

# Mini Sigma filters



## Amiad

Mini Sigma is Amiad's latest automatic self-cleaning plastic filter. This durable, lightweight filter offers maximum installation flexibility. The filter can be used anywhere in the water system, so filter screens no longer have to be manually cleaned. Several filters can easily be placed in parallel, so unlimited capacities are possible.

### GENERAL

Amiad's Mini Sigma filter is the latest addition to our portfolio. It is a small, lightweight plastic filter with a long service life. The filter is quick and easy to install, simple to operate, and requires minimal maintenance. The Mini Sigma filter was developed for use at low pressure, with a capacity of up to 80 m<sup>3</sup>/h and with 7 filtration degrees from 50-500 microns. The filter contains a 40-mm (1.5") flush valve. The low pressure and high contamination storage capacity means savings in operational costs.

### THE FILTRATION PROCESS

Untreated water enters through the coarse filter on the inlet side, and then passes through the filter screen from the inside and the clean water coming through the outside of the screen then leaves the filter housing. The gradual accumulation of contamination on the inside of the filter screen creates a filter cake. As the filter cake grows, so does the pressure difference across the filter. A differential pressure switch (DP) detects the differential pressure, and activates the cleaning process when it reaches a pre-set level (0.5 bar).

### OUTDOOR CULTIVATION APPLICATION

Mini Sigma filters can be used in outdoor irrigation as the main filter for various irrigation systems, such as sprinkler irrigation and drip irrigation.

### INDOOR CULTIVATION APPLICATION

For irrigation in greenhouses, Mini Sigma filters can be used as a second/extra filter after, for example, an SAF filter or media filter, or after the day tank.

### Open field application

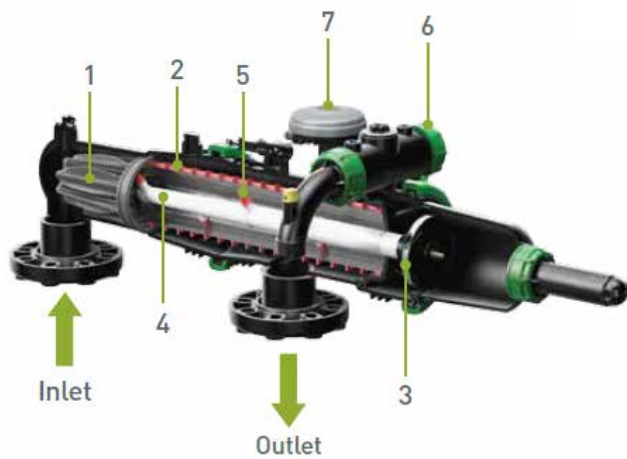
Open field, frost mitigation and inline drip system	Suction rig	Mini Sigma
Open field, frost mitigation and inline drip system	Pump (+ Mixrite)	Mini Sigma

### Greenhouse application

Roof cooling	Mini Sigma
Manual- / service line	Mini Sigma
Drain water pre-filtration (not in UV installations)	Mini Sigma
Low pressure humidification	Mini Sigma
<b>Online drip systems (i.e.. Kameleon) and overhead sprinklers</b>	
After day storage tank	Mini Sigma (only when fertigation rig is equipped with SAF or media filter)
Mixing tank rig	Mini Sigma pre-filtration (filling pump) + SAF main filter (system pump) Media filter pre-filtration (filling pump) + Mini Sigma filter (system pump)
Injection rig	Mini Sigma in combination with sand filter
Suction rig, UV decontamination	n/a (SAF filter application)

## Mini-Sigma filter application

	500 micron	300 micron	200 micron	130 micron	100 micron	80 micron	50 micron
	Green	Blue	White	Red	Yellow	Black	Orange
Drip irrigation (inline)					Uniram Revacom-Plus RevaDrip RevaDur-Plus	Streamline-X	
Drip irrigation (online)					Spraystake	Kameleon-(High) CNL Woodpecker Cobra Capillair Bubbler	
Sprinklers		Naan-sprinkler 233 B	DAN-Bridgeless (105-200 l/u)	DAN-Bridgeless (43-70 l/u)	Turbojet	Pulsator	DAN-Foggers
		Naan-sector sprinkler 423 WP AG	DAN-Bridgeless-S (105-200 l/u)	DAN-Bridgeless-S (43-70 l/u)	Hurricane	DAN-Flipper	fog sprinklers (arc)
		DAN-Modulair (235-300 l/u)	DAN-Modulair (105-200 l/u) DAN-Mamkad	DAN-Modulair (45-70 l/u) Arc sprinklers		DAN-Modular (25-35 l/u) DAN-7955 fog sprinkler (35 l/u)	
			DAN-Super-10	Pin sprinklers single sided sprinklers			



### Parts list

No.	Description
1	Coarse particle filter
2	Fine screen
3	Turbine
4	Scanner shaft
5	Nozzle
6	Flush valve
7	ADI-P controller

### Self-cleaning process

The self-cleaning cycle starts in one of following circumstances:

1. Signal from the DP switch, pre-set to (0.5 bar)
2. Time interval parameter set on the controller
3. Manual start, activated by the ADI-P mobile app (within Bluetooth range) or via the electronic control panel.

When the flush valve opens, a strong suction force is created on the nozzles of the scanner shaft during flushing. This removes dirt particles from the screen very effectively, and removes dirt from the filter during flushing.

### Mini Sigma models

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

- ✓ 2" Mini Sigma for a maximum of 30 m<sup>3</sup>/h
- ✓ 3" Mini Sigma for a maximum of 50 m<sup>3</sup>/h
- ✓ 4" Mini Sigma for a maximum of 80 m<sup>3</sup>/h

### Control system

Amiad's new ADI-P controller provides unique monitoring and control functions. The controller communicates with Amiad's advanced, easy-to-use app with detailed filter performance data on your mobile phone. The self-cleaning mechanism is controlled and monitored by the ADI-P controller. The self-cleaning cycle is activated by an integrated DP switch.

#### The ADI-P controller and mobile app also provide:

- ✓ DP and flush cycle counters
- ✓ Warnings: low/high pressure, low battery
- ✓ Reports and data on performance history
- ✓ Optionally, the limit contact (EC) can be programmed as an alarm contact
- ✓ Optionally, the second flushing contact can be programmed as a pump start/downstream valve
- ✓ Controller firmware updated via app



## TECHNICAL DATA

ADI-P controller

Electric power supply : 4 x AA 1.5 battery or external  
7-14 VDC power supply

Solenoid : 9-12 VDC Latching

### Multiple Mini Sigma filters in parallel

An almost unlimited number of filters can be installed in parallel by connecting the limit contact (EC) of the first controller to the differential pressure switch input (DP) of the next Mini Sigma filter. When the set differential pressure is reached, the filters flush in sequence.

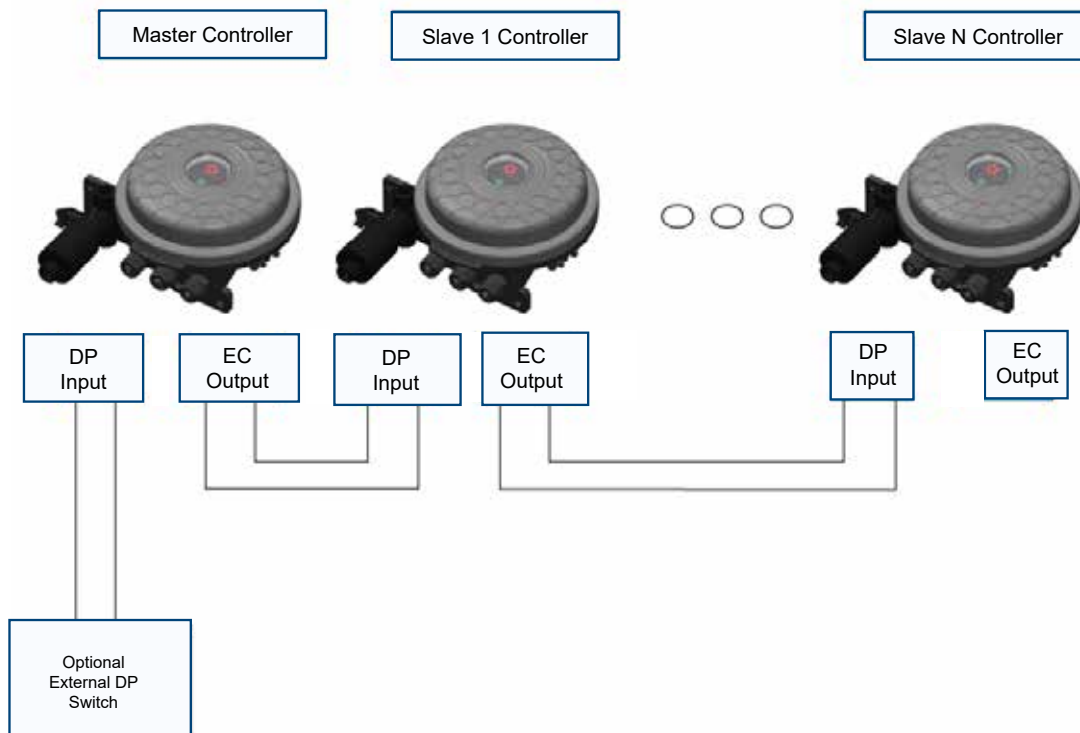
### Downloading the mobile app:

Download and install the ADI-P app on your phone. The app is available for Android (version 5 and above) and iPhone (IOS version 9 and above). The ADI-P app from Amiad Water Systems can be downloaded as follows:

- ✓ For Android - go to the Play Store:  
<https://play.google.com/store/>
- ✓ For iPhone - go to the App Store:  
<https://www.apple.com/ios/app-store/>

## CHARACTERISTICS

- ✓ Reliable and sustainable
- ✓ Amiad's unique self-cleaning filter technology
- ✓ Modular design with different installation configuration options
- ✓ Polymer filter – corrosion-free
- ✓ Low flushing water and energy consumption
- ✓ Low operational costs
- ✓ Compact design and small installation space
- ✓ Simple installation and low-maintenance
- ✓ Ideal for various indoor and outdoor irrigation applications
- ✓ Amiad's innovative and user-friendly ADI-P controller, operated by an associated application for advanced monitoring capabilities



## General information

		Sigma Mini 2" 1200	Sigma Mini 3" 1600	Sigma Mini 4" 2400
Maximum capacity	m³/h	25	50	80
Effective filter area	cm²	1200	1600	2400
Standard filtration levels	microns	50-80-100-130-200-300-500		
Filter screen material		Molded Weavewire screen S/ST316L with EPDM ring		
Diameter of connection		2" BSPT male	3" / 90 mm flange	4" / 110 mm flange
Diameter of flushing connection		1,5" BSPT male		
Minimum working pressure *	bar	1,5		
Maximum working pressure **	bar	8		
Working temperature **	°C	5-60 °C		
Weight (empty)	kg	16	20	23
Water content	liter	20,5	22,4	27,1
Weight (incl. water)	kg	36,5	42,4	50,1

\* The pressure difference across the outlet should be at least 1,5 bar during flushing.

\*\* Maximum pressure is 8 bar @ 20 °C. Maximum pressure will decrease at higher temperatures.

## Flushing

Flushing time	seconds	10 (adjustable)		
Minimum flushing water per cycle ***	liter	24	26	28
Minimum flushing volume per cycle	m³/h	8,7	9,6	10
Flushing criteria	bar	0,5 bar pressure difference (adjustable)		
No. of nozzles	pieces	3	4	6

\*\*\* (@ 1,5 bar, 10 seconds)

## Material

Filter housing	Reinforced Polyamide
Filter screens	Molded Weavewire screen S/ST316L with EPDM ring
Flush mechanism	Polybutylene
Flush valve	Polymer
Seals	EPDM
Tubes	Polyethylene (LDPE 8x6 mm)

## Application (capacity m³/h)

Model		500 micron Green	300 micron Blue	200 micron White	130 micron Red	100 micron Yellow	80 micron Black	50 micron Orange
Rain water								
Mini 2" 1200 cm²	max. 30 m³/h	30	30	30	30	30	30	24
Mini 3" 1600 cm²	max. 50 m³/h	50	50	50	50	50	42	32
Mini 4" 2400 cm²	max. 80 m³/h	80	80	80	80	76	62	48
Surface water								
Mini 2" 1200 cm²	max. 30 m³/h	30	30	30	30	30	24	19
Mini 3" 1600 cm²	max. 50 m³/h	50	50	50	50	42	32	26
Mini 4" 2400 cm²	max. 80 m³/h	80	80	80	77	62	48	38
Drain water								
Mini 2" 1200 cm²	max. 30 m³/h	30	30	30	30	24	19	16
Mini 3" 1600 cm²	max. 50 m³/h	50	50	50	42	32	26	21
Mini 4" 2400 cm²	max. 80 m³/h	80	80	77	62	48	38	31

## Screen dimensions

	Diameter (mm)	Length (mm)
Mini Sigma 2" 1200	115	375
Mini Sigma 3" 1600	115	500
Mini Sigma 4" 2400	115	750

## INSTALLATION & MAINTENANCE

### Installation

- ✓ It is important that these filters are connected with flat collar sleeves and BSPT threaded couplings. Connection kits for connecting a Mini Sigma filter are available.
- ✓ Read the manual before installing. You will find installation advice here.
- ✓ Install a non-return valve on the outgoing side, to prevent damage due to hydraulic shock, etc.
- ✓ We recommend mounting the filter horizontally.
- ✓ **Note:** the filter is supplied as standard with a 100-micron screen. The correct filter screen can be supplied separately.
- ✓ **Note:** the pipework must have sufficient load-bearing capacity to bear the total weight of the filters. If the pipework could twist or bend, for example, it could damage the filter.
- ✓ Use the EC or pump start signal to monitor the flushing frequency and ensure it is at the right level.
- ✓ **Note:** the filter does not have a drain hose from the coil as standard. Depending on the orientation of the filter ring, it can be attached later to prevent flushing water from reaching the filter.
- ✓ Netafim Netherlands recommends using the following product for adjusting or extending the PE hoses: 02058-250051 LDPE 8X6 100M
- ✓ If there is continuous flow through the flushing valve: check if the nut at the discharge elbow is sufficiently tightened, and that the manual control of the coil is in the horizontal (automatic) position.

### Maintenance

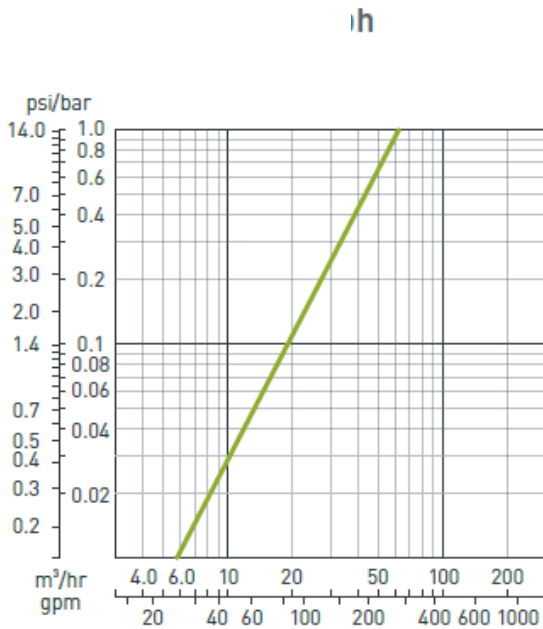
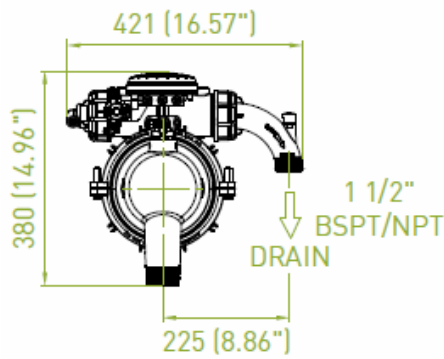
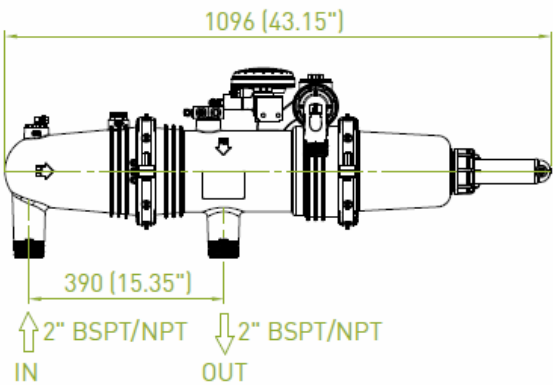
- ✓ It is recommended that the operation of the Mini Sigma is checked regularly (depending on the application, but in any case annually).
- ✓ For maintenance: see manual and Mini Sigma maintenance advice checklist, and the instruction films on our website.
- ✓ **Note:** The red nozzles are not wearing parts. They should never touch the screen. If the nozzles show signs of wear, this indicates incorrect assembly or wearing patterns. This wear may affect either the suction scanner itself or the bearings of the suction scanner in the separator plate and/or the stone catcher. In case of damage to the nozzles, always check the filter screen for damage as well. The red nozzles are not available separately; if worn, replace the entire suction scanner and any other worn parts if necessary.

### Screen cleaning

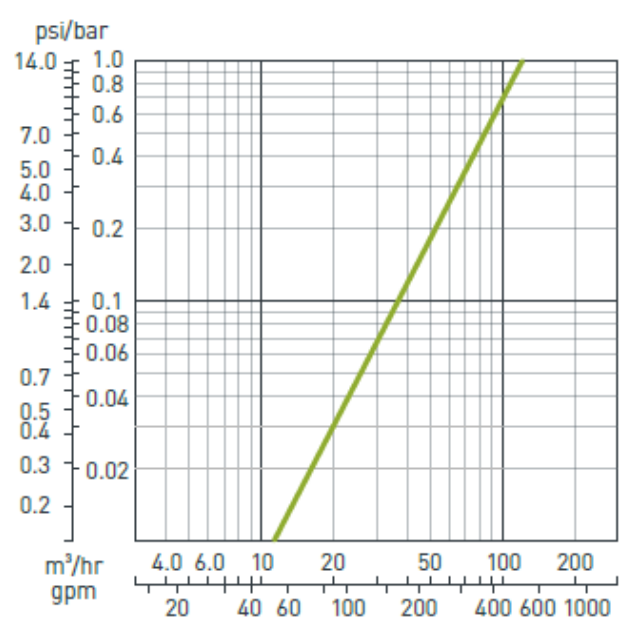
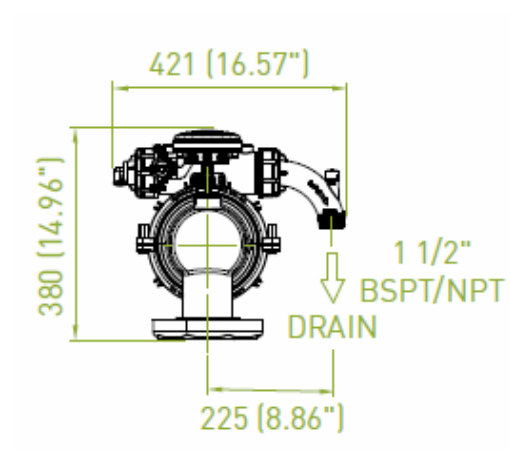
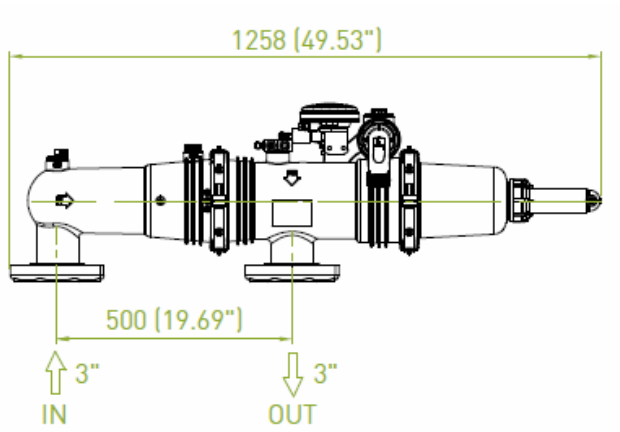
- ✓ See the screen cleaning advice for filter screens on our website.

TECHNICAL DRAWINGS AND GRAPHS

Mini Sigma 2" 1200

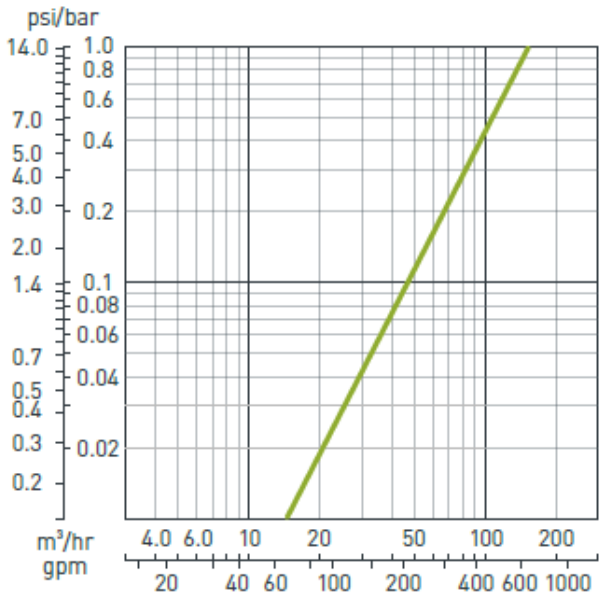
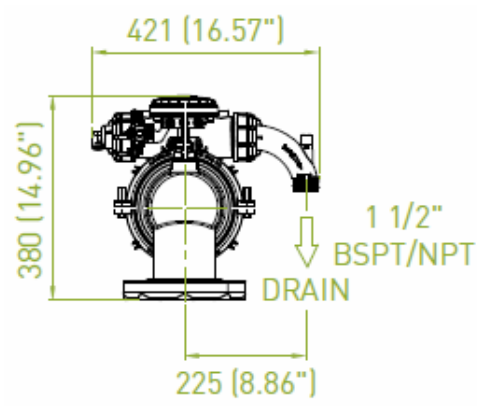
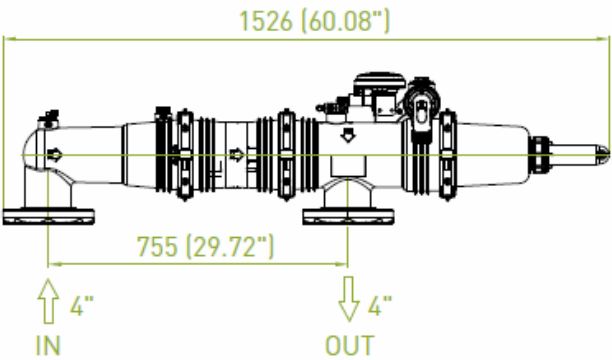


Mini Sigma 3" 1600





Mini Sigma 4" 2400



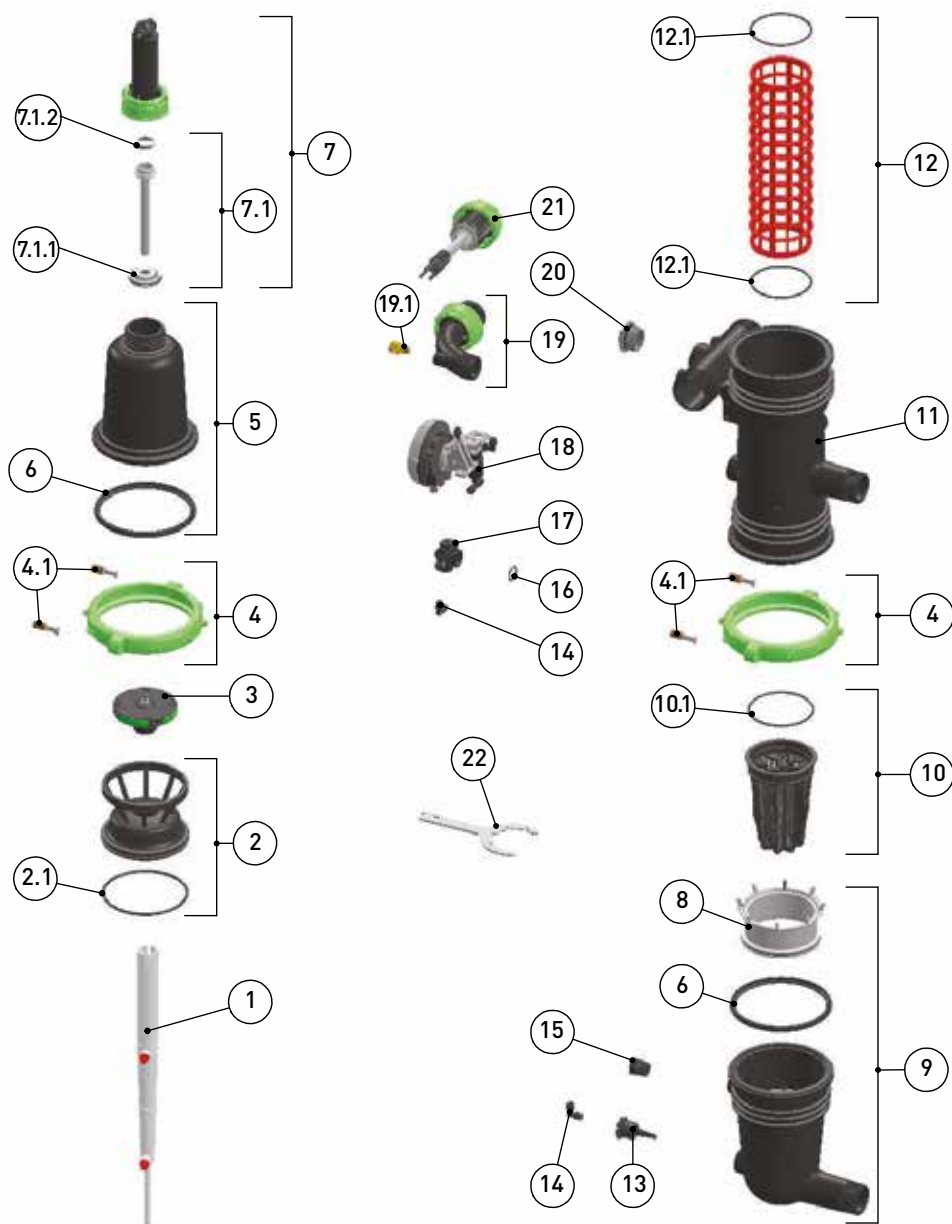
## PARTSLIST MINI SIGMA 2"

Item	Description	Art. nr.
1	2" suction scanner	74480-014151
2	2-3-4" separation plate assembly	70665-000110
2.1	2-3-4" o-ring separation plate	70620-004195
3	2-3-4" turbine	70665-000103
4	2-3-4" clamp assembly for housing	70665-000115
4.1	2-3-4" set bolts / nuts / washers	70665-000120
5	2-3-4" cover assembly	70665-000114
6	2-3-4" O-ring (hydraulic seal)	70665-000133
7	2-3-4" actuator assembly	70665-000107
7.1	2-3-4" actuator piston assembly	70665-000108
7.1.1	2-3-4" actuator seal holder	70665-000106
7.1.2	2-3-4" actuator U-cup seal NBR	70665-000134
8	2" coarse screen	70665-000111
9	2" lower body BSPT	70665-000116
9	2" lower body NPT	on request
10	2-3-4" coarse screen assembly	70665-000102
10.1	2-3-4" o-ring coarse screen	70665-000131
11	2" Mini Sigma body BSPT	70665-000123
11	2" Mini Sigma body NPT	on request
12	For filter elements check the screen overview	
12.1	2-3-4" filter O-ring	74480-067500
13	2-3-4" Bushing 1"- 1/4" + seal	70620-008305
14	2-3-4" L-connector Tefen black 1/4" - 8 mm	70665-000129
15	2-3-4" plug + seal 3/4"	70665-000135
16	2-3-4" o-ring 2-120	70665-000132
17	2-3-4" top divisor	70665-000127
18	2-3-4" ADI-P controller 12V	70665-000101
18a	2-3-4" latch solenoid	70665-000128
19	2-3-4" drain pipe 1,5" BSPT	70665-000104
19	2-3-4" drain pipe 1,5" NPT	op aanvraag
19.1	2-3-4" vacuum breaker	70665-000105
20	2-3-4" plug 1,5"- 1/4" + o-ring	70665-000112
21	2-3-4" valve actuator assembly	70665-000109
22	2-3-4" wrench galvanized	70665-000130

### Filter tubes

Netafim recommends the following material for replacement, adjustment or extension of the PE filter tubes, if required: 02058-250051 LDPE 8X6 100M

## PARTS DRAWING MINI SIGMA 2"



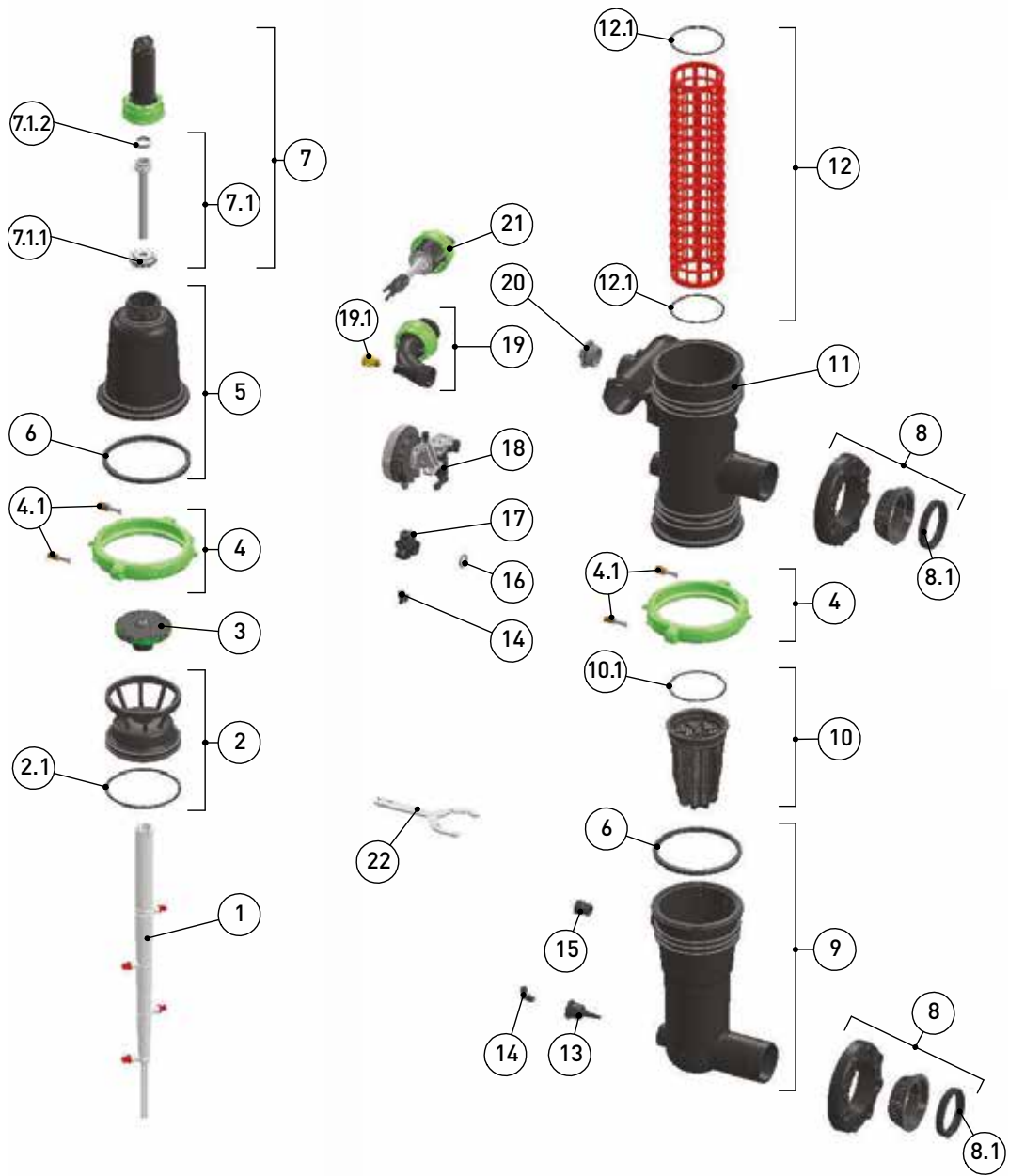
## PARTSLIST MINI SIGMA 3"

Item	Description	Art. nr.
1	3" suction scanner	74480-014152
2	2-3-4" separation plate assembly	70665-000110
2.1	2-3-4" O-ring separation plate	70620-004195
3	2-3-4" turbine	70665-000103
4	2-3-4" clamp assembly	70665-000115
4.1	2-3-4" set bolts / nuts / washers	70665-000120
5	2-3-4" cover assembly	70665-000114
6	2-3-4" O-ring (hydraulic seal)	70665-000133
7	2-3-4" actuator assembly	70665-000107
7.1	2-3-4" actuator piston	70665-000108
7.1.1	2-3-4" actuator seal holder	70665-000106
7.1.2	2-3-4" actuator U-cup seal	70665-000134
8	3" AKF universal flange set	70620-004810
8.1	3" AKF flange set gasket	70620-004900
9	3" lower body	70665-000118
10	2-3-4" coarse screen assembly	70665-000102
10.1	2-3-4" o-ring seal	70665-000131
11	3" Mini Sigma body	70665-000125
12	For filter elements check the screen overview	
12.1	2-3-4" filter O-ring	74480-067500
13	2-3-4" bushing 1" - 1/4" + seal	70620-008305
14	2-3-4" L-connector Tefen black 1/4" - 8 mm	70665-000129
15	2-3-4" plug + seal 3/4"	70665-000135
16	2-3-4" o-ring 2-120	70665-000132
17	2-3-4" top divisor	70665-000127
18	2-3-4" ADI-P controller 12V	70665-000101
18a	2-3-4" latch solenoid	70665-000128
19	2-3-4" drain pipe 1,5" BSPT	70665-000104
19	2-3-4" drain pipe 1,5" NPT	on request
19.1	2-3-4" vacuum breaker	70665-000105
20	2-3-4" plug 1,5"- 1/4" + o-ring	70665-000112
21	2-3-4" valve actuator assembly	70665-000109
22	2-3-4" wrench galvanized	70665-000130

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PARTS DRAWING MINI SIGMA 3"



## PARTSLIST MINI SIGMA 4"

Item	Description	Art. nr.
1	4" suction scanner	70665-000121
2	2-3-4" separation plate	70665-000110
2.1	2-3-4" o-ring separation plate	70620-004195
3	2-3-4" turbine	70665-000103
4	2-3-4" clamp assembly	70665-000115
4.1	2-3-4" set bolts / nuts /washers	70665-000120
5	2-3-4" cover assembly	70665-000114
6	2-3-4" O-ring (hydraulic seal)	70665-000133
7	2-3-4" actuator set	70665-000107
7.1	2-3-4" actuator piston	70665-000108
7.1.1	2-3-4" actuator seal holder	70665-000106
7.1.2	2-3-4" actuator U-cup	70665-000134
8	4" AKF universal flange set	70620-004860
8.1	4" AKF flange set gasket	70620-004920
9	4" low body Mini Sigma	70665-000119
10	2-3-4" coarse screen assembly	70665-000102
10.1	2-3-4" o-ring seal	70665-000131
11	4" Mini Sigma body	70665-000126
12	For filter elements check the screen overview	
12.1	2-3-4" filter o-ring	74480-067500
12.2	4" coupling ring filter screen	70660-002055
13	4" spacer assembly	70665-000122
14	2-3-4" L-connector Tefen black 1/4" - 8 mm	70665-000129
15	2-3-4" o-ring 2-120	70665-000132
16	2-3-4" top divisor	70665-000127
17	2-3-4" ADI-P controller 12V	70665-000101
17.1	2-3-4" latch solenoid	70665-000128
18	2-3-4" drain pipe 1,5" BSPT	70665-000104
18	2-3-4" drain pipe 1,5" NPT	on request
18.1	2-3-4" vacuum breaker	70665-000105
19	2-3-4" plug 1,5"- 1/4" + o-ring	70665-000112
20	2-3-4" actuator flushing valve	70665-000109
21	2-3-4" wrench galvanized	70665-000130
22	2-3-4" bushing 1"- 1/4" + seal	70620-008305
23	2-3-4" plug 3/4"	70665-000135

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# PARTS DRAWING MINI SIGMA 4"

