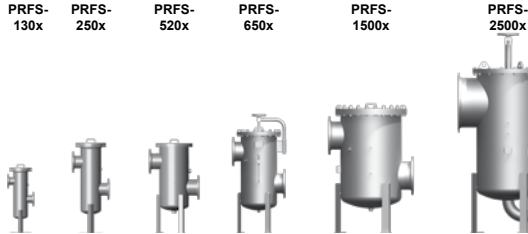


## Process Screen Basket Filter PRFS



### 1. TECHNICAL SPECIFICATIONS

#### 1.1 GENERAL

Screen basket filters are used mainly as coarse filters or prefilters. The direction of flow is from the inside to the outside. The separated solid contamination is collected in the stainless steel screen basket and can be disposed of quickly and conveniently. By using clogging indicators which monitor the differential pressure, the condition of the screen basket filter can be determined at any time. The filter materials can be cleaned and reused, and this therefore reduces operating costs. Filter housings are available in carbon steel with an internal epoxy coating and in stainless steel.

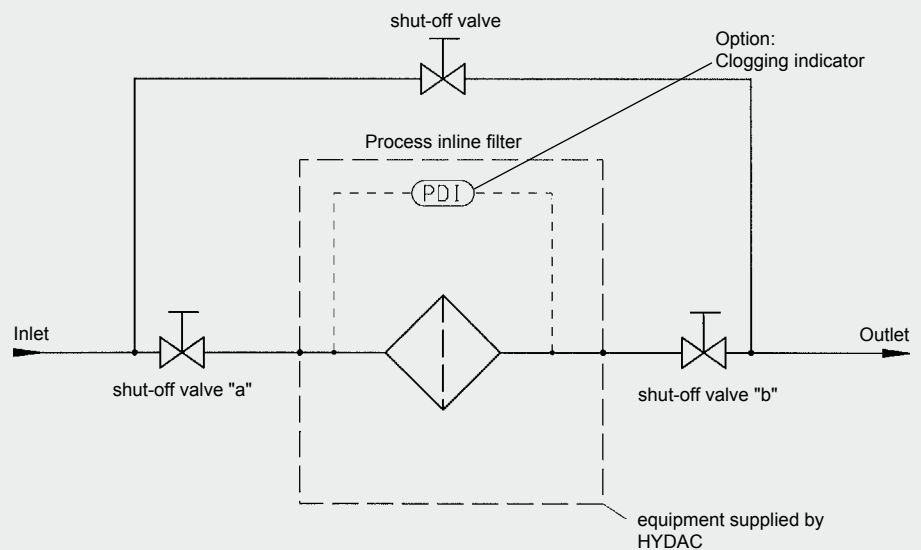


#### 1.2 SUMMARY OF AVAILABLE SIZES AND CONNECTIONS

Connection size	Series					
	130x	250x	520x	650x	1500x	2500x
DN 50	●					
DN 80	●					
DN 100	●	●				
DN 150		●	●			
DN 200		●	●	●		
DN 250			●	●	●	
DN 300				●	●	
DN 400					●	
DN 500					●	●
DN 600						●
DN 700						●

The selection of the connection size depends on the level of contamination of the fluid and the associated filter area.

#### 1.3 CIRCUIT DIAGRAM



## 2. FILTER SPECIFICATIONS

### 2.1 SUMMARY OF TECHNICAL SPECIFICATIONS OF THE STANDARD FILTER HOUSING

Series	Type	Connection size according to DIN DN	Materials			Pressure range*	Temp. [°C]	Weight [kg]	Volume [l]
			Stainless steel	Carbon steel					
				without int. corrosion protection	with int. corrosion protection				
130x	1303	50/	●			PN 16	-10 to 90	80	25
	1304	80/			●				
	1305	100/150		●					
250x	2503	100/	●					130	46
	2504	150/			●				
	2505	200		●					
520x	5203	150/	●					300	118
	5204	200/			●				
	5205	250		●					
650x	6503	200/	●					360	213
	6504	250/			●				
	6505	300		●					
1500x	15003	300/	●			460	433		
	15004	400/			●				
	15005	500		●					
2500x	25003	500/	●			990	1330		
	25004	600/			●				
	25005	700		●					

\* Other pressure ranges on request.

### 2.2. FURTHER TECHNICAL SPECIFICATIONS OF THE STANDARD FILTER HOUSING

#### 2.2.1 Seal materials

FPM (Viton), asbestos free gasket

#### 2.2.2 Corrosion protection, external

2 layer primer (not required for stainless steel filters)

#### 2.2.3 Corrosion protection, internal

2K-epoxy primer (not required for stainless steel filters)

#### 2.2.4 Documentation

Operating and maintenance instructions

### 2.3 SUMMARY OF TECHNICAL SPECIFICATIONS OF FILTER ELEMENTS

Series	No. of screen baskets	Filter element type	Overall filter area [cm <sup>2</sup> ]	Filter materials and filtration ratings [µm]			Permiss. diff. pressure across element [bar]
				Wire mesh (reinforced with perforated plate)	Slotted tube	Perforated plate	
130x	1	SK-3-...	2035	25, 40,	50,	3000	6
250x	1	SK-4-...	2850	60, 80,	100, 200,		
520x	3	SK-3-...	6105	100, 150,	250, 300,		
650x	4	SK-4-...	11400	200, 250,	500,		
1500x	7	SK-4-...	19950	500, 1000,	2000,		
2500x	5	SK-5-...	37000	1000	3000		

### 2.4. OPTIONAL VERSIONS

There is a range of optional versions available for the Process Screen Basket Filter PRFS. For technical details and prices, please contact our Technical Sales Department at Head Office.

#### 2.4.1 Housing manufacture

- AD Rules / PED 97/23/EC
- ASME Code Design (with or without U-Stamp)

#### 2.4.2 Flange connections

- ANSI
- JIS

#### 2.4.3 Housing materials

- Various qualities of stainless steel\*
- Various qualities of carbon steel\*

#### 2.4.4 Materials of internal parts and elements

- Various qualities of stainless steel
- Various qualities of carbon steel\*
- Various qualities of duplex/ superduplex

#### 2.4.5 Cover lifting devices

- Stainless steel version
- Carbon steel version

#### 2.4.6 Seal materials

- Various seal materials on request, depending on the resistance to the fluid.

#### 2.4.7 Corrosion protection and external finishes

- RAL colours acc. customer requirements (for carbon steel qualities)
- Various multi layer coatings

#### 2.4.8 Differential pressure monitoring

- Visual
- Electrical
- Visual/electrical
- Differential pressure gauge with 2 microswitches

#### 2.4.9 Documentation

- Manufacturer's test certificates
- Material certificates (3.1 according to DIN EN 10204)
- 3rd parties (TÜV, ABS, Lloyds, etc.)
- Welding procedure specifications (WPS) / Procedure Qualification Record (PQR)
- Inspection plan
- and many other documents available on request

Further optional models on request.

### 3. MODEL CODE

PRFS - S - 1303 - AF3 - 100 - 0 - 1 - X

#### 3.1 SCREEN BASKET FILTER PRFS / PRFSD

##### Filter type

PRFS = Screen basket filter

PRFSD = Screen basket filter, duplex (change-over)

##### Filter material

D = wire mesh, reinforced with perforated plate (cleanable)

DS = wire mesh, reinforced with perforated plate on both sides (cleanable)

S = slotted tube (cleanable)

L = perforated plate (cleanable)

##### Size

130x = DN 50 / 80 / 100 / 150

250x = DN 100 / 150 / 200

520x = DN 150 / 200 / 250

650x = DN 200 / 250 / 300

1500x = DN 250 / 300 / 400

2500x = DN 500 / 600 / 700 (only for single filter PRFS)

##### End code x

x = 3 stainless steel housing

x = 4 housing carbon steel + epoxy internal coating

x = 5 housing carbon steel without coating

##### Type of connection (see table)

F = flange to DIN followed by nominal width  
e.g. F100

AF = flange to ANSI followed by nominal width in inches

##### Filtration rating in $\mu\text{m}$

25, 40, 60, 80, 100, 150, 200, 250, 500, 1000 (wire mesh)

50, 100, 200, 300, 500, 1000, 2000, 3000 (slotted tube)

3000 (perforated plate)

##### Equipment

0 = without additional equipment

1 = cover plate lifting device

2 = bleed and drain ball valve

##### Type of clogging indicator

0 = without clogging indicator

1 = visual indicator PVD 2 B.1

2 = visual-electrical indicator PVD 2 D.0

3 = visual-electrical-analogue indicator V01

4 = visual-analogue indicator in aluminium with 2 adjustable contacts (0...4 bar)

5 = visual-analogue indicator in stainless steel with 2 adjustable contacts (0...4 bar)

6 = electrical differential pressure switch PVD 2 C.0

##### Modification number

##### Supplementary details

Drawing number for special equipment

#### 3.2 SCREEN BASKET FILTER ELEMENT

SK - 4 - S - 1000 - 0

##### Element construction

Screen basket element with handle

##### Size

1, 2, 3, 4, 5

##### Material of filter element

D = wire mesh, reinforced with perforated plate

DS = wire mesh, reinforced with perforated plate on both sides

S = slotted tube

L = perforated plate

##### Filtration rating in $\mu\text{m}$

25, 40, 60, 80, 100, 150, 200, 250, 500, 1000 wire mesh

50, 100, 200, 300, 500, 1000, 2000, 3000 slotted tube

3000 perforated plate

##### Seal material

0 = no seal for filtration rating > 500

V = Viton

N = NBR

EP = EPDM

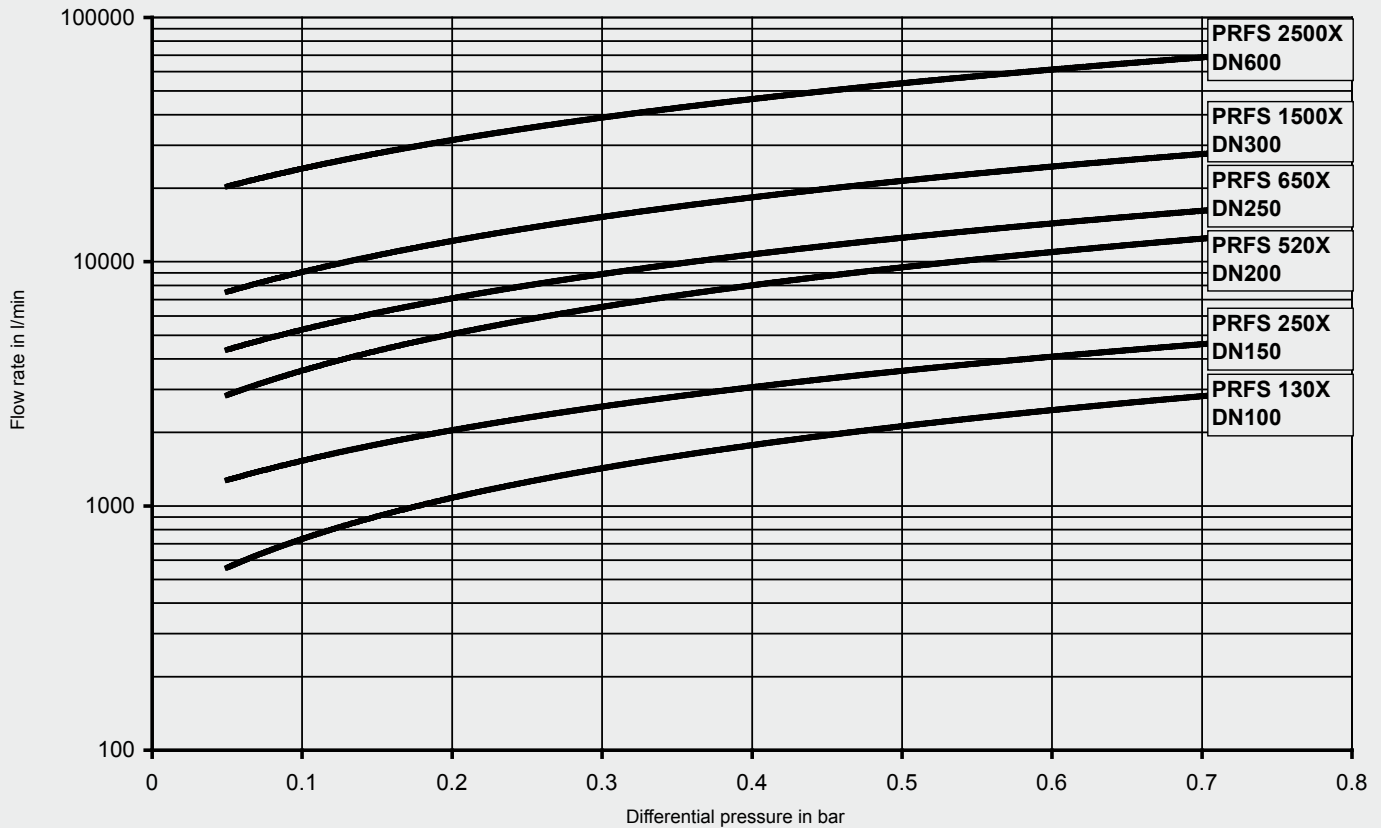
SI = Silicon

K = Klingersil gasket (only on L, D, DS versions)

## 4. FILTER CALCULATION / SIZING

### 4.1 PRESSURE DROP CURVES HOUSING INCLUDING BASKET INSERT

The curves apply to water at 20 °C or fluids to 15 mm<sup>2</sup>/s!



### 4.2 CALCULATION CRITERIA

In order to be able to size the filter correctly, the following design data should be available:

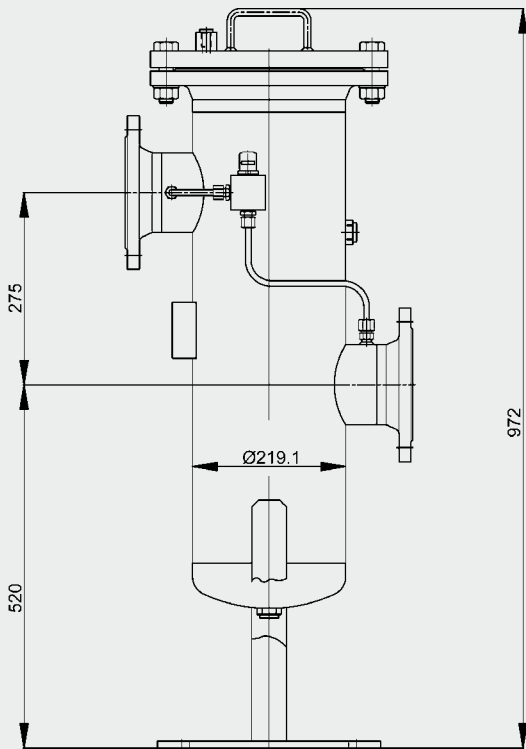
- Flow rate
- Type of medium
- Materials/resistance
- Viscosity
- Required filtration rating
- Particulate loading in the fluid
- Type of contamination
- Operating pressure
- Operating temperature

Use the pressure drop curves to calculate the Process Screen Basket Filter PRFS. Generally speaking, an initial -  $\Delta p$  (clean filter condition) of > 0.2 bar should not be exceeded.

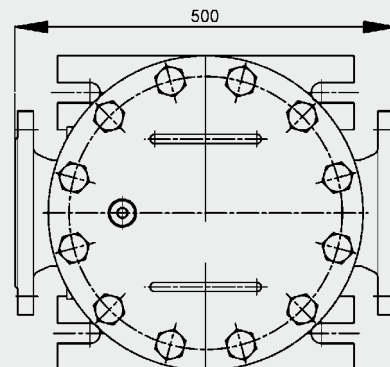
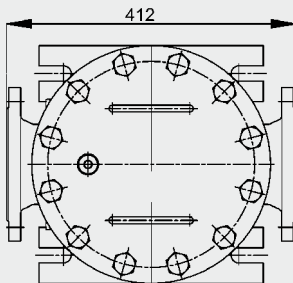
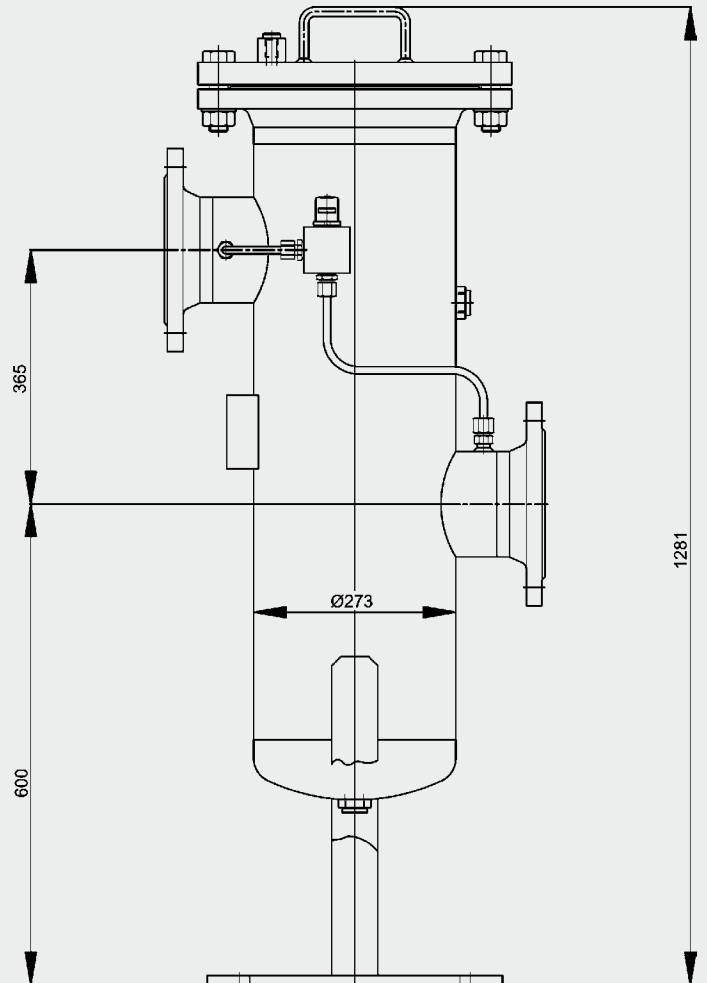
The pressure drop curves are valid for all filtration ratings and basket materials. Exception: With 50  $\mu\text{m}$  slotted tube screen baskets, the pressure drop increases by 30 %.

A further factor in the calculation is the flow velocity through the flange inlet. It should not exceed 4 m/s.

**5. DIMENSIONS**  
**5.1 FILTER HOUSING**  
**PRFS 130x**



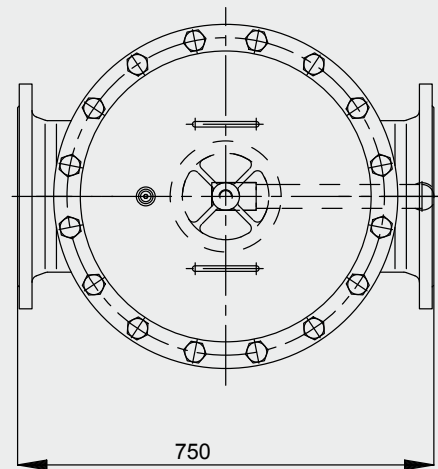
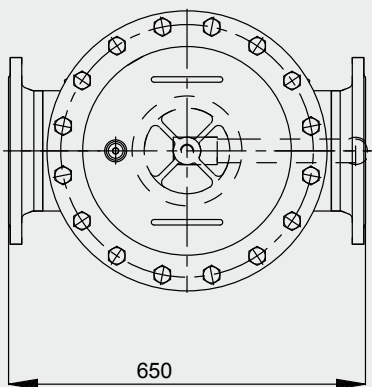
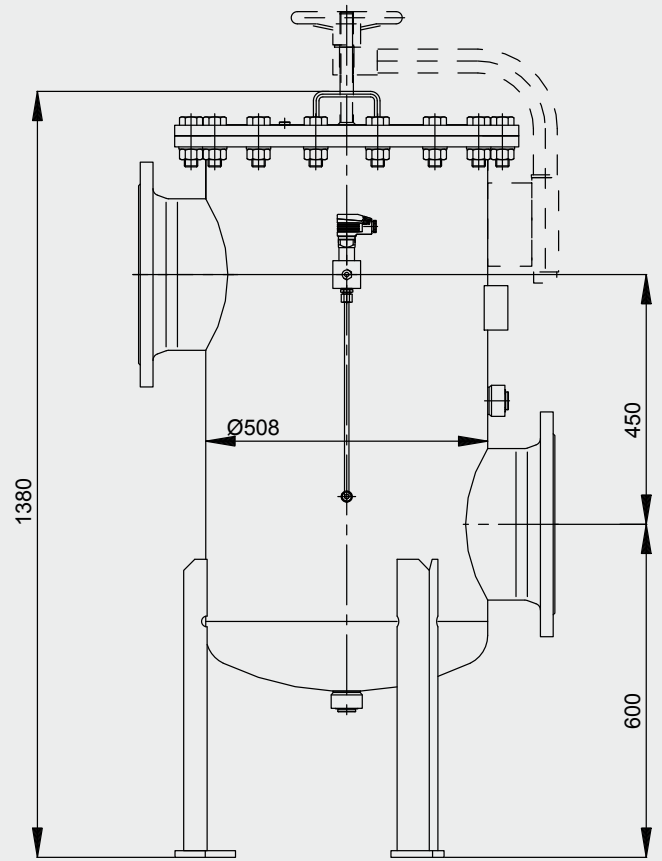
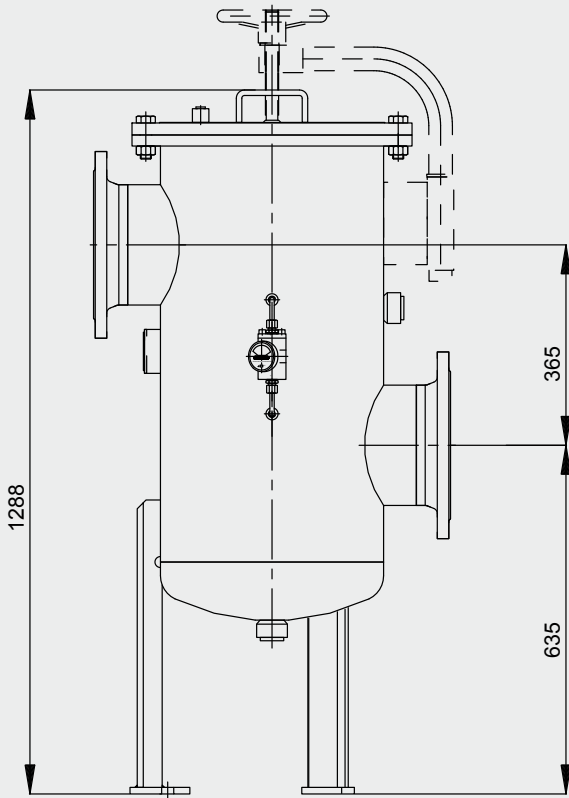
**PRFS 250x**



- The filter must not be used as a pipe support.
- The dimensions quoted have  $\pm 5$  mm tolerances.

PRFS 520x

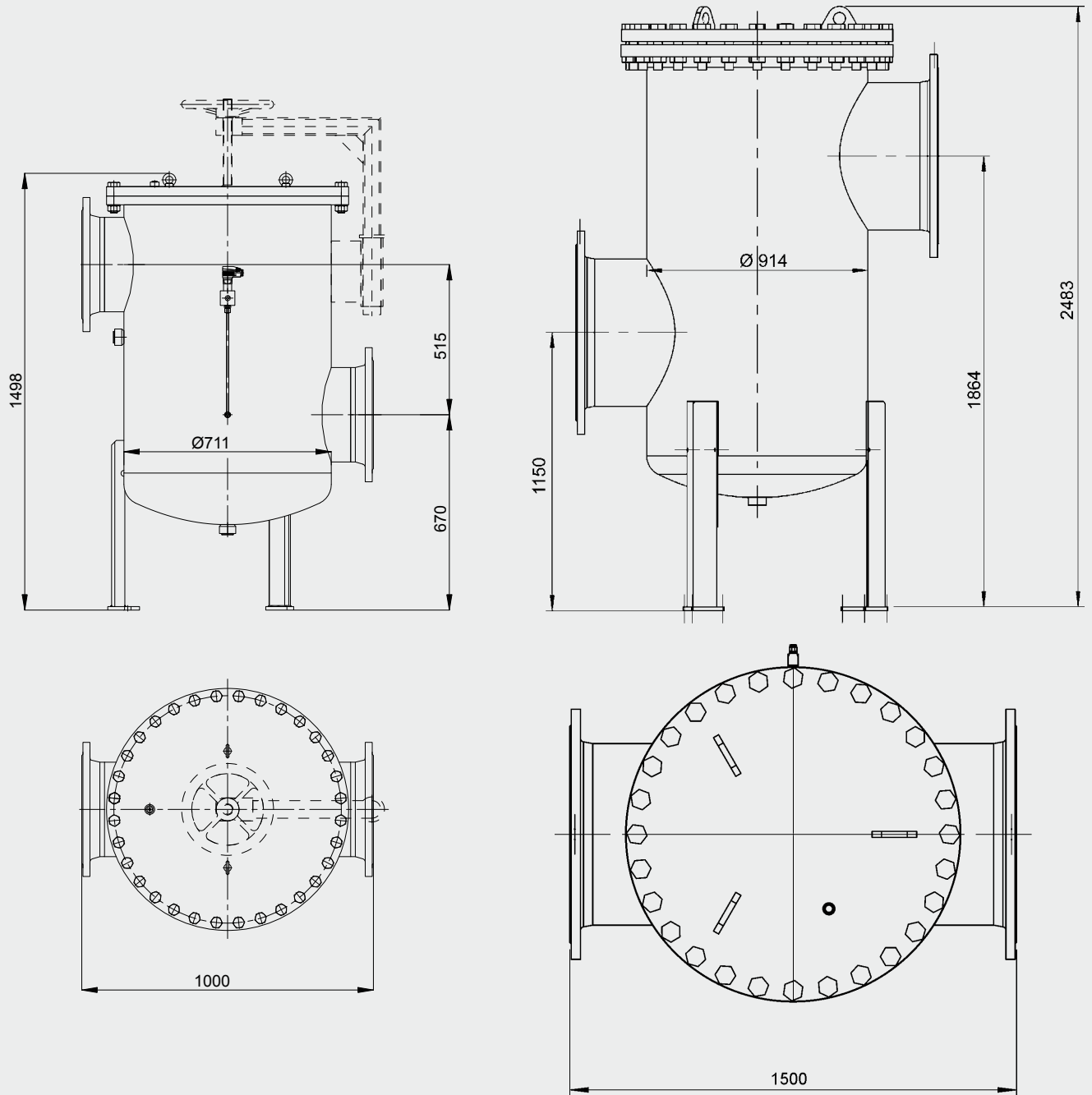
PRFS 650x



- The filter must not be used as a pipe support.
- The dimensions quoted have  $\pm 10$  mm tolerances.

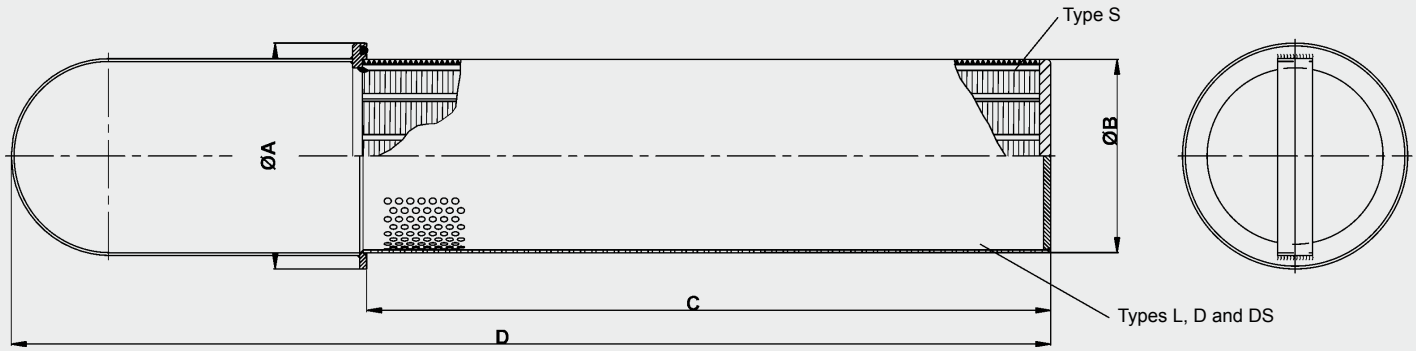
PRFS 1500x

PRFS 2500x



- The filter must not be used as a pipe support.
- The dimensions quoted have  $\pm 10$  mm tolerances.

## 5.2 SCREEN BASKET INSERT



Size	A	B	C	D
SK-3	160	137	486	738.5
SK-4	187	164	566	913
SK-5	300	260	910	1619

### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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