

AMIAD "EBS" FILTERS

8"-14" Automatic Filters, for flow rates up to 1000 m³/h; 4400 Usgpm

The Amiad automatic self-cleaning filters, for high flow rates and a larger filtration area.

Features:

- For flow rates up to 1000 m³/h; 4400 Usgpm.
- Filtration range: from 3500 to 10 micron.
- Large filter area: 10,000 cm²; 1550 in².
- Two cleaning methods: Brushes or Scanner.
- Electronically monitored cleaning cycle flexibility of control options.
- Flushing according to pressure differential and/or according to time. Option for continuous flushing.
- Minimum water wasted during flushing.
- No interruption of flow downstream during flushing.
- Applications:
 - Water supply systems
 - Cooling water
 - Waste water

in: Steel industries, Pulp & Paper, Food processing, Plastic industry, Mining, Irrigation, etc.



How the "EBS" filter works

The EBS is an easy-to-operate automatic self-cleaning filter. The EBS is designed to work with various types of screens in filtration degrees from 3500 to 10 micron, and is available in 8", 10", 12" and 14" inlet/outlet diameter.

Filtering process:

The water flows through the stainless steel cylindrical filter element from inside out, creating minimal head loss. Different types of screens are available for different filtration needs.

The "filtration cake" accumulating on the screen surface causes head loss to develop across the screen. When this head loss reaches a pre-set value, the cleaning mechanism is operated.

Self-cleaning process:

One of two methods of self-cleaning may be selected, depending on the required degree of filtration: **Coarse** (3500-200 micron) or **fine** (800-10 micron).

Coarse filtration – Brushes.

The brushes are a construction of stainless steel, driven by a 11/2 HP electric motor. The brushes revolve along the screen, thus removing the filter cake, which is then discharged through an exhaust valve for a duration of 15 to 20 seconds.

Fine filtration – Suction scanner.

The suction scanner is a stainless steel construction, driven by a 1/2 HP motor. Its hollow nozzles scan the screen surface in a spiral motion, sucking-in the filter cake, in a controlled motion, without touching the screen. Suction power is achieved due to low pressure conditions created by the exhaust valve opening to the atmosphere. The filter cake is then discharged through the open exhaust valve. Cleaning takes between 35 to 40 seconds.

The self-cleaning process begins when the pressure differential across the screen reaches a pre-set value or a predetermined lapse of time. During the self-cleaning process filtered water continues to flow downstream of the filter.

Control system:

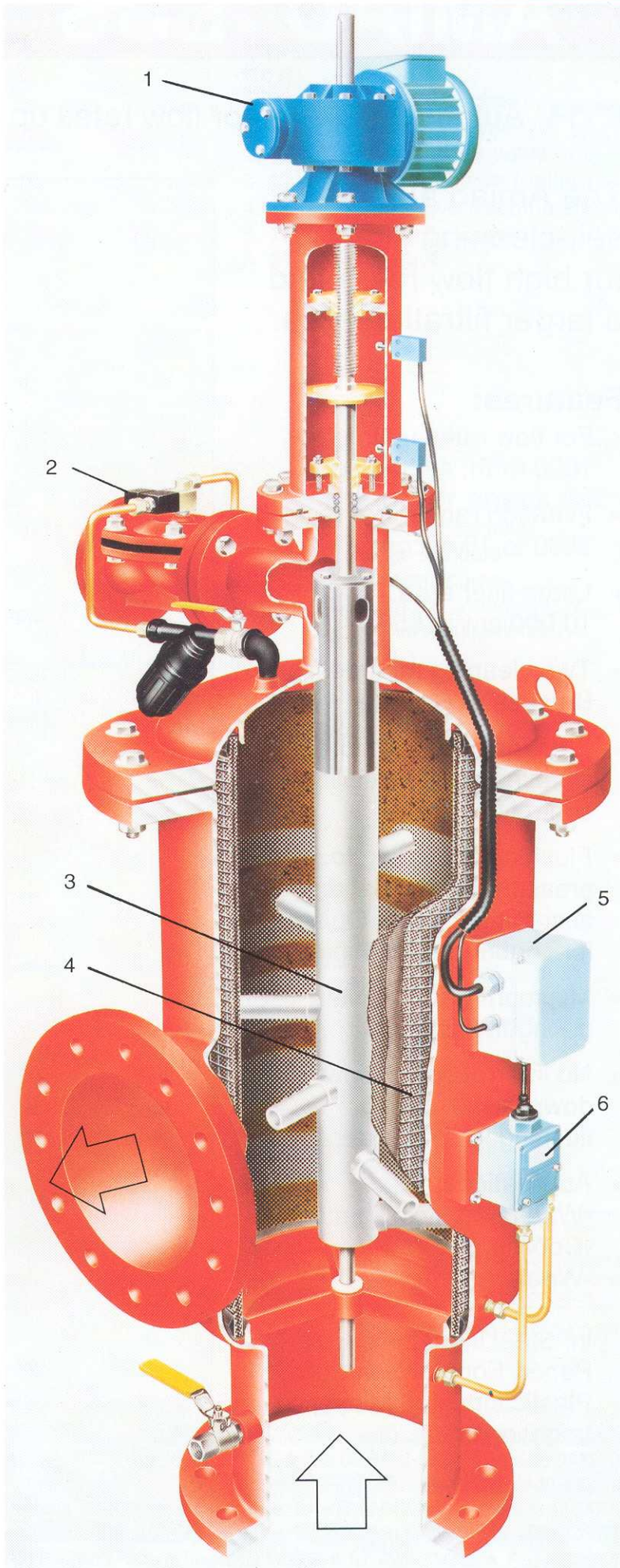
The EBS filter is equipped with a pressure differential switch that transmits an electric signal to the electronic control board, which initiates the flushing cycle.

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

Features:

- Flushing according to pressure differential and/or according to time.
- Option for operation of continuous flushing.
- Flushing counter
- An alarm or an alternative reaction in malfunction mode (open a bypass, shut-off a pump, operate an alarm signal in control room, etc.).

1. Drive unit
2. Exhaust valve
3. Suction scanner
4. Weavewire screen
5. Wiring box
6. Pressure differential switch



Technical specifications

General

Maximum flow rate	1000 m ³ /h	4400 USgpm	Consult manufacturer for optimum flow depending on filtration degree & water quality.
Min. working pressure	2 bar	30 psi	or lower if pressure is increased for flushing.
Max. working pressure	10 bar	150 psi	16 bar = 240 psi upon request.
Filter area	10,000 cm ²	1550 in ²	
Inlet/Outlet diameter	200,250, 300 & 350 mm	8", 10", 12" & 14"	Flange standards as per request.
Filter housing	500 mm	20"	Epoxy-coated steel, or other on request.
Max. working temperature	80°C	176°F	
Weight	200 mm = 310 Kg	08" = 680 lb.	
	250 mm = 325 Kg	10" = 715 lb.	
	300 mm = 350 Kg	12" = 770 lb.	
	350 mm = 380 Kg	14" = 840 lb.	

Flushing data

Exhaust valve	80 mm	3"	
Wasted water per cycle	500 liter	132 gallon	at 2 bar = 30 psi
Minimum flow for flushing	50 m ³ /h	220 USgpm	at 2 bar = 30 psi
Flushing cycle time	Scanner: 35-40 Seconds		
	Brushes: 15-20 Seconds		

Control and electricity

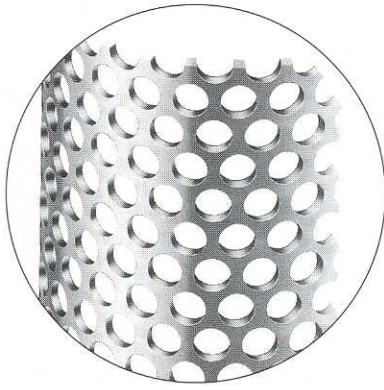
Control voltage	24V AC (12V or 24V DC upon request)		
Electric motor	Scanner: 1/2 HP; 18/22 Gear output R.P.M.		
	Brushes: 1 1/2 HP; 14 Gear output R.P.M.		
Rated operation voltage	3 phase: 220 / 380 / 440 V; 50 / 60 Hz		
	Single phase: 110 / 220 V; 50 / 60 Hz		
	DC: 12V or 24V (upon request)		
Current consumption	Scanner: 1.5 Amp. (DC option 16 Amp.)	Brushes: 4.0 Amp.	

Construction materials*

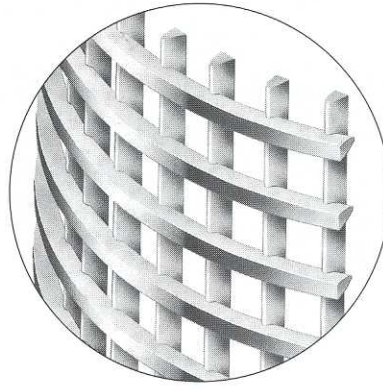
Filter housing and lid	Epoxy-coated carbon steel 37-2 (Stainless Steel 316 available on request).
Screens	Stainless Steel 316 (Perforated, Wedgewire or Weavewire).
Cleaning mechanism	Scanner: Stainless Steel 316, POM
	Brushes: Stainless Steel 316, PVC
Exhaust valve	Epoxy-coated cast iron, Natural rubber
Seals	Synthetic rubber, Teflon
Control	Aluminum, Brass, Stainless Steel, PVC

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

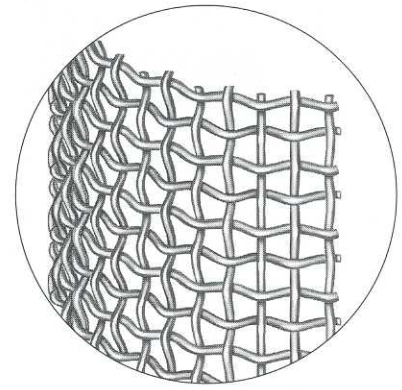
Screen types



Perforated Cylinder



Wedgewire screen

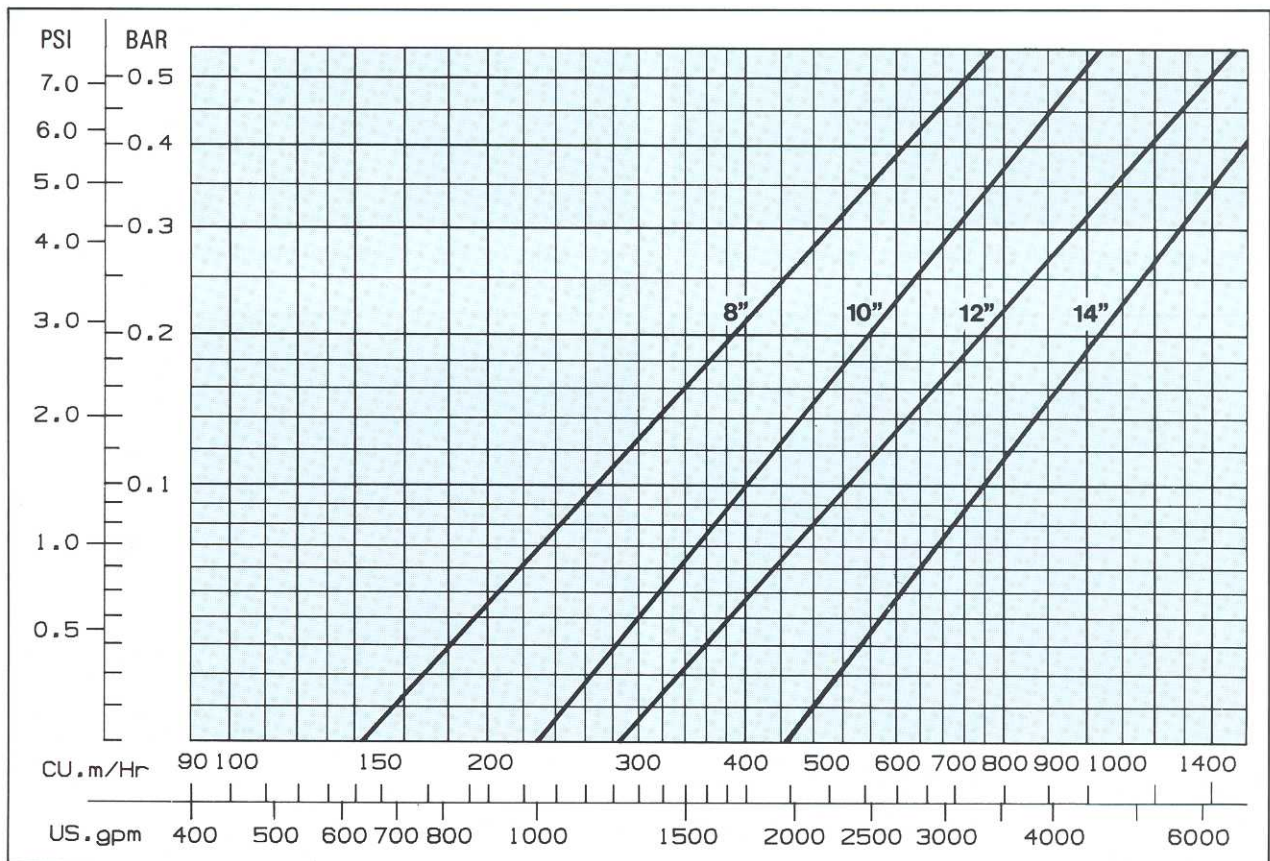


Weavewire screen

Standard filtration degrees

Cleaning method	Stainless steel brushes							Suction scanner								
	Perforated cyl.			Wedgewire Screen				Weavewire Screen								
micron	3500	2500	1500	800	500	300	200	500	300	200	130	100	80	50	25	10
mm	3.5	2.5	1.5	0.8	0.5	0.3	0.2	0.5	0.3	0.2	0.13	0.1	0.08	0.05	0.02	0.01
mesh	4	6	10	20	30	50	75	30	50	75	120	155	200	300	450	600

Pressure loss graph

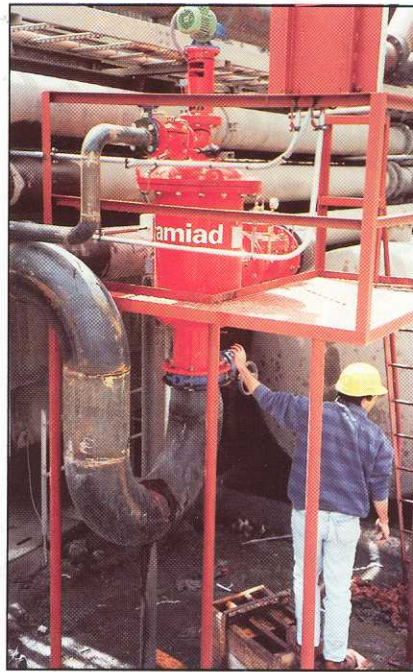


Measured with Suction type, 130 micron.

Typical applications



Cooling water in Hydro-electric power station. NORWAY.



Cooling water in Steel industry. AUSTRALIA.



Prefiltration of drinking water treatment. ISRAEL.



Zebra mussel protection at fish hatchery. Vermont, USA.



River water for drip irrigation of tree plantation (paper industry). Oregon, USA.

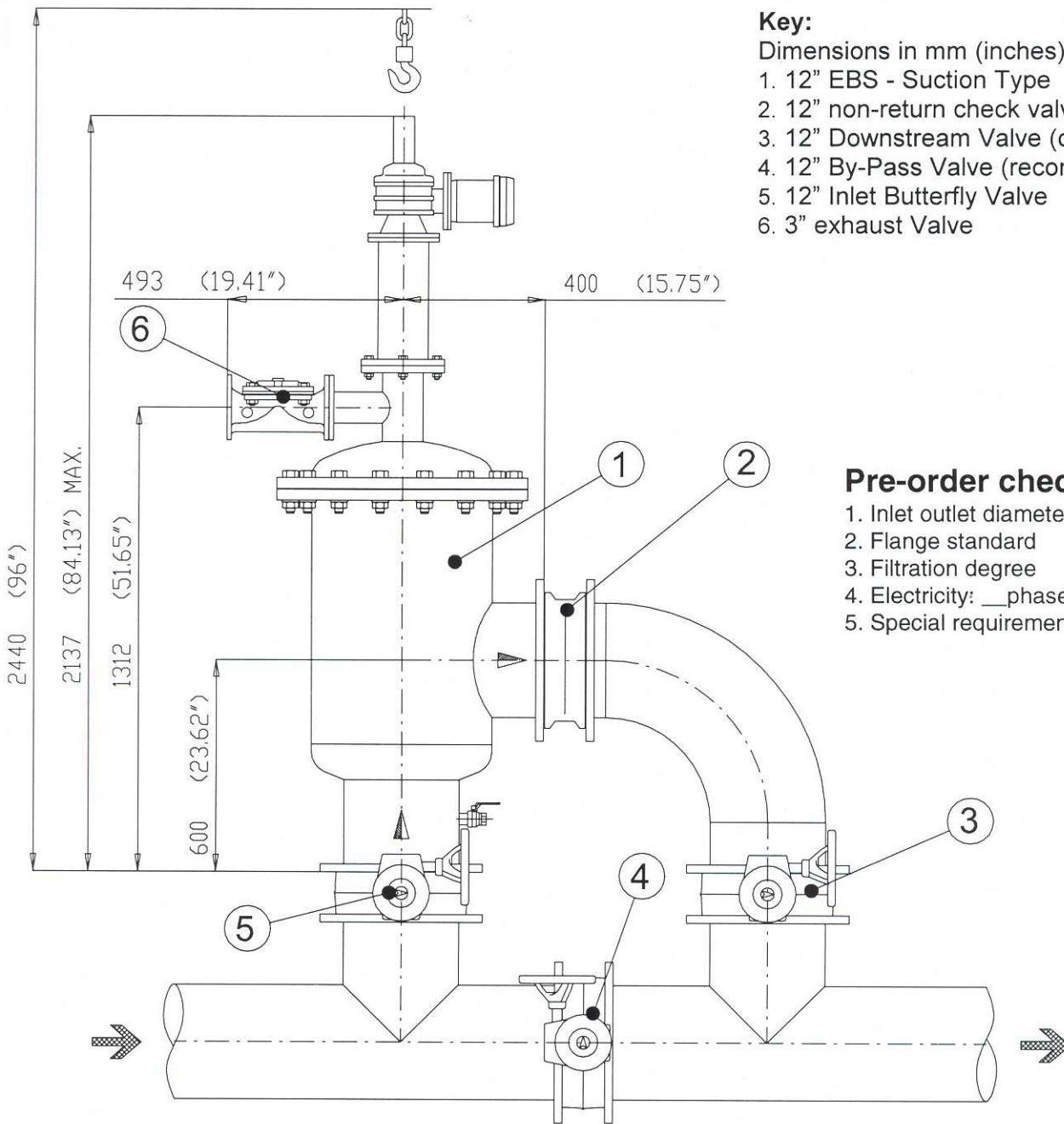


Reservoir water for raw crop irrigation. ISRAEL.



Canal water filtration for fish ponds. ISRAEL.

Suggested installation



Key:

Dimensions in mm (inches).

1. 12" EBS - Suction Type
2. 12" non-return check valve (required)
3. 12" Downstream Valve (option)
4. 12" By-Pass Valve (recommended)
5. 12" Inlet Butterfly Valve
6. 3" exhaust Valve

Pre-order check list:

1. Inlet outlet diameter
2. Flange standard
3. Filtration degree
4. Electricity: __phase, __V, __ Hz
5. Special requirements



amiad filtration systems

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AMIAD products undergo constant monitoring for quality control. The manufacturer reserves the right to incorporate changes and improvements in the product without prior notice.

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