DANGO & DIENENTHAL
Filtertechnik GmbH

Separator

GB

The Separator

The New Definition of Purity for Your Medium

- Sinter and Scale Separation
- Cooling Water
- River Water
- Sea Water
- Process Water

Our Filter Systems Protect


Spray Nozzles


Plate Heat Exchangers


Piping Systems


Mechanical Seals


Pumps

	Separator (SPR / BA)	Multi-Separator (M)
flow rate	2 m³/h to 250 m³/h	120 m³/h to 3,000 m³/h
filter fineness	≥ 5 µm	≥ 5 µm
operating pressure	2 to 63 bar	2 to 63 bar
pressure loss with clean filter	0.6 bis 1.2 bar	0.6 bis 1.2 bar
flange	DN 50 to DN 200	DN 150 to DN 700
temperature	- 10 to + 110 °C	- 10 to + 110 °C

Scope of Delivery

Fig. 1

	Separator (SPR / BA)		Multi-Separator (M)		
steel design	•			•	
stainless steel design	•			•	
PVC design	•			-	
PE design	•			-	
Pressure Equipment Directive (PED)	•			•	
ASME		Δ			Δ
documentation	•			•	
certificates	•	Δ		•	Δ

included in the scope of delivery	•
available at extra charge	Δ
not available	-

Filtration Process

Fig. 2

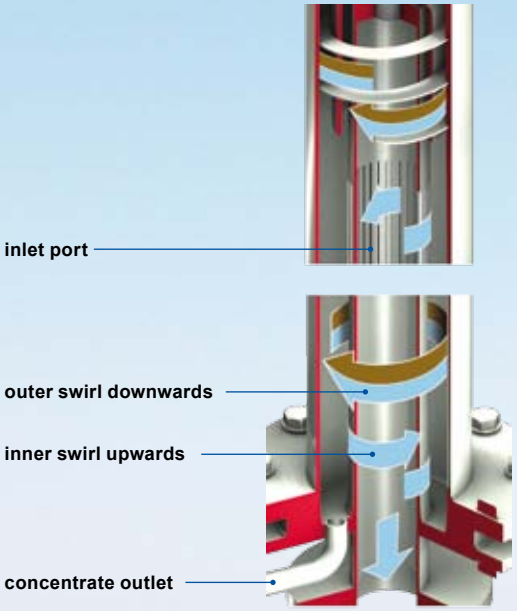


Fig. 3

Mode of Operation

The Separator (SPR) and Multi-Separator (M) are fully automatically working separating and cleaning devices for separating specifically heavy solids from liquid mediums. The raw water enters the Separator through the inlet flange. A turbo helix in the housing sets the medium to a circular motion. The resulting centrifugal forces impact the heavy particles (> 1.3 kg/dm³) in the outer swirl. In the lower part of the separator the medium starts to move upwards again along the inner tube (= inner swirl). In the lower part of the separator the concentrate outlet is situated. The device-dependent deposited amount of solids (up to 2 % in the feed water) can be continuously drained through the concentrate outlet together with a liquid fraction

Basic Unit Type SPR

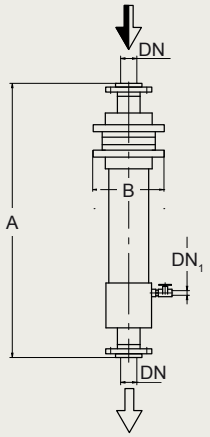
für 2 - 10 m³/h

SPR 3 / 5 / 10	
DN	50
DN_1	G 1/2“
A	900
B	220

Basic Unit Type SPR

für 10 - 50 m³/h

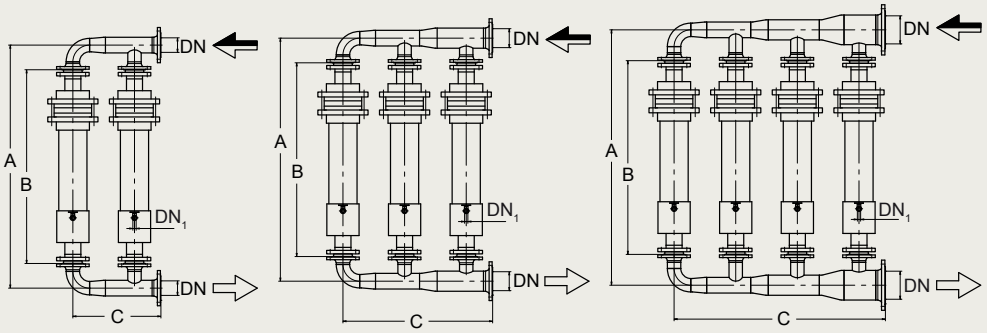
SPR 20 / 30 / 50	
DN	65
DN_1	G 1/2“
A	1100
B	300



Group Arrangement Block-Assembly Type BA

für 100 - 250 m³/h

	BA 2 SPR	BA 3 SPR	BA 4 SPR
DN	80	100	150
DN_1	2 x G 1/2“	3 x G 1/2“	4 x G 1/2“
A	1384	1384	1450
B	1100	1100	1100
C	500	850	1200



2 SPR **3 SPR** **4 SPR**

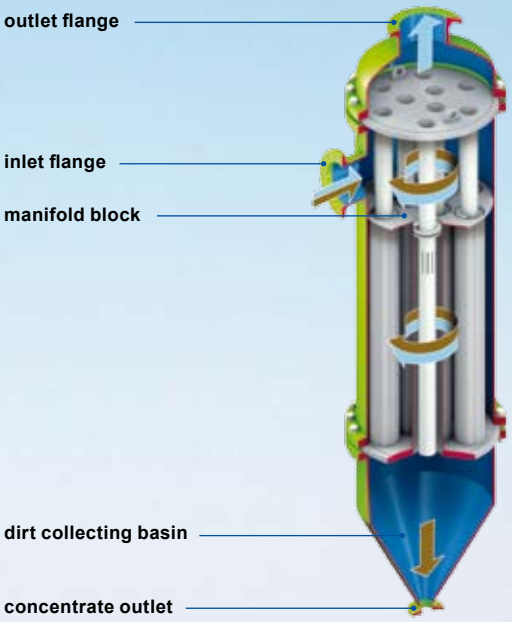


Fig. 4

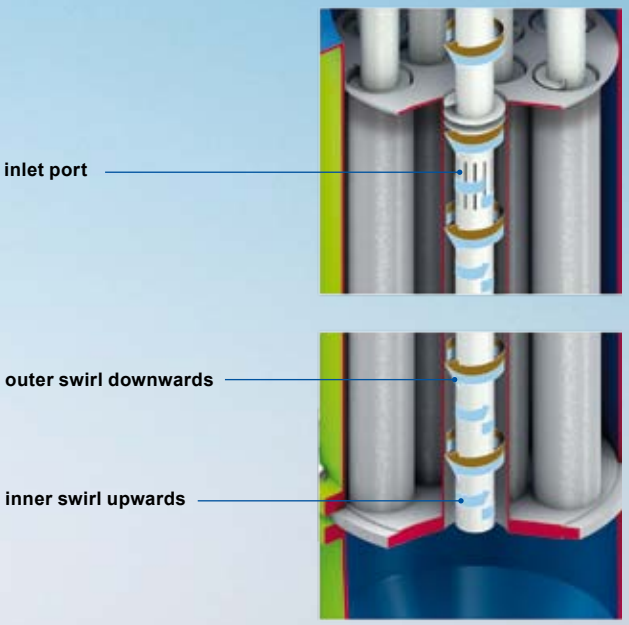


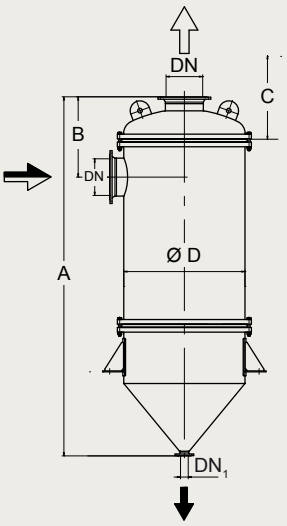
Fig. 5

of 3 to 5 % of the feed water. The cleaned medium arrives in the inlet ports of the static inner tube and leaves the filter through the outlet flange. The Multi-Separator (M) bases on the design principle of the Separator (SPR). In order to allow for higher flow rates and at the same time optimizing the size ratio several Separators are installed in a common housing.

The raw water enters the Separator through the inlet flange. In the manifold block the raw water is divided on several Separators. Specifically heavy particles deposit in the dirt collecting basin. From here they can be continuously or discontinuously drained (according to customer specifications) through the concentrate outlet.

Basic Unit Typ M

für 120 - 3000 m³/h



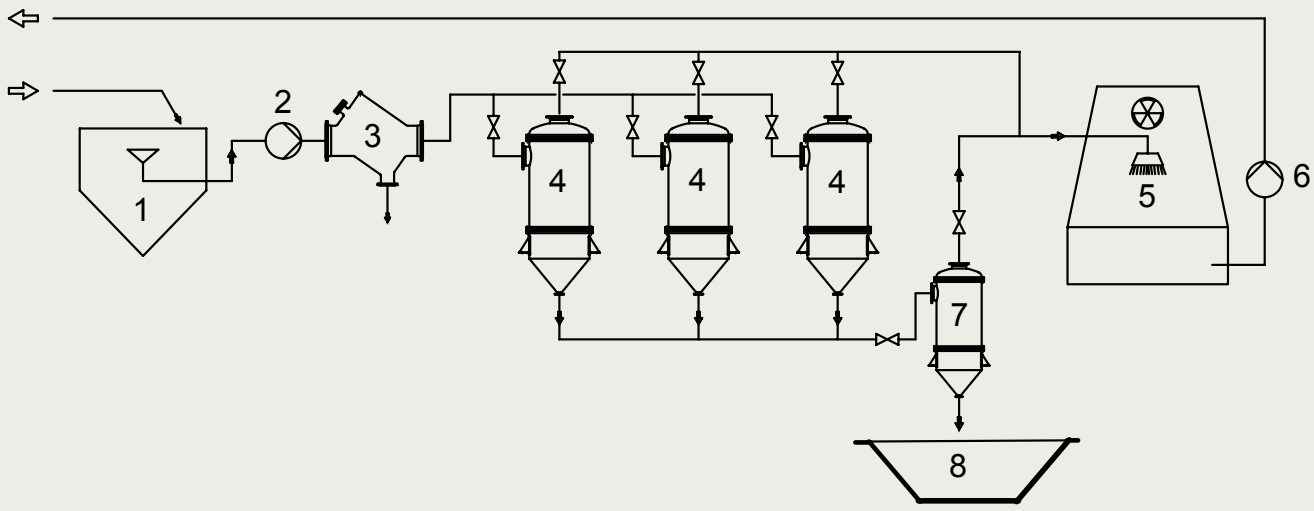
	M4	M6	M9	M12	M18	M30	M54
flow rate in m³/h	120 - 200	180 - 300	270 - 500	360 - 600	540 - 1000	900 - 1500	1620 - 3000
DN	150	200	250	300	400	400	600
DN_1	25	50	65	80	80	80	150
A	2597	2932	3250	3524	3670	3845	4380
B	572	690	720	785	860	860	1085
C	1800	1900	1900	1900	2200	2200	2300
D	419	508	711	900	900	1300	1700
weight in kg							
empty	500	950	1260	1750	2000	3600	5200
filled	775	1530	2210	3460	4500	8100	13800

Range of Application

Fig. 6 test water in a steel works

Fig. 7 spray in a rolling mill

Process Diagram



1 sedimentation pit
2 pump - flow
3 Plate Filter as pre-filter
4 Multi-Separator
5 cooling tower
6 pump - return flow
7 concentrate thickener
8 concentrate sedimentation pit

Fig. 8 arrangement plan for different separating devices in the cooling water circuit of a hot-rolled strip mill

Advantages

- high grade of separation
- robust construction
- wide range of materials
- low wear (no movable parts in the filter)
- simple installation
- small concentrate losses

Fig. 9

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