

AEGIS® TurboGuard® Pre-Filters

Graver Technologies, LLC introduces TurboGuard, its technically improved 6 inch (152 mm) high-flow filter for the utility market.

Graver is the world’s largest supplier of condensate system filters and components and has been manufacturing precoat and non-precoat septa for condensate systems for more than 50 years. Graver is the consistent technology innovator with more than 40 patents and numerous technical advances for condensate and high purity water applications.

Graver’s family of TurboGuard High Flow Filters will provide superior CRUD removal upstream of deep bed demineralizers. TurboGuard High Flow Filters may also be used following ion exchange beds as a resin trap, or as highly efficient pre-filters before membrane systems.

Graver’s TurboGuard line of filters are manufactured in the USA at Graver Technologies manufacturing plants, under an ISO-9001 (2000) quality system.

Graver’s TurboGuard High Flow Filter integrates a number of improvements over currently available elements. With the most experience of any supplier in condensate applications, Graver can access more than 50 years of experience when improving fundamental filtration in condensate and high purity water applications.



Features

- Flow is from the inside core to the outer pleats
- TurboGuard Filters are wrapped in a one-piece extruded outer cage preventing both media migration during inside out flow, and tearing during removal
- TurboGuard’s one-piece extruded outer cage allows for easier maintenance and removal
- One-piece molded end caps, including molded-in bail for secure handling during installation and removal
- Quad Seal gasket system to provide maximum sealing surfaces
- Thermally bonded construction
- Low pressure drop at specified flow rates
- Optimized media surface area allows the full use of installed media area — not blocked off by media “squeezing”
- Maximum Flow Rates (lower flow rates will affect performance)
 - 60” element up to 500 gpm (1,893 lpm)
 - 40” element up to 350 gpm (1,325 lpm)
 - 20” element up to 175 gpm (663 lpm)
- A complete line of ASME Code Section VIII Division 1 Housings are available

FILTER SPECIFICATIONS

Media	Pleated Proprietary Multi-Layer Polypropylene
End Caps	Polypropylene
Cage	Polypropylene
O-Rings	EPDM Quad Seal
Dimensions	
Outside Diameter	6” (152 mm)
Nominal Lengths	60” (1,524 mm)
	40” (1,016 mm)
	20” (508 mm)
Maximum Operating Temperature	180°F (85°C)
Maximum Forward Operating Differential Pressure	50 psid (3.4 bar) @ 68°F (20°C)
Recommended Max. Changeout Differential Pressure	35 psid (2.4 bar)

AEGIS® TurboGuard®

Pre-Filters

Graver's TurboGuard High Flow Filter is designed specifically for use in combined cycle or high cycling plants with or without deep beds. TurboGuard should also be used in other critical utility applications where substantial dirt holding and CRUD removal properties are essential. TurboGuard High Flow Filters are typically installed upstream of the condensate

demineralizers to prevent ion exchange resin bead fouling. Unique Media design is focused specifically on utility applications and the specific contaminants in condensate-type systems. Graver TurboGuard High Flow Filter will retrofit competitive inside-out vessels designed for 6" diameter (152 mm) x 60" (1,524 mm) long filters.

TURBOGUARD HIGH FLOW NOMENCLATURE INFORMATION

TurboGuard (TBG) High Flow Series	Retention Rating (Microns)	Length Inches	Gasket or O-Ring
	1	20 (508 mm)	P = EPDM
	3	40 (1,016 mm)	S = Silicone
	5	60 (1,524 mm)	B = Buna N
	10		V = Viton
	20		
	40		
	60		
	100		

Example: TBG 5-60-P = TurboGuard High Flow Filter, 5 microns, 60 inches, EPDM.

TURBOGUARD HIGH FLOW SERIES ELEMENT PRESSURE DROP

Microns	Element Pressure Drop psid/gpm			Element Pressure Drop Mbar/M ³ /Hr		
	20"	40"	60"	20"	40"	60"
1	0.0200	0.0097	0.0065	6.0845	2.9395	1.9820
3	0.0167	0.0081	0.0054	5.0705	2.4495	1.6516
5	0.0076	0.0037	0.0025	2.3179	1.1198	0.7550
10	0.0046	0.0022	0.0015	1.3908	0.6719	0.4530
20	0.0021	0.0010	0.0007	0.6374	0.3079	0.2076
40	0.0017	0.0008	0.0006	0.5215	0.2520	0.1699
60	0.0015	0.0007	0.0005	0.4552	0.2199	0.1483
100	0.0010	0.0050	0.0003	0.3035	0.1466	0.0989

Note: For chemical compatibility, flow rates, and temperature requirements please consult the factory or your local Graver distributor.

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