

# Bernoulli Filters

Original Swedish technology. Superior PHE protection.

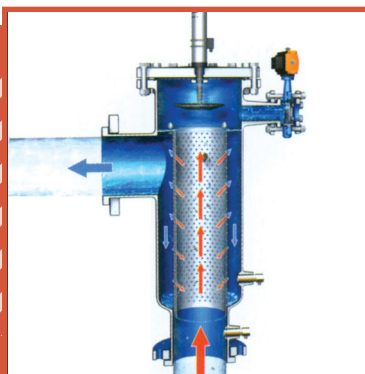
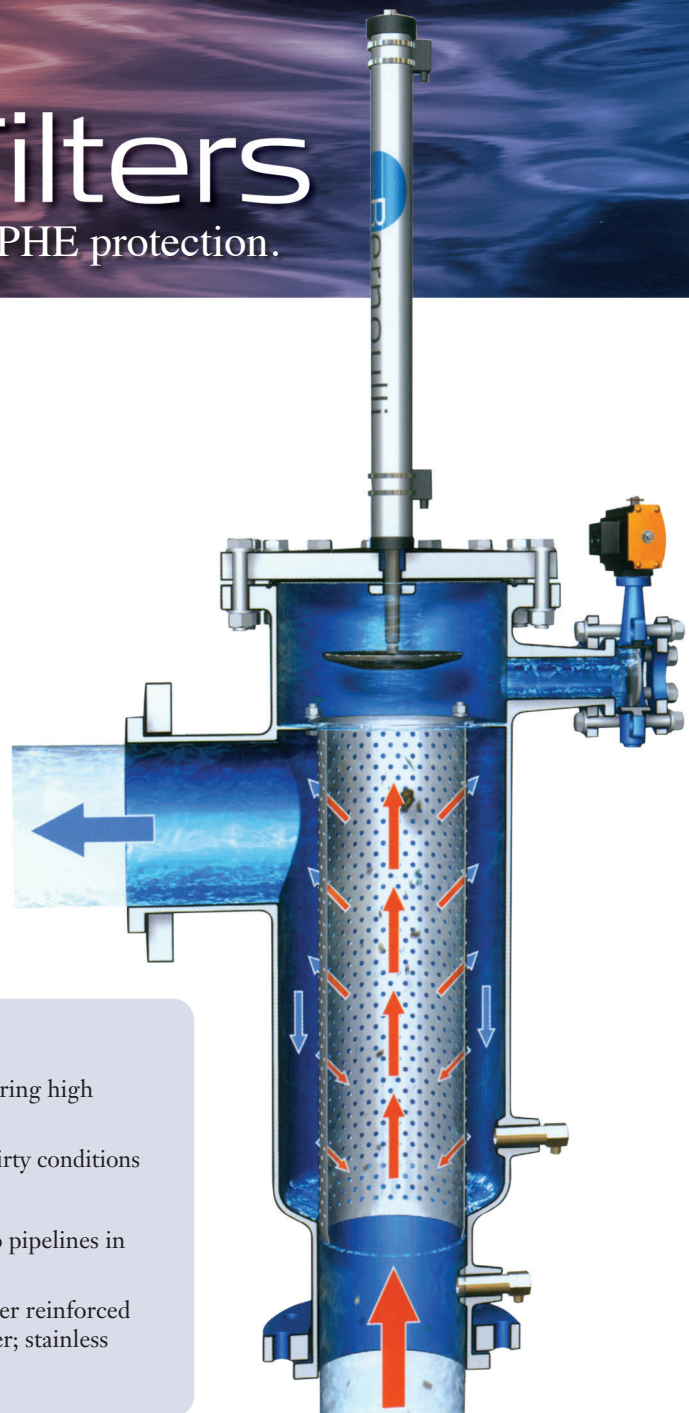
Self-cleaning Bernoulli Filters protect Plate Heat Exchangers in virtually any application, especially where raw cooling water is used. Advanced, yet simple Swedish technology is highly reliable yet demands minimal maintenance. By cooling with untreated water (including seawater), users realize substantial, continuing savings. Yet Bernoulli Filters drastically curtail PHE fouling. The results: minimal cleanup, protection from heat exchanger damage, long system life and reliable operation day in and day out.

## The Bernoulli cleaning principle

In a Bernoulli filter, the bulk of the work is done by a disc mounted on a pneumatic cylinder. The filter basket is cleaned by the disc as water passes through a gap between the disc and the basket. Flow velocity increases locally around the disc. In accordance with the Bernoulli principle, static pressure is reduced. The vacuum effect of lower static pressure around the edge of the disc cleans the basket.

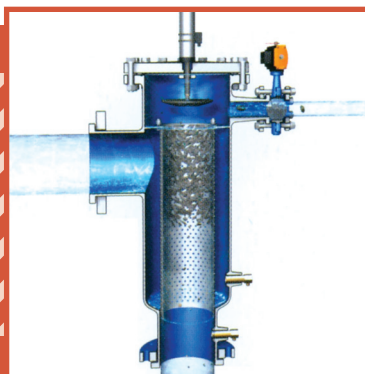
## Advantages

- Simple, effective cleaning system with few moving parts, ensuring high operational reliability and simple maintenance
- A low and constant pressure drop, the same in both clean and dirty conditions
- Low flushing pressure, from 5 psig
- Easy installation: The Bernoulli Filter can be fitted directly to pipelines in almost any position
- Good corrosion resistance: Filter bodies in PVC and glass-fiber reinforced polyester (GRP) are particularly suitable for corrosive seawater; stainless steel filter bodies work best for fresh water applications



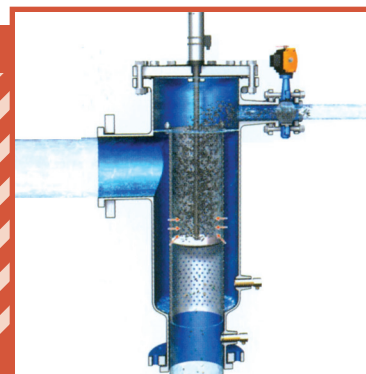
### Normal filtering operation

The flushing valve is closed. The piston remains outside the strainer basket.



### Flushing phase one

Cleaning is initiated by a timer or differential pressure control. The flushing valve opens and large particles are flushed out.

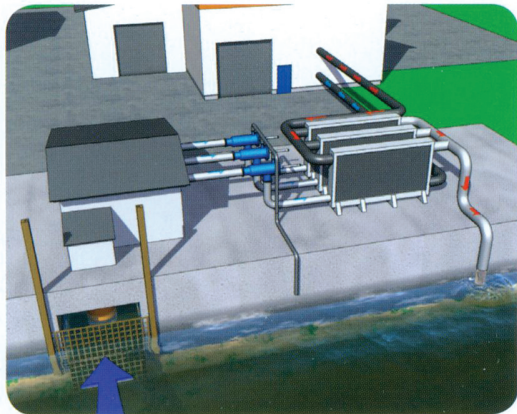


### Flushing phase two

The piston moves twice into the basket, removing particles which are stuck to the basket.

# Bernoulli Filters

– engineered for reliability



Overview picture of the Bernoulli target application, protection of Plate Heat Exchangers (PHE).

## Specifications

| Filter type | Filter body | Design pressure | Max operating temperature |
|-------------|-------------|-----------------|---------------------------|
| BSP         | PVC         | 150 psig        | 40°C (104°F)              |
| BSG         | GRP         | 90/150 psig     | 60°C (140°F)              |
| BSS         | AISI 316L   | 150 psig        | 80°C (176°F)              |

Filtration: 0.1-2.0 mm  
 Max particle size: 40 mm  
 Min flushing pressure: from 5 psig

### Material

Filter body as indicated above  
 Filter basket AISI 316L or titanium  
 Driving unit AISI 316L  
 Piston seal Polyurethane  
 Flushing valve PVC or AISI 316L

### Controls

- Pneumatically operated, psi air pressure
- Voltage 230/120 V 50/60 Hz

### Functions

- Electronic control
- Double supervision system with timer and differential pressure switch

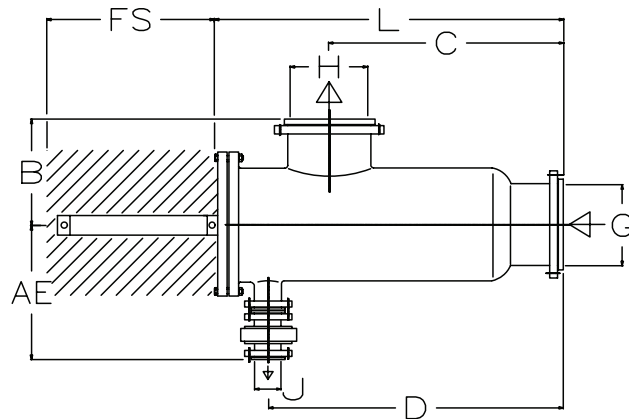
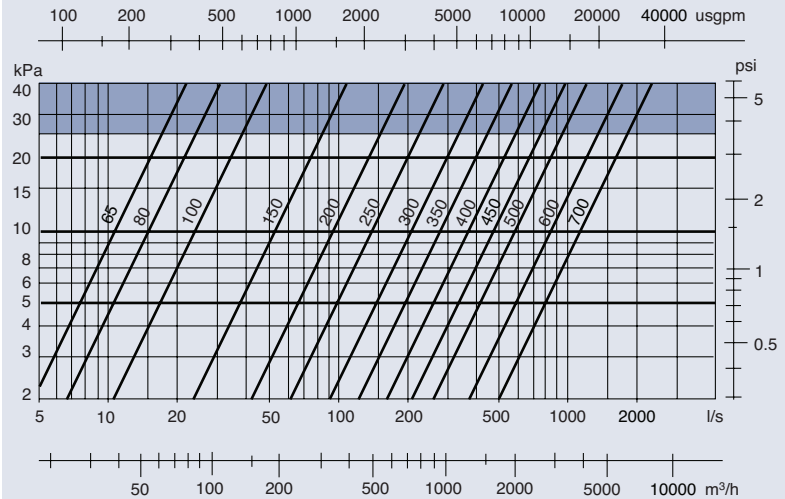
### Contact for computer supervision

- Filter in operation
- Flushing
- Alarm

### Flange standard

- ANSI 150
- DIN PN 10

## Selection chart



| FILTER TYPE                     | FLOW CAPACITY |             | DIMENSIONS (mm) |     |      |      |      |      |        |         | WEIGHT (kg) |
|---------------------------------|---------------|-------------|-----------------|-----|------|------|------|------|--------|---------|-------------|
|                                 | MAX (l/s)     | FLUSH (l/s) | AE              | B   | C    | D    | L    | FS   | G/H    | J       |             |
| <b>Filter body in PVC</b>       |               |             |                 |     |      |      |      |      |        |         |             |
| BSP 65                          | 17            | 2           | 102             | 205 | 390  | 300  | 480  | 330  | DN 65  | BSP 1"  | 12          |
| BSP 80                          | 23            | 3           | 330             | 235 | 385  | 490  | 650  | 470  | DN 80  | DN 40   | 17          |
| BSP 100                         | 36            | 4           | 335             | 275 | 440  | 550  | 735  | 470  | DN 100 | DN 40   | 24          |
| <b>Filter body in GRP</b>       |               |             |                 |     |      |      |      |      |        |         |             |
| BSG 100                         | 36            | 4           | 397             | 200 | 385  | 495  | 630  | 470  | DN 100 | DN 40   | 18          |
| BSG 150                         | 83            | 9           | 452             | 275 | 530  | 675  | 830  | 650  | DN 150 | DN 40   | 40          |
| BSG 200                         | 145           | 17          | 533             | 350 | 705  | 880  | 1100 | 700  | DN 200 | DN 50   | 60          |
| BSG 250                         | 235           | 26          | 403             | 400 | 825  | 1050 | 1270 | 1000 | DN 250 | DN 100  | 105         |
| BSG 300                         | 325           | 37          | 453             | 475 | 1000 | 1260 | 1500 | 1100 | DN 300 | DN 100  | 160         |
| BSG 350                         | 450           | 50          | 453             | 475 | 1100 | 1380 | 1650 | 1200 | DN 350 | DN 100  | 180         |
| BSG 400                         | 580           | 67          | 503             | 600 | 1240 | 1540 | 1800 | 1200 | DN 400 | DN 100  | 300         |
| BSG 450                         | 735           | 85          | 553             | 650 | 1450 | 1770 | 2050 | 1650 | DN 450 | DN 100  | 500         |
| BSG 500                         | 910           | 105         | 658             | 700 | 1600 | 2050 | 2350 | 1650 | DN 500 | DN 150  | 550         |
| BSG 600                         | 1300          | 150         | 708             | 900 | 1800 | 2250 | 2650 | 1800 | DN 600 | DN 150  | 850         |
| BSG 700                         | 1770          | 200         | 808             | 850 | 2250 | 2750 | 3250 | 2150 | DN 700 | DN 150  | 1300        |
| <b>Filter body in AISI 316L</b> |               |             |                 |     |      |      |      |      |        |         |             |
| BSS 80                          | 23            | 3           | 252             | 165 | 340  | 455  | 590  | 460  | DN 80  | BSP 1¼" | 30          |
| BSS 100                         | 36            | 4           | 302             | 175 | 350  | 465  | 600  | 460  | DN100  | BSP 1½" | 37          |
| BSS 150                         | 83            | 9           | 352             | 250 | 500  | 650  | 800  | 700  | DN 150 | BSP 1½" | 90          |
| BSS 200                         | 145           | 17          | 388             | 300 | 630  | 810  | 980  | 700  | DN 200 | BSP 2"  | 140         |
| BSS 250                         | 235           | 26          | 378             | 350 | 750  | 975  | 1175 | 1000 | DN 250 | DN 100  | 210         |
| BSS 300                         | 325           | 37          | 433             | 380 | 900  | 1160 | 1370 | 1100 | DN 300 | DN 100  | 270         |
| BSS 400                         | 580           | 67          | 513             | 450 | 1050 | 1350 | 1600 | 1250 | DN 400 | DN 100  | 550         |

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