

3" Spin Klin™ Apollo L.C.E.

Automatic Low Cost Energy
disc filtration system with
large filtration area

L.C.E systems:

- For low pressure where higher pressure is not available or is too costly
- Flushes at low pressure using less energy
- For low to medium flow rates in a compact footprint



inlet/outlet

150 - 200 mm
(6" - 8")

flow rates

80 - 320 m³/h
(396-1,409 gpm)

filtration degrees

100 - 400
micron

min. backwash pressure

1.5 bar
(22 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
- Compact design

How the 3" Spin Klin™ Apollo L.C.E. Systems Work

General

The Apollo 3" Spin Klin™ L.C.E. series are modular, all polymeric, automatic disc filters with a patented self-cleaning backwash mechanism. The 3" Apollo L.C.E. systems range in flow rates from 80 m³/h (352 gpm) to 320 m³/h (1,409 gpm) with filtration degrees ranging from 100 – 400 micron. Inlet/Outlet from 150 - 200 mm (6" – 8") diameter.

The Filtration Process

The discs are stacked on the Spin Klin™ L.C.E. 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 enter the backwashed filter.

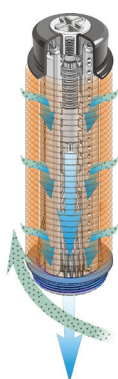
The Apollo Spine Technology Offers:

- Significantly larger filtration area (in length and diameter, triple the 2" disc)
- Reduction in required number of valves and accessories
- Lower backwash flow during cleaning process
- Unique design offers the largest disc element technology on the market

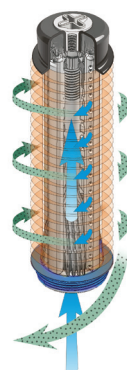
Construction materials	
Filter Housing & Lid	PP (Polypropylene)
Disc elements	PP (Polypropylene)
Backwash valves	RPA (Reinforce Polyamide) or RPP (Reinforce Polypropylene)
Manifolds	PP (Polypropylene)
Seals	NBR or EPDM, (Viton optional)
Control Tubing	PE



Apollo spine



Filtration mode



Backwash mode

Disc material type availability according to filtration degree:

Color Code	Black	Red	Yellow	Blue
Micron	100	130	200	400

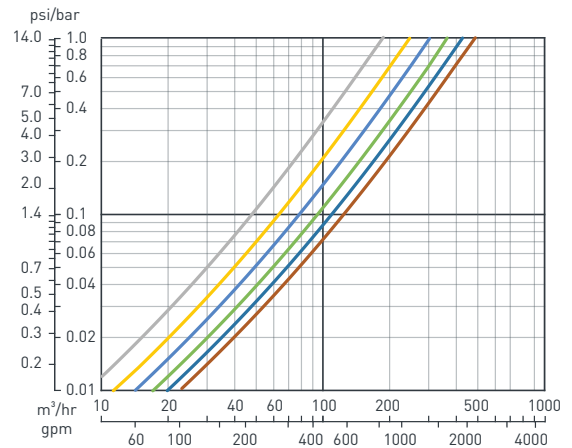
Filter Type	3 unit battery	4 unit battery	5 unit battery	6 unit battery	7 unit battery	8 unit battery
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General Data							
Max. working pressure	6 bar (87 psi)						
Min. backwash pressure	1.5 bar (22 psi)						
Max. recommended flow rate	130 μ	120 m ³ /h (528 gpm)	160 m ³ /h (704 gpm)	200 m ³ /h (880 gpm)	240 m ³ /h (1057 gpm)	280 m ³ /h (1233 gpm)	320 m ³ /h (1409 gpm)
Filtration volume		9,426 cm ³ (575 in ³)	12,568 cm ³ (767 in ³)	15,710 cm ³ (959 in ³)	18,852 cm ³ (1,150 in ³)	21,994 cm ³ (1,342 in ³)	25,136 cm ³ (1,534 in ³)
Filtration area		7,860 cm ² (1,218 in ²)	10,480 cm ² (1,624 in ²)	13,100 cm ² (2,031 in ²)	15,720 cm ² (2,437 in ²)	18,340 cm ² (2,843 in ²)	20,960 cm ² (3,249 in ²)
Inlet/Outlet diameter		150 mm (6")			150/200 mm (6"/8")	200 mm (8")	250 mm (10")
Max. working temperature	60°C (140°F)						
Dry weight standard		125 kg (275 lb)	155 kg (341 lb)	190 kg (418 lb)	220 kg (484 lb)	255 kg (561 lb)	285 kg (627 lb)

Backwash Data	
Valve drain port	80 mm (3")
Flushing time	30 seconds
Min. flow for backwash	24 m ³ /h (106 gpm)



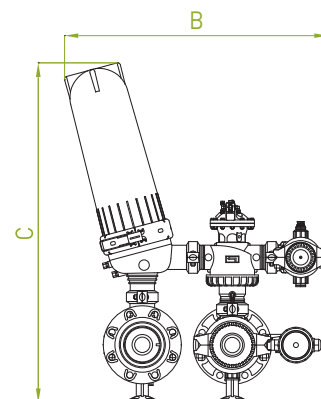
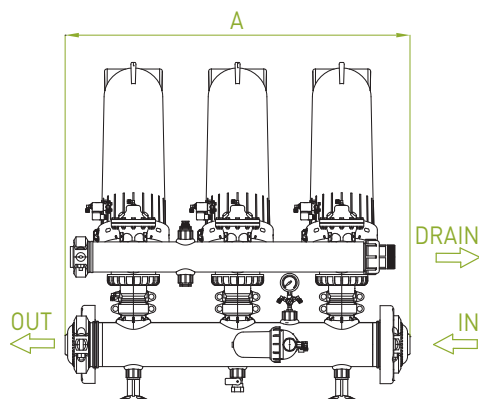
Head Loss Graphs (in clean water)



*head loss is based on a 130 micron disc

— 3 unit — 4 unit — 5 unit — 6 unit — 7 unit — 8 unit

Typical Installation Drawing



Dimensions		3 unit battery	4 unit battery	5 unit battery	6 unit battery	7 unit battery	8 unit battery
A	Length	1,160 mm (45 21/32")	1,540 mm (60 5/8")	1,920 mm (75 19/32")	2,300 mm (90 9/16")	2,680 mm (105 1/2")	3,060 mm (120 15/32")
B	Width	941 mm (37 1/16")					
C	Height	1,218 mm (47 15/16")					