



M300 Filters

flow rates	filtration degrees	water for cleaning	min. operating pressure
up to 1100 m³/h (4840 US gpm)	3000-15 micron	less than 1% of the total flow	2 bar (30 psi)

Versatile and efficient self cleaning hydraulic filters that require no external power source



features:

- Large filtration area, reliable operating mechanism and simple construction, make the M300 filters the ideal solution for industrial and municipal filtration systems where no power is available
- Multi-layer coating for extra durability
- Compact lightweight design for easy installation and maintenance
- Cost effective solution for wide range of flow-rates and filtration degree requirements
- Automatic flushing according to pressure differential and/or time interval
- No interruption of downstream flow during flushing
- Especially custom-made filters available: High Temperature, High pressure, etc.

How the FILTOMAT M300 Filters Work

General

The Amiad FILTOMAT M300 Series are cost effective, easy-to-operate, automatic filters with an hydraulic self-cleaning mechanism that doesn't require external power source to operate.

With their various screen areas, the "M300" models support a wide range of flow-rates, 25-1100 m³/h (110-4840 US gpm), with filtration degrees of 3000 down to 15 micron and inlet/outlet diameters from 2"-16".

The Filtering Process

The filtration process begins when raw water flows through the Filter Inlet (1) into the Coarse Screen (2). Here, the water is pre-filtered in order to protect the cleaning mechanism from large debris.

The water then passes through the inner surface of the Fine Screen (3), dirt particles are trapped and accumulate inside the filter while clean water flows out of 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 differential pressure across the screen's inner and outer surfaces.

The Self-Cleaning Process

When the differential pressure across the screen reaches a pre-set value, the filter's Rinse Controller (5) starts the cleaning cycle. In the piston-less models the Hydraulic Valves (6) are activated and in the M300 piston models the Piston (7) together with the Hydraulic Valves are activated. This creates a pressure drop in the Motor Chamber (8) and a back-flush stream that flows out of the filter to the drain through the Nozzles (9), the Dirt Collector (10) and the Hydraulic Motor (11). The vacuum action and spiral motion of the Dirt Collector cleans 100% of the fine screen.

The byPass Option (M400 models)

In applications that require continuous supply of water, such as in fire protection systems, Amiad provides the optional M400 bypass feature. The bypass is triggered in cases of system fault that cause the filter's screen to become blocked. Unfiltered water follows through the bypass until the screen is cleaned. Once the screen is cleaned, the filter resumes normal operation.

"M300 SERIES" Models

For covering its wide range of flow-rates, Amiad's "FILTOMAT M300 SERIES" is provided in the following main groups divided by their screen area:

Filtomat M300-400/750 (piston-less)

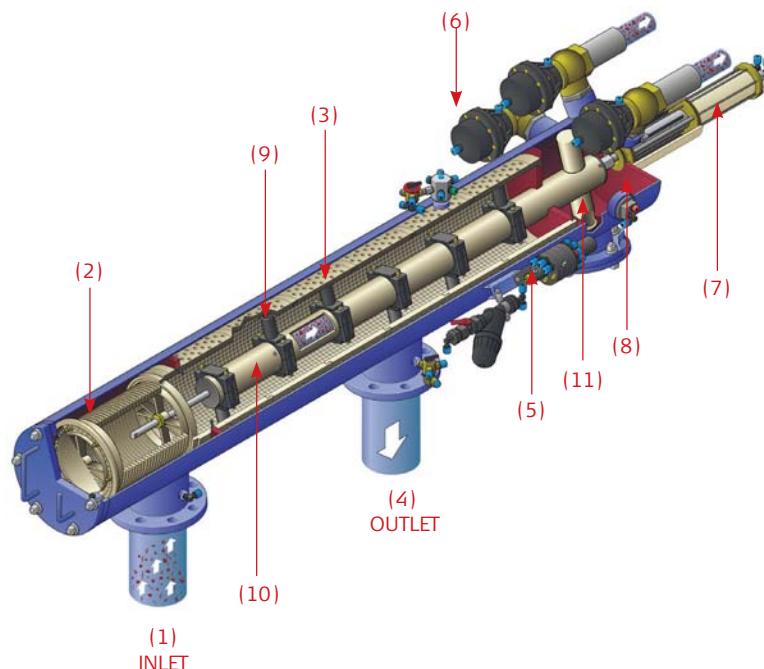
Supporting flow-rates of 25-80 m³/h (110-350 US gpm)

Filtomat M300-1500 Supporting flow-rates of 25-80 m³/h (110-350 US gpm)

Filtomat M300-3000 Supporting flow-rates of 80-300 m³/h (350-1320 US gpm)

Filtomat M300-4100/4600 Supporting flow-rates of 150-400 m³/h (660-1760 US gpm)

Filtomat M300-6100/7000 Supporting flow-rates of 400-1100 m³/h (1760-4840 US gpm)



Filtomat M300-400/750 Piston-Less Filters

Technical Specifications

Filter Type	M302LP	M303P	M304P
General Data			
Maximum flow rate*	25 m ³ /h (110 US gpm)	40 m ³ /h (175 US gpm)	80 m ³ /h (350 US gpm)
Inlet/Outlet diameter	Threaded 2" (50 mm) BSP or NPT	Flanged 3" (80 mm)	Flanged 4" (100 mm)
Filtration degrees	15, 25, 40, 50, 80, 100, 120, 150, 200, 400, 800, 1000, 1500, 3000		
Min. working pressure	2 bar (30 psi) Can be lower if pressure is increased for flushing		
Max. working pressure	10 bar (150 psi)		
Max. working temperature	65°C (149°F)		
Weight	Empty = 40 kg (88 lb) Full = 60 kg (132 lb)	Empty = 46 kg (101 lb) Full = 71 kg (156.5 lb)	Empty = 60 kg (132 lb) Full = 95 kg (209 lb)

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

Flushing Data			
Minimum flow for flushing (at 2 bar -30 psi)	25 m ³ /h (110 US gpm)	25 m ³ /h (110 US gpm)	40 m ³ /h (176 US gpm)
Reject water volume per flush cycle (at 2 bar -30 psi)	35 liter (9.24 US gallon)	35 liter (9.24 US gallon)	55 liter (14.52 US gallon)
Flushing cycle time	3-5 seconds		
Exhaust valve	2" 50 mm	2" 50 mm	1-2 x 2" 1-2 x 50 mm
Flushing criteria	Differential pressure of 0.5 bar (7psi), time intervals and manual operation		

Screen Data			
Filter area	Flat = 400 cm ² (62.9 in ²) 4-layer = 500 cm ² (81.8 in ²)	Flat = 400 cm ² (62.9 in ²) 4-layer = 500 cm ² (81.8 in ²)	Flat = 750 cm ² (118.7 in ²) 4-layer = 950 cm ² (147 in ²)
Screen types	Flat, 4-layer, Zigzag		

Construction Materials*	
Filter housing	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request)
Filter lid	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request) High density Polypropylene
Cleaning mechanism	PVC and Stainless Steel 316L
Exhaust valve	Brass, Stainless steel 316, BUNA-N
Seals	BUNA-N
Control	Aluminum, Brass, Stainless steel 316, PVC, Acetal

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

Filtomat M300-1500 Filters

Technical Specifications

Filter Type	M302LPE	M303LPE	M304LPE	M306PE
General Data				
Maximum flow rate*	25 m ³ /h (110 US gpm)	40 m ³ /h (175 US gpm)	80 m ³ /h (350 US gpm)	80 m ³ /h (350 US gpm)
Inlet/Outlet diameter	Threaded 2" (50 mm)	Flanged 3" (80 mm)	Flanged 4" (100 mm)	Flanged 6" (150 mm)
Filtration degrees	15, 25, 40, 50, 80, 100, 120, 150, 200, 400, 800, 1000, 1500, 3000			
Min. working pressure	2 bar (45 psi) Can be lower if pressure is increased for flushing			
Max. working pressure	10 bar (150 psi)			
Max. working temperature	65°C (149°F)			
Weight	Empty = 80 kg (176 lb) Full = 140 kg (308 lb)	Empty = 93 kg (205 lb) Full = 153 kg (337 lb)	Empty = 100 kg (220 lb) Full = 180 kg (398 lb)	Empty = 108 kg (238 lb) Full = 198 kg (436 lb)

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

Flushing Data	
Minimum flow for flushing (at 2 bar -30 psi)	30 m ³ /h (132 US gpm)
Reject water volume per flush cycle (at 2 bar -30 psi)	83 liter (22 US gallon)
Flushing cycle time	7-10 seconds
Exhaust valve	2" 50 mm
Flushing criteria	Differential pressure of 0.5 bar (7psi), time intervals and manual operation

Screen Data	
Filter area	Flat = 1500 cm ² (232.4 in ²) 4-layer = 2200 cm ² (341 in ²)
Screen types	Flat, 4-layer, Zigzag

Construction Materials*	
Filter housing	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request)
Filter lid	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request) High density Polypropylene
Cleaning mechanism	PVC and Stainless Steel 316L
Exhaust valve	Brass, Stainless steel 316, BUNA-N
Seals	BUNA-N
Control	Aluminum, Brass, Stainless steel 316, PVC, Acetal

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

Filtomat M300-3000 Filters

Technical Specifications

Filter Type	M304LP	M306LP	M308P
General Data			
Maximum flow rate*	80 m ³ /h (350 US gpm)	150 m ³ /h (660 US gpm)	300 m ³ /h (1320 US gpm)
Inlet/Outlet diameter	Flanged 4" (100 mm)	Flanged 6" (150 mm)	Flanged 8" (200 mm)
Filtration degrees	15, 25, 40, 50, 80, 100, 120, 150, 200, 400, 800, 1000, 1500, 3000		
Min. working pressure	2 bar (30 psi) Can be lower if pressure is increased for flushing		
Max. working pressure	10 bar (150 psi)		
Max. working temperature	65°C (149°F)		
Weight	Empty = 100 kg (220 lb) Full = 180 kg (396 lb)	Empty = 127 kg (279 lb) Full = 250 kg (550 lb)	Empty = 144 kg (316 lb) Full = 284 kg (625 lb)

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

Flushing Data			
Minimum flow for flushing (at 2 bar -30 psi)	50 m ³ /h (220 US gpm)	50 m ³ /h (220 US gpm)	50 m ³ /h (220 US gpm)
Reject water volume per flush cycle (at 2 bar -30 psi)	140 liter (37 US gallon)	140 liter (37 US gallon)	140 liter (37 US gallon)
Flushing cycle time	7-10 seconds		
Exhaust valve	2 x 2" 2 x 50 mm	2 x 2" 2 x 50 mm	2 x 2" 2 x 50 mm
Flushing criteria	Differential pressure of 0.5 bar (7psi), time intervals and manual operation		

Screen Data			
Filter area	Flat = 3000 cm ² (465 in ²) 4-layer = 4800 cm ² (744 in ²)	Flat = 3000 cm ² (465 in ²) 4-layer = 4800 cm ² (744 in ²)	Flat = 3000 cm ² (465 in ²) 4-layer = 4800 cm ² (744 in ²)
Screen types	Flat, 4-layer, Zigzag		

Construction Materials*	
Filter housing	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request)
Filter lid	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request) High density Polypropylene
Cleaning mechanism	PVC and Stainless Steel 316L
Exhaust valve	Brass, Stainless steel 316, BUNA-N
Seals	BUNA-N
Control	Aluminum, Brass, Stainless steel 316, PVC, Acetal

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

Filtomat M300-4100/4600 Filters

Technical Specifications

Filter Type	M310P	M306XLP	M308LP
General Data			
Maximum flow rate*	400 m ³ /h (1760 US gpm)	150 m ³ /h (660 US gpm)	300 m ³ /h (1320 US gpm)
Inlet/Outlet diameter	Flanged 10" (250 mm)	Flanged 6" (150 mm)	Flanged 8" (200 mm)
Filtration degrees	15, 25, 40, 50, 80, 100, 120, 150, 200, 400, 800, 1000, 1500, 3000		
Min. working pressure	2 bar (30 psi) Can be lower if pressure is increased for flushing		
Max. working pressure	10 bar (150 psi)		
Max. working temperature	65°C (149°F)		
Weight	Empty = 250 kg (550 lb) Full = 500 kg (1100 lb)	Empty = 142 kg (312 lb) Full = 252 kg (554 lb)	Empty = 160 kg (352 lb) Full = 340 kg (748 lb)

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

Flushing Data			
Minimum flow for flushing (at 2 bar -30 psi)	50 m ³ /h (220 US gpm)	75 m ³ /h (330 US gpm)	75 m ³ /h (330 US gpm)
Reject water volume per flush cycle (at 2 bar -30 psi)	140 liter (37 US gallon)	210 liter (55.4 US gallon)	210 liter (55.4 US gallon)
Flushing cycle time	7-10 seconds		
Exhaust valve	2 x 2" 2 x 50 mm	2-3 x 2" 2-3 x 50 mm	2-3 x 2" 2-3 x 50 mm
Flushing criteria	Differential pressure of 0.5 bar (7psi), time intervals and manual operation		

Screen Data			
Filter area	Flat = 4100 cm ² (632 in ²) 4-layer = 6700 cm ² (1042 in ²)	Flat = 4600 cm ² (723 in ²) 4-layer = 7500 cm ² (1156 in ²)	Flat = 4600 cm ² (723 in ²) 4-layer = 7500 cm ² (1156 in ²)
Screen types	Flat, 4-layer, Zigzag		

Construction Materials*	
Filter housing	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request)
Filter lid	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request) High density Polypropylene
Cleaning mechanism	PVC and Stainless Steel 316L
Exhaust valve	Brass, Stainless steel 316, BUNA-N
Seals	BUNA-N
Control	Aluminum, Brass, Stainless steel 316, PVC, Acetal

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

Filtomat M300-6100/7000 Filters

Technical Specifications

Filter Type	M310LP	M312P	M314P	M316P
General Data				
Maximum flow rate*	400 m ³ /h (1760 US gpm)	600 m ³ /h (2640 US gpm)	900 m ³ /h (3960 US gpm)	1100 m ³ /h (4840 US gpm)
Inlet/Outlet diameter	Flanged 10" (250 mm)	Flanged 12" (300 mm)	Flanged 14" (350 mm)	Flanged 16" (400 mm)
Filtration degrees	15, 25, 40, 50, 80, 100, 120, 150, 200, 400, 800, 1000, 1500, 3000			
Min. working pressure	2 bar (30 psi) Can be lower if pressure is increased for flushing			
Max. working pressure	10 bar (150 psi)			
Max. working temperature	65°C (149°F)			
Weight	Empty = 268 kg (589 lb) Full = 548 kg (1205 lb)	Empty = 291 kg (640 lb) Full = 631 kg (1388 lb)	Empty = 315 kg (693 lb) Full = 745 kg (1639 lb)	Empty = 435 kg (957 lb) Full = 885 kg (1947 lb)

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

Flushing Data				
Minimum flow for flushing (at 2 bar -30 psi)	75 m ³ /h (330 US gpm)	75 m ³ /h (330 US gpm)	75 m ³ /h (330 US gpm)	75 m ³ /h (330 US gpm)
Reject water volume per flush cycle (at 2 bar -30 psi)	250 liter (54 US gallon)	250 liter (54 US gallon)	250 liter (54 US gallon)	250 liter (54 US gallon)
Flushing cycle time	7-10 seconds			
Exhaust valve	3 x 2" 3 x 50 mm			
Flushing criteria	Differential pressure of 0.5 bar (7psi), time intervals and manual operation			

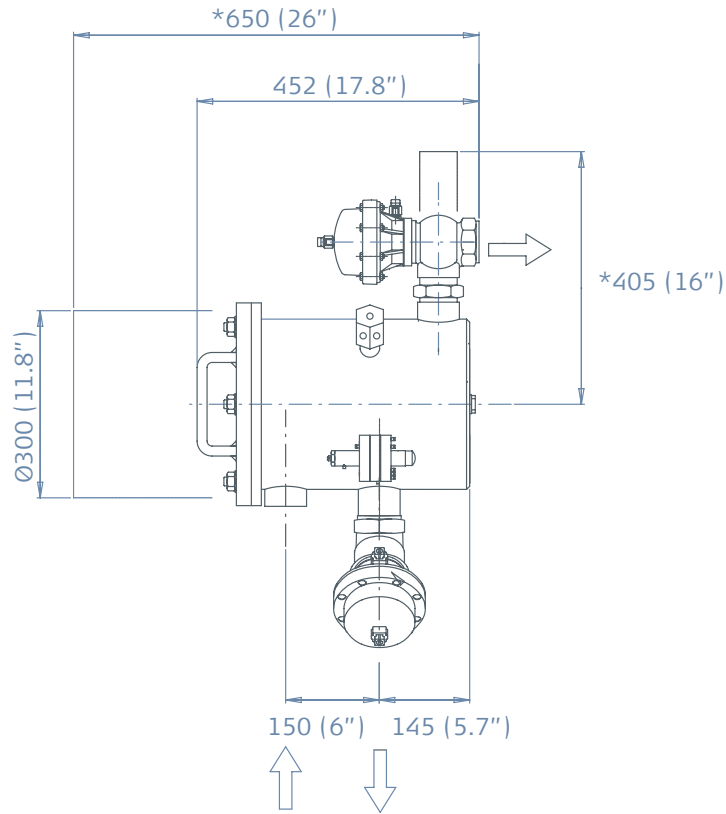
Screen Data				
Filter area	Flat = 6100 cm ² (945 in ²) 4-layer = 10000 cm ² (1550 in ²)	Flat = 6100 cm ² (945 in ²) 4-layer = 10000 cm ² (1550 in ²)	Flat = 7000 cm ² (1085 in ²) 4-layer = 12000 cm ² (1860 in ²)	Flat 7000 cm ² (1085 in ²) 4-layer = 12000 cm ² (1860 in ²)
Screen types	Flat, 4-layer, Zigzag			

Construction Materials*	
Filter housing	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request)
Filter lid	Epoxy-coated carbon steel 37-2. (Stainless Steel 316 on request) High density Polypropylene
Cleaning mechanism	PVC and Stainless Steel 316L
Exhaust valve	Brass, Stainless steel 316, BUNA-N
Seals	BUNA-N
Control	Aluminum, Brass, Stainless steel 316, PVC, Acetal

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

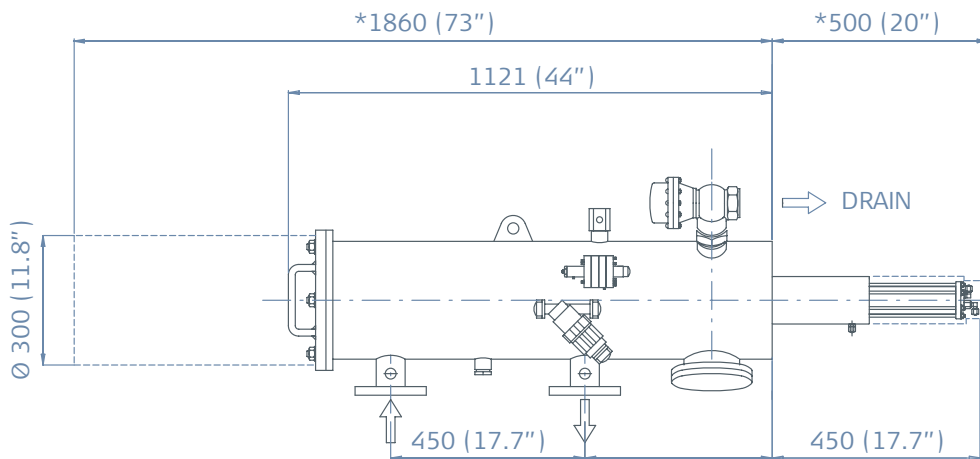
Filtomat M300-400/750 Piston-Less Filters

M302 LP



Filtomat M300-1500 Filters

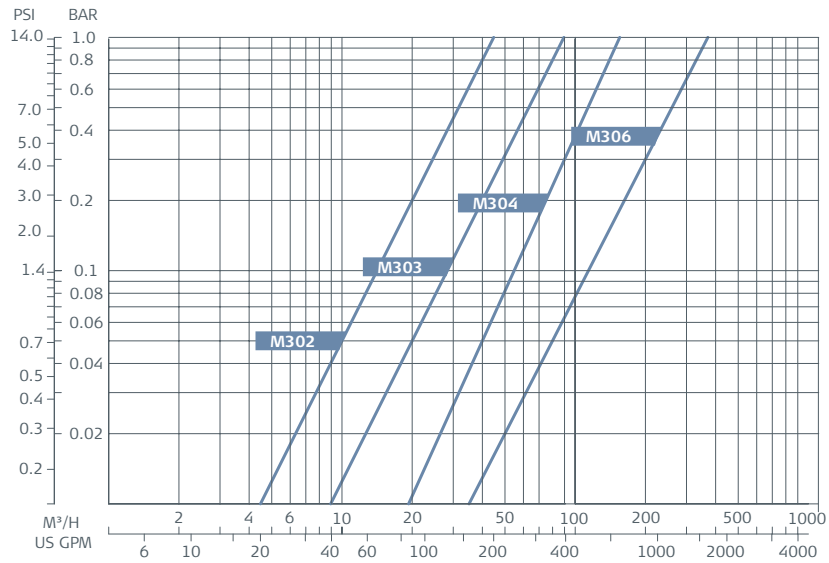
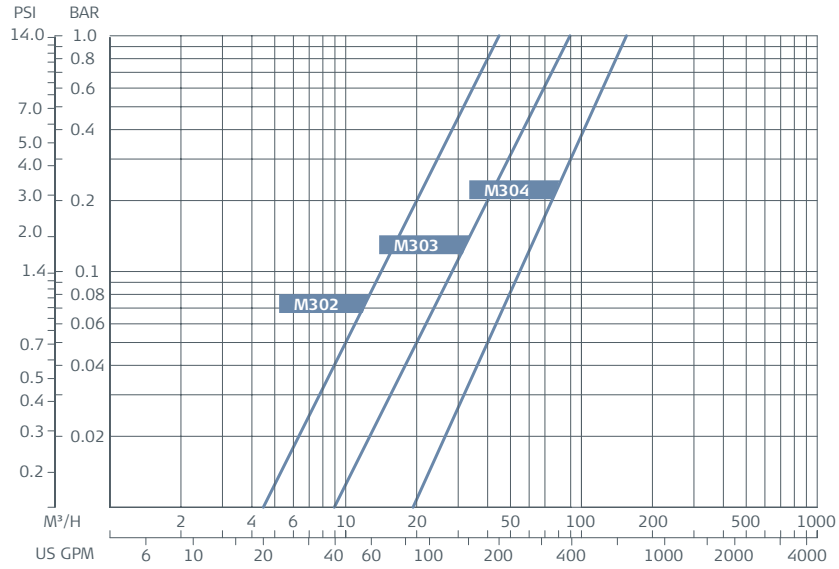
M302 LPE



Dim. In mm (inch)

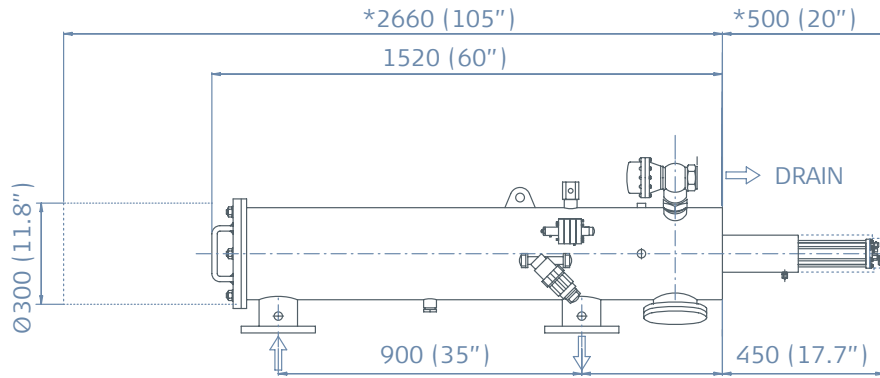
*Approx. length required for maintenance

Pressure Loss Graphs



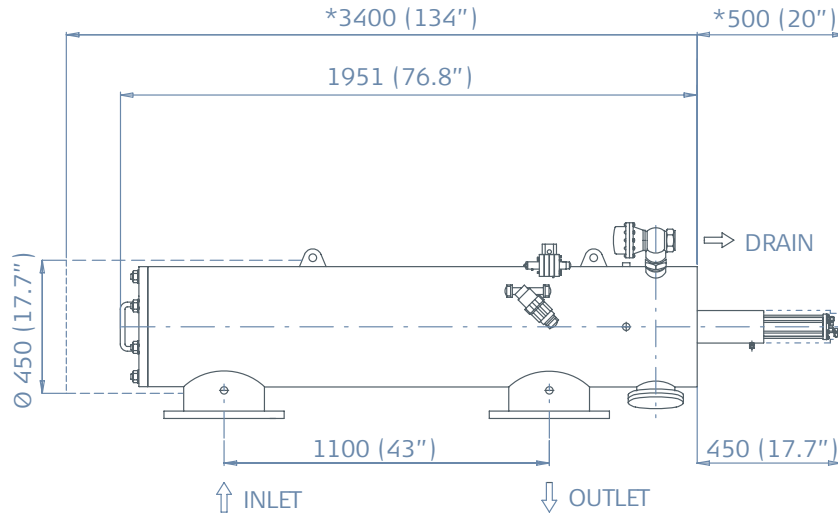
Filtomat M300-3000 Filters

M304 LP



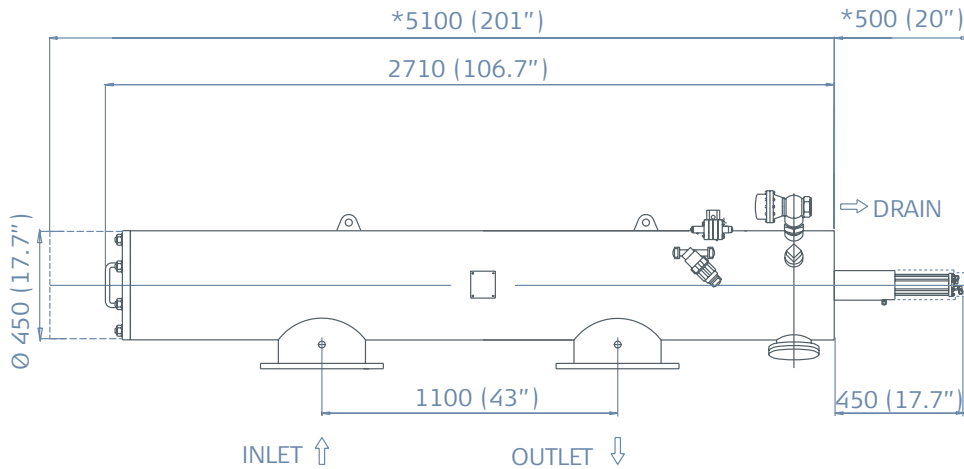
Filtomat M300-4100/4600 Filters

M310 P



Filtomat M300-6100/7000 Filters

M312 P



Dim. In mm (inch)

*Approx. length required for maintenance

Pressure Loss Graphs

