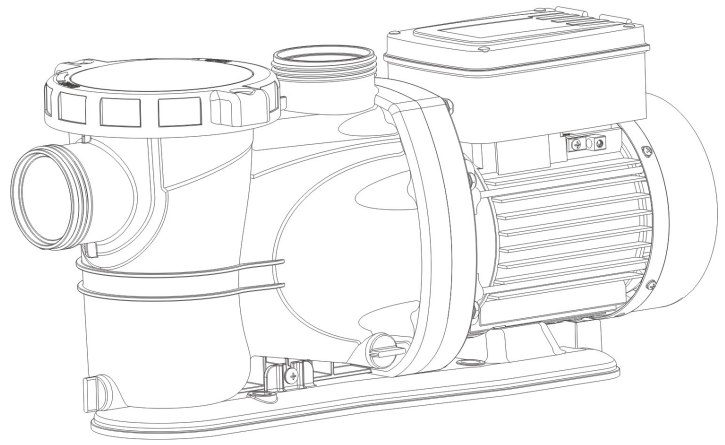




Libertyville, Illinois 60048
www.intermatic.com



PURFLO 2-SPEED POOL PUMPS

INSTALLATION AND OPERATING INSTRUCTIONS OWNER'S MANUAL

SAFETY SECTION

Warning

The equipment must be installed and serviced by a qualified technician in accordance with all applicable codes and ordinances. Improper installation can create hazards resulting in property damage, serious injury, or death. Improper installation will void the warranty. Follow the guidelines below for pump installation, which minimizes the risk to pool, spa, and hot tub users.

- Pump suction is hazardous and can trap, drown, or dismember bathers. Do not use or operate swimming pools, spas, or hot tubs if a suction outlet cover is missing, broken, or loose.
- To reduce the risk of injury, do not allow children to use this product unless they are closely supervised at all times.
- Entrapment protection must be designed to eliminate the possibility of suction entrapment or hair entrapment.
- Risk of electric shock or electrocution. Connect only to a grounding-type receptacle protected by a ground-fault circuit- interrupter (GFCI).
- To reduce the risk of electric shock, install at least 6 feet from the inside walls of a pool. Do not use an extension cord. Provide a properly located outlet.
- To reduce the risk of electrical shock, replace the damaged cord.
- To avoid electrical shock hazards, always turn the power off the motor before draining the pump.
- If installed in an outer enclosure, adequate ventilation and free air circulation must be provided to prevent motor overheating.

PRODUCT DESCRIPTION

The self-priming two-speed pool pump is designed for high efficiency and easy installation and maintenance. It is constructed for years of trouble-free service. This swimming pool pump is designed for use with permanently installed swimming pools only.

Note: This pump is for use with permanently installed pools only. Do not use with storable pools. Max liquid temperature: +122°F

Note: This manual contains essential information about this product's installation, operation, and safe use. Once installation is complete, this manual must be given to the owner/operator of this equipment.

IMPORTANT SAFETY INSTRUCTIONS

Always follow basic safety precautions with this equipment, including:

This pump is for use with permanently installed pools. Do not use with portable pools. A permanently installed pool is constructed in, on the ground, or in a building and is not intended to be disassembled or moved.

Provide sufficient ventilation to maintain air temperature below the maximum ambient temperature rating shown on the motor nameplate. Any enclosure or pump house must allow adequate ventilation to ensure the ambient temperature remains below the motor rating when the pump operates.

Locate the pump on a non-combustible surface that is as close to the pool as possible. The surface should be hard, level, dry, well ventilated. The surrounding area should protect the pump from the elements and allow sufficient space for maintenance and service. Ensure the drainage will flow away from the pump. To reduce vibration and pipe stress, use anchor bolts to secure the pump base to the surface.

Design the piping system to allow the pump suction inlet height to be as close to the water level as possible. Mount the pump below the water level for easy priming. If the pump must be located above the filled water level, keep the vertical distance to a minimum. Use short, direct piping to the suction; this will minimize friction loss.

Motors run at high temperatures. Do not allow leaves, debris, or foreign matter to collect around the pump motor. Allow the motor to cool before handling.

POOL PUMP SUCTION REQUIREMENTS

Suction Outlet Covers

All suction inlet covers must be maintained and replaced if cracked, broken, or missing.

Testing and Certification

All suction inlet covers must comply with ASME/ANSI specifications for suction fittings for use in swimming Pools, Spas, Hot Tubs, and Whirlpool applications.

The product must be tested for compliance with the standards and the certification must be included with the components,

Suction inlets must be designed so that water is drawn simultaneously. A vacuum relief device can be installed in line leading to the pump suction.

All Suction Outlet Covers must conform to ASME/ANSI A112.19.18M, must be a minimum 18x23 grate or larger, or must have an approved channel drain system. Skimmers are exempted. All pool and spa single or multiple-outlet circulation systems shall be equipped with tan atmospheric vacuum relief system. The system must be ASME/ANSI A112.19.17 Rated.

Any pool or spa shall immediately be closed if the cover or grate is damaged or missing.

Suction outlet covers/grates shall be tested and listed by a nationally recognized testing laboratory as conforming to ASME/ANSI A112.19.8.

INSTALLATION

Unpacking

After unpacking the unit, carefully inspect for any damage that may have occurred during transit. Check for loose, missing, or damaged parts.

Installation

Only qualified, licensed personnel should install pumps and wiring. The pump must be located away from corrosive or flammable chemicals.

Locate the pump as close to the pool as practical and run the suction line as directly as possible. This cuts down on friction loss through the pipes and fittings.

The manufacturer recommends protecting the product from the sun and rain when it is being used outdoors. Note: Motors require free circulation of air to aid in cooling.

Threaded connections

Use only Teflon® tape or equivalent on threaded plumbing connections. Other pipe compounds may damage the threads. Do not use silicone or petroleum-based compounds. Do not over tighten.

Consider climatic conditions when applying adhesives. Atmospheric conditions with high humidity will make the adhesive action of certain glues less effective. Follow the manufacturer's instructions.

Pump plumbing

The suction line should be as large as or larger than the discharge pipe. Avoid using a suction pipe smaller than the pump connection. The pump is designed to accept 1-1/2" inch suction piping. Use rigid or flexible PVC pipe. Ensure pipe ends are clean and free of any flash caused by cutting. Use the proper glue for the pipe selection.

1. Please keep the pipes as straight and short as possible and ensure that they are of appropriate size.
2. Avoid connecting an elbow directly to the pump inlet. Use a length of straight pipe to ensure proper water entry to the pump.
3. Slope horizontal runs upward to the pump to prevent trapping air.
4. To reduce strain on the pump, it is advisable to use independent piping supports.
5. Keep as much of the suction line as possible below the water level to reduce priming time.
6. Valves and unions should be installed in the pump suction and return lines to make servicing and maintenance easier, particularly if the system is installed below deck level.

NOTICE: Use Teflon tape or a pipe thread compound stick (1.25oz) to make threaded connections to the pump.
Do not use pipe dope.

NOTICE: Use a supplier-recommended primer to secure the glued joints. Many local codes require a primer with a purple tracer to verify primer use.

Teflon Taping Instructions

Use only new or clean PVC pipe fittings. Wrap male pipe threads with one to two layers of Teflon tape. Cover the entire threaded portion. Do not over-tighten. If leaks occur, remove the pipe, clean off old tape, rewrap with one to two additional layers of tape, and reconnect.

Fittings

Fittings restrict flow. For the best efficiency, use the fewest number of fittings as possible. Avoid fittings that could trap air. Pool fittings must

conform to International Association of Plumbing and Mechanical Officials (IAPMO) standards. Use only non-entrapping suction fitting or double suction.

Electrical

Ground the motor before connecting to the electrical supply. Failure to ground the motor may cause severe or fatal electrical shock hazards.

7. Never ground to a gas supply line.
8. To avoid dangerous or fatal electrical shock, turn OFF the power to the motor before working on electrical connections.
9. Ground Fault Circuit Interrupter (GFCI) tripping indicates an electrical problem. If GFCI trips and will not reset, have a qualified electrician inspect and repair the electrical system.
10. Verify that the supply voltage matches the nameplate voltage. Incorrect voltage can seriously damage the motor and void the warranty.

Voltage

The voltage at the motor must be within 10% of the motor nameplate rated voltage, or the motor may overheat, causing overload tripping and reduced component life. If the voltage does not fall within the specified range, consult the power company. The motor voltage requirement is 115VAC/60Hz. The motor's current rating is 1.5HP/8.5Amps and 2HP/10.5 Amps at high speed.

Grounding/bonding

Install ground bond and wire motor according to local or National Electrical Code requirements. Permanently ground the motor. Use the ground terminal for electrical service ground.

1. Bond motor to the pool structure. Use a solid copper conductor, size No. 8 AWG or larger. Run the wire from external bonding to reinforcing rod or mesh. Connect a No. 8 AWG solid copper bonding wire to the pressure wire connector provided on the motor housing and to all metal parts of the swimming pool, spa, or hot tub to all electrical equipment, metal piping, or conduit within 5 feet of the inside walls of swimming pool, spa, or hot tub.

Wiring

Follow all national and local wiring codes. If unsure of code requirements, consult a professional electrician. Make sure the circuit breaker size is rated sufficiently to power the pump. If other lights or appliances are also on the same circuit, be sure to add their amp loads to the pump amp load. If unsure, consult a licensed electrician.

A Ground Fault Circuit Interrupter (GFCI) is required in the circuit. See the manufacturer's instructions for the size of GFCI required and test procedures for GFCI.

OPERATION

CAUTION: DO NOT run the pump dry.

If the pump is run dry, the mechanical seal will be damaged, and the pump will start leaking. If this occurs, the damaged seal must be replaced. ALWAYS maintain a proper water level in your pool. If the water level falls below the skimmer opening, the pump will draw air through the skimmer, losing the prime and causing the pump to run dry, resulting in a damaged seal.

1. Before removing the trap cover.
2. Stop the pump before proceeding.
3. Close gate valves in suction and discharge pipes.
4. Release all pressure from the pump and piping system.
5. Never tighten or loosen the clamp while the pump is operating.
6. If the pump is being pressure tested, be sure pressure has been released before removing the trap cover. Do not block pump suction. To do so with the body may cause severe or fatal injury. Small children using the pool must ALWAYS have close adult supervision.

Priming Pump

Never operate the pump without water. Water acts as a coolant and lubricant for the mechanical shaft seal.

1. Release all pressure from the filter, pump, and piping system; see the filter owner's manual.
2. In a flooded suction system (water source higher than the pump), the pump will prime automatically when the suction and discharge valves are opened.
3. If the pump is located above the normal pool water level, remove the ring and cover, assemble, and fill the basket and pump with water.
4. Clean and inspect the O-ring and reinstall the trap. Replace ring and cover assembly. Rotate clockwise to tighten the cover.

NOTICE: *Tighten the ring and cover assembly by hand; do not use tools. Pump prime time will depend on the vertical distance and length of the suction line. The pump is designed to prime at 10 ft or less. If the pump does not prime, ensure all valves are open and the suction pipe is submerged. Verify there are no leaks in suction lines. See the Troubleshooting Guide for further assistance.*

MAINTENANCE

Routine Maintenance

Clean the strainer basket regularly. Do not strike the basket to clean as it may damage it. Debris or trash collected in the basket will choke off water flow through the pump.

Before attempting to clean the basket:

1. Shut the power off to the pump motor.
2. Close valves in suction and discharge and release pressure from the system. Hazardous suction can trap hair or body parts, causing severe injury or death. Do not block suction.
3. Removing the ring and cover assembly by turning counterclockwise. If necessary, tap handles gently with a rubber mallet.
4. Remove the basket and clean. Inspect holes in the basket for blockage. Clean the basket with water and place it in the trap. Verify that the basket is oriented correctly in the pump housing.
5. Clean and inspect lid O-Ring; reinstall ring and cover assembly. Tighten the trap cover by hand only.
6. Keep the motor clean. Make sure the air vents on the motor are free from any obstruction.
7. Prime pump (see priming instructions).

Storage/Winterization/Draining Pump

1. Shut the power off to the pump motor.
2. Pump down the water level below all inlets to the pool.
3. Remove basket cover.
4. Drain the basket housing and pump housing through the pump drain plugs.
5. Clean the pump and basket, then replace the cover assembly.
6. Be sure the motor is kept dry and covered.

Explosion hazard. Purging the system with compressed air can cause components to explode, with risks of severe injury or death to anyone nearby. Use only a low-pressure (below 5 PSI), high-volume blower for purging the pump, filter, or piping.

NOTICE: *Allowing the pump to freeze will damage the pump and void the warranty.*

NOTICE: *Use only non-toxic anti-freeze. Do not use automotive anti-freeze. It is highly toxic and may damage plastic components in the system.*

PUMP SERVICE TROUBLESHOOTING GUIDE

Read and understand safety and operating instructions in the manual before doing any work on the pump. Only Qualified personnel should electrically test or service the pump motor.

A. Pump won't prime.

1. Make sure the pump and basket bodies are full of water. See priming instructions.
2. Make sure there are no leaks in the suction piping.
3. Make sure suction inlets are well below the water level to prevent the pump from sucking air.
4. Check for clogging or obstruction.
5. A pump is designed to prime at a vertical distance of 10 ft or less. Verify suction lift is 10 ft or less. Lower pump closer (vertically) to the water source.

B. Low water flow.

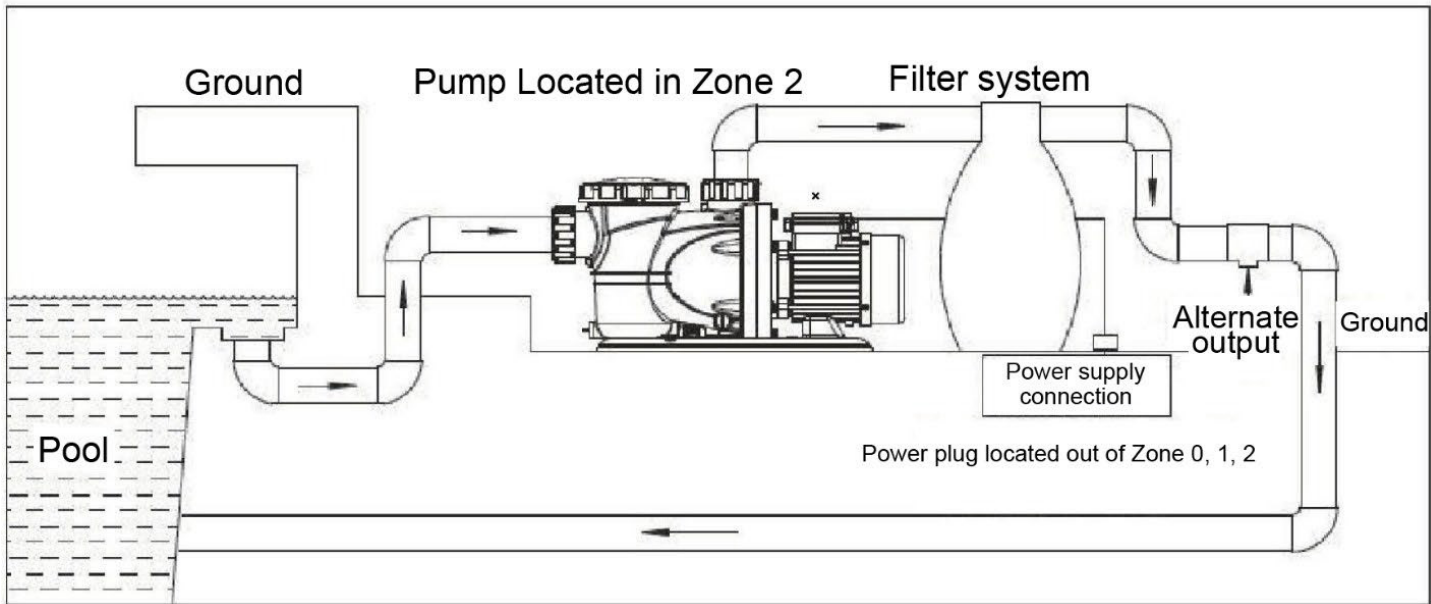
1. Make sure the suction trap is not clogged. If it is, clean the trap and strainer.
2. Make sure the impeller is not clogged.
3. The pump is switched to low speed.
4. Impeller and diffuser may be worn. If so, order replacement parts from the Repair Parts List, Page 7.
5. The pump may be trying to push a column of water too high. If so, a higher head pressure pump is needed.

C. Motors running slow or won't start.

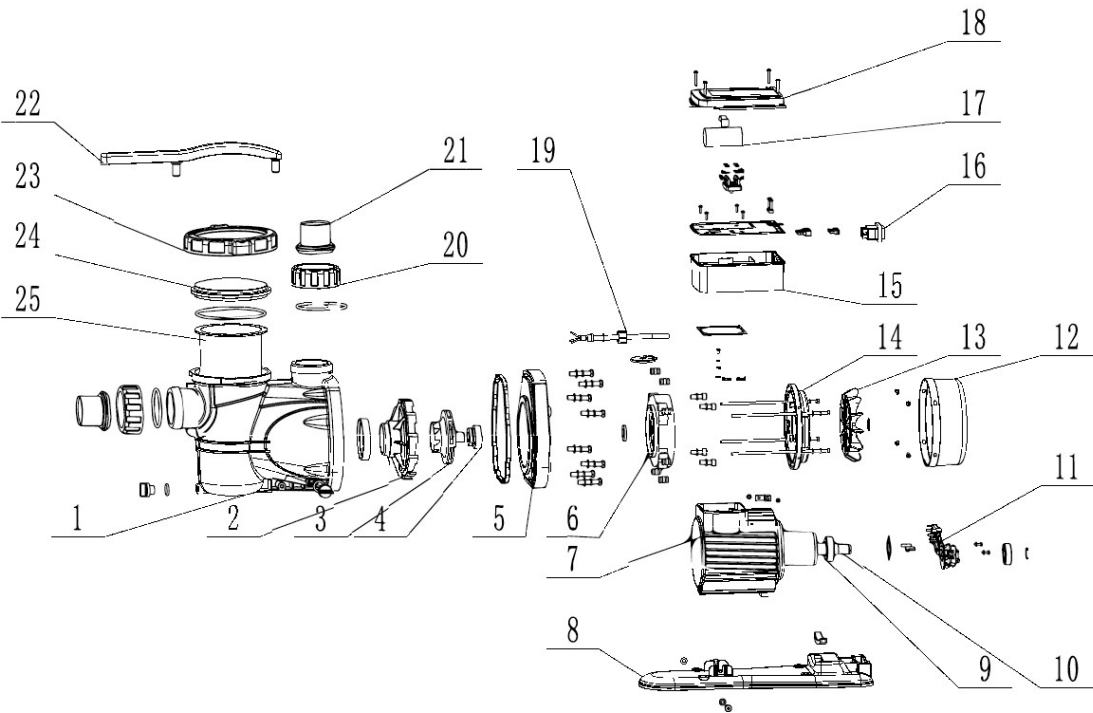
1. While running, check the voltage at motor terminals. If it is low, consult your power company.
2. The Pump is equipped with Automatic Thermal Overload Protection. The motor will automatically shut off under normal operating conditions before heat damage build-up due to an improper operating condition can occur. The motor will auto-restart when a safe heat level is reached.
3. The pump may be too hot.
 - a. Check line voltage. Consult a licensed electrician if it is less than 90% or more than 110% of the rated voltage.
 - b. Increase ventilation.
 - c. Reduce ambient temperature.
 - d. Tighten loose connections.
4. Open capacitor.

D. Noisy pump.

- 1. The pump assembly will be strained if suction and discharge piping are not adequately supported. The installation illustration is shown below.
- 2. Air leaks in suction, causing noise in the pump.
- 3. Do not mount the pump on a wooden platform. Securely mount it on a concrete platform for the quietest performance before working on the pump or motor.



Service Parts



25	Filter	PP
24	Pump cover	PC
23	Pump cover nut	PA6
22	Spanner	PP
21	Adapter	PVC
20	Adapter nut	ABS
19	Power cord	
18	Terminal box cover	ABS
17	Capacitor	
16	Switch	
15	Terminal box	ABS
14	End plate	ADC12
13	Fan	PP
12	Fan cover	PP
11	centrifugal switch	
10	Rotor	
9	bearing	
8	Baseboard	PP
7	Stator	
6	Support	ADC12
5	Plastic support	PP
4	Mechanical seal	
3	Impeller	PP0
2	Diffuser	PP
1	Pump body	PP

LIMITED WARRANTY

If within the warranty period specified, this product fails due to a defect in material or workmanship, Intermatic Incorporated will repair or replace the failed part or the entire unit with a new or factory refurbished product, at its discretion, free of charge.