



Spin Clean[®]

Plastic Filters

Plastic Spin Clean® Filters

API Plastic Spin Clean® 4E and 5E Filters



Plastic Spin Clean® Filters are unique screen filters that stay clean during operation. They effectively keep debris moving across the screen element towards the basin, where it is collected and can be drained to atmosphere.

The 4E Plastic Spin Clean® Filter is best suited for applications where the contaminants are heavy particles like sand.

The 5E-40 Plastic Spin Clean® Filter is best suited for applications with surface water where the main contaminants are light particles, like algae and other organic matter commonly found in canals, rivers, ponds and reservoirs.



Product Features

- No moving parts
- Unique Spin Clean® action keeps the screen clean during operation
- Engineered plastic construction is light in weight and resistant to corrosion and injected chemicals
- Two piece threaded housing with O-ring seal for easy screen access and maintenance
- Pressure ratings of 80 psi and 150 psi available in ¾" and 1" models, 150 psi rating for 1½", 2" and 5E-40-1½" models.
- Strong stainless steel screen elements available in 30, 50, 100, 150 (standard) and 200 mesh
- Vinyl screen collars prevent debris from by-passing filter area
- Available with ball valve for flushing debris basin
- Only 5-8 psi pressure loss required across filter to ensure best self cleaning action

Models and Specifications

Type	Inlet/Outlet Size (inches)	Inlet/Outlet Type	Basin Cap or Valve	Basin Outlet Threads	Maximum Flow Rate (gpm)	Maximum Working Pressure (psi)
4E-¾A	¾	MPT	Cap	¾ MHT	9	80
4E-¾B	¾	MPT	Valve	¾ MHT	9	80
4EH-¾A	¾	MPT	Cap	¾ MPT	9	150
4EH-¾B	¾	MPT	Valve	¾ MPT	9	150
4E-1A	1	MPT	Cap	¾ MHT	18	80
4E-1B	1	MPT	Valve	¾ MHT	18	80
4EH-1A	1	MPT	Cap	¾ MPT	18	150
4EH-1B	1	MPT	Valve	¾ MPT	18	150
4EH-1½	1½	MPT	Valve	¾ MPT	55	150
4EH-2P	2	MPT	Valve	¾ MPT	110	150
5E-40	1½	MPT	Valve	¾ MPT	40	150

Ordering Information:

Examples: Type -Screen Mesh

4E-3/4B-200 ¾" MPT w/MHT flush & Ball Valve (80psi) w/200 mesh screen

4EH-1A-30 1" MPT w/MPT flush & Ball Valve (150 psi) w/30 mesh screen

4EH-1½-150 1½" MPT w/MPT flush & Ball Valve (150 psi) w/150 mesh screen

Options:

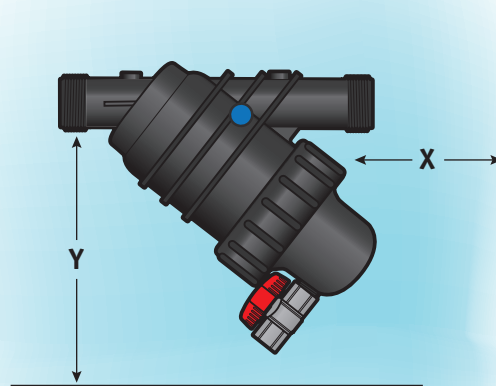
All models – Drilled and tapped 1/8" hole for pressure gauge at inlet and outlet boss

1" and larger models – BSP Threads

Please call customer service for availability

Minimum Clearance

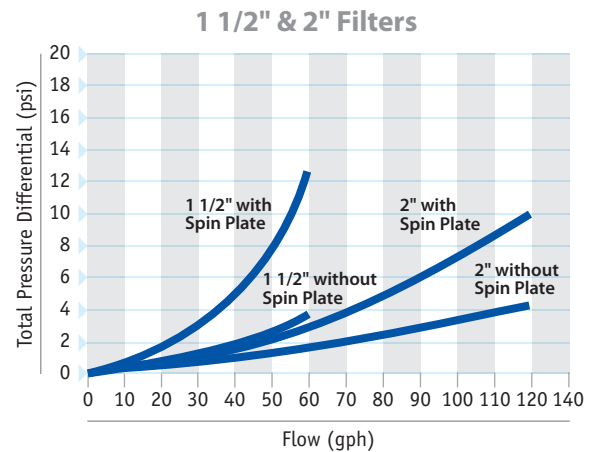
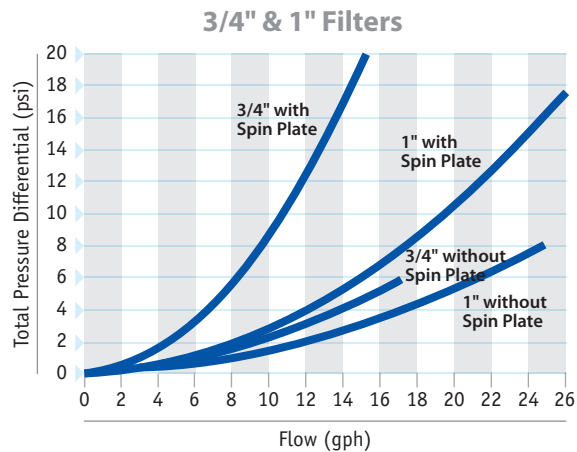
Size	X	Y
4E-3/4 & 1 w/cap	5"	8"
4E-3/4 & 1 w/valve	6"	10"
4E-1-1/2	4"	12"
4E-02	4"	12"
5E-40	4"	12"



Size Selection Guide

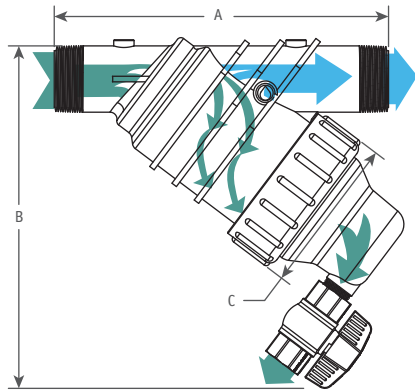
Specifications		3/4"	1"	1 1/2"	2"
Screen area in sq. inches (cm ²)		23.4 / 151.0	23.4 / 151.0	60.8 / 392.3	60.8 / 392.3
Housing material (80 psi pressure rating)		ABS	ABS	N/A	N/A
Housing material (150 psi pressure rating)		Engineering Grade Plastic	Engineering Grade Plastic	Engineering Grade Plastic	Engineering Grade Plastic
30, 50, 100, 150 & 200 mesh stainless steel screens		Yes	Yes	Yes	Yes
Sintered screens		No	No	Yes	Yes
Clearance height in inches (with valve)		12	13	15.5	
Width in inches (thread to thread)		6 1/8	6 5/8	12	12
Drilled/tapped 1/8" hole for gauge or schrader		Optional	Optional	Optional	Optional
Debris basin flush port size	Low Pressure	3/4" MHT	3/4" MHT	N/A	N/A
	High Pressure	3/4" MPT	3/4" MPT	3/4" MPT	3/4" MPT

Flow Characteristics



Spin Plate Flow Data

Model #	Part #	Notes/Reference	Range (gpm)
3/4-SP	12140001	3/4" -2 Hole (Standard)	9
1-SP	12140002	1" - 2 Hole (Standard)	18
11/2-SP	12140013	11/2" - 4 Hole	45-55
11/2-SP-3	12140058	11/2" - 3 Hole	34-42
11/2-SP-2	12140059	11/2" - 2 Hole	23-28
2-SP	12140029	2" - 4 Hole	90-110
2-SP-3	12140061	2" - 3 Hole	68-84
2-SP-2	12140060	2" - 2 Hole	45-55



Housing Dimensions

Size	A		B		C	
	in	cm	in	cm	in	cm
3/4"	6.2	15.8	8.5	21.6	3	7.6
1"	6.8	17.3	9.5	24.1	3	7.6
1 1/2"	12	30.5	12	30.5	5.5	14.0
2"	12	30.5	12	30.5	5.5	14.0

Screen Dimensions

Size	A		B		C		Screen Material	Area of Filtration	
	in	cm	in	cm	in	cm		sq. in.	sq. cm
3/4" & 1"	5.25	13.3	1.78	4.5	1.6	4.1	STAINLESS STEEL	23.4	151.0
1" prior to Jan. 2003	6.25	15.9	1.78	4.5	1.6	4.1	STAINLESS STEEL	28.4	183.2
1 1/2" & 2"	7.25	18.4	3.5	8.9	3.2	8.1	STAINLESS STEEL	60.8	392.3

1" Screen

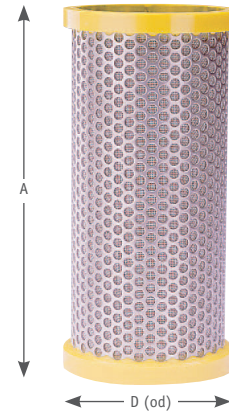
For filters purchased prior to Jan. 2003



3/4" & 1" Screen



1 1/2" & 2" Screen



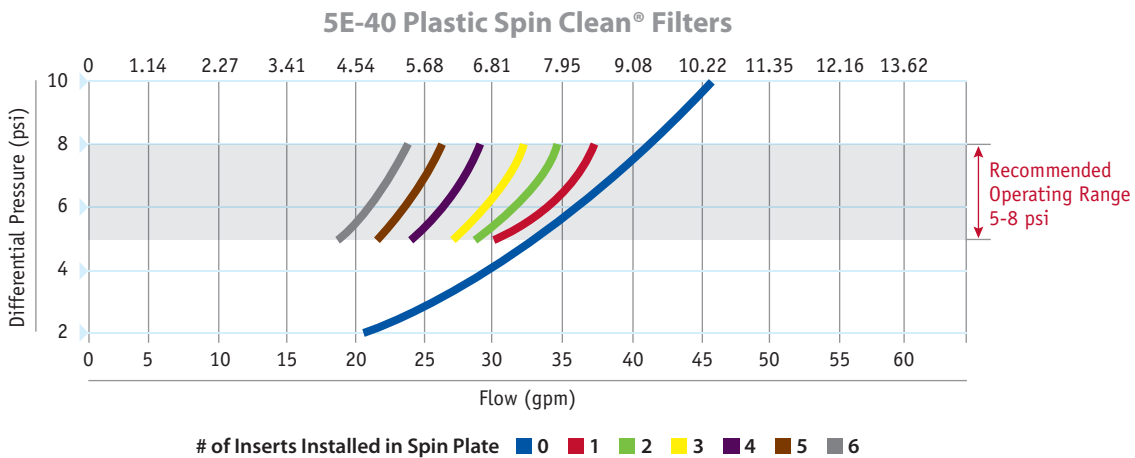
Filter Screen Mesh/Micron Conversions

MESH	30	50	100	150	200
INCH	.023	.012	.006	.004	.003
MICRON	590	300	152	100	80
COLOR	Gold	Yellow	Blue	Black	Red

Flow Range & Characteristics

Flow Range, gpm (m ³ /hr) with Flow Inserts installed in Spin Plate							
Filer Model	Fully Open Spin Plate	1 Flow Insert	2 Flow Inserts	3 Flow Inserts	4 Flow Inserts	5 Flow Inserts	6 Flow Inserts
5E-40	31-40 (7.0-9.1)	31-40 (7.0-9.1)	31-40 (7.0-9.1)	31-40 (7.0-9.1)	31-40 (7.0-9.1)	31-40 (7.0-9.1)	31-40 (7.0-9.1)

Flow Characteristics



Operation

Incoming unfiltered water from the inlet is forced through the nozzles of a stationary spin plate at the top of the filter screen element. These nozzles blast water across the inside screen surface, continuously sweeping the screen clean, spinning debris toward the basin where it is collected.

Each filter model is designed to self-clean over a flow range corresponding to pressure differentials between the inlet and outlet of the filter of from 5-8 psi. As long as the flow through the filter is sufficient to produce these pressure differentials, a strong self-cleaning action will be maintained. These flow ranges are shown for each filter model in the Flow Range charts.

These pressure differentials are critical for the filter to run long periods without maintenance. Operating the filter at less than the minimum pressure differential will reduce the cleaning action resulting in more frequent screen clogging and disassembly to remove and clean the screen.

4E Spin Clean models usually require only periodic flushing of contaminants from the drain basin. With higher loading of contaminants it may be necessary to flush more frequently or on a continuous basis with a small flow of water.

5E Spin Clean models require continuous flushing with a low flow rate to reduce the concentration of organic contaminants within the basin and screen area. Approximately 1% of the total flow through the filter is an adequate continuous flush flow from the basin drain valve.

Operating with Flow Rates Lower than Minimum Required

If it is known that the Spin Clean filter will be operating at lower flow rates than rated flow, or if it is discovered that the flow rate of a system is insufficient to give the filter the minimum pressure differential required, changing the spin plate may be necessary to assure full self-cleaning action.

For 4E-3/4 and 4E-1 Plastic filters, the spin plates are interchangeable, so a 3/4" spin plate may be used in a 4E-1 filter to accommodate a lower flow rate.

For 4E 1-1/2 and 4E-2 Plastic filters, all spin plates are interchangeable and various spin plates are available with different flow ranges. The Flow Range chart showing the flow rates corresponding to the spin plate to be installed should be used as a guide.

For 5E-40 Plastic filters, hollow vinyl flow insert tubes are used for flow reduction. Any number of inserts may be used up to the number of nozzles in the spin plate. The Flow Range chart showing the flow ranges for each installed flow insert should be used as a guide. The vinyl flow inserts are solvent welded into the rigid PVC spin plate using PVC cement for welding flexible PVC to rigid PVC (such as IPS Weld-On #2795). Flow inserts should be installed from the top side of the nozzle openings with the top of the insert flush with the top surface of the spin plate.

Maintenance

Care should be taken to keep the operating pressure differential across the filter between 5-8 psi. Pressure reading should be monitored sufficiently to detect any build up of pressure differential during normal operation, which indicates the start of filter screen plugging. When this occurs, the system should be shut down, the filter drained and disassembled. The screen element should be washed thoroughly using a high pressure spray washer, spraying from outside in.

Several steps can be taken to extend the maintenance interval:

1. Start with a thoroughly clean screen element. Rinsing with garden hose pressure is not as good as using a pressure washer.
2. Make sure the filter never runs with less than a 5 psi differential.
3. Change spin plates or use more Flow Inserts (on the 5E-40 model) to boost operating differential to 8 psi if not already achieved, to further increase cleaning action.
4. Increase flush flow rate for continuous flushing filters.
5. Pre-screen heavy organic/aquatic loads with a coarse screen filter at the pump inlet for surface water installations.
6. Open flush valve fully on start-up to prevent sudden loading from a surge of contaminants.



3/4" & 1" Filter Specifications

- Available with threaded cap or ball valve for flushing debris basin
- ABS models rated to 80 psi
- Engineered plastic models rated to 150 psi



3/4" Filter

- 3/4" MPT inlet x 3/4" MPT outlet
- Large screen area provides 23.4 sq. in. of filtration surface
- Maximum recommended flow is 9 gpm



1" Filter

- 1" MPT inlet x 1" MPT outlet
- BSP thread available
- Large screen area provides 23.4 sq. in. of filtration surface
- Maximum recommended flow is 18 gpm

1 1/2" & 2" Filter Specifications

- Standard with Ball Valve (Schedule 40 PVC)
- Filter screens are bonded to a perforated stainless steel outer case to prevent collapse
- Molded of high-strength engineered plastic and pressure rated to 150 psi



1 1/2" Filter

- 1 1/2" MPT inlet x 1 1/2" MPT outlet
- BSP thread available
- Maximum recommended flow is 55 gpm



2" Filter

- 2" MPT inlet x 2" MPT outlet
- BSP thread available
- Maximum recommended flow is 110 gpm

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