



## ALF-B – Alfa Laval Filter

Filtration for cooling systems using low-quality water



Alfa Laval Filter (ALF) is the perfect companion to utility heat exchangers that use sea, lake or river water as the cooling medium. ALF filters remove all debris and marine life that can cause clogging, reducing the risk of unplanned downtime and prolonging heat exchanger service intervals.

Several thousand ALF filters are in operation in cooling systems around the world. Typical applications include power plants, processing industries, sea vessels and comfort cooling systems.

ALF-B gives you standardized, reliable protection for your heat exchangers and fully automatic operation (backflushing). The low pressure drop and minimal maintenance requirements ensure low lifecycle costs.

An ALF-B filter is most often used in conjunction with one or more heat exchangers, but can also be used for protecting tubular condensers, cooling tower spray nozzles or any similar equipment.

ALF-B is available in four sizes with connections ranging from 100 mm to 300 mm.

### Benefits

- Heat exchangers are protected from debris and marine life, increasing cooling system uptime and lowering maintenance costs
- Backflushing is performed automatically and does not interrupt the filtering process
- Easy installation and maintenance
- Proven, reliable technology
- Full support from Alfa Laval Service throughout the entire equipment lifecycle

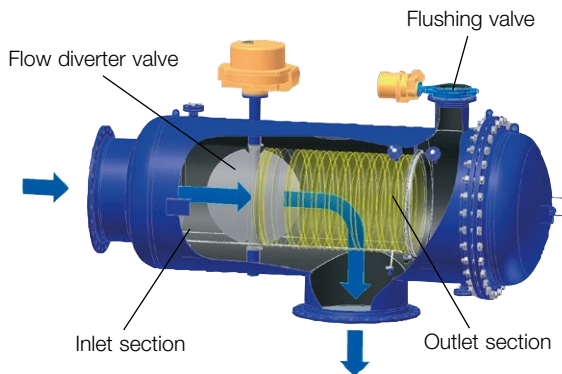
### Design and operation

ALF-B is a pressure filter with an automatic flushing arrangement. The filter body is made of rubber-lined carbon steel. The filter basket and all other wetted parts are made of stainless steel, super stainless steel (SMO) or titanium, depending on how aggressive the medium is.

A differential pressure control system monitors pressure drop over the filter basket and indicates when cleaning is necessary. ALF-B units can be cleaned either automatically, at predetermined intervals, or manually. The unit is flushed using the inlet pressure, which is carried out without interrupting the filtering process.

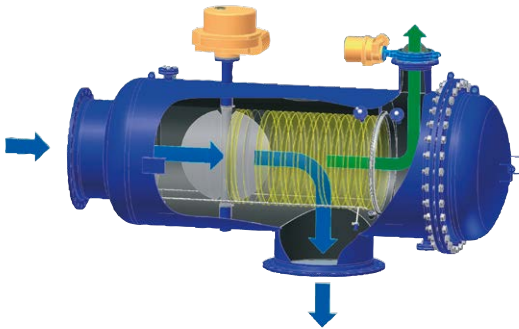
## Operating modes

### 1. Normal operation



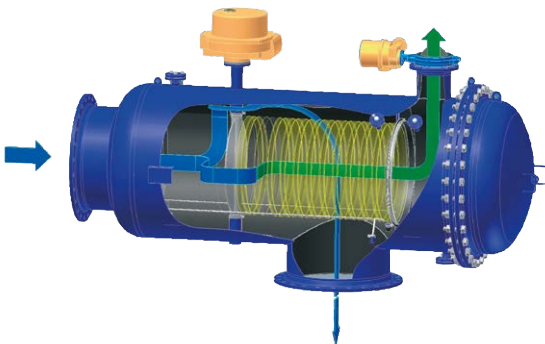
The flow diverter valve is open and the flushing valve is closed. The liquid passes through the filter basket and is discharged through the main outlet.

### 2. Primary flushing



The flushing valve opens, reducing the pressure drop and increasing velocity and total flow through the filter. Any debris sticking to the filter basket is dislodged and flushed out through the flushing valve. The velocity of the liquid is sufficient to remove any debris embedded in the inlet section of the basket.

### 3. Secondary flushing (backflushing)



The flushing valve remains open and the flow diverter valve closes, forcing the flow to pass through the filter basket in the inlet section. Most of the liquid is discharged through the main outlet, but the pressure forces part of the flow to backflush the filter basket in the outlet section. The dislodged debris exits through the flushing valve.

## Installation

ALF-B is designed to be placed directly in the pipe system and is installed horizontally. The inlet is placed at one end and the main outlet at a 90° downward angle. The inspection/service opening is placed on the opposite side of the inlet, providing easy service access with no need to remove the pipe connection. The flush outlet points upward at a 90° angle from the inlet.

ALF-B units can be installed upstream of heat exchangers with shut-off valves placed upstream of the filter and downstream of the heat exchanger. This enables flexible servicing if many units are installed in parallel – for instance in a duty/standby installation or when installed on a bypass pipe, allowing the filter to be taken out of service separately.

Depending on pipe dimensions, flow rate and the permissible pressure drop, one ALF-B filter can be installed to protect several heat exchangers. The filter(s) should preferably be mounted close to the heat exchanger(s) in order to minimize the risk of biological growth in the pipe system connecting the components.

We recommend connecting the flushing outlet to the heat exchanger outlet when possible, and returning the debris to the natural water source. It is important that the filter is installed downstream of the feed pump(s).

## Part of the ALF range

ALF-B is part of the ALF range, comprising models in various materials with different configurations and options. The ALF-R model is similar to ALF-B but can be customized to meet your specific requirements. Contact your local Alfa Laval representative or visit [www.alfalaval.com](http://www.alfalaval.com) to learn more.

## Extending performance with the Alfa Laval 360° Service Portfolio

Our extensive service offer ensures top performance throughout the lifetime of your Alfa Laval equipment. Excellent availability of parts and the commitment and expertise of our team bring you peace of mind.

### Start-up

- Installation
- Installation Supervision
- Commissioning

### Maintenance

- Service kits and spare parts
- Preventive maintenance
- Repairs

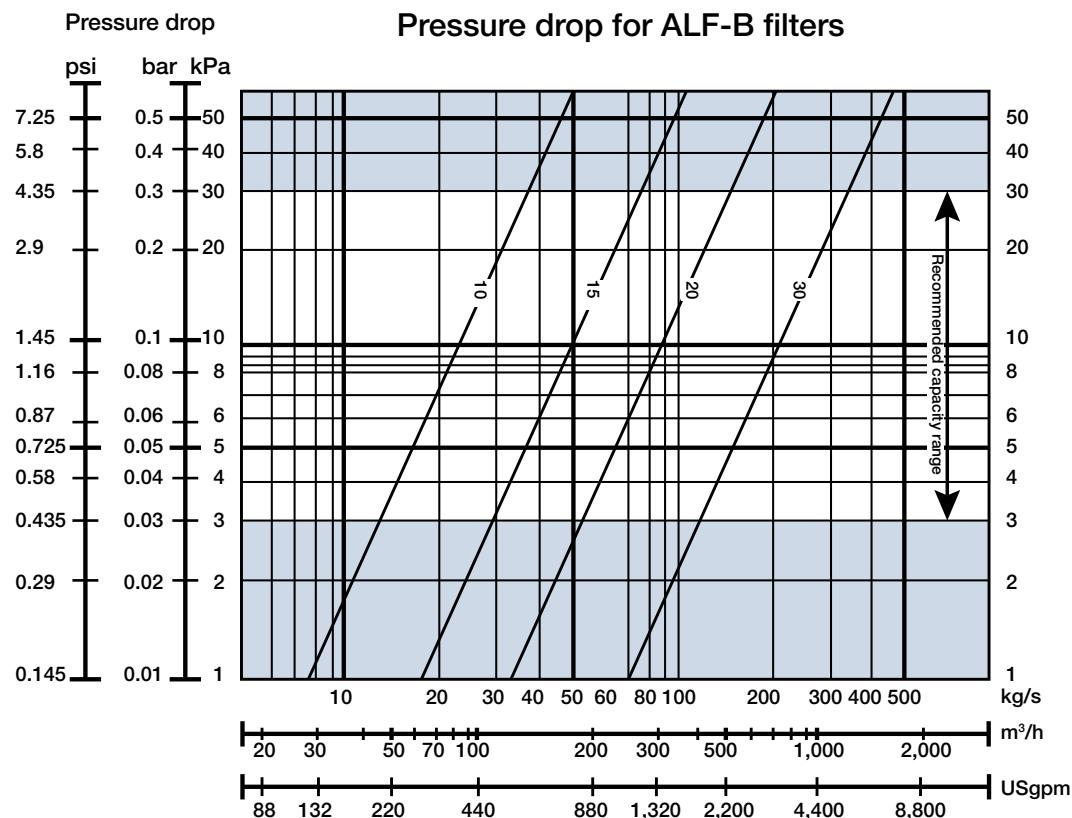
### Support

- Troubleshooting
- Telephone support
- Training

### Improvements, monitoring

- Equipment upgrades
- Replacement and retrofit

We can also create a Performance Agreement – a customized service agreement for you that includes any or all of the above services.



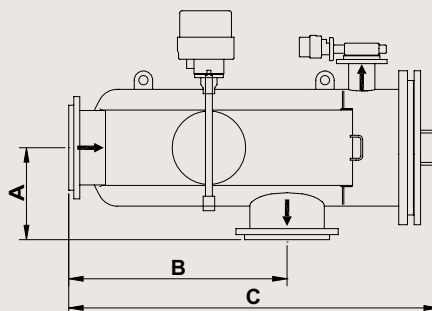
#### Technical data

Connections	EN 1092.1/PN10	DN100-DN300
Operation	Pneumatic, electric	Actuator controlled valves
Mesh size	Perforated plate design (Ø hole)	1.0-1.5-2.0-2.5 mm
	Wedge wire design (slot size)	0.1-0.3-0.5-1.0 mm
Materials	Filter body	Rubber-lined carbon steel P355GH / ASTM A516 Gr 70
	Internal parts (wetted)	Stainless steel EN 1.4404 ASTM 316L
	Internal parts (wetted)	Super stainless steel, EN 1.4547 / ASTM S31254 (SMO)
	Internal parts (wetted)	Titanium, EN 3.7025 / ASTM B265 Grade 2
Design code	EN13445	
Design pressure	10 bar (g) / 150 psi	
Design temperature	65°C / 149°F	
Control panel	PLC-based	Power supply: 1~ 110-230 V, 50-60 Hz

#### Dimensions



ALF-B with filter casing made of rubber-lined carbon steel



#### ALF-B

	A	B	C
ALF 10B	146	411	696
ALF 15B	210	567	948
ALF 20B	242	649	1,107
ALF 30B	340	852	1,454

#### How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at [www.alfalaval.com](http://www.alfalaval.com)