

## SAF Series

Automatic self-cleaning filters, perfect for filtering poor quality water and ideal for numerous applications



flowrates

**up to 400 m<sup>3</sup>/h  
(1,760 gpm)**

filtration degrees

**800-10 micron**

water for cleaning

**less than 1%  
of the total flow**

minimum working  
pressure

**2 bar (30 psi)**

### features:

- Large filter area, reliable operating mechanism and simple construction make the SAF filters the ideal solution for filtration of poor water quality to very fine filtration
- Automatic self-cleaning according to pressure differential and/or time
- No interruption of downstream flow during self-cleaning
- Robust and reliable self-cleaning mechanism, even in marginal operating conditions
- Applications: municipal water supply systems, cooling water, wastewater treatment, industrial pre-filtration, membrane protection, irrigation systems etc.
- Industries: manufacturing, oil and gas, mining, water and wastewater treatment plant, turf and agriculture, etc.

## How the SAF filters work?

### General

The Amiad SAF filters are sophisticated, yet easy-to-operate, automatic filters, with a self-cleaning mechanism driven by an electric motor.

The “SAF” filters support flow-rates of up to 400 m<sup>3</sup>/h (1,760 gpm), with various screens designed to cover a range of filtration degrees, from 800 to 10 micron, and are available in inlet/outlet diameters of 2” to 10”.

### The Filtering Process

Raw water enters the filter inlet (1) through the coarse screen (2) which protects the cleaning mechanism from large debris. The water passes through the fine screen (3), trapping dirt particles which accumulate inside the filter. Clean water flows through the filter outlet (4). The gradual dirt buildup on the inner screen surface causes a filter cake to develop, with a corresponding increase in the pressure differential across the screen. A pressure differential switch senses the increased pressure differential and when it reaches a pre-set value (typically 7.0 psi), the cleaning process begins.

### The Self-Cleaning Process

Cleaning of the filter is carried out by the suction scanner (5) which spirals across the screen. The open exhaust valve creates a high velocity suction stream at the nozzles tip which “vacuums” the filter cake from the screen. During the self-cleaning process, which takes between 15 to 40 seconds, filtered water continues to flow downstream.

### The Control System

Operation and monitoring is done by PLC (Programmable Logic Controller). The PLC allows maximum operation flexibility and provides a wide range of control options from an independent stand-alone unit up to full integration within the customer’s central control system.

Initiation of self-cleaning process:

1. Flushing by pressure differential – DP analog or digital signal
2. Flushing by time intervals
3. Continuous flushing – regardless of DP or time
4. Remote or local manual start

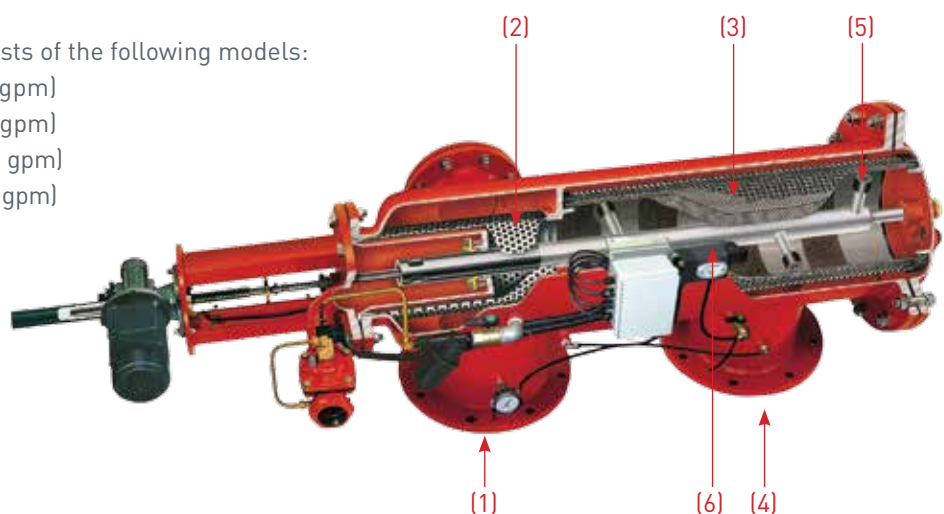
The PLC also provides:

- Flush cycle counter
- Cause of flushing statistics
- Faults and alarms, reaction and messages

### “SAF” Models

Amiad’s “SAF” product-line consists of the following models:

- SAF 1500 for up to 80 m<sup>3</sup>/h (350 gpm)
- SAF 3000 for up to 150 m<sup>3</sup>/h (660 gpm)
- SAF 4500 for up to 250 m<sup>3</sup>/h (1,100 gpm)
- SAF 6000 for up to 400 m<sup>3</sup>/h (1,760 gpm)



SAF 1500



SAF 3000



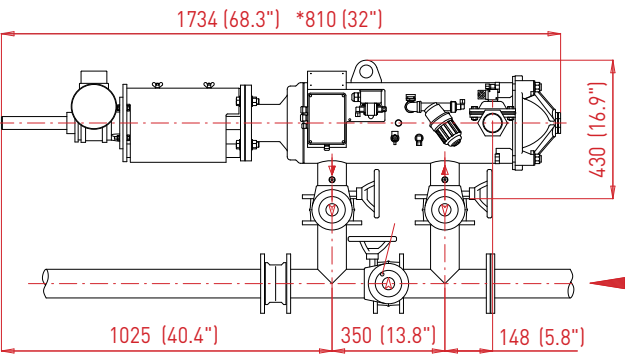
SAF 4500



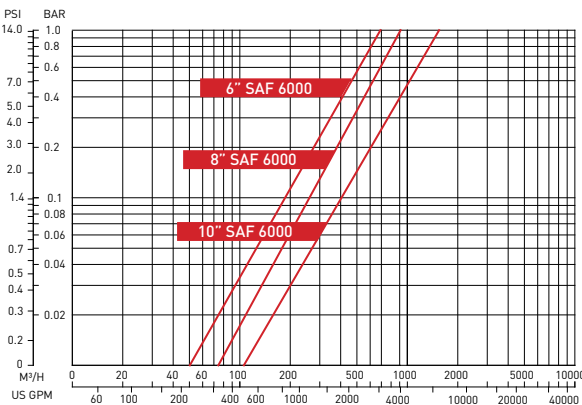
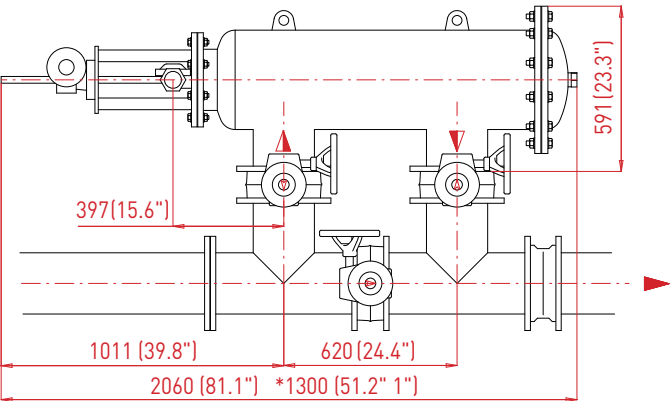
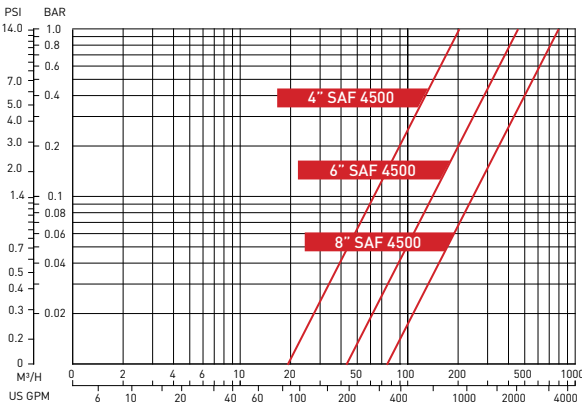
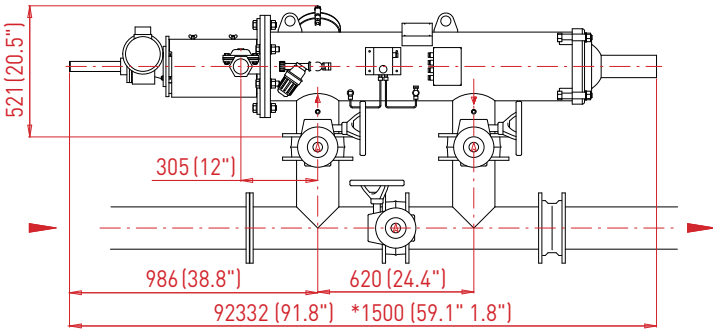
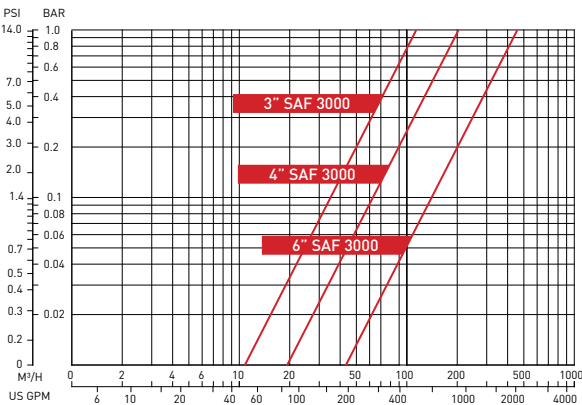
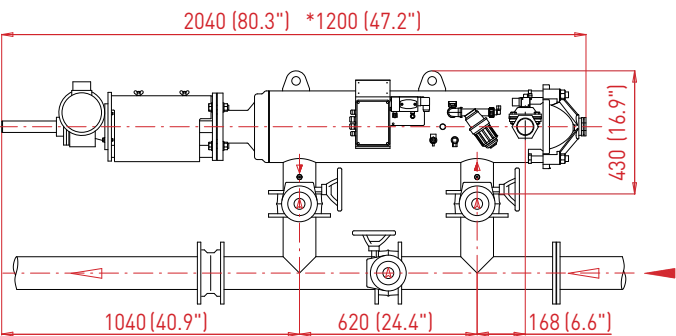
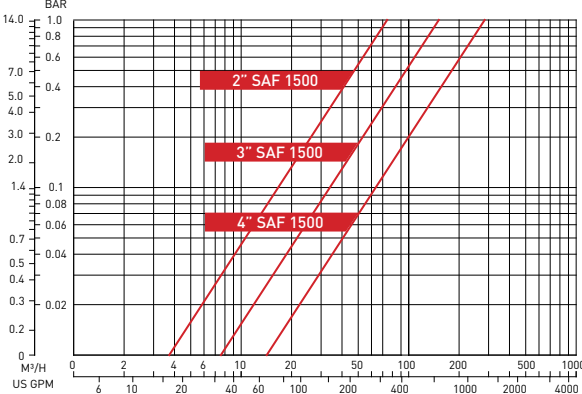
SAF 6000



Typical Installation Drawing



Head Loss Graphs in clean water



Dim: mm (inch)  
\*Approx. length required for maintenance

Technical Specifications

Filter	SAF 1500	SAF 3000	SAF 4500	SAF 6000
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General Data				
Maximum flowrate*	80 m³/h (352 gpm)	150 m³/h (660 gpm)	250 m³/h (1,100 gpm)	400 m³/h (1,760 gpm)
Inlet/Outlet diameter	2" (50 mm) 3" (80 mm) 4" (100 mm)	3" (80 mm) 4" (100 mm) 6" (150 mm)	4" (100 mm) 6" (150 mm) 8" (200 mm)	6" (150 mm) 8" (200 mm) 10" (250 mm)
Standard filtration degrees	800, 500, 300, 200, 130, 100, 80, 50, 25, 10 micron			
Min. working pressure	2 bar (30 psi) For lower pressure please consult manufacturer			
Max. working pressure	10 bar (150 psi)		10 bar ( 150 psi) 16 bar (232 psi) upon request	
Max. working temperature	50°C (122°F)		60°C (140°F) 95°C (203°F) upon request	
Weight [empty]	86 kg (190 lb)	110 kg (242.5 lb)	160 kg (353 lb)	250 kg (551 lb)

\* Consult Amiad for optimum flow depending on filtration degree and water quality.

Flushing Data				
Minimum flow for flushing (at 2 bar -30 psi)	6 m³/h (26 gpm)	11 m³/h (48 gpm)	15 m³/h (66 gpm)	25 m³/h (110 gpm)
Reject water volume per flush cycle 0,5 bar (7 psi)	25 liter (7 gallon)	64 liter (17 gallon)	83 liter (22 gallon)	280 liter (74 gallon)
Flushing cycle time	15 seconds	20 seconds		40 seconds
Exhaust valve	2" (50 mm)			
Flushing criteria	Differential pressure of 0.5 bar (7psi), time intervals and manual operation			

Screen Data				
Filter area	1,500 cm² (232 in²)	3,000 cm² (465 in²)	4,500 cm² (697 in²)	6,000 cm² (930 in²)
Screen types	Four-layer weavewire stainless steel 316L			
	Molded weavewire stainless steel 316L			

Control and Electricity			
Rated operation voltage	115 - 480 VAC, 1 or 3 PH, 50 or 60 Hz		
Electric motor	¼ HP		⅓ HP
Current consumption	0.6 Amp		0.8 Amp
Control voltage	24 VAC 12V or 24VAC, upon request		

Construction Materials*	
Filter housing	Epoxy-coated carbon steel 37-2
Filter lid	SMC polyester/epoxy-coated carbon steel 37-2
Cleaning mechanism	Stainless steel 316L, acetal
Exhaust valve	Epoxy-coated cast iron, natural rubber
Seals	Synthetic rubber, teflon
Control	Aluminum, brass, stainless steel, PVC, nylon

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

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