

AQUA



Pool Filtration



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Pool Filtration

WATER FILTRATION

Water can be filtered in different ways. As a matter of fact, two different categories of filtration can be identified:

- a) deep bed filtration (sand filters);
- b) surface filtration (cartridge filters). During deep bed filtration,

it is fundamental that the liquid sifts through the whole filtering layer made up of granulated material. During this process the mechanism used is interception, thanks to which particles with a bigger standard size than the pores of the filtering sand are blocked by the material itself.

In surface filtration, the filtration process takes place on the surface of a component whose pores are smaller than the particles. Filter's thickness is therefore secondary.

DEEP BED FILTRATION

In this case, filtration takes place as the water sifts through the filtering material. During deep bed filtration, water and filter's characteristics progressively change. Filtration articulates in different phases:

- 1) the particles contained in the water impact the grains of the filtering bed. Water can impact the filter in many ways, which have different relevance depending on the kind of filtration;
 - a) 0,4-0,8mm, for rapid pressure filters;
 - b) 1/1,35 mm: for slow filters with settled water;
 - c) 6.35/9 mm: for roughing treatments.

- 2) the particle adheres to the grains it touches and is subsequently removed by the water flood going downstream. The adherence is facilitated by the low speed of the fluid;

- 3) pore size reduction is caused by the progressive adherence of the particles to the filter, and it makes the fluids flow faster and apply a higher dragging force that makes the previously settled particles come off.

Factors are:

filter porosity

Darcy's filtration speed (m/s)

length of the filtering bed (m)

gravitational acceleration (9,81 m/s²)

shape factor (variable from about 0,7 for angular grains to 1 for spherical particles)

average diameter of the filtering grains index of resistance of the filter, derivable from the Ergun equation as a function of the Reynolds number

Filtering mass characteristics

Filtering material can be classified with several parameters, the most important of which are listed hereinafter:

- 1) granulometric curve: shows the size of a particle passing through a filter (x-axis), and the weight of the material passing through the filter (y-axis);
- 2) actual size: given by the dimension corresponding to percentage 10 on the granulometric curve;
- 3) uniformity coefficient: also derived from the granulometric curve

Quartz sand is one of the most common materials used for filtering beds. Other materials are anthracite and active granular carbons.

As for the granulometry of the filtering bed, two different solutions can be adopted depending on the grain chosen, which can be uniform or assorted (usually, no more than 2-3 layers).

SURFACE FILTRATION

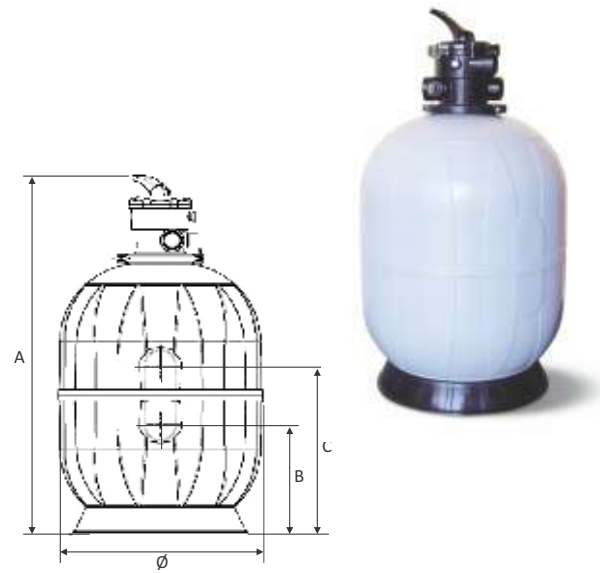
The mechanisms of adhesion to the filtering bed are different than those of volume filtration. In case the particle present in the water can not pass through the pores of the filter, a separation takes place (like it happens in surface filtration). This phenomenon causes the formation of a growing layer of solid particles. The presence of this layer usually does not affect the general functioning of the filter; instead, it improves the global filtration effect, intercepting more particles.

- 1) interception: it takes place when a particle passes close to a grain for a distance that is lower than its radius;
- 2) diffusion: colloidal particles follow random patterns caused by the collision with the molecules of the dispersion medium;
- 3) inertia : it is almost negligible in the case of the water, due to the viscosity of the medium;
- 4) settling: if the particle follows the gravitational field, it may lose the fluid filament it carries and subsequently deposit on a grain. This phenomenon depends on the ratio between fall speed of the particle and fluid speed.
- 5) hydrodynamic effects: in this case the particle receives a side impulse, transversally to the fluids, and starts rotating. Intercepting: finally, all particles suffer the hydrodynamic effects.



1- INJECTED SAND FILTERS "AQUARIUS" TOP VALVE

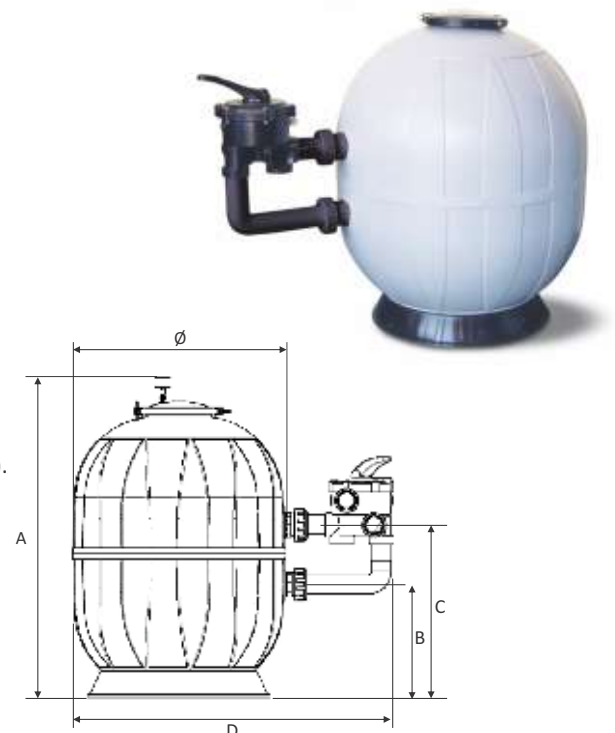
- Sand filter with 6 way selector top valve.
- Totally injection molded in polypropylene.
- 100% polypropylene, ball-shaped body with micro-hole pipe distribution. Supporting base of the double-ring filter to ensure stability.
- Polished and glazed wedges finish
- Draining micro-hole pipe distribution
- Working pressure max. 3 bar.
- Connection filter-valve with clamping collars.
- Lateral side connectors $\varnothing 50$ mm (for 1 1/2" valve).
- 3/4" filter discharge
- Constant re-productivity.
- Standard: UNI 10637:2006 regulation for TYPE D categories
- Warranty: 5 years.



CODE	Ø	CONNECTIONS	FLOW (m ³ /h) V=50m ³ /h/m ²	SAND kg	FILTRATION AREA m ²	DIMENSIONS			PACKING	WEIGHT kg	VOLUME m ³
						A	B	C			
100100900	450	1 1/2"	6	75	0.12	775	206	356	2	11	0.20
100100901	530	1 1/2"	10	100	0.20	925	280	430	2	17	0.31
100100903	620	1 1/2"	14	150	0.28	960	300	450	2	20	0.44

2- INJECTED SAND FILTERS "AQUARIUS" SIDE VALVE

- Sand filter with 6 way selector side valve.
- Totally injection molded in polypropylene.
- Polypropylene spherical body; distribution with micro-hole pipe, anti-slip features with nozzles to ease the maintenance operations.
- Automatic air bleed with upper filter base for double-ring filter to guarantee stability lid with pressure gauge seat and manual air bleed.
- Seal is guaranteed by clamps with butterfly valves and nut maintenance does not require tools.
- Polished and glazed wedges finish
- Draining micro-hole pipe distribution
- Working pressure max. 3 bar.
- Lateral side connectors $\varnothing 50$ mm (for 1 1/2" valve) and $\varnothing 63$ mm (for 2" valve).
- 3/4" filter discharge
- Standard: UNI 10637:2006 regulation for TYPE D categories
- Warranty: 5 years.



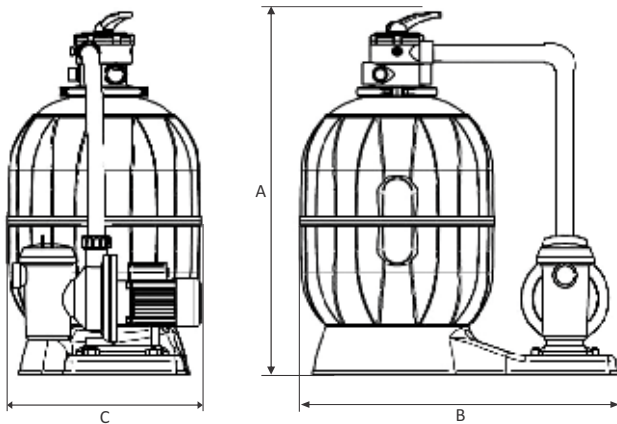
CODE	Ø	CONNECTIONS	FLOW (m ³ /h) V=50m ³ /h/m ²	SAND kg	FILTRATION AREA m ²	DIMENSIONS				PACKING	WEIGHT kg	VOLUME m ³
						A	B	C	D			
100100913	450	1 1/2"	6	75	0.12	645	206	356	716	2	10	0.20
100100902	530	1 1/2"	10	100	0.20	795	281	431	730	2	16	0.31
100100904	620	1 1/2"	14	150	0.28	830	300	449	820	2	19	0.44
100100906	790	2"	22	250	0.44	1010	349	579	1102	2	29	0.76

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3- FILTRATION SYSTEM "AQUARIUS"

- An exclusive and unique design built with state of the art technology, fully injected 100% food grade Polypropylene guaranteeing maximum reliability and performance. The "Aquarius" range sand filters have been designed and manufactured using only first grade raw materials.
- 100% polypropylene, ball-shaped body with micro-hole pipe distribution. Supporting base of the double-ring filter to ensure stability.
- Polished and glazed wedges finish
- Filtration system with a 6 way top selector valve assembled on a base with pump and prefilter.
- Draining micro-hole pipe distribution
- Max. working pressure: 3 bar.
- Connection filter-valve with clamping collars.
- 3/4" filter discharge
- Standard: UNI 10637:2006 regulation for TYPE D categories
- Warranty: 5 years.

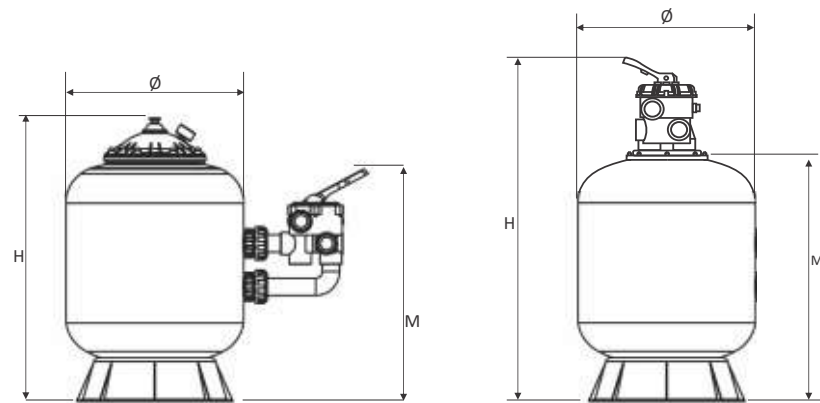


CODE	TYPE	POWER		IN-OUT	FLOW (m ³ /h) V=50m ³ /h/m ²	SAND kg	FILTRATION AREA m ²	DIMENSIONS			PACKING	WEIGHT kg	VOLUME m ³
		HP	kW					A	B	C			
100100916	Top	0.50	0.37	DN50	6	75	0.12	835	830	450	1	20	0.32
100100917	Top	0.75	0.55	DN50	10	100	0.20	985	870	530	1	25	0.46
100100918	Top	1	0.75	DN50	14	150	0.28	1020	915	620	1	30	0.57
107100305	Side	0.50	0.37	DN50	6	75	0.12	705	830	450	1	20	0.32
107100306	Side	0.75	0.55	DN50	10	100	0.20	855	870	530	1	25	0.46
107100307	Side	1	0.75	DN50	14	150	0.28	890	915	620	1	30	0.57



4- BOBBIN-WOUND SAND FILTERS "MUNICH"

- Bobbin filter with fiber and polyester resin.
- Cover with screw closure, Ø240 die-injected for diameters up to 900 mm and Ø 400 polyester/fibreglass for Ø1100 and Ø1200.
- Fitted with collector arms & diffuser made in UPVC.
- Fitted with pressure gauge, manual air and water purges.
- Multiport valve with six positions filter, backwash, rinse, re-circulate, waste and closed.
- Maximum working pressure of 2,5 Kg/cm².
- Test pressure 3,5 Kg/cm².
- Warranty: 5 years.
- Filter can be supplied at 30m³/hr/m² velocity on demand



CODE	TYPE	Ø	CONNECTIONS	FLOW (m ³ /h) V=50m ³ /h/m ²	SAND kg	FILTER AREA m ²	DIMENSIONS		PACKING	WEIGHT kg	VOLUME m ³
							H	M			
MU-450-VT	Top	450	1½"	8	75	0.16	800	570	2	16.5	0.19
MU-550-VT	Top	550	1½"	12	125	0.22	840	610	2	21.1	0.23
MU-650-VT	Top	650	1½"	16	150	0.30	960	730	2	24.3	0.38
MU-450-VS	Side	450	1½"	8	75	0.16	670	590	2	16.5	0.19
MU-550-VS	Side	550	1½"	12	150	0.22	710	630	2	21.1	0.23
MU-650-VS	Side	650	1½"	16	225	0.30	830	660	2	24.3	0.38
MU-700-VS	Side	700	2"	19	260	0.50	895	750	2	33	0.45
MU-800-VS	Side	800	2"	25	300	0.50	1030	900	2	41.5	0.67
MU-900-VS	Side	900	2"	30	400	0.64	1130	930	2	52.3	0.95
MU-1100-VS	Side	1100	Ø75	43	660	0.98	1310	990	1	115	1.84
MU-1200-VS	Side	1200	Ø90	56	1000	1.13	1430	1020	1	124	2.32

Note: valves not included for Ø 1100 and Ø1200 filters.

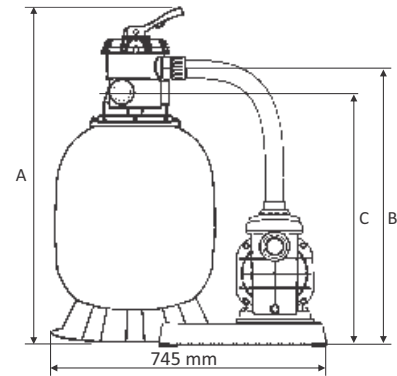
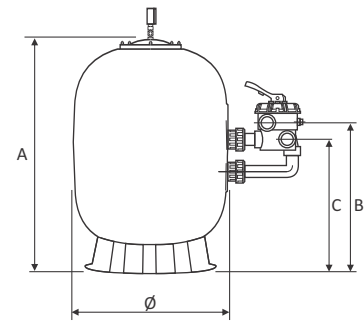
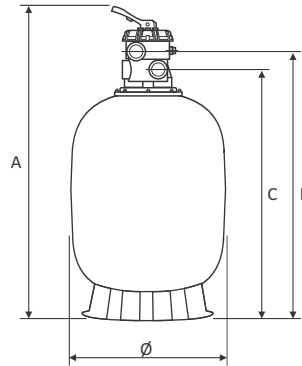
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5- BLOW-MOLDED FILTERS "EC3000"

- One piece blow-molded filters made in PE-HD with side or top mounted valves.
- Including pressure gauge, manual air vent and water purge.
- Maximum working pressure 3.5kg/cm².
- Filtration velocity: 50m³/h/m².
- Very durable and rigid structure.
- Warranty: 5 years.



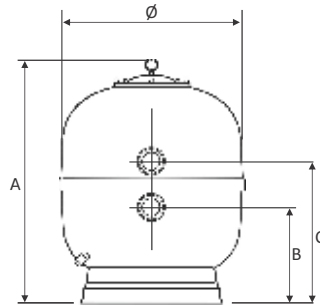
6-way selector valve for filtering, washing, rinsing, recirculation, emptying and closing operations, with union connections of 50mm.



CODE	TYPE	Ø	FLOW (m ³ /h) V=50m ³ /h/m ²	SAND kg	DIMENSIONS			PACKING	WEIGHT kg	VOLUME m ³
					A	B	C			
FRL-400	Side	400	6	45	580	430	355	2	8.00	0.12
FRL-500	Side	500	9	79	680	490	430	2	10.50	0.22
FRL-600	Side	600	14	102	880	630	560	2	14.00	0.37
FTS-400	Top	400	6	45	810	685	624	2	8.00	0.12
FTS-500	Top	500	9	79	913	788	727	2	10.50	0.22
FTS-600	Top	600	14	102	1108	982	921	2	14.00	0.37
FTM-400	Top Monoblock with 0.5 HP pump	400	6	45	835	710	645	2	11.00	0.18
FTM-500	Top Monoblock with 0.75 HP pump	500	9	79	930	805	740	2	13.50	0.30
FTM-600	Top Monoblock with 1 HP pump	600	14	102	1125	1000	935	2	17.00	0.46

6- FIBERGLASS SAND FILTERS "OCEAN"

- Laminated filters in reinforced polyester.
- Transparent lid with pressure gauge in bars.
- UV resistant.
- Delivered with 6 way valve and connections.
- Maximum working pressure : 2.5 Bar
- Test pressure : 3,5 Bar.
- Maximum T°: 43°C
- Maximum filtration speed : 50 m³/h/m
- Sand granulometry : 0,4 -0,8 mm
- 5 years guarantee.



CODE	ø	CONNECTIONS	FLOW (m ³ /h) V=50m ³ /h/m ²	SAND kg	DIMENSIONS			PACKING	WEIGHT kg	VOLUME m ³
					A	B	C			
SO-400	400	1½"	6	50				2	20	0.20
SO-500	500	1½"	9	100	805	290	415	2	22.5	0.26
SO-600	600	1½"	14	175	850	330	455	2	27.5	0.37
SO-750	750	2"	22	300	985	325	555	2	35.5	0.60
SO-900	900	2"	32	400	1050	365	635	2	52.5	1.25

7- SIX-WAY SELECTOR VALVES

- 6-way selector valve for filtering, washing, rinsing, recirculating, emptying and closing operations.
- Made of premium, UV resistant, impact resisting ABS material.
- Manufactured with extremely long-lasting sealing materials & pressure springs, which are mounted at the valve plate



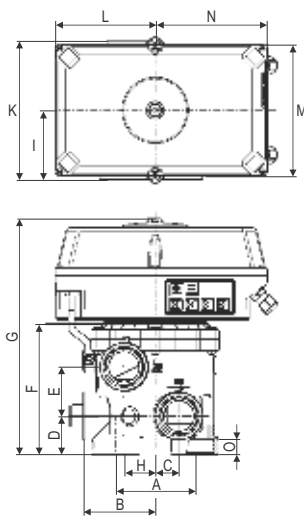
CODE	MOUNTING	CONNECTIONS	PRESSURE	FLOW RATE	PACKING	WEIGHT kg	VOLUME m ³
			bar	m ³ /h			
SV-15	Side	1½"	3.5	17	1	3	0.03
SV-20	Side	2"	3.5	27	1	4	0.04
SV-25	Side	2½"	3.5	43	1	1.5	0.05
SV-30	Side	3"	3.5	56	1	6	0.06
TV-15	Top	1½"	3.5	17	1	3	0.03

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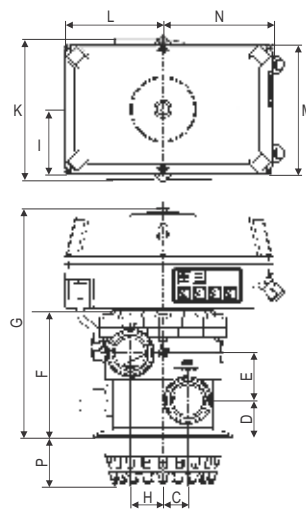


8- AUTOMATIC VALVE "AQUASTAR EASY"

- 6 way back wash valve made for fully automatic, economic back wash of small filter systems.
- IP65 protection code.
- Valve and actuator body made of UV-resistant.
- Multi voltage actuator 12-34V DC, 12-230V AC (50-60Hz).
- Position 'circulation' can be used in combination with salt water chlorine systems.
- Potential free clamps for control of Praher electric valves.
- Direct pump connection easy adaption to all well known filter systems by 1½" and 2" Ocean side mount or top mount valve ABS 3.5 bar including Praher PVC and ABS piping and unions for easy and quick installation.
- Optionally available with manual override retro installation on all manual Ocean V6 side or top mount valves with new sealing system.
- Fields of application: Pool and Spa industry, natural pools, fountains.



Side Mount (SM)



Top Mount (TM)

Setting of back wash process with timer

	Back wash time (S1)	Rinse time (S2)	Back wash frequency (S3)
	45 seconds	20 seconds	off
	75 seconds	40 seconds	after 3 days
	2 minutes	1 minutes	after 7 days
	6 minutes	1½ minutes	after 14 days

Regulation by pressure (0.5-3.5 bar)

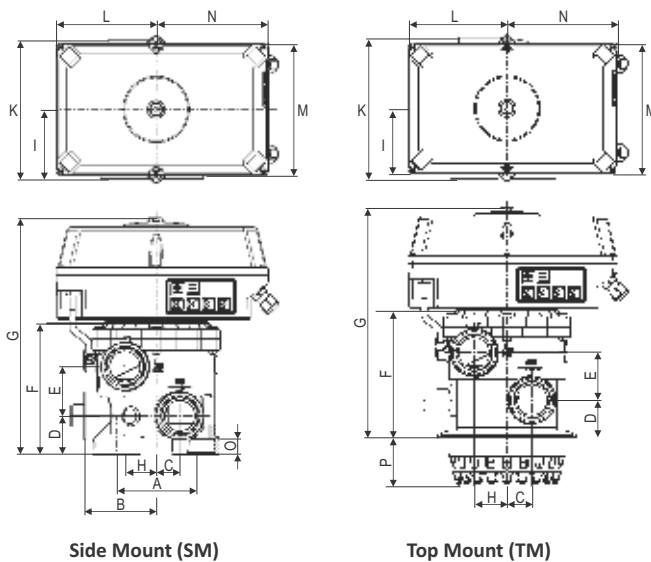
	0:0.5 bar	4:0.9 bar	8:1.3 bar	C:2.0 bar
	1:0.6 bar	5:1.0 bar	9:1.4 bar	D:2.5 bar
	2:0.7 bar	6:1.1 bar	A:1.5 bar	E:3.0 bar
	3:0.8 bar	7:1.2 bar	B:1.75 bar	F:3.5 bar

	DIMENSIONS														
	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P
1.5" SM	99.5	90	29.5	48	61.5	163.5	295	39	87.5	175	125	165	140	18.5	-
1.5" TM	-	-	31.5	47	59.5	160	291	41.5	90	180	125	165	140	18.5	62.5
2" SM	110	114	38	60	81	330	339	36	114	228	125	165	140	26	-

CODE	DESCRIPTION	PACKING	WEIGHT	VOLUME
			kg	m ³
MAU-015-TM	Automatic Valve 1½" Top Mount with Time + Pressure Switch	1	4	0.03
MAU-015-SM	Automatic Valve 1½" Side Mount with Time + Pressure Switch	1	4	0.03
MAU-020-SM	Automatic Valve 2" Side Mount with Time + Pressure Switch	1	5	0.04

9- AUTOMATIC VALVE "AQUASTAR COMFORT"

- Developed for exclusive private and public swimming pools and aquaparks which are not equipped with a separate PLC control but should be run by fully automatic back wash systems.
- Characterized by its solid construction and variety adjusted to the individual needs.
- Moreover this series has the same advantages as the AQUASTAR EASY and many more:
 - Available for Praher Ocean V6 1½", 2" and 3" SM and TM.
 - 5 positions can be controlled by your own PLC control system (filter/back wash/rinse/drain/circulation)
 - Optic position display on actuator lid.
 - Price-wise more economic than 5 pcs 1½", 2", 3" electric-, pneumatic- and solenoid valves, butterfly valves and ball valves for your filter system.
 - Manual override for all dimensions, potential free connections for EO510 ball valve or additional pump (possibly: 2nd pump)
 - MVO 12-34 VAC; 12-230 VAC.



Side Mount (SM)

Top Mount (TM)

Setting of back wash process with timer

	Back wash time (S1)	Rinse time (S2)	Back wash frequency (S3)
	45 seconds	20 seconds	off
	75 seconds	40 seconds	after 3 days
	2 minutes	1 minutes	after 7 days
	6 minutes	1½ minutes	after 14 days

Regulation by pressure (0.5-3.5 bar)

	0:0.5 bar	4:0.9 bar	8:1.3 bar	C:2.0 bar
	1:0.6 bar	5:1.0 bar	9:1.4 bar	D:2.5 bar
	2:0.7 bar	6:1.1 bar	A:1.5 bar	E:3.0 bar
	3:0.8 bar	7:1.2 bar	B:1.75 bar	F:3.5 bar

	DIMENSIONS														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1.5" TM	99.5	90	29.5	48	61.5	163.5	295	39	87.5	117	175	125	165	140	18.5
1.5" SM	-	-	31.5	47	59.5	160	291	41.5	90	117	228	125	165	140	26
2" SM	110	114	38	60	81	210	339	36	114	117	228	125	165	140	26
3" SM	170	165	50	85.5	110	306	436	50	165	117	114	330	125	165	35

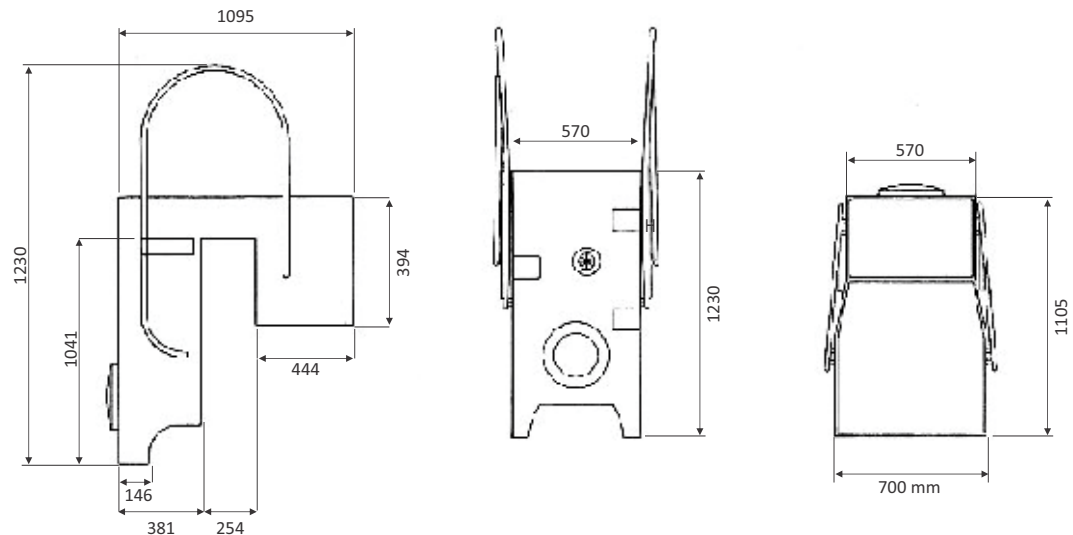
CODE	DESCRIPTION	PACKING	WEIGHT	VOLUME
			kg	m ³
SAB-015-TM	Automatic Valve 1½" Top Mount with Time + Pressure Switch	1	4	0.03
SAB-015-SM	Automatic Valve 1½" Side Mount with Time + Pressure Switch	1	4	0.03
SAB-020-SM	Automatic Valve 2" Side Mount with Time + Pressure Switch	1	5	0.04
SAB-030-SM	Automatic Valve 3" Side Mount with Time + Pressure Switch	1	6	0.05

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10- AQUA COMBO FILTRATION SYSTEM

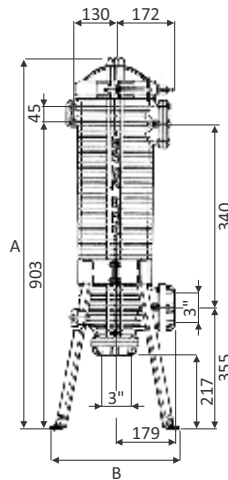
- High filtering capability 5 -25um.
- ABS, PP or PE housing instead of the operation room.
- Does not need pipelines, so it can help with the leakage problem.
- Equipped with auto chemical feeder, chemicals can be sent to pool automatically once the motor start.
- Two vacuum functions. All dirt & debris can be sucked into the skimmer basket or sucked through the vacuum pipe then out.
- Turbo boost massage jet, something like Jacuzzi. and air switch can be used to control the air bubble. And auxiliary jet can assist the massage jet to strengthen the power of the water to massage.
- Multiple functions: No other underwater light needed, no handrail needed any more, etc.
- Environmental & Reliable: comes with CE approvals.
- 2-year-limited warranty for our machine.
- Superior Housing: Made out of PP material with the functions of anti corrosion, watertight protection, scratches, cracks, tears proof etc...
- Digital Control panel: Three groups working time setting, automatic and manual working mode, over voltage, over current protection etc...



CODE	CYCLING PUMP KW	VOLTAGE	FILTERING EFFICIENCY um	FLOW (m ³ /h) V=50m ³ /h/m ²	U/W LIGHT	PACKING	WEIGHT kg	VOLUME m ³
AC-25	1.5/2.25	220V 50Hz	5-15	25	150W/12V	1	35	0.95

11- CARTRIDGE FILTER "BIG ONE"

- Big One is a unique polypropylene housing for professional applications where high performances and reliable products are needed.
- Designed to treat high quantity of water, it's a two-pieces compact container, that can fit 23" and 40" filtering elements.
- The housing is made with 3" female In-Out threading without brass inserts, and it's equipped with, plastic drain plug and plastic relief valve.
- Big One is provided with a stainless steel clamp that enable to open and close (easily and quickly) the housing during maintenance operations.
- Max. working pressure: 6 bar.
- Burst pressure: 20 bar.
- Max. working temperature: 40° C.
- Capacity (empty) at 2 bar: 60m³/h.
- Filtration grade: 40 micron



CODE	HIGHT	CONNECTIONS	FLOW m³/h	DIMENSIONS		PACKING	WEIGHT kg	VOLUME m³
				A	B			
A1150050	23"	3"	20	1090	388	1	19	0.02
A1150060	40"	3"	40	1500	388	1	22.5	0.28

CARTRIDGE "BIG ONE"

- Made of polyester, core in PP, end caps in FON and O-ring in NBR.
- The polyester filtration cartridge is available in 2 sizes 23" and 40".
- Inner diameter 76 mm, external diameter 147.5 mm.
- Efficiency: 95%
- Max. working pressure: 6 bar.
- Max. differential pressure suggested: 0.8 bar
- Max. working temperature: 80° C.
- Filtration grade: 40 micron



Over 500 cleaning

CODE	HIGHT	FLOW m³/h	PACKING	WEIGHT kg	VOLUME m³
A4088020	23"	20	1	1.3	0.02
A4088030	23"	20	1	1.3	0.02
A4088050	40"	40	1	2.2	0.03
A4088060	40"	40	1	2.2	0.03

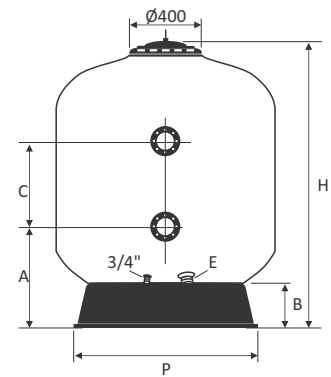
Pool Filtration



12- VERTICAL BOBBINED FILTERS

- These filters are manufactured with fiber-glass and polyester resin.
- Totally anticorrosive.
- Fitted with collector arms & diffuser made in UPVC and polypropylene.
- Resistant to salted water.
- Working pressure 2.5kg/cm² - 4kg/cm².
- Test pressure: 4 kg/cm² - 5.5kg/cm².
- Maximum temperature 50°C.
- Filter can be supplied on demand with
 - Nozzle plate
 - Sight glass
 - Manhole
 - Pressure gauge
- Warranty: 5 years.

Note: All Bobbined filters do not include valves. Please specify the type of valves: Manual or automatic (electric or pneumatic) for quotation.



Working pressure: 2.5kg/cm²

Test pressure: 4 kg/cm²

CODE	Ø	CONNECTIONS mm	FILTRATION RATE m ³ /h/m ²	FLOW (m ³ /h)	WEIGHT IN SERVICE kg	PACKING	WEIGHT kg	VOLUME m ³
FB-8020	1400	75	20	30	3700	1	173	3.7
FB-8021	1400	90	30	46	3700	1	173	3.7
FB-8022	1400	110	40-50	61-77	3700	1	173	3.7
FB-8023	1600	90	20	40	4900	1	235	5.0
FB-8024	1600	110	30-40	60-80	4900	1	235	5.0
FB-8025	1600	125	50	100	4900	1	235	5.0
FB-8026	1800	90	20	50	6100	1	270	6.4
FB-8027	1800	110	30	76	6100	1	270	6.4
FB-8028	1800	125	40	101	6100	1	270	6.4
FB-8029	1800	140	50	125	6100	1	270	6.4
FB-8030	2000	110	20	62	7900	1	295	8.7
FB-8031	2000	125	30	94	7900	1	295	8.7
FB-8032	2000	140	40	125	7900	1	295	8.7
FB-8033	2000	160	50	157	7900	1	295	8.7
FB-8034	2350	125	20	87	12550	1	530	14.8
FB-8035	2350	140	30	130	12550	1	530	14.8
FB-8036	2350	160	40	175	12550	1	530	14.8
FB-8037	2350	200	50	217	12550	1	530	14.8

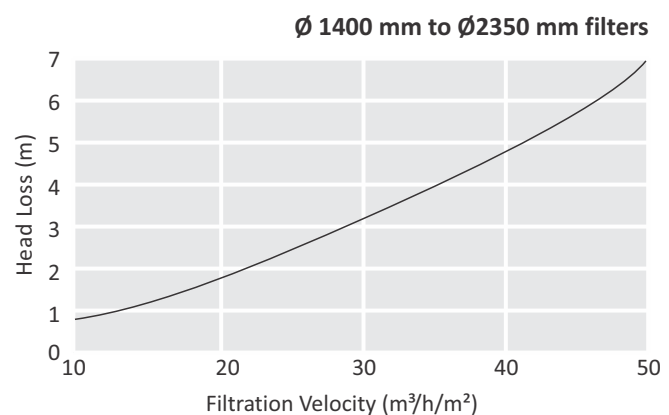
Working pressure: 4kg/cm²

Test pressure: 5.5 kg/cm²

CODE	Ø	CONNECTIONS mm	FILTRATION RATE m ³ /h/m ²	FLOW (m ³ /h)	WEIGHT IN SERVICE kg	PACKING WEIGHT kg	VOLUME m ³	
FB-9020	1400	75	20	30	3700	1	192	3.7
FB-9021	1400	90	30	46	3700	1	192	3.7
FB-9022	1400	110	40-50	61-77	3700	1	192	3.7
FB-9023	1600	90	20	40	4900	1	250	5.0
FB-9024	1600	110	30-40	60-80	4900	1	250	5.0
FB-9025	1600	125	50	100	4900	1	250	5.0
FB-9026	1800	90	20	50	6100	1	300	6.4
FB-9027	1800	110	30	76	6100	1	300	6.4
FB-9028	1800	125	40	101	6100	1	300	6.4
FB-9029	1800	140	50	125	6100	1	300	6.4
FB-9030	2000	110	20	62	7900	1	350	8.7
FB-9031	2000	125	30	94	7900	1	350	8.7
FB-9032	2000	140	40	125	7900	1	350	8.7
FB-9033	2000	160	50	157	7900	1	350	8.7
FB-9034	2350	125	20	87	12550	1	530	14.8
FB-9035	2350	140	30	130	12550	1	530	14.8
FB-9036	2350	160	40	175	12550	1	530	14.8
FB-9037	2350	200	50	217	12550	1	530	14.8

Ø	FILTRATION BED HEIGHT m	FILTRATION AREA m ²	VOLUME lts	SAND 0.4 -0.8 mm kg	GRAVEL 1-2 mm kg	DIMENSIONS					
						H	B	A	C	P	E
1400	1	1.54	2000	1650	450	1755	240	585	610	1085	90
1600	1	2.01	2600	2150	675	1836	260	680	515	1230	140
1800	1	2.54	3400	2800	750	1875	280	720	465	1370	140
2000	1	3.14	4400	3800	1050	2040	300	790	510	1550	140
2350	1	4.24	8045	5275	1800	2520	340	965	600	1859	140

CODE	DESCRIPTION
FBLUX1400	FB FILTER 1400 to be supplied with nozzle plate, sight glass, manhole, and pressure gauge set
FBLUX1600	FB FILTER 1600 to be supplied with nozzle plate, sight glass, manhole, and pressure gauge set
FBLUX1800	FB FILTER 1800 to be supplied with nozzle plate, sight glass, manhole, and pressure gauge set
FBLUX2000	FB FILTER 2000 to be supplied with nozzle plate, sight glass, manhole, and pressure gauge set
FBLUX2400	FB FILTER 2350 to be supplied with nozzle plate, sight glass, manhole, and pressure gauge set



Pool Filtration

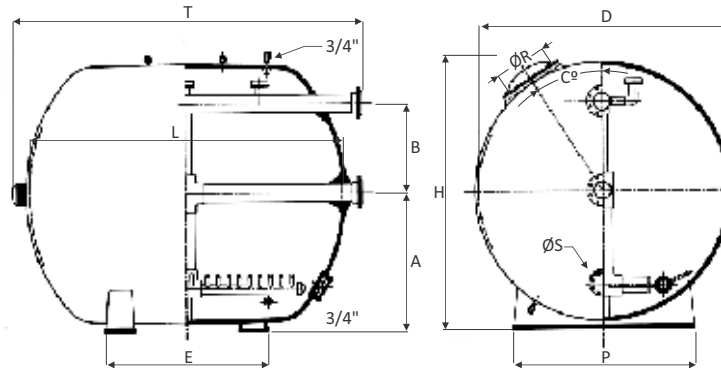


13- HORIZONTAL BOBBED FILTERS

- 3/4" connection for air purge.
- Top loading manhole DN400.
- Lifting rings for manipulation when empty.
- Manual drain valve 3/4".
- Bottom flange for media discharge Ø140.
- Connections, internal systems, complementary access or manholes and other options should be ordered additionally.
- Warranty: 5 years.

Note: All Bobbed filters do not include valves. Please specify the type of valves: Manual or automatic (electric or pneumatic) for quotation.

L	CODE			Ø	CAPACITY		DIMENSIONS						SAND 0.4 -0.8 mm kg	GRAVEL 1-2 mm kg	WEIGHT VOLUME	
	2.5 BAR	4 BAR	6 BAR		lit.	A	B	E	P	T	H	kg			m ³	
2000	H-422010	H-442010	H-462010	1050	1565	630	325	1190	800	2260	1260	950	350	285	3.1	
	H-422012	H-442012	H-462012	1200	2015	725	325	1060	900	2260	1390	1100	425	330	4.0	
	H-422014	H-442014	H-462014	1400	2680	810	390	950	1080	2260	1600	2100	575	405	5.1	
	H-422016	H-442016	H-462016	1600	3420	925	475	960	1230	2320	1830	2850	600	475	5.8	
2500	H-422510	H-442510	H-462510	1050	2000	630	325	1410	800	2760	1260	1525	575	355	3.9	
	H-422512	H-442512	H-462512	1200	2580	725	325	1260	900	2750	1390	1750	700	410	4.0	
	H-422514	H-442514	H-462514	1400	3460	810	390	1130	1080	2780	1600	2825	800	435	6.2	
	H-422516	H-442516	H-462516	1600	4430	925	475	1080	1230	2820	1830	3875	850	520	7.2	
	H-422518	H-442518	H-462518	1800	5530	1040	550	880	1380	2820	2050	4850	975	585	10.4	
	H-422520	H-442520	H-462520	2000	6900	1090	710	520	1470	2820	2220	6575	1050	650	13.2	
3000	H-423010	H-443010	H-463010	1050	2430	630	325	2300	800	3260	1260	2050	775	420	4.7	
	H-423012	H-443012	H-463012	1200	3140	725	325	2160	900	3260	1390	2325	925	480	4.9	
	H-423014	H-443014	H-463014	1400	4230	810	390	2050	1080	3260	1600	3450	1000	585	7.1	
	H-423016	H-443016	H-463016	1600	5430	925	475	2060	1230	3320	1830	4750	1050	685	8.6	
	H-423018	H-443018	H-463018	1800	6800	1040	550	1920	1380	3320	2050	5925	1225	805	12.2	
	H-423020	H-443020	H-463020	2000	8470	1090	710	1500	1470	3320	2220	8025	1300	945	15.6	
	H-423023	H-443023	-	2350	11130	1270	710	1500	1740	3350	2560	9300	2575	1150	20.2	
3500	H-423518	H-443518	H-463518	1800	8070	1040	550	1880	1380	3850	2050	7000	1475	930	14.2	
	H-423520	H-443520	H-463520	2000	10040	1090	710	1240	1470	3850	2220	9475	1550	1100	18.1	
	H-423523	H-443523	H-463523	2350	13300	1270	710	1240	1740	3850	2560	11050	3125	1500	23.0	
	H-423525	H-443525	H-463525	2500	14920	1360	710	840	1850	3850	2710	11675	3175	1505	28.0	
4000	H-424018	H-444018	H-464018	1800	9340	1040	550	2920	1380	4320	2050	8075	1700	1055	16.0	
	H-424020	H-444020	H-464020	2000	11600	1090	710	2080	1470	4320	2220	10925	1800	1260	20.5	
	H-424023	H-444023	-	2350	15470	1270	710	2080	1740	4350	2560	12800	3650	1450	25.7	
	H-424025	H-444025	-	2500	17380	1360	710	2080	1850	4380	2710	13500	3725	1670	31.8	
4500	H-424520	H-444520	H-464520	2000	13180	1090	710	1960	1470	4880	2220	12375	2075	1420	23.0	
	H-424523	H-444523	H-464523	2350	17640	1270	710	1960	1740	4880	2560	14525	4200	1800	28.5	
	H-424525	H-444525	H-464525	2500	19830	1360	710	1960	1850	4940	2710	15350	4300	1835	35.5	
5000	H-425023	H-445023	-	2350	19800	1270	710	2740	1740	5350	2560	16250	4750	1750	31.2	
	H-425025	H-445025	-	2500	22300	1360	710	2740	1850	5380	2710	17200	4850	2000	39.3	



* Please Specify The Velocity Of Filtration When Ordering:
 * Connection (mm) * Flow (m³/h)

FILTRATION VELOCITY m ³ /h/m ²	LENGTH	DIAMETER															
		1050		1200		1400		1600		1800		2000		2350		2500	
		Conn.	Flow	Conn.	Flow	Conn.	Flow	Conn.	Flow	Conn.	Flow	Conn.	Flow	Conn.	Flow	Conn.	Flow
20	2000	753	36.2	90	41.2	110	46.94	125	52	-	-	-	-	-	-	-	-
	2500	110	46	125	53	110	60	140	67	125	75	140	87	-	-	-	-
	3000	125	56.2	125	63.6	125	72.94	140	81.6	140	91.6	140	106	160	118.8	-	-
	3500	-	-	-	-	-	-	-	-	140	108	160	125	160	141	160	149
	4000	-	-	-	-	-	-	-	-	160	125	160	144	200	163.4	200	172.4
	4500	-	-	-	-	-	-	-	-	-	-	-	-	200	186	200	196
	5000	-	-	-	-	-	-	-	-	-	-	-	-	200	208	200	219.6
30	2000	90	54.3	125	61.8	125	70.41	140	78	-	-	-	-	-	-	-	-
	2500	125	70	140	79	160	91	160	101	160	112	160	130	-	-	-	-
	3000	140	84.3	140	95.4	160	109.41	160	122.4	160	137.4	160	159	200	178.2	-	-
	3500	-	-	-	-	-	-	-	-	200	162	200	187	200	212	200	223
	4000	-	-	-	-	-	-	-	-	200	187.5	200	216	225	245.1	225	258.6
	4500	-	-	-	-	-	-	-	-	-	-	225	245	225	279	250	294
	5000	-	-	-	-	-	-	-	-	-	-	-	-	250	312	250	329.4
40	2000	110	72.4	140	82.4	140	93.88	160	104	-	-	-	-	-	-	-	-
	2500	140	93	160	106	200	121	200	134	200	150	200	174	-	-	-	-
	3000	160	112.4	160	127.2	200	145.88	200	163.2	200	183.2	200	212	225	237.6	-	-
	3500	-	-	-	-	-	-	-	-	225	216	225	250	225	282	225	297
	4000	-	-	-	-	-	-	-	-	225	250	225	288	250	326.8	250	344.8
	4500	-	-	-	-	-	-	-	-	-	-	250	326	250	371	350	392
	5000	-	-	-	-	-	-	-	-	-	-	-	-	350	416	350	439.2

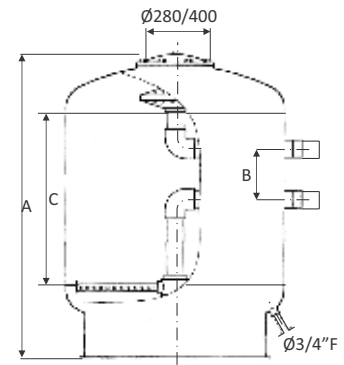
Pool Filtration



14- STAINLESS STEEL SAND FILTERS

STAINLESS STEEL SAND FILTER TYPE "XE"

- Manufactured with AISI 304 V2A (AISI 316 L V4A stainless steel on demand).
- Internal water distribution: Cross. (Nozzle plate on demand)
- Hand hole $\varnothing 280/400$.
- Filtration rate: $50\text{m}^3/\text{h}/\text{m}^2$.
- External has shiny finish.
- Maximum working pressure: 2 bar (10 bar on demand)
- Test pressure: 3.5 bar (17 bar on demand)
- Warranty: 5 years.



CODE	\varnothing	CONNECTIONS	FLOW (m^3/h) $V=50\text{m}^3/\text{h}/\text{m}^2$	SAND kg	DIMENSIONS			PACKING WEIGHT kg	VOLUME m^3
					A	B	C		
XE-500	500	1½"	10	200	1050	200	750	2	
XE-630	630	1½"	15	300	1130	200	750	2	
XE-800	800	2"	25	450	1200	200	750	2	
XE-950	950	2½"	35	700	1300	200	750	1	
XE-1200	1200	3"	60	1200	1400	200	750	1	

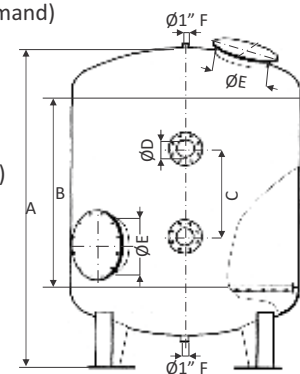
Note: For 316 stainless steel grade add **-316**

For 10bar working pressure and 17bar test pressure add **-1017**



STAINLESS STEEL SAND FILTER TYPE "XR"

- Manufactured with AISI 304 V2A (AISI 316 L V4A stainless steel on demand).
- Internal water distribution: Panel. (Nozzle plate on demand)
- Complete with manhole and handhole.
- Filtration rate: $50\text{m}^3/\text{h}/\text{m}^2$.
- External pikling.
- Magnesium anode protection.
- Maximum working pressure: 2.5 bar (10 bar on demand)
- Test pressure: 4 bar (17 bar on demand)
- Warranty: 5 years.



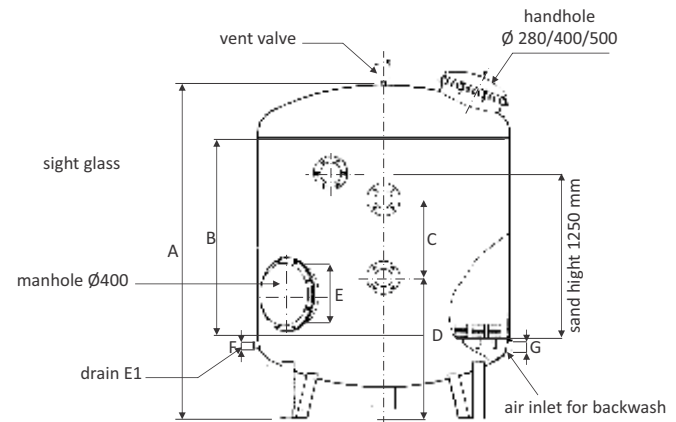
CODE	\varnothing	CONNECTIONS	FLOW (m^3/h) $V=50\text{m}^3/\text{h}/\text{m}^2$	SAND kg	DIMENSIONS					PACKING WEIGHT kg	VOLUME m^3
					A	B	C	D	E		
XR-1200	1250	DN 80	56	2000	2040	1250	400	$\varnothing 80$	$\varnothing 280/400$	1	
XR-1400	1400	DN 100	77	2700	2160	1250	500	$\varnothing 100$	$\varnothing 400$	1	
XR-1600	1600	DN 100	100	3100	2340	1250	500	$\varnothing 100$	$\varnothing 400$	1	
XR-1800	1800	DN 125	127	4000	2400	1250	500	$\varnothing 125$	$\varnothing 400$	1	
XR-2000	2000	DN 150	157	4900	2400	1250	500	$\varnothing 150$	$\varnothing 400$	1	
XR-2200	2200	DN 200	190	5700	2400	1250	500	$\varnothing 200$	$\varnothing 400$	1	
XR-2400	2400	DN 200	226	6786	2450	1250	500	$\varnothing 200$	$\varnothing 400$	1	

Note: For 316 stainless steel grade add **-316**

For 10bar working pressure and 17bar test pressure add **-1017**

STAINLESS STEEL SAND FILTER TYPE "XL"

- Manufactured with AISI 304 V2A (AISI 316 L V4A stainless steel on demand).
- Internal water distribution nozzle plate.
- Filtration rate: 30m³/h/m².
- From Ø1400 to Ø2400 External pikling.
- Magnesium anode protection.
- Maximum working pressure: 2.5 bar (10 bar on demand)
- Test pressure: 4 bar (17 bar on demand)



CODE	Ø	CONNECTIONS	FLOW (m ³ /h) V=30m ³ /h/m ²	DIMENSIONS							PACKING	WEIGHT kg	VOLUME m ³
				A	B	C	D	E	F	G			
XL-630	630	1.5"	9.35	1950	1500	400	900	Ø400	1"	1½"	1		
XL-800	800	2"	15	2050	1500	400	900	Ø400	1"	1½"	1		
XL-950	950	DN 65	22	2100	1500	500	900	Ø400	1"	1½"	1		
XL-1200	1250	DN 80	34	2200	1500	500	900	Ø400	1"	2"	1		
XL-1400	1400	DN 100	47	2300	1500	600	900	Ø400	1"	2"	1		
XL-1600	1600	DN 100	60	2400	1500	600	900	Ø400	1"	2"	1		
XL-1800	1800	DN 125	76	2540	1500	600	1000	Ø400	1½"	2½"	1		
XL-2000	2000	DN 150	95	2650	1500	600	1000	Ø400	1½"	2½"	1		
XL-2200	2200	DN 150	114	2700	1500	600	1000	Ø400	1½"	3"	1		
XL-2400	2400	DN 200	135	2750	1500	600	1000	Ø400	1½"	3"	1		

Note: For 316 stainless steel grade add **-316**

For 10bar working pressure and 17bar test pressure add **-1017**

Pool Filtration



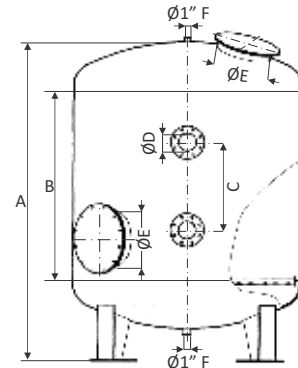
15- CARBON STEEL SAND FILTERS

HOT ZINC PLATED CARBON STEEL FILTER TYPE "ZR"

- Carbon steel filters varnished with epossidic paints
- h. Body bandage 1250 mm
- Complete with: manhole and handhole; internal water distribution: with arm collectors
- Filtration rate: 50 m³/h x m²;H
- Sand: 1000 /1100 mm
- Internal water distribution with nozzle plate: + 20%
- Test pressure 4bar
- Max. working pressure 2.5 bar

PLEASE NOTE:

- You are recommended to earth the installation.
- The sand is not included in the price.
- Nozzle plate on demand.



CODE	Ø	CONNECTIONS	FLOW (m ³ /h) V=50m ³ /h/m ²	SAND kg	DIMENSIONS					PACKING kg	WEIGHT m ³
					A	B	C	D	E		
01001	1250	Din 80	60	2000	2040	1250	900	Ø90	Ø400	1	
01002	1500	Din 100	88	2900	2160	1250	900	Ø90	Ø400	1	
01006	1600	Din 125	100	2900	2160	1250	900	Ø140	Ø400	1	
01003	1800	Din 125	127	2900	2160	1250	900	Ø140	Ø400	1	
01004	2000	Din 150	190	5700	2400	1250	900	Ø160	Ø400	1	
01007	2200	Din 150	196	5700	2400	1250	900	Ø160	Ø400	1	
01005	2400	Din 200	226	6786	2450	1250	900	Ø225	Ø400	1	

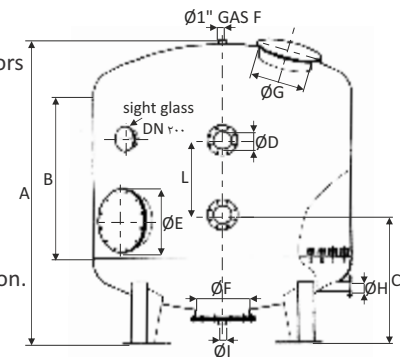


HOT ZINC PLATED CARBON STEEL FILTER TYPE "VL"

- Carbon steel filters varnished with epossidic paints
- h. Body bandage 1250 mm
- Complete with: manhole and handhole
internal water distribution: with arm collectors
- Filtration rate: 30 m³/h x m²;H
- Sand: 1250 /1300 mm
- With nozzle plate
- Test pressure 4bar
- Max. working pressure 2.5 bar

PLEASE NOTE:

- You are recommended to earth the installation.
- The sand is not included in the price.



CODE	Ø	CONNECTIONS	FLOW (m ³ /h) V=30m ³ /h/m ²	SAND kg	DIMENSIONS								
					A	B	C	L	ØD	ØE	ØF	ØH	ØI
01011	1250	DN 80	36	2300	2300	1500	1000	600	90	400	400	DN 65	1" F
01013	1400	DN 100	53	3300	2400	1500	1000	600	110	400	500	DN 65	1" F
01014	1600	DN 125	66	3920	2400	1500	1100	600	140	400	500	DN 65	1½" F
01015	1800	DN 125	76	4700	2600	1500	1100	600	140	500	500	DN 65	1½" F
01017	2000	DN 125	95	5600	2600	1500	1100	600	160	500	500	DN 65	2" F
01019	2200	DN 150	114	7100	2650	1500	1100	600	160	500	500	DN 65	2" F
01020	2400	DN 150	135	8400	2700	1500	1100	600	160	500	600	DN 65	2" F
01022	2800	DN 200	184	11500	3100	1500	1100	600	225	500	600	DN 65	2" F
01023	3000	DN 200	212	13000	3150	1500	1100	600	225	500	600	DN 100	2" F

16- VALVE MANIFOLDS

- All valve manifolds (manual or automatically driven) are made of PVC (PN 10) with flanges for connection to filters as per DIN-2501 standard.
- Butterfly valves or Ball valves in PVC.
- Automatic valve manifold, driven either by electric power or pneumatically, for carrying out filtration, back washing, rinsing and shut down of the filters. Fitted with two valves without safety blocks (electric) or double acting (Pneumatic), and the remaining valves with safety blocks (electric) or spring return (pneumatic), to prevent an unexpected emptying of the installation.
- All manifolds are supplied disassembled and without support brackets.

CODE	Ø D	MANIFOLD TYPE	NO. OF VALVES	PACKING	WEIGHT kg	VOLUME m ³
MM4-075	75	Manual	4	1		
MM4-090	90					
MM4-110	110					
MM4-125	125					
MM4-140	140					
MM4-160	160					
MM4-200	200					
MM4-225	225					
MM4-250	250	<hr/>				
MM5-075	75	Manual	5	1		
MM5-090	90					
MM5-110	110					
MM5-125	125					
MM5-140	140					
MM5-160	160					
MM5-200	200					
MM5-225	225					
MM5-250	250	<hr/>				
AM4-075	75	Electric	4	1		
AM4-090	90					
AM4-110	110					
AM4-125	125					
AM4-140	140					
AM4-160	160					
AM4-200	200					
AM4-225	225					
AM4-250	250	<hr/>				
AM5-075	75	Electric	5	1		
AM5-090	90					
AM5-110	110					
AM5-125	125					
AM5-140	140					
AM5-160	160					
AM5-200	200					
AM5-225	225					
AM5-250	250	<hr/>				
PM4-075	75	Pneumatic	4	1		
PM4-090	90					
PM4-110	110					
PM4-125	125					
PM4-140	140					
PM4-160	160					
PM4-200	200					
PM4-225	225					
PM4-250	250	<hr/>				
PM5-075	75	Pneumatic	5	1		
PM5-090	90					
PM5-110	110					
PM5-125	125					
PM5-140	140					
PM5-160	160					
PM5-200	200					
PM5-225	225					
PM5-250	250					



Manual manifolds of 4 valves



Manual manifolds of 5 valves



Electric driven valve



Pneumatic driven valve

Pool Filtration



17- CONTROL PANEL FOR VALVE MANIFOLDS

- Control panel for electrically or pneumatically actuated manifolds of 4 or 5 valves.
- For automatic filtration, backwashing, rinsing and shut-down operations.
- Fitted with automatic programming installation that enables the execution of all the required operations and can be personalised to suit your requirements. Quick and easy installation with numbered terminal connection strip.
- Voltage 230 V single phase.
- Does not include valve manifold.
- Time and pressure control.

CODE	DESCRIPTION	PACKING	WEIGHT	VOLUME
			kg	m ³
CPA5V-E-1	Control panel for electrically actuated manifolds of 5 valves for 1 filter	1		
CPA5V-E-2	Control panel for electrically actuated manifolds of 5 valves for 2 filters	1		
CPA5V-E-3	Control panel for electrically actuated manifolds of 5 valves for 3 filters	1		
CPA5V-E-4	Control panel for electrically actuated manifolds of 5 valves for 4 filters	1		
CPA5V-E-5	Control panel for electrically actuated manifolds of 5 valves for 5 filters	1		
CPA5V-E-6	Control panel for electrically actuated manifolds of 5 valves for 6 filters	1		
CPA4V-E-1	Control panel for electrically actuated manifolds of 4 valves for 1 filter	1		
CPA4V-E-2	Control panel for electrically actuated manifolds of 4 valves for 2 filters	1		
CPA4V-E-3	Control panel for electrically actuated manifolds of 4 valves for 3 filters	1		
CPA4V-E-4	Control panel for electrically actuated manifolds of 4 valves for 4 filters	1		
CPA4V-E-5	Control panel for electrically actuated manifolds of 4 valves for 5 filters	1		
CPA4V-E-6	Control panel for electrically actuated manifolds of 4 valves for 6 filters	1		
CPA5V-P-1	Control panel for pneumatically actuated manifolds of 5 valves for 1 filter	1		
CPA5V-P-2	Control panel for pneumatically actuated manifolds of 5 valves for 2 filters	1		
CPA5V-P-3	Control panel for pneumatically actuated manifolds of 5 valves for 3 filters	1		
CPA5V-P-4	Control panel for pneumatically actuated manifolds of 5 valves for 4 filters	1		
CPA5V-P-5	Control panel for pneumatically actuated manifolds of 5 valves for 5 filters	1		
CPA5V-P-6	Control panel for pneumatically actuated manifolds of 5 valves for 6 filters	1		
CPA4V-P-1	Control panel for pneumatically actuated manifolds of 4 valves for 1 filter	1		
CPA4V-P-2	Control panel for pneumatically actuated manifolds of 4 valves for 2 filters	1		
CPA4V-P-3	Control panel for pneumatically actuated manifolds of 4 valves for 3 filters	1		
CPA4V-P-4	Control panel for pneumatically actuated manifolds of 4 valves for 4 filters	1		
CPA4V-P-5	Control panel for pneumatically actuated manifolds of 4 valves for 5 filters	1		
CPA4V-P-6	Control panel for pneumatically actuated manifolds of 4 valves for 6 filters	1		

18- VALVE MANIFOLD BRACKETS

- Easy assembly valve manifold brackets from $\varnothing 75$ mm to $\varnothing 225$ mm for all filter
- Totally adjustable in height, consisting of vertical support pipes in zinc-plated steel, together with box of accessories.



CODE	DESCRIPTION	PACKING	WEIGHT kg	VOLUME m ³
MB-01	Zinc plated steel bar height 3.00 m	1	3.8	0.003
MB-02	Zinc plated steel bar height 2.30 m	1	4.5	0.004
MB-03	Zinc plated steel bar height 1.85 m	1	5.9	0.005
MB-05	Accessories box of 2 support brackets with anti-vibration clamps & fixing bolts for $\varnothing 75$ mm pipe	1	1.5	0.011
MB-06	Accessories box of 2 support brackets with anti-vibration clamps & fixing bolts for $\varnothing 90$ mm pipe	1	1.5	0.011
MB-07	Accessories box of 2 support brackets with anti-vibration clamps & fixing bolts for $\varnothing 110$ mm pipe	1	1.5	0.011
MB-08	Accessories box of 2 support brackets with anti-vibration clamps & fixing bolts for $\varnothing 125$ mm pipe	1	1.5	0.011
MB-09	Accessories box of 2 support brackets with anti-vibration clamps & fixing bolts for $\varnothing 140$ mm pipe	1	1.5	0.011
MB-10	Accessories box of 2 support brackets with anti-vibration clamps & fixing bolts for $\varnothing 160$ mm pipe	1	2.5	0.011
MB-11	Accessories box of 2 support brackets with anti-vibration clamps & fixing bolts for $\varnothing 200$ mm pipe	1	2.5	0.011
MB-12	Accessories box of 2 support brackets with anti-vibration clamps & fixing bolts for $\varnothing 225$ mm pipe	1	2.5	0.011

19- WALL BRACKETS FOR VALVE MANIFOLD

- For all filter type from $\varnothing 63$ mm pipe onwards.
- Consisting in zinc-plated steel support bracket with anti-vibration clamp and fixing screws.
- Supply: 1 vertical support with manifold bracket.



CODE	DESCRIPTION	PACKING	WEIGHT kg	VOLUME m ³
WB-02	For $\varnothing 75$ mm pipe	1	1.2	0.007
WB-03	For $\varnothing 90$ mm pipe	1	1.3	0.007
WB-04	For $\varnothing 110$ mm pipe	1	1.4	0.007
WB-05	For $\varnothing 125$ mm pipe	1	1.4	0.007
WB-06	For $\varnothing 140$ mm pipe	1	1.5	0.007
WB-07	For $\varnothing 160$ mm pipe	1	1.6	0.007
WB-08	For $\varnothing 200$ mm pipe	1	1.7	0.007
WB-09	For $\varnothing 225$ mm pipe	1	1.7	0.007
WB-10	For $\varnothing 250$ mm pipe	1	2.0	0.011
WB-11	For $\varnothing 315$ mm pipe	1	2.4	0.011

Pool Filtration



20- FILTRATION MEDIA

- Quartziferous sand.
- Grinded quartz in 25 kg bags.

CODE	GRANULOMETRY mm	PACKING	WEIGHT kg	VOLUME m ³
FM-01	0.4 - 0.8	1	25	0.015
FM-02	1.0 - 2.0	1	25	0.015
FM-03	1.0 - 3.0	1	25	0.015
FM-04	3.0 - 5.0	1	25	0.015

21- AFM® GLASS MEDIA

What is AFM®?

- AFM® stands for Activated Filter Material, a revolutionary filter media made from green glass developed and manufactured by Dryden Aqua.
- AFM® exceeds the performance of quartz and glass sand by filtering about 30% more organics.
- AFM® is bio-resistant and self-sterilising which means no biofilm is formed in the filter bed. This important feature makes the pool system healthier, ecological and more economical.
- AFM® has successfully been used in over 100,000 public and private swimming pools worldwide.
- AFM® is manufactured under ISO 9001-2008 standards and is a filter material certified under European standards for drinking water.
- AFM® is a registered trademark and is exclusively made by Dryden Aqua.

AFM® exceeds the performance of quartz and glass sand by far

1. Crystal clear water:

AFM® filters much finer than quartz or glass sand. At 20 m/hr filtration speed a nominal filtration of 5 microns is achieved without flocculation – AFM® filters at least 30 % more organic substances than fresh quartz or glass sand. With optimised coagulation and flocculation with APF and ZPM, a nominal filtration of less than 0.1 microns can be achieved.

2. Lower chlorine consumption means less secondary chlorine reaction products: chlorine is an excellent disinfectant. But in reaction with organic and inorganic substances it also produces undesirable, harmful reaction by-products such as trichloramine and THM's. The more chlorine is consumed the more secondary reaction by-products are produced. With AFM® we can remove far more substances than with sand or glass sand. This applies particularly in connection with coagulation and flocculation. Everything that can be filtered out and removed in backwash process doesn't have to be oxidised. The better the filtration the lower the chlorine consumption and less disinfection by-products are produced.

4. No trichloramine and no chlorine smell:

the bacteria in the biofilm convert urea into ammonia which then reacts with chlorine to inorganic chloramine (mono, di- and trichloramine). Trichloramine causes the unpleasant chlorine smell and is also a severe health hazard. If however, no heterotrophic bacteria are present, urea remains in the water. It reacts with chlorine to the harmless chlorine urea. No biofilm – no trichloramine - no chlorine smells.

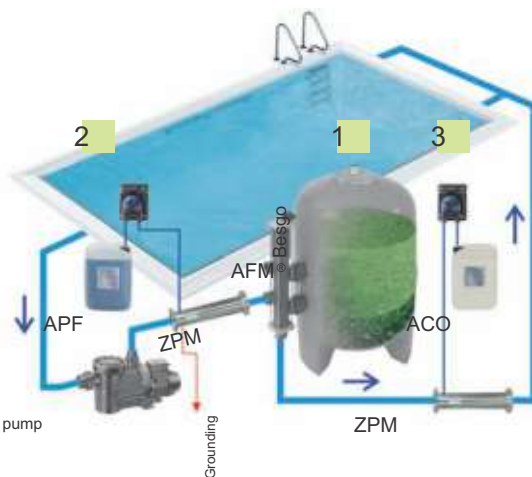
5. Filter function remains good with AFM® for many years:

No biofilm in the AFM® filter also means no channel formation to disrupt the filter function. Due to filter contamination the performance of a sand filter worsens dramatically after 6 - 12 months despite frequent backwashing. The performance of AFM® remains consistently high for many years.

What makes AFM® that effective?

1. Clean Green glass:

The raw material used for AFM® has to have a very specific glass quality. AFM® is only made from pure green glass which is the only glass that has the necessary chemical and physical properties to make AFM® self-sterilising.



- 1 Filtration with AFM®
- 2 Coagulation and flocculation with APF and ZPM
- 3 Catalytic oxidation with ACO and ZPM

Variable frequency pump

Grounding

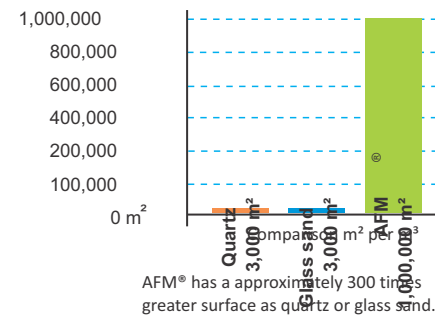
2. Ideal hydraulic properties:

The raw material is broken into the optimal grain size and grain shape. The correct shape is crucial for the outstanding hydraulic characteristics of AFM®. Balls (glass beads or pearls) as well as plates are not suitable for clean water applications. For security reasons, no dangerous glass splinters are allowed to be present in the filter material. Our ISO certified manufacturing process ensures that this is not the case.

3. Activation process:

The AFM® activation process creates a mesoporous structure with a huge catalytic surface area. Typically crushed glass or sand has a surface area of 3,000 m² per m³ but activated AFM® has a surface area of over 1,000,000 m² per m³ which is over 300 times greater surface area for adsorption and catalytic reactions. Hydroxyl groups on the surface give AFM® a strong negative charge known as the zeta potential that attracts heavy metals and organic molecules. In the presence of oxygen or oxidising agents the catalytic surface generates free radicals that oxidise pollutants and disinfects the surface of AFM®.

Comparison quartz, glass sand and AFM®



What is the recommended layering of AFM®?

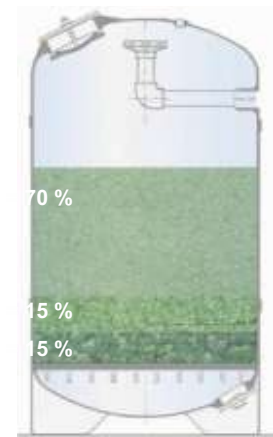
If you are currently using sand or glass sand simply replace this in your filter with AFM®. While sand has a specific weight of 1,450kg/m³, the specific weight of AFM® is 1,250kg/m³, and therefore it needs about 15% less AFM® according to weight.

For example: your filter has 150kg of sand, only 125kg of AFM® are needed.

AFM® is supplied in three different grain sizes and should be used as follows:

- AFM® grain 1 = 0.5 to 1.0 mm grain size in the upper filter bed: 70%
- AFM® grain 2 = 1.0 to 2.0 mm grain size, support below grain 1: 15%
- AFM® grain 3 = 2 mm to 4 mm grain size, support below grain 2: 15%

Grain 2 can be used for filters less than 1000mm in diameter instead of grain 3. Also for all DIN filters with nozzle plate, grain 3 can be substituted with grain 2.



Operating criteria:

- Recommended filtration speed: 15-130 m/h
- Air purge: 60-100 m/h
- Flush: 40-150 m/h
- Desired filter bed expansion: at least 15%

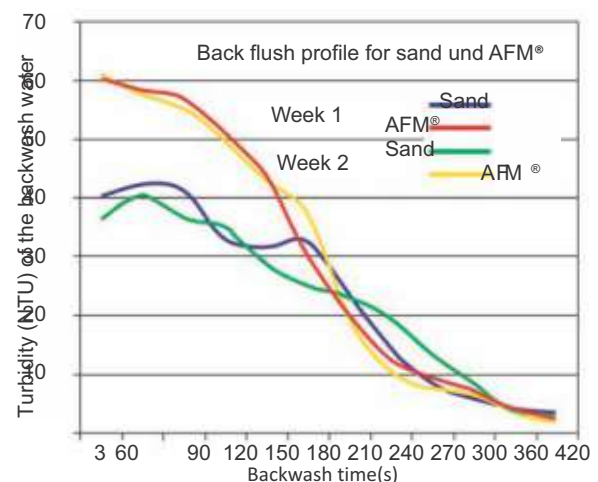
AFM® grain 1 specification:

Specific weight: 1,250kg/m³
 Effective size: 0.6 mm
 Sphericity: > 0.8
 Roundness: > 0.7
 Uniformity coefficient: < 1.3
 Cross-sectional ratio: < 2.4
 Specific gravity: 2.5
 OAD: > 10
 Purity: 99,95 %

Chemical composition in %:

Silica	70	Calcium	10
Magnesium	1	Lanthanum	2
Sodium	8	Cobalt	0.016
Aluminium	1.5	Lead	<0.005
Antimony	< 0.001	Mercury	<0.0005
Arsenic	<0.0001	Titanium	0.1
Barium	0.02	Rubidium	0.05
Cadmium	<0.0001	Iridium	0.05
Chromium	0.15	Platinum	0.0001

AFM and sand back flush curve:



The back flush curve compares the backwash of a sandy water with an AFM filter. The AFM® filter, 30% more dirt was washed out.

CODE	GRANULOMETRY	PACKING	WEIGHT	VOLUME
	mm			
AFM-01	0.5 - 1.0	1	25	0.015
AFM-02	1.0 - 2.0	1	25	0.015
AFM-03	2.0 - 4.0	1	25	0.015