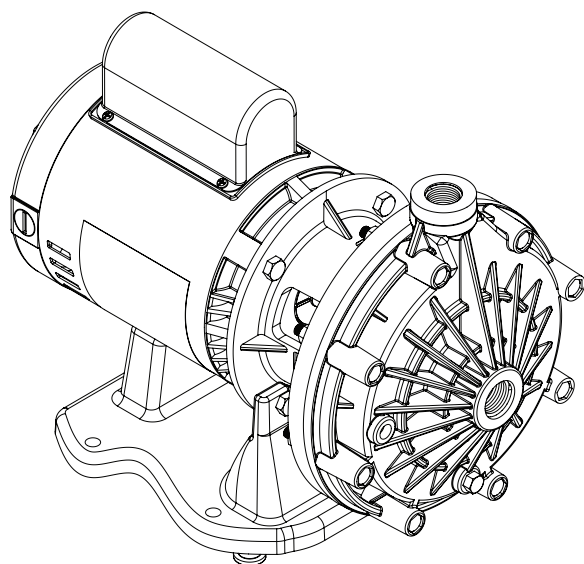




BOOSTER PUMP

PRESSURE-SIDE CLEANER PUMP



INSTALLATION AND USER'S GUIDE

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

IMPORTANT

A solid copper bonding conductor, not smaller than No. 8 AWG, should be connected from the accessible wire connector on the motor to all metal parts of the swimming pool, spa or hot tub structure and to all electrical equipment, metal conduit and metal piping within 5 ft. (1.5 m) of the inside walls of the swimming pool, spa or hot tub when the motor is installed within 5 ft. (1.5 m) of the inside walls of the swimming pool, spa or hot tub.

IMPORTANT SAFETY INSTRUCTIONS



IMPORTANT NOTICE

This guide provides installation and operation instructions for this pump. Consult Pentair with any questions regarding this equipment.

Attention Installer: This guide contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment after installation or left on or near the pump.

Attention User: This manual contains important information that will help you in operating and maintaining this product. Please retain it for future reference.

READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS



This is the safety alert symbol. When you see this symbol on your system or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠ DANGER

Warns about hazards that can cause death, serious personal injury, or major property damage if ignored.

⚠ WARNING

Warns about hazards that may cause death, serious personal injury, or major property damage if ignored.

⚠ CAUTION

Warns about hazards that may or can cause minor personal injury or property damage if ignored.

NOTE

Indicates special instructions not related to hazards.

Carefully read and follow all safety instructions in this manual and on equipment. Keep safety labels in good condition; replace if missing or damaged.

When installing and using this electrical equipment, basic safety precautions should always be followed, include the following:

⚠ DANGER

FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH. **THIS PUMP SHOULD BE INSTALLED AND SERVICED ONLY BY A QUALIFIED POOL SERVICE PROFESSIONAL. INSTALLERS, POOL OPERATORS AND OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS IN THE OWNER'S MANUAL BEFORE USING THIS PUMP. THESE WARNINGS AND THE OWNER'S MANUAL MUST BE LEFT WITH THE POOL OWNER.**

⚠ WARNING

Do not permit children to use this product.

⚠ WARNING

RISK OF ELECTRICAL SHOCK. Connect only to a branch circuit protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the circuit is protected by a GFCI.

⚠ WARNING

This unit must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of an electric shock. Do not use this pump. Disconnect the pump and have the problem corrected by a qualified service representative before using.

⚠ CAUTION

This pump is for use with permanent swimming pools and may also be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

General Warnings

- Never open the inside of the drive motor enclosure. There is a capacitor bank that holds a 230 VAC charge even when there is no power to the unit.
- The pump is not submersible.
- The pump is capable of high flow rates; use caution when installing and programming to limit pumps performance potential with old or questionable equipment.
- Code requirements for electrical connection differ from country to country, state to state, as well as local municipalities. Install equipment in accordance with the National Electrical Code and all applicable local codes and ordinances.
- Before servicing the pump; switch OFF power to the pump by disconnecting the main circuit to the pump.
- This appliance is not intended for use by persons (including children) of reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

⚠ DANGER

SUCTION ENTRAPMENT HAZARD: STAY OFF THE MAIN DRAIN AND AWAY FROM ALL SUCTION OUTLETS! THIS PUMP IS NOT EQUIPPED WITH SAFETY VACUUM RELEASE SYSTEM (SVRS) PROTECTION AND DOES NOT PROTECT AGAINST BODY OR LIMB ENTRAPMENTS, DISEMBOWELMENTS (WHEN A PERSON SITS ON A BROKEN OR UNCOVERED POOL DRAIN) OR HAIR ENTANGLEMENTS.



THIS PUMP PRODUCES HIGH LEVELS OF SUCTION AND CREATES A STRONG VACUUM AT THE MAIN DRAIN AT THE BOTTOM OF THE BODY OF WATER. THIS SUCTION IS SO STRONG THAT IT CAN TRAP ADULTS OR CHILDREN UNDER WATER IF THEY COME IN CLOSE PROXIMITY TO A DRAIN OR A LOOSE OR BROKEN DRAIN COVER OR GRATE.

THE USE OF UNAPPROVED COVERS OR ALLOWING USE OF THE POOL OR SPA WHEN COVERS ARE MISSING, CRACKED OR BROKEN CAN RESULT IN BODY OR LIMB ENTRAPMENT, HAIR ENTANGLEMENT, BODY ENTRAPMENT, EVISCERATION AND/OR DEATH.

The suction at a drain or outlet can cause:

Limb Entrapment: When a limb is sucked or inserted into an opening resulting in a mechanical bind or swelling. This hazard is present when a drain cover is missing, broken, loose, cracked or not properly secured.

Hair Entanglement: When the hair tangles or knots in the drain cover, trapping the swimmer underwater. This hazard is present when the flow rating of the cover is too small for the pump or pumps.

Body Entrapment: When a portion of the body is held against the drain cover trapping the swimmer underwater. This hazard is present when the drain cover is missing, broken or the cover flow rating is not high enough for the pump or pumps.

Evisceration/Disembowelment: When a person sits on an open pool (particularly a child wading pool) or spa outlet and suction is applied directly to the intestines, causing severe intestinal damage. This hazard is present when the drain cover is missing, loose, cracked, or not properly secured.

Mechanical Entrapment: When jewelry, swimsuit, hair decorations, finger, toe or knuckle is caught in an opening of an outlet or drain cover. This hazard is present when the drain cover is missing, broken, loose, cracked, or not properly secured.

NOTE: ALL SUCTION PLUMBING MUST BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL AND LOCAL CODES, STANDARDS AND GUIDELINES.

IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING TO MINIMIZE THE RISK OF INJURY DUE TO SUCTION ENTRAPMENT HAZARD:

- A properly installed and secured ANSI/ASME A112.19.8 approved anti-entrapment suction cover must be used for each drain.
- Each suction cover must be installed at least three (3') feet apart, as measured from the nearest point to nearest point.
- Regularly inspect all covers for cracks, damage and advanced weathering.
- If a cover becomes loose, cracked, damaged, broken or is missing, replace with an appropriate certified cover.
- Replace drain covers as necessary. Drain covers deteriorate over time due to exposure to sunlight and weather.
- Avoid getting hair, limbs or body in close proximity to any suction cover, pool drain or outlet.
- Disable suction outlets or reconfigure into return inlets.

⚠ WARNING The pump can produce high levels of suction within the suction side of the plumbing system. These high levels of suction can pose a risk if a person comes within the close proximity of the suction openings. A person can be seriously injured by this high level of vacuum or may become trapped and drown. It is absolutely critical that the suction plumbing be installed in accordance with the latest national and local codes for swimming pools.

⚠ WARNING A clearly labeled emergency shut-off switch for the pump must be in an easily accessible, obvious place. Make sure users know where it is and how to use it in case of emergency.

The Virginia Graeme Baker (VGB) Pool and Spa Safety Act creates new requirements for owners and operators of commercial swimming pools and spas.

Commercial pools or spas constructed on or after December 19, 2008, shall utilize:

(A) A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8a 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.

Commercial pools and spas constructed prior to December 19, 2008, with a single submerged suction outlet shall use a suction outlet cover that meets ASME/ANSI A112.19.8a and either:

- (A) A SVRS meeting ASME/ANSI A112.19.17 and/or ASTM F2387, or
- (B) A properly designed and tested suction-limiting vent system, or
- (C) An automatic pump shut-off system, or
- (D) Disabled submerged outlets, or
- (E) Suction outlets shall be reconfigured into return inlets.

⚠ CAUTION For Installation of Electrical Controls at Equipment Pad (ON/OFF Switches, Timers and Automation Load Center)



Install all electrical controls at equipment pad, such as on/off switches, timers, and control systems, etc. to allow the operation (startup, shut-down, or servicing) of any pump or filter so the user does not place any portion of his/her body over or near the pump strainer lid, filter lid or valve closures. This installation should allow the user enough space to stand clear of the filter and pump during system start-up, shut down or servicing of the system filter.

⚠ DANGER HAZARDOUS PRESSURE: STAND CLEAR OF PUMP AND FILTER DURING START UP.



Circulation systems operate under high pressure. When any part of the circulating system (i.e. locking ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the pump housing cover, filter lid, and valves to violently separate which can result in severe personal injury or death. Filter tank lid and strainer cover must be properly secured to prevent violent separation. Stand clear of all circulation system equipment when turning on or starting up pump. Before servicing equipment, make note of the filter pressure. Be sure that all controls are set to ensure the system cannot inadvertently start during service. Turn off all power to the pump. **IMPORTANT: Place filter manual air relief valve in the open position and wait for all pressure in the system to be relieved.**

Before starting the system, fully open the manual air relief valve and place all system valves in the "open" position to allow water to flow freely from the tank and back to the tank. Stand clear of all equipment and start the pump.

IMPORTANT: Do not close filter manual air relief valve until all pressure has been discharged from the valve and a steady stream of water appears. Observe filter pressure gauge and be sure it is not higher than the pre-service condition.

General Installation Information

- All work must be performed by a qualified service professional, and must conform to all national, state, and local codes.
- Install to provide drainage of compartment for electrical components.
- These instructions contain information for a variety of pump models and therefore some instructions may not apply to a specific model. All models are intended for use in swimming pool applications. The pump will function correctly only if it is properly sized to the specific application and properly installed.

⚠ WARNING Pumps improperly sized or installed or used in applications other than for which the pump was intended can result in severe personal injury or death. These risks may include but not be limited to electric shock, fire, flooding, suction entrapment or severe injury or property damage caused by a structural failure of the pump or other system component.

Pumps and replacement motors that are single speed and one (1) Total HP or greater cannot be sold, offered for sale, or installed in a residential pool for filtration use in California, Title 20 CCR sections 1601-1609.

CUSTOMER SERVICE / TECHNICAL SUPPORT

Hours: 8:00AM to 7:30PM EST (5:00AM - 4:30PM PST)

Call: (800) 831-7133

Visit: www.pentair.com

Fax: (800) 284-4151

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INSTALLATION

This booster pump is a 1.13 horsepower pump with a 1.0 service factor. The pump produces a minimum of 50 psi (3.4 bar) at 12 GPM (45.4 LPM).

Unit Location

Pump should be installed on a firm and level surface. Unless required by a local code, it need not be bolted down. Installation should be as close as possible to a filtered water return line and convenient location for servicing.

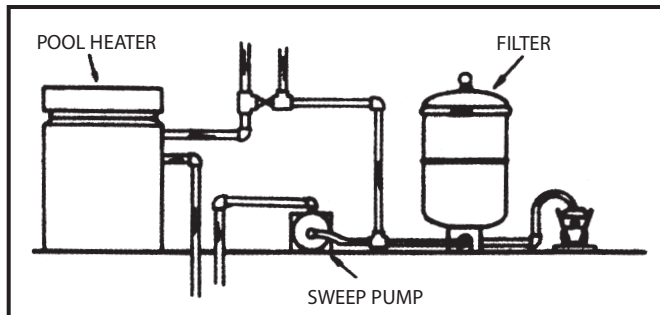
Note: Booster pump must always be connected to return line on discharge side of filter. Never connect suction side of booster pump ahead of filter. See **Figure 1**, at the bottom of this page.

Typical Installation - Heater Consideration

Suction side of booster pump must be connected to the return line after the heater. Except on solar installations, never connect suction side of booster pump ahead of filter or heater.

Note: Keep booster pump a minimum of 3 feet (0.9 meters) from heater. See **Figure 2A**.

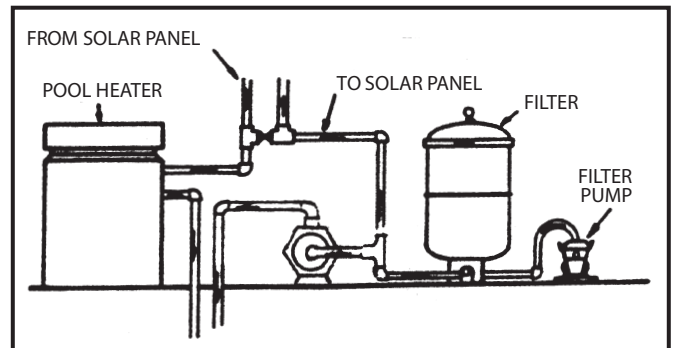
Figure 2A: Installation with Heater



Installation with Solar Heater

With or without a gas heater for back-up, when installing any one of Pentair's automatic pool cleaners in a pool with solar heating, the in-line tee must be installed on the return line between the filter and the solar heater. This minimizes the possibilities of an air lock in the sweep pump each time the solar panel is filled and assures an ample supply of water. (See **Figure 2B**).

Figure 2B: Installation with Solar Heater



Installation with Spa Pools

Connect suction side of the booster pump before spa bypass valve, if your pool is plumbed for a spa pool. See **Figure 3**.

Figure 3: Installation with Pool/Spa Combo

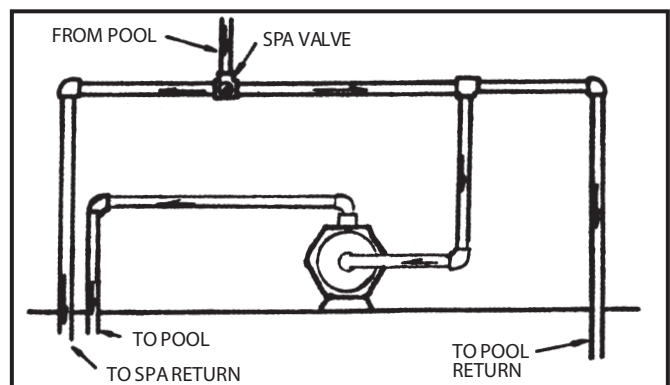
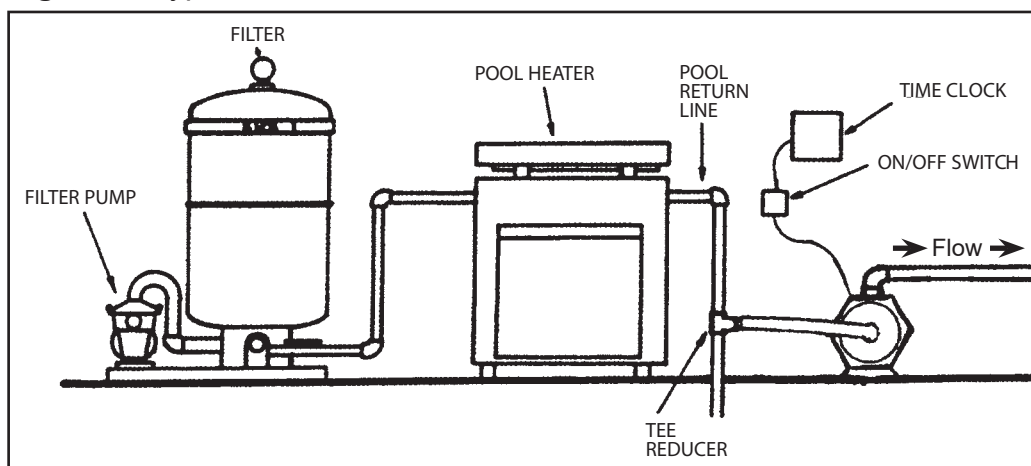


Figure 1: Typical Installation



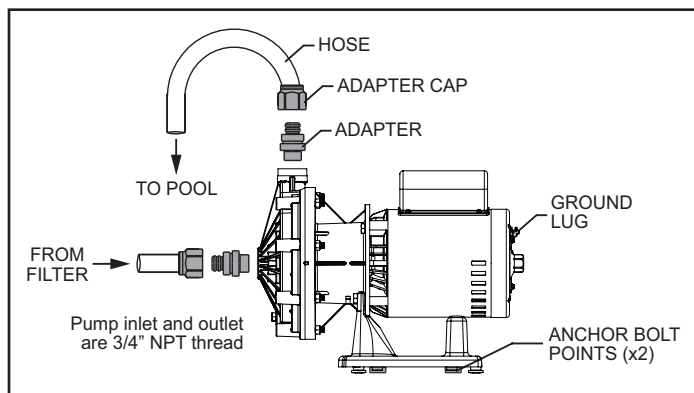
Pump Inlet Connection to Return Line

Use elbow and reducing bushing if needed on pre-plumbed installation. Use tee on existing installation. Connect pump suction to the return line after filter and heater as follows: Preferably, underneath side (NEVER ON TOP) of the horizontal return line.

Installation of Pump Hoses

1. Remove the adapter from hose kit bag (P/N 353020) and wrap thread seal tape around the 3/4 inch NPT threads of the adapter. At least four wraps is recommended.
2. Screw the adapter into the pump outlet. Torque to 60 in-lbs (6.8 Nm).
3. Cut the hose to an appropriate length. 6 ft (1.8 m) of hose has been provided for both the inlet and outlet.
4. Place the adapter cap over the hose (**Figure 4**) and slide the hose onto the adapter until the hose is flush against the wall where the threads begin. Heating of the hose or use of a lubricant may be useful if the hose is cold.
5. Screw the adapter cap onto the adapter and tighten to 60 in-lbs (6.8 Nm).
6. Repeat the process for both the inlet and outlet of pump. When routing the hose make sure there are no tight bends or kinks in the hose.

Figure 4: Installation of Pump Hoses

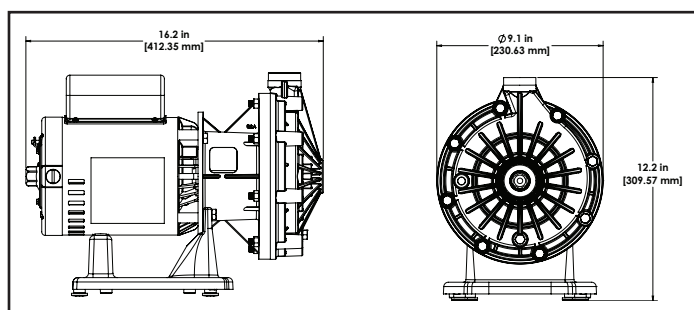


Specifications

Dimensions: 16.2" x 9.1" x 12.2" (See below)

Motor: 1.13 THP, 60 Hz

Power Supply: 120/240 VAC



Electrical Connections

⚠ WARNING



RISK OF ELECTRICAL SHOCK OR ELECTROCUTION

This pump must be installed by a licensed or certified electrician or a qualified service professional in accordance with the National Electrical Code (NEC) and all other applicable national or local codes and ordinances. Improper installation will create an electrical hazard which could result in death or serious injury to users, installers, or others due to electrical shock, and may also cause damage to property.

Always disconnect power to the pump at the circuit breaker before servicing the pump. Failure to do so could result in death or serious injury to service people, users or others due to electric shock.

Read all servicing instructions before working on the pump.

Wiring

1. Be sure all electrical breakers, switches and automatic controls are turned off before wiring motor.

⚠ WARNING

STORED CHARGE - Wait at least sixty (60) seconds before servicing.

2. Become familiar with the wiring diagram, volts, hertz, amps and phase of your particular pump motor. All of this information is provided on the motor nameplate label found on the side of the motor.
3. Be sure that the supply voltage meets the requirements listed on the motor nameplate. If these requirements are not met, permanent motor damage may occur.
4. For wiring sizes and general guidelines for proper electrical installation, please follow the specifications defined in the National Electrical Code and all other applicable national or local codes.
5. 3-Phase motors require external overload protection. An initial inspection is needed to ensure proper rotation of the pump.
Once installed, momentarily cycle the power on and then off. Note the rotation of the motor fan or shaft as it comes to a stop. If wired correctly the motor shaft and/or fan will match the rotation arrow noted on the pump.
6. Use a strain relief and be sure all electrical connections are clean and tight.
7. Cut the wires to the appropriate length so they do not overlap or touch when connected.

Grounding

1. Permanently ground the motor using the green ground screw. Use the correct wire size and type specified by National Electrical Code. Ensure the ground wire is connected to an electrical service ground.
2. The pump should be permanently connected to either a circuit breaker, 2-pole timer or 2-pole relay.

Note: If AC power is supplied by a GFCI circuit breaker, the pump should be wired on its own independent circuit **unless the pump is operated in tandem with a Pentair salt chlorine generator.**

Electrical Connections (cont.)

Bonding

1. Bond the motor to the structure in accordance with the National Electrical Code and all other applicable national or local codes. Use a solid copper bonding conductor not smaller than 8 AWG. For Canadian installations, a 6 AWG or larger solid copper bonding conductor is required. Run a wire from the external bonding screw or lug to the bonding structure.
2. Connect the wire from the accessible bonding lug on the motor to all metal parts of the swimming pool, spa, or hot tub structure and to all electrical equipment, metal conduit, and metal piping within 5 ft. (1.5 m) of the inside walls of the swimming pool, spa, or hot tub. Run a wire from the external bonding screw or lug to the bonding structure.

⚠ WARNING Before establishing or restoring power to the pump, be sure all electrical connections are tight and all electrical and wiring compartment covers are properly installed.

Note: When the pump is started and stopped by removing power with a relay or timer, a two-pole device should be used to apply and remove power to both POWERLINE TERMINALS. Pentair offers GFCI breakers which offer appropriate personal protection while meeting 2008 to current NEC Standards for Pool Pumps. See Pentair product catalog for details.

Time Clock

A separate time clock is recommended. To ensure proper sequence of filter pump and booster pump, the time clocks must be reset if power is interrupted.

The automatic pool cleaner must be run for a length of time necessary to clean the pool, but should never be allowed to run while filter system is off. This will result in damage to the booster pump. Running the automatic pool cleaner without the filter system in operation will void warranty. The automatic pool cleaner should start operating one half hour to forty-five minutes after the filter pump starts and stop one half hour to forty-five minutes before the filter pump stops.

Manual Switch

A manual switch is recommended. It should be located between the time clock and the booster pump. The switch eliminates turning the pump off at the time clock.

MAINTENANCE

Pump Seal

The booster pump is fitted with a mechanical shaft seal which is water lubricated and water cooled. If the pump is run without water this seal will be damaged. **NEVER OPERATE UNLESS FILTER SYSTEM IS ON.**

Servicing the Pump

This motor is a drip proof motor, but can be damaged by rainfall, splash or flooding by causing water to enter the motor.

Disassembly

1. Turn off booster pump motor and close valves.
2. Unscrew suction line in middle of volute.
3. Loosen nuts and remove bolts between booster pump volute and seal bracket.
4. Remove cap from the back end of motor. Use a crescent wrench or open end wrench to hold shaft from spinning.
5. Hold wrench and turn impeller counter-clockwise to remove.

Removing the Seal

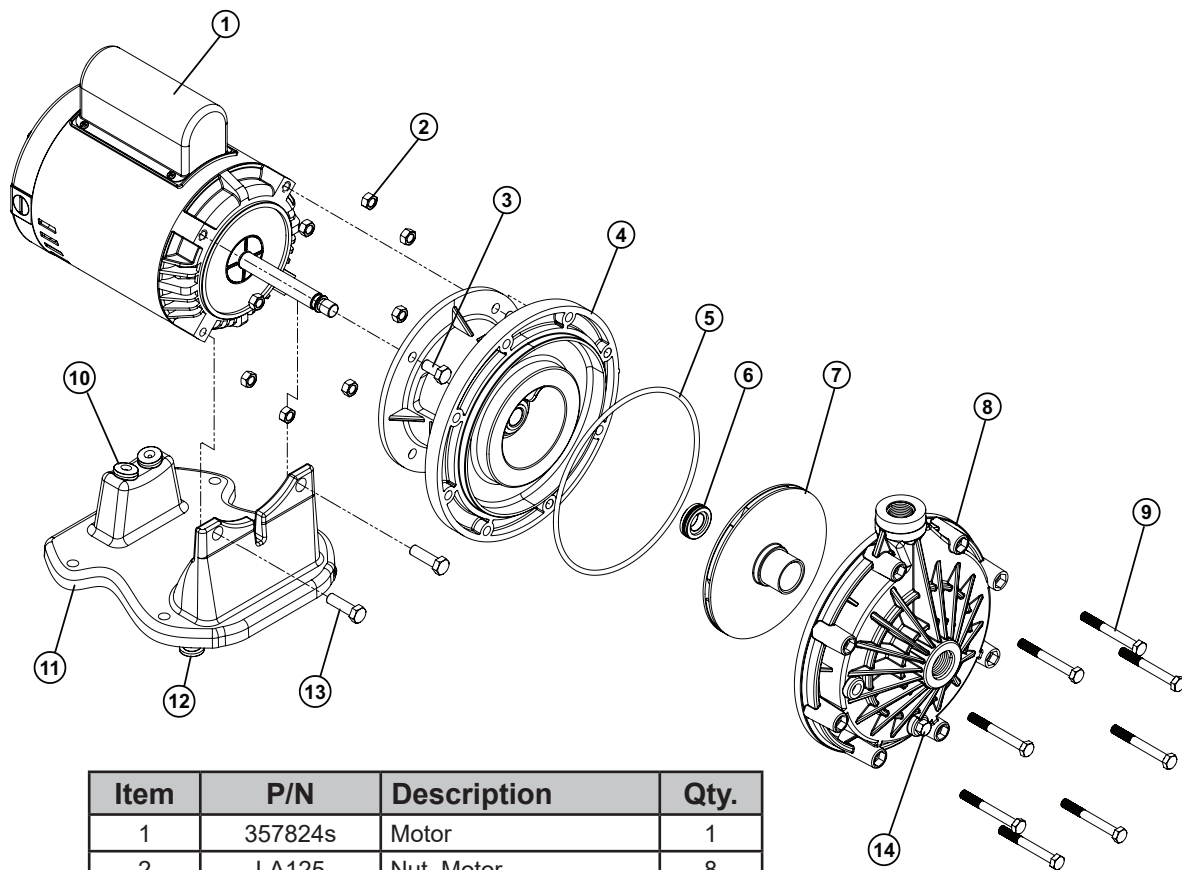
1. Stand motor on end, using one screwdriver slowly pry seal out of impeller. Remove seal bracket and dislodge seal from backside of seal bracket using hammer and screwdriver.

Reassembly

1. After replacing the necessary parts, reassemble by reversing order of steps 1-5 above.
2. Ceramic seal must be perfectly clean of any foreign objects or dirt. If seal is not clean, it will cause leakage. The ceramic seal must go in with the side containing grooves facing into the center of the rubber gasket, otherwise it will leak.
3. Replace impeller and seals if warped or discolored. This condition is caused by overheating due to pump running dry. Smooth surface or ceramic seal should be parallel to and facing away from back side of impeller.
4. Silicone backside of metal flange on spring seal, push down until flush in center of seal bracket. Be careful not to get silicone on the spring seals contact surface.

**If you have any questions, contact Pentair at:
1-800-831-7133**

REPLACEMENT PARTS



Item	P/N	Description	Qty.
1	357824s	Motor	1
2	LA125	Nut, Motor	8
3	LA135	Bolt, Motor	2
4	LA295	Seal Bracket	1
5	LA415	O-ring, Seal Bracket	1
6	071734s	Shaft Seal	1
7	LA05L	Impeller	1
8	LA39534	Volute	1
9	LA115	Bolt, Volute	8
10	MA36s	Grommet	2
11	LA41	Motor Stand	1
12	MA36	Grommet	4
13	LA136	Bolt, Motor Stand	2
14	LA385	Drain Plug	1
-	PA375	O-ring, Drain Plug	1
-	353020	Hose Kit	1



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