

Warrior™ D.E. Filter Operating Procedures

IMPORTANT SAFETY INSTRUCTIONS READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS

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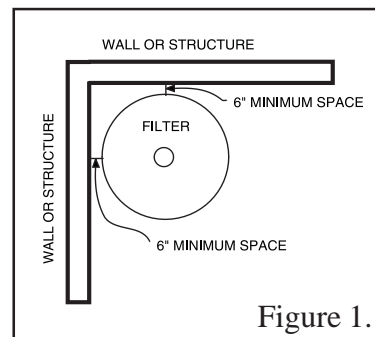
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⚠ WARNING

Before installing this product, read and follow all warning notices and instructions accompanying this filter. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of these instructions.

SECTION I. FILTER INSTALLATION

1. The filter should be mounted on a level concrete slab. Position the filter so that the instructions, warnings and pressure gauge are visible to the operator. Also, position the filter so that the piping connections, control valve and drain port are convenient and accessible for servicing and winterizing.



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2. Install electrical controls (e.g., on/off switches, timers control systems, etc.) at least five (5) feet from the filter. This will allow you enough room to stand clear of the filter during system start up.
3. Provide sufficient clearance around the filter to permit visual verification that the clamp is properly installed, see Figure 1.
4. Provide sufficient space above the filter to remove the filter lid or control valve for cleaning and servicing. This distance will vary with the model of filter you are using. See Table 1 for the required vertical clearance.


⚠ WARNING	
	<p>Risk of electrical shock or electrocution. Position the filter and High Flow™ manual air relief valve to safely direct water drainage and purged air or water. Water discharged from an improperly positioned filter or valve can create an electrical hazard that can cause severe personal injury as well as damage property.</p>

TABLE 1		
<u>Model</u>	<u>Size</u>	<u>Vertical Clearance Req.</u>
56408600	44 GPM	36 in.
56408700	66 GPM	46 in.
56408800	88 GPM	68 in.

5. When installing the High Flow™ manual air relief valve use the O-ring only, there is no need for thread sealing compounds. Position the filter to safely direct water drainage. Rotate the High Flow™ manual air relief valve to safely direct purged air or water. Water discharged from an improperly positioned filter or valve can create an electrical hazard as well as damage property.
6. Make all plumbing connections in accordance with local plumbing and building codes. Filter plumbing connections are provided with an O-ring seal. Use only a silicone base lubricant on the O-rings. Do not use pipe joint compound, glue or solvent on the bulkhead connections.
7. The base of this filter is provided with two (2) mounting bosses for the purpose of anchoring the filter to the concrete.
8. The maximum working pressure of this filter is 50 psi. Never subject this filter to pressure in excess of this amount, even when conducting hydrostatic pressure tests. Pressures above 50 psi can cause the lid to be blown off, which can result in severe injury, death or property damage.

When performing hydrostatic pressure tests or when testing for external leaks of the completed filtration and plumbing system, insure that the Maximum Pressure that the filtration system will be subjected to DOES NOT EXCEED THE MAXIMUM WORKING PRESSURE OF ANY OF THE COMPONENTS CONTAINED WITHIN THE SYSTEM. In most cases, the maximum pressure will be stated on each component of the system.

If doubt exists as to the pressure to which the system will be subjected, install an ASME approved automatic Pressure Relief or Pressure Regulator in the circulation system for the lowest working pressure of any of the components in the system.

SECTION II. FILTER OPERATION

⚠ WARNING



THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (e.g., LOCK RING, PUMP, FILTER, VALVES, ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BLOW OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH, OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

1. BEFORE REPOSITIONING VALVES AND BEFORE BEGINNING THE ASSEMBLY, DISASSEMBLY, OR ADJUSTMENT OF THE LOCK RING OR ANY OTHER SERVICE OF THE CIRCULATING SYSTEM: (A) TURN THE PUMP OFF AND SHUT OFF ANY AUTOMATIC CONTROLS TO ASSURE THE SYSTEM IS NOT INADVERTENTLY STARTED DURING THE SERVICING. (B) OPEN AIR RELIEF VALVE, AND (C) WAIT UNTIL ALL PRESSURE IS RELIEVED -PRESSURE GAUGE MUST READ ZERO (0).
2. WHENEVER INSTALLING THE FILTER LOCK RING, FOLLOW THE FILTER LOCK RING INSTALLATION INSTRUCTIONS EXACTLY.
3. ONCE SERVICE ON THE CIRCULATING SYSTEM IS COMPLETE, FOLLOW SYSTEM RESTART INSTRUCTIONS EXACTLY.
4. MAINTAIN CIRCULATION SYSTEM PROPERLY. REPLACE WORN OR DAMAGED PARTS IMMEDIATELY (e.g., lock ring, pressure gauge, relief valve, O-rings, etc.)
5. BE SURE THAT THE FILTER IS PROPERLY MOUNTED AND POSITIONED ACCORDING TO INSTRUCTIONS PROVIDED.

A. GENERAL INFORMATION

1. This filter operates under pressure. When lock ring is installed properly and operated without air in the water system, this filter will operate in a safe manner.
2. The maximum working pressure of this filter is 50 psi. Never subject this filter to pressure in excess of this amount - even when conducting hydrostatic pressure tests. Pressures above 50 psi can cause the lid to be blown off, which can result in severe injury, death or property damage.

When performing hydrostatic pressure tests or when testing for external leaks of the completed filtration and plumbing system, insure that the Maximum Pressure that the filtration system will be subjected to DOES NOT EXCEED THE MAXIMUM WORKING PRESSURE OF ANY OF THE COMPONENTS CONTAINED WITHIN THE SYSTEM. In most cases, the maximum pressure will be stated on each component of the system.

If doubt exists as to the pressure to which the system will be subjected, install an ASME approved automatic Pressure Relief or Pressure Regulator in the circulation system for the lowest working pressure of any of the components in the system.

3. The pressure gauge is the primary indicator of how the filter is operating. Maintain your pressure gauge in good working order.


⚠ WARNING	
	Your filter is a piece of machinery, do not tamper with it, attempt to disassemble it or otherwise adjust it unless you fully understand it's operation. Serious injury or death can occur if the equipment is improperly handled. Consult a pool service professional for maintenance and service assistance.

4. Clean your filter when pressure reads between 8-10 psi higher than the original starting pressure. Your filter pressure reading will increase as it removes dirt from your pool. However, this buildup of pressure will vary due to different bathing loads, temperature, weather conditions, etc.
 - a. MY ORIGINAL STARTING PRESSURE IS _____ psi (pounds per square inch). I SHOULD CLEAN THE FILTER CARTRIDGES AT _____ psi.

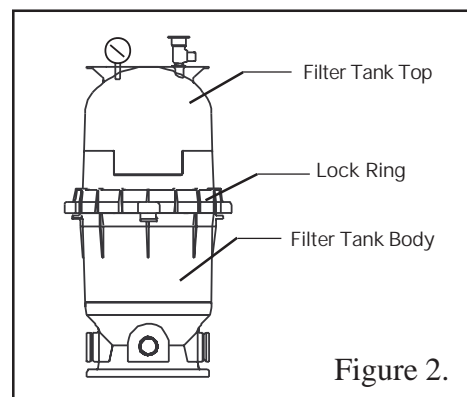
B. LOCKRING INSTALLATION INSTRUCTIONS

These instructions **MUST BE FOLLOWED EXACTLY** to prevent the lid from blowing off during system restart or later operation.


1. Perform the following steps before working on any part of the circulating system (e.g., lock ring, pump, filter, valves, etc.).
 - a. Turn the pump off and shut off any automatic controls to ensure that the system is not inadvertently started during servicing.
 - b. Open the air relief valve.
 - c. Wait until all pressure is relieved. **Never attempt to assemble, disassemble or adjust the filter lock ring while there is any pressure in the filter.**
2. Be certain the O-ring is in position in the lower tank half. Place the filter lid over the lower tank half. Making sure it is fully and firmly seated on the tank half, see Figure 2.

⚠ WARNING	
	THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (e.g., LOCK RING, PUMP, FILTER, VALVES, ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BE BLOWN OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH, OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

3. Place lock ring over tank lid, and centering the lock ring on the threads of the tank body, turn the lock ring clockwise until the safety latches click and the lock ring hits the stops on the body. **DO NOT ATTEMPT TO OVER-TIGHTEN THE LOCK RING AFTER LOCK RING HAS HIT THE STOPS ON THE BODY.**
4. Follow the System Restart Instructions in Section C.



C. SYSTEM RESTART INSTRUCTIONS

⚠ CAUTION	
	This filter operated under high pressure. When any part of the circulation system (e.g. lock ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid to be blown off which can result in severe injury, death, or property damage. To avoid this potential hazard, follow these instructions.

1. **Open the High Flow™ manual air relief valve until it snaps into the full open position (this only requires a quarter turn counterclockwise).** Opening this valve rapidly releases air trapped in the filter.
2. Stand clear of the filter tank, then start the pump.
3. Close the High Flow™ manual air relief valve after a steady stream of water appears.
4. The system is not working properly if either of the following conditions occur.
 - a. A solid stream of water does not appear within 30 seconds, after the pump's inlet basket fills with water.
 - b. The pressure gauge indicates pressure before water outflow appears.

If either condition exists, **shut off the pump immediately**, open valves in the water return line to relieve pressure, and clean the air relief valve, see Section F. Cleaning the High Flow™ manual air relief valve. If the problem persists, call 1-800-828-6123 for assistance.

D. CLEANING FILTER

⚠ WARNING	
The following information should be read carefully since it outlines the proper manner of care and operation for your filter system. As a result of following these instructions and taking the necessary preventative care, you can expect maximum efficiency and life from your filtration system.	

⚠ CAUTION	
	Please heed all manufacturers' posted instructions, warnings and cautions when using Baquacil® or Baqua Clean®.

1. Turn the pump off, shut off any automatic controls to ensure that the system is not inadvertently started during servicing.
2. Open the filter High Flow™ manual air relief valve, (and the waste drain valve, or cap, if your system has one).

NOTE

Special care must be taken when cleaning filter grids used in a swimming pool or spa using Baquacil as a sanitizer. Because of the way Baquacil works, the filter media must be cleaned more thoroughly and more frequently than in a chlorine system. If extreme care is not taken to completely remove all residue from the filter grids a buildup will occur. This buildup will significantly shorten the life of the filter grids.

Baquacil is a mild coagulant which combines bacterial cells as well as other small particles contributed by the environment, bathers, etc. into particles large enough to be trapped by the filter. In comparison with all other trapped contaminants in a typical pool or spa the amount of bacterial cells that are deposited on the filter is minimal. The resulting deposit is a gray sticky film which can only be removed with Baqua Clean. If TSP or any TSP type cleaner is used prior to stripping the film, the cleaner and the gray film will combine to form a gum-like substance. Once this occurs, the substance cannot be removed from the media and the filter media must be replaced.

3. Remove hair and lint strainer pot lid and clean basket. Replace basket and secure lid.
4. Disconnect air relief drain hose if installed.
5. Remove locking ring by depressing safety latches on both sides of ring and rotate counterclockwise, then remove tank lid.
6. Remove the grid assembly by placing hands in lifting handles and pulling straight up on the element assembly
7. Remove the knob from the center support rod to disassemble grids.
8. Using a garden hose with a nozzle, direct water spray at the grids to dislodge and wash away accumulated foreign matter.
9. Turn the grids over several times during the washing operation to clean the grids thoroughly.
10. Clean and remove debris from inside the filter tank and from O-ring and O-ring groove on tank body.
11. Reassemble the clean grid assembly and install assembly into the filter tank body, making sure it is fully seated. Align the arrow on the handle frame with inlet port of filter.
12. Replace the tank lid onto the tank body making sure it is fully and firmly seated on the tank body.
13. Place lock ring over tank lid, and centering the lock ring on the threads of the tank body, turn the lock ring clockwise until the safety latches click and the lock ring hits the stops on the body.
DO NOT ATTEMPT TO OVER-TIGHTENED THE LOCK RING AFTER LOCK RING HAS HIT THE STOPS ON THE BODY.

NOTE

Any time the filter tank is opened, and/or element assembly is removed, be sure to generously coat the O-ring with silicone lubricant before reassembling the unit. DO NOT USE PETROLEUM BASED LUBRICANTS BECAUSE THEY HAVE A DETERIORATING EFFECT ON RUBBER.

14. Replace drain cap and reinstall air relief valve drain hose if used.

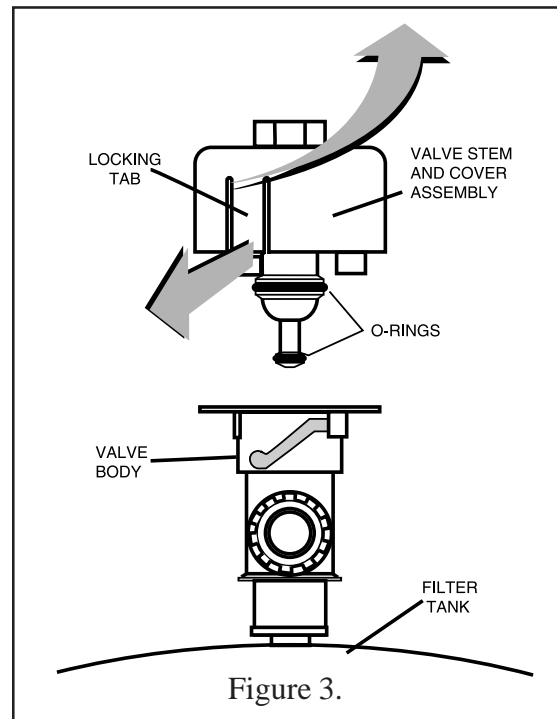
E. REPLACING FILTER GRIDS

Filter grid life will vary with pool conditions such as bather load, wind, dust, etc. You can expect an average media life of 3 years under normal conditions.

1. To replace grids follow steps in Section D, Cleaning Filter.

F. CLEANING THE HIGH FLOW™ MANUAL AIR RELIEF VALVE

1. Turn the pump off and shut off any automatic controls to ensure that the system is not inadvertently started during servicing.
2. **OPEN THE HIGH FLOW™ MANUAL AIR RELIEF VALVE UNTIL IT SNAPS INTO THE FULL OPEN POSITION, THEN WAIT UNTIL ALL PRESSURE IS RELIEVED.**
3. With the relief valve attached to the filter tank, pull out the locking tabs and remove the valve stem and cover assembly with a counterclockwise and lifting motion, see Figure 3.
4. Clean debris from the valve stem and body. Verify that the filter tank's air passage is open by inserting a 5/16" drill bit through the valve body. Verify that the O-rings are in good condition, properly positioned, and lubricated with a silicone base lubricant.
5. Reinstall the valve stem and cover assembly with a downward and clockwise motion until it snaps into position.

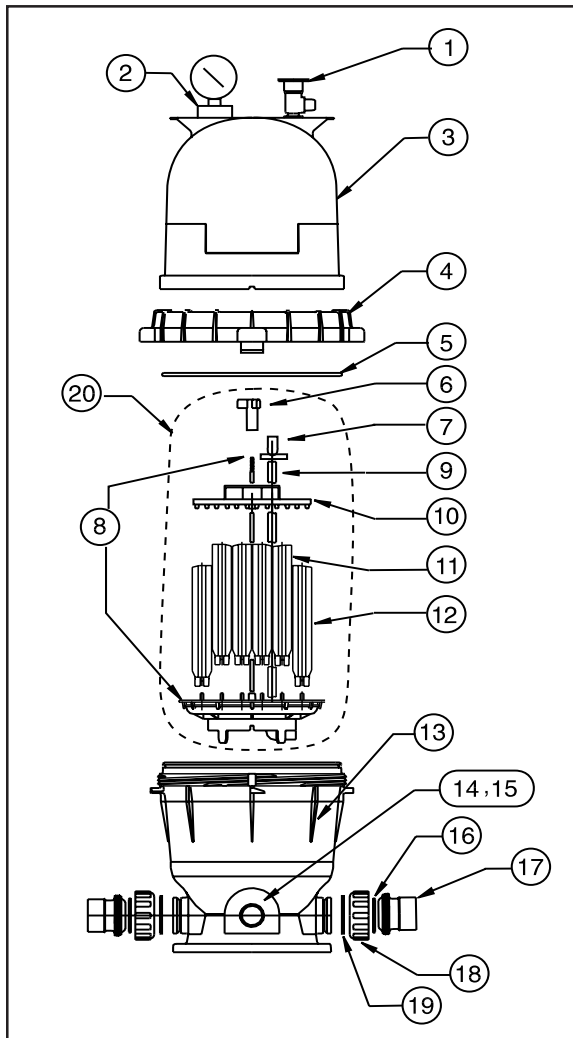


SECTION III. TROUBLE SHOOTING

- A. Air entering your filter is dangerous and can cause the lid to blow off. Correct any conditions in your filtration system that allow air to enter the system.
 - 1. Some common ways to identify air entering the system:
 - a. Low water level in pool or spa - skimmer is starving for water with pump running. Add water to pool or spa.
 - b. Air bubbles or low water level in pump hair and lint pot are caused by; low water level, clogged skimmer basket, split suction cleaner hose, leak in pump hair and lint pot lid, or leak in pump suction line.
 - c. Air bubbles coming out of water return lines into pool or spa with pump running, see items 1.a and 1.b of this section.
 - d. Air is discharged from the air relief valve on top of the filter when the valve is opened with the pump running, see items 1.a and 1.b of this section, above.
- B. Until the water initially put into the pool has been completely filtered, short filter cycles in between cleanings are normal. In most cases pool owners are dismayed by the undesirable color and appearance of water in a newly filled pool. Plaster dust can be responsible for short filter cycles, requiring frequent cleaning.
- C. If pressure drops on gauge, check skimmer basket and pump basket first for debris. If the baskets are clean, shut off power to pump and turn off any automatic controls. Then turn motor shaft with your fingers. If it turns freely then the pump must be disassembled and the impeller checked to see if it is clogged. If it is not frozen or clogged then there is an obstruction in the line between the pool and the pump.
- D. The pressure gauge is an important part of the filter system. It is your primary indicator of how the system is operating. Maintain your pressure gauge in good working order. Check the operation of your pressure gauge in the following manner:
 - 1. The pressure gauge should go to zero (0) when the system is turned off and pressure is relieved.
 - 2. The pressure gauge should indicate pressure when the system is operating.
 - 3. The pressure gauge should be readable and not damaged in any way.
 - 4. Replace the pressure gauge if it is not meeting the requirements of items D.1 through D.2 of this section, above.

SECTION IV. REPLACEMENT PARTS.

A. WARRIOR D.E. TANK ASSY



Item	Part Number	Description
1	98209800	High Flow manual air relief valve
2	53003201	Pressure Gauge
3	59053200	Lid, 44 & 88 GPM Filter, BLACK
3	190041	Lid, 44 & 88 GPM Filter, ALMOND
3	59025600	Lid, 66 GPM Filter, BLACK
3	190042	Lid, 66 GPM Filter, ALMOND
4	59052901	Locking Ring Assy.
5	87300400	Body O-ring
6	39302700	Tie Rod Knob
7	59016200	Air Bleed Sock Kit
8	59022500	Tie Rod/Manifold Assy., 44 GPM Filter
8	59022501	Tie Rod/Manifold Assy., 66 GPM Filter
8	59022502	Tie Rod/Manifold Assy., 88 GPM Filter
9	59011200	Air Bleed Tube, 44 GPM Filter
9	59011300	Air Bleed Tube, 66 GPM Filter
9	59011400	Air Bleed Tube, 88 GPM Filter
10	59023000	Top Grid Support
11	59009600	Large Grid, 44 GPM Filter
11	59009700	Large Grid, 66 GPM Filter
11	59009800	Large Grid, 88 GPM Filter
12	59005200	Small Grid, 44 GPM Filter
12	59005300	Small Grid, 66 GPM Filter
12	59005400	Small Grid, 88 GPM Filter
13	59055600	Bottom, 44 GPM, BLACK
13	178562	Bottom, 44 GPM, ALMOND
13	59055700	Bottom, 66 & 88 GPM, BLACK
13	178563	Bottom, 66 & 88 GPM, ALMOND
14	86202000	Drain Cap, w/ O-ring
15	51005000	Drain Cap O-ring
16	39102800	Union O-ring
17	79304600	Body, Swivel
18	98212200	Union Nut
19	39104500	Union Nut "C" Clip
20	59005800	Grid pack assy., 44 GPM
20	59005900	Grid pack assy., 66 GPM
20	59006000	Grid pack assy., 88 GPM

SAVE THESE INSTRUCTIONS.

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