

"EBS" FILTER SERIES



The largest automatic self-cleaning filter for fine filtration.



- ▶ For flow rates up to 23,350 gpm
- ▶ Fine filtration degrees: 800 - 10 micron
- ▶ Large filtration area of up to 6,200 in²



AMIAD FILTRATION SYSTEMS

HOW THE "EBS" FILTERS WORK

The EBS is an automatic filter, with a self-cleaning mechanism driven by an electric motor. The EBS is designed to work with various types of screens in filtration degrees from 800 to 10 micron, and is available in 8" to 24" inlet/outlet diameter.

Filtering process:

Raw water flows into the filter through the cylindrical filter element from the inside-out, causing particles to accumulate on the inside screen surface which causes the development of a "filter cake". The accumulation of the filter cake causes pressure differential to develop between the filter inlet and outlet.

A pressure differential switch senses the pressure differential across the screen and when it reaches a pre-set value, the cleaning mechanism is operated.

Cleaning process:

The EBS begins the self-cleaning process when the pressure differential across the screen reaches a pre-set value or an (adjustable) amount of time has passed. Cleaning of the filter's fine screen is carried out by the suction scanner which is a motor driven assembly that rotates while also moving linearly. It consists of a central tube with tubular nozzles equally spaced along the length of the central tube. An exhaust flush valve connects the internal cavity of the suction scanner to atmospheric pressure outside the filter body. By opening the exhaust valve, the differential pressure between the water inside the filter and the atmosphere outside the filter creates high suction forces at the openings of each of the suction scanner nozzles.

This suction force causes water to flow backwards through a small area of screen in front of each nozzle, pulling the filter cake off the screen and sucking it into the suction scanner and out through the exhaust valve to waste.

The driving mechanism rotates the suction scanner in a slow, controlled motion. The cleaning cycle is completed in approx. 30 seconds. During this time the nozzles cover 100% of the screen removing the filter cake from the entire screen surface. During the self-cleaning cycle, filtered water continues to flow downstream of the filter.

Control system:

The EBS filter is equipped with a pressure differential switch that transmits an electric signal to the electronic control board, which initiates the flush cycle.

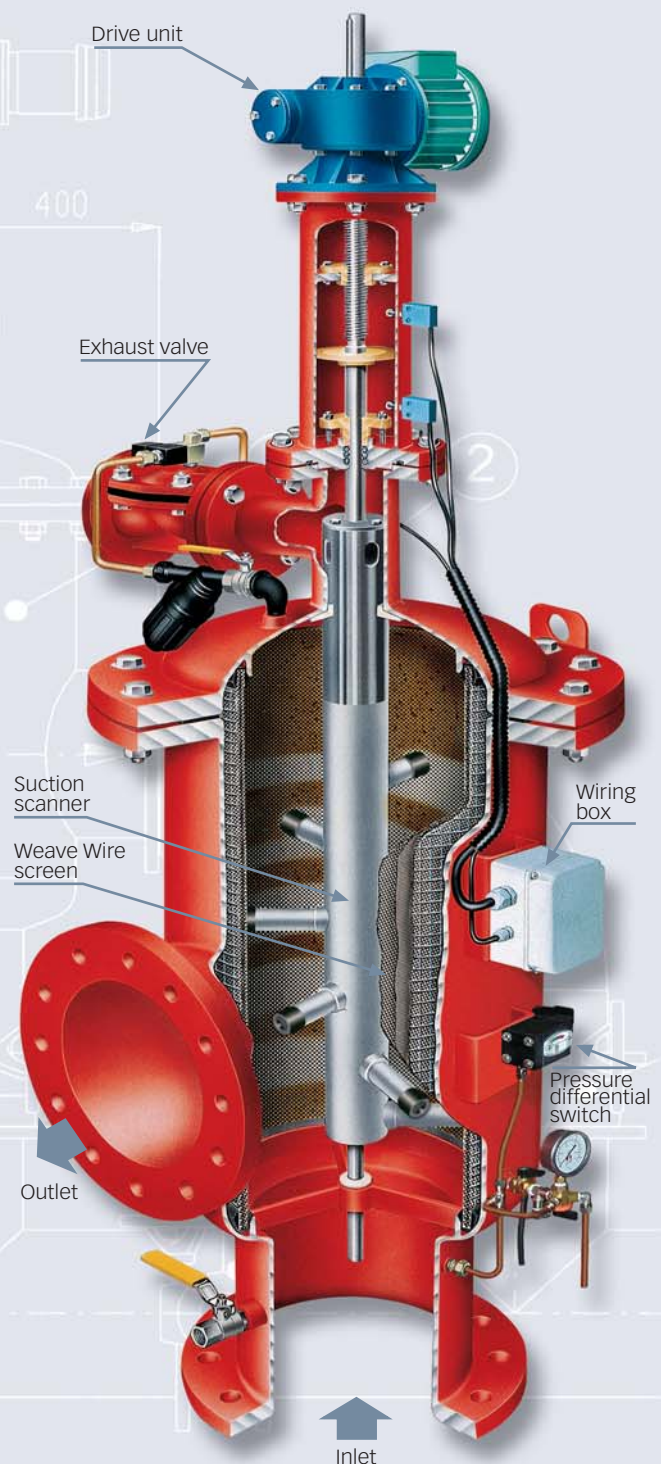
A solenoid operates the exhaust valve by means of a hydraulic command or compressed air.

The filter operation and cleaning cycle are controlled and monitored by a Programmable Logic Control (PLC). The PLC allows maximum flexibility in control options and has many features that can be incorporated per the customer's needs.

The MegaEBS:

The MegaEBS filter consists of four EBS screen elements and cleaning mechanisms within one housing. An integral control panel allows for sequential operation of the cleaning mechanisms, one-by-one, in pairs, or all four units simultaneously.

The Mega EBS is an excellent solution for applications with space limitations or when a limited number of filter units are required.



TECHNICAL SPECIFICATIONS

General

Filter type	EBS-10,000	EBS-15,000	MegaEBS	
Maximum flow rate [gpm]	5,300	7,950	23,350	Consult manufacturer for optimum flow depending on filtration degree & water quality.
Min. working pressure [psi]	30	30	30	Pressure requirements depend on multiple factors. Please consult manufacturer.
Max. working pressure [psi]	150	150	150	225 psi upon request.
Filter area [in ²]	1,550	2,325	6,200	
Inlet/Outlet diameter [inch]	8" - 16"	16" - 20"	16" - 24"	Flange standards upon request.
Max. working temp. [°F]	140	140	140	200°F upon request.
Weight (Av.) empty [lb]	1080 / 770	1,505*	4,960*	In-line / On-line
Volume (Av.) [gal]	68 / 53	133*	740*	In-line / On-line

*Referring to In-Line models only (On-Line specs. on request).

Flushing data

Exhaust valve [inch]	3"	3"	4 x 3"	
Wasted water per cycle [gal]	110	132	528	at 30 psi
Min. flow for flushing [gpm]	220	220	880-220	at 30 psi
Flushing cycle time [sec.]	30	36	30-120	

Control and electricity

Electric motor [HP]	1/2	1/2	4 x 1/2	20/24 Gear output RPM
Control voltage [V]	24 AC			
Rated operation voltage	1 phase, 110/220V; 3 phase, 220-480V, 50/60Hz			
Current consumption [Amp.]	1.5	1.5	5.0	

Construction materials*

Filter housing and lid	Epoxy-coated carbon steel 37-2
Screens	Four-layer Weave Wire stainless steel 316L
Cleaning mechanism	Stainless steel 316L, Acetal
Exhaust valve	Epoxy-coated cast iron, Natural rubber
Seals	Synthetic rubber, Teflon
Control	Aluminum, Brass, Stainless steel, Nylon, PVC

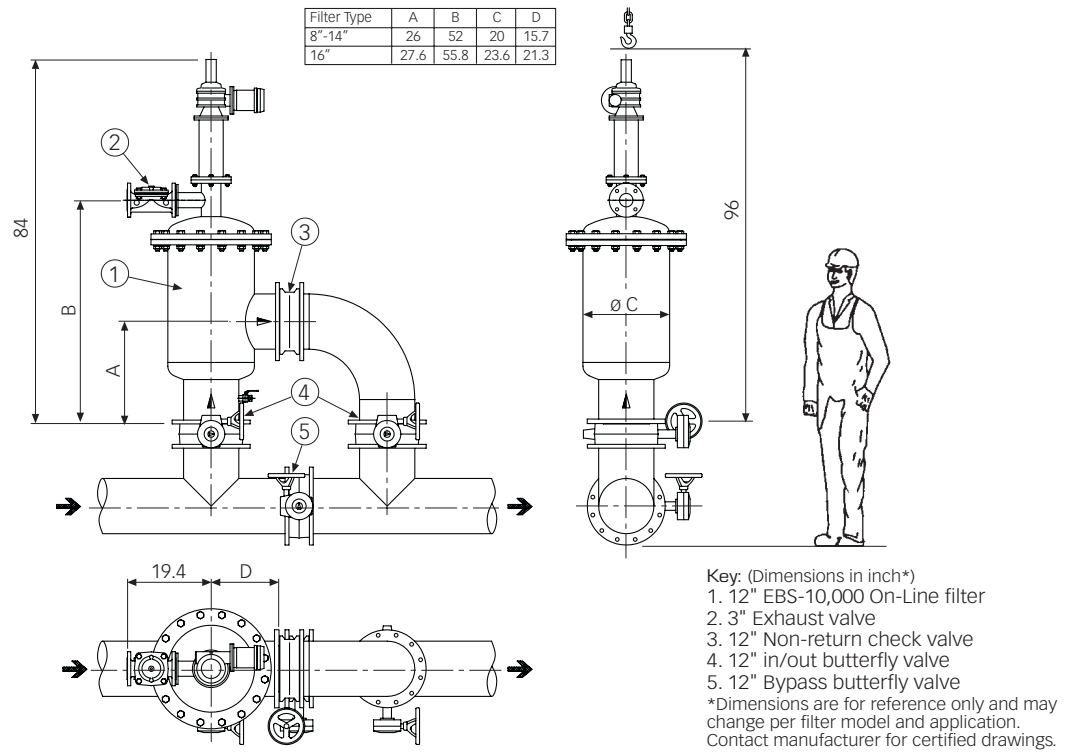
*Amiad offers a variety of construction materials. Consult manufacturer for specifications.

Standard filtration degrees

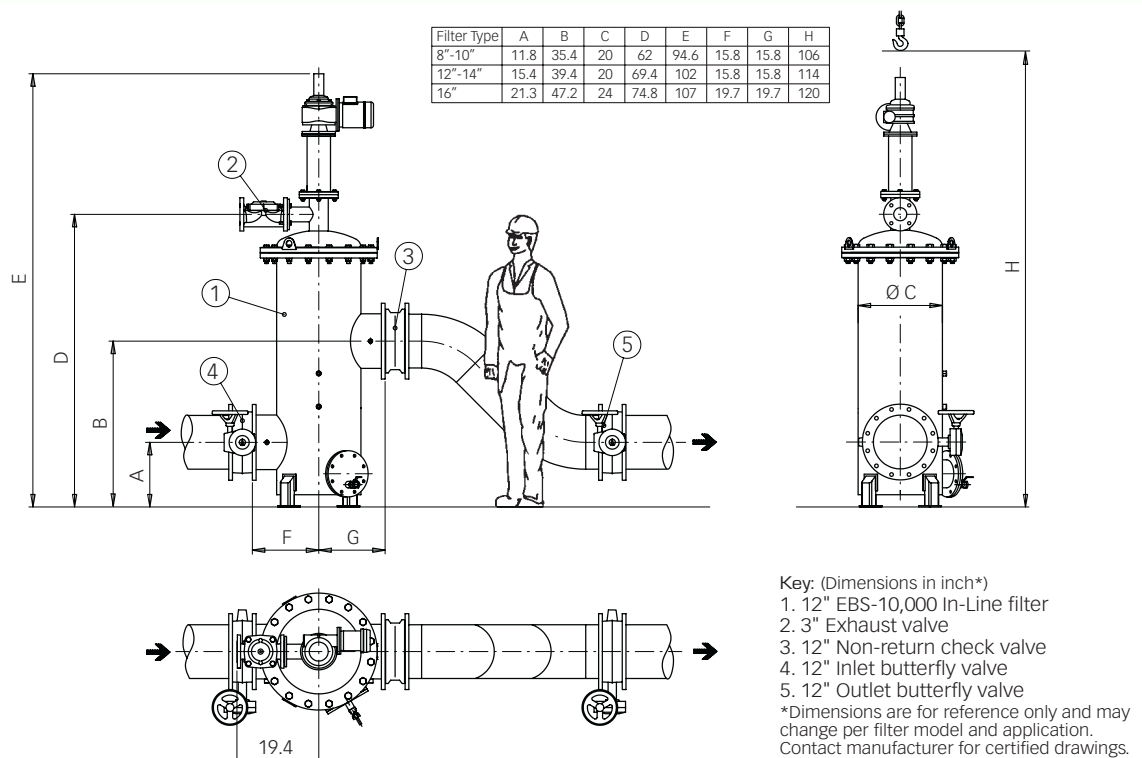
	Weave Wire stainless steel screen									
micron	800	500	300	200	130	100	80	50	25	10
mm	0.8	0.5	0.3	0.2	0.13	0.1	0.08	0.05	0.02	0.01
mesh	20	30	50	75	120	155	200	300	450	600

SUGGESTED INSTALLATIONS

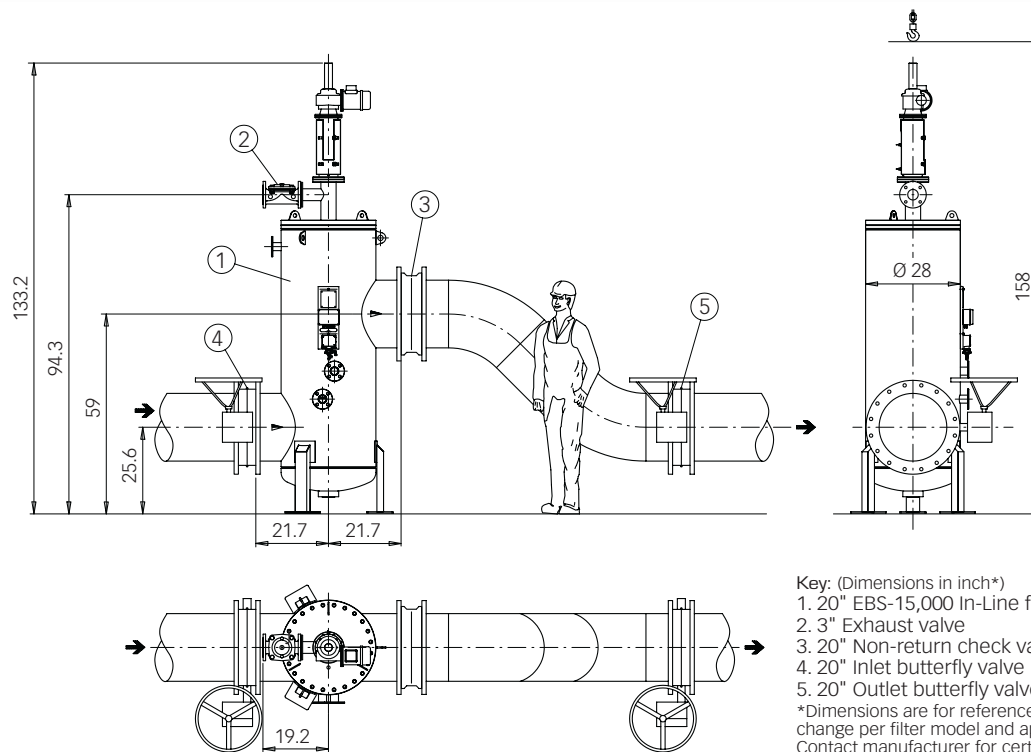
EBS-10,000 On-Line



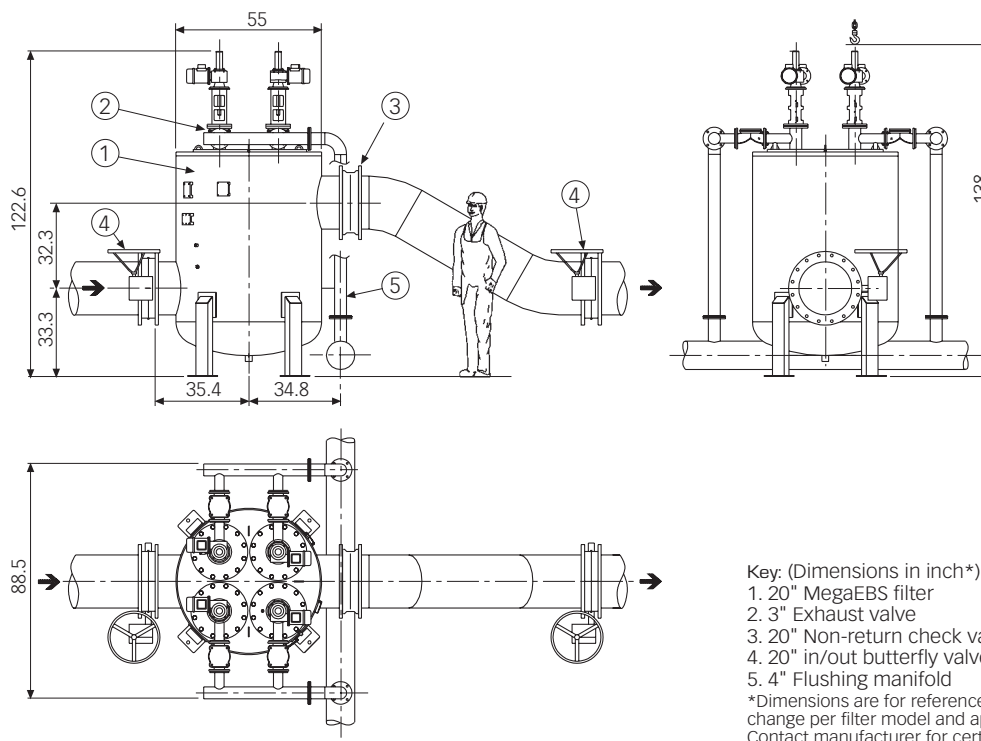
EBS-10,000 In-Line



EBS-15,000



MegaEBS

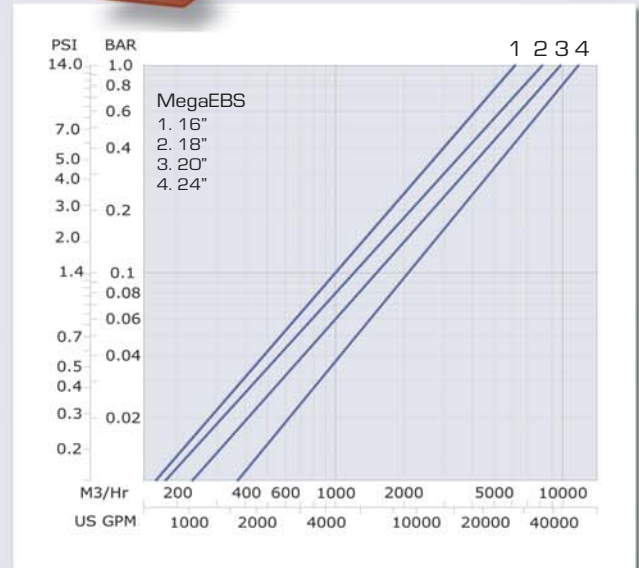
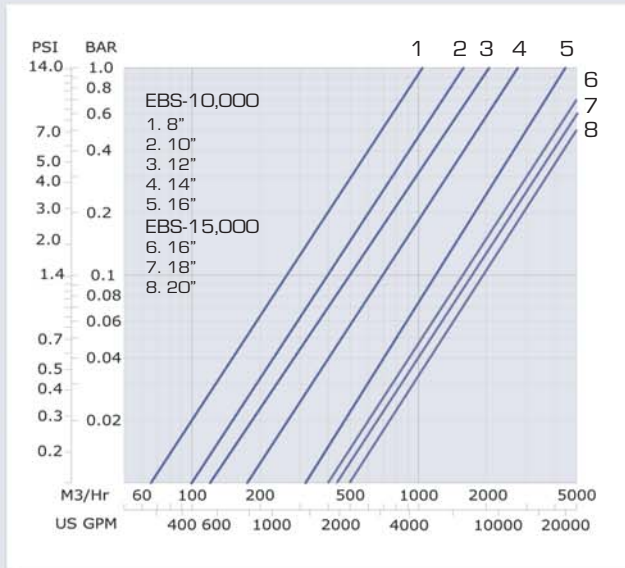


PRESSURE LOSS GRAPHS

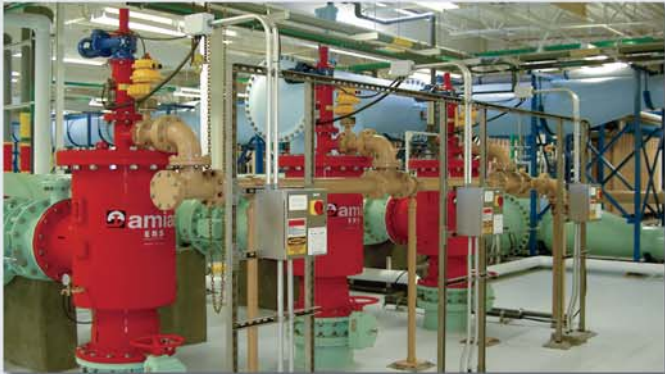
EBS



MegaEBS



SELECTED WORLDWIDE APPLICATIONS



▲ Prefiltration to MF. 13,000gpm, 300µm. Clarified river water. Olathe, KS. USA



▲ Cooling tower at a steel mill. 70,000gpm, 200µm. Southern China



▲ Seawater application: Injection water filtration 970gpm, 200µm and 25µm. On board "FPSO"



▲ Drip irrigation for Almond Groves, 17,400gpm, 130µm, river water. Lachlan Farms, Australia



▲ Side stream filtration of cooling tower water. 1,600gpm, 25µm. Huntley Power Station, New Zealand



▲ Chinese army 14th division irrigation project. 61,750gpm, 130µm. Xinjiang, China



▲ Frost protection system, dam water 31,750gpm, 500µm. ARA Project, New Zealand



▲ Chinese army irrigation project. 70,000gpm, 130µm. Xinjiang, China



▲ Aquaculture - Zebra mussel control.
8,800gpm, 25µm. Vermont, USA



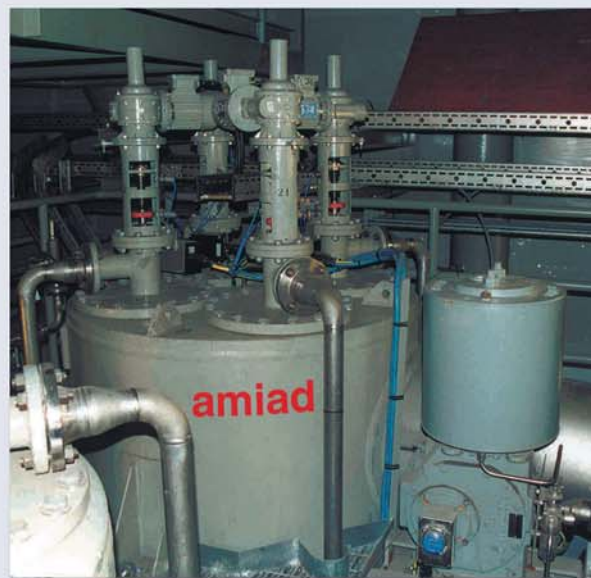
▲ Cooling water in chemical plant.
2,000gpm, 130µm. Hamburg, Germany



▲ Reservoir water for irrigation.
4,400gpm, 100µm. Kfar Hasidim, Israel



▲ Industrial wastewater. 3,500gpm, 50µm. Electronic industry, Korea



▲ Injection water. 8,800gpm, 50µm. North Sea Platform



▲ River water for hot spa. 750gpm, 25µm. Japan



▲ Pre-filtration to RO membranes. 7,500gpm, 25µm.
Desalination plant, Israel

SELECTED WORLDWIDE APPLICATIONS



▲ Pre-filtration to DWTP. 1,650gpm, 50 µm. Dan river, Israel



▲ Injection water on board FPSO. 970gpm, 25 µm. West Africa



▲ Drip irrigation. 40,000gpm, 130 µm. China



▲ Drip irrigation of strawberries. 62,000gpm, 130 µm. Spain



▲ Golf course irrigation. 3,100gpm, 200 µm. Tampa, USA



▲ Irrigation water supply. 8,000gpm, 50 µm. Narbonne, France



▲ Drip irrigation. 35,000gpm, 130 µm. Helche Creviente, Spain



▲ Recreation and irrigation water supply. 15,000gpm, 80 µm. Spanish Fork, USA



In an increasingly crowded world, the need for clean water concerns everyone involved in sustaining our quality of life. Society and economy cannot exist without water; Because water is life.

For more than 40 years, Amiad has helped meet this need by developing a comprehensive line of exceptionally efficient, automatic self-cleaning filters and manual filters for use in industry, municipalities, and irrigation. Amiad provides solutions in more than 66 countries, with seven subsidiaries and sales offices. Amiad's pledge to the filtration industry is to continue providing innovative and dependable systems, quality service and reliable customer support.

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