amiad® WATER SYSTEMS | ARKAL

2”-3” SpinKlin™

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

inlet/outlet connection	flow rates	filtration degrees	max. working pressure
2” SK: 80 - 150 mm (3” - 6”) 3” SK: 150 - 200 mm (6” - 8”)	10-120 m^3/h (44-530 gpm) 90-200 m^3/h (400-880 gpm) and higher	20-400 micron	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 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” SpinKlin™ 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 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	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

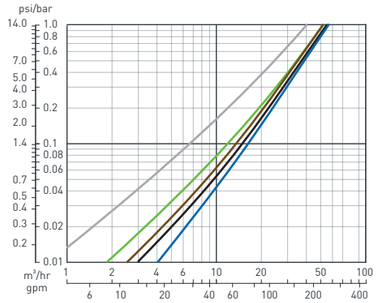
SK 2” Batteries

Filter Type		2 unit battery	3 unit battery	4 unit battery
General Data				
Max. working pressure*		10 bar (145 psi)		
Min. backwash pressure		2.8 bar (40.6 psi)		
Maximum recommended flow rate	100µ	30 m³/h (132 gpm)	45 m³/h (198 gpm)	60 m³/h (264 gpm)
	55µ	20 m³/h (88 gpm)	30 m³/h (132 gpm)	40 m³/h (176 gpm)
	20µ	10 m³/h (44 gpm)	15 m³/h (66 gpm)	20 m³/h (88 gpm)
Available filtration degrees		400, 200, 130, 100, 70, 55, 40, 20 micron		
Filtration volume		2,296 cm³ (140 in³)	3,444 cm³ (210 in³)	4,592 cm³ (280 in³)
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				
Drain connection		50 mm (2”)		
Flushing time		20 seconds		
Min. flow for backwash		10 m³/h (44 gpm)		

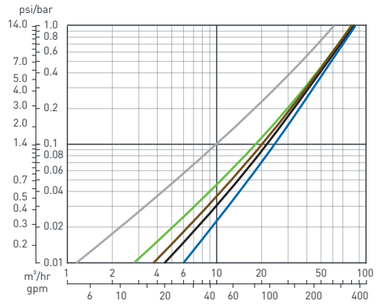
* Maximum operating pressure and temperature are interdependent parameters and are given for general reference only. Please consult your authorized Amiad representative for the application specific parameters.

Head Loss Graphs (in clean water)
400µ 100µ 70µ 55µ 20µ

2 x 2” SK Battery



3 x 2” SK Battery



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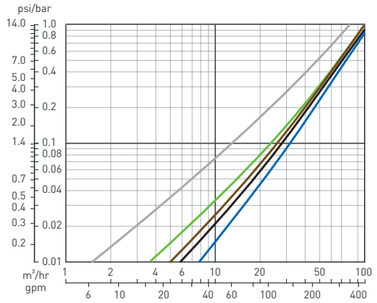
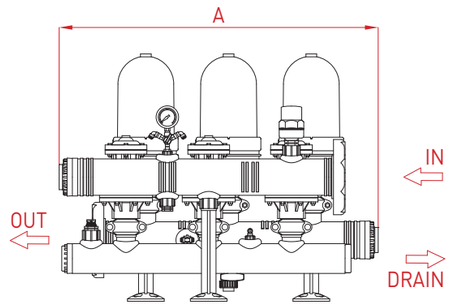
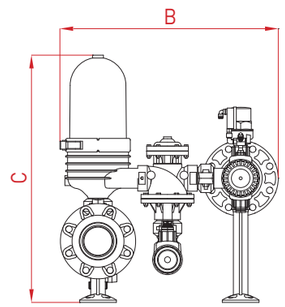


Typical Installation Drawing





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

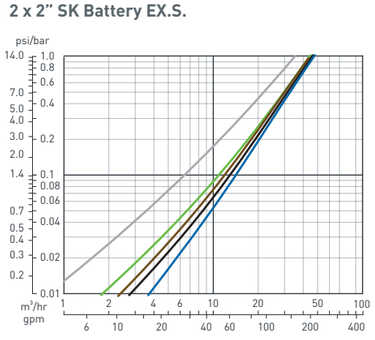
Filter Type		2 unit battery	3 unit battery	4 unit battery
General Data				
Max. working pressure*		10 bar (145 psi)		
Min. backwash pressure		2.8 bar (40.6 psi)		
Maximum recommended flow rate	100µ	30 m³/h (132 gpm)	45 m³/h (198 gpm)	60 m³/h (264 gpm)
	55µ	20 m³/h (88 gpm)	30 m³/h (132 gpm)	40 m³/h (176 gpm)
	20µ	10 m³/h (44 gpm)	15 m³/h (66 gpm)	20 m³/h (88 gpm)
Available filtration degrees		400, 200, 130, 100, 70, 55, 40, 20 micron		
Filtration volume		2,296 cm³ (140 in³)	3,444 cm³ (210 in³)	4,592 cm³ (280 in³)
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				
Drain connection		50 mm (2”)		
Flushing time		15 seconds		
Min. flow for backwash		10 m³/h (44 gpm)		

* Maximum operating pressure and temperature are interdependent parameters and are given for general reference only. Please consult your authorized Amiad representative for the application specific parameters.

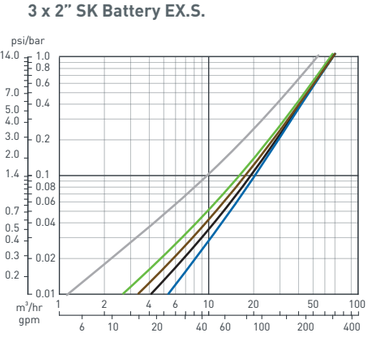
Head Loss Graphs (in clean water)

400µ 100µ 70µ 55µ 20µ

2 x 2” SK Battery EX.S.



3 x 2” SK Battery EX.S.



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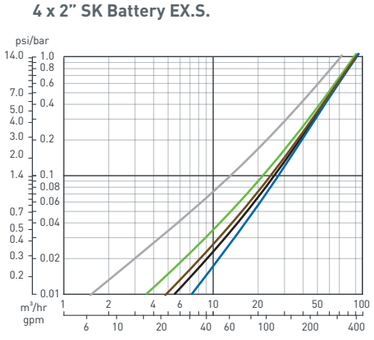
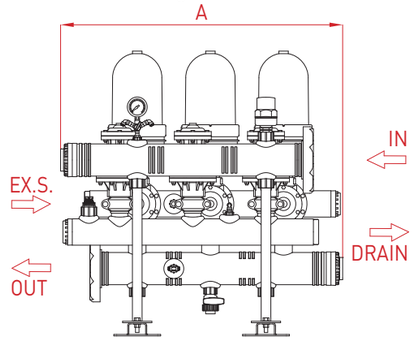
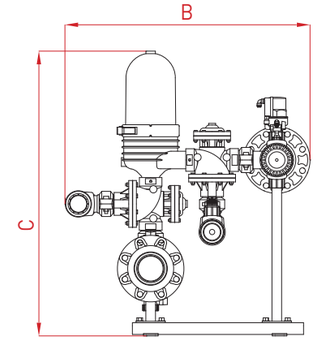


Typical Installation Drawing





Dimensions		2 unit battery	3 unit battery	4 unit battery
A	Length	706 mm (28”)	964 mm (38”)	1214 mm (48”)
B	Width	839 mm (33”)		
C	Height	973 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	30 m³/h (132 gpm)	45 m³/h (198 gpm)	60 m³/h (264 gpm)
	55µ	20 m³/h (88 gpm)	30 m³/h (132 gpm)	40 m³/h (176 gpm)
	20µ	10 m³/h (44 gpm)	15 m³/h (66 gpm)	20 m³/h (88 gpm)
Available filtration degrees		400, 200, 130, 100, 70, 55, 40, 20 micron		
Filtration volume		2,296 cm³ (140 in³)	3,444 cm³ (210 in³)	4,592 cm³ (280 in³)
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)
Air flow requirements		270 l/min (71 gpm) at 6-8 bar (87-116 psi)		

* Maximum operating pressure and temperature are interdependent parameters and are given for general reference only. Please consult your authorized Amiad representative for the application specific parameters.

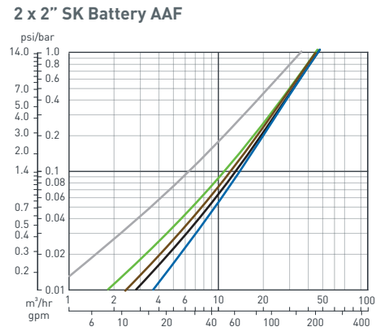
Backwash Data	
Valve drain port	50 mm (2”)
Flushing time**	7 seconds
Volume of backwash (not include air)**	12 liter (3.2 gallons)

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

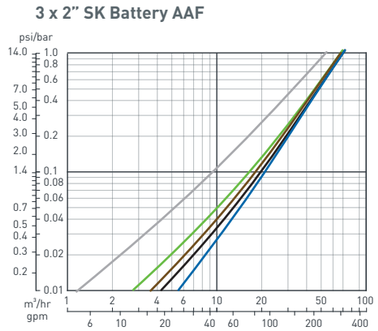
Head Loss Graphs (in clean water)

400µ 100µ 70µ 55µ 20µ

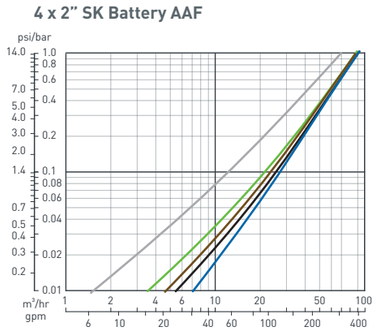
2 x 2” SK Battery AAF



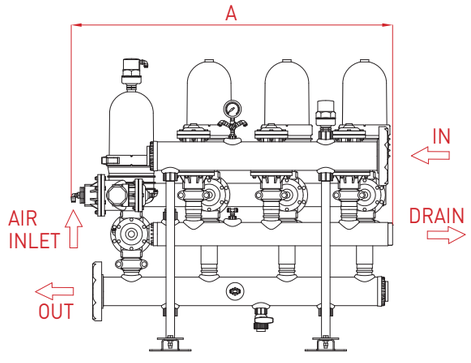
3 x 2” SK Battery AAF

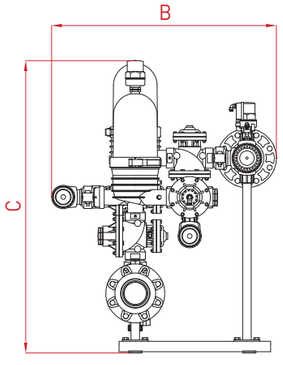


4 x 2” SK Battery AAF



Typical Installation Drawing





Dimensions		2 unit battery	3 unit battery	4 unit battery
A	Length	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

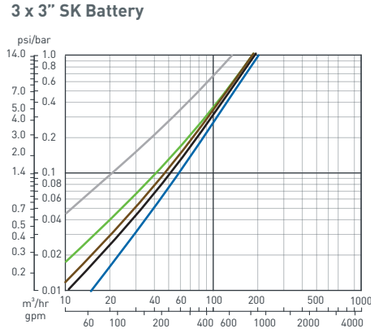
Filter Type		3 unit battery	4 unit battery	5 unit battery
General Data				
Max. working pressure*		10 bar (145 psi)		
Min. backwash pressure		2.8 bar (40.6 psi)		
Maximum recommended flow rate	100µ	90 m^3/h (396 gpm)	120 m^3/h (527 gpm)	150 m^3/h (660 gpm)
	55µ	60 m^3/h (264 gpm)	80 m^3/h (352 gpm)	100 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		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				
Drain connection		80 mm (3”)		
Flushing time		20 seconds		
Min. flow for backwash		20 m^3/h (88 gpm)		

* Maximum operating pressure and temperature are interdependent parameters and are given for general reference only. Please consult your authorized Amiad representative for the application specific parameters.

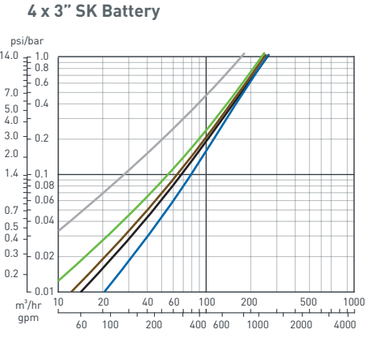
Head Loss Graphs (in clean water)

400µ 100µ 70µ 55µ 20µ

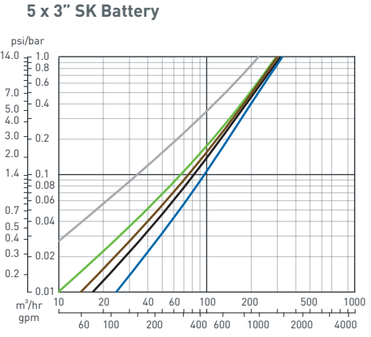
3 x 3” SK Battery



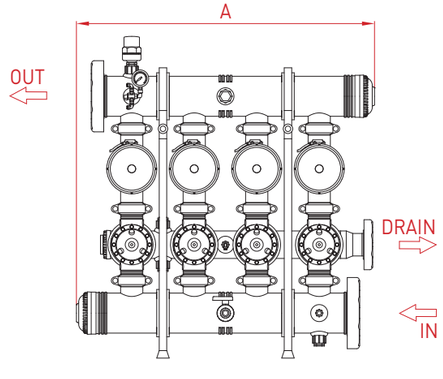
4 x 3” SK Battery

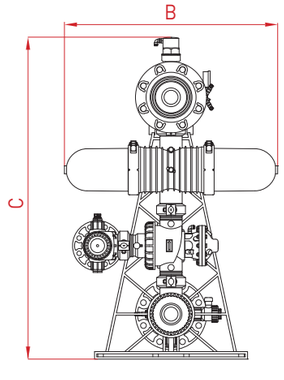


5 x 3” SK Battery



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”)		
C	Height	1,287 mm (50 21/32”)		

SK 3” Batteries External Source

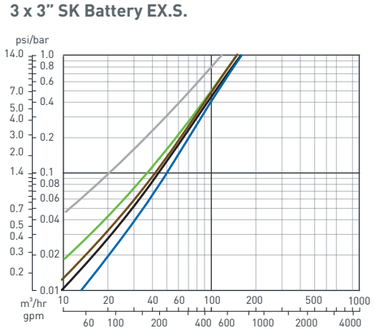
Filter Type		3 unit battery	4 unit battery	5 unit battery
General Data				
Max. working pressure*		10 bar (145 psi)		
Min. backwash pressure		2.8 bar (40.6 psi)		
Maximum recommended flow rate	100µ	90 m^3/h (396 gpm)	120 m^3/h (527 gpm)	150 m^3/h (660 gpm)
	55µ	60 m^3/h (264 gpm)	80 m^3/h (352 gpm)	100 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		6,888 cm^3 (420 in^3)	9,184 cm^3 (520 in^3)	11,480 cm^3 (700 in^3)
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 m^3/h (88 gpm)		

* Maximum operating pressure and temperature are interdependent parameters and are given for general reference only. Please consult your authorized Amiad representative for the application specific parameters.

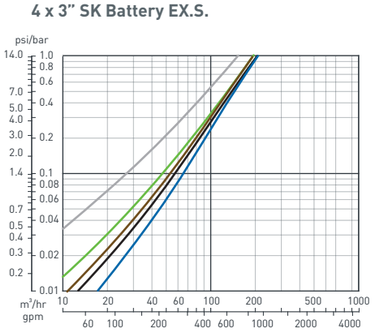
Head Loss Graphs (in clean water)

400µ 100µ 70µ 55µ 20µ

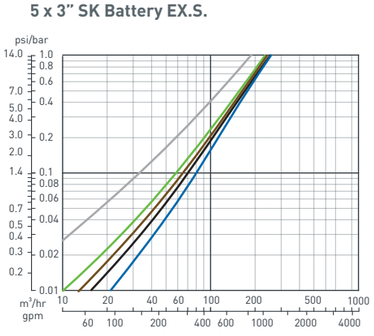
3 x 3” SK Battery EX.S.



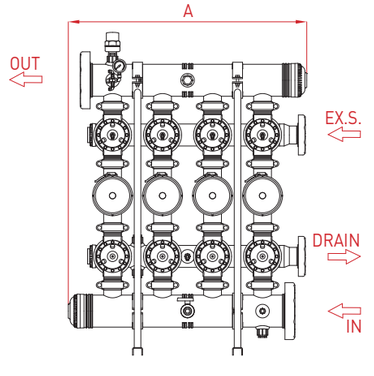
4 x 3” SK Battery EX.S.

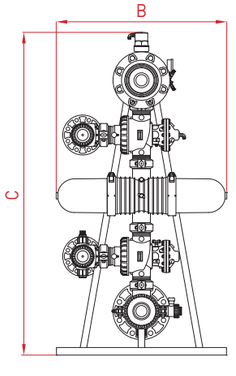


5 x 3” SK Battery EX.S.



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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