KAF Bernoulli

Automatic self-cleaning filter
DN 50 – DN 800 | PN 4 – PN 25 (ANSI 2“-40“)

Krone GmbH
Herbert-Ludwig-Str. 14
28832 Achim
Tel: +49 (0)4202 97 69 20
Fax: +49 (0)4202 97 69 27
info@krone-filter.com
www.krone-filter.com

Areas of use

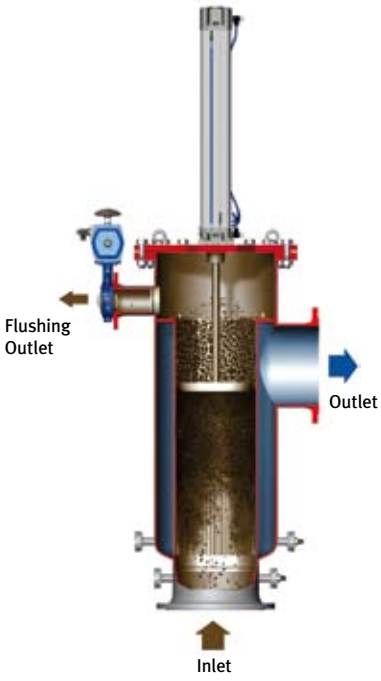
The KAF Bernoulli automatic self-cleaning filter is a versatile self-cleaning essentially maintenance-free filter for removing particulate impurities from water and process liquids with large quantities of such impurities, such as from natural water sources (seawater, river water) as well as from heating or cooling circuits and processes. It works with an operating pressure as low as 0.3 bar, and its features include little loss of pressure combined with a high flow rate, simple robust design, high output, weight and space-saving construction.

- from 0.3 bar working pressure
- The filter can be fitted in any position in the pipe system.

Brief description of its function

While flushing, a specially shaped flushing disc increases the speed between the disc and the strainer. The local reduction in pressure caused by this leads to the dirt particles being sucked off the strainer insert. Solid constituents are flushed through the flushing valve which is opened at the same time. The filter is fitted with a differential pressure monitoring system which initiates the flushing process automatically before the strainer becomes blocked and could lead to considerable reduction in the through flow. The flushing process can also be carried out after a pre-set period.

- The flow of the filtrate is not disrupted, the amounts of liquid used for flushing are small.
- The reduction of pressure drop in the system is minimal.



QUALITY MANAGEMENT Certificate
Voluntary participation in regular monitoring according to ISO 9001:2000

Electronic control panel - it controls up to 2 filters.

Description of the cleaning process

The contaminated medium flows through the flange in the filter which is marked as the inlet. It flows through the filter insert from inside to outside and flows out through the flange which is marked as the outlet. The filter flushing phase is activated either when the pre-set differential pressure is reached, or after the pre-set time interval. The flushing valve opens and larger particles of contaminate are flushed with the continually flowing medium through the loss in pressure. The piston then usually runs through two cycles in the filter basket and thus increases the speed between the piston and the wall of the strainer. The contaminate is sucked off by the reduction in pressure this causes. The flushing period can be set through the controls to take account of the operating conditions. The frequency of flushing depends on the level of contamination in the medium.

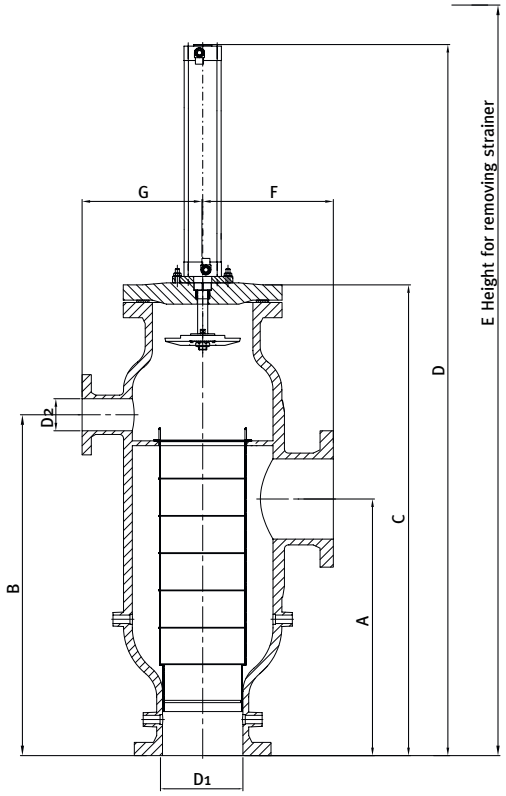
Fitting

Operating instructions: please note the detailed instructions supplied with the filter!

It is fitted into the piping using the flanges. Please ensure that the standard model filter is fitted vertically or horizontally, and that it is not subjected to any mechanical tension or additional load. The medium must flow in the direction shown on the housing. Incorrect installation can lead to the filter not working properly. If the contaminate has to be flushed out in an upward direction, make sure that the filter‘s supply pressure is at least 0.3 bar higher than the back pressure in the contaminant flushing line (note loss through friction in pipes). If the filter is to be used for media other than those for which it was designed or with other operating data, it is essential that the customer checks that those parts which are touched by the medium and the seals are resistant to the medium to be filtered; it may be necessary to consult the manufacturer and to carry out a conformity assessment in accordance with European Pressure Directive (PED) EN 97 / 23 EC (if required, CE certification).

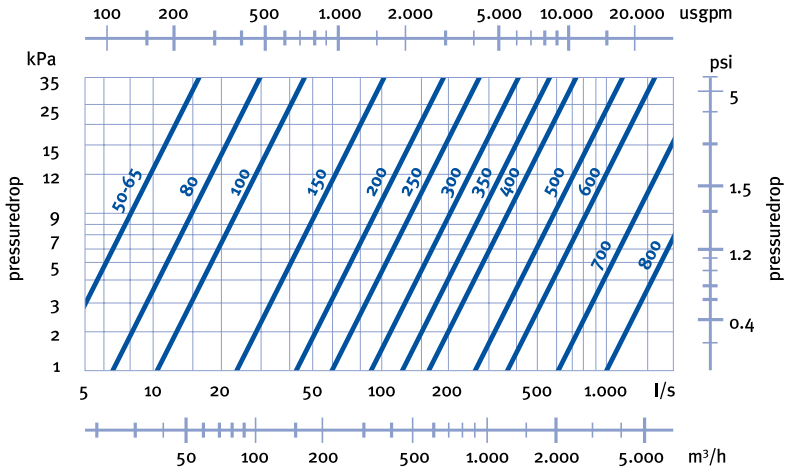
Technical data

	Standard	Special models
Filter insert	200 µm (0,2 mm) – 10 mm	Others on request, e.g. 0.1 mm
Filter lid	Lid with hexagonal bolts and nuts	-
Primer	-	on request
Draining unit	-	on request
Connections	DIN 2632 / 2633	To customer's specification (e.g. ANSI)
Materials:	-	-
Housing: plastic stainless steel	 GRP / FRP (fibre-reinforced plastic on polyester base) 1.4571	 PVC, HDPE, PVDF PP,PE Steel (rubberised)
Seals	NBR	on request
Perforated plate/slotted hole strainer	1.4571 / 1.4401	Titanium, hasteloy
Flushing disc	POM	-
Piston rod	1.4571	Titanium. hasteloy C4, monel
Differential pressure switch	Nickel coated brass	on request
Design:	-	-
Differential pressure switch	Electric with 1 contact for start of cleaning, protection type IP 65	Protection class in explosion proof design (ATEX)
Control	Multi-function unit fitted / not fitted	Explosion proof (ATEX)
	230 V / 50 Hz	on request
	Protection type IP 65	Protection type in explosion proof design
Cylinder	Pneumatically operated	Electric (depending on nominal size) (ATEX)
Required air pressure Contaminant outlet valve	6 bar Isolation valve	3.5 bar (maximator) Valve, ball valve
Surface treatment, inside	-	-
Housing, steel	Anti-corrosion oil	Vulcanoit, Vestosint
Housing, stainless steel	glass bead blasted	Etched and passivated
Housing, GRP / FRP	Chemical resistant Vinilester Liner	
Surface treatment, outside	-	-
Housing, steel	RAL 5010 blue	Customer's specification, e.g. rubberised Vulcanoit
Housing, stainless steel	glass bead blasted	-
Housing, GRP / FRP	GRP outer colour or solid-coloured	PP liner or PVDF liner
Range of use of materials by temperature	-	-
Housing, steel and stainless steel	Limit temperatures : Complying with DGRL or AD2000 regulator -20 °C to 95 °C	Special model: +120 °C
Housing GRP	Limit temperatures: -70°C to +90°C	Special model: +120 °C
Design	PED 97/23 EC (CE))	ASME-Code, ATEX



Flange complying with DIN 2632/2633 PN10-16 or ANSI B 16.5 150 lbs

Dimensioning Chart



Sample dimensions (0.2 mm filter mesh) / selection diagram, at 500 m3/h with 200 µm using a DN 200 or DN 250 is recommended.

Material	D1	D2	A	B	C	D	E	F	G	Weight *	Flow ***	Ex. amount of flushing liquid/flushing (adjustable)
	DN	DN	mm	mm	mm	mm	mm	mm	mm	appr. kg	m³/h	m³
VA/steel **	50	25	310	385	520	1020	1100	200	135	25	8–45	0,04
	65	25	310	385	520	1020	1100	200	135	30	8–45	0,04
	80	40	405	510	620	1100	1200	235	190	35	15–80	0,06
	100	40	430	480	680	1305	1400	240	240	40	40–120	0,09
	150	40	490	680	810	1450	1550	260	255	80	50–300	0,2
	200	80	590	790	1010	1950	2050	290	280	110	100–500	0,54
	250	100	740	980	1250	2180	2280	345	330	165	160–800	1,2
	300	100	890	1155	1440	2510	2610	375	385	200	200–1100	2,2
	400	100	1010	1325	1535	3010	3100	485	465	450	400–2000	4,5
	500	150	1590	2205	2350	3800	3900	695	555	1400	800–3000	9,5
	600	200	1540	3055	3490	4650	4750	900	805	1600	1200–4000	13,5
	700	200	2650	3255	3750	5650	5750	1200	1100	1800	1500–5000	17,0
GRP	40/50	25	420	535	720	1200	1300	165	165	15	8–45	0,04
	65	25	420	535	720	1200	1300	165	165	17	8–45	0,04
	80	40	465	595	800	1300	1400	200	175	20	20–90	0,06
	100	40	490	630	870	1370	1450	225	220	25	40–120	0,09
	150	40	580	750	1030	1680	1750	260	235	30	70–300	0,2
	200	80	660	870	1200	2000	2100	325	300	60	150–500	0,54
	250	100	785	1030	1410	2300	2400	395	350	90	200–700	1,2
	300	100	895	1190	1620	2800	2900	500	400	180	300–1000	2,2
	400	100	1260	1600	2100	3600	3700	575	500	260	500–1800	4,5
	500	150	1750	2170	2760	4300	4400	675	580	715	800–2500	9,5
	600	200	1900	2300	2900	4500	4600	780	640	1100	1200–4000	13,5
	700	200	2200	2600	3100	4750	4850	870	700	1400	1500–5000	17,0

* depending on design pressure. ** rubberised on request, *** depends on filter mesh size