



SAPHIRUS Sand Filter Installation and User's Guide

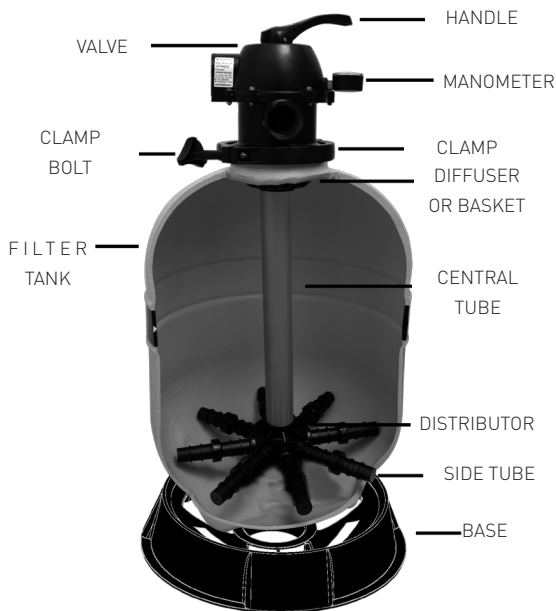
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Saphirus Sand Filter

Whatever the size and type of your pool, the daily water treatment should be relied upon the filter's work which guarantees a clean environment for you and your family. The Saphirus Filter is available in three sizes to choose from, according to your pool's water volume and required flow. On the table located on page 13, you can identify the recommended filter model for each pool. In the case of larger pools, it is recommended to install filters in parallel, integrating as many units as necessary to obtain the proper flow. The pump that integrates to the filter unit must also be chosen according to the dimensions of the pool to be treated. Follow the instructions correctly and always allow for the number of hours your pool needs to complete the filtering process.

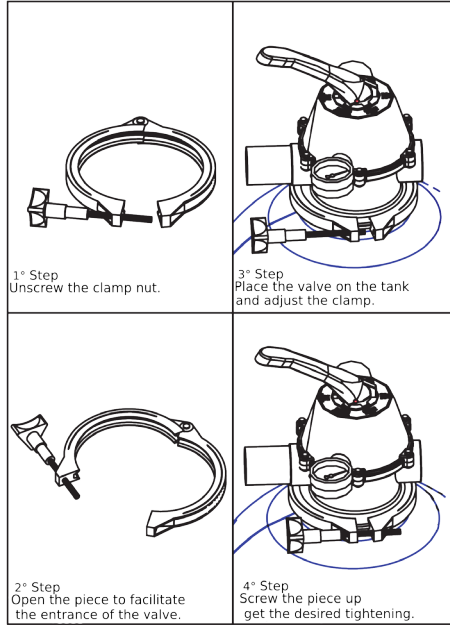
YOUR SAPHIRUS FILTER



ILLUSTRATIVE IMAGE

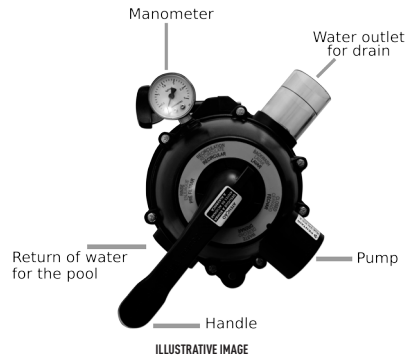
6-WAY VALVE SAPHIRUS FILTER

In the Saphirus Filter the valve is secured by a clamp with a single screw, which makes assembly and maintenance simple and fast.

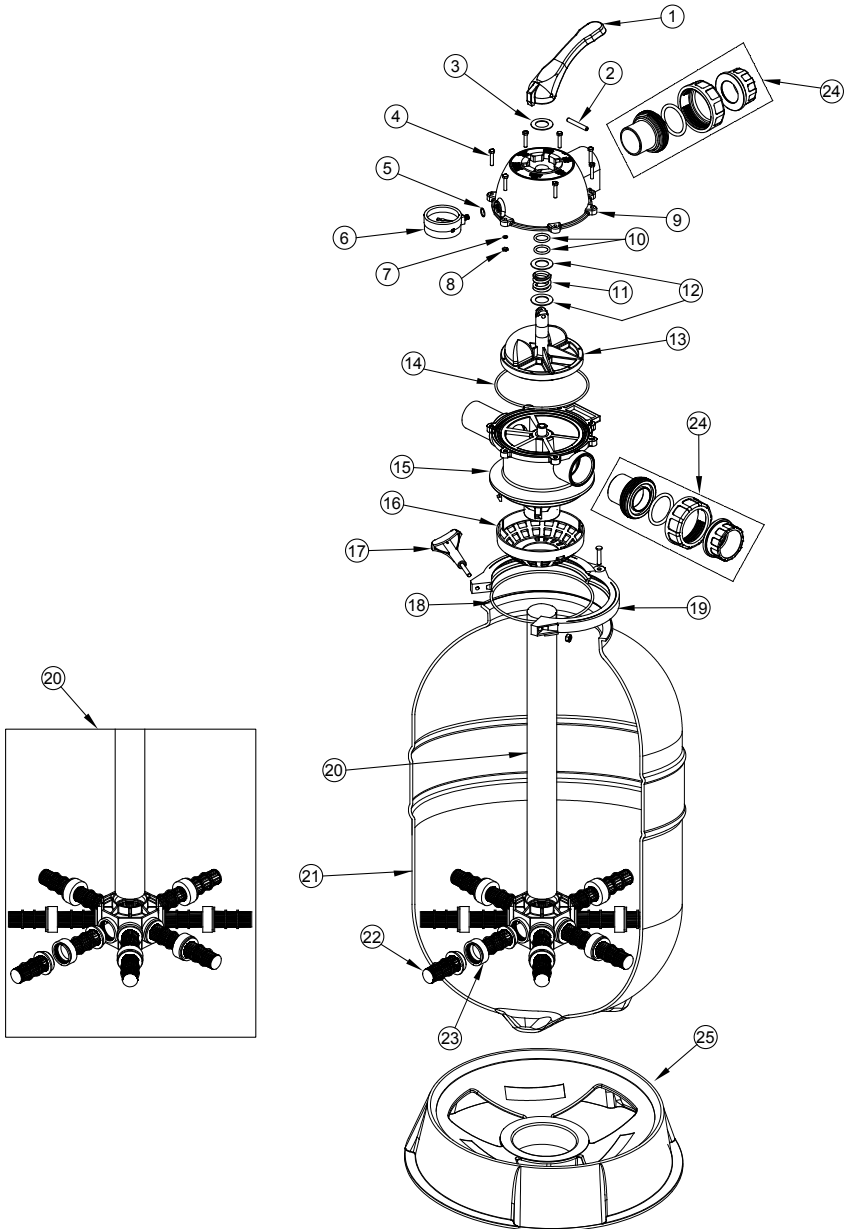


GENERAL CHARACTERISTICS OF THE 6-WAY VALVE

- ABS valve, completely removable and corrosion resistant.
- Handle that allows easy selection of six different operations: filter, backwash, rinse, drain, recirculate, close. It is designed in a way that provides easiness in the change of positions.
- Backwash viewer, located on the valve, allows for water display when the filter is operating in the backwash, rinse and drain positions.
- The pressure gauge indicates the internal pressure of the filter.
- The distributor spreads the water throughout the filtering media (silica sand) smoothly and in sheet form, resulting in a homogeneous filtration process.



REPLACEMENT PARTS FILTER SAPHIRUS



REPLACEMENT PARTS FILTER SAPHIRUS

Part	Code	Product
1	28072264	6-way valve handle with adhesive
2	28050050	Handle bolt 1/4 "x46mm brass
3	28050042	Nylon washer 45.5x22.3x2.2mm
4	28050038	Hexagon bolt M5x25mm din933 stainless steel 304
5	28040003	Manometer O' ring
6	28090007	Manometer 0-4kgf / 0-60PSI thread 1/4 "bsp
7	28050046	Smooth washer M5 diameter 5.3mm DIN125 stainless 304
8	28050041	Hexagonal nut M5 DIN934 stainless 304
9	28072420	Valve cover 6 way 1.5IN P / Filter export
10	28040029	6-way valve cover O' ring
11	28100014	Spring 5 spiral Stainless Steel 302
12	28050043	Smooth brass washer 31,7x22x1,5mm
13	28070231	6-way valve distributor with spider packaging
14	28040041	O' ring valve body DE = 154 L = 4.2 A = 3.8 mm
15	28072423	Valve body export C / visor and diffuser
16	28072262	Bottom valve diffuser
17	28072287	Handle nut with 1/4 "stainless steel screw 304
18	28040019	Lower body O' ring
19	28072307	Clamp for valve
20	28072311	Complete distributor kit Saphirus 16" model
	28072312	Complete distributor kit Saphirus 20" model
	28072313	Complete distributor kit Saphirus 24" model
21	28072428	Filter tank Saphirus 16" with adhesive
	28072429	Saphirus filter tank 20" with adhesive
	28072430	Saphirus filter tank 24" with adhesive
22	28070252	Male side tube
23	28070251	Side tube extender
24	28072347	Union nut 1.5 "
25	28072417	Base for the Saphirus 16" model
	28072418	Base for the Saphirus 20" model
	28072419	Base for the Saphirus 24" model

20 - Includes 1 center tube, 1 filter dispenser, 8 side tube [22] and 8 side tube extenders [23] for models 20 "and 24".

23 - 8 pieces are used per filter - Only for 20 "and 24".

FILTER MEDIA THAT MUST BE USED

The filtering media used by your Saphirus Filter should be silica sand, free of organic materials, with appropriate granulometry for proper functioning and filtering efficiency.

The filter media (silica sand) for your Saphirus Filter is sold separately.

PLACING THE FILTERING MEDIA IN YOUR SAPHIRUS FILTER FOR THE FIRST TIME

After the installation of your Saphirus Filter, the filtering media (silica sand) is placed. On the table on page 13, you will find the amount of the filter media (silica sand) that should be used in your filter model. Remove the filter valve. Cover the entrance of the central tube so that it is sealed. Pour a little water in the tank to prevent the sand from damaging the side tubes.

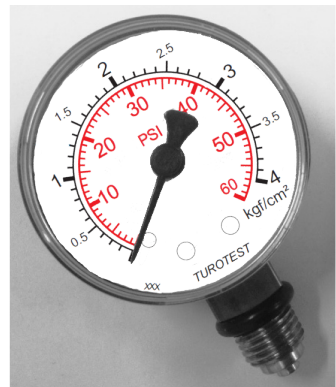
WASHING OF FILTERING MEDIA (SILICA SAND) IN YOUR SAPHIRUS FILTER FOR THE FIRST TIME

After placing the filtering media (silica sand) in your Saphirus Filter, a first wash should be done. To do this, you should only follow this instructions:

- Place the handle in the backwash position
- Confirm that the suction valves are open
- Close the return valve to the pool
- Open the outlet valve for drainage
- Turn on the pump and switch it off when you notice that the water flow is perfectly clean. To achieve this, look at the filter's viewer located on the valve.

FUTURE BACKWASH

The working pressure can vary from system to system, according to the pool's hydraulic installation and distance from the equipment's room. Place the valve in the filtering position and write down the pressure value indicated in the pressure gauge; it is recommended that the starting pressure should not be higher than 40 PSI. This way, when pressure increases (8 - 10 PSI), it is recommended to perform a new backwash. Always in the filtration process, this operation must be done to ensure that the filter media is not saturated with dirt. In general, this process is carried out at least once a week in residential pools and daily in those for commercial use (such as gyms and clubs).



ILLUSTRATIVE IMAGE

USING YOUR SAPHIRUS FILTER FOR THE FIRST TIME

- If the pump is installed above pool's water level, you must first fill the pump's strainer basket with water and making sure the lid creates a perfect seal to prevent the entry of air. The pump will not run a normal operation if the air entrance occurs.
- The pump will never prime without the strainer basket being full of water or with closed valves that restrains the normal flow of water. In these cases, the pump will suffer damages that are not covered by the warranty.
- Never turn the filter valve with the pump running.

Other important considerations:

- Do not use the filtering position when clarifiers are used, as these products can petrify the filtering media (silica sand) and decrease its filtering power.
- Check that the electrical protection components installed are recommended for the motor, otherwise the warranty does not cover the damages caused.
- Install an outlet drain for the drainage network and a drain on the floor in the machine room to prevent leaks from affecting the electric motor of the pump.

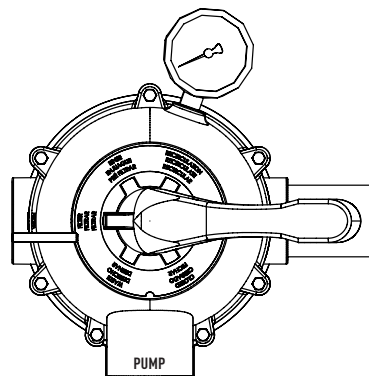
OPERATION OF YOUR SAPHIRUS FILTER

VALVE

The valve has been designed to make all the maneuvers in the water treatment of your pool very simple. Simply lower the handle with the palm of your hand, allowing the release of the socket, then turn, in any direction, to the desired position. To change valve positions, turn off the pump, place the valve in the desired operation and restart the pump.

NEVER TURN THE VALVE WITH THE PUMP RUNNING!

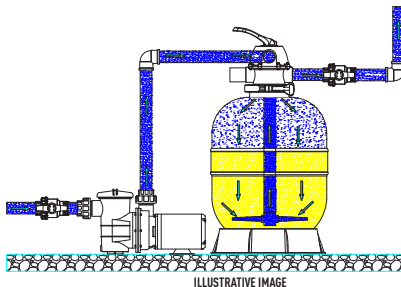
The valve offers six positions: filter, backwash, rinse, drain, recirculate and close.



ILLUSTRATIVE IMAGE

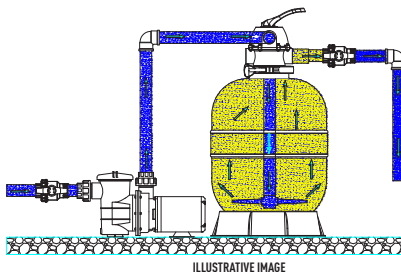
FILTER

The water passes through the pump, enters the valve, passes through the distributor, runs through the filter media (silica sand), enters the side tubes and returns to the pool. The dirt is retained in the sand and is expelled to the drain with the backwash and rinsing operations. The filtration should be performed daily, from six to eight hours, depending on how often the pool is used and the size of the pump and filter according to the pool and the conditions of the place (dust, pollution, leaves, etc.). Do not use the filtering position when using clarifiers in the water, as these products can petrify the filter media (silica sand) and decrease its filtering power.



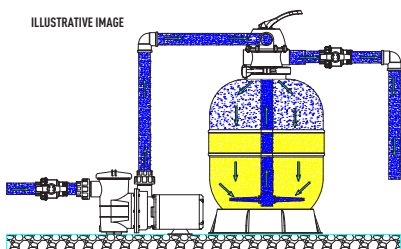
BACKWASH

This operation is used to wash the filter media (silica sand). As the water is filtered, the dirt that is retained in the sand saturates it, which makes it difficult for the water to pass and causes an increase in the pressure in the filter. This increase in pressure will be shown by the pressure gauge. When the value shown on the pressure gauge exceeds 8-10 PSI (above the start pressure), proceed to wash. The backwash option can also be decided based on the loss of flow in the return water inlets of the pool. Contrary to what happens in the previous operation (filtering), when backwashing, the water passes through the pump, enters the valve, passes through the central tube and exits through the collectors, runs through the filtering media (silica sand), enters in the valve and conducted directly to the drain, removing the dirt retained on the sand. The peephole located on the filter valve shows the decrease in the turbidity of the water. Wash the sand before using the filter for the first time.



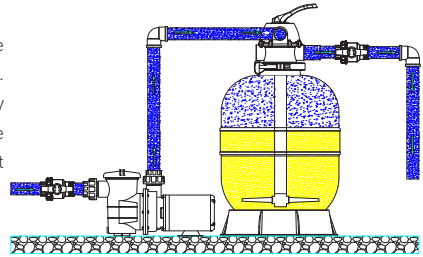
RINSE

This operation is performed immediately after backwashing, to prevent small impurities deposited in the system from returning to the pool. In this operation, the water passes through the filtering material (silica sand) and goes to the drain (drain), thus cleaning the filtering system.



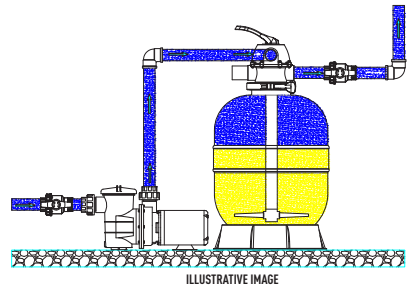
DRAIN

The water passes through the pump, through the body of the valve and goes to drain, without going through the filter tank. This operation is used when, in extreme cases, it is necessary to drain (empty) the pool, or in case that small particles are deposited in the bottom of the pool, those that the filter cannot retain. In this case, it is advisable to aim for drainage.



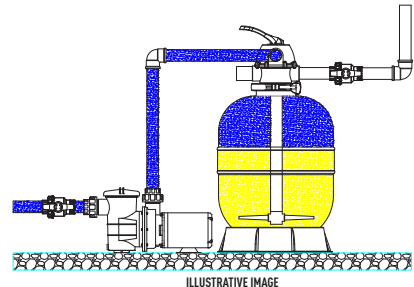
RECIRCULATION

This operation is carried out to make the mixture of the chemical products homogeneous in the water balance. The water passes through the pump, enters the valve and returns to the pool, without going through the filtering material.



CLOSED

In this position, there is no water passing through the filter nor the valve. It is used when the filter remains unused for long periods of time or when pool's water level is low. The filter valves for swimming pools are diversion valves, not blocking valves, so it is recommended for greater safety, that the installation scheme that accompanies the product is followed.



GUIDELINES

Within the available possibilities, the filter should be as close as possible to the pool, on the side of the main drain and preferably below the water level. For the construction of the equipment room, consider the dimensions of your equipment and reserve a space that provides thermal comfort for both the operator and the equipment. Provide a point of electrical energy supply, as well as a system for the safety of the equipment and mainly of the operator. This protection can be done with thermal pads according to the Local Standard. It is essential to connect the motor to the physical ground, both to avoid the risk of damage to the operator or users, and to avoid damage to the equipment. Also place in the machine room the drainage network and a drain on the floor to prevent eventual leaks from affecting the electric motor. It is not recommended to store chemical products inside the machine room. In the installation, do not place the pump directly on the floor. Place it on a base to avoid direct contact of the engine with soil moisture. Fill the filter with the filtering media (silica sand) using a sand funnel.

Valve connections must be made with schedule 40 PVC pipes for cementing. Check the quality and expiration date of the glue. The recommended connections are the "long curves" and not elbows. To glue pipes to the valve, follow the recommendations of the adhesive manufacturer. Sand lightly the external and internal part of the valve that will receive the pipe. Apply glue and attach the pipes to the valve. On the valve's body, the correct connections are indicated. Remember that this is a vacuum system, so that any air inlets in the pipeline will compromise the system's performance. For priming the pump, see the instructions in the manual that comes with it.

ELECTRICAL INSTALLATION

Envisage: all protections recommended by local codes, physical grounding in accordance with local regulations. The motor warranty will only be granted if the protection systems required by the Local Standard, which are compatible with the motor, are installed. Make sure that the voltage is correct and that there is no voltage drop below than that recommended by the manufacturers (5%). Consult the manual that accompanies your pump. Always install with professional electricians.

HYDRAULIC INSTALLATION

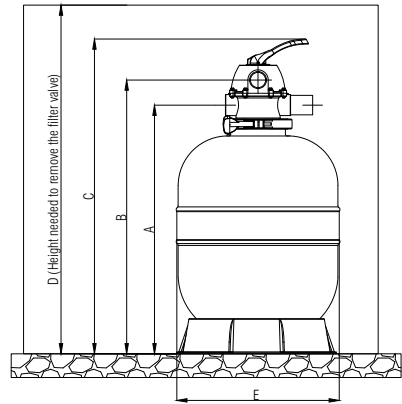
For the supply or replacement of water in the pool via public network, install a pipe (10 cm) or feed nozzle (20 cm), above the edge of the pool, or use a hose connected to a key remote from the edge swimming pool. For larger pools, build a compensation tank connected to the recirculation and treatment system of the pool, since the possibility of contamination is high. In addition to the sanitary aspect, equipment and devices are subject to high pressures, compromising them mechanically.

Dimensions

FILTER SAPHIRUS

Model	A	B	C	D	E
Saphirus 16"	672	746	867	967	380
Saphirus 20"	733	807	928	1028	479
Saphirus 24"	815	889	1010	1110	585

* Dimensions in millimeters (mm)

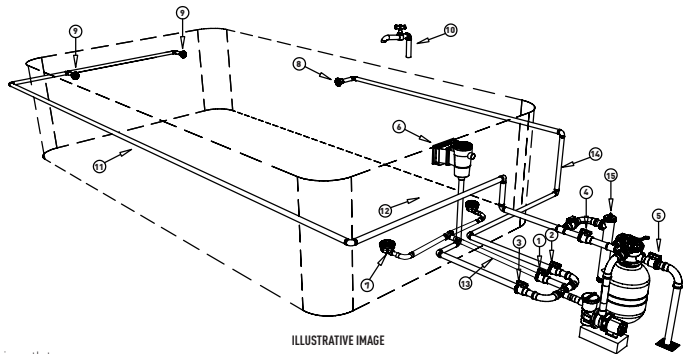


ILLUSTRATIVE IMAGE

Installation

- 1- Drain valve
- 2- Valve of the sweeper nozzle
- 3- Skimmer valve
- 4- Return valve
- 5- Drain valve *
- 6- Skimmer
- 7- Main drain
- 8- Sweeper nozzle
- 9- Return nozzle
- 10- Filling Line
- 11- Return pipe
- 12- Skimmer pipe
- 13- Main drain pipe
- 14- Pipe of the sweeper nozzle
- 15- UV lamp sterilizer

* It is suggested to install a valve in the drain outlet.



ILLUSTRATIVE IMAGE

TECHNICAL DATA TABLE FILTER SAPHIRUS

Product Code	Model	Filter			Recirculation		Pump	
		Filtering Area (pie²)	Sand Required (Kg)*	Maximum pressure (PSI)**	6 hours	8 hours	(HP)	Flow (GPM)
					Maximum volume of the pool (Lts)			
13010146	Saphirus 16"	1.40	46	50	38,160	50,880	1/2	28
13010147	Saphirus 20"	2.18	80	50	58,620	78,160	3/4	43
13010148	Saphirus 24"	3.14	136	50	85,860	114,480	1.0	63

Flows calculated at a rate of 20 GPM / ft2 of filtering area.

This filter can be used with Zeolite filter material, if the filter material is Zeolite, the maximum flow should not exceed 15 GPM / ft2.

Granulometry: 10/20 mesh - 20/30 mesh.

Note *: Characteristics: silica sand, effective size between 0.40 and 0.55 mm and coefficient of uniformity less than 1.75.

Note **: The maximum pressure variation will depend on the hydraulic load loss.

Water balance recommendations

KIT TEST pH / Cl tests the pH and free chlorine before using the products
 CHLORINE keep residual free chlorine (1 - 3 ppm)
 ALGICIDA DE MAINTENANCE 1X per week
 FLOCCULANT particles suspended in water
 pH + use when the pH is low
 pH - use when the pH is high

- Always adjust the pH before adding any product (ideal pH 7.2 / 7.6).
- Pre-dilute all products in a bucket with water.
- Choose night time to add chlorine, as UV rays destroys chlorine (ideal free chlorine 1.0 / 3.0 ppm). As for the products' dosage, read the instructions on the label of the product you are using, using the recommended amount for your pool's water volume. NEVER DRAIN YOUR POOL COMPLETELY. If you need to empty it, call a technician so he can be there while doing so.

Problems / Causes / Solutions

In case of any problem with the use of the filter, see the following table. If it is not possible to solve the problem, contact one of the Sibrape distributors.

Description	Cause	Solution
Solid materials in suspension / turbid water.	<ol style="list-style-type: none"> 1. Insufficient filtration; 2. Precipitation of carbonates due to very high pH; 3. High load of bathers; 	<ol style="list-style-type: none"> 1. Check and key the filter; 2. Filter continuously; 3. Correct the pH; 4. Test the chlorine residue and keep it between 1 and 3 ppm;
Milky water.	<ol style="list-style-type: none"> 1. High stabilizer; 	<ol style="list-style-type: none"> 1. Partially drain the pool and refill, if it continues, re-empty and refill;
Algae, green, cloudy water or green and black spots on the walls.	<ol style="list-style-type: none"> 1. Insufficient chlorine; 2. Absence of treatment with algacide; 	<ol style="list-style-type: none"> 1. pH test and correct, if necessary; 2. Make a superchlorination; 3. Follow the prevention treatment with algacide;
Foam in the water - the water in the pool seems to have soap bubbles.	<ol style="list-style-type: none"> 1. Accumulation of organic material; 2. Improperly add the foamy product to water; 	<ol style="list-style-type: none"> 1. Make superchlorination to eliminate organic contamination; 2. Partially drain the pool and refill, if it continues, re-empty and refill;
Rust stains on the surfaces of the pool next to the metal walls.	<ol style="list-style-type: none"> 1. Corrosion due to very low pH; 	<ol style="list-style-type: none"> 1. Adjust the pH to the range of 7.2 to 7.6;
Eye irritation; Smell of chlorine in the water.	<ol style="list-style-type: none"> 1. Inadequate pH; 2. Chloramines; 	<ol style="list-style-type: none"> 1. Check that the pH is in the ideal band and correct if necessary; 2. Supercool the water; 3. Keep control under greater control of pH and free chlorine residue
Water color: water becomes too blue, green, brown or watercolor when dealing with chlorine.	<ol style="list-style-type: none"> 1. Copper, iron and manganese already present in the feed water or dissolved by corrosion (very low pH). When chlorine is added, the chemical reaction causes these colored composite metals to stain the water; 	<ol style="list-style-type: none"> 1. Adjust the pH to the range of 7.2 to 7.6; 2. Add metal eliminator product (Max Clear by Klaren); 3. Filter continuously and wash the filter as necessary; 4. Aspir the sediments that settle to the bottom;

SAPHIRUS FILTER WARRANTY

Make sure that all accessories are complete in the presence of the person delivering them and that they are aware of the conditions of installation, use and maintenance of the equipment.

All retailers are trained and able to provide technical attention.

Before requesting technical attention at the reseller store, make sure that all the possibilities (problems / possible causes / solutions) described on page 14 of your manual have been verified.

When requesting technical attention, always have the sales invoice in hand.

Always demand original parts.

Warranty terms

This product is guaranteed against possible manufacturing defects starting from the date of delivery. The guarantee is backed up with the sales invoice. The SAPHIRUS FILTER tank is guaranteed for 5 years. The rest of the equipment is guaranteed for twelve months. Not covered by warranty defects derived from:

- Inappropriate use or negligence of the user;
- Installing the equipment on an unsuitable floor;
- Phenomena of nature;
- Natural wear and tear from normal operating conditions;
- Use of corrosive or abrasive fluids not provided for in the equipment design;
- Damage caused by improper transport, falls, etc.;
- Disassembly of the equipment during the warranty period by an unskilled person, except when authorized by the supplier;
- Operate the 6-way valve with the pump on;
- Operate the filter with pressure above recommended (in the range of 50 PSI);
- Operate the filter with a heating system without installing check valve;

