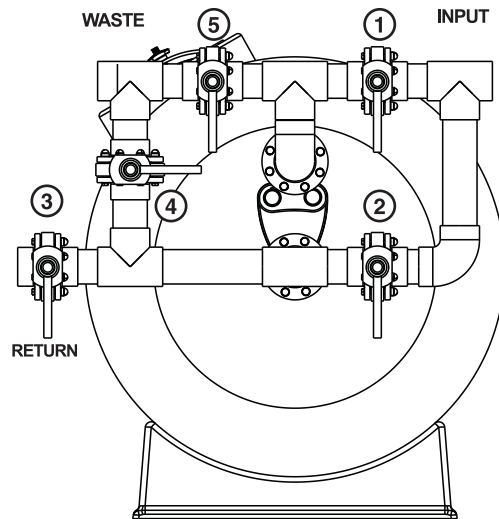


WORKING PROCESS

It has to be done with the pump stopped and valves in position.



	①	②	③	④	⑤
FILTER	open	close	open	close	close
BACKWASH	close	open	close	close	open
RINSE	open	close	close	open	close
WASTE	open	close	close	close	open
RECIRCULATE	close	open	open	close	close

EMPTYING OF FILTER'S SAND

To change sand or filtration elements, proceed as follows:

Remove top lid.

- Drain filter's water and sand through the lower drainage hole.
- If there is not enough room, sand can be removed through the manhole.
- To refill the filter with sand, follow the instructions given in starting, checking first of all that the drainage hole has been perfectly fitted and that it does not leak water.

OTHER RECOMMENDATIONS

- If the equipment has been stopped during a long period of time, it is advisable to empty the water filter.
- In standard filters, ozone water treatments must not be used and pressure and temperature specifications must not be exceeded. Contact our technical department if you have any doubt about the use of our filter.

GUARANTEE

This filter has been manufactured using the best high technology materials and manufacturing process, going through strict quality tests on materials, finishes and performance.

All those bumps, rips and breakages caused by an inadequate use of the product or by ignoring our recommendations are not included in this guarantee.

These guarantees include only the replacement of defective parts. Further charges, as those works made by third parties, compensations, etc, will not be accepted by the manufacturer.

SAND FILTER

Models: H1200-1.9, H1200-2.3, H1200-2.5, H1200-2.7, H1200-3, H1400-1.9, H1400-2.5, H1400-3, H1600-1.9, H1600-2.5, H1600-3, H1800-2.5, H1800-3, H1800-3.5, H1800-4, H2000-2.5, H2000-3, H2000-3.5, H2000-4, H2000-4.5, H2350-3, H2350-3.5, H2350-4, H2350-4.5, H2350-5, H2500-3.5, H2500-4, H2500-4.5, H2500-5, H3000-3.5, H3000-4, H3000-4.5, H3000-5

INTRODUCTION

This manual provides the necessary instructions to install, use and maintain bobbin wound filters. In order to take full advantage of the product, please follow the instructions in this manual. This will also assure safety and normal life time.

The manufacturer will provide further information if needed.

1. Description.

These filters are designed to provide water filtration for pools and water parks, as well as for water treatments that eliminates suspended matter with properly reduced filtration element. Besides the filter itself some other factors such as chemical liquid treatment, pump equipment, pipelines and general hydraulic design must be taken into account for filtration and depuration process because they can also influence the proper filter operation.

When public pools are concerned, the current rules in each country should be observed, as the installation must follow them.

The filtration quality depends on different parameters such as depth of filtration bed, characteristics, quality and grade of filtration media etc, as well as filtration rate.

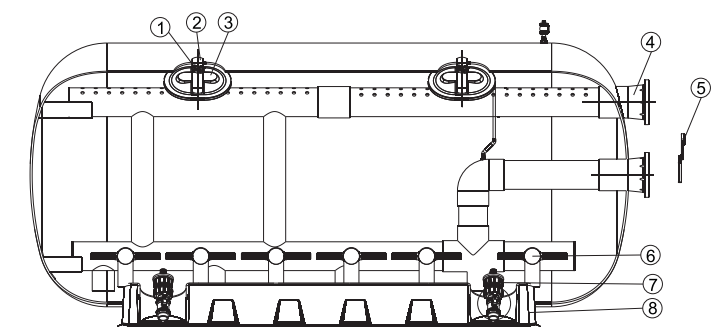
2. Filter's Characteristics.

The tank is made of polyester resin and glass fiber, totally anticorrosive. Inside, it contains collectors and diffusers made of durable plastic material (PVC and ABS), proof against salt-water. They are designed for a working pressure of 2.5 kg/cm² to 4 kg/cm² and maximum temperature of 43°C. Other specifications can be supplied upon request.

Filtration rates may be 20, 30, 40 and 50 m³/h/m², depending on the application and the kind of filtration elements that have been selected. Rate 50 is not advisable in public pools.

SPECIFICACIONES

Item	Description
1	Nut, Lid
2	Lid's fixing bridge
3	Lid with bolt
4	Flange
5	Instrument Panel
6	Lateral
7	Drain for sand
8	Base



INSTALLATION

1. Filter installation.

Filters are delivered properly packed and ready in order to facilitate unloading and transport using fork-lift truck, crane, etc. It is very important to make sure that the filters have not suffered bumps during transport.

- To obtain a correct filter installation, the following stages must be observed:
- Install filters in their final location.
- Install correctly the butterfly valves in the filters.
- Install butterfly valves supports and regulate them correctly (height, etc.)
- Connect butterfly valves with the pipe of the pumps, return pipes and drain.
- Check the inner parts of each filter (collectors, top diffusers).
- Fill the filters with water.
- Empty half the water and add the filtration element (gravel, sand and/or anthracite), etc.

1.1 Filters location.

It is acceptable to place the filters under the water level. However if vacuum occurs in the installation, suction cups must be installed in the lids to avoid that depression could collapse the filter's tanks.

Filters must be situated so that their bases are perfectly level and completely supported by the floor.

The location must be of appropriate size to allow maintenance periodic overhauls and other work.

Additionally the room must provide a drain to allow, in case of accident, evacuation of water flowing from any tube, filter, pump, etc. this will avoid risk of damages in the electrical installations (pumps, electric panels, etc.)

1.2 Manometers.

The manometer panel had been installed in the filter. In pools filters, the usual pressures when the filter is clean are:

- Inlet pressure: 0.8-1 Kg/cm².
- Outlet pressure: 0.4-0.6 Kg/cm².

When the differential pressure between the two manometers is 1 Kg/cm² or higher, backwash must be carried out.

1.3 Instrument Panel installation:

- Before running the filter, drill a $\Phi 11.4$ diameter hole in the filter's return pipe and drain that connects to the water inlet and outlet. (Figure 1, Figure 2)
- Tap a 1/4" thread to the hole with Teflon tape. Cut off pressure gauge rubber plug. (Figure 3, Figure 4, Figure 5)
- Twine the connection head with Teflon tape, fix to 1/4" thread and connect to the direct head and the valve of the panel. (Figure 6, Figure 7, Figure 8)

Caution:

- Tap with PN1.6Mpa or Class E 15bar PVC pipe.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

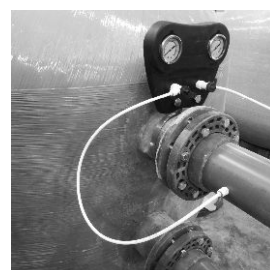


Figure 7

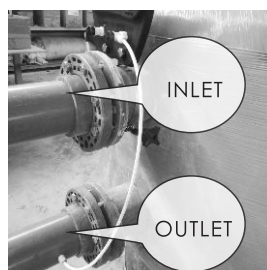


Figure 8

STARTING

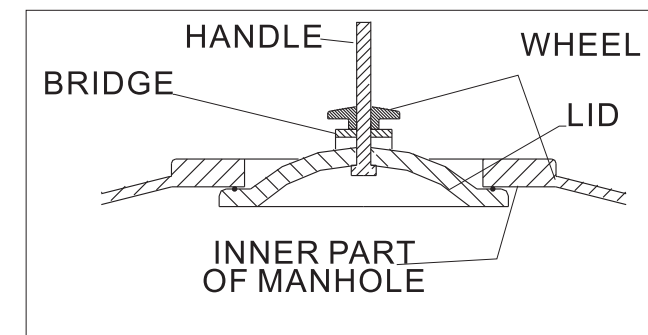
Before filling filters with sand or other filtration elements, it is advisable to check the internal collectors to make sure that they have not been damaged during transport or installation.

Afterwards, fill the filters with water and make hydraulic to reassure that there is no leak and that the equipment works properly.

Then stop the pumps, open each filter's lid (the filter must not be emptied without opening the lid, as it could collapse) and empty half the water that each filter contains. Then, start filling the filter with sand or other filtration elements, bearing in mind that first of all you must put gravel up to the collector arms (10 cm approx.)

This must be done very carefully in order to avoid any damage in the lower components of the filter. When the filter is being filled with sand, this must be carefully spread over the surface.

Once the filter is full with the filtration elements clean the lid and the inner part of the manhole. This will prevent any debris and sand from affecting the sealing.

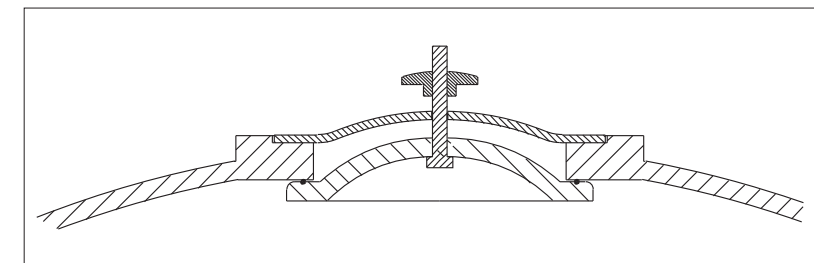


Introduce the lid in the manhole, leaving it leveled and centered. The lid must be supported by the handle, as this will avoid that it could fall into the tank and damage any of its parts.

Put the bridge in the position shown and manually tighten the wheel.

To achieve a proper seal, you do not have to manually tighten the wheel, as this could damage the lid. The pressure itself will improve the seal.

When the filter is under pressure, it is normal that wheel and bridge remain separated. You must not tighten the wheel again when the filter is under pressure, because when the pumps stop, the lid could be damaged or blocked.



Once the filter has been completely filled with water, start the performance of installation, venting manually to eliminate all the air that could be inside the filter, as the presence of air the filter performance.

After this, the filter has been ready for working process.