

SAF Series

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



flowrates

**up to 1,760 gpm
(400 m³/h)**

filtration degrees

800-20 micron

water for cleaning

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

minimum working
pressure

30 psi (2 bar)

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 1,760 gpm (400 m³/h), with various screens designed to cover a range of filtration degrees, from 800 to 20 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 nozzle's tip which "vacuums" the filter cake from the screen. During the self-cleaning process, which takes between 20 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

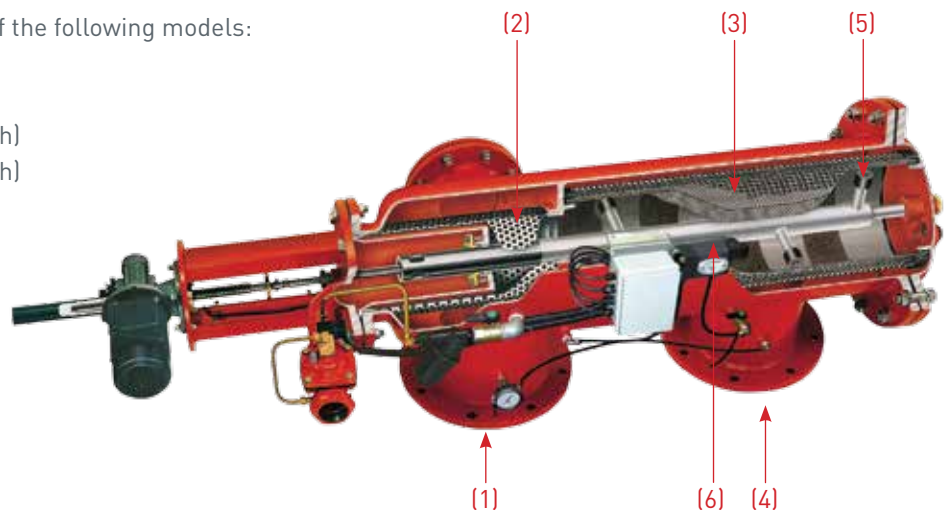
The PLC also provides:

- 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 80 350 gpm (m³/h)
- SAF 3000 for up to 150 660 gpm (m³/h)
- SAF 4500 for up to 1,100 gpm (250 m³/h)
- SAF 6000 for up to 1,760 gpm (400 m³/h)



SAF 1500



SAF 3000



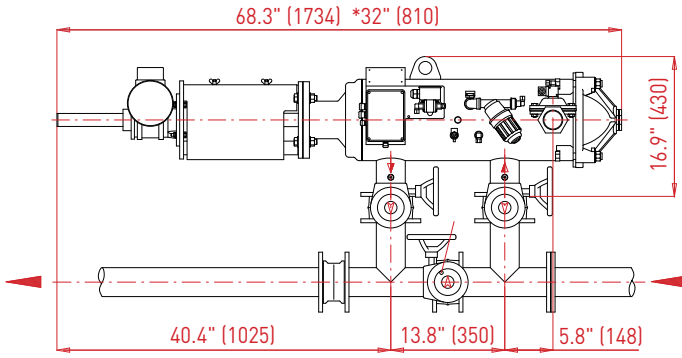
SAF 4500



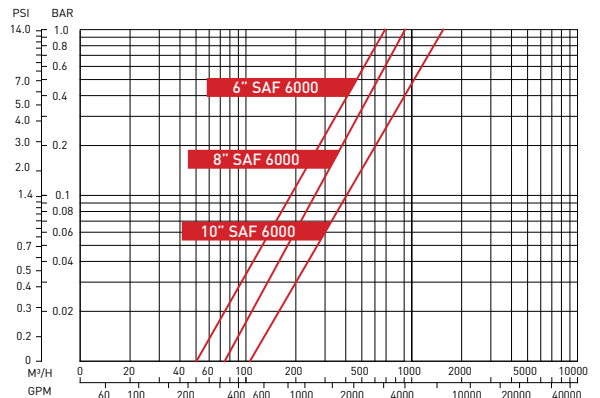
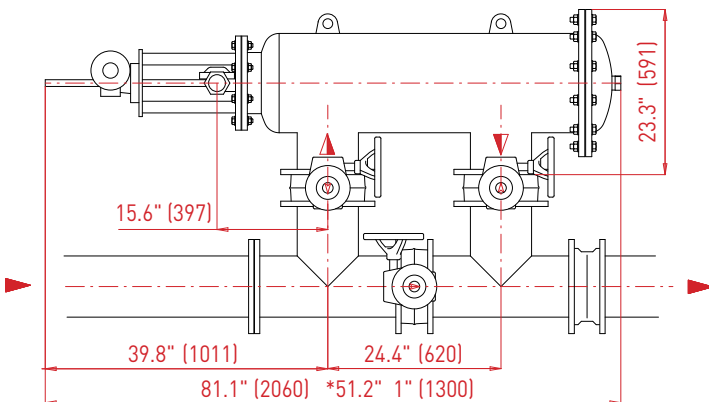
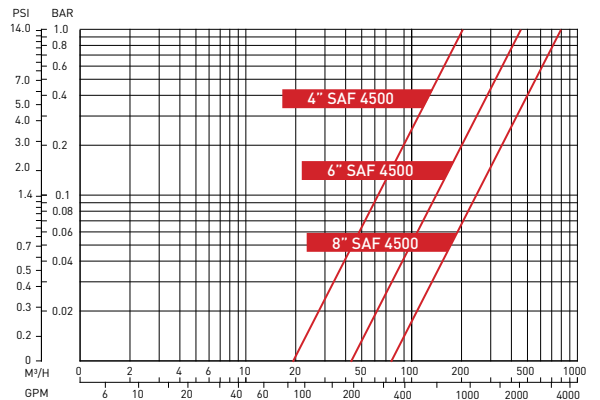
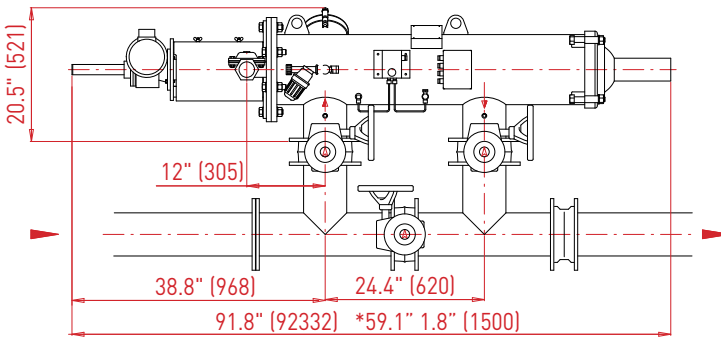
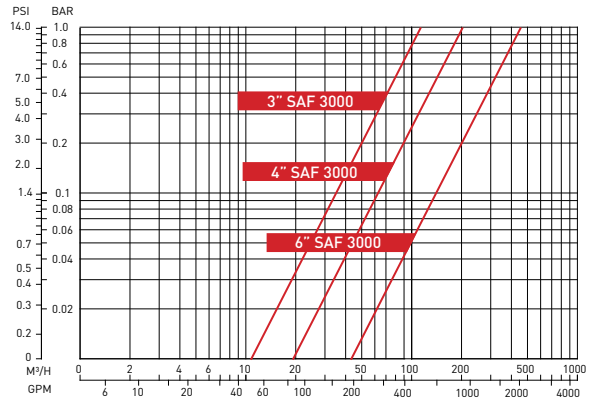
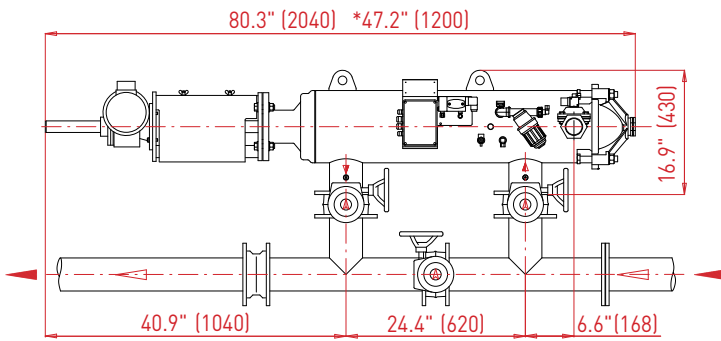
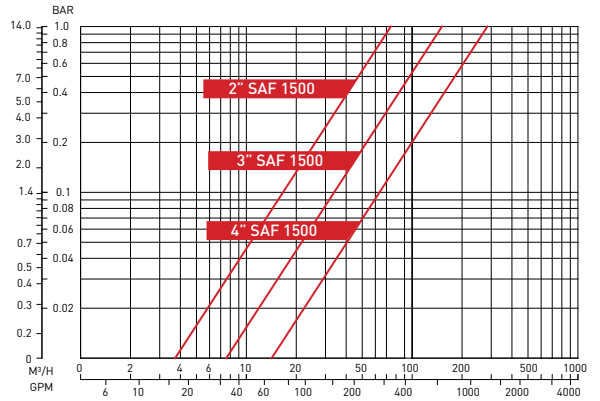
SAF 6000



Typical Installation Drawing



Head Loss Graphs in clean water



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

Technical Specifications

Filter	SAF 1500	SAF 3000	SAF 4500	SAF 6000
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General Data				
Maximum flowrate*	352 gpm (80 m ³ /h)	660 gpm (150 m ³ /h)	1,100 gpm (250 m ³ /h)	1,760 gpm (400 m ³ /h)
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, 40, 30, 20, 10 micron			
Min. working pressure	30 psi (2 bar) For lower pressure please consult manufacturer			
Max. working pressure	150 psi (10 bar)		150 psi (10 bar) 232 psi (16 bar) upon request	
Max. working temperature	122°F (50°C)		60°C (140°F) 203°F (95°C) upon request	
Weight [empty]	190 lb (86 kg)	242.5 lb (110 kg)	353 lb (160 kg)	551 lb (250 kg)

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

Flushing Data				
Minimum flow for flushing (at 30 psi - 2 bar)	26 gpm (6 m ³ /h)	48 gpm (11 m ³ /h)	66 gpm (15 m ³ /h)	110 gpm (25 m ³ /h)
Reject water volume per flush cycle 7 psi (0,5 bar)	7 gallon (25 liter)	17 gallon (64 liter)	22 gallon (83 liter)	74 gallon (280 liter)
Flushing cycle time	15 seconds	20 seconds		40 seconds
Exhaust valve	2" (50 mm)			
Flushing criteria	Differential pressure of 7psi (0.5 bar), time intervals and manual operation			

Screen Data				
Filter area	232 in ² (1,500 cm ²)	465 in ² (3,000 cm ²)	697 in ² (4,500 cm ²)	930 in ² (6,000 cm ²)
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 24 VAC or 12V, 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.

Headquarters

Amiad Water Systems Ltd. D.N. Galil Elyon 1, 1233500, Israel

Tel: +972 4 690 9500, Fax: +972 4 814 1159

E-mail: info@amiad.com

The Americas



Amiad USA Inc. Main Office and Manufacturing: 120-J Talbert Road, Mooresville, NC 28117

Tel: +1 704 662 3133, Fax: +1 704 662 3155, Toll Free: +1 800 24 FILTER

E-mail: infousa@amiad.com www.amiadusa.com

West Coast Sales Office and Warehouse:

1251 Maulhardt Ave, Oxnard, CA 93030

Tel: 1 805 988 3323, Fax: 1 805 988 3313, Toll Free: 1 800 969 4055

Brazil

Amiad Sistemas de Água Ltda., Rua Funchal, 411, Conj. 42, Vila Olimpia, São Paulo, CEP 04551-060

Tel: +55 11 31923824, E-mail: infobrasil@amiad.com

Amiad Oil & Gas, E-mail: amisur@adinet.com.uy

Mexico

Amiad México SA DE CV, AV. Jesus del Monte #39B – INT 601, Col. Jesus del Monte, C.P. 52764

Huixquilucan, Estado de México, Tel/Fax: +52 55 636 28122, Mob: +52 1 55 4909 2202

E-mail: infomexico@amiad.com

Irrigation Office:

Ing. Ramón Padilla Sanchez 1000 A, Col. Venta del Astillero, Zapopan, C.P. 45221, Jalisco – Mexico

Tel: +52 1 33 3640 0189 / +52 1 33 3641 4943, E-mail: infomexico-irr@amiad.com

Asia



India

Amiad Filtration India Pvt Limited, Plot No. A/435, Road No. 24, T T C Indl Area

MIDC Mahape, P.O. M.B.P, Navi Mumbai - 400710

Tel: +91 22 2778 7813/14, Email: info-india@amiad.com

China

Amiad China (Yixing Taixing Environtec Co., Ltd.) 70 Baihe Chang, Xingjie Yixing Jiangsu, 214204

Tel: +86 510 87134000, Fax: +86 510 87134999, E-mail: marketing@taixing.cc

South-East Asia

Filtration & Control Systems Pte. Ltd., 22 Sin Ming Lane #07-71 Midview City, Singapore 573969

Tel: +65 6 337 6698, Fax: +65 6 337 8180, E-mail: amiad@amiad.com.sg

Australia



Amiad Australia Pty Ltd. 138 Northcorp Boulevard, Broadmeadows, Victoria 3047

Tel: +61 3 93585800, Fax: +61 3 93585888, E-mail: sales@amiad.com

Europe



Amiad Water Systems Europe SAS

100 avenue de l'Anguillon, Z.I. des Iscles, 13160 Chateaufort

Tel: +33 (0) 4 32 60 10 01, Fax +33 (0) 4 32 60 60 85

Germany

Amiad Water Systems SAS Europe (German branch office)

Zweigniederlassung Deutschland Prinz-Regent-Str. 68 a 44795 Bochum

Tel: +49 (0) 234 588082-0, Fax: +49 (0) 234 588082-10, E-mail: info@amiad.de

United Kingdom

Amiad Water Systems UK Limited, Unit 1 Heol Rhosyn, Dafen Business Park

Dafen, Llanelli SA14 8QG

Tel: +44 (0)1792 277290, Fax: +44 (0)1792 797707, E-mail: info-uk@amiad.com

