

STA-RITE™



Installation and User's Guide

Cristal-Flo™ High Rate Sand Filter



T-Series



SM-Series



T-Series

with ClearPro Technology®



SM-Series

with ClearPro Technology®

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Pentair Water Belgium bvba
Industriepark Wolfstee
Toekomstlaan 30
B-2200 Herentals - Belgium

Contents

| | |
|--|----------|
| Important Safety Precautions | 2 |
| Section 1: General Information | 3 |
| Section 2: Installation | 3 |
| Filter Mount/Piping | 3 |
| Filter Set-up | 3 |
| <i>for Top Mount versions (T-series)</i> | 3 |
| <i>for Side Mount versions (SM-series)</i> | 4 |
| Startup/Operation | 5 |
| The function scheme of the 6-way valve | 5 |
| Section 3: Maintenance | 5 |
| Water Maintenance | 6 |
| Storage/Winterizing | 6 |
| Section 4: Troubleshooting Guide | 6 |

Customer Support

HERENTALS, BELGIUM (8:30 A.M. to 4:30 P.M.) CET

Website: www.pentairpooleurope.com

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An illustrated spare parts list can be found at:
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IMPORTANT SAFETY PRECAUTIONS

THESE OPERATING INSTRUCTIONS CONTAIN IMPORTANT INFORMATION ON THE SAFE, PROPER AND ECONOMICAL OPERATION OF THE SWIMMING POOL FILTERS. STRICT OBSERVATION OF THE OPERATING INSTRUCTIONS WILL HELP TO AVOID DANGERS, REDUCE REPAIR COSTS AND SHUTDOWN TIMES AND INCREASE THE RELIABILITY AND WORKING LIFE OF THE PRODUCT.

General Information

Check carton for any evidence of damage due to rough handling in shipment. If carton or any filter components are damaged, notify the carrier immediately.



This manual contains critical safety information that must be provided to the end user. Failure to read and to follow instructions could result in serious personal injury and/or major property damage.

- This filter operates under pressure and if assembled improperly or operated with air in the water circulation system, the top lid (SM-Series) or top valve (T-Series) can separate, blowing off, which may result in an accident causing property damage or serious bodily injury.
- Keep safety labels in good condition and replace if missing or illegible.
- Failure to operate your filter system or inadequate filtration can cause poor visibility in your pool. This can result in serious personal injury or drowning as a consequence of diving into turbid water or on top of obscured objects
- Please note that a filter removes organic matter and does not sanitize the pool. The pool water must be sanitized and the water must be balanced for sparkling clear water.
- Filters should never be tested or subjected to air or gas under pressure. All gases are compressible and constitute a serious hazard when under pressure. Severe injury or property damage could occur if the filter is subjected to air or gas pressure.
- Operating at excessive vacuum levels can cause the vessel to crack and could cause property damage.
- To prevent damage to the equipment and possible injury, always turn the pump off before changing the valve position.
- Always visually inspect the filter components during normal servicing to ensure structural safety. Replace any item that is cracked, deformed or otherwise visually defective. Defective filter components can allow the filter top or attachments to be blown off and could cause severe injury or property damage.

Section 2

Installation

Installation of filter should only be done by qualified, licensed personnel.

Filter should be installed in a location which must:

- Provide weather and freeze protection.
- Provide space and lighting for easy access for routine maintenance.
- Be on a reasonably level surface and provide adequate drainage.
- Be as close to pool as possible to reduce line loss from pipe friction.

Piping

- Piping must conform to local/country plumbing and sanitary codes.
- Use pipe joint sealing compound or teflon tape on all applicable pipe and fittings.
- Do not damage union sealing surfaces or "O" Rings.
- Support pipe independently to prevent strains on filter or valve.

Wastewater

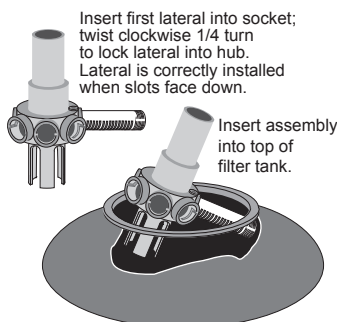
Be sure all provisions for waste water disposal meet applicable local or national regulations. 380 litres (100 gallons) or more of pool water will be discharged during filter backwashing. Do not discharge where water will cause flooding or damage.

ClearPro Technology:

When the filter is used for the first time, shift the valve handle to 'Backwash' position, until you see clear water appearing through the sideglass. Do this at least 3 times before proceeding.

Filter Setup for Top Mount Versions (T-series)

Assembly: See Figures 1 through 3 for assembly laterals.



Loading Sand Media

1. To keep sand out of collector assembly, place plastic sand shield over top of collector tube before pouring sand into filter (See Figure 4).
2. To support laterals and prevent lateral breakage during loading, fill tank about half full of water before loading sand.
3. Pour correct amount of sand into filter tank (see product label).
4. Remove plastic sand loading shield and keep for future use.

Figure 1

Hold assembly up near top of tank and add remaining laterals.

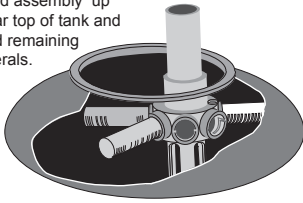


Figure 2

After all laterals are securely in sockets, position assembly on centering boss in bottom of tank.

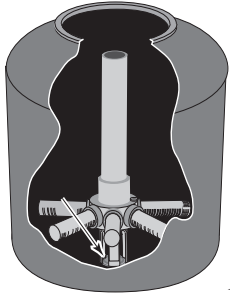
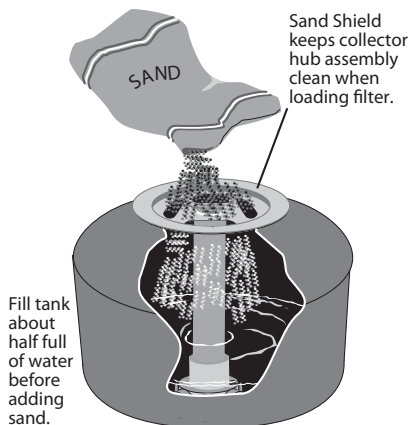
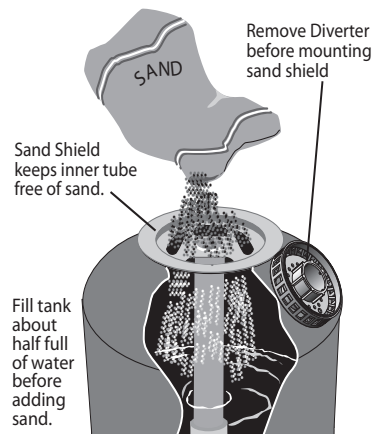


Figure 3



Fill tank about half full of water before adding sand.

Figure 4



Fill tank about half full of water before adding sand.

Figure 5

Valve Installation

NOTICE: Make sure gasket area on top of tank, valve and piping are free of sand before installation

1. Install O-Ring on valve flange; make sure O-Ring is clean, dry, and has no nicks, tears, or scrapes.
2. Put valve on top of tank. Vertical pipe of collector assembly inserts into base of valve.
3. Install clamp. Valve port labeled "PUMP" should point toward pump.
4. For plastic clamps: tighten screws until clamp ends (under bolt) are less than 6mm (1/4") apart. Tap around outside of clamp with a mallet to help seat clamp.
For stainless steel clamps: tighten bolt head until clamp is securely fastened.



Hazardous pressure. Clamp will not hold unless it is seated properly! DO NOT START PUMP until clamp secure.

5. If clamp will not pull up to 6mm (1/4") gap, wait 15-30 minutes and retighten. Tap clamp gently with mallet to help seat clamp.
6. Connect pipe from pump discharge to valve port labeled "PUMP" and complete all plumbing connections (see previous section for piping requirements):
 - A. Pipe from valve RETURN port to pool return.
 - B. Pipe from valve WASTE port to waste.
 - C. Suction piping from pool to trap inlet on pump.
7. System is ready for startup.

NOTICE: If there are leaks from beneath valve/clamp area, STOP PUMP, release all pressure, remove clamp and valve and clean sealing surfaces.

Filter Set-up for Side Mount Versions (SM-series) Assembly: See Figure 5 for filter assembly.

NOTICE: Check the tightness of the tank nuts - they may loosen from vibration in shipping. They should be tightened to 40 Nm (30 ft. lbs.) of torque.

Loading Sand Media

1. Follow instructions from T-series version on previous page.

Lid Installation

NOTICE: Make sure gasket area on top of tank, valve and piping is free of sand before installation

1. Install pressure gauge and O-Ring on lid flange; make sure O-Ring is clean, dry, and has no nicks, tears, or scrapes.
2. Put lid on top of tank and install clamp.
3. For plastic clamps: tighten screws until clamp ends (under bolt) are at least 6mm (1/4") apart. Tap around outside of clamp with a mallet to help seat clamp.

For stainless steel clamps: tighten bolt head until clamp is securely fastened



Hazardous pressure. Clamp will not hold unless it is seated properly! DO NOT START PUMP until clamp is secure

4. If clamp will not pull up to 6mm (1/4") gap, wait 15-30 minutes and retighten. tap clamp gently with mallet to help seat clamp.
5. Connect valve ports with union halves provided. Assemble union as follows for leakfree operation:
 - A. O-Ring and sealing surfaces must be clean
 - B. Assemble hand tight only (no wrenches); NO pipe compound or teflon tape on unions.
6. Complete all plumbing connections (see previous section for piping requirements):
 - A. Pipe from valve PUMP port to pool return.
 - B. Pipe from valve RETURN port to pool return.
 - C. Pipe from valve WASTE port to waste.
 - D. Suction piping from pool to trap inlet on pump.
7. System is ready for startup.

NOTICE: If there are leaks from beneath lid/clamp area, STOP PUMP, release all pressure, remove clamp and valve and clean sealing surfaces.

Start-up/Operation (See Figure 7)

- ⚠ Hazardous pressure. To avoid explosion and possible severe or fatal injury, filter system pressure must not exceed 3,5 Bar (50 PSI) under any circumstances. NEVER test this filter system with compressed air; never operate system with water temperature above 35° C (95° F)**
- ⚠ To prevent equipment damage and possible injury, turn pump OFF before changing valve position.**

NOTICE: Do not add chemicals directly into the pool skimmer. Adding undiluted chemicals may damage equipment and void warranty.

1. Open system valves and make sure pump is filled with water. Make sure pool water level is 50 mm (2") above bottom of skimmer opening.
2. With pump OFF, set valve to 'BACKWASH' position.
- 3.a. For Top Mount version: start pump, circulating water backwards through filter to waste. Do not install pressure gauge until a steady stream of water runs out of gauge port; then stop pump and install gauge.
- 3.b. For Side Mount: Open the Air Vent Stem and start pump, circulating water backwash through filter to waste. Do not close the Air Vent Stem until a steady stream of water runs out of the Air Vent port; then close the vent.

NOTICE: To prevent pump from running dry, be sure water level never drops below bottom of skimmer inlet. Add water to pool if necessary to keep skimmer flooded while backwashing and rinsing.

4. Backwash until water runs clear (3-5 minutes).
5. Stop pump; set valve to 'RINSE' position.
6. Start pump; run pump for one minute.
7. Stop pump; set valve to 'FILTER' position.
8. Filter is now ready for service.
9. Record clean starting filter pressure gauge reading as a reference.
10. When pool is first filled, backwash once a day until pool water is sparkling clear. After that, backwash when pressure gauge shows 0,30 to 0,50 Bar (5 to 7 PSI) higher than starting pressure.

The function scheme of the 6-way valve

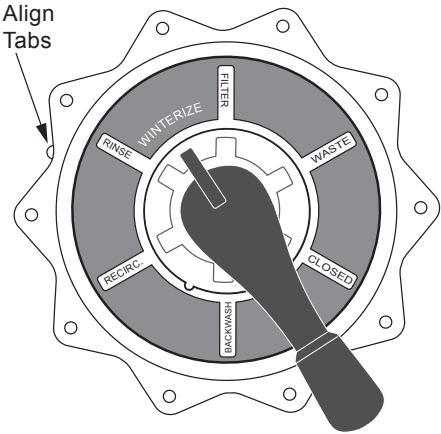
| | |
|---|---|
| FILTER Normal filtration and vacuuming; water goes through filter to pool. |  <p>Figure 7</p> |
| RINSE For initial start-up cleaning and sand bed leveling after backwash; water goes through filter to waste. | |
| RECIRCULATE Circulates pool water; bypasses filter. | |
| WASTE Lowers pool level or drains pool; water bypasses filter, goes to waste. | |
| BACKWASH Reverses flow for cleaning; water goes through filter to waste. | |
| CLOSED Shuts off all flow to filter and pool. | |
| WINTERIZE Leaves all valve ports partially open for winter storage. | |

Figure 7

Section 3 Maintenance

General

Wash outside of filter with a mild detergent and water. Rinse off with hose.

Inspect sand bed at least once a year to remove foreign material which has not been backwashed out of system.

NOTICE: DO NOT use solvents to clean filter; solvents may damage plastic components in system.
When the sand bed gets hard and crusty on top, remove all the old sand and replace it with new sand.

Weekly Pool Equipment Inspection

1. Check pressure during operation. When pressure is 0,3 to 0,5 Bar (5 to 7 PSI) higher than initial operating pressure, backwash filter (see instructions under "Startup/Operation").
2. Except during hot weather with heavy swimmer loads, operating filter 6 to 12 hours per day should be sufficient. Carefully monitor water chemical balance and follow recommendations of your local pool professional.

Water Maintenance

- Keep water level at least 50mm (2") above bottom of skimmer opening. Failure to do so can allow air to enter system, causing pump to lose prime and air to enter filter.
- Maintain pH at 7.2 to 7.6 in pool.

Vacuum Pool

1. Fill vacuum hose by submerging in water from one end to the other.
2. To vacuum, insert hose into skimmer suction manifold or into vacuum line in pool wall. See instructions provided by pool builder or pool manufacturer. Start pump, making sure it is primed and pumping.
3. After vacuuming, clean pump trap to remove accumulated debris, then check filter pressure gage. If reading is 0,3 to 0,5 Bar (5 to 7 PSI) higher than initial operating pressure, backwash filter.

Lower or Drain Pool

1. Turn pump 'OFF'; set valve handle to 'WASTE'.
2. Use vacuum cleaner hose and head.
3. Start pump; run until pool is lowered to desired level.
4. Turn pump 'OFF'; set valve handle to 'FILTER'.
5. Start pump.

Storage/Winterizing



Pool chemicals may give off corrosive fumes. Store chemicals away from system in a well ventilated area.

NOTICE:

Allowing water to freeze will damage filter and void warranty. If antifreeze is needed, use propylene glycol; it's plastic compatible and non-toxic. Follow manufacturers instructions. Do not use ethylene glycol based anti-freeze – it's toxic and it may damage plastic components.

1. Open all system valves. Set multiport valve at 'WINTERIZE' to allow air passage to all ports.
2. Remove drain plug from filter and drain filter tank completely and replace drain cap.
3. Cover filter to protect from freezing weather, but do not seal from air circulation.

Startup for Winterized Equipment

1. Remove any temporary weather protection placed around system for shutdown.
2. See "Startup" for reactivation of the filter.
3. Inspect all electrical wiring to pump for damage or deterioration over the shutdown period. Have a qualified serviceman repair/replace wiring as needed. Inspect and tighten all watertight connections.
4. Open all valves in suction and return piping.
5. Remove any winterizing plugs in system.
6. Drain all winterizing chemicals (if used) from system; flush system.
7. Close all drain valves and replace all drain plugs in system.
8. Fill pool with water to proper level (see pool manufacturer's instructions).

Section 4

Troubleshooting Guide

1. Short Cycle between backwashes:

- A. Flow rate too high or filter too small; consult dealer for system sizing recommendations.
- B. Water is chemically out of balance; consult pool serviceman.
- C. Excess dirt/dust in pool; vacuum pool directly to waste.
- D. Body oil/lotion build-up in filter; consult dealer for chemical filter cleaners and follow cleaner manufacturer's instructions.

NOTICE:

Time between backwashes will vary with each installation and between different areas of the country. Ask installer about normal backwash interval in your area. The following causes and remedies are for cycle times shorter than normal for your area.

- E. Filter inadequately backwashed. See instructions under "Startup/Operation" section.
- F. Algae in pool. Consult pool professional about proper chemical maintenance.
- G. Residual chlorine level too low. Consult pool professional about proper chemical maintenance.
- H. Inspect filter sand for solidification caused by dust, calcium, skin oils, or suntan lotions.

WARNING



Hazardous pressure.

Can cause severe injury or major property damage from tank blow up.

Release all pressure and read instructions before working on filter.

2. Low Flow:

- A. Pipe blocked downstream from filter; remove obstruction.
- B. Piping too small; use larger pipe.
- C. Plugged pump; plugged hair and lint trap or skimmer basket. Clean thoroughly.

3. Pool Water Not Clear:

- A. Water is chemically out of balance; consult pool professional.
- B. Filter is too small; consult dealer about equipment sizing.
- C. Sand in pool means broken lateral. Drain both water and sand out of tank. Follow procedure under "Filter Setup" section, and instructions with new lateral to replace broken part.

An illustrated spare parts list can be found at:

www.pentairpooleurope.com