

# MINI SIGMA

Innovative automatic self-cleaning filter. Lightweight and durable with maximum installation flexibility.



	2"	3"	4"
maximum flow rate	25 m <sup>3</sup> /h (110 gpm)	50 m <sup>3</sup> /h (220 gpm)	80 m <sup>3</sup> /h (352 gpm)
inlet/outlet diameter	50 mm (2")	80 mm (3")	100 mm (4")
filtration degrees	80-500 micron		
minimum operating pressure during flush cycle	1.5 bar (22 psi)		
maximum operating pressure	8 bar (116 psi)		

## features:

- Reliable and durable
- Amiad's unique suction-scanner cleaning technology
- Modular design with various installation configurations
- Polymeric filter - corrosion free
- Low water and energy consumption
- Compact design and small footprint
- Easy installation and low maintenance
- Ideal for many landscape and agricultural irrigation applications
- Amiad's innovative and user friendly ADI-P electronic controller, operated by a mobile app for advanced monitoring capabilities

Patent pending

# How the Mini Sigma Filter Works

## General

Amiad's Mini Sigma filter is the newest addition to the Sigma family. It is a small and lightweight yet durable filter; quick and easy to install, simple to operate, and requires minimal maintenance. The Mini Sigma filter was developed to handle low pressure operation, with a capacity of up to 80 m<sup>3</sup>/h (352 gpm) and with filtration degrees from 80-500 micron. Inlet/outlet connections are available in 50 mm (2"), 80 mm (3"), and 100 mm (4") diameter. Filters include a 40 mm (1.5") flush valve.

## The Filtration Process

Raw water enters through the filter inlet and passes through the screen. Clean water flows through the filter outlet. The gradual dirt buildup on the screen's inner surface causes a filter cake to develop, creating an increase in the pressure differential across the filter system. A differential pressure (DP) switch senses the pressure differential and when it reaches a pre-set level, the self-cleaning process begins.

## The Control System - Amiad's NEW ADI-P Controller

Amiad's ADI-P controller offers a one-of-a-kind monitoring and control functionality. The controller interacts with Amiad's advanced, user-friendly app that provides detailed filtration performance data on your mobile phone device. The self-cleaning mechanism is controlled and monitored by the ADI-P controller. The self-cleaning cycle is triggered by an integrated DP switch.

The ADI-P controller and mobile app also provide:

- DP and flush cycle counters
- Alerts – low/high pressures, low battery
- Reports and performance history data

## The Self-Cleaning Process

The self-cleaning cycle is initiated by any one of the following conditions:

1. Signal from the DP switch, pre-set at 7 psi (0.5 bar)
2. Time interval parameter set at the controller
3. Manual start, triggered by the ADI-P mobile app (within Bluetooth range) or via electronic controller keypad

The flush valve opens to atmosphere creating a strong suction force at the scanner nozzles, effectively removing dirt particles from the screen and discharging them from the filter.

## Mini Sigma Models

Amiad's Mini Sigma Series consists of the following models:

- 2" Mini Sigma for up to 25 m<sup>3</sup>/h (110 gpm)
- 3" Mini Sigma for up to 50 m<sup>3</sup>/h (220 gpm)
- 4" Mini Sigma for up to 80 m<sup>3</sup>/h (352 gpm)

## Amiad's ADI-P Controller

The **Mini Sigma** comes with the innovative ADI-P controller developed by Amiad specifically for its filters.



**Control** the Mini Sigma with your mobile device!



Interacts with Amiad's advanced, user-friendly ADI-P mobile app



One-of-a-kind monitoring and control functionality



Provides detailed filtration performance data



Bluetooth® range communication

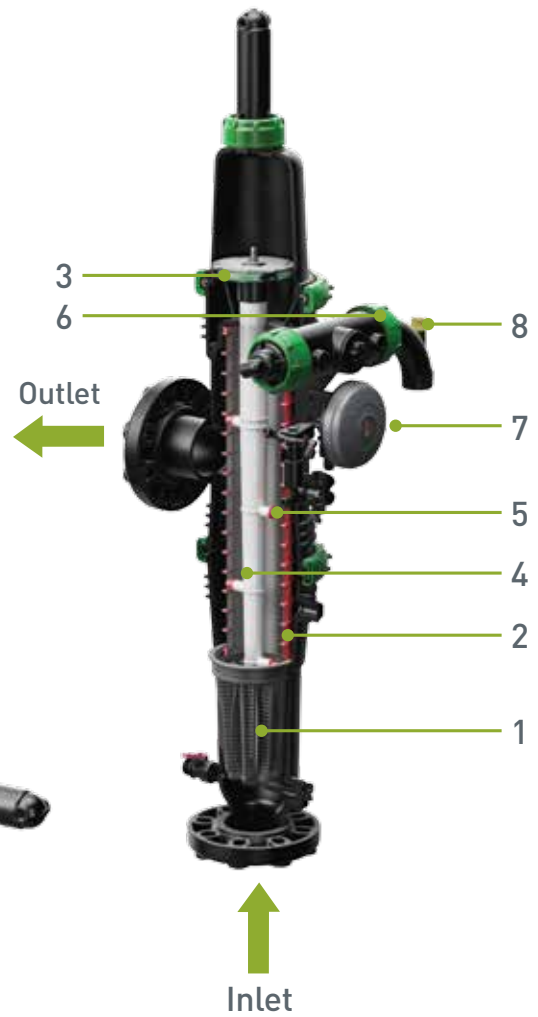
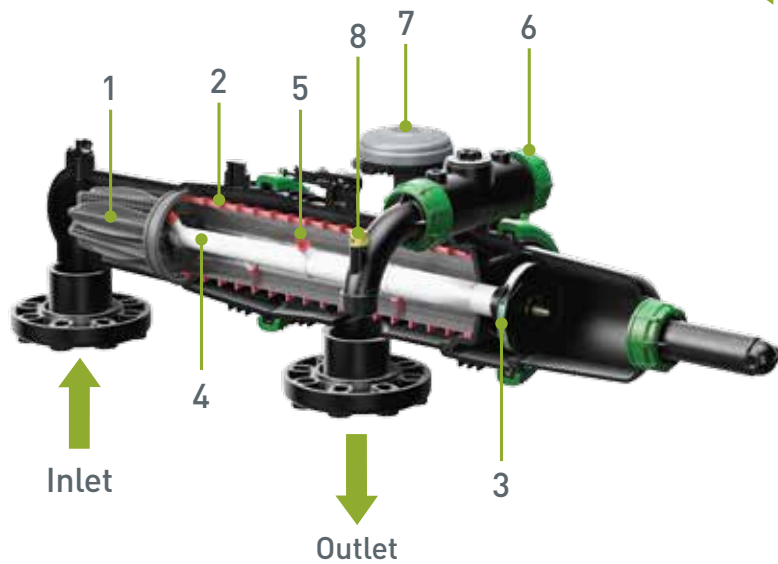


Offline information storage available

## Mini Sigma parts description

- 1 Coarse screen
- 2 Fine screen
- 3 Hydraulic turbine
- 4 Suction-scanner shaft
- 5 Suction-scanner nozzles

- 6 Flush valve
- 7 ADI-P controller
- 8 Integral anti vacuum



## Technical Specifications

General data	2" Mini Sigma	3" Mini Sigma	4" Mini Sigma
Max. flow rate* (130µ) in average water quality	25 m <sup>3</sup> /h (110 gpm)	50 m <sup>3</sup> /h (220 gpm)	80 m <sup>3</sup> /h (352 gpm)
Min. operating pressure when cleaning	1.5 bar (22 psi)		
Max. operating pressure	8 bar (116 psi)		
Filtration area	1,200 cm <sup>2</sup> (186 in <sup>2</sup> )	1,600 cm <sup>2</sup> (248 in <sup>2</sup> )	2,400 cm <sup>2</sup> (372 in <sup>2</sup> )
Inlet/Outlet diameter	2" (50 mm) BSPT/NPT	3" (80 mm) Victaulic/Universal flange	4" (100 mm) Victaulic/Universal flange
Weight (Empty)	16 kg (35 lbs)	20 kg (44 lbs)	23 kg (51 lbs)

\* Amiad's flow recommendation per water quality.

Electronic control	
Control power supply	4 x AA type 1.5V batteries and/or External 7-14 VDC
Solenoid	9-12 VDC latching solenoid
DP switch	Integral sensors

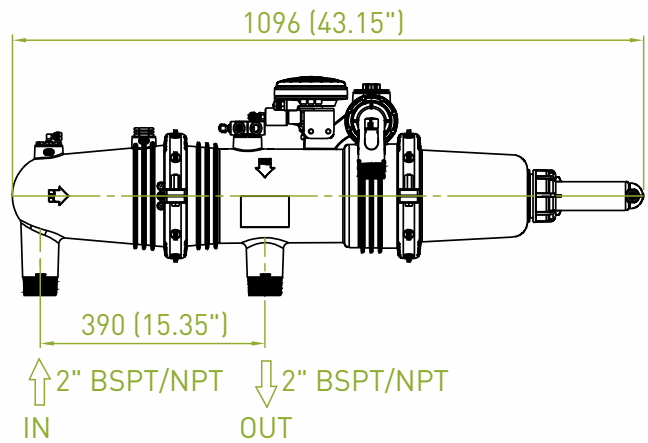
Flushing data*			
Exhaust valve	1.5" (40 mm) BSPT/NPT		
Flushing time	10 seconds		
Reject water volume per flush cycle	24 liters (6.3 gallons)	26 liters (6.8 gallons)	28 liters (7.4 gallons)
Flushing flow rate	8.7 m <sup>3</sup> /h (38.3 gpm)	9.6 m <sup>3</sup> /h (42.2 gpm)	10 m <sup>3</sup> /h (44 gpm)

\* At 1.5 bar (22 psi)

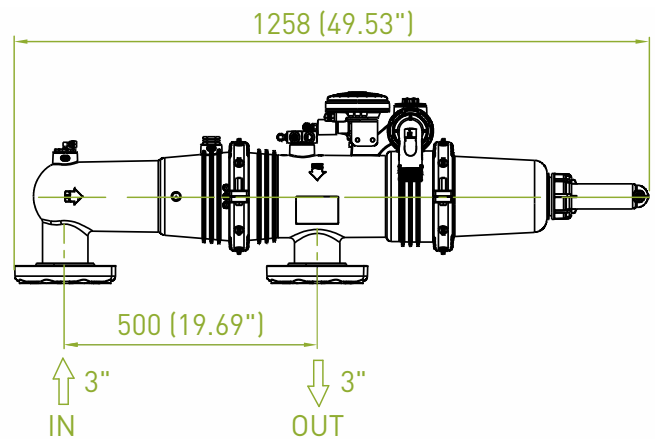
Construction materials	
Filter housing and lid	RPA (reinforced polyamide)
Screens	Molded weavewire, stainless steel 316L
Cleaning mechanism	PBT (polybutylene)
Exhaust valve	All polymeric
Seals	EPDM
Control command tubing	PE (polyethylene)

Standard Filtration Degrees						
micron	500	300	200	130	100	80
mm	0.5	0.3	0.2	0.13	0.1	0.08

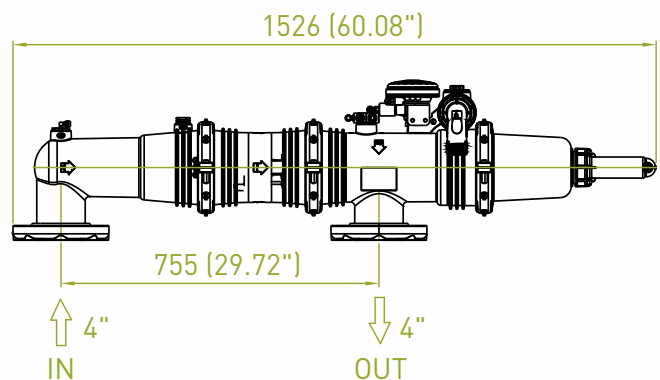
## 2" Mini Sigma on-line



## 3" Mini Sigma on-line

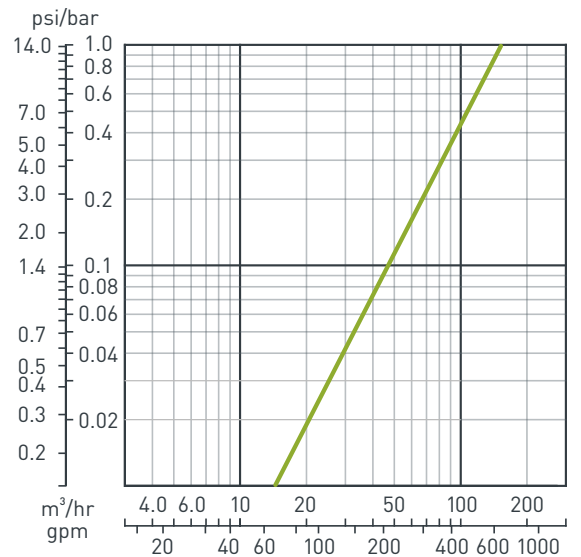
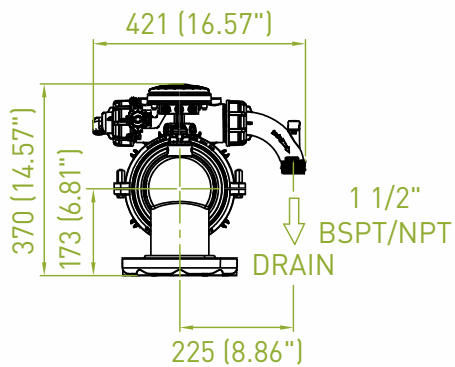
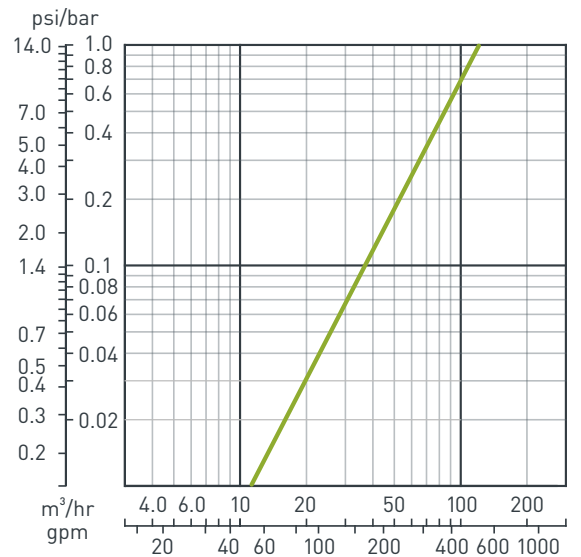
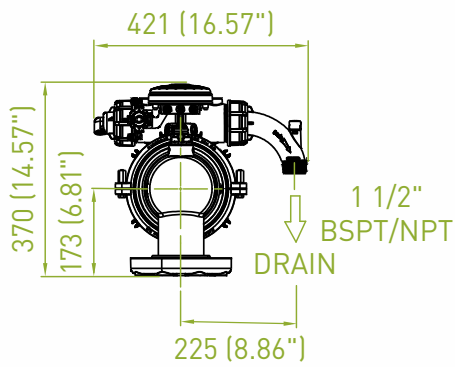
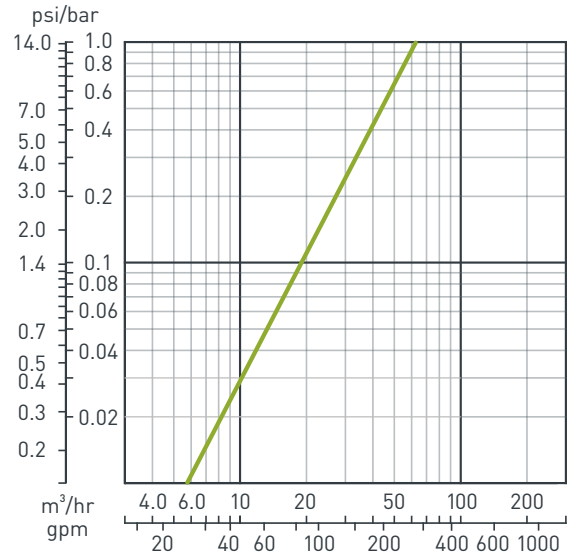
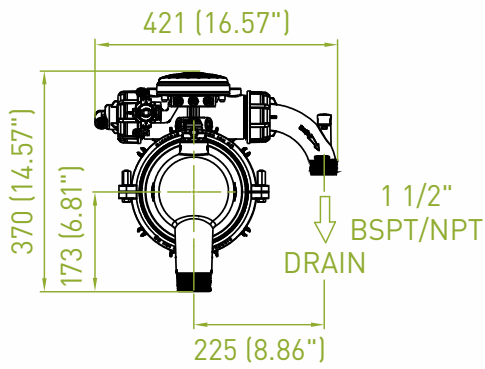


## 4" Mini Sigma on-line



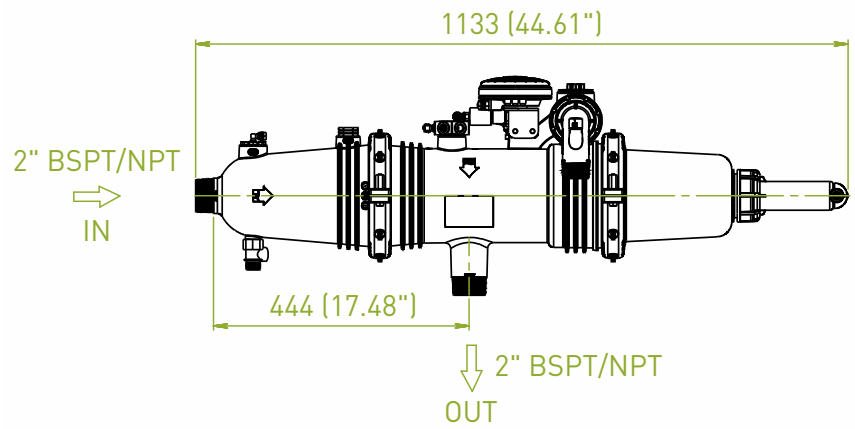
Dim: mm (inch)

## Pressure Loss Graph (in clean water)

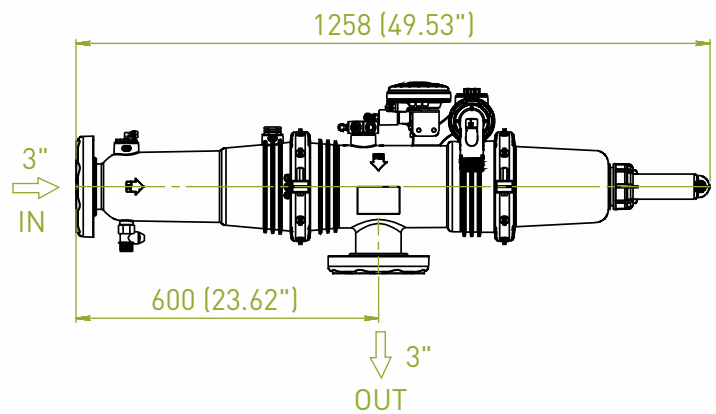


Dim: mm (inch)

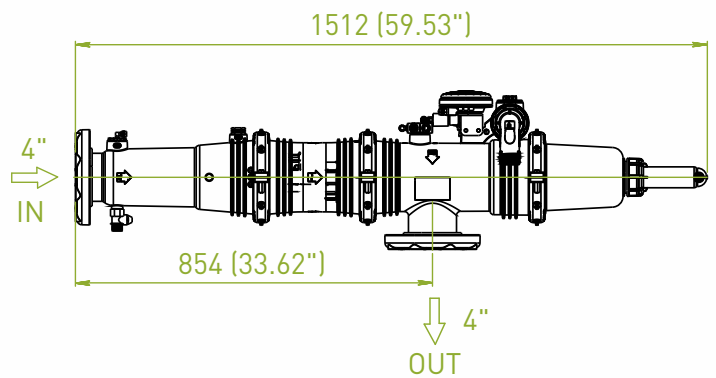
## 2" Mini Sigma angle



## 3" Mini Sigma angle



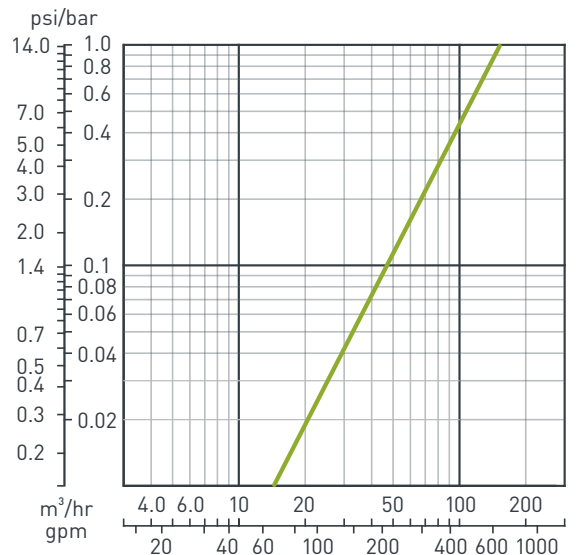
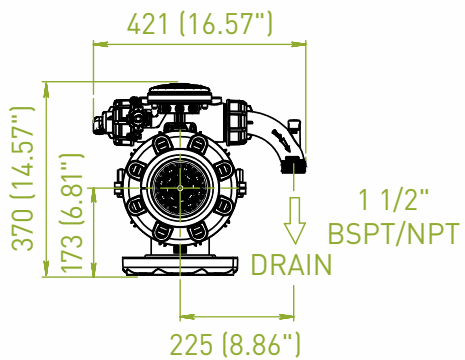
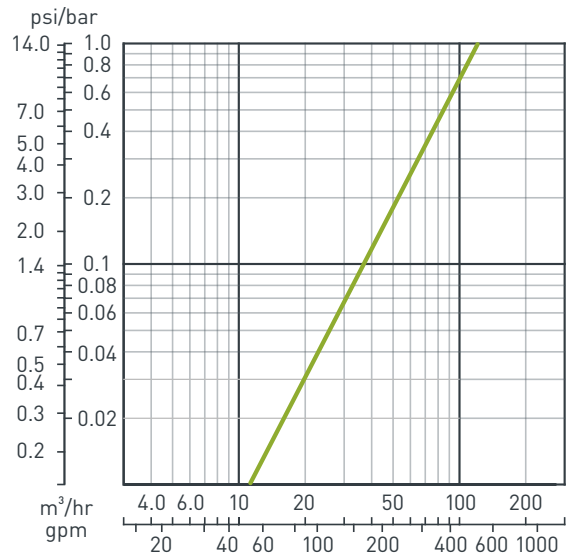
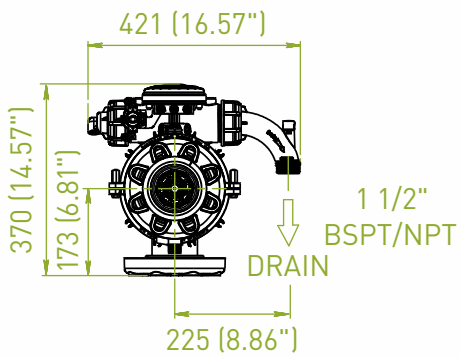
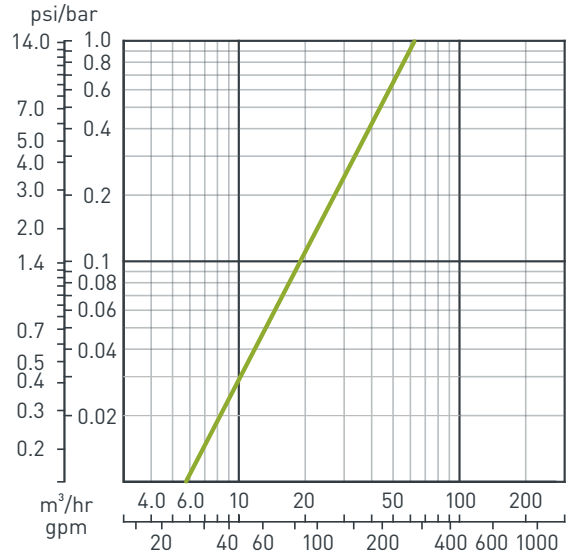
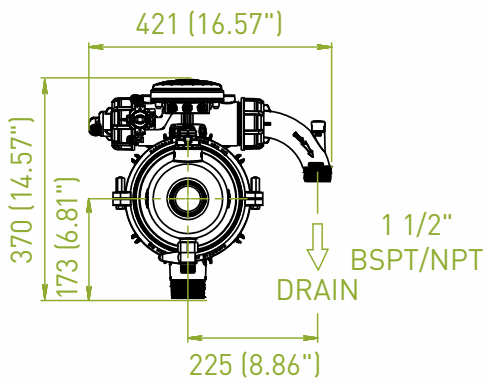
## 4" Mini Sigma angle



Dim: mm (inch)



## Pressure Loss Graph (in clean water)



Dim: mm (inch)

# Mini Sigma Configuration Options

Advanced design for **maximum installation flexibility:**



Modular, versatile inlet and outlet options



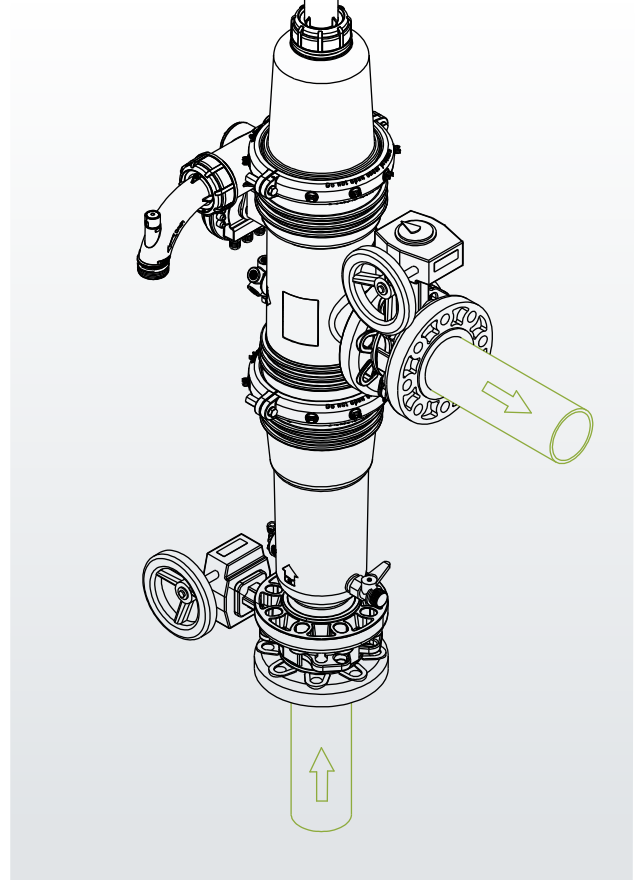
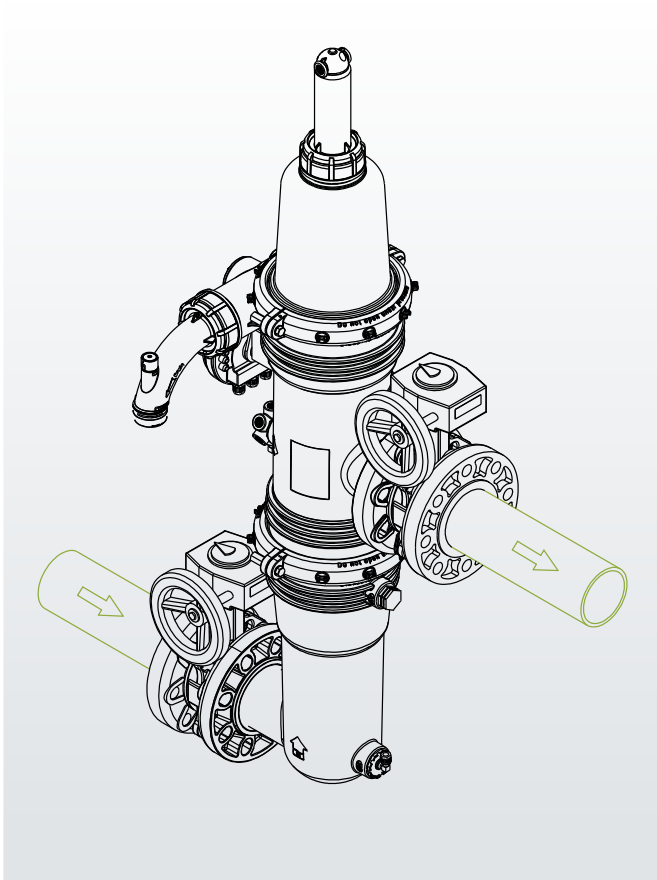
Horizontal or vertical configuration



360° rotation of the drain pipe to fit any installation configuration

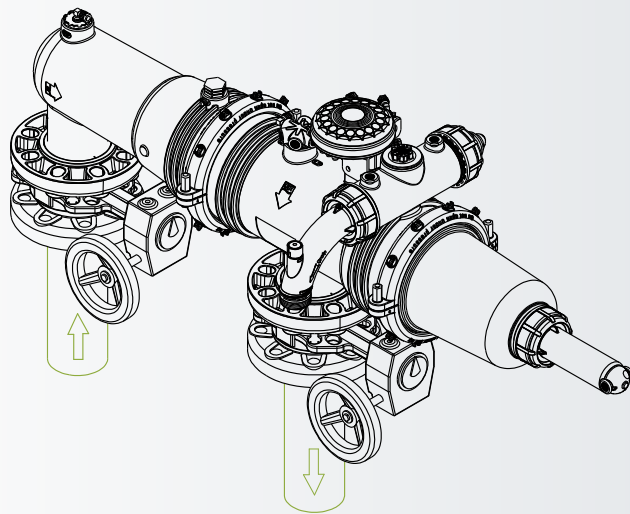
On-line

Angle

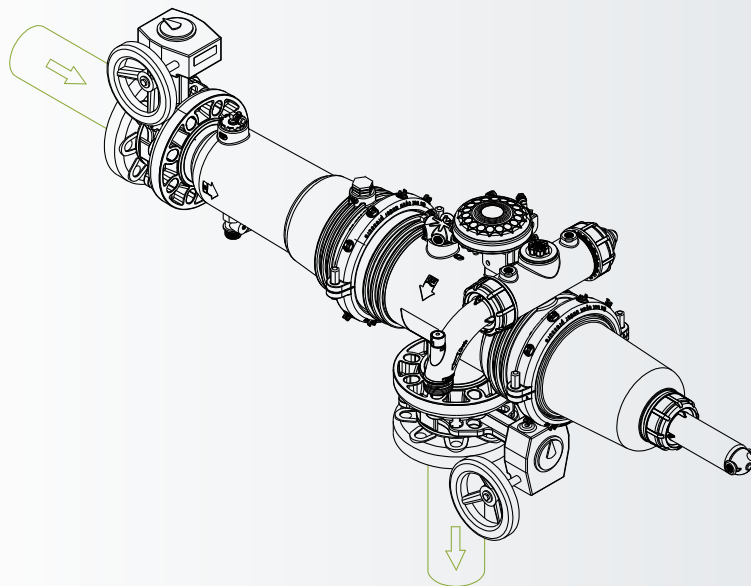


Vertical

On-line



Angle



Horizontal

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