DROP
Filtration Systems
Irrigation Equipment

Product Specification Sheet: **X series**

SAND MEDIA FILTERS

X series

The X series filters are used mainly in applications where the contaminated water has increased organic contaminance (algae, seaweeds etc) or even inorganic contaminants (argilic-clay soils).

Due to their three-dimensional nature they have the ability to withhold large quantities of particles. The filtration media which accomplishes the filtering is silica sand, in different available grain size depending on the required filtration needs.

The sand media filters are cleaned by means of a backwash procedure. The water flow direction is reversed, the sand volume increases and the withholded particles are drained outwards.

The double chambered sand media filters have the same characteristics with those of the single chamber, the only difference is that they are effectively two filters in one array and hence they have the capability to perform self cleaning without interuptions to the clean water flow rate.

General Characteristics

Their anti corrosive protection includes surface treatment using phosphoric acids followed by electrostatic polyesteric paint, while other available paint and material options are also available pending request.

The product is supplied with multiple couplings and flanges options availability (DIN, ASA, etc) conforminng to all required international standars.

The maximum operating pressure is 8 bars (116 psi).

They are available in other specifications, such as self cleaning version.

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Characteristics

Product Key / Type	Inlet / Outlet	Tank Diameter	Filtration Surface		Flow Rate		River		Canal		Maximum Pressure	
			m^2	$in.^2$	m^3/h	gpm	m^3/h	gpm	m^3/h	gpm	bar	psi
05-08-152	1 1/2"	18"	0.16	248	12	52.8	6	26.4	5	22	8	116
05-08-202	2"	20"	0.20	310	17	74.8	8	35.2	6	26.4	8	116
05-08-302	3"	24"	0.28	434	23	101.2	11	48.4	8	35.2	8	116
05-08-338	3"	36"	0.65	1007.5	50	220.1	26	114.4	20	88	8	116
05-08-450	4"	48"	1.15	1782.5	75	330.2	46	202.5	35	154.1	8	116
05-08-305 horizontal	3"	24"	0.75	1162.5	60	264.1	30	132	23	101.2	8	116
05-08-156 double chamber	1 1/2"	20"	0.40	620	16	70.4	15	66	11	48.4	8	116
05-08-206 double chamber	2"	24"	0.75	1162.5	33	145.3	30	132	23	101.2	8	116
05-08-307 double chamber	3"	36"	1.00	1550	60	264.1	40	176.1	30	132	8	116
05-08-451 double chamber	4"	36"	1.35	2092.5	80	352.2	54	237.7	41	180.5	8	116

Silica sand required quantity

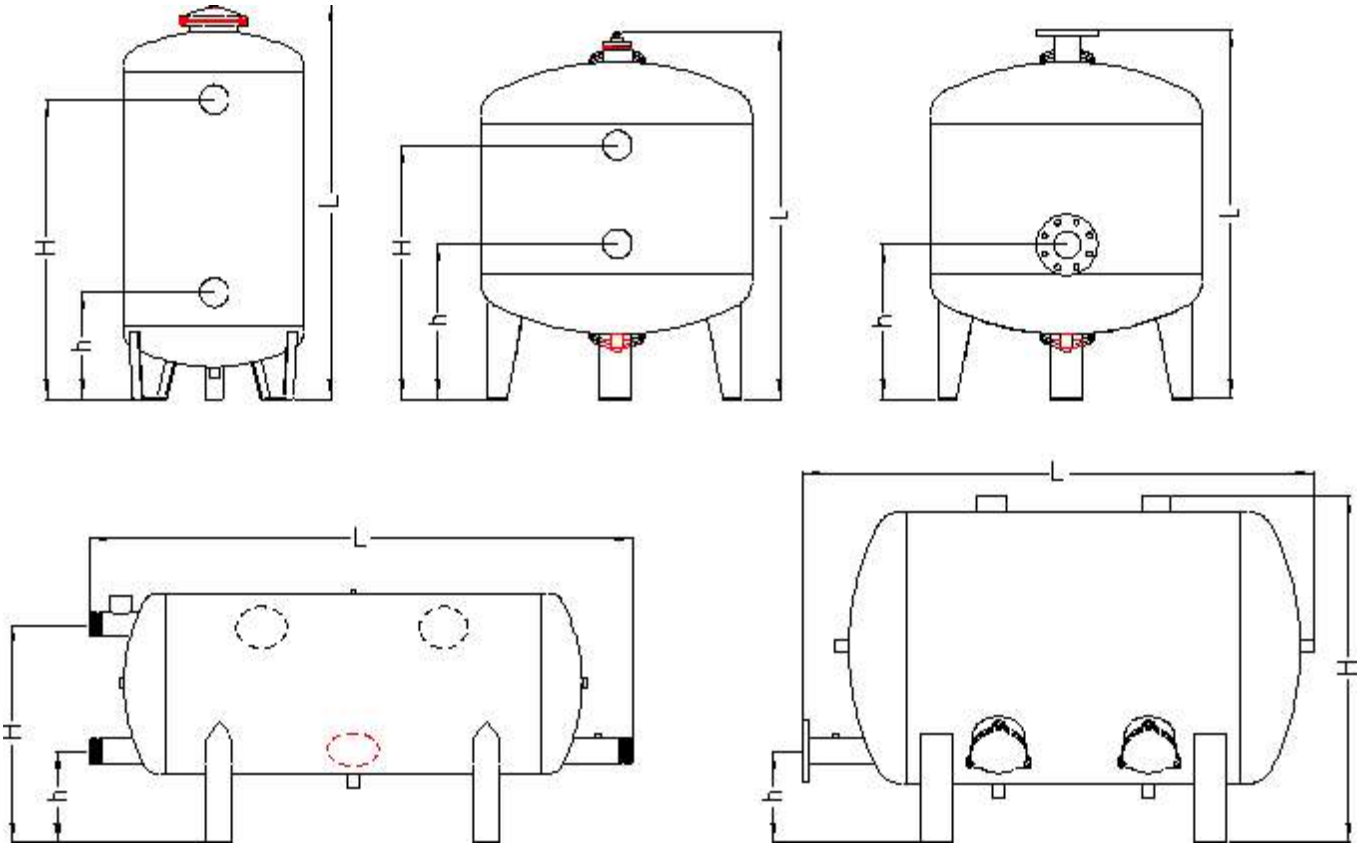
Type	Silica Sand quantity	
	kg	lbs.
1 1/2" (18")	78	172
2" (20")	130	286.6
3" (24")	234	515.8
3" (36")	468	1031.7
4" (48")	858	1891.5
3" horizontal	364	802.5
2" double chamber	364	802.5
3" double chamber	650	1433
4" double chamber	988	2178.1

Dimensions

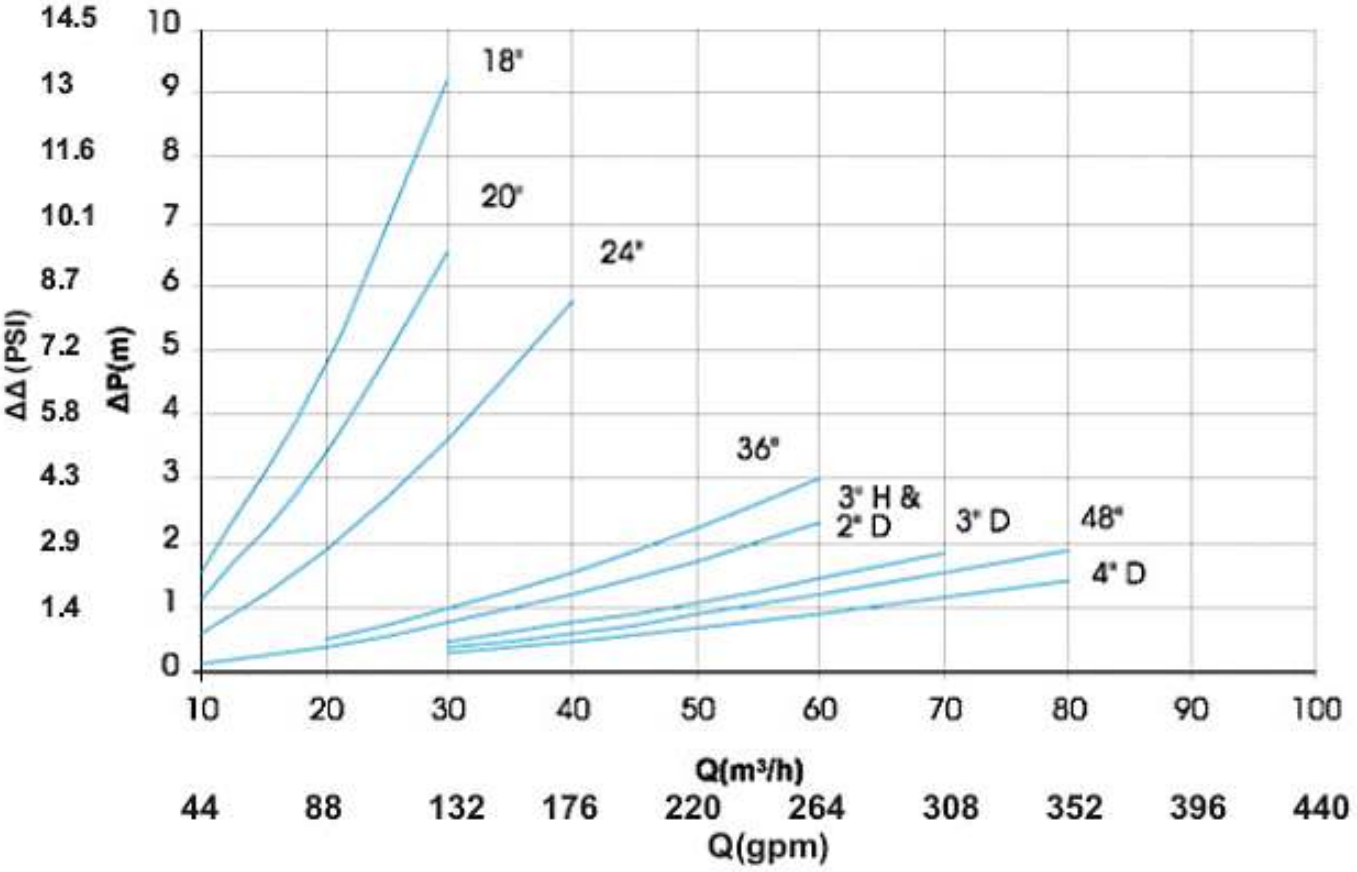
Type	L		H*		h		Weight		Tank Volume	
	mm	in.	mm	in.	mm	in.	kg	lbs.	lt.	gallon
1 1/2" (18")	1040	41	810	31.9	330	13	48	105.8	119	31.4
2" (20")	1230	48.4	930	36.6	370	14.5	62	136.7	175	46.2
3" (24")	1305	51.4	990	39	350	13.7	74	163.1	284	75
3" (36")	1220	48	840	33	510	20.1	108	238	505	133.4
4" (48")	1360	53.5	900	35.4	600	23.6	192	423.3	971	256.5
3" horizontal	1800	70.8	1291	50.8	300	11.8	125	275.6	398	105.1
1 1/2" double chamber	1130	44.5	745	29.3	200	7.8	89	196.2	175	46.2
2" double chamber	1640	64.5	1140	44.8	360	14.2	122	269	398	105.1
3" double chamber	1690	66.5	1278	50.3	300	11.8	198	436.5	879	232.2
4" double chamber	2020	79.5	1278	50.3	300	11.8	240	529.1	1128	298

* H = Minimum recomended installation height

Dimension Diagram



X series pressure loss diagram



Note: All measurements have been taken under clean water conditions.

Media data - Silica sand selection matrix

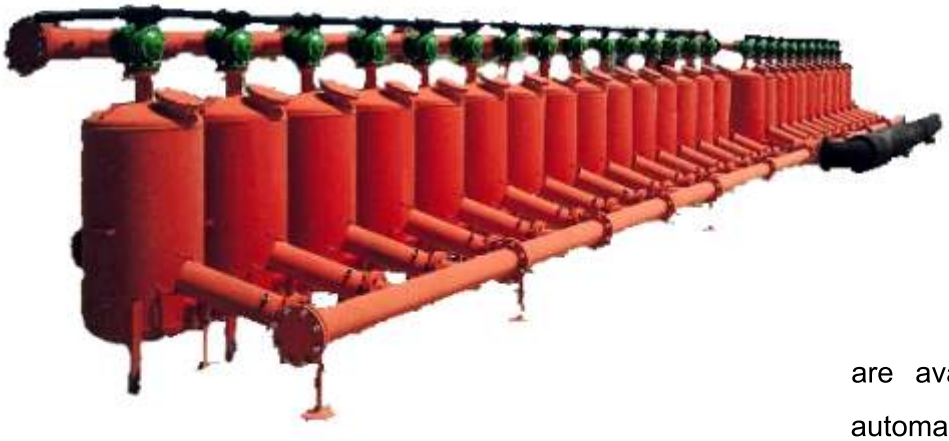
Silica sand designation no	Silica sand grain size range	Mean effective size (mm)	Coefficient of Uniformity	Filtration quality (mesh)
12	Silicon Dioxide (1.2 - 2.4 mm)	1.2	1.5	130-140
20	Silicon Dioxide (0.4 - 0.8 mm)	0.5	1.43	200-230

Two factors describe the attributes of the filtration media used in sand media filters:

The **Coefficient of Uniformity** is an indicator which expresses the variance of the grain size particles in a sample. For better filtration control the silica sand must be as uniform in size as possible. Large variations of silica sand grain sizes will result in decreasing the time interval required for cleaning the filter, since even the tiniest particles that are capable of flowing through the water jets, will be withholded from the un-uniform pores of the silica sand. The Coefficient of Uniformity can be expressed as the rate of: (mesh size that is required for 60% of the silica sand to flow through) / (mesh size that is required for 10% of the silica sand to flow through).

The **Mean Effective Size** is an indicator that indicates the particle size that can be withholded by the silica sand. It is defined as the mesh size that is required for the 10% of the silica sand to flow through.

SAND MEDIA FILTER SYSTEMS



For better filtration results and to accomodate demand for filtration of greater water flow rates, sand media filter combinations are assembled in filtration systems. These are available either in manual or automatic cleaning process versions.

The use of sand media filter systems enables the filtration of vastly greater water flow rates than a single filter station, as well as providing the advantage of continous watrer flow rate during the cleaning process (irrigation, warter supply).

The optimum system choice depends on the water flow rate as well as the water quality. According to internationaly accepted practice the optimum choice of sand media filter or system requires that we will insure water flow rate speed equals with 1.3 m/min for relatively clean water, 1m/min for ordinary water and 0.5-0.8m/min for highly contaminated water.

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System types and characteristics

Product Key /Type	Sand Media/ Horizontal filters	Number of Units	Inlet / Outlet	Flow Rate m^3/h	River m^3/h	Canal m^3/h
BX20-2	X 20" O 3"	2 1	3"	30	16	12
BX20-3	X 20" O 4"	3 1	4"	40	24	18
BX24-2	X 24" O 3"	2 1	3"	45	22	17
BX24-3	X 24" O 4"	3 1	4"	65	34	25
BX36-2	X 36" O 4"	2 1	4"	80	52	39
BX36-3	X 36" O 6"	3 1	6"	150	78	59
BX36-4	X 36" O 6"	4 2	6"	200	104	78
BX48-2	X 48" O 6"	2 1	6"	100	92	69
BX48-3	X 48" O 6"	3 2	6"	210	138	104
BX48-4	X 48" O 6"	4 2	8"	270	184	138
BX48-5	X 48" O 6"	5 3	8"	330	230	173
BX48-6	X 48" O 6"	6 3	10"	420	276	207
BX48-8	X 48" O 6"	8 4	10"	560	368	276
BX48-10	X 48" O 6"	10 6	12"	700	460	345
BX48-12	X 48" O 6"	12 8	12"	840	552	414
BX48-14	X 48" O 6"	14 8	14"	980	644	483
BX48-24	X 48" O 6"	24 14	18"	1680	1104	828

Note: : Larger systems and in various arrays are available following demand.