

2"-3" SpinKlin™

Automatic disc filtration system for low to medium flow rates in a compact footprint



inlet/outlet connection

**2" SK: 80 - 150 mm
(3" - 6")**

**3" SK: 150 - 200 mm
(6" - 8")**

flow rates

**10-120 m³/h
(44-530 gpm)**

**90-200 m³/h
(400-880 gpm)
and higher**

filtration degrees

20-400 micron

max. working pressure

10 bar (145 psi)

features:

- Micron-precise depth filtration of solids
- Innovative disc technology captures and retains large amounts of solids
- Long-term operation with minimal maintenance
- Easy and simple operation
- Short automatic backwash with regulated water volume for a small water footprint
- Permanently eliminates the need to replace filter media
- Compact design

How the 2”- 3” SpinKlin™ Systems Filters Work

General

The Arkal 2”- 3” SpinKlin™ series are modular, all polymeric, automatic disc filters with a patented self-cleaning backwash mechanism.

The 2”- 3” SpinKlin™ systems range in flow rates from 10 m³/h (44 gpm) to 200 m³/h (880 gpm) with filtration degrees ranging from 20 - 400 micron. Inlet/Outlet from 80 - 200 mm (3”- 8”) diameter.

The Filtration Process

The discs are stacked on the SpinKlin™ spine and assembled according to pre-determined water filtration requirements. During filtration, the discs are compressed by means of a pre-loaded spring and differential pressure, forcing the water to pass through the grooved disc surface, thus trapping the solids.

The Backwash Process

Activated by a pre-determined time command or differential pressure, the system enters backwash mode. The inlet valve port shuts as the drain valve port opens. During the backwash process, pressure is released and the spine’s piston elevates, releasing the compression on the discs. Tangential jets of filtered water are then forced through the nozzles positioned along the spine. At this stage the discs spin freely, loosening the trapped solids which are then flushed out. During the flushing cycle each filter pod is backwashed sequentially, while the other pods continue to supply filtered water downstream. When a pod begins the backwash cycle, the system valves automatically reverse the flow in the pod, allowing filtered downstream pressurized water to backwash the filter.

External Source Backwash

Each filter is backwashed sequentially, while the other filters continue to supply filtered water downstream. In each backwashed filter the inlet & outlet valves automatically close and the drain & external source valves automatically open. Pressurized filtered water from the external source header enters the backwashed filter through its outlet port and backwashes it.

- Higher energy for low operating pressure applications and fine filtration degrees

Air Aided Backwash (for 2” SpinKlin™ systems only)

Main benefits:

- Enhanced cleaning power, especially on fine filtration degrees.
- Minimized backwash water volume.
- Low pressure operation.
- Reduced backwash time per filter pod (<10 sec).
- The air and water mix at a minimum pressure of 2.5 bar generates the optimal cleaning performance in SpinKlin™ technology.

During the flushing cycle, each filter pod is backwashed sequentially while the other pod continues to supply filtered water downstream. When a pod begins the backwash cycle, the valves automatically reverse the flow in the pod, and open the air valve, allowing compressed air to push the filtered water stored in the accumulator through the backwash manifold and into the SpinKlin™ filter being backwashed.

Each backwash cycle requires a time delay to allow the water tank to be filled with clean water and air, making the total backwash duration longer than in regular systems.

A clean & dry air pressure source is necessary to operate the filtration system (supplied by the customer).

Construction materials

Filter Housing & Lid	RPP (Reinforce Polypropylene) & RPA (Reinforce Polyamide)
Disc elements	PA (Polyamide) or PP (Polypropylene)
Backwash valves	RPP (Reinforce Polypropylene) or RPA (Reinforce Polyamide)
Manifolds	PP (Polypropylene)
Seals	NBR or EPDM, (Viton optional)
Control Tubing	PE or PA

Disc material type availability according to filtration degree:

Color Code	Gray	Purple	Green	Brown	Black	Red	Yellow	Blue
Micron	20	40	55	70	100	130	200	400
PP Disc PA (Nylon) Disc	PP, PA	PP	PP, PA	PP, PA	PP, PA	PP, PA	PP, PA	PP

SK 2" Batteries

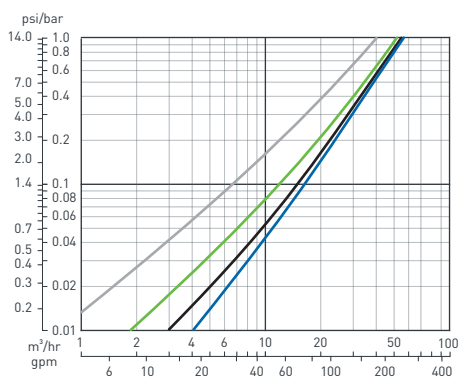


Filter Type	2 unit battery	3 unit battery	4 unit battery	
General Data				
Max. working pressure	10 bar (145 psi)			
Min. backwash pressure	2.8 bar (40.6 psi)			
Maximum recommended flow rate	100 μ	40 m ³ /h (176 gpm)	60 m ³ /h (364 gpm)	80 m ³ /h (352 gpm)
	55 μ	20 m ³ /h (88 gpm)	30 m ³ /h (132 gpm)	40 m ³ /h (176 gpm)
	20 μ	10 m ³ /h (44 gpm)	15 m ³ /h (66 gpm)	20 m ³ /h (88 gpm)
Available filtration degrees	400, 200, 130, 100, 70, 55, 40, 20 micron			
Filtration volume	2,296 cm ³ (140 in ³)	3,444 cm ³ (210 in ³)	4,592 cm ³ (280 in ³)	
Inlet/Outlet diameter	80 mm (3")	100 mm (4")		
Max. working temperature	60°C (140°F)			
Dry weight standard	27 kg (59.5 lb)	38 kg (83.7 lb)	49 kg (108 lb)	
Backwash Data				
Valve drain port	50 mm (2")			
Flushing time	20 seconds			
Min. flow for backwash	10 m ³ /h (44 gpm)			

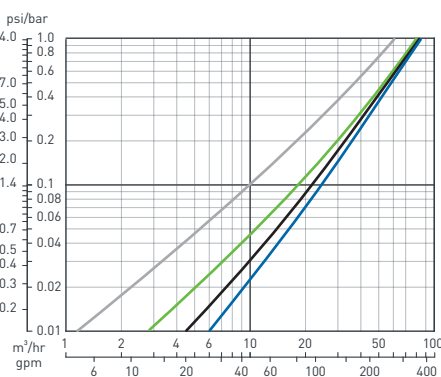
Head Loss Graphs (in clean water)

— 400 μ — 100 μ — 55 μ — 20 μ

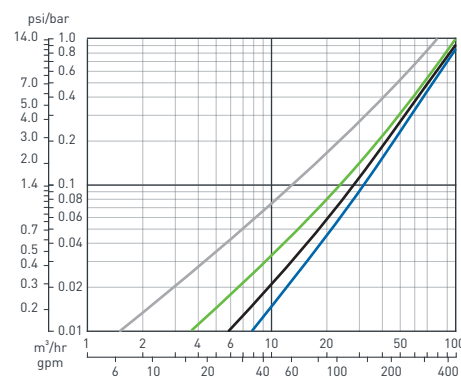
2 x 2" SK Battery



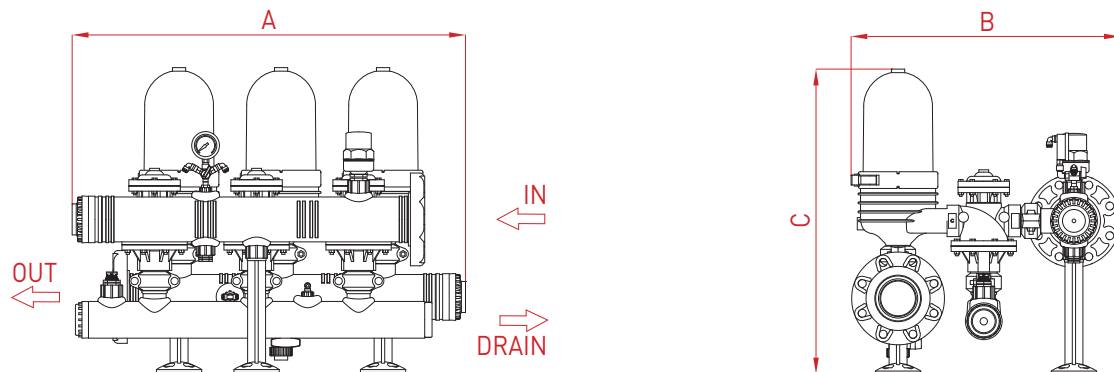
3 x 2" SK Battery



4 x 2" SK Battery



Typical Installation Drawing



Dimensions	2 unit battery	3 unit battery	4 unit battery	
A	Length	706 mm (28")	964 mm (38")	1,214 mm (48")
B	Width		660 mm (26")	
C	Height		747 mm (30")	

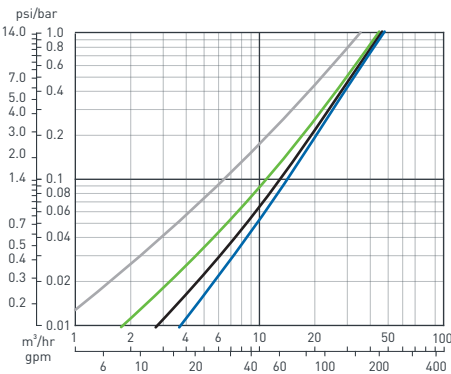
SK 2" Batteries External Source



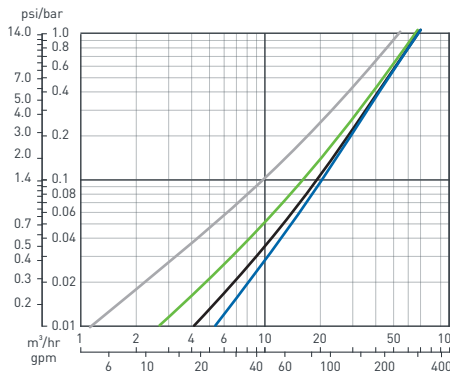
Filter Type	2 unit battery	3 unit battery	4 unit battery	
General Data				
Max. working pressure	10 bar (145 psi)			
Min. backwash pressure	2.8 bar (40.6 psi)			
Maximum recommended flow rate	100μ	40 m ³ /h (176 gpm)	60 m ³ /h (364 gpm)	80 m ³ /h (352 gpm)
	55μ	20 m ³ /h (88 gpm)	30 m ³ /h (132 gpm)	40 m ³ /h (176 gpm)
	20μ	10 m ³ /h (44 gpm)	15 m ³ /h (66 gpm)	20 m ³ /h (88 gpm)
Available filtration degrees	400, 200, 130, 100, 70, 55, 40, 20 micron			
Filtration volume	2,296 cm ³ (140 in ³)	3,444 cm ³ (210 in ³)	4,592 cm ³ (280 in ³)	
Inlet/Outlet diameter	80 mm (3")	100 mm (4")		
Max. working temperature	60°C (140°F)			
Dry weight EX.S. backwash	46 kg (102 lb)	59 kg (131 lb)	73 kg (162 lb)	
Backwash Data				
Valve drain port	50 mm (2")			
Flushing time	15 seconds for external source backwash			
Min. flow for backwash	10 m ³ /h (44 gpm)			

Head Loss Graphs (in clean water) — 400μ — 100μ — 55μ — 20μ

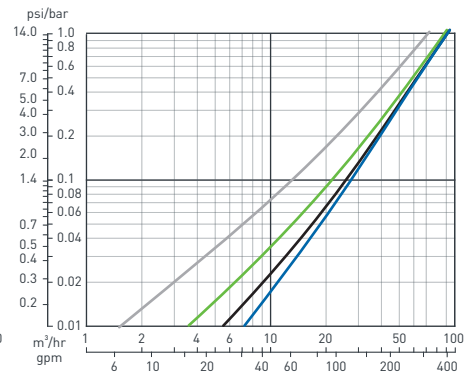
2 x 2" SK Battery EX.S.



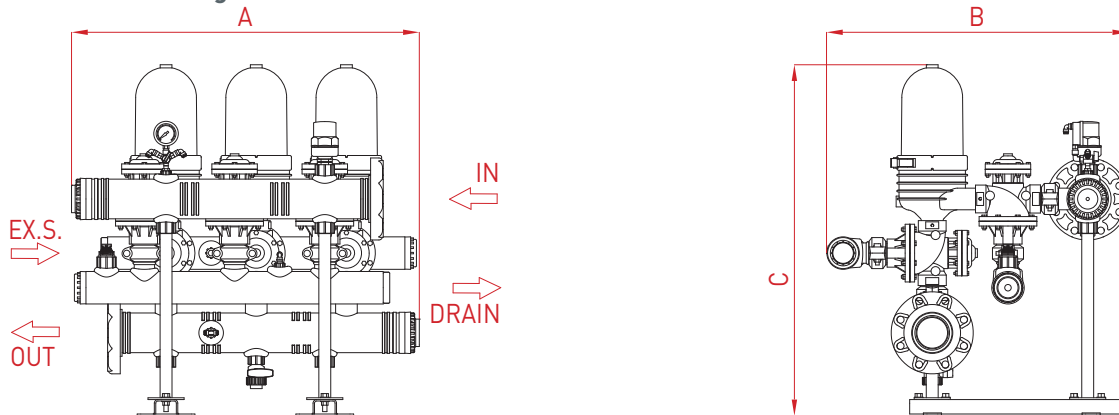
3 x 2" SK Battery EX.S.



4 x 2" SK Battery EX.S.



Typical Installation Drawing



Dimensions		2 unit battery	3 unit battery	4 unit battery
A	Length	706 mm (28")	964 mm (38")	1214 mm (48")
B	Width	383 mm (33")	383 mm (33")	383 mm (33")
C	Height	974 mm (38")	974 mm (38")	974 mm (38")

SK 2" Batteries Air Aided



Filter Type		2 unit battery	3 unit battery	4 unit battery
General Data				
Max. working pressure		10 bar (145 psi)		
Min. down stream pressure*		1 bar (15 psi)		
Maximum recommended flow rate	100μ	40 m ³ /h (176 gpm)	60 m ³ /h (364 gpm)	80 m ³ /h (352 gpm)
	55μ	20 m ³ /h (88 gpm)	30 m ³ /h (132 gpm)	40 m ³ /h (176 gpm)
	20μ	10 m ³ /h (44 gpm)	15 m ³ /h (66 gpm)	20 m ³ /h (88 gpm)
Available filtration degrees		400, 200, 130, 100, 70, 55, 40, 20 micron		
Filtration volume		2,296 cm ³ (140 in ³)	3,444 cm ³ (210 in ³)	4,592 cm ³ (280 in ³)
Inlet/Outlet diameter		80 mm (3")	100 mm (4")	
Max. working temperature		60°C (140°F)		
Dry weight standard		59 kg (131 lb)	73 kg (162 lb)	89 kg (197 lb)

* Low pressure for filtration, added pressure for backwash with air up to 3 bar.

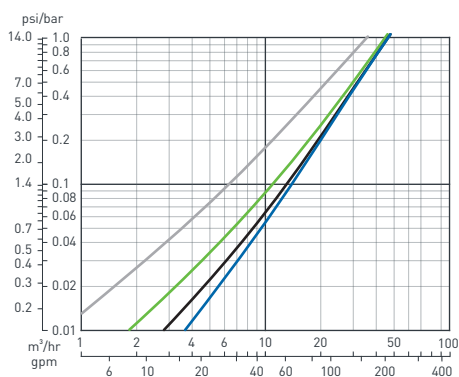
Backwash Data	
Valve drain port	50 mm (2")
Flushing time**	7 seconds
Volume of backwash (not include air)**	12 liter (3.2 gallons)

** Air Aided system flushing time and volume depend on air tank size.

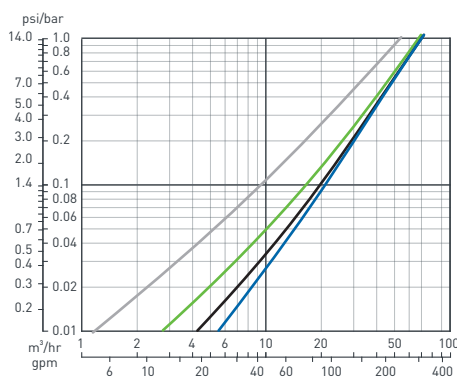
Head Loss Graphs (in clean water)

— 400μ — 100μ — 55μ — 20μ

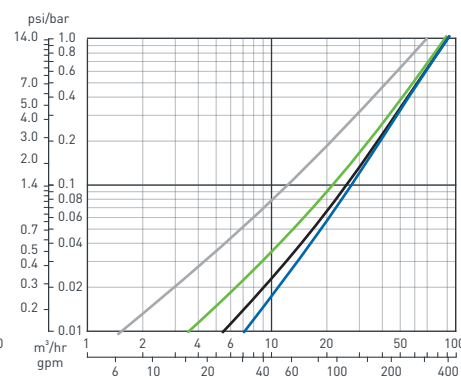
2 x 2" SK Battery AFF



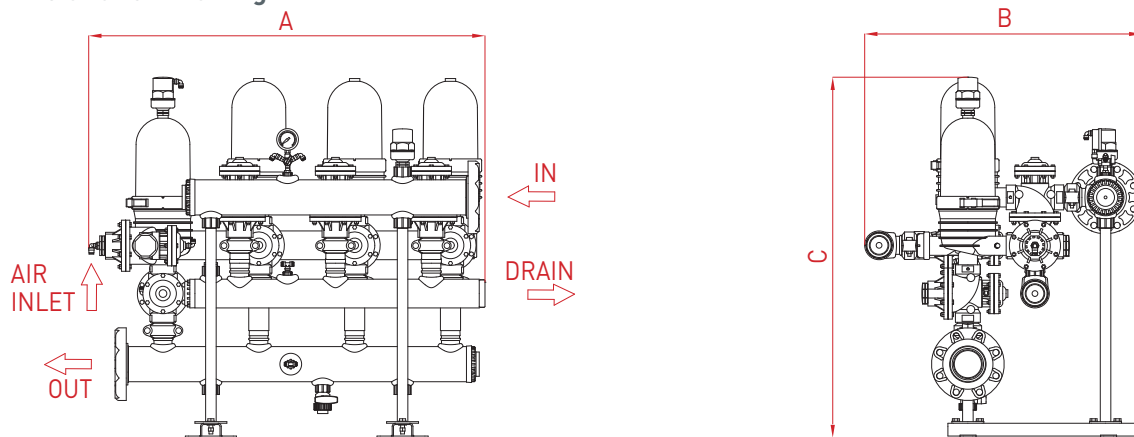
3 x 2" SK Battery AFF



4 x 2" SK Battery AFF



Typical Installation Drawing



Dimensions		2 unit battery	3 unit battery	4 unit battery
A	Length	941 mm (37")	1,241 mm (49")	1,541 mm (61")
B	Width		868 mm (34")	
C	Height		1,128 mm (44")	

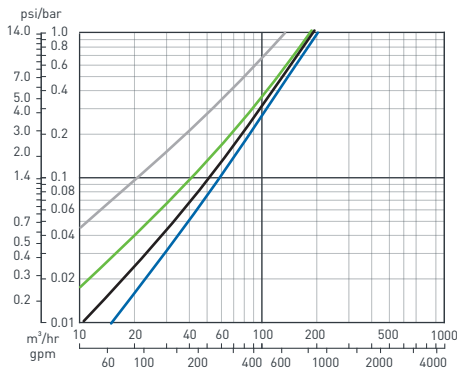
SK 3" Batteries



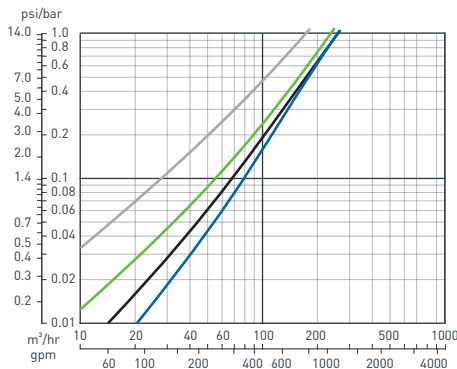
Filter Type	3 unit battery	4 unit battery	5 unit battery	
General Data				
Max. working pressure	10 bar (145 psi)			
Min. backwash pressure	2.8 bar (40.6 psi)			
Maximum recommended flow rate	100μ	90 m ³ /h (396 gpm)	120 m ³ /h (527 gpm)	150 m ³ /h (660 gpm)
	55μ	60 m ³ /h (364 gpm)	80 m ³ /h (352 gpm)	100 m ³ /h (440 gpm)
	20μ	30 m ³ /h (132 gpm)	40 m ³ /h (176 gpm)	50 m ³ /h (220 gpm)
Available filtration degrees	400, 200, 130, 100, 70, 55, 40, 20 micron			
Filtration volume	6,888 cm ³ (420 in ³)	9,184 cm ³ (560 in ³)	11,480 cm ³ (700 in ³)	
Inlet/Outlet diameter	150 mm (6")			
Max. working temperature	60°C (140°F)			
Dry weight standard	95 kg (209 lb)	115 kg (253 lb)	135 kg (297 lb)	
Backwash Data				
Valve drain port	80 mm (3")			
Flushing time	20 seconds			
Min. flow for backwash	20 m ³ /h (88 gpm)			

Head Loss Graphs (in clean water) — 400μ — 100μ — 55μ — 20μ

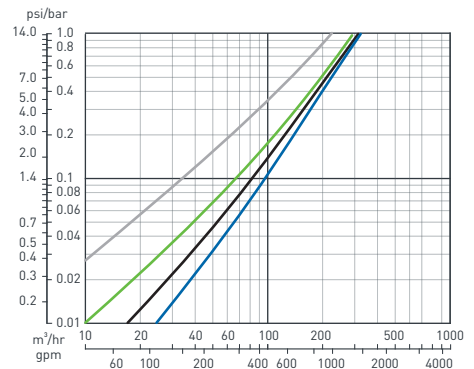
3 x 3" SK Battery



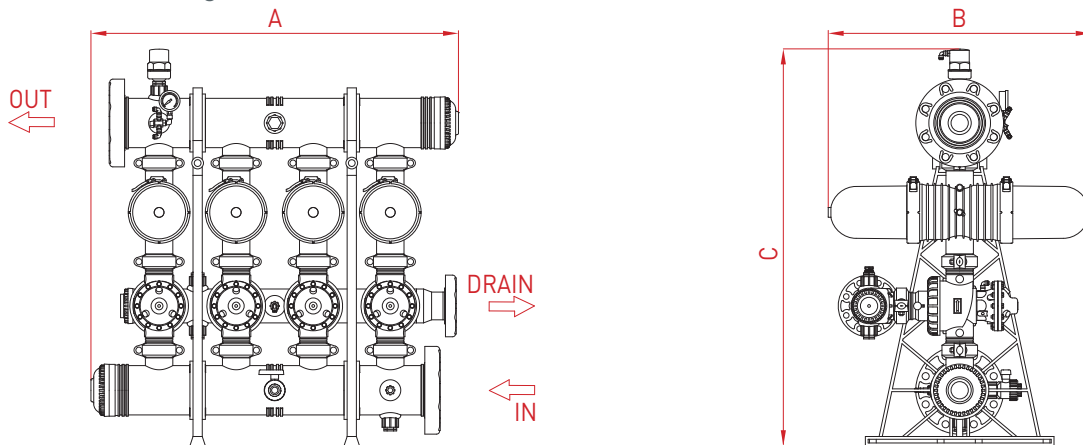
4 x 3" SK Battery



5 x 3" SK Battery



Typical Installation Drawing



Dimensions		3 unit battery	4 unit battery	5 unit battery
A	Length	942 mm (37 3/32")	1,192 mm (46 15/16")	1,442 mm (56 25/32")
B	Width	853 mm (33 19/32")	853 mm (33 19/32")	853 mm (33 19/32")
C	Height	1,287 mm (50 21/32")	1,287 mm (50 21/32")	1,287 mm (50 21/32")

SK 3" Batteries External Source

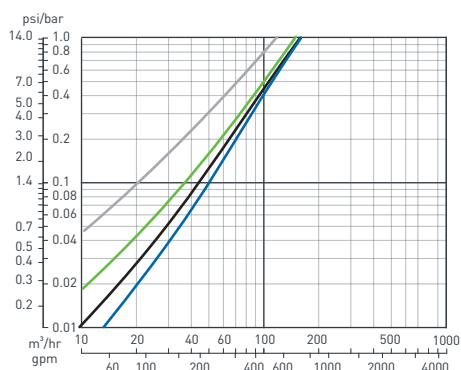


Filter Type		3 unit battery	4 unit battery	5 unit battery
General Data				
Max. working pressure		10 bar (145 psi)		
Min. backwash pressure		2.8 bar (40.6 psi)		
Maximum recommended flow rate	100µ	90 m³/h (396 gpm)	120 m³/h (527 gpm)	150 m³/h (660 gpm)
	55µ	60 m³/h (364 gpm)	80 m³/h (352 gpm)	100 m³/h (440 gpm)
	20µ	30 m³/h (132 gpm)	40 m³/h (176 gpm)	50 m³/h (220 gpm)
Available filtration degrees		400, 200, 130, 100, 70, 55, 40, 20 micron		
Filtration volume		6,888 cm³ (420 in³)	9,184 cm³ (520 in³)	11,480 cm³ (700 in³)
Inlet/Outlet diameter		150 mm (6")		
Max. working temperature		60°C (140°F)		
Weight [empty] EX.S. backwash		110 kg (242 lb)	130 kg (286 lb)	150 kg (330 lb)
Backwash Data				
Valve drain port		80 mm (3")		
Flushing time		15 seconds		
Min. flow for backwash		20 m³/h (88 gpm)		

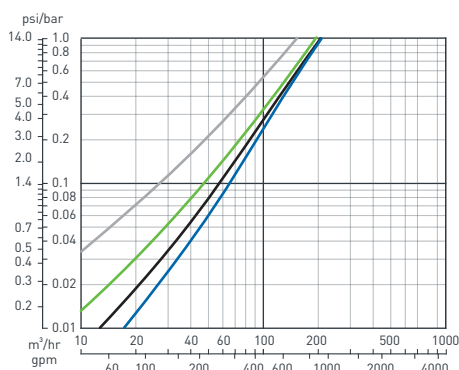
Head Loss Graphs (in clean water)

— 400µ — 100µ — 55µ — 20µ

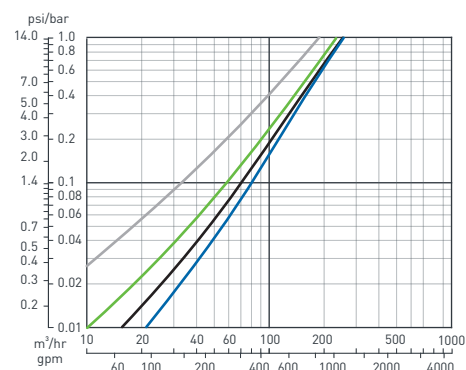
3 x 3" SK Battery EX.S.



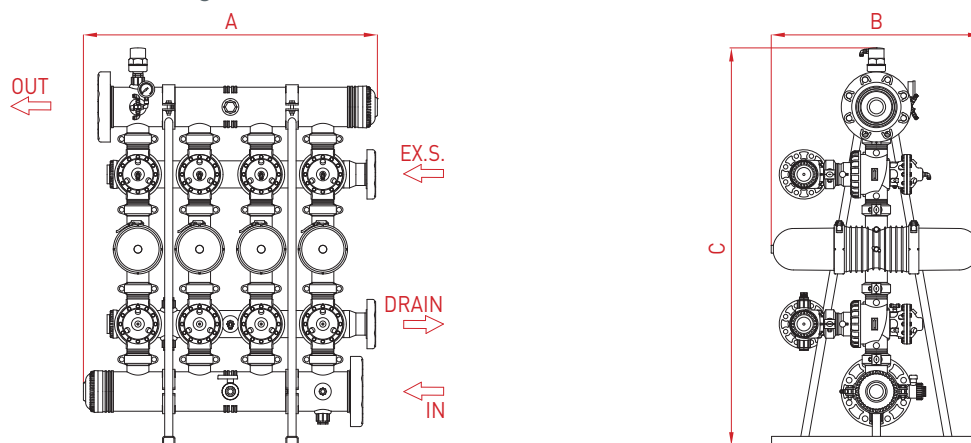
4 x 3" SK Battery EX.S.



5 x 3" SK Battery EX.S.



Typical Installation Drawing



Dimensions		3 unit battery	4 unit battery	5 unit battery
A	Length	942 mm (37 3/32")	1,192 mm (46 15/16")	1,442 mm (56 25/32")
B	Width		853 mm (33 19/32")	
C	Height		1,614 mm (63 17/32")	

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