

2"-3" Spin Klin™

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



inlet/outlet connection

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

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

flow rates

44-530 gpm
(10 - 120 m³/h)

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

filtration degrees

20 - 400 micron

max. working pressure

145 psi (10 bar)

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” Spin Klin™ series are modular, all polymeric, automatic disc filters with a patented self-cleaning backwash mechanism.

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

The Backwash Process

The discs are stacked on the Spin Klin™ 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 trigger or differential pressure, the system enters backwash mode. The inlet valve port shuts while 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” Spin Klin™ systems only)

Main benefits:

- Enhanced cleaning power, especially on fine filtration degrees
- Less 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 Spin Klin™ 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 Spin Klin™ 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	RPA (Reinforce Polyamide) or RPP (Reinforce Polypropylene)
Disc elements	PP (Polypropylene) or PA (Polyamide)
Backwash valves	RPA (Reinforce Polyamide) or RPP (Reinforce Polypropylene)
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

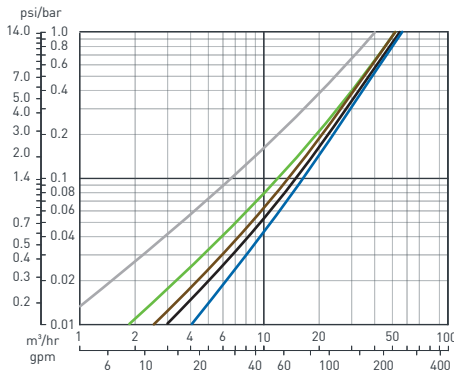


Filter Type	2 unit battery	3 unit battery	4 unit battery
General Data			
Max. working pressure	145 psi (10 bar)		
Min. backwash pressure	40.6 psi (2.8 bar)		
Maximum recommended flow rate	100 μ	132 gpm (30 m ³ /h)	198 gpm (45 m ³ /h)
	55 μ	88 gpm (20 m ³ /h)	132 gpm (30 m ³ /h)
	20 μ	44 gpm (10 m ³ /h)	66 gpm (15 m ³ /h)
Available filtration degrees	400, 200, 130, 100, 70, 55, 40, 20 micron		
Filtration volume	140 in ³ (2,296 cm ³)	210 in ³ (3,444 cm ³)	280 in ³ (4,592 cm ³)
Inlet/Outlet diameter	3" (80 mm)	4" (100 mm)	
Max. working temperature	140°F (60°C)		
Dry weight standard	59.5 lb (27 kg)	83.7 lb (38 kg)	108 lb (49 kg)
Backwash Data			
Drain connection	2" (50 mm)		
Flushing time	20 seconds		
Min. flow for backwash	44 gpm (10 m ³ /h)		

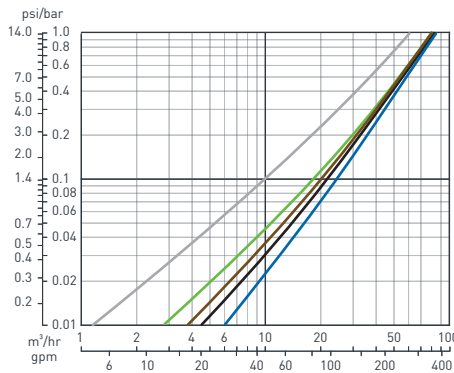
Head Loss Graphs (in clean water)

— 400 μ — 100 μ — 55 μ — 20 μ

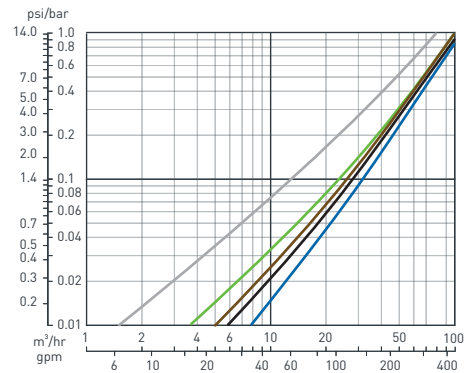
2 x 2" SK Battery



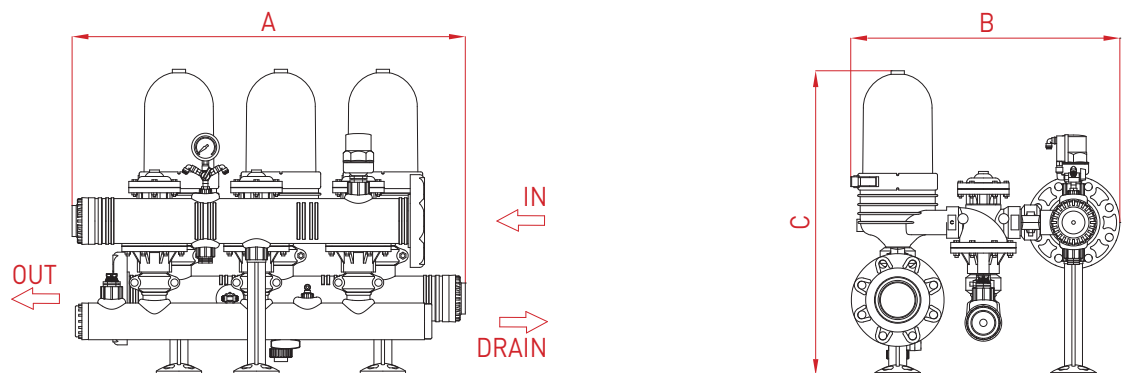
3 x 2" SK Battery



4 x 2" SK Battery



Typical Installation Drawing



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

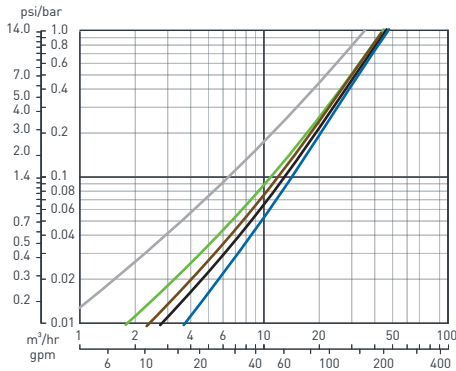
SK 2" Batteries External Source



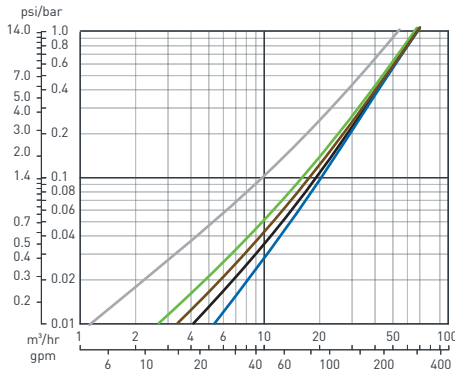
Filter Type	2 unit battery	3 unit battery	4 unit battery	
General Data				
Max. working pressure	145 psi (10 bar)			
Min. backwash pressure	40.6 psi (2.8 bar)			
Maximum recommended flow rate	100µ	132 gpm (30 m³/h)	198 gpm (45 m³/h)	264 gpm (60 m³/h)
	55µ	88 gpm (20 m³/h)	132 gpm (30 m³/h)	176 gpm (40 m³/h)
	20µ	44 gpm (10 m³/h)	66 gpm (15 m³/h)	88 gpm (20 m³/h)
Available filtration degrees	400, 200, 130, 100, 70, 55, 40, 20 micron			
Filtration volume	140 in³ (2,296 cm³)	210 in³ (3,444 cm³)	280 in³ (4,592 cm³)	
Inlet/Outlet diameter	3" (80 mm)	4" (100 mm)		
Max. working temperature	140°F (60°C)			
Dry weight EX.S. backwash	102 lb (46 kg)	131 lb (59 kg)	162 lb (73 kg)	
Backwash Data				
Drain connection	2" (50 mm)			
Flushing time	15 seconds			
Min. flow for backwash	44 gpm (10 m³/h)			

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

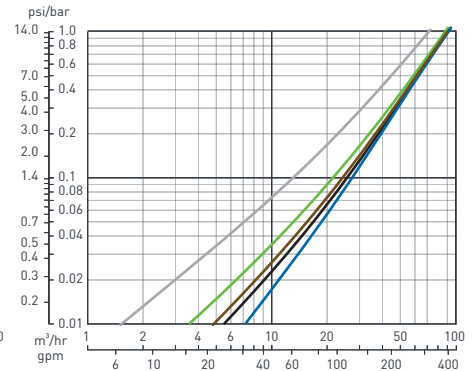
2 x 2" SK Battery EX.S.



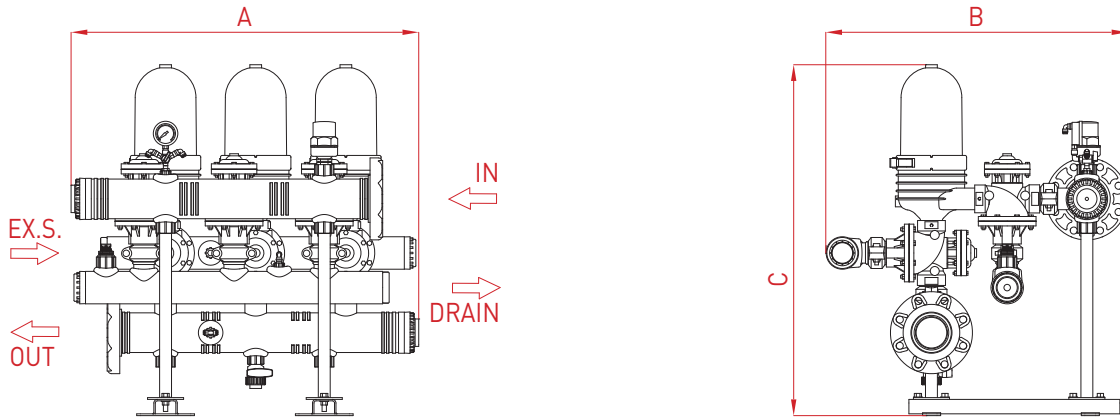
3 x 2" SK Battery EX.S.



4 x 2" SK Battery EX.S.



Typical Installation Drawing



Dimensions	2 unit battery	3 unit battery	4 unit battery	
A	Length	28" (706 mm)	38" (964 mm)	48" (1,214 mm)
B	Width		33" (839 mm)	
C	Height		38" (964 mm)	

SK 2" Batteries Air Aided



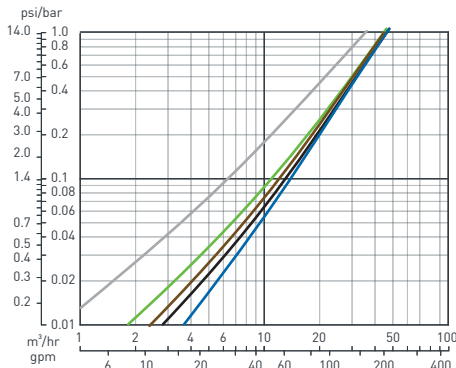
Filter Type	2 unit battery	3 unit battery	4 unit battery	
General Data				
Max. working pressure	145 psi (10 bar)			
Min. down stream pressure*	15 psi (1 bar)			
Maximum recommended flow rate	100μ	132 gpm (30 m ³ /h)	198 gpm (45 m ³ /h)	264 gpm (60 m ³ /h)
	55μ	88 gpm (20 m ³ /h)	132 gpm (30 m ³ /h)	176 gpm (40 m ³ /h)
	20μ	44 gpm (10 m ³ /h)	66 gpm (15 m ³ /h)	88 gpm (20 m ³ /h)
Available filtration degrees	400, 200, 130, 100, 70, 55, 40, 20 micron			
Filtration volume	140 in ³ (2,296 cm ³)	210 in ³ (3,444 cm ³)	280 in ³ (4,592 cm ³)	
Inlet/Outlet diameter	3" (80 mm)	4" (100 mm)		
Max. working temperature	140°F (60°C)			
Dry weight standard	131 lb (59 kg)	162 lb (73 kg)	197 lb (89 kg)	
Air flow requirements	71 gpm (270 l/min) 87-116 psi (at 6-8 bar)			
Backwash Data				
Valve drain port	2" (50 mm)			
Flushing time**	7 seconds			
Volume of backwash (not include air)**	3.2 gallons (12 liter)			

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

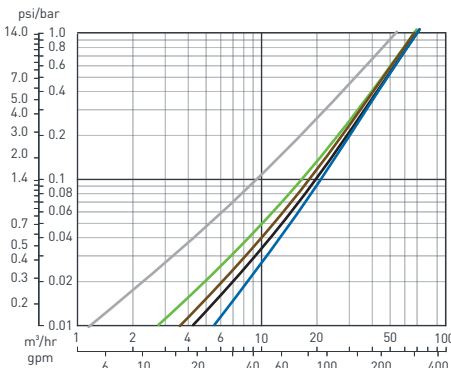
Head Loss Graphs (in clean water)

— 400μ — 100μ — 55μ — 20μ

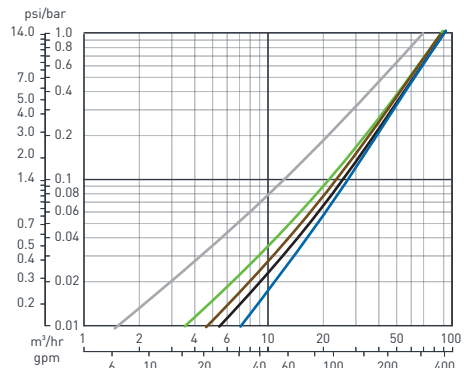
2 x 2" SK Battery AAF



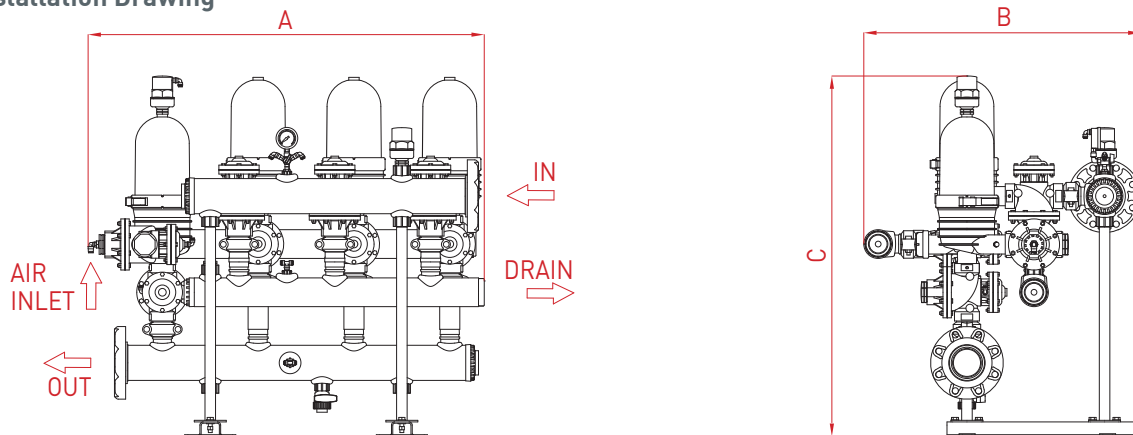
3 x 2" SK Battery AAF



4 x 2" SK Battery AAF



Typical Installation Drawing



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

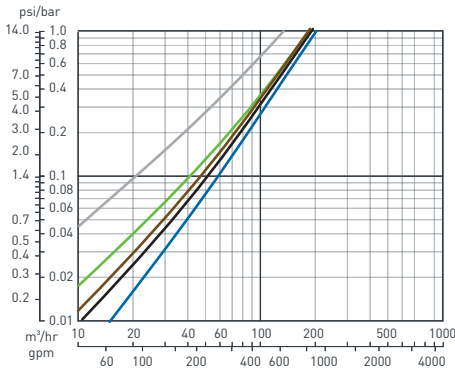
SK 3" Batteries



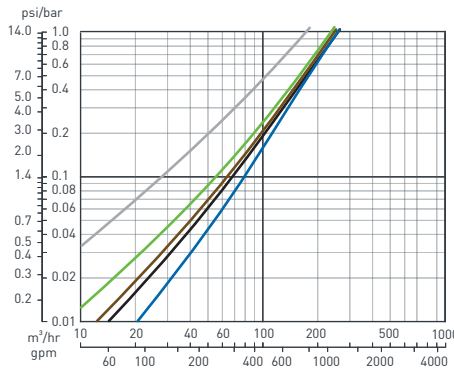
Filter Type	3 unit battery	4 unit battery	5 unit battery	
General Data				
Max. working pressure	145 psi (10 bar)			
Min. backwash pressure	40.6 psi (2.8 bar)			
Maximum recommended flow rate	100μ	90 m ³ /h (396 gpm)	120 m ³ /h (527 gpm)	150 m ³ /h (660 gpm)
	55μ	60 m ³ /h (264 gpm)	80 m ³ /h (352 gpm)	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	420 in ³ (6,888 cm ³)	560 in ³ (9,184 cm ³)	700 in ³ (11,480 cm ³)	
Inlet/Outlet diameter	6" (150 mm)			
Max. working temperature	140°F (60°C)			
Dry weight standard	209 lb (95 kg)	253 lb (115 kg)	297 lb (135 kg)	
Backwash Data				
Drain connection	3" (80 mm)			
Flushing time	20 seconds			
Min. flow for backwash	88 gpm (20 m ³ /h)			

Head Loss Graphs (in clean water)

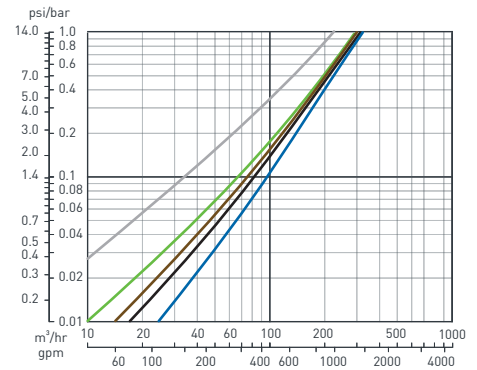
3 x 3" SK Battery



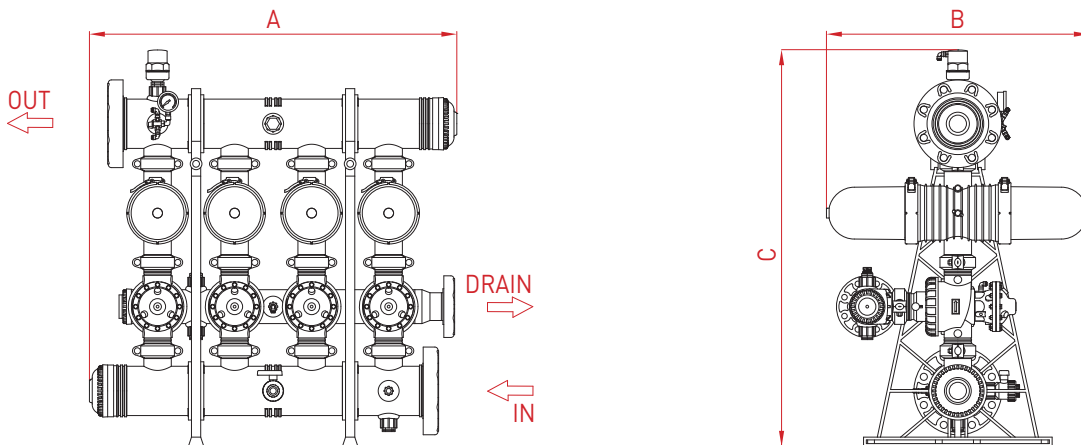
4 x 3" SK Battery



5 x 3" SK Battery



Typical Installation Drawing



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

SK 3" Batteries External Source



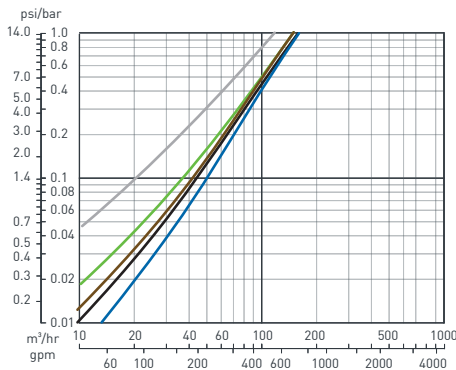
Filter Type	3 unit battery	4 unit battery	5 unit battery
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General Data				
Max. working pressure		145 psi (10 bar)		
Min. backwash pressure		40.6 psi (2.8 bar)		
Maximum recommended flow rate	100μ	396 gpm (90 m ³ /h)	527 gpm (120 m ³ /h)	660 gpm (150 m ³ /h)
	55μ	264 gpm (60 m ³ /h)	352 gpm (80 m ³ /h)	440 gpm (100 m ³ /h)
	20μ	132 gpm (30 m ³ /h)	176 gpm (40 m ³ /h)	220 gpm (50 m ³ /h)
Available filtration degrees		400, 200, 130, 100, 70, 55, 40, 20 micron		
Filtration volume		420 in ³ (6,888 cm ³)	520 in ³ (9,184 cm ³)	700 in ³ (11,480 cm ³)
Inlet/Outlet diameter		6" (150 mm)		
Max. working temperature		60°C (140°F)		
Weight [empty] EX.S. backwash		242 lb (110 kg)	286 lb (130 kg)	330 lb (150 kg)

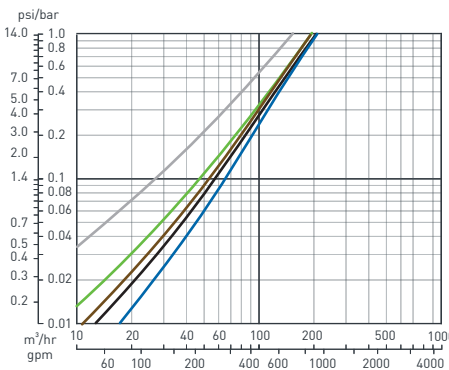
Backwash Data	
Valve drain port	3" (80 mm)
Flushing time	15 seconds
Min. flow for backwash	20 m ³ /h (88 gpm)

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

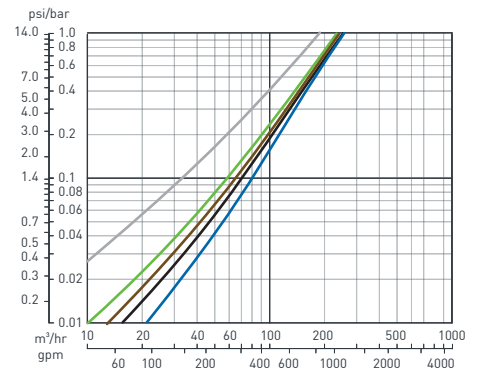
3 x 3" SK Battery EX.S.



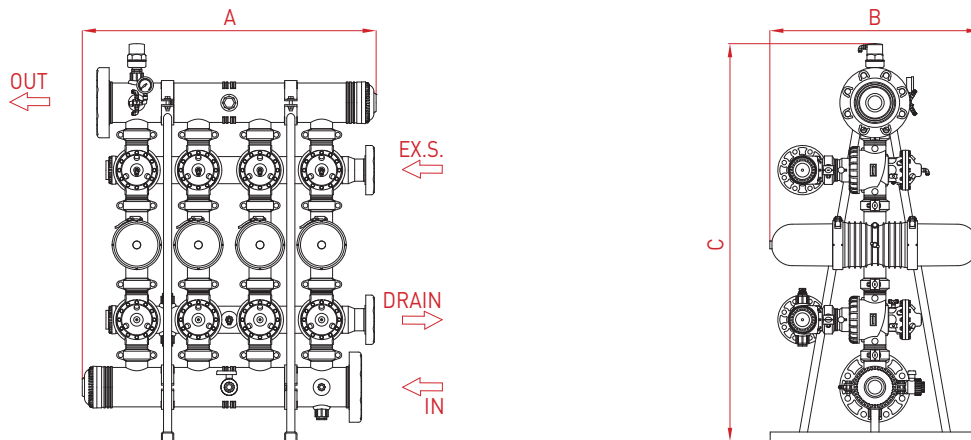
4 x 3" SK Battery EX.S.



5 x 3" SK Battery EX.S.



Typical Installation Drawing



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

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