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air-phin

SELF CLEANING SUCTION FILTER

AUTO
SELF CLEANING FILTER

SAP CLEANING SYSTEM

CONTINUOUS FILTRATION

QUICK BOLTS SYSTEM

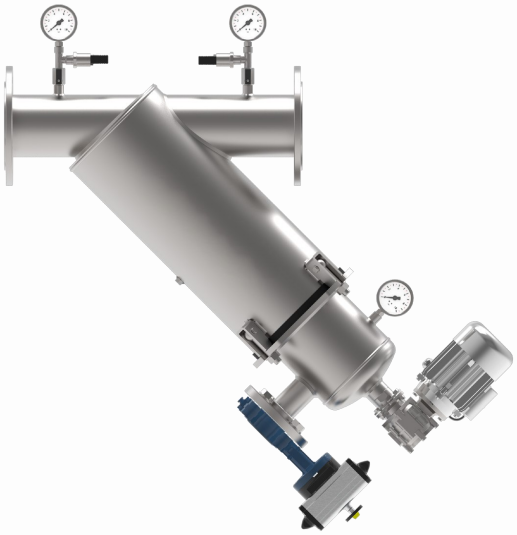
DRINKING WATER GASKETS

SHOT-PEENING TREATMENT

PASSIVATION TREATMENT

MADE IN ITALY

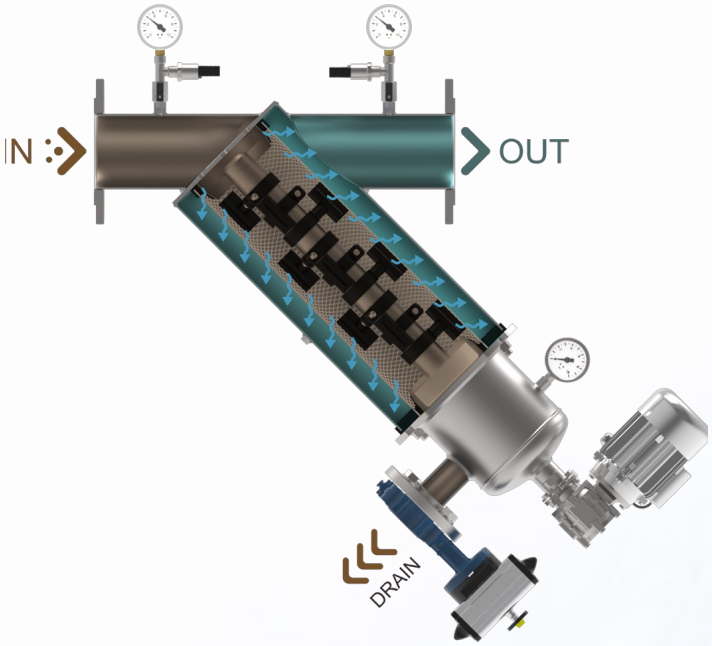
air-phin



air-phin is a self-cleaning suction mesh filter equipped with a motorized adaptive suction pad cleaning system which easily regenerates the filtering element within a few seconds, without interrupting the flow. It is ideal to treat water loaded with suspended solids and can be implemented in various industrial applications: process water treatment, HVAC closed circuit systems, fire prevention systems and many more. It is available in 3 different constructive shapes,Y- L and O in order to adapt to different installation layouts.

The vessel and cleaning system are completely made of stainless steel supplemented with adaptive and resistant suction pads which make the filter very robust and low- maintenance

The wide array of filter screens, supplied with a PES or Stainless Steel AISI 316 filtering mesh, allows the user to choose between various filtration degrees, ranging from 3000µm to 25µm.



FILTRATION PROCESS

To-be-treated raw liquid enters the filter through the inlet connection (IN), suspended solids are retained inside the filtering element and purified liquid flow out of the outlet connection (OUT).

CLEANING

The continuous build-up of solids, trapped inside the filter mesh, creates a differential pressure between inlet and outlet that can be read on the filter's manometers

The cleaning cycle is activated at regular time intervals or when the progressive build-up of suspended solids, trapped inside the filtering mesh, causes an excessive differential pressure between inlet and outlet (0,8 bar).Both parameters can be set by the controller.

During the cleaning cycle the drain valve is opened while the adaptive suction pads start rotating and removing the dirt accumulated on the filtering element, thanks to the suction force created by the pressure differential between the filter and the drain chamber. Captured dirt particles are discharged through the drain valve (DRAIN). Filtration is not interrupted if the inlet pressure is above 3 bars

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TECHNICAL SPECIFICATION

MATERIAL	
Filter housing	Stainless steel AISI 304 - AISI 316L
Gasket	EPDM*
Drain/Vent valve	Cast Iron Body with AISI 316L lens
Pressure Gauges	Stainless steel AISI 304 - AISI 316L
Surface finish	Microshot Peening and Passivation

* Certified for the following European Drinking Water regulations: UBA, DVGW-standard W-270, WRAS och ACS.

DESIGNDATA	
Flow rate	Up to 400 m^3/h
Design pressure [bar]	PN 10
Max Temperature [°C]	80
Salinity [TDS]	<10.000 ppm
pH range	3-9
Design Code	PED 68/2014/EU

POWER SUPPLY	
Electric Voltage	230Vac 50/60 Hz single phase
Compressed air	6 bar

ACTUATION	
Electric motor	230Vac 0,11 kW
Solenoid Vale	Electropneumatic 24 Vdc

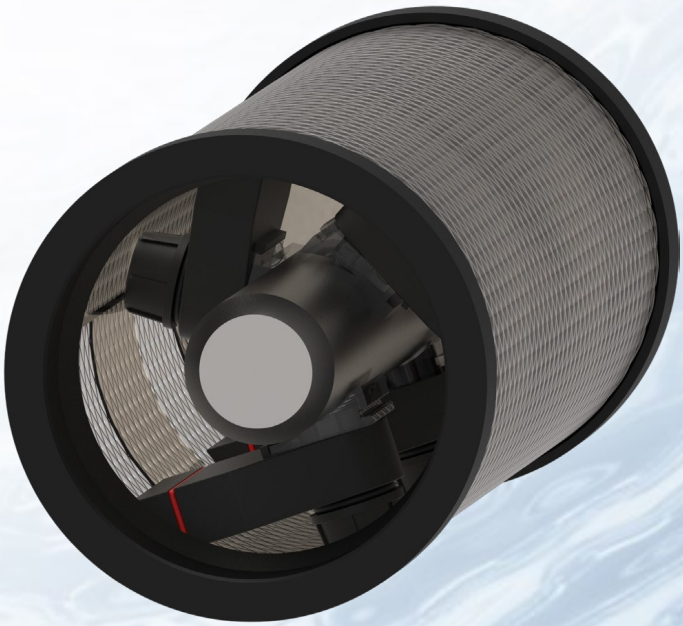
Filter's actuation is powered by the controller

CONTROLLER

POWER SUPPLY	PROTECTION CLASS	MATERIAL	INPUT	OUTPUT	CLEANING CUCPLE MANAGEMENT
230Vac 50/60 Hz single phase	IP65	ABS	2 digital (Pause, DP)	4 SPDT 16A 250Vac	Differential Pressure (0,6-0,8bar)
			3 analogic (Pressure)	4 SPST 1A 24Vdc	Pre-set time intervals
				1 SPST (alarm)	Manual

SAP (SUCTION ADAPTIVE PADS) SELF-CLEANING SYSTEM

air-phin's self-cleaning system is composed of suction adaptive pads installed on a stainless steel shaft which rotates during the cleaning cycle,started by the electronic controller, and remove suspended particles from the filtering screen. The system does not require external intervention but is activated at regular time intervals or when the progressive build-up of suspended solids, trapped inside the filtering mesh, causes an excessive differential pressure between inlet and outlet (0,8 bar).

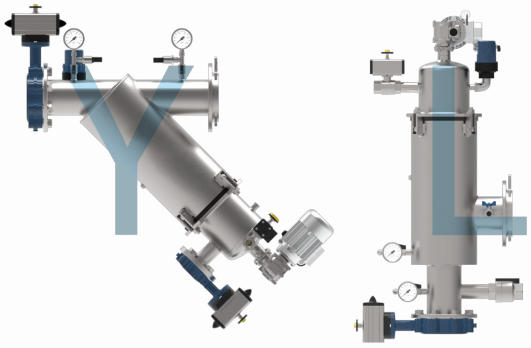


FEATURES

air-phin filters are manufactured with technical and constructive features suitable for industrial applications and are available in 3 different constructive shapes: Y, L and O.

The vessel is manufactured in Stainless Steel AISI 304 or in AISI 316 upon request and is available in Y and L constructive shapes. For each shape four different sizes are available: 6, 8, 18 and 30 which differ in the size of the filtering element inside them.

After the welding the component will receive two surface treatments: micro-shot peening and passivation. The former provides a greater surface resistance and removes any manufacturing impurities whereas the latter recreates the passive film on the material protecting against corrosion.



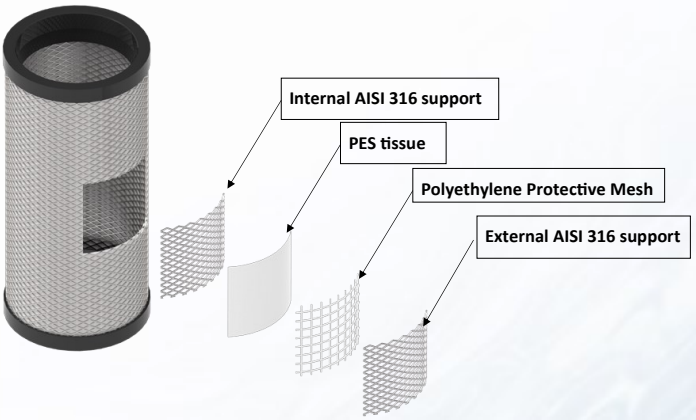
CONNECTIONS

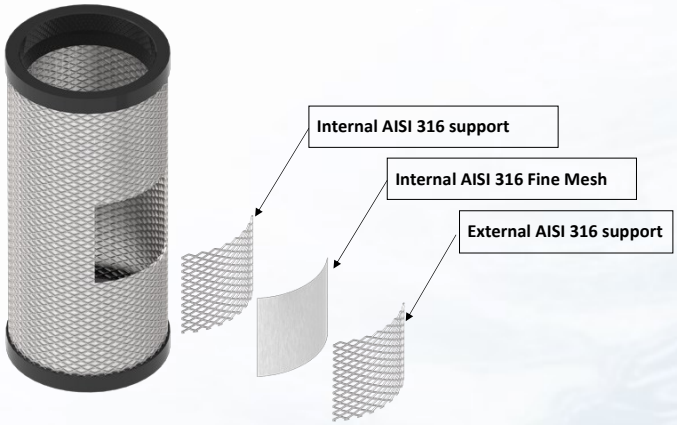
air-phins Inlet and Outlet connections can be BSPP Threaded up to 3” and are ISO PN16 flanged from DN80 onwards.

FILTERING ELEMENT

M-LAY PES FILTER KIT

Composed of 4 layers, its wide array of available filtering tissues and allows the customer to choose from various filtration degrees starting from 25µm up to 810µm. From the inside outwards: AISI 316 Internal Support, PES tissue, Polyethylene protection mesh, AISI 316 External support.





3LAY INOX FILTER KIT

Composed of 3 stainless steel AISI 316 layers, this type of filtering element is very resistant and proves to be an excellent alternative to the M-LAY FILTERKIT when it comes to harsh exercise conditions, especially when sharp or cutting suspended solids might be present inside the liquid.

FLOW RATES

You can select the product you need by identifying the IN/OUT connections and MAX flowrate first, then choosing one of the available constructive shapes and finally the relative size of the filtering element.

IN/UT	MAX FLOW RATE*		SHAPE			FILTERING SURFACE		
Ø	[m^3/h]	[l/min]	Y	L	O	Storlek	[cm^2]	[in^2]
2’ BSPP	30	500	✓	✓	-	6	1500	233
3’ BSPP	60	1000	✓	✓	-			
DN 80	60	1000	✓	✓	✓			
DN 100	110	1666	✓	✓	✓			
3’ BSPP	70	1666	✓	✓	-	8	2200	341
DN 80	70	1666	✓	✓	✓			
DN 100	110	1833	✓	✓	✓			
DN 100	120	2000	✓	✓	✓	18	3300	512
DN 150	204	4000	✓	✓	✓			
DN 100	120	2000	✓	✓	✓	30	5400	837
DN 150	260	4333	✓	✓	✓			
DN 200	400	6666	-	✓	✓			

*Max flow rates are calculated based on clean water with a filtration degree of 120µm.

With the same IN/OUT connection and the same MAX flowrate, the larger filter will require less cleaning than the smaller one.

CLEANING CYCLE

	SIZE 6	SIZE 8	SIZE 18	SIZE 30
Min. cleaning flowrate	9 m^3/h	13 m^3/h	13 m^3/h	20 m^3/h
Min. pressure during cleaning cycle	3 bar	3 bar	3 bar	3 bar
Water consumption full cleaning cycle	50 L	75 L	75 L	115 L
Cleaning cycle’s length	20-25 s	20-25 s	20-25 s	20-25 s

HEAD LOSS

Head losses are referred to filters with 120 µm clean filtering mesh.

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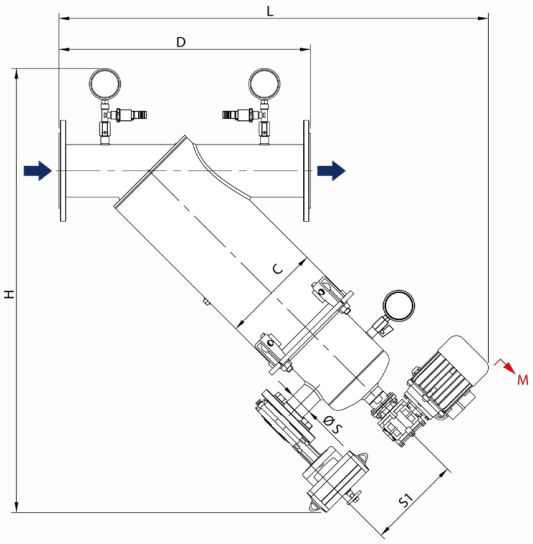
MODEL COMPOSITION

The model that identifies the filter is composed as follows:

AIPH	50	Y	6
FILTER ACRONYM	CONNECTION	VESSEL SHAPE	SIZE

DIMENSIONS

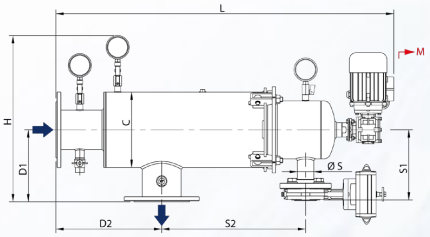
Y SHAPE



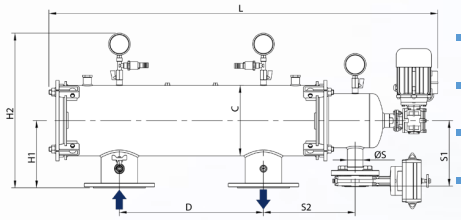
MODEL	IN/OUT	D [mm]	L [mm]	H [mm]	C [mm]	S1 [mm]	ØS [mm]	M_{min} [mm]	WEIGHT [Kg]
AIPH 2" Y 6	2"BSPP	412	757	830	219	204	DN 40	500	31
AIPH 3" Y 6	3"BSPP	464	783	844	219	204	DN 40	500	32
AIPH 80 Y 6	DN 80	487	782	844	219	204	DN 40	500	36
AIPH 100 Y 6	DN 100	547	824	857	219	204	DN 40	500	37
AIPH 3" Y 8	3" BSPP	464	892	953	219	204	DN 40	700	35
AIPH 80 Y 8	DN 80	487	891	953	219	204	DN 40	700	39
AIPH 100 Y 8	DN 100	547	933	966	219	204	DN 40	700	41
AIPH 100 Y 18	DN 100	585	933	966	273	204	DN 40	700	47
AIPH 150 Y 18	DN 150	660	959	993	273	204	DN 40	700	53
AIPH 100 Y 30	DN 100	585	1150	1194	273	216	DN 50	1000	57
AIPH 150 Y 30	DN 150	660	1173	1221	273	216	DN 50	1000	63

MODEL	IN/OUT	D1 [mm]	D2 [mm]	L [mm]	H [mm]	C [mm]	S1 [mm]	S1 [mm]	ØS [mm]	M_{min} [mm]	WEIGHT [Kg]
AIPH 2" L 6	2"BSPP	190	310	836	549	219	204	268	DN 40	500	31
AIPH 3" L 6	3"BSPP	190	310	836	549	219	204	268	DN 40	500	32
AIPH 80 L 6	DN 80	210	310	836	549	219	204	268	DN 40	500	36
AIPH 100 L 6	DN 100	210	310	836	549	219	204	268	DN 40	500	37
AIPH 3" L 8	3" BSPP	190	310	990	549	219	204	422	DN 40	700	35
AIPH 80 L 8	DN 80	210	310	990	549	219	204	422	DN 40	700	39
AIPH 100 L 8	DN 100	210	310	990	549	219	204	422	DN 40	700	40
AIPH 100 L 18	DN 100	246	350	1061	576	273	204	422	DN 40	700	48
AIPH 150 L 18	DN 150	246	350	1061	576	273	204	422	DN 40	700	52
AIPH 100 L 30	DN 100	246	350	1367	576	273	216	728	DN 50	1000	57
AIPH 150 L 30	DN 150	246	350	1367	576	273	216	728	DN 50	1000	61
AIPH 200 L 30	DN200	266	350	1367	576	273	216	728	DN 50	1000	67

L SHAPE



O FORM



MODEL	IN/OUT	D1 [mm]	D2 [mm]	L [mm]	H [mm]	C [mm]	S1 [mm]	S2 [mm]	ØS [mm]	M_{min} [mm]	WEIGHT [Kg]
AIPH 80 O 6	DN 80	450	1215	210	482	219	204	287	DN40	500	50
AIPH 100 O 6	DN 100	450	1215	210	482	219	204	287	DN40	500	52
AIPH 80 O 8	DN 80	450	1215	210	482	219	204	287	DN40	700	51
AIPH 100 O 8	DN 100	450	1215	210	482	219	204	287	DN40	700	53
AIPH 100 O 18	DN 100	640	1720	246	546	273	204	422	DN40	700	76
AIPH 150 O 18	DN 150	640	1720	246	546	273	204	422	DN40	700	77
AIPH 100 O 30	DN 100	640	1720	246	546	273	216	422	DN50	1000	78
AIPH 150 O 30	DN 150	640	1720	246	546	273	216	422	DN50	1000	81
AIPH 200 O 30	DN 200	640	1720	266	566	273	216	422	DN50	1000	85

*M = Minimum free space required for mainte-

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