

Forty-X™ Disc Filter Technical Specifications

DESCRIPTION

The Forty-X[™] Disc Filter is a high-rate tertiary filter that utilizes an optimized tertiary mesh (OTM) filter panel woven from 316L stainless steel threads to create a weave that improves solids collection and rejection. The panel configuration includes a robust, molded structural frame and a pressure-assisted seal allowing the panels to sustain and operate at a higher head loss and providing higher throughput when compared to other woven polyester, flat panel disc filter designs. Our filter panels are also housed in a trash tolerant filter panel housing, which assures the unhindered flow of water between panels and rejects plastics, algae clumps or other floatables.

The inside out filtration design of the Forty-X Disc Filter allows the water to flow into an influent center drum and then out through the disc filters capturing solids on the inside surface of the media. This filtration characteristic eliminates the need for a separate system for handling floating material and settling sludge. The captured solids are backwashed into a reject trough using a positive pressure spray cleaning system. A backwash cycle is automatically initiated by a level sensor in the influent channel with filtration continuing during backwash.

The modular design offers flexibility for a broad range of flows and applications including: municipal tertiary filtration, water reuse and process water filtration. With more filtration area, higher operational head loss capabilities, water pressure assisted seals and trash tolerant filter panel housings, the Forty-X Disc Filter is able to sustain and produce a high amount of filtrate in a small footprint.

Evoqua's DAVCO[™] product line is dedicated to the advancement in disc filtration through ongoing research and development. Our industry leading expertise in wastewater filtration equipment design, steel fabrication, and field installation/construction services provide a single-source approach to municipal and industrial projects.

MARKETS

- Municipal Water & Wastewater
- Food & Beverage
- General Manufacturing
- Oil & Gas
- Power Generation
- Healthcare

APPLICATIONS

- Municipal Tertiary Filtration
- Water Reuse &
 Recycle Systems
- Process Water Filtration
- Phosphorus Removal



The modular design of the Forty- X^{TM} disc filter offers flexibility for a broad range of flows and applications

FEATURES

- Small footprint
- Easy to operate and 316L stainless steel optimum tertiary mesh (OTM) filter panels
- Trash tolerant filter panel housing
- Wind safe stainless-steel sliding arch covers for easy access and maintenance
- Superior solids capture and holding capacity
- Less frequent backwash cycles resulting in energy reduction
- Less routine chemical cleaning
- Flow rate per unit from
 0.4 (mgd) to 12 + (mgd)
- Modular design offers flexibility and expandability
- Title 22 approved
- Suitable for retrofit of existing conventional filters
- Made in the USA

OPTIONS

- PLC control with ethernet communication
- Chemical cart for chemical backwashing
- Maintenance platform/ access platform
- Tank with MOC 316/others
- Common PLC with multiple
 units
- Additional spares to cover 3 to 5 years

System Capacity/Spec, Weight, and Dimensions

DESIGN BASIS

- Operating temp: 50-70°F
- Backwash flow: 1-2% reject typical
- Backwash pressure: 110 psi
- Indoor/outdoor installation
- 65% disc submerged
- Feed flow through gravity

TYPICAL FILTRATE QUALITY

- Filtrate TSS < 5 mg/l
- Filtrate turbidity < 2 NTU

CONSTRUCTION MATERIALS

UTILITY REQUIREMENT

- 460 VAC, three-phase, 60 Hz
- Tank/Frame 304SSFilter Media 316LSS
- Top Cover 304SS
- Inline Backwash Filter 304SS
- Control Panel SS



Model	1402T	1403T	1406T	1409T	1412T	1415T	1418T	1424T
Size of Influent Nozzle (in)	8	10	14	18	20	20	24	30
Effluent Nozzle Size (in)	8	10	14	18	20	20	24	30
Influent Bypass Nozzle Size (in)	8	10	10	14	18	18	18	N/A
Number Filters per Disc/Unit (ea)	56	84	168	252	336	420	504	672
BW Motor (HP)	5	5	10	10	15	25	25	30
Drum Drive (HP)	2	2	2	2	2	2	2	2
Average Flow (mgd)	0.4	0.6	1.2	1.8	2.4	3	3.6	4.8
Peak Flow (mgd)	1	1.5	3	4.5	6	7.5	9	12
*Single Unit Length (ft)	7'9"	10'10"	13'2"	16'2"	18'4"	22'5"	24'8"	30'1"
*Single Unit Width (ft)	7'6"	7'6"	7'6"	7'6"	7'6"	7'6"	7'6"	7'6"
*Single Unit Height (ft)	8'4"	8'4"	8'4"	8'4"	8'4"	8'4"	8'4"	8'4"
*Weight of Each Unit (dry)(lbs)	6,200	7,200	8,500	10,250	12,000	14,000	15,500	18,000
*Operating Weight (Ibs)	12,400	15,700	19,600	24,200	28,700	45,000	50,000	60,000

*Approximate Note: The flow given above is for 1 filter, and will need to be adjusted if TSS > 30 mg/l

Model	1402F	1403F	1406F	1409F	1412F	1415F	1418F	1424F
*Single Unit Length (ft)	6'2"	6'11"	8'6"	9'	14'5"	15'3"	20'	26'3"
*Single Unit Width (ft)	7'6"	7'6"	7'6"	2'6"	7'6"	7'6"	7'6"	7'6"
*Single Unit Height (ft)	9'4"	9'4"	9'4"	9'4"	9'4"	9'4"	9'4"	9'4"
*Weight of Each Unit (dry) (lbs)	6,000	6,500	7,700	9,000	10,500	20,500	12,750	15,800

May be covered by one or more of the following patents: 7,597,805; 7,972,508; 8,118,175; 8,409,436; 8,801,929; 8,808,542; 8,961,785



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