

IMPORTANT SAFETY INFORMATION

WARNING

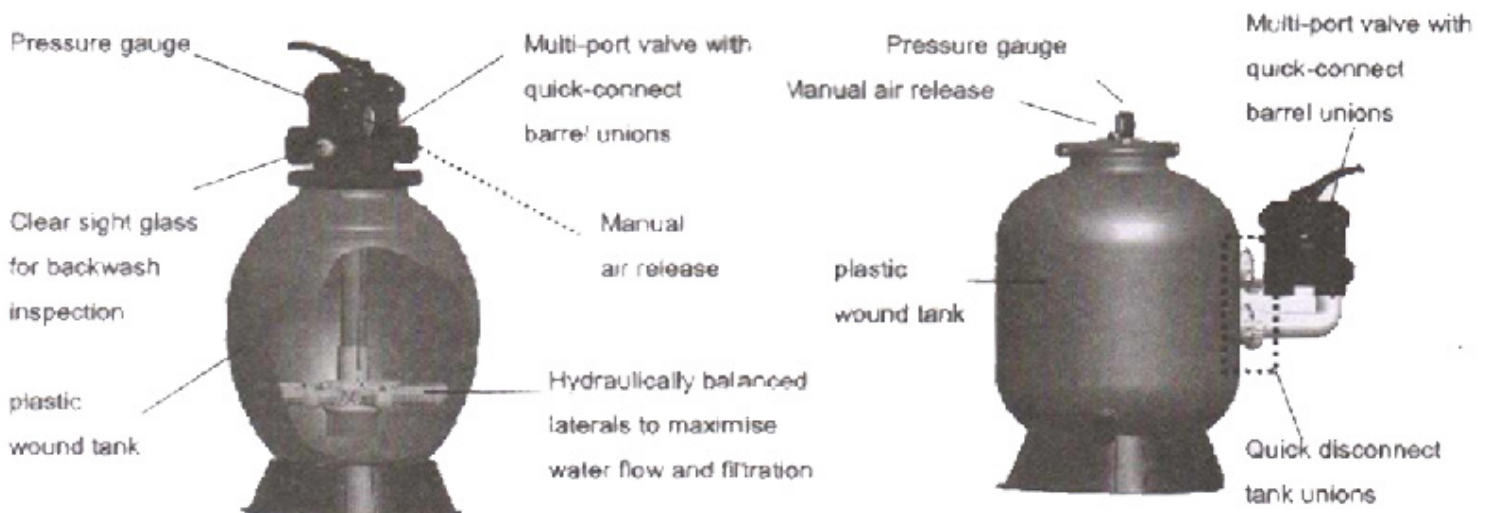
GENERAL SAFETY WARNINGS

SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS PUMP AND SAND FILTER IS NOT INSTALLED AND USED CORRECTLY. INSTALLERS, POOL OPERATORS AND POOL OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THIS PUMP AND SAND FILTER.

Most states and local codes regulate the construction, installation, and operation of public pools and spas, and the construction of residential pools and spas. It is important to comply with these codes, many of which directly regulate the installation and use of this product. Consult your local building and health codes for more information.

IMPORTANT: Attention Installer: This Installation and User's Guide contains important information about the installation, operation and safe use of this pump and sand filter. This Guide should be given to the owner and/or operator of this equipment.

- The sand filters are designed to work with water temperature $> 32^{\circ}\text{F}$ and $<$ than 113°F . The filter should never be operated outside of these temperatures or damage may occur. The installation should be carried out in accordance to the safety instructions of swimming pools and the specific instructions for each facility.
- A pool or spa pump must be installed by a qualified pool and spa service professional in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation may create an electrical hazard which could result in death or serious injury to pool users, installers, or others due to electrical shock, and may also cause damage to property
- To reduce the risk of injury, do not permit children to use or operate this pump and sand filter.
- **DO NOT** store chemicals around your pool. Chemical spills and fumes can weaken swimming pools and/or spas.
- Any modifications of this equipment of the filter requires prior consent from the supplier's original replacement and accessories authorized by the manufacturer to ensure a high level of safety. The supplier assumes no liability for any damage or injuries caused by unauthorized replacement parts and/or accessories. In the even of defective operation or fault, contact the supplier or the nearest authorized service agent.



Blow Molded Top Mount Sand Filter

Blow Molded Side Mount Sand Filter

IMPORTANT SAFETY INFORMATION

HIGH PRESSURE FROM THE SAND FILTER CAN CAUSE SEVERE INJURY OR MAJOR PROPERTY DAMAGE DUE TO TANK SEPARATION. RELEASE ALL PRESSURE AND READ INSTRUCTIONS BEFORE WORKING ON THE SAND FILTER. IF THE FILTER CLAMP IS ADJUSTED UNDER PRESSURE, THE TANK CAN SEPARATE, CAUSING SERIOUS INJURY OR MAJOR PROPERTY DAMAGE.

PUMPS REQUIRE HIGH VOLTAGE WHICH CAN SHOCK, BURN, OR CAUSE DEATH. BEFORE WORKING ON PUMP! ALWAYS DISCONNECT POWER TO THE POOL PUMP AT THE CIRCUIT BREAKER BEFORE SERVICING THE PUMP. FAILURE TO DO SO COULD RESULT IN DEATH OR SERIOUS INJURY TO SERVICE PERSON, POOL USERS OR OTHERS DUE TO ELECTRIC SHOCK.

⚠ DANGER SUCTION ENTRAPMENT HAZARD



POOL AND SPA PUMPS MOVE LARGE VOLUMES OF WATER, WHICH CAN POSE EXTREME DANGER IF A PERSON'S HAIR COMES IN PROXIMITY TO A DRAIN THAT IS NOT THE PROPER SIZE FOR THE PUMP OR PUMPS.

The Virginia Graeme Baker Pool and Spa Safety Act imposes certain new requirements on owners and operators of swimming pools and spas. Pools or spas constructed on or after December 20, 2008, shall utilize:

(A) No submerged suction outlets, a gravity drainage system with ASME/ANSI cover(s), one or more unblock-able outlets; or

(B) A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8 Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs and either:

(i) A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems and/or ASTM F2387 Standard Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming Pools, Spas and Hot Tubs or

(ii) A properly designed and tested suction-limiting vent system or

(iii) An automatic pump shut-off system.

Pools and spas constructed prior to December 20, 2008, with a single submerged suction outlet shall use a suction outlet cover that meets ASME/ANSI A112.19.8 and either:

(A) A multiple main drain system without isolation capability, or

(B) A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 and/or ASTM F2387

(C) A properly designed and tested suction-limiting vent system, or

(D) An automatic pump shut-off system, or

(E) Disabled submerged outlets, or

(F) Suction outlets shall be reconfigured into return inlets.

IMPORTANT SAFETY INFORMATION

WARNING

This filter operates under high pressure. When any part of the circulating system (e.g., clamp, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid or control valve to separate which may result in serious 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 clamp or any other service of the circulating system:
 - (a) Turn the pump off and shut off any automatic controls to ensure the system is not inadvertently started **during the servicing;**
 - (b) Open manual air relief valve;
 - (c) Wait until all pressure is relieved, pressure gauge must read zero (0).
2. Whenever installing the filter clamp, follow the filter valve and clamp 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., clamp, pressure gauge, relief valve, o-rings, etc.).
5. Be sure that the filter is properly mounted and positioned according to instructions provided.

WARNING

Failure to operate your filter system or inadequate filtration can cause poor water clarity obstructing visibility in your pool and can allow diving into or on top of obscured objects, which can cause serious personal injury or drowning.

This filter operates under pressure. With the valve clamped properly and operated without air in the system, this filter will operate in a safe manner. Air entering the filter and the valve not clamped correctly can cause the valve to separate, which could cause serious personal injury and/or property damage.

Always turn pump off before changing valve positions. Changing valve positions while the pump is running can damage the control valve, which may cause serious injury or property damage.

Chemical fumes and/or spills can cause serious corrosion to the filter and pump structural components. Structurally weakened components can cause filter, pump or valve attachments to separate and could cause serious bodily injury or property damage. High voltage can cause serious or fatal injury. Always install a suitable GFCI at the power source of this unit as an added safety precaution. Article 681-31 of the NEC requires that a GFCI be used if this pump is used with a storable pool.

NEVER work on the pump while it is running or power is still connected. High voltage can cause serious or fatal injury. A suitable ground fault interrupter should always be installed at the power supply source of this unit. Be sure to ground the motor before connecting to electrical AC power supply. Failure to ground the motor can cause serious or fatal electrical shock hazard. **DO NOT** ground to a gas supply pipe line.

FOR CORD AND PLUG CONNECTED UNITS: Connect only to a ground type receptacle protected by a Ground Fault Circuit Interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by GFCI. Do Not Bury Cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers, and other equipment. To reduce the risk of electrical shock, replace damaged cord immediately. To reduce the risk of electrical shock, Do Not Use an extension cord to connect unit to electrical supply; provide a properly located outlet.

INSTALLATION

SAND FILTRATION WORKING PRINCIPLE

Incoming water from the piping system is automatically directed by the multi-port valve to the top of the filter bed. As the water is pumped through the filter sand, dirt and debris are trapped by the filter bed, and filtered out. The filter water is returned from the bottom of the filter tank., through the multi-port and back through the piping system .

PREPARATION BEFORE INSTALLATION

1. Position the filter as close to the swimming pool / spa as possible.
2. The filter should be placed on a level concrete slab, very firm ground, or equivalent. Ensure that the ground will not subside to prevent any strain to the attached plumbing.
3. Position the filter so that the piping connections, Multi-Port Valve and winter drain is convenient and accessible for operation, servicing and winterizing.
4. Ensure that the compliance label is facing the front to allow easy identification in the case of service difficulties.

INSTALLATION

WARNING: This product should be installed and serviced only by a qualified professional.

1. Put the filter tank on the base. Turn the filter tank to the right to tighten it. Position the outlet drain plug so it is facing outside for easy operation.
2. Before filling the filter media into the filter vessel, do a visual check of the laterals. Look for broken or loose laterals. Replace if necessary. The laterals of side-mount valve sand filter are all installed.
3. To eliminate stress on the laterals, fill the filter vessel with enough water to provide a cushioning effect when the filter sand is poured in.
4. Make sure the air release hose is running along side the body of the lateral holder. One end of the air release hose **MUST** be out of the sand. **DO NOT** bury the air release hose in the sand.
5. To eliminate stress on the laterals, fill the filter vessel with enough water to provide a cushioning effect when the filter sand is poured in.
6. (a) Top Mount Sand Filters -Top Mount sand filters are supplied with a perforated plastic locator, which centers the stem and prevents media from entering the stem pipe. Place the perforated plastic locator on the center stem of the filter and carefully pour in the filter media via the perforated holes of the plastic locator. Remove the plastic locator once completed. NOTE: If a template is not provided or is lost you must center the stem and cover the stem opening to prevent non-alignment and media entering the stem pipe. (b) Side Mount Sand Filters (SM650)-Remove the top diffuser from the internal diffuser pipe and place the flexible air relief tube to the side, out of the way, inside the filter vessel. Cap the internal diffuser pipe with the sand shield provided to prevent sand from entering it. **DO NOT MOVE DIFFUSER PIPE** as this can affect the integrity of the bulkhead seal. NOTE: The above instructions do not apply to Side Mount Filters larger than SM650 filters. Any filter media entering the diffusers will be removed during normal operation.
7. Wash all the filter media and debris away from the threads of the filter vessel.
8. Lubricate the o-ring or gasket (bolt down type) MPV and thread to the filter. Lubricant should be silicon based and not petrochemical based lubes.
9. Thread the Multi port Valve or Top Cap onto the filter tank.

PLUMBING

1. Check that the incoming water pressure is within the filter's recommended working pressure and ensure that a pressure limiting valve is installed if using mains water or a high pressure pump.
2. Ensure that a foot valve (non return valve) is installed if the pump is installed 500mm above the water level.
3. If the sand filter is installed below the water level or connected to mains water, isolation valves should be installed before the filter and after the valve. This will prevent water flow during any routine maintenance that may be required.
4. Minimize the length of pipe and the number of fittings to minimize friction loss to ensure maximum efficiency.
5. Connect all plumbing to the Multiport Valve taking care that all joints are glued or tightened securely to prevent leaking.
6. To prevent breakage and damage to the pump and Multiport Valve, use only pipe sealants specifically formulated for plastics.
7. Ensure solvents are not excessively applied to fittings as this could run into O'rings and create sealing problems. Do not over tighten fittings or adaptors.

MULTIPORT VALVE OPERATION

1. Filter Position for filtering the body of water. Incoming water from the piping system is automatically directed by the Multiport Valve to the top of the filter bed. As the water is pumped through the filter sand, dirt and debris are trapped by the filter bed, and filtered out. The filtered water is returned from the bottom of the filter tank, through the Multiport Valve and back through the piping system.

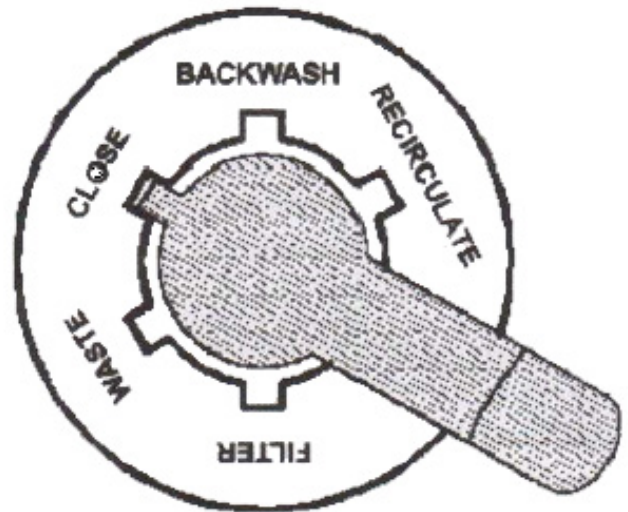
2. Backwash Position for cleaning the filtermedia. Water flow is reversed by the Multiport Valve through the filter bed so that water flow is directed to the bottom of the tank and up through the filter bed, flushing the previously trapped dirt and debris out the waste line.

3. Rinse Position for flushing the filter system. The water flow is directed by the Multiport Valve through the filter bed and out the waste line. This process settles the filter media bed into place and ensures any dirt or debris is rinsed out of the filter, preventing possible return to the Swimming Pool/ Spa.

4. Waste Position for bypassing the filter bed to Waste. The water flow is directed by the Multiport Valve straight to the backwash outlet, bypassing the entire filter bed. This Multiport Valve position is used lower the water level or for vacuuming water with high dirt loads.

5. Re-circulate - Position for bypassing the filter bed to the Swimming Pool/ Spa. The Multiport valve recirculates water flow directly back to the Swimming Pool/ Spa, bypassing the filter. NOTE: This position is not available on 4-Way Multiport.

6. Closed - Position for closing all flow to the filter. Be sure correct amount of filter sand media is in tank and that all connections have been made and are secure.



INITIAL STARTUP OF FILTER

Be sure correct amount of filter media is in tank and that all connections have been made and are secure.

1. Depress Multiport Valve handle and rotate to the **BACKWASH** position. **NOTE:** To prevent damage to control valve seal, always depress handle before turning.
2. Switch on the Pump. (OPTIONAL) If a gate valve is installed open the valve before turning on the pump, allowing the filter tank to fill with water.
3. Once water flow is steadily exiting the waste line, run the pump for at least one minute. The initial backwashing of the filter is recommended to remove any impurities or fine sand particles in the filter media.
4. Turn the pump off. Set the Multiport Valve to the **RINSE** position. Switch on the Pump and allow it to run until water in sight glass is clear - approximately 10 to 15 seconds.
5. Switch off the Pump. Set the Multiport Valve to the **FILTER** position and Switch on the Pump. Your filter is now operating in the normal filter mode.
6. Adjust pool suction and return valves to achieve desired flow. Check the plumbing and filter for water leaks and tighten connections, bolts, and nuts, as required. **NOTE:** During initial clean-up of the pool water, it may be necessary to backwash frequently due to the unusually heavy initial dirt load.
7. Record the pressure gauge reading (start up pressure) during initial operation. After a period of time, the accumulated dirt and debris in the filter causes a resistance to flow, and the flow diminishes. The pressure will start to rise and the flow of water will start diminishing. When the pressure gauge reading is 8-10 PSI higher than the initial "Start up" pressure, it is time to backwash (clean) the filter.

CAUTION: All suction and discharge valves must be open when starting the pump. Failure to do so could cause severe personal injury and/ or property damage. **NOTE:** If a pump is installed, switch the pump on and off, instead of closing and opening the optional gate valve.

NOTE: To prevent unnecessary strain on piping system and valve, always shut off the pump before switching filter control valve position. To prevent damage to the pump and filter and for proper operation of they system, clean pump strainer and skimmer baskets regularly.

NOTE: If the filter is connected to mains water, It is not necessary to record the start up pressure, as mains pressure tends to ffuctuate.

BACKWASHING CONDITIONS

The function of backwashing is to separate the deposited particles from filter media grains and flush them from the filter bed. Backwashing is achieved by reversing the flow of water through the filter bed at a fairly high flow rate. This high flow rate expands the filter bed and the water collects the debris taking it to waste.

Time for backwashing is determined by the following conditions:

1. The flow rate through the filter bed decreases until it is insufficient to meet the demand.
2. The removal efficiency of the filter bed decreases to the point where the effluent quality deteriorates and is no longer acceptable.
3. When the pressure gauge reading is 50 kPa (7.2 PSI) higher than the start up pressure.
4. If the filter is connected to the water main, pressure rise is not an accurate indicator as water main pressure tends to fluctuate. It is best to rely on the actual flow rate.

NOTE: We recommend that you backwash a swimming pool sand filter in a residential installation at least once a month.

The importance of backwashing cannot be overstated. Dense filter media can become "packed" without proper and frequent enough backwashing. Debris will remain trapped and create channelling within the filter bed. This will result in the filter bed exhausting early. Moreover, if debris is not flushed from the media grains, the filter bed will become dirtier and dirtier as time goes on until the filter operation fails.

BACKWASHING INSTRUCTIONS

1. Switch off the Pump. Close the Inlet Valve. **NOTE:** If a pump is installed, switch the pump on and off, instead of closing and opening the Gate Valve.
2. Release the filter's pressure by loosening Pressure Release Valve until the Pressure Gauge needle drops to zero <0>.
3. Re-tighten Pressure Release Valve.
4. Depress and turn Handle to the **BACKWASH** position. In the **BACKWASH** position, the water flow is automatically reversed through the filter so that it is directed to the bottom of the filter vessel, up through the sand, flushing the previously trapped dirt and debris out the waste line.
5. Switch on the Pump. Backwash water will flow out through drain pipe.
6. When the backwash water in the sight glass appears clear, switch off the Pump.
7. Depress and turn the handle to the **RINSE** position. In the **RINSE** position, the water flow is directed through the filter bed and out of the filter through the backwash outlet. This process settles the filter media bed into place and ensures any dirt or debris is rinsed out of the filter, preventing possible return to the pool.
8. Switch on the Pump. Rinse water will flow out through the drain pipe.
9. When the rinse water in the sight glass appears clear. Switch off the Pump and Close the Inlet Valve.
10. Depress and turn the handle to the Filter position and switch on the Pump and pen the Inlet Valve for normal operation..

MAINTENANCE

The filter media will only require replacement once it has reached the limits of its designated life. Refer to the product information of the particular filter media used. To ensure the maximum life of the selected filter media, please follow the procedures below:

1. Backwash the filter regularly according to the instructions set under "Backwashing".
2. Refer to the specifications of the filter media used and implement regeneration procedures accordingly.
3. Maintain a correct chemical balance your pool/spa water. The chemical balance of water is a relationship between its Ph, total alkalinity, calcium hardness and water temperature. The water must be maintained at all times to the following:

PH LEVEL: BETWEEN 7.2 & 7.8.

TOTAL ALKALINITY: BETWEEN 80 & 150ppm.

CALCIUM HARDNESS: BETWEEN 150 & 300ppm. And within these tolerances be balanced to the Langelier Saturation Index within a range of -0.2 to +0.2.

NOTE: Testing kits are available to test the water yourself or alternately bring a sample of the water to a professional pool and spa shop.

4. Mains water and rural water supplies need to be monitored. Saturation (life) in mains water or bore (rural) will vary depending on water quality.
5. To prevent damage to the pump and filter and for proper operation of the system, clean pump strainer and skimmer baskets regularly.
6. Replace the pressure gauge if faulty readings are observed.

TROUBLESHOOTING

<p>Abnormal or excessive force to operate the multiport valve</p>	<p>Scoring or jamming with foreign matter or debris. If this condition persists after rinsing, disassemble the valve to clear. Continued operation of the valve may result in a non-sealing condition (damage to spider gasket). This will lead to water loss to the backwash line or to inefficient filtration.</p>
<p>Water is dirty</p>	<ol style="list-style-type: none"> 1. Insufficient filtration time. 2. Heavy contaminants or dirt load. 3. Dirty filter, requires backwashing. 4. Air leaking on suction (influent line). 5. Pump impeller vanes blocked. 6. In sufficient water supply (water level low, blockage). 7. Pump not primed. 8. In correct water chemistry. 9. Excessive flow of water for filter size. Foreign matter or debris forced through filter bed and through the under drain. 10. Other restrictions including (pool suction cleaners) resistance from other inline equipment such as strainers. Operating the filter on recirculate will determine if the restriction is in the filter. 11. Clogged or channeled filter media. Perform backwash or regeneration. Refer to maintenance section.
<p>Filter media in the backwash</p>	<p>Scoring or jamming with foreign matter or debris. If this condition persists after rinsing, disassemble the valve to clear. Continued operation of the valve may result in a non-sealing condition (damage to spider gasket). This will lead to water loss to the backwash line or to inefficient filtration.</p>
<p>Filter media returning to the pool</p>	<ol style="list-style-type: none"> 1. Excessive quantity of media in the filter. 2. Excessive waterflow. 3. Incorrect size or grade of filter media.
<p>Short filtration cycle</p>	<ol style="list-style-type: none"> 1. Presence of algae or a scale builds up. 2. Check water chemistry. 3. Excessive water flow, check pump size, mains water flow. 4. Filter blocked through calcium etc. clean filter media.

DISCLAIMER

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.



SAVE THESE INSTRUCTIONS.

Questions, issues or missing parts?

Before returning to your retailer, our customer service team is here to help.



Call Us: 909.628.0880

Email Us: customer@xtremepowerusa.com

Hours of Operation: 9am - 3pm PST Monday - Friday

PRODUCT MADE IN CHINA