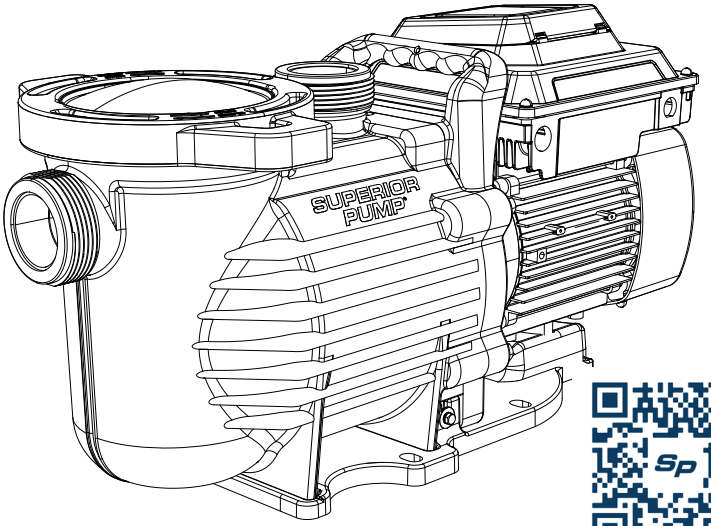
SUPERIOR PUMP®

INSTALLATION & OPERATION MANUAL SMART VARIABLE SPEED PUMP

Models: 98150, 98300



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IMPORTANT WARNING AND SAFETY INSTRUCTIONS

ATTENTION INSTALLER: This manual contains important information about the installation, operation, and safe use of this pump. This manual should be given to the owner and/or operator of this pump after installation or left on or near the pump.

ATTENTION USER: This manual provides important information that will help you in operating and maintaining this pump. Please keep it for future reference.

SAFETY GUIDELINES

Carefully read, understand and follow all safety instructions in this manual.

⚠ This is the safety alert symbol. When you see this symbol, look for one of the following signal words.

⚠ DANGER Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ CAUTION Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ WARNING Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE Indicates special instructions not related to hazards.

The following basic safety precautions should always be followed when installing and using this electrical equipment:

⚠ DANGER SERIOUS BODILY INJURIES OR DEATH CAN RESULT FROM FAILURE TO FOLLOW ALL INSTRUCTIONS. POOL OPERATORS AND OWNERS MUST READ AND UNDERSTAND ALL WARNINGS AND INSTRUCTIONS IN THIS OWNER'S MANUAL BEFORE USING THIS PUMP. THIS OWNER'S MANUAL AND ALL WARNINGS MUST BE LEFT WITH THE POOL OWNER.

⚠ WARNING To reduce the risk of injury, do not allow children to use this product.

⚠ WARNING **RISK OF ELECTRICAL SHOCK.** Connect this unit only to a circuit protected by a ground fault circuit interrupter (GFCI). If you're uncertain if the circuit is protected by a GFCI, contact a licensed electrician to verify.

⚠ WARNING This unit must be connected only to a power supply circuit that is protected by a ground fault circuit interrupter (GFCI). The installer should install an appropriate GFCI and it should be tested on a regular basis. To test the GFCI, press the test button. The power supply should be interrupted. Press the reset button, the power should be restored. If the GFCI does not operate in this manner, the GFCI is defective and should be replaced. It's possible that an electric shock may occur if the GFCI interrupts power to the pump without the test button being pressed. Disconnect the pump from the power supply and contact a qualified electrician to replace the GFCI. Never use a pump with a defective GFCI. Always test the GFCI before use.

⚠WARNING Don't expose the pump to freezing temperatures. Discharge lines exposed to freezing temperatures should be positioned with a downward slope to prevent freezing.

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

General Warnings:

- Never open the motor enclosure of the drive or motor. This unit contains a capacitor bank that retains a 230 VAC charge even if the power is turned off.
- This pump is not submersible. Do not submerge any part of this pump.
- This pump is capable of developing high flow rates. Use caution when installing and programming this pump with old equipment in questionable working order as damage may occur.
- Depending on state, and local municipal codes, there may be differing requirements for electrical connections. Follow all local & state codes and ordinances as well as the National Electrical Code when installing this equipment.
- Always disconnect the main power supply before attempting to service the pump.
- Unless supervised or instructed by a person responsible for their safety, this appliance is not intended for use by individuals (including children) with reduced physical, mental, or sensory abilities, or without experience and knowledge.

⚠ DANGER **HAZARDS RELATED TO SUCTION ENTRAPMENT:** STAY AWAY FROM ALL SUCTION OUTLETS AND STAY OFF THE MAIN DRAIN! THIS PUMP IS NOT EQUIPPED WITH SAFETY VACUUM RELEASE SYSTEM (SVRS) PROTECTION AND DOES NOT PROTECT AGAINST BODY OR LIMB ENTRAPMENTS. TO PREVENT ACCIDENTS, PREVENT YOUR BODY AND/OR HAIR FROM BEING ENTAGLED IN THE POOL SUCTION INLETS.

This pump produces a strong vacuum and a high level of suction at the main drain of the body of water. Adults and children can become trapped underwater if they come in close proximity to a drain or a loose or broken drain cover or grate.

The use of a swimming pool or spa with non-approved covers or using the pool or spa when covers are missing, cracked, or broken cover can cause limb entrapment, hair entanglement, body entrapment, evisceration, and/or death.

The suction at drains and outlets can cause:

Limb Entrapment: An arm or leg can get pulled into a drain opening and become stuck, especially if the drain cover is broken, loose, cracked, or not attached correctly.

Hair Entanglement: Hair can get caught or tangled in the drain cover, trapping the swimmer underwater. This can happen when the drain cover can't handle the pump's flow rate.

Body Entrapment: Part of a swimmer's body can become sealed against the drain if the drain cover is damaged, missing, or not rated for the pump being used.

Evisceration/Disembowelment: If a drain cover is missing or not secured and someone sits on the open outlet—often in shallow or children's pools—the strong suction can cause severe internal injuries**.**

Mechanical Entrapment: Jewelry, swimsuits, hair accessories, fingers, toes, or knuckles can get caught in a drain opening if the cover is broken, loose, cracked, missing, or improperly secured.

NOTICE ALL SUCTION PLUMBING MUST BE INSTALLED IN ACCORDANCE WITH THE LATEST LOCAL AND NATIONAL CODES. IT MUST ALSO COMPLY WITH ALL SAFETY STANDARDS AND GUIDELINES.

⚠WARNING **IN ORDER TO REDUCE INJURY RISKS FROM SUCTION ENTRAPMENT HAZARDS:**

- Each drain must be equipped with an ANSI/ASME A112.19.8 approved anti-entrapment suction cover.
- Each suction cover should be installed a minimum of three (3') feet apart measuring between the closest points.
- Regularly check all covers for cracks, damage, and advanced weathering and replace if necessary.
- Replace a drain cover if it becomes loose, cracked, damaged, broken, or missing with a certified replacement cover.
- Replace drain covers as necessary. Drain covers deteriorate over time due to exposure to sunlight and weather.
- Prevent getting hair, limbs or your body in close proximity to any suction cover, pool drain, or outlet.
- Disable suction outlets or reconfigured into return inlets.

⚠WARNING A high level of suction can be generated by this pump in the plumbing system's suction side. The high level of suction can pose a threat to those in close proximity to the suction openings. This high vacuum can cause serious injuries or cause people to drown by becoming trapped. Swimming pool suction plumbing must be installed according to the latest national and local codes.

⚠WARNING A clearly identified emergency shut-off switch for the pump should be located in a highly visible location. Ensure that all users of the pool know where it is located and how to use it in case of an emergency.

The Virginia Graeme Baker (VGB) Pool and Spa Safety Act establishes new requirements for commercial swimming pool and spa owners and operators.

On or after December 19, 2008, commercial pools and spas must use:

A multiple main drain system without isolation capability with suction outlet covers complying with ASME/ANSI A112.19.8a Suction Fittings for Swimming Pools, Wading Pools, Spas, and Hot Tubs and either:

(1) Safety vacuum release systems (SVRS) that meet ASME/ANSI A112.19.17 Manufactured Safety Vacuum Release systems (SVRS) for Residential and Commercial Swimming Pools, Spas, Hot Tubs, and Wading Pool Suction Systems, or ASTM F2387 Standard Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming Pools, Spas and Hot Tubs

(2) Suction-limiting vents that have been properly designed and tested

(3) System for shutting off pumps automatically

Pools and spas constructed before December 19, 2008, with a single submerged suction outlet, must use a suction outlet cover that meets ASME/ANSI A112.19.8a or either:

(A) ASVRS compatible toASME/ANSI A112.19.17 and/or ASTM F2387, or

(B) Suction-limiting vents that have been properly designed and tested or

(C) System for shutting off pumps automatically, or

(D) Submerged outlets can be disabled or

(E) Reconfiguration of suction outlets into return inlets is required.

⚠ CAUTION For installation of electrical controls at the equipment pad (ON/OFF switches, timers, and automation load centers)

Ensure that all electrical controls are installed at the equipment pad, including switches, timers, and control systems to prevent the user from putting his/her body over or near a pump strainer lid, filter lid, or valve closure when starting, shutting down, or servicing a pump or filter. This installation should allow a user during system start-up, shutdown, or servicing of the filter, to stand far enough away from the filter and pump.

⚠ DANGER **HAZARDOUS PRESSURE:** When starting up, stand clear of the filter and pump. When parts of a circulating system are serviced (i.e. locking rings, pumps, filters, valves, etc.) air can enter and pressurize the system. It is possible for the pump housing cover, filter lid, and valves to violently separate when subjected to pressurized air. You must secure the strainer cover and filter tank lid to prevent violent separation.

When turning on or starting the pump, stand clear of all circulation equipment. You should note the filter pressure before servicing the equipment. Make sure that the pump controls are set so that it cannot start inadvertently during service.

IMPORTANT: Ensure that the filter manual air relief valve is in the open position and wait for all pressure in the system to be released.

Open the manual air relief valve fully and place all system valves in the "open" position before starting the system. Make sure you stand clear of any equipment when starting the system.

IMPORTANT: If the filter pressure gauge is higher than the pre-service condition, don't close the manual air relief valve until all pressure has been released from the valve and a steady stream of water appears.

Information about Installation:

- It is required that all work be performed by a qualified service professional and in accordance with all national, state, and local regulations.
- Ensure that electrical components are properly drained in the compartment.
- There are several models of pumps included in these instructions. Some instructions may not apply to a specific model. All models are intended toward swimming pool use. If the pump is properly sized for the specific application and properly installed, it will function correctly.

⚠ WARNING The improper size, installation, or use of pumps in applications for which they were not designed can result in serious personal injury or death. There are a number of risks involved, including electric shock, fire, flooding, suction entrapment, severe injury to others or property damage as a result of structural failures in pumps or other system components.

Pumps and replacement motors that are single speed and one (1) Total HP (THP) 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.

OVERVIEW

Pump Features:

- Energy Star 3.1, DOE, CEC, UL, CUL Certified, FCC
- Multiple programmable speeds and flow rates
- Control panel LED alarm signals notify user of error messages and/or improper operation.
- Large strainer basket with transparent cover for easy inspection.
- Handle for easy carrying and installation.
- Ultra quiet operation, as low as 42 decibels.
- ANSI standard fittings
- Quick and easy operation for in-ground self-priming pumps (98150 & 98300) and above ground swimming pool pump (98150 & 98300).
- Programable schedule to save energy consumption up to 80%.
- Compatible with most filters & cleaning systems.
- NSF 50 Priming test.
- **WEF: 8.8 (98150), 7.3 (98300)**

Drive Features:

- User-friendly interface
- Enclosures are UV and rain-proof
- Time schedule onboard
- Programmable Priming & Quick Clean mode.
- Display and retention of pump alarms
- Power input: 115/208-230V (98150), 230V (98300) 50 & 60Hz
- Power limiting protection circuit
- A 24-hour service is available. In case of power outages, the clock will be retained
- Lockout mode for the keypad

Drive Overview:

The pump is equipped with a variable speed, high efficiency motor that provides flexibility in terms of motor speed. There are settings for duration and intensity. Pumps are designed to run continuously maintaining a sanitary environment at the lowest possible speed, minimizing the consumption of energy while protecting the environment.

⚠ DANGER This pool pump motor is rated for 115/208-230 Volts (98150) or 230 Volts (98300) 50 or 60 Hz, and only for use in pools. Connecting incorrect voltage or use in other applications may cause damage, personal injury or damage to equipment.

The integrated electronics interface controls the speed and the duration of the run. The pump can operate at speeds ranging from 450 to 3450 RPM. The pump is designed to operate within the voltage range of 115/208-230 Volts (98150) or 230 Volts (98300) at either 50 or 60 Hz input frequency.

It is usually best to set the pump following our factory setting in order to minimize energy consumption; the fastest speed for the longest duration leads to more consumption of energy. However, the optimal settings can be influenced by a number of factors, such as the size of the pool, environmental conditions and the number of water features. Pumps can be programmed according to adapt to your specific needs.

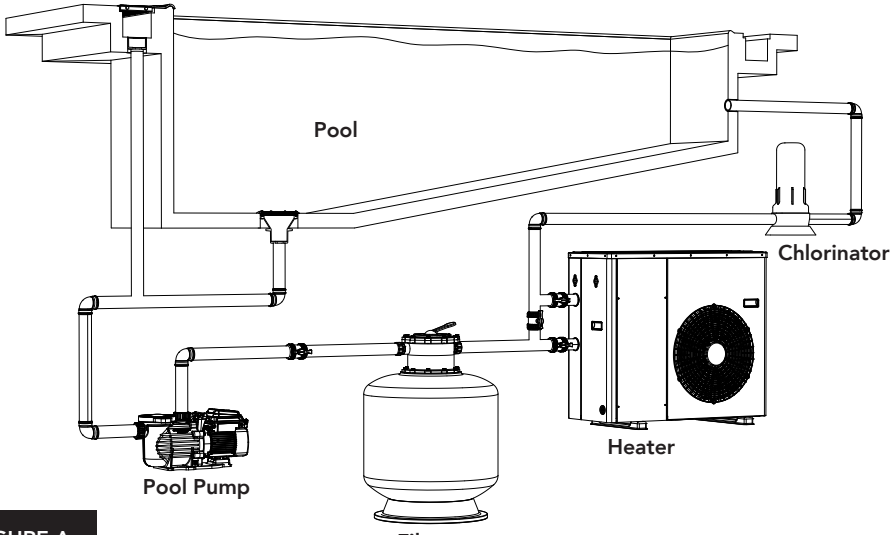


FIGURE A

INSTALLATION

Only a qualified plumbing and/or electrical professional should install this pump to ensure a safe and proper installation. Improper installation could result in serious injury or property damage. See **FIGURE A.**

PUMP LOCATION

NOTICE Do not install this pump within an enclosure or under the skirt of a spa or hot tub, unless it is marked accordingly.

NOTICE Ensure that the pump is mechanically secured to the equipment pad to prevent movement.

Make sure the pump meets the requirements listed below.

1. Install the pump as close as possible to the pool or spa. This will reduce friction loss and improve the overall efficiency of the pump. To further reduce friction loss and improve efficiency, use short, direct suction and return piping.
2. Install the pump a minimum of 5' (1.5 m) from the inside wall of the pool or spa and any other structures. Canadian installations require a minimum of 9.8' (3 m) from the pool water level.
3. Install the pump a minimum of 3' (0.9 m) away from the heater outlet.
4. Do not install the pump more than 8' (2.6 m) above the water level of the pool.
5. Install the pump in a well-ventilated location that is protected from excess moisture.
6. Install the pump maintaining a space of at least 3" from the rear of motor and 6" from the top of control pad for easy maintenance and repair of the motor if required. See **FIGURE B** on page 9.

⚠ CAUTION To reduce the risk of electric shock, the pool must be installed no closer than 6 feet (1.8 m) from any electrical outlet. Do not place portable appliances closer than 5 feet (1.5 m) from the pool.

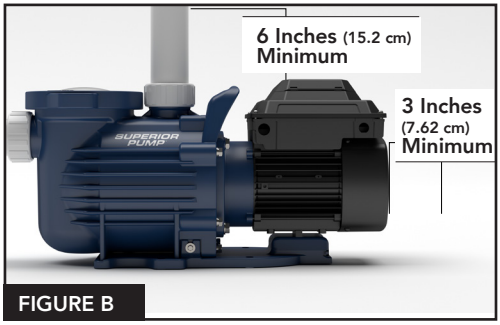


FIGURE B

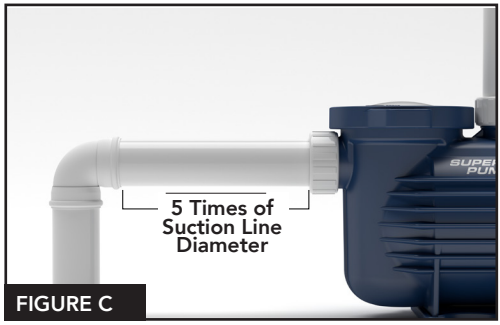


FIGURE C

PIPING:

1. The piping diameter on the suction side of the pump should be the same or larger than the return line.
2. The plumbing on the suction side of the pump should be as short as possible and use the fewest fittings as possible.
3. Install a valve on both suction and discharge lines so the pump can be isolated for easy maintenance and repair.
4. Any valve, elbow or tee installed in the suction line should be at least five (5) times the diameter of suction line pipe from the discharge port. For example, a 2" pipe requires a 10" length of pipe before the suction port of the pump, as below drawing. See **FIGURE C**.

FITTINGS AND VALVES:

1. Do not install 90° elbows directly into pump inlet and outlet.
2. Installing valves on suction and discharge pipes is an important part of any flooded suction system as it allows for easy maintenance and repair. However, the suction valve should not be placed any closer than five times the diameter of the suction pipe to the inlet.
3. Using a check valve in the discharge line is highly recommended for any application of this pump where there is significant plumbing height after the pump.
4. It is important to install check valves when plumbing in parallel with another pump to ensure proper operation. Check valves help to prevent backflow and reverse rotation of the impeller and motor.

ELECTRICAL INSTALLATION:

⚠ DANGER **RISK OF ELECTRIC SHOCK** This pump MUST be installed by a qualified and licensed electrician, or certified service professional, in accordance with the National Electrical Code and all applicable local codes and ordinances. If the pump is not properly installed, it can create an electrical hazard, which can potentially lead to death or serious injury, due to electric shock or electrocution.

A means for disconnection must be incorporated in the wiring in accordance with wiring codes. Always disconnect and lockout the power to the pump at the circuit breaker before installing or servicing the pump. Failing to do so can result in death or serious injury due to electric shock.

WIRING:

1. Remove the 4 protective caps from control panel cover. Use a Phillips screwdriver to loosen the 4 screws and open the cover see **FIGURE E**. Open the cover slowly to prevent damage to the wiring at the connection between the control panel and the circuit board.
2. Locate the wiring terminals on the circuit board. See **FIGURE D.**


FIGURE D


FIGURE E

WIRING OPERATION:

It is recommended to use 12AWG wire and a regular 20A GFCI breaker. If the 115V input trips, replace with a regular GFCI with 15A or more.

For 115V/60HZ (98150) input: Terminal L1 (Live Wire), Terminal N (Neutral Wire), Terminal G (Ground Wire). See **FIGURE F**.

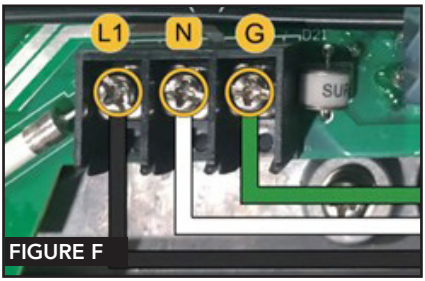


FIGURE F

For 208-230V/60HZ (98150) and 230V (98300) input: Terminal L1 (Live Wire 1), Terminal L2 (Live Wire 2), Terminal G (Ground Wire). See **FIGURE G**.

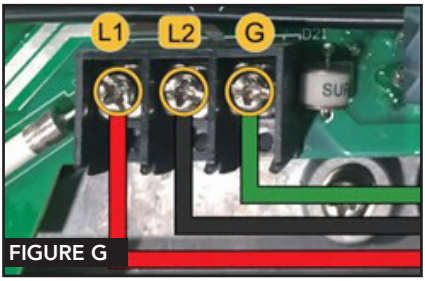


FIGURE G

⚠WARNING **STORED CHARGE**
Wait a minimum of 5 minutes before servicing.

1. All electrical breakers and switches MUST be turned off before wiring the motor.
2. Ensure the power supply meets the requirements listed on the motor name plate. Serious and permanent damage can occur if improper voltage is used.
3. Wire sizes and guidelines - follow the specifications as defined by the current National Electric Code and any local codes. When unsure of what size wire to use, it is always best to use a heavier gauge (larger diameter) wire for safety.
4. All electrical connections MUST be clean and ensure all connections are tight. Use strain relief on all enclosures.
5. Trim the wires to the correct size and ensure that they do not overlap or touch when connected to the terminals.
6. It is important to reinstall the drive cover after any electrical installation or whenever leaving the pump unsupervised during installation or servicing. This is to ensure that rainwater, dust, or other foreign particles are not able to accumulate in the drive.

NOTICE Make sure that the keypad wires are not pinched between the drive body and cover when re-installing the drive.

GROUNDING:

1. It is important to ensure that the motor is properly grounded using the Grounding Terminal as shown in FIGURE E, F on page 10 inside the drive wiring compartment. When installing the ground wire, be sure to follow the requirements of the National Electrical Code and any local codes for wire size and type. Ensure the ground wire is connected to an electrical service ground.

2. **⚠WARNING** Electric shock hazard. This pump must be connected to a power supply with leakage protection (GFCI). GFCI systems should be supplied and inspected by the installer.

BONDING:

1. Using the Bonding Lug located on the side of the motor (See **FIGURE H**), bond the motor to all metal parts of the pool structure, electrical equipment, metal conduit, and metal piping within 5' (1.5 m) of the inside walls of the swimming pool, spa, or hot tub. This bonding should be done in accordance with the current National Electrical Code and any local codes.
2. For American installations, an 8 AWG or larger solid copper bonding conductor is required. For Canada installation, a 6 AWG or a larger solid copper bonding conductor is required.

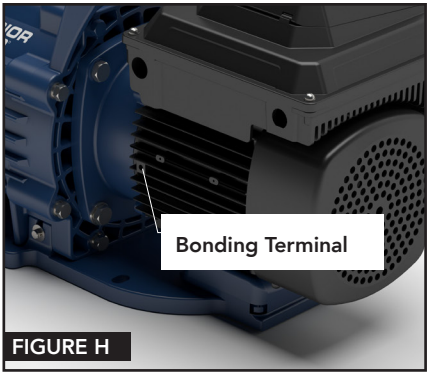


FIGURE H

LINK RS485 SIGNAL CABLE AND INITIAL STARTUP

Superior Pump variable speed pool pumps are compatible with Pentair's PL4/PLS4 control system as well as Jandy and Hayward's Automation systems via a dedicated RS485 signal cable. (**RS485 Signal Cable is sold separately**)

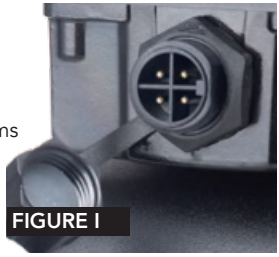


FIGURE I

Connection To Pentair Automation System using RS485 Signal Cable:

1. Connect the signal cables to the corresponding terminals as shown in **FIGURE J** wiring diagram.
2. Connect the other end of the signal cable to the communication port on the pump and lock the watertight nut. See **FIGURE I.**

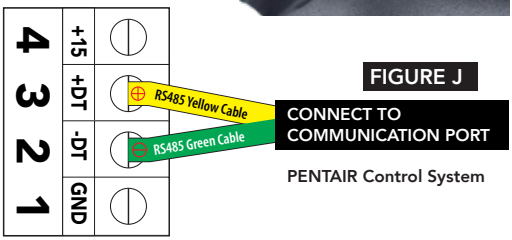


FIGURE J

Connection To Jandy Automation System using RS485 Signal Cable:

1. Connect the signal cables to the corresponding terminals as shown in **FIGURE K** wiring diagram
2. Connect the other end of the signal cable to the communication port on the pump and lock the watertight nut. See **FIGURE I**.

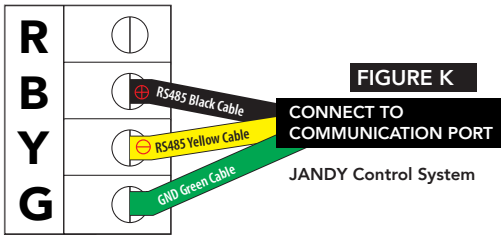


FIGURE K

Connection To Hayward Automation System using RS485 Signal Cable:

NOTICE To connect to the Hayward Automation System, the Baud rate must be changed.

1. On the control panel press the "TAB" and [2] buttons simultaneously. The screen will display "0003". Press the DOWN (arrow) until "0004" is displayed. The pump will now be set to recognize Hayward's language.
2. Connect the signal cables to the corresponding terminals as shown in **FIGURE L** wiring diagram.
3. Connect the other end of the signal cable to the communication port on the pump and lock the watertight nut. See **FIGURE I**.
4. After successful connection, the control screen on the pump will show ECoN and the communication (CMM) indicator will be illuminated. See **FIGURE M**.

The pump can now be controlled by the specific automation system that it's connected to.

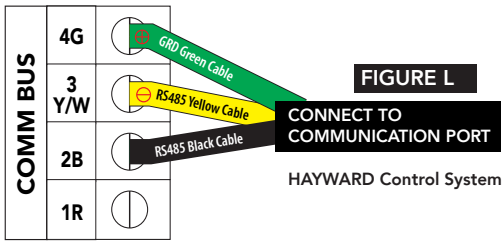


FIGURE L

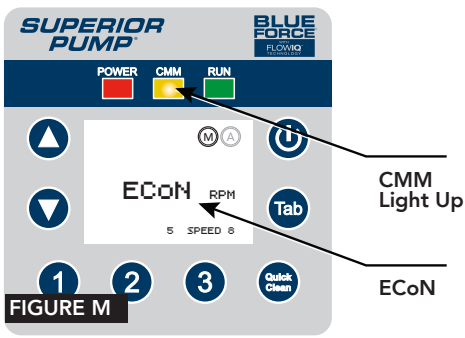


FIGURE M

FIRST START

1. Before starting the pump, make sure the pump basket and pipes are completely filled with water, and that the water level in the basket is high.
2. Place the wet end lid in position and turn it counterclockwise until the lid's ears are 90 degrees from the pump. See **FIGURE N**.
3. Check the pipe joints for leaks, then start the variable speed pool pump.

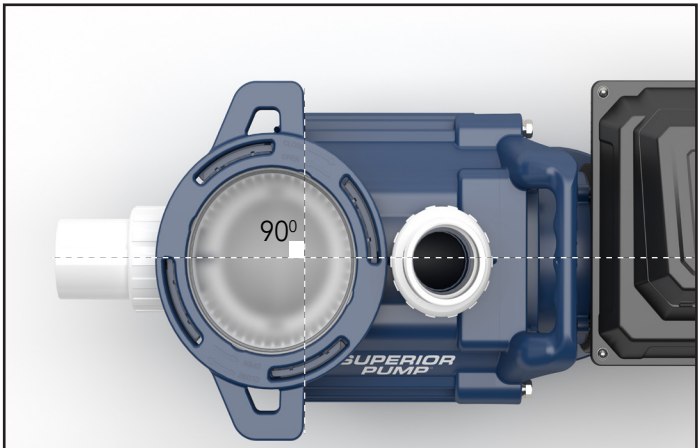


FIGURE N

DISCLAIMER Superior Pump is compatible with the autonation system of Pentair, Jandy & Hayward products. Pentair, Jandy & Hayward are registered trademarks of Pentair, Jandy & Hayward. This product is not affiliated with, manufactured, authorized, or endorsed by Pentair, Jandy & Hayward.

NOTICE Each time the pump is started, it will run at a speed of 3450 rpm for 10 minutes (the factory default is 3450 rpm for a duration of 10 minutes), and the home page of the screen will display a countdown timer. After the countdown ends, it will run according to the predetermined program when in automatic mode or run in manual mode.

NOTICE In programming mode, if there is no activity for 6 seconds, the pump will save the last settings input and exit programming mode.

KEYPAD OVERVIEW

See **FIGURE O**.

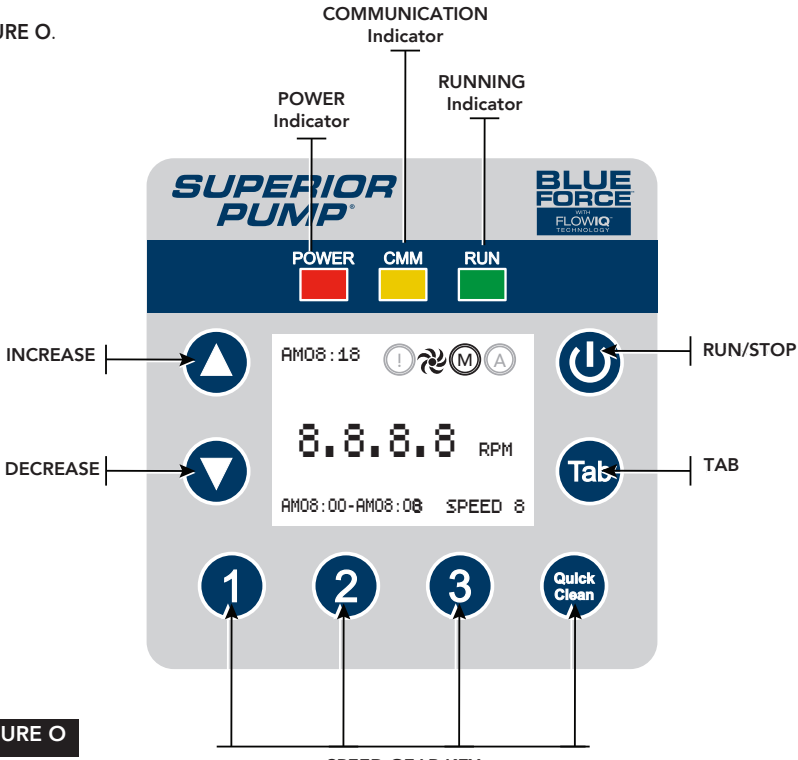


FIGURE O

SCREEN OVERVIEW

See **FIGURE P.**

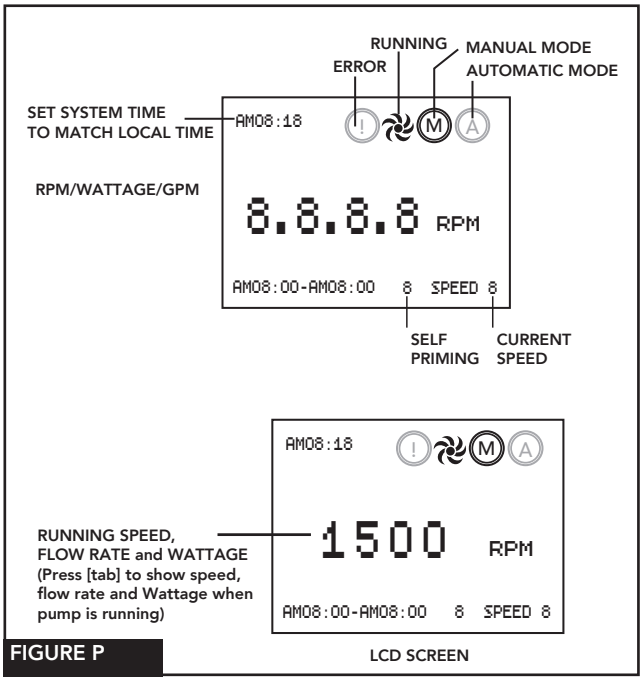
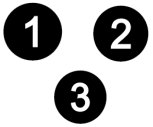


FIGURE P

KEY SYMBOL	NAME	FUNCTION DESCRIPTION
	RUN/STOP	Controls the on / off functions of the pump.
	SPEED SELECTOR BUTTONS	[1] In automatic mode, you can check the speed setting. [2] In manual mode, the speed can be selected. [3] Press and Hold the button for 3 seconds to enter the setting state, press "TAB" / UP (arrow) / DOWN (arrow) to set speed and running time (running time can only be set in automatic mode [A]).
	QUICK CLEAN	[1] In automatic mode, press once to check the QUICK-CLEAN speed and self-priming time. [2] Press and hold the button for 3 seconds to enter programming mode, press "TAB" + UP (arrow) or DOWN (arrow), to set self-priming time. (Self-Priming time can only be set in automatic mode [A]). NOTE: [3] in manual mode, the quick cleaning speed can be selected.
	TAB	[1] When pump is running, press "TAB" to switch display between speed, flow rate & wattage. [2] In the programming mode, you can select speed, time (hour/minute). [3] Press and hold the button for 3 seconds to enter the system time setting. (Set the system time match your local time)
	INCREASE	Increase speed / Increase time
	DECREASE	Decrease speed / Decrease time
	KEY COMBINATION (PRESS EACH BUTTON SIMULTANEOUSLY.)	With the pump not running, simulataneously press and hold the "TAB" + "UP" (arrow) buttons for 3 seconds to restore factory settings.
		With the pump not running, simulataneously press and hold the "TAB" + "DOWN" (arrow) buttons for 3 seconds. The LCD screen will switch between manual mode and automatic mode, with corresponding icons displayed.
	KEY COMBINATION	The controller displays the home page, and press the TAB + QUICK-CLEAN keys for 3 seconds to lock/unlock the keyboard
		The controller displays the home page, press TAB + [1] buttons for 3 seconds to turn on/off the button sound.
		Change Baud Rate between Pentair, Jandy, and Hayward. NOTE: Pentair and Jandy are using the same Baud Rate, but Hayward uses different one.

⚠WARNING If power is on, it is important to be aware that pressing any of the buttons referred to in this section could result in the motor starting. This could lead to potential danger in the form of personal injury or damage to equipment if the risk is not taken into account.

OPERATION

Programming and Operation Schedule

1. Connect the pump to power, the "POWER" LED light will illuminate. See **FIGURE Q**.

FIGURE Q

2. The default setting is MANUAL MODE with the following (4) speeds for each button.

Speed	Range of Rotation	Factory Default	Run Time (Factory Setting)
1	300~3450 rpm	3000 rpm	8:00 am ~ 10:00 am
2	300~3450 rpm	1400 rpm	10:00 am ~ 8:00 pm
3	300~3450 rpm	2200 rpm	8:00 am ~ 10:00 am
Quick Clean	300~3450 rpm	3450 rpm	

⚠CAUTION **Set the system time and date to match your local time:** or the pump will not operate correctly in AUTO MODE.

SET DATE & SYSTEM TIME: Press and hold the "TAB" button for 3 seconds to enter the time and date setting. The clock in the upper left corner will begin to blink. Use the UP (arrow) or DOWN (arrow) to set the hour. Once set, press the "TAB" button again to display the minute setting. Use the UP (arrow) or DOWN (arrow) to set the minute. See **FIGURE R.**

In automatic mode, if the time is not within schedule SPEED 1~3, the pump will remain in a stationary state.

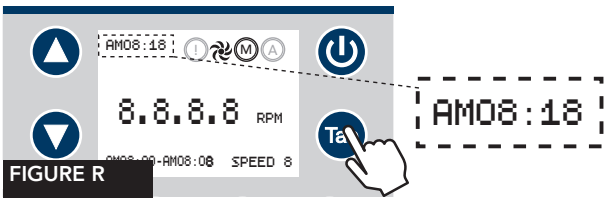


FIGURE R

SYSTEM TIME BLINK

SET SPEED AND RUNNING TIME IN AUTO MODE

Select a speed selector button (1, 2 or 3) and hold for 3 seconds. The RPM on the display will blink. Use the UP or DOWN arrow buttons to increase/decrease the speed. Once the speed is set, press the "Tab" button to switch to the time setting. The running time at the lower left corner will blink. Use the UP / DOWN arrows to modify start time. Once set, press the "Tab" button, then the END TIME numbers will begin to blink. Use the UP / DOWN arrows to set the end time. **NOTE:** To modify the end time. The setting process is the same for Speeds [1], [2] or [3]. See **FIGURE S.**

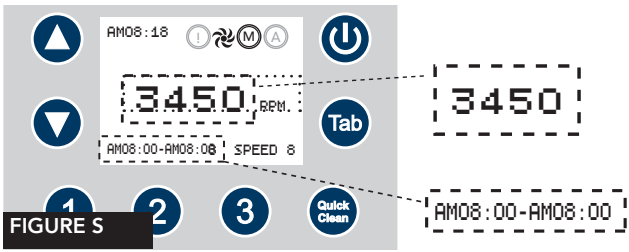


FIGURE S

SPEED and TIME BLINK

NOTICE **Automatic Mode -** In Automatic Mode, the pump will operate according to the pre-set SPEEDS 1~3 time.

Pump gear priority: SPEED [1] > SPEED [2] > SPEED [3]. If the time overlaps, prioritize the execution speed.

EXAMPLE: The pump will only execute SPEED [1], and not SPEED [2].

SPEED 1: AM 08:00 ~ AM 10:00
SPEED 2: AM 08:00 ~ AM 11:00

NOTICE The operation schedule needs to be programmed from 12:00 am to 11:59 pm and the schedule CANNOT cross midnight.

EXAMPLE: If you set the schedule from 8:00 pm to 6:00 am, the pump will stop at midnight. If you need the pump to run after midnight set another program for 12:00 am or after.

At any time during the day that is not within the programmed SPEED 1~3, the pump sill stay in stationary state.

NOTICE Use speed above 1000 RPM. In order to be compatible with the heater and maintenance of the pool water we recommend that the rpm be no less than 1000 rpm, to ensure the maintenance of the pool.

Set Self-Priming Time and Speed :

Self-priming in ground pool pump (Model: 98150, 98300). The factory default setting is run for 10 minutes at maximum speed (3450 RPM). Non self-priming Above Ground Pool Pump (Model: 98150, 98300), The factory default setting is run for 1 minute at maximum speed (3450 RPM).

Hold TAB button for 3 seconds, and the system hour will blink. Press TAB twice, the self-priming speed will blink. Use UP/DOWN arrows to increase or decrease the priming. Press TAB again, the self-priming minute will blink. Use UP/DOWN arrows to increase or decrease the priming minutes. See **FIGURE S.**

In the Auto Mode, hold QUICK CLEAN button for 3 seconds, speed numbers ([3] + UP arrow or DOWN arrow) blink; Then press the TAB button, the priming time will blink; then use the button to set priming time. See **FIGURE T.**

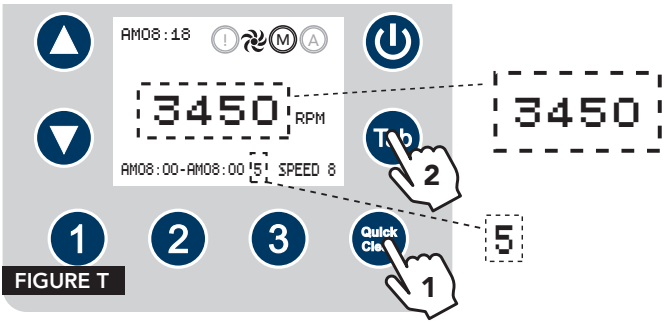


FIGURE T

SPEED and TIME BLINK

NOTICE In the self-priming function, only the time can be set; the speed (RPM) cannot be set. The factory setting is to run at the maximum speed (3450 RPM) to ensure air is discharged from the pipe.

OPERATION (continued)

Switch from Auto Mode to Manual Mode:

The factory default setting is Maunal Mode. To switch to Auto Mode, turn the pump off (green light off). Press and hold the "TAB" + DOWN (arrow) for 3 seconds. The system will switch from Manual Mode to Auto Mode. The [M] on the screen changes to [A], and the setup is complete. See **FIGURE U.**

If you need to restore manual mode, follow the same procedure above.

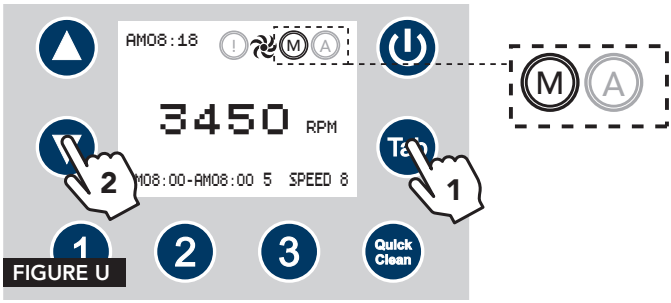


FIGURE U

Set Speed in Manual Mode:

Press and hold a desired speed buttons for 3 seconds ([1], [2], [3] or QUICK CLEAN, the speed number will blink. Use the UP (arrow) or DOWN (arrow) buttons to increase or decrease the speed. If there is no activity for 5 seconds, the pump will save the last settings input and exit programming mode. See **FIGURE V.**

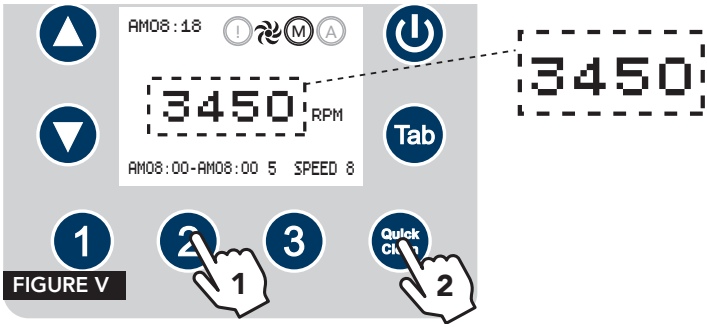


FIGURE V

SPEED BLINK

NOTICE Manual Mode, allows you to set a single speed at which the pump will run continuously until you decide to change the RPM or switch back to automatic mode. This mode is ideal for specific cleaning tasks or situations where a constant speed is required.

Reset Factory Default Setting:

With POWER ON, simultaneously press and hold the "TAB" + UP (arrow) buttons for 3 seconds to reset to the factory default settings. See **FIGURE W.**

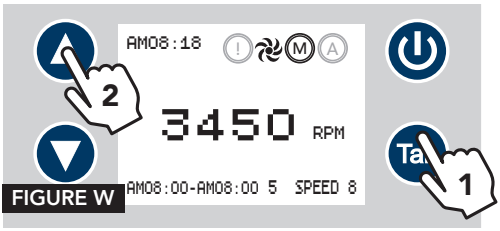


FIGURE W

Lock / Unlock the keyboard:

On the control panel home screen, simultaneously press and hold the TAB + QUICK CLEAN buttons for 3 seconds to lock/unlock the keyboard. See **FIGURE X.**

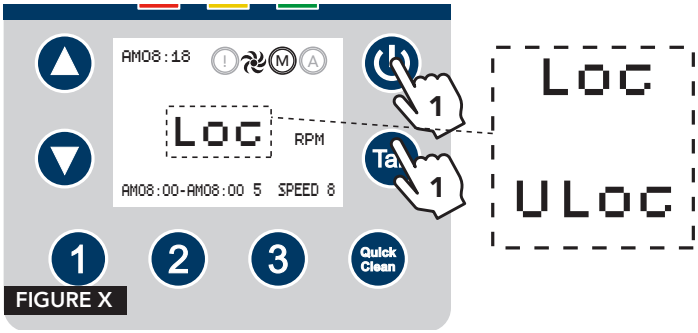


FIGURE X

LOCK / UNLOCK BLINK

Turn OFF / On button sound:

On the control panel home screen, simultaneously press and hold the TAB + [1] buttons for 3 seconds to turn on/off the button sound. See **FIGURE Y.**

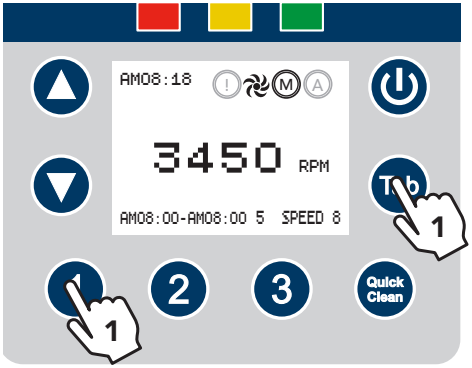


FIGURE Y

OPERATION (continued)

Button Cell Replacement

The pump controller is backed by a button cell (CR1220, 3V). This battery maintains basic controller functions during a power outage. Typical battery life is 2–3 years.

⚠WARNING Button/Coin Cell Battery Hazard

- Contains a button/coin cell battery. If swallowed, these batteries can cause severe internal burns and death within 2 hours.
- Keep new and used batteries out of reach of children.
- If the battery compartment does not close securely, stop using the product immediately and keep it away from children.
- If you suspect a battery has been swallowed or placed inside any part of the body, call the National Battery Ingestion Hotline: 800-498-8666 immediately.
- Always ensure the battery compartment is securely closed after replacement.

Replacement Procedure

1. Use a Phillips screwdriver to remove the 4 screws securing the controller cover. Open the cover slowly to avoid damaging wiring connections between the control panel and circuit board. See **FIGURE Z.**
2. Locate the button/coin cell battery (CR1220, 3V) on the circuit board and replace it with a new one. Use only CR1220 – 3 volt batteries.

FIGURE Z

⚠WARNING **CONTAINS COIN CELL BATTERY**. If swallowed, a coin cell battery can cause severe internal burns and death. Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children. If you think a battery might have been swallowed or ingested, **call the National Battery Ingestion Hotline at 800-498-8666 immediately.** Ensure the battery compartment is securely closed after replacement.

Priming

The pump is preset to a 10-minute priming mode at 3450 RPM each time it starts.

ALARM — Dry-Run Hazard

- The pump must never run without water. Running dry can damage the shaft seal, causing leaks, loss of pressure, and potential damage to the pump body, impeller, and seal.
- To prevent dry-run damage, maintain water in the pool at least halfway up the skimmer opening. If water falls below this level, the pump may lose prime and run dry, which can result in property damage or personal injury.

Initial Startup Checklist

Before starting the pump for the first time:

1. Verify the shaft turns freely.
2. Confirm that the power supply voltage and frequency match the nameplate specifications.
3. Check for obstructions in the piping system.
4. Ensure the system is configured to prevent pump startup when water level is below minimum.
5. Verify the motor rotation direction matches the indication on the fan cover.

If the motor fails to start, consult the Troubleshooting Table (Section 9) for potential causes and corrective actions or **contact customer service at 800-495-9278.**

START-UP PROCEDURE

Preparation

1. Open all valves in the circulation system.
2. Turn ON power to the motor.
3. Check the circuit breaker current of the motor and adjust the overheat protector as needed.

Power-On

1. Turn on the power supply.
   - The POWER indicator light will illuminate.
   - The inverter will remain in a stop state.
   - The system time (set to match your local time) and the [A] icon are displayed on the LCD screen.
2. Press the POWER key.
   - The pump will start or enter standby mode.
   - The pump runs at 3450 RPM for 10 minutes during the priming cycle.

NOTICE During priming, the LCD displays:

   - System time
   - [A] icon
   - [MOTOR] icon
   - Speed: [4] (3450 RPM)
   - Countdown of priming time

3. After 10 minutes, the pump switches to the preset automatic mode:
   - LCD displays system time, [A] icon, [MOTOR] icon, current speed, start and stop times, and multi-stage speed settings.
   - Multi-stage speeds execute in chronological order.
   - If multiple settings overlap, priority is: [1] > [2] > [3].
   - If multi-stage speed is not needed, set the start and end times of all stages to be the same.

⚠WARNING Pump Below Water Line

For pumps installed below the water line:

- Ensure that return and suction lines are closed before opening the strainer pot.
- Reopen the valves before operating the pump to prevent water backflow and potential injury or equipment damage.

NOTICE Controller Protection

- To protect the monitor screen and controller, keep the control panel cover closed when the pump is not in use. See **FIGURE AA.**

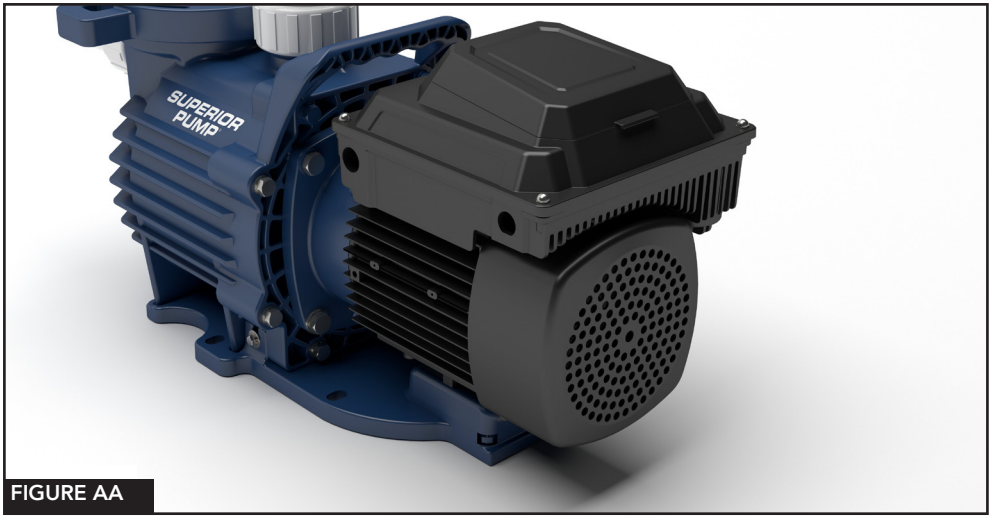


FIGURE AA

APP OPERATION

Download the Smart Life App from the App Store

Touch the top right corner and SELECT ADD DEVICE. See **FIGURE BB**.

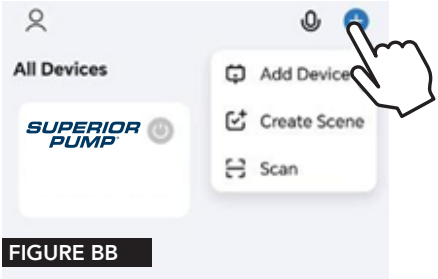


FIGURE BB

Download APP

1. Enable Bluetooth on your device. Connect with local hotspot wifi.
2. Your device will begin searching for the pump. The COMM light will flash for 5 minutes until the pump is found. It is recommended that the pump connect within a WiFi range of 50 feet.
3. SUPERIOR PUMP logo should appear. See **FIGURE CC.** Select the pump and the system will ask you for the hotspot wifi's name and password. (Suggest to connect a 2.4G NOT 5G signal). The pump is now connected to your device.

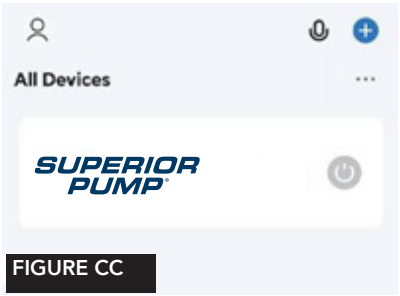
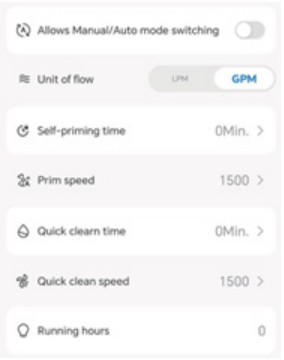


FIGURE CC



Select your Pump

The app will recognize your pump automatically and the picture and model number of your pump will appear on the app. The home page will be as shown below. You can switch AUTO / MANUAL MODE on this page. When the speed number in the blue circle is in white, it means that the speed is on duty and other speed buttons are grey. See **FIGURE DD.**

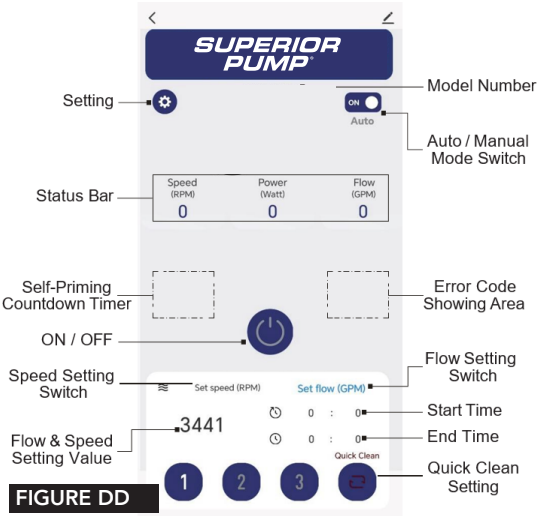


FIGURE DD

NOTICE If you want to create scenes supported by Smart Life, the pump must be set to MANUAL mode. If the pump is in AUTO mode, it will run its preset schedule and will NOT run any outside programs.

NOTICE Only one user can be assigned to a single pump.

If the user needs to be changed, simultaneously press and hold the UP (arrow) & DOWN (arrow) buttons for 3 seconds. The previous will be removed from the system and the COMM light will flash. Follow the instructions to add the new key holder.

NOTICE The key holder can share control right to other users.

APP OPERATION (Continued)

The SETTING button is at the left corner. If it is pressed, it will provide the screen shown below:

1. **Allows Manual/Auto Mode switching.** If it turns on, the Manual/Auto Mode button will show up at right corner of home page. If it turns off, the pump only can be run under manual mode which is designed for taking orders from scenes created by Smart Life.
2. **Unit of flow:** LPM (Liter per minute) & GPM (Gallon per minute) can be selected.
3. **Self-Priming Time:** the Self-Priming Time can be set from 0 to 10 minutes.
4. **Priming Speed:** The priming speed can be set between 1500 to 3450 rpm. 3450 rpm priming speed is highly recommended.
5. **Quick Clean time:** the value can be set from 0 to 60 minutes.
6. **Quick Clean Speed:** The Quick Clean speed can be set between 1500 to 3450 rpm. 3450 rpm priming speed is highly recommended.
7. **Running Hours:** it is an accumulated timer for counting how many hours the pump has been used.
8. **Restore Factory Setting**: If this button is pressed, all setting will be back to default settings.

In the **Auto mode**, you can select Speed [1] or [2] or [3], then program schedule, set flow and speed. Just touch Speed [1] or [2] or [3] then you will enter the below setting pager. You can set Maximum flow, but in the real situation, you can't reach the full flow because there are filters, elbows and others which will reduce the flow. The current flow rate will be shown at the status bar. See **FIGURE EE.**

FIGURE EE

In the Manual Mode, touch Speed 1, or 2, or 3, then you will enter the programming page shown below in **FIGURE FF**. By moving the control bar, you can set flow & speed. You can set Maximum flow, but in the real situation, you can't reach the maximum flow because there are filters, elbows & other which will reduce the flow. The current flow rate will be shown at status bar.

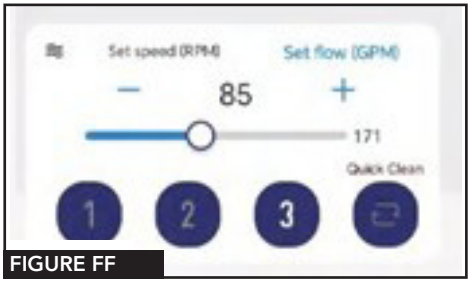


FIGURE FF

QUICK CLEAN: You can set the quick clean time and speed. At any time, you can press QUICK CLEAN and the pump will immediately start. After the QUICK CLEAN cycle is complete, the pump will resume back to the original schedule.

How To Set Language: Press "Me" and touch the top right corner button. Select your preferred language from the list.

Creating Scene by Using the APP

At Home page, touch " Scene" to create individual Scene powered by Smart Life app. See **FIGURE GG.**

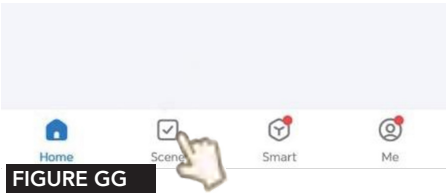
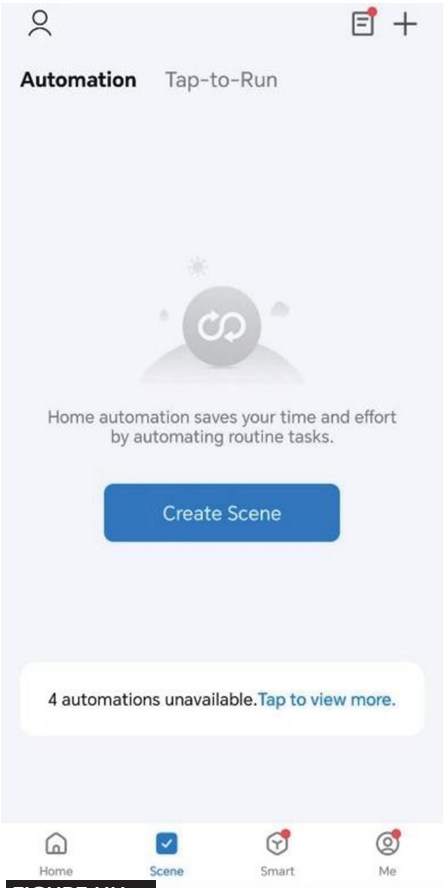


FIGURE GG

There are several scenes to be programmed and follow the instructions, available on the app, to set up your own scene. See **FIGURE HH.**

In addition, you can combine several pieces of equipment together in the Smart Life App and use Tap-to-Run and control them together.

You have Automation and TAP-TO-RUN features



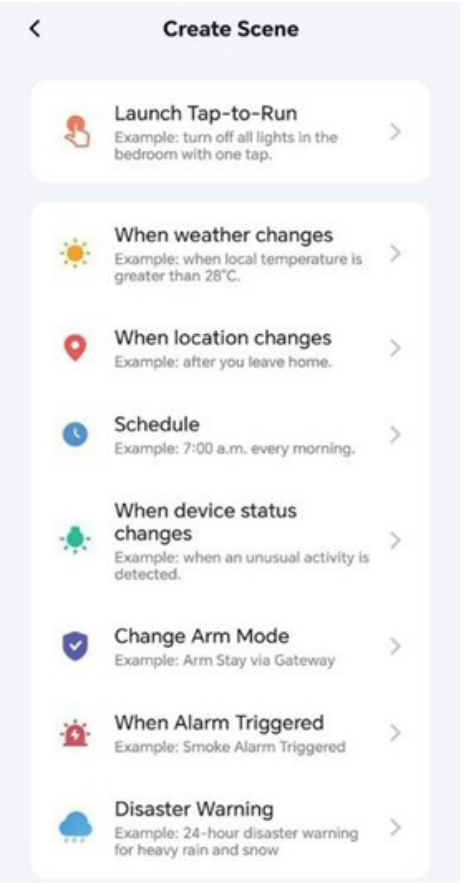


FIGURE HH

MAINTENANCE

⚠WARNING Risk of Severe Injury or Death — Pressure and Hot Water Hazard.

Do NOT open the strainer basket if the pump fails to prime or if the pump has been operating without water in the pump housing. Under these conditions, the pump may contain pressurized vapor and scalding hot water. Opening the strainer pot may cause the lid or components to separate violently, resulting in serious injury or death.

Before opening the strainer pot:

- Ensure all suction and discharge valves are opened slowly and carefully.
- Verify that the strainer pot is cool to the touch.
- Proceed with extreme caution.

⚠WARNING Risk of Electric Shock — May Cause Serious Injury or Death.

Turn OFF all electrical power to the pump at the circuit breaker before servicing. Failure to disconnect power may result in electric shock to service personnel, users, or bystanders. Read and follow all servicing instructions before performing maintenance.

NOTICE To maintain proper pump operation and system efficiency, the pump strainer basket and skimmer basket must be cleaned regularly.

Cleaning the Pump Strainer and Skimmer Basket

Frequent inspection and cleaning of the strainer basket is strongly recommended to prevent debris buildup and ensure proper priming and performance. See **FIGURE II**, and follow the instructions.

Cleaning Procedure

1. Press the START/STOP button to stop the pump.
2. Turn OFF power to the pump at the circuit breaker.
3. Open the filter air relief valve to release all pressure from the filtration system.
4. Remove the strainer pot lid by turning it counterclockwise.
5. Remove the strainer basket from the strainer pot.
6. Remove all debris from the basket.

NOTICE If the basket is cracked or damaged, replace it immediately. Do not operate the pump with a damaged basket.

7. Carefully reinstall the basket, ensuring the notch at the bottom of the basket aligns with the rib at the bottom of the strainer pot.
8. Fill the strainer pot with water up to the inlet port.
9. Clean the lid, O-ring, and sealing surfaces thoroughly.

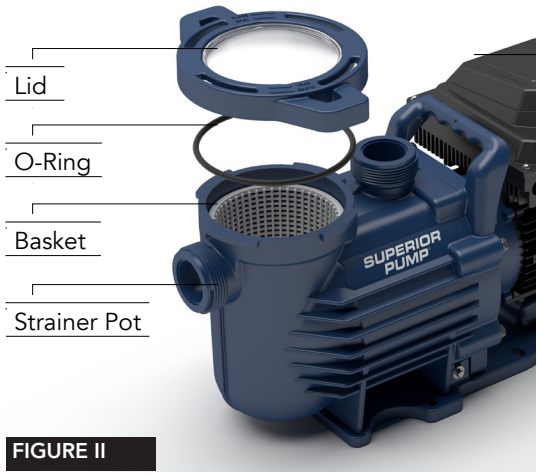


FIGURE II

NOTICE Keeping the lid O-ring clean and properly lubricated is essential for maintaining a watertight seal and extending pump life.

10. Install the lid onto the strainer pot and turn it clockwise until securely locked.

NOTICE The lid handles must be nearly perpendicular to the pump body to ensure the lid is securely locked.

11. Restore power to the pump at the circuit breaker.
12. Open the filter air relief valve.
13. Stand clear of the filter and start the pump.
14. Keep the air relief valve open until all air is released and a steady stream of water flows, then close the valve.

⚠WARNING Risk of Equipment Damage and Personal Injury.

Never operate the pump without water in the strainer pot. Running the pump dry may cause overheating, seal failure, or permanent equipment damage.

⚠WARNING Risk of injury, Death, or Property Damage — Pressure Hazard

All components of the circulation system (including the lock ring, pump, filter, valves, and related fittings) operate under high pressure. Pressurized air or water can cause the strainer lid or other components to separate violently. This may result in serious injury, death, or property damage.

To reduce this risk, follow all safety instructions in this manual exactly.

Winterizing

NOTICE Freeze damage is not covered under warranty. If freezing temperatures are expected, follow the procedures below to reduce the risk of damage.

Winterizing Procedure

1. Press the START/STOP button to stop the pump.
2. Turn OFF electrical power to the pump at the circuit breaker.
3. Open the filter air relief valve to release all pressure from the filtration system.
4. Carefully remove the two drain plugs located at the bottom of the strainer pot and allow all water to drain completely.
   - Store the drain plugs in the strainer basket for safekeeping.
5. Protect the motor from extreme weather conditions such as heavy rain, snow, and ice.

NOTICE Do NOT wrap the motor with plastic or any airtight material.

Do NOT cover the motor while it is operating or expected to operate.

NOTICE In mild climate areas, it is recommended to run the equipment continuously during freezing conditions or when freezing temperatures are forecast.

MAINTENANCE (Continued)

Pump Care

Proper care and maintenance of the pump will extend service life and help prevent damage that may not be covered under warranty.

Avoid Overheating

1. Shield the pump from direct sunlight and excessive heat.
2. Install the pump in a well-ventilated location to prevent overheating.

Maintain a Clean Operating Environment

1. Keep the installation area as clean as possible.
2. Keep chemicals away from the motor at all times.
3. Do not sweep or stir dust near the motor while it is operating.
4. Dirt or debris damage to the motor may void the warranty.
5. Regularly clean the strainer pot lid, O-ring, and sealing surfaces.

⚠WARNING Risk of Electric Shock and Equipment Damage — Moisture Hazard. Keep Away From Moisture

1. Avoid splashing or spraying water onto the motor.
2. Protect the pump from flooding caused by extreme weather.
3. Ensure the pump installation area provides adequate flood protection.
4. If the motor becomes wet, allow internal components to dry completely before operation.
5. Do NOT operate a flooded pump.
6. Water damage to the motor may void the warranty.

Restart The Pump

Priming the pump

1. Turn off power to the pump at the circuit breaker.
2. In order to relieve all pressure from the filtration system, the filter air relief valve must be activated.
3. To remove the strainer pot lid, twist it in a counter-clockwise direction.
4. The strainer pot should be filled with water up to the inlet port.
5. Install the lid onto the strainer pot and turn the lid clockwise in order to lock it securely into place.

NOTICE In order to properly lock the lid, the handles need to be nearly perpendicular to the pump body.

6. Turn on power to the pump at the circuit breaker.
7. Open the filter air relief valve.
8. Keep away from the filter and turn on the pump.
9. To bleed air from the filter air relief valve, open the valve and let the air escape until a steady stream of water appears.

When the priming cycle is complete, the pump will begin normal operation.

TROUBLE SHOOTING

ERROR CODES	FAULT DISRUPTION	POSSIBLE FAILURE	CORRECTIVE ACTION
E001	IPM (Intelligent Power Module) failure	Electronic components are damaged Interference causes Misoperation Poor ground connection	Check whether there is strong interference around Check the ground wire Contact the supplier
E002	Output current exceeds the limit	Sudden change or abnormality of load	Check the load or reduce the load sudden change
E006	Input voltage is too high	Abnormal input voltage Load disconnection.	Check the input power Check if the load is disconnected
E009	Input voltage is too low	Input voltage is low	Check input power
E011	Motor overload	Power supply voltage is too low. The motor stalls or the load changes suddenly	Check the voltage. Check the load.
E013	Output phase loss	Output wiring U/V/W phase loss The three-phase load is seriously unbalanced.	Check output wiring. Check the motor and cables.
E014	Controller Overheat	Ambient temperature is too high. Control board malfunction	Allow controller to cool. Reduce the ambient temperature. Contact customer service
E018	Faulty current sampling circuit	Current detection component failure Abnormal amplifier circuit	Contact customer service
E021	Display board EEPROM failure	Poor connection between the display board and the main drive board. EEPROM damage.	Replace the connecting cable between the display board and the main drive board. Contact customer service
E040	Static blockage failure	Motor mechanical lock-up	Check the load.
E048	PFC (Power Factor Correction)	Input voltage is too low PFC circuit failure	Check the input voltage Contact customer service
E095	Communication Fault	Poor connection between the display circuit board and the main circuit board	Check the wiring and connectors Contact customer service

E002 will automatically recover, and other fault codes will appear, the controller will stop, and it needs to be powered off and on again to restart the controller.

TROUBLE SHOOTING (continued)

ERROR CODES	FAULT DISRUPTION	POSSIBLE FAILURE	CORRECTIVE ACTION
E030	Dry Run Alarm	Pump running dry. Lack of water in pump housing or in suction lines.	Check that there is sufficient water in the pump housing. Contact customer service
LOF	Dry Run Alarm	Flow rate is lower than 18 GPM (68 LPM)	

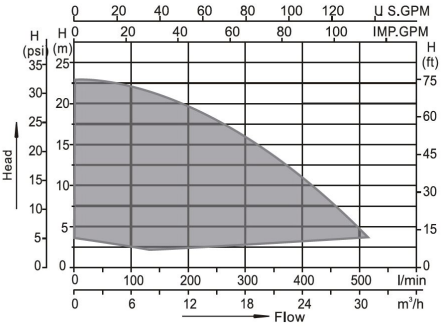
SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Pump does not turn on or run	Breaker is tripped or turned off Loose or incorrect wire connections	Reset or turn on breaker or switch. Ensure wiring is correct and securely connected. Check for loose connectors between the controller and wiring board; unplug and reconnect if necessary. Verify that the GFCI breaker is operating properly. Inspect the motor fan and impeller for damage.
	Incorrect system time	Set system time match the local time. Confirm the pump is scheduled to run at the correct scheduled time
Pump repeatedly trips the circuit breaker	Unstable current	Use wiring with a size of at least 12 AWG. Ensure the pump is connected to an independent 15 A (or higher) GFCI circuit. If the pump is wired at 115 V and tripping occurs, rewire for 230 V operation.
Pump does not self-prime properly	Blockage or leakage Air leak in suction line	Clean the skimmer and pump strainer basket. Make sure all valves in the system are open. Verify the lid O-ring is clean, properly seated, and the lid ears are positioned at 90° to the pump body. Ensure all pipes, fittings, and unions on the suction side of the pump are secure and leak-free
	Low water pressure	Fill the pump with water before starting. Do not run pump dry. Refer to (page 20) priming instructions
Pump makes excessive noise	Defective motor parts	Remove the rear fan cover and inspect the cooling fan for damage. If the motor bearing is siezed or damaged, contact customer service
	Debris in rear motor fan cover	Inspect and clean the back of motor fan cover to remove any dirt or debris.
	Unstable voltage	A screeching noise at high speed may indicate a loose electrical connection. Open the controller box, inspect all connections, and reconnect any loose wires. If the issue continues, replace the controller.

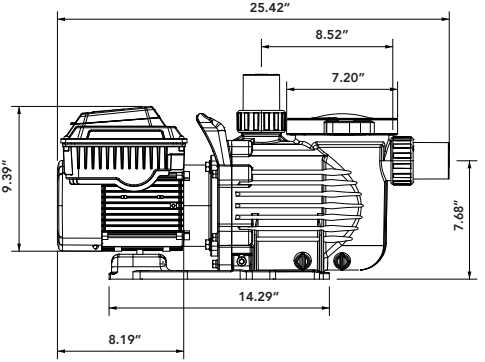
TECHNICAL DATA

MODEL	VOLTAGE (V)	FRE-QUENCY (Hz)	POWER (THP)	CURRENT (A)	WEF	Hmax (feet)	Qmax (gal/min)	Speed (r/min)	Lbs.
98150	115/ 208-230	50/60	2.2	13.8/ 8.5-7.4	8.8	246	134.72	300~3450	44
98300	230		3.9	13	7.3	282	171.71		57

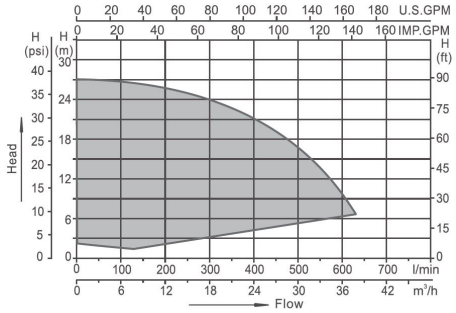
PERFORMANCE CURVE and INSTALLATION SIZE

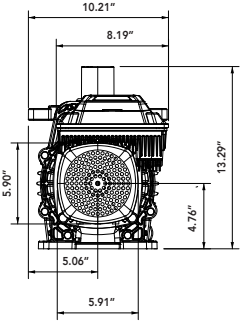
98150

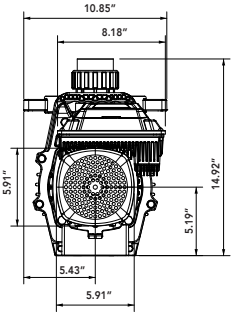


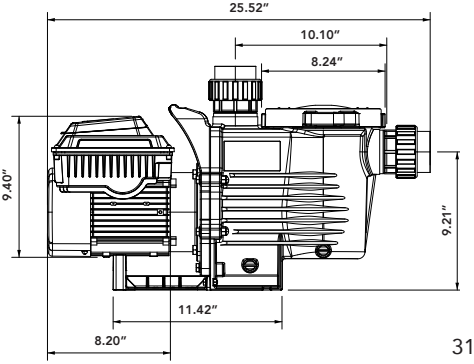


98300





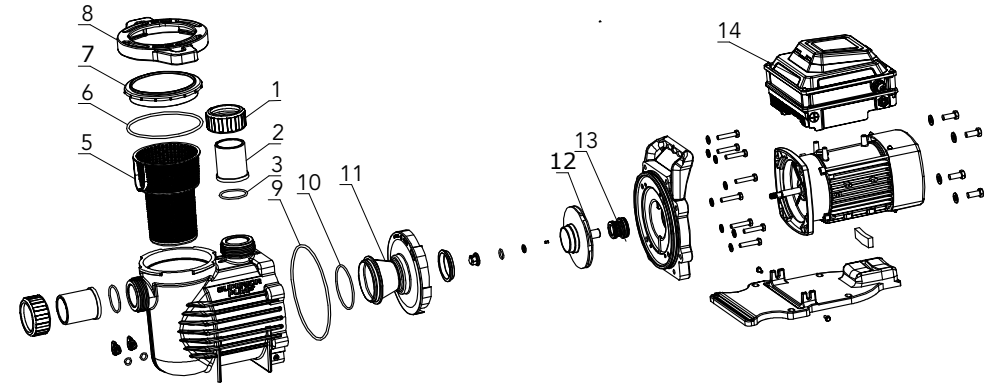




REPLACEMENT PARTS

	Description	98150	98300
1	Nut - Tie In	340-00159	340-00168
2	Pipe - Stub	335-00121	335-00122
3	Seal - O-Ring	350-00125	350-00132
4	Transition Union		335-00123
5	Filter Basket	300-00137	300-00142
6	Seal - O-Ring	350-00126	350-00128
7	Cover - Basket	305-00131	305-00134
8	Nut - Basket Cover	305-00132	305-00135
9	Seal - O-Ring	350-00127	350-00133
10	Seal - O-Ring	350-00128	
11	Diffuser	300-00138	
12	Impeller	320-00116	320-00117
13	Mechanical Seal	350-00130	
14	Controller	315-00134	315-00135

98150



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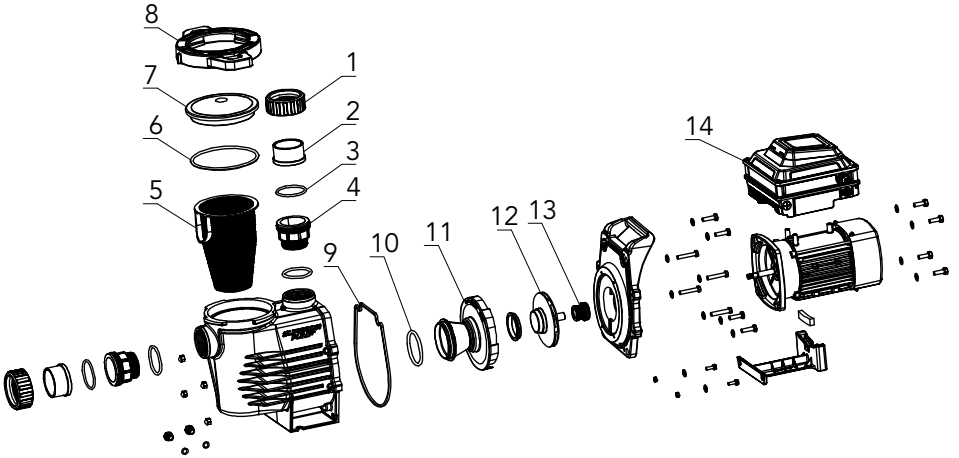

FCC SDoC

2BUFJ-98XXX Part 15 statement: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference

(2) this device must accept any interference received, including interference that may cause undesired operation.

⚠WARNING Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

SDoC contact:

Pedrollo Group USA

45 Maryland Ave. East, St. Paul, MN 55117

800-495-9278

www.pedrollogroupusa.com
www.superiorpoolpumpusa.com

LIMITED WARRANTY

Superior Pump warrants the products specified in this warranty to be free from defects in material or workmanship for two (2) years from date of purchase, with option for 36 months upon registration. During the time period and subject to the terms and conditions, Superior Pump will repair or replace to the original user or consumer any portion of this product which proves to be defective due to materials or workmanship. At all times Superior Pump shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts, or components. Superior Pump has the option to inspect any product returned under warranty to confirm that the warranty applies before repair or replacement under warranty is approved. This warranty set forth is Superior Pump's sole obligation and purchaser's exclusive remedy for defective product. Return defective product to the place of purchase for warranty consideration.

WARRANTY PERIOD - PRODUCTS:

If, within the duration of product use by the original user, this product proves to be defective due to materials or workmanship, the product shall be repaired or replaced at Superior Pump's option, subject to the terms and conditions set forth in this warranty statement. Proof of purchase is required for warranty consideration. In the absence of suitable proof of the purchase date, the effective period of this warranty is 24 Months, with option for 36 months upon registration, from the product's date of manufacture.

LABOR, ETC. COSTS:

Superior Pump shall IN NO EVENT be responsible or liable for the cost of field labor or other charges incurred by any customer in removing and/or affixing any product, part, or component thereof.

PRODUCT IMPROVEMENTS:

Superior Pump reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for units sold and/or shipped prior to such change or improvement.

GENERAL TERMS AND CONDITIONS:

This warranty shall not apply to damage due to acts of God, normal wear and tear, normal maintenance services and the parts used in connection with such service, lightning or conditions beyond the control of the Manufacturer, nor shall it apply to products which, in the sole judgment of the Manufacturer, have been subject to negligence, abuse, accident, misapplication, tampering, alteration; nor due to improper installation, operation, maintenance or storage; nor to excess of recommended maximums as set forth in the instructions. Warranty will be VOID if any of the following conditions are found:

1. Product is used for purposes other than those for which it was designed and manufactured
2. Product not installed in accordance with applicable codes, ordinances, and good trade practices
3. Product connected to voltage other than indicated on nameplate or labels
4. Pump exposed to but not limited to the following: sand, gravel, cement, grease, plaster, mud, tar, oil, gasoline, solvents or other abrasive or corrosive substances
5. Pump has been used for pumping liquids above 120°F
6. Pump allowed to operate dry (liquid supply cut off)

DISCLAIMER:

Any oral statements about the product made by the seller, the Manufacturer, the representatives, or any other parties do not constitute warranties, shall not be relied upon by the user, and are not part of the contract for sale. Seller's and the Manufacturers only obligation, and buyer's only remedy, shall be the replacement and/or repair by the Manufacturer of the product as described above. NEITHER SELLER NOR THE MANUFACTURER SHALL BE LIABLE FOR ANY INJURY, LOSS OR DAMAGE, DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS), ARISING OUT OF THE USE OR THE INABILITY TO USE THE PRODUCT, AND THE USER AGREES THAT NO OTHER REMEDY SHALL BE AVAILABLE TO IT. Before using, the user shall determine the suitability of the product for their intended use, and user assumes all risk and liability whatsoever in connection therewith.

THE WARRANTY AND REMEDY DESCRIBED IN THIS LIMITED WARRANTY IS AN EXCLUSIVE WARRANTY AND REMEDY AND IS IN LIEU OF ANY OTHER WARRANTY OR REMEDY, EXPRESSED OR IMPLIED, WHICH OTHER WARRANTIES AND REMEDIES ARE HEREBY EXPRESSLY EXCLUDED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT EITHER APPLIES TO A PRODUCT SHALL BE LIMITED IN DURATION TO THE PERIODS OF THE EXPRESSED WARRANTIES GIVEN ABOVE.

Some states and countries do not allow the exclusion or limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

NOTES

SUPERIOR PUMP®

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