cock. Set pressure using adjustment screw
Low flowrate (operating pressure breaks down during air consumption)	Filter cartridge is loaded Restriction between main cock and service unit	Clean filter cartridge (see operation and maintenance) Check line
Pressure rises above the set operating pressure	Valve cone [16] on seat is defective	Replace seal
Audible blow-off at the pressure control knob	Diaphragm [15] or valve cone [16] does not seal at seat [17]	Replace diaphragm Replace both components
Audible blow-off at the drain screw	Drain screw leaks	Tighten or replace

Replacement pressure gauge Type MA-50-2,5

The right of modification is reserved

