

Sand Media Filter SF

Ball Tech Energy's sand media filters have been developed especially for water filtration in contaminated water applications where sand grains adhere to each other and cause filter clogging. In such applications, simple backwashing of the grains has proven ineffective. In Ball Tech Energy's patented filter, every single sand grain is washed as a single unit. Replacing the sand in the filter, as is done in commonplace filters, becomes unnecessary. A Ball Tech Energy model SF-24-06 filter is capable of bringing water from a turbidity level of 35NTU to a level of 2.7NTU, taking into account a flow rate of 6 m³/hr.

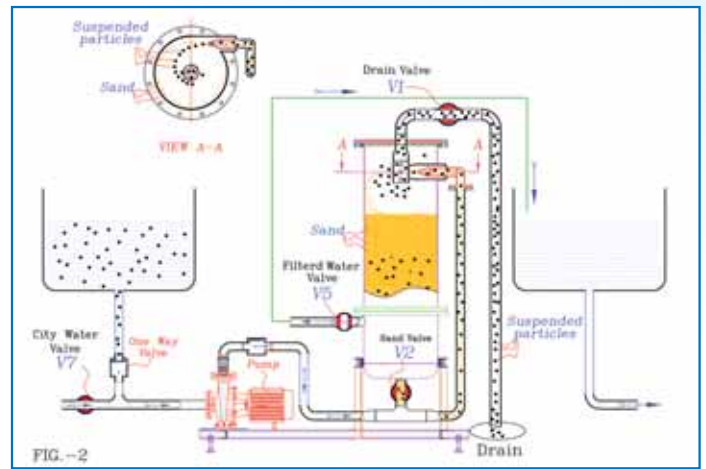
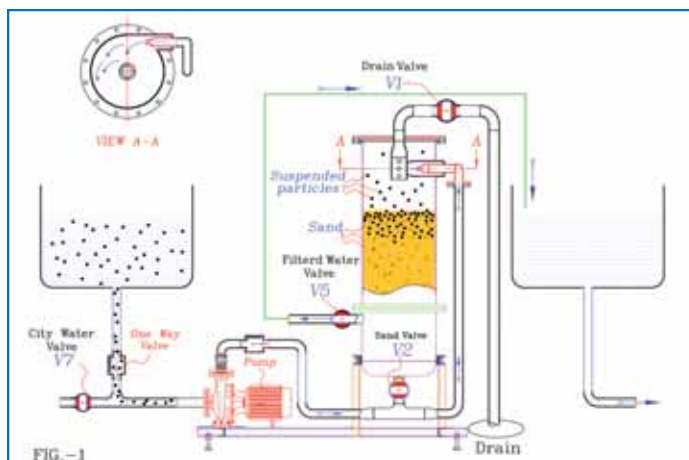
Ball Tech Energy's sand filter is designed to filter water in the following applications:

- **Cooling towers:** filtration of drifting particles, scale residue and silica.
- **Reverses Osmosis:** pre-filtration.
- **Ornamentation fish pools:** filtration of fish excretion and algae
- **Swimming pools:** filtration of contaminants received from the air and from swimmers.
- **Industrial factories:** filtration of paper, textile and other industries processes water.



Filter Operation

1. A pump pumps the contaminated water and directs it to the upper part of the filter. The water flows along a tangent to the filter's rim and is homogenously dispersed throughout the entire sand area. After seeping through the sand, the water leaves the filter at its lower part, all the contaminants having been trapped in the filter media. (Fig. 1)
2. A differential pressure gauge measures the pressure difference between the filter's water entry and exit points. When this pressure difference reaches a level of 7 meters (any other setting is possible), the washing process commences.



3. Once the sand washing command is received, the electrically controlled municipal or other water source supply valve opens, while the no-return valve installed on the contaminated water supply line closes and another valve at the bottom of the filter opens. Municipal water pumped toward the filter's upper part draws with it sand and contaminants from the filter's bottom separates them and leads them to the filter's upper part. At this point, the circumventing flow (cyclone principle) causes the heavy sand to sink and the contaminants to flow outward toward the sewage. (Fig. 2)



Advantages:

- 95% savings of common known media filters back washing water.
- Total water requirements for complete washing: up to 5% of the amount needed with any other sand media filter.
- Filter's media does not coalesce into clusters; therefore the filter does not clog.
- Not necessary to replace or refresh the sand.

Ball-Tech Energy Ltd.

Sand Media Filter SF

General Specifications:

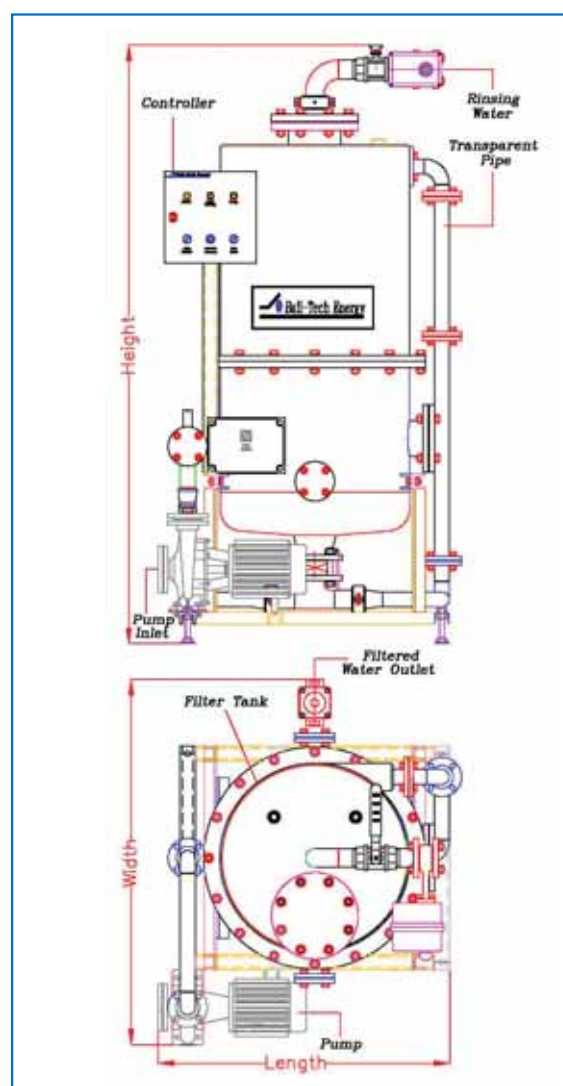
Model	Flow Range*		U.S. gpm		Filtration Surface Area		Inlet/Outlet Flanges	Pump kw	Load amp. at 380 (v)	Sand Requirement		Operation Weight	
	Min.	Max.	Min.	Max.	m ³	ft ³				Kg	lbs.	Kg	lbs.
SF-16-03	1.5	3	6.6	13.2	0.13	1.4	1.5"	3	3	85	187	200	440
SF-20-04	2	4	8.8	17.6	0.2	2.15	1.5"	3	3.5	165	363	350	770
SF-24-06	3	6	13.2	26.4	0.3	3.2	1.5"	3	5	267	588	600	1320
SF-30-10	5	10	22	44	0.5	5.4	2"	4	8	415	915	750	1655
SF-36-14	7	14	31	62	0.7	7.5	2"	5.5	11	708	1560	1100	2425
SF-48-23	12	24	53	106	1.2	12.9	2.5"	7.5	16	1517	3344	2100	4630

- The standard filter is designed to operate under pressures of up to 16bar.
- Filter testing pressure is 20bar.
- Maximal working temperature is 80°C.
- Pump's power supply: 380V, 3 phase.
- Filtering media size for standard filter is 10 μ , it is also possible to supply 5 μ media.

Dimensions:

Model	Tank \varnothing	Length		Width		Height	
		mm	in.	mm	in.	mm	in.
SF-16-03	16"	736	29	965	38	1422	56
SF-20-04	20"	840	33	1068	42	1727	68
SF-24-06	24"	940	37	1168	46	1930	76
SF-30-10	30"	1143	45	1320	52	2032	80
SF-36-14	36"	1295	51	1473	58	2184	86
SF-48-23	48"	1600	63	1778	70	2337	92

- Washing of contaminated sand may be accomplished using the municipal water supply or water that has been filtered.
- Ball Tech Energy's filter can be installed as a single unit or a series of parallel-operating filters.
- The filter may be washed manually or automatically control by computer.



Ball-Tech Energy Ltd.