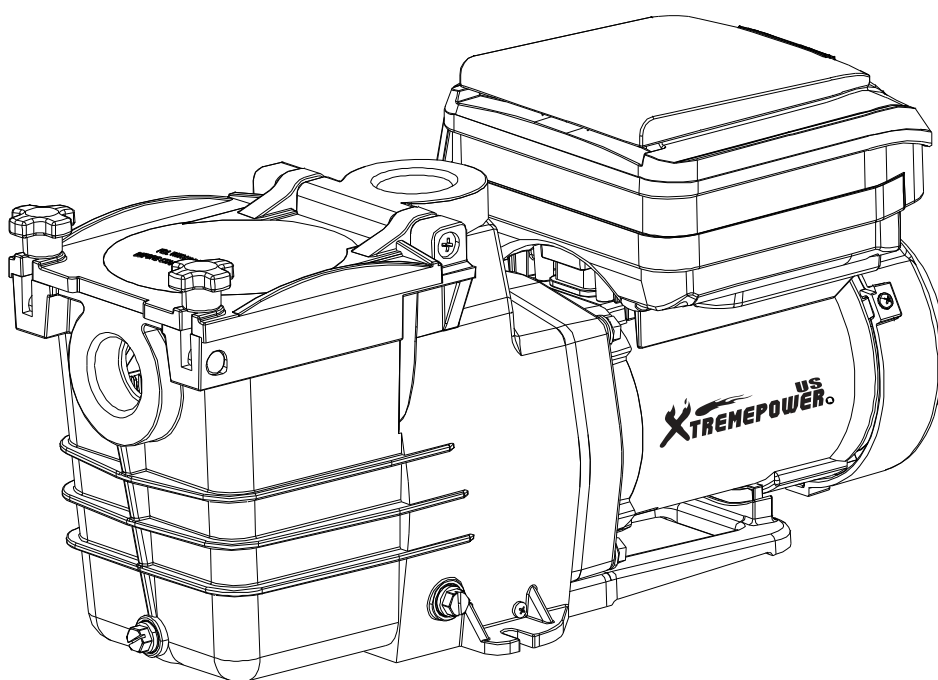




VARIABLE SPEED PUMP 1.65HP

SKU: 75016

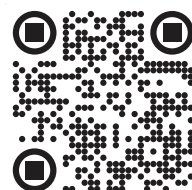


INSTALLATION AND USER'S GUIDE

⚠ DANGER

Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in serious injury. Save all warnings and instructions for future reference.

75016



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IMPORTANT SAFETY INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

This guide provides instructions for installing and using the VARIABLE SPEED PUMP. If you have any questions about the equipment, please contact XtremepowerUS.

This guide contains important information about safely installing and operating this product. After installation, make sure to share this information with the owner/operator or leave it with them for their reference.

Legends and Symbols

When you come across the safety-alert symbol on your equipment or in this manual, pay attention to the following signal words and remain vigilant about the potential for personal injury.

-  **DANGER:** Ignoring these hazards can result in death, severe personal injury, or significant property damage.
-  **WARNING:** Indicates potential hazards that can result in severe personal injury, death, or significant property damage. Ignoring these warnings presents a real danger.
-  **CAUTION:** Indicates potential hazards that can result in minor or moderate personal injury, property damage, or actions that are unpredictable and unsafe. Ignoring these cautions presents a potential hazard.
-  **NOTE:** This label indicates important special instructions that are not directly related to hazards.

USE OF NON-XTREMEPOWERUS REPLACEMENT PARTS VOIDS WARRANTY

ATTENTION INSTALLER: This manual contains vital information regarding the installation, operation, and safe use of this product. It is essential to provide this manual to the end user of the product. Failure to read and follow all instructions could lead to severe injuries.

 **DANGER** Failure to comply with all instructions and warnings may lead to severe bodily injury or even death. For optimal safety and functionality, it is advisable to have the product installed and serviced by a certified service professional. Prior to using this product, installers, operators, and owners must carefully review these warnings and all instructions provided in the owner's manual. It is essential to leave these warnings and the owner's manual with the owner for their reference and safety.

 **WARNING** For safety reasons, children should not be allowed to use this product. Packing materials and plastic bags are not toys. Keep them away from children to prevent the risk of suffocation.

IMPORTANT SAFETY INSTRUCTIONS

⚠ DANGER

- **Suction Entrapment Risk:** High suction can trap and drown individuals near drains or broken covers. Avoid using the pool or spa if drain covers are missing, cracked, or damaged.
- **Electrical Hazard:** Never open the pump's drive or motor enclosure to avoid electrical hazards.



SUCTION ENTRAPMENT HAZARD

⚠ WARNING

- **Qualified Installation:** Pool pump installation and servicing should only be performed by a qualified pool service professional.
- **Correct Application:** Avoid using the pump in settings for which it was not designed, as improper usage can lead to injury or death.
- **Adult Supervision:** This product is not suitable for use by children without adult supervision.
- **Ensure Safe Operation:** Only install the pump in applications that match its intended design.
- **High-Pressure Hazard:** Pool circulation systems operate under high pressure, which can lead to serious injury if improperly handled.
- **Start-Up Precautions:** Stand clear of the system during start-up to avoid potential hazards from pressure surges.

⚠ CAUTION

- **System Sizing and Installation:** Ensure that pumps are properly sized and installed to avoid injury, system damage, or compromised performance.
- **Suction entrapment hazard:** Stay off the main drain and away from suction outlets.
- **Anti-Entrapment Covers:** Ensure properly installed and secured anti-entrapment covers are in place to prevent hazards. Maintain distance from main drains and suction outlets. If possible, disable suction outlets or convert them to return inlets.
- **Code Compliance:** All suction plumbing installations must comply with national and local codes.

★ NOTE

- **Intended Use:** This pump is for permanent swimming pools and compatible hot tubs or spas. It is not for use with storable pools.
- **Manual and Label Adherence:** Review the product manual for important operation and maintenance guidelines.
- **Safe Electrical Setup:** Electrical installations must allow for safe operation without exposing users to electrical risks.
- **Safety Labels:** Maintain safety labels in good condition for clear visibility of hazards and replaced if damaged.
- **Air Relief:** Before starting the system, open the air relief valve and confirm all system valves are open to avoid pressure buildup.

OVERVIEW (PRODUCT INFORMATION)

OVERVIEW (PRODUCT INFORMATION)

PUMP FEATURES

- Ultra-quiet operation
- 2 in. plumbing connections for easy installation and replacement
- Transparent strainer pot lid for quick and easy inspection of the strainer basket
- Self-priming design for fast and reliable start-up

MOTOR FEATURES

- High-efficiency permanent magnet motor for improved energy savings
- 56 square flange design for standard mounting compatibility
- Built to withstand outdoor environments
- Operates at lower temperatures due to high efficiency
- Totally Enclosed Fan-Cooled (TEFC) motor for enhanced durability and protection

DRIVE FEATURES

The pump is equipped with a premium variable frequency drive (VFD) that provides flexibility in motor speed control and operating duration.

NOTE

This pump is designed for use with 230 Vrms nominal voltage and for pool pump applications only. Connection to an incorrect voltage or use in other applications may result in equipment damage or personal injury.

PERFORMANCE AND OPERATION

- Speed range: 1000 to 3450 RPM
- Compatible with 230 Vrms, 50/60 Hz input power
- The drive controls both speed settings and run durations

The pump is designed to operate at the lowest effective speed required to maintain proper water sanitation while minimizing energy consumption. Optimal settings may vary depending on:

- Pool size
- Additional water features
- Chemical treatment requirements
- Environmental conditions

NOTE

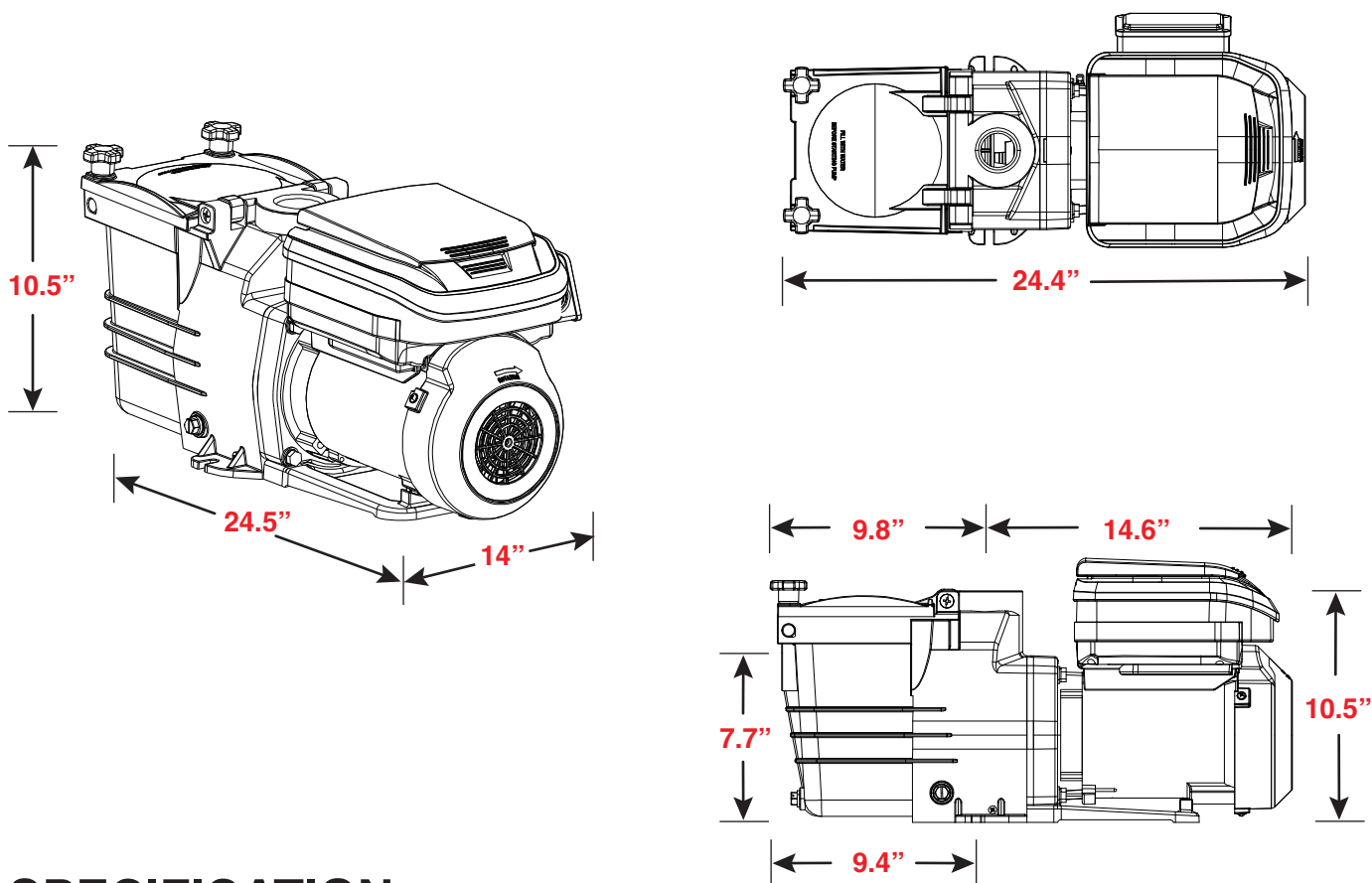
Determining optimal performance settings may require trial and adjustment.

CONTROL AND FUNCTION FEATURES

- User-friendly interface for easy operation
- UV- and rain-resistant enclosure for outdoor durability
- Built-in 24-hour scheduling (time-of-day clock)
- Adjustable priming mode
- Programmable Quick Clean mode
- Pump alarm display with fault memory
- Automatic power-limiting protection circuit
- 24-hour clock retention during power outages

OVERVIEW (PRODUCT INFORMATION)

DIMENSIONS



SPECIFICATION

SKU	75016
HORSEPOWER	1.65 HP
CONNECTION	2" Inlet/Outlet
INPUT VOLTAGE / FREQ	230V, 50/60HZ
INPUT CURRENT	0.4 - 5.6 AMPS
MAXIMUM FLOW RATE PER MINUTE	122 GPM (Gallons/Minute)
MAXIMUM HEAD LIFT	59 FT
SPEED RANGE (RPM)	1000 ~ 3450 RPM (Revolutions/Minute)
HYDRAULIC HORSEPOWER (HHP)	0.718
TOTAL HORSEPOWER (THP)	1.65
Protection Rating	IPX 5 (Water Resistant)
MAX WATER TEMPERATURE	-40°F ~ 140°F
OPERATING TEMPERATURE RANGE	32°F ~ 122°F
HUMIDTY TOLERANCE	0% ~ 95% Relative Humidity, Non-Condensing
WEIGHT	26.5 LBS

INSTALLATION

- Installation should be performed only by a qualified plumbing professional to ensure proper setup and to mitigate safety risks.
- Refer to the IMPORTANT SAFETY INSTRUCTIONS on pages 2–3 for detailed safety and installation guidance.

LOCATION

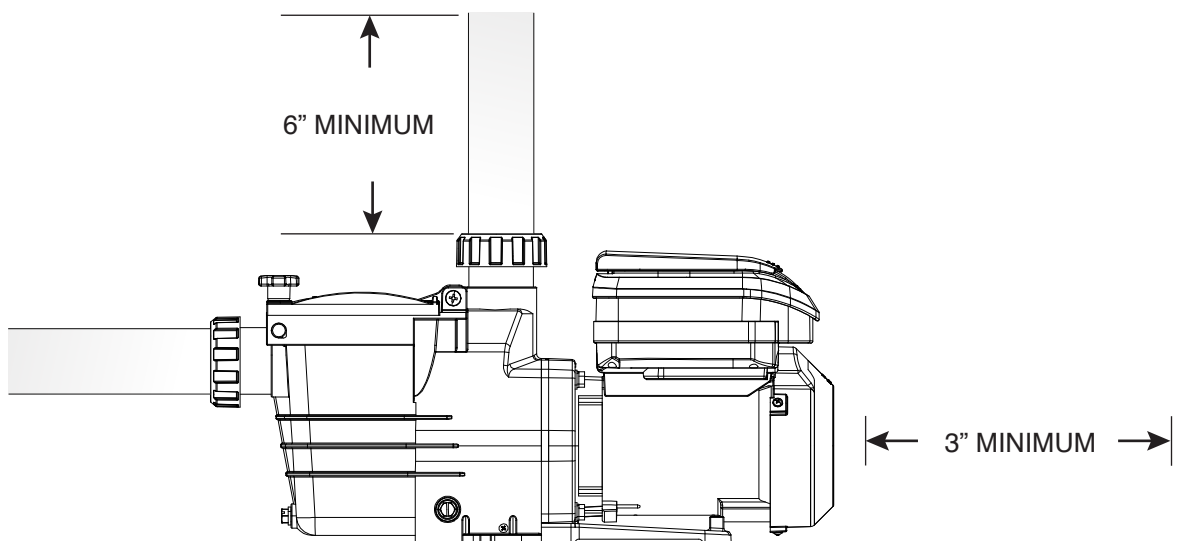
★ NOTE

- Do not install the pump in an enclosed space, such as an external enclosure or under a hot tub or spa skirt.
- Ensure that the pump is securely attached to a stable equipment pad for optimal performance.

LOCATION REQUIREMENTS

- Place the pump close to the pool or spa, using short, direct piping for both suction and return lines to reduce friction loss and increase efficiency.
- Maintain a minimum distance of 5 feet from the pool or spa's inner wall (9.8 feet in Canada).
- Keep the pump at least 3 feet away from the heater outlet.
- Avoid placing the pump more than 5 feet above the water level to prevent operational issues.
- Install the pump in a well-ventilated area, away from moisture sources such as rain gutters and sprinklers.
- Leave at least 3 inches of clearance at the rear for motor removal and 5 inches on top for keypad accessibility. Refer **Figure 1**.

FIGURE 1



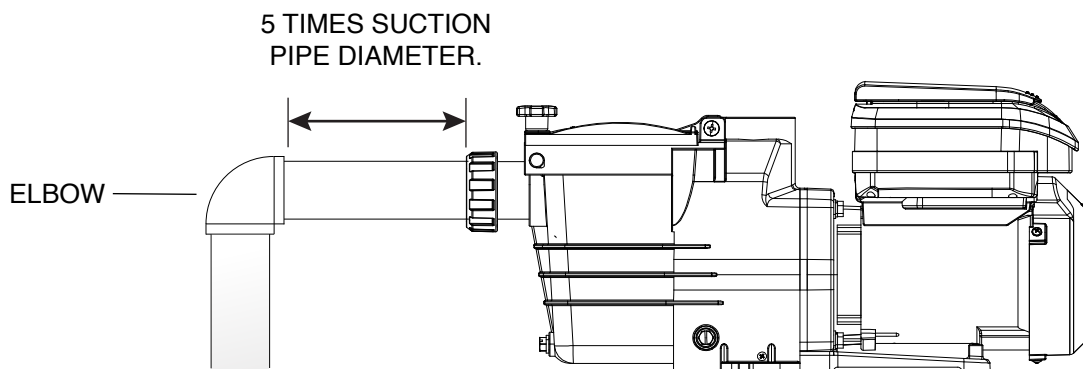
PIPING

PIPING GUIDELINES

- Use larger piping to increase plumbing efficiency, ensuring that the suction side pipe diameter is equal to or larger than that of the return line to facilitate optimal flow.
- Ensure that the suction side pipe diameter is equal to or larger than the return line to facilitate optimal flow.
- Keep the suction side piping as short as possible to enhance pump performance.
- Maintain a straight section of pipe on the suction line that is at least five times the pipe's diameter before the pump's inlet. Refer **Figure 2**.

Example: For a 2.5-inch diameter pipe, ensure at least 12.5 inches of straight piping before the suction port. This setup improves priming speed and extends the lifespan of the pump by reducing turbulence.

FIGURE 2



FITTINGS AND VALVES

★ NOTE

- To reduce turbulence and prevent cavitation, avoid placing 90° elbows directly at the pump's suction port (see **Figure 2**).

FITTINGS AND VALVES GUIDELINES

- For flooded suction systems, install gate valves on both the suction and discharge pipes to allow for easy isolation during maintenance.
- Position the suction gate valve at least five times the suction pipe's diameter away from the pump to prevent interference with flow dynamics.
- Install a check valve on the discharge line, especially if the plumbing has a significant rise after the pump, to prevent water backflow and help maintain consistent pump performance.
- When plumbing two pumps in parallel, install check valves on each pump's discharge line to prevent reverse rotation of the impeller and motor, which can occur if one pump is running while the other is off or during fluctuations in flow.

INSTALLATION

ELECTRICAL INSTALLATION

The pump operates on 230 V, 50/60 Hz, single-phase power. Power connections are capable of handling up to 8 AWG solid or stranded wire.

DANGER

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION

- The 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 applicable local codes and ordinances.
- Improper installation can result in death or serious injury due to electric shock and may cause property damage.
- Always disconnect power at the circuit breaker before installing, servicing, or maintaining the pump.
- Failure to disconnect power may result in fatal electric shock.
- Stored Charge Hazard: Wait at least 5 minutes after disconnecting power before servicing.
- Read all instructions before performing any electrical work.

WARNING

WIRING INSTRUCTIONS

- Ensure all electrical breakers and switches are turned OFF before wiring the motor.
- Verify that the supply voltage matches the motor nameplate.
- All wiring must comply with the National Electrical Code (NEC) and local regulations.
- Use properly rated wiring (up to 8 AWG) and ensure all connections are tight and secure.
- Do not operate the pump with the drive cover removed.
- Ensure wires are not pinched or damaged during installation.
- Keep the electrical components dry and protected from moisture.

NOTE

EQUIPMENT SAFETY

- Ensure wires are not pinched between the drive body and the lid.
- Use appropriately sized wiring to prevent overheating or voltage drop.
- Do not install fittings or wiring that place stress on electrical connections.
- Always reinstall the drive lid/cover after servicing.
- Avoid exposure to water, dirt, or debris inside the electrical compartment.

INSTALLATION

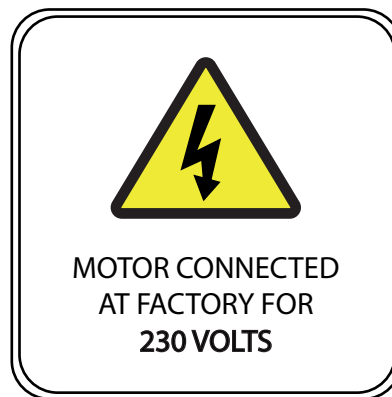
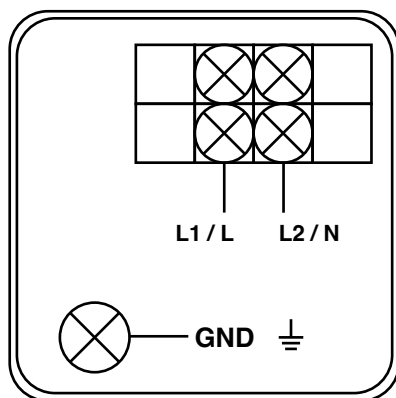
ELECTRICAL INSTALLATION

GROUNDING INSTRUCTIONS

- Permanently ground the motor using the grounding terminal inside the wiring compartment.
- Follow NEC and local code requirements for proper grounding wire size and type.
- Ensure the ground wire is connected to a reliable electrical service ground.

BONDING INSTRUCTIONS

- Using the bonding lug on the motor, bond the pump to:
 - All metal parts of the pool structure
 - Electrical equipment
 - Metal piping and conduit within 5 ft (1.5 m) of the pool, spa, or hot tub
- Use a solid copper bonding conductor:
 - Minimum 8 AWG (standard)
 - Minimum 6 AWG (Canadian installations)



USE COPPER CONDUCTORS ONLY. ACCEPTABLE FOR FIELD WIRING.

★ NOTE

IMPORTANT SAFTY

- Do not operate the pump unless it is properly grounded and bonded.
- Improper installation can result in electric shock, fire, or equipment failure.
- Only use qualified personnel for electrical installation and servicing.

OPERATION

INITIAL SETUP

Before operating the pump for the first time, the internal clock and operational schedules must be properly programmed by following the instructions in this manual.

Refer to “**Setting the Clock**” and “**Programming Custom Schedules**” for detailed guidance on configuring scheduled operation.

★ NOTE The pump’s functionality may vary if features like External Control Only Mode or Keypad Lockout are enabled. Close the keypad cover after each use to protect the keypad and drive components from potential damage.

! CAUTION To avoid damaging the keypad, use only your fingers to press the buttons; do not use screwdrivers, pens, or other tools for programming the pump.

! WARNING If the pump motor is connected to power, pressing any buttons mentioned in this section may activate the motor. Unexpected motor start-ups could result in personal injury or equipment damage. Always be aware of the motor’s power status when programming or servicing.

USING THE DEFAULT SCHEDULE

The default schedule is designed to provide sufficient daily water turnover for a typical pool (see Table 2).

The pump operates according to the following preset schedule:

1. SPEED 1

- Start Time: 8:00 AM
- Speed: 2850 RPM
- Duration: 2 hours

2. SPEED 2

- Start Time: 10:00 AM
- Speed: 1730 RPM
- Duration: 10 hours

3. SPEED 3

- Start Time: 8:00 PM
- Speed: 2300 RPM
- Duration: 2 hours

4. SPEED 4

- Start Time: 10:00 PM
- Speed: 1150 RPM
- Duration: 8 hours

5. After completing Speed 4, the pump will stop for 2 hours, after which the cycle will restart at Speed 1. The factory default setting runs the pump for a total of 22 hours per day until modified by the user.

OPERATION

KEYPAD FUNCTIONS

SPEED SETTINGS

1. Speed 1 - Press to select Speed 1 (2850 RPM) / LED ON = Speed 1 is running
2. Speed 2 - Press to select Speed 2 (1730 RPM) / LED ON = Speed 2 is running
3. Speed 3 - Press to select Speed 3 (2300 RPM) / LED ON = Speed 3 is running
4. Speed 4 - Press to select Speed 4 (1150 RPM) / LED ON = Speed 4 is running

OPERATION KEYS

5. Quick Clean Key - Activates quick cleaning mode
6. Start/Stop Key - Start or stop the pump
Light ON = Pump running or active mode
Light Blinking = Pump stopped, waiting for scheduled start
7. Main Menu Access - When the frequency converter is OFF, press to enter main menu
8. Display Button - Switch between display information while running

NAVIGATION (ARROW KEYS)

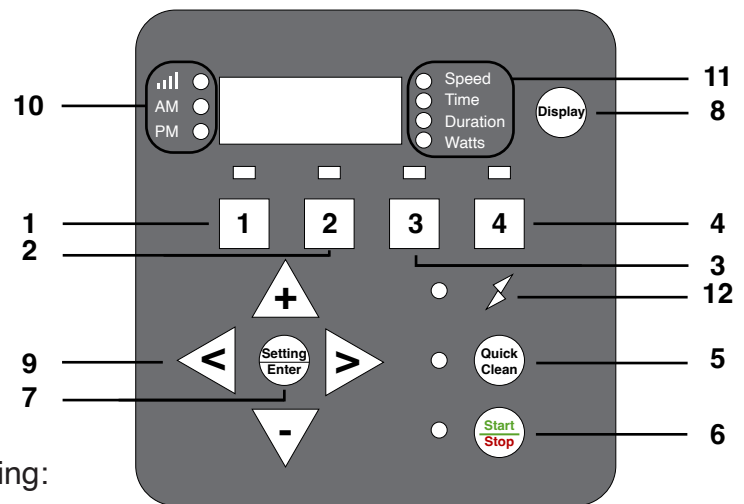
9. Arrow Keys Functions
 - (Up): Increase speed or time
 - (Down): Decrease speed or time
 - (Left): Move cursor left
 - (Right): Move cursor right

DISPLAY LAYOUT REFERENCE

- 1–4: Speed indicators
- Quick Clean: Cleaning mode
- Setting / Enter: Menu navigation
- Start/Stop: Pump operation
- + / - / < >: Adjustment & navigation

DIGITAL PANEL DISPLAY

10. Digital Display (Digital Tube)
Displays key operating information including:
 - Current speed level
 - Time and duration
 - Power consumption
 - Bluetooth connection status
 - Other system functions



DISPLAY MODE LED INDICATORS

- Works together with the Display Button to show different data modes.
- Each LED corresponds to a specific type of information shown on the digital display.
- Flashing LED = Current parameter is editable
- Solid LED = Parameter is being displayed

POWER LED INDICATOR

- LED ON = Pump is powered (energized)
- Indicates that the system is receiving electricity and ready for operation

NOTE If the Power LED is ON but the pump is not running, check: Start/Stop button status. Timer or scheduled mode. Any active protection codes (e.g., E3, P1, etc.)

NOTE Always confirm LED indicators when selecting speeds Use lower speeds (Speed 4) for energy saving. Use Quick Clean for short, high-power cleaning cycles.

INITIAL PROGRAMMING

- Before first use, set the pump's internal clock and operational schedules as detailed in this manual. Refer to *Setting the Clock* in this section and **CUSTOM SCHEDULE PROGRAMMING** for step-by-step instructions.

★ NOTE

- When setting up a new schedule, ensure that the start times for Speeds **1** through **4** are programmed in chronological order within a 24-hour period.

SETTING THE CLOCK

- When the pump is first connected to power, the clock will flash, indicating the need for setup.
- Press Setting. Use the + and - buttons to set the current time, < and > to adjust the cursor position. In 12-hour format, AM/PM will be displayed.
- In 12-hour format, AM/PM will be displayed.

USING THE DEFAULT SCHEDULE

- The default schedule provides adequate daily circulation for most pools (see Table 2 for details).

PROGRAM	STARTUP TIME	OPERATION DURATION	DEFAULT SPEED
SPEED 1	8:00AM (8:00) ADJUSTABLE)	2 HRS (ADJUSTABLE)	2850 RPM (ADJUSTABLE)
SPEED 2	10:00AM (10:00) (ADJUSTABLE)	10 HRS (ADJUSTABLE)	1730 RPM (ADJUSTABLE)
SPEED 3	8:00AM (20:00) (ADJUSTABLE)	2 HRS (ADJUSTABLE)	2300 RPM (ADJUSTABLE)
SPEED 4	10:00AM (22:00) (ADJUSTABLE)	8 HRS (ADJUSTABLE)	1150 RPM (ADJUSTABLE)

★ NOTE
THE DEFAULT OPERATING CYCLE OF THE PUMP IS SET TO RUN FOR 22 HOURS PER DAY.

DEFAULT SCHEDULE OPERATES

- SPEED 1:** Starts at 8:00 AM, runs at 2850 RPM for 2 hours.
- SPEED 2:** Starts at 10:00 AM, runs at 1730 RPM for 10 hours.
- SPEED 3:** Starts at 8:00 PM, runs at 2300 RPM for 2 hours.
- SPEED 4:** Starts at 10:00 PM, runs at 1150 RPM for 8 hours.
- Following **SPEED 4**, the pump pauses for 2 hours and then resumes with **SPEED 1**. This cycle repeats, maintaining a 22-hour daily operation as set by the factory until altered by the user.

★ NOTE

- To start the pump, press the Start/Stop button and ensure that the corresponding LED is illuminated.

CUSTOM SCHEDULE PROGRAMMING

To customize the pump schedule, the pump must first be stopped. Ensure that the Start/Stop LED is OFF (not illuminated).

During programming, the LED next to the selected parameter will blink, indicating it is being edited:

Speed = Run speed (RPM)

Time = Start time

Duration = Run time

TO PROGRAM A CUSTOM SCHEDULE

Step 1: Stop the Pump

1. Press the **Start/Stop** button to stop the pump.

Step 2: Program SPEED 1

2. Press “1”. The SPEED 1 LED and “Speed” parameter LED will blink.
3. Adjust the speed:
 - Use “+” and “-” to change RPM
 - Use “<” and “>” to move the cursor

 **NOTE** Speed adjustment increments: **100 / 10 / 1 RPM**



4. Press “1” again.
The start time will display, and the “Time” LED will blink.

5. Adjust the start time:
 - Use “+” and “-” to change values
 - Use “<” and “>” to move the cursor

 **NOTE** Time adjustment increments: **1 hour / 10 minutes / 1 minutes.**

6. Press “1” again.
The duration will display, and the “Duration” LED will blink.

OPERATION

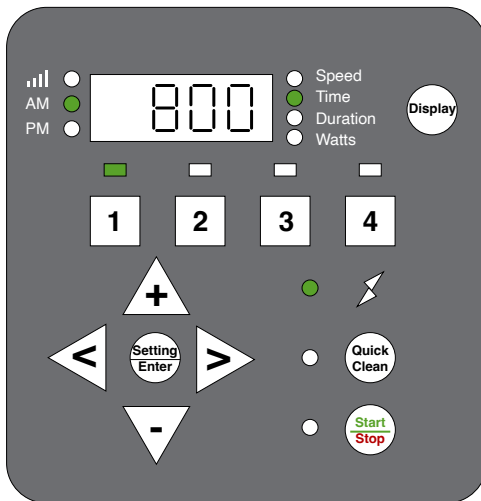
TO PROGRAM A CUSTOM SCHEDULE (CONTINUED)

7. Adjust the duration:

- Use “+” and “-” to change values
- Use “<” and “>” to move the cursor

★ NOTE

Duration adjustment increments: **1 hour / 10 minutes**.
If duration is set to 0 hours, this segment will not run.



8. SPEED 1 programming is complete.

★ NOTE

Pressing “1” will cycle through Speed, Time, and Duration again. Changes are saved automatically as they are adjusted.

Step 3: Program SPEED 2, 3, 4, and QUICK CLEAN

9. Press “2” to program SPEED 2.

The SPEED 2 LED and “Speed” LED will blink.

10. Adjust speed using “+” “-” “<” “>”.

11. Press “2” again to set duration.

12. Adjust duration using “+” “-” “<” “>”.

13. Repeat the same procedure for:

- SPEED 3
- SPEED 4
- QUICK CLEAN

Step 4: Activate the Schedule

14. Press **Start/Stop**.

Ensure the Start/Stop LED is ON (illuminated).

The pump will now operate according to the programmed schedule.

★ NOTE

If the pump was manually stopped, press **Start/Stop** again to start the schedule.
A lit **Start/Stop** LED indicates that the pump will follow the set schedule.

OPERATION

SPEED PRIORITIZATION (NON-EXTERNAL CONTROL)

For scheduled operation, speed settings are prioritized in the following order:

SPEED 1 → SPEED 2 → SPEED 3 → SPEED 4

- **SPEED 1** has the highest priority
- **SPEED 4** has the lowest priority

When schedule times overlap, the pump will operate according to the highest-priority speed, and lower-priority speeds will be overridden.

EXAMPLE

Starting Schedule (Before Adjustment)

- **SPEED 1:** Start Time = 08:00 AM, Duration = 6 hours
- **SPEED 2:** Start Time = 09:00 AM, Duration = 1 hour
- **SPEED 3:** Start Time = 10:00 AM, Duration = 1 hour
- **SPEED 4:** Start Time = 02:00 PM, Duration = 1 hour

RESULTING OPERATION

Based on speed priority:

- The pump will run at **SPEED 1** from 8:00 AM to 2:00 PM
- **SPEED 2** and **SPEED 3** will be skipped, as their scheduled times fall within the **SPEED 1** operating period
- The pump will then run at **SPEED 4** from 2:00 PM to 3:00 PM

END SCHEDULE (After Adjustment)

- **SPEED 1:** Start Time = 8:00 AM, Duration = 6 hours
- **SPEED 4:** Start Time = 2:00 PM, Duration = 1 hour

OPERATING THE PUMP WHILE RUNNING

⚠ CAUTION If power is connected to the pump, pressing any control button may cause the motor to start automatically. Failure to recognize this hazard may result in personal injury or equipment damage.

DISPLAY FUNCTION

Press the Display button to cycle through the following parameters:

- **Speed** — Current operating speed (RPM)
- **Time** — Current time of day
- **Duration** — Remaining time at the current speed
- **Watts** — Current power consumption

MANUAL SPEED OVERRIDE

Pressing any **SPEED** button ("**1**", "**2**", "**3**", "**4**", or **Quick Clean**) while the pump is running will activate a temporary override:

- The pump will run at the selected speed and its programmed duration
- After completion, the pump will return to the programmed schedule

★ NOTE If speed settings are adjusted while the pump is running, the pump will operate at the newly entered speed for the remainder of the current cycle, but the changes will not be saved.

PROGRAMMING QUICK CLEAN

The pump is equipped with a Quick Clean feature, which allows temporary operation at higher or lower speeds ranging from 1700 to 3450 RPM.

At the end of the Quick Clean cycle, the pump will automatically return to the programmed schedule.

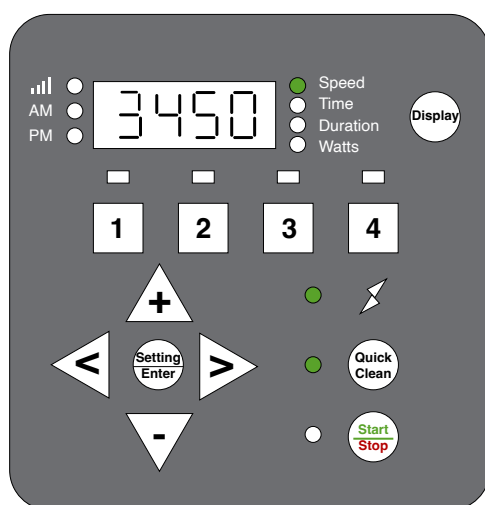
TO PROGRAM QUICK CLEAN

Step 1

- Press **Start/Stop** to stop the pump

Step 2

- Press **Quick Clean**.
- The Quick Clean LED and Speed LED will blink, indicating editing mode

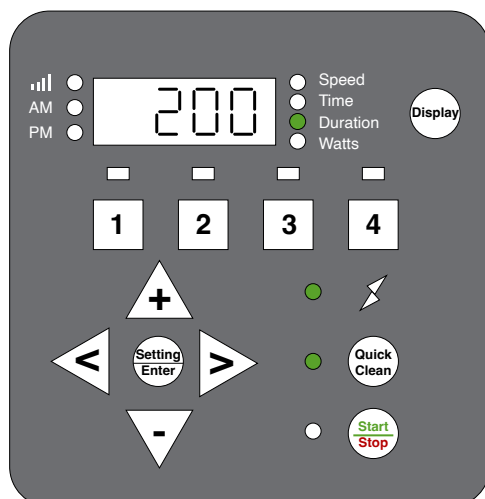


Step 3 – Set Speed

- Use “+” / “-” to adjust speed (RPM)
 - Use “<” / “>” to move the cursor
- Adjustment steps: **100 RPM / 10 RPM / 1 RPM**

Step 4 – Set Duration

- Press **Quick Clean** again
- The Duration LED will blink



PROGRAMMING QUICK CLEAN (CONTINUED)

Step 5 – Adjust Duration

- Use “+” / “-” to set time.
- Use “<” / “>” to move cursor.

Adjustment steps: **1 hour / 10 minutes**

Range: **Minimum: 10 minutes / Maximum: 24 hours**

 **NOTE** Quick Clean duration does not affect the scheduled start time.

FACTORY RESET

The drive can be reset to factory settings if necessary.

 **CAUTION** A Factory Reset will erase all programmed settings and schedules. The time of day will NOT be erased. This action is immediate and cannot be undone. Only perform this if absolutely necessary

To Perform Factory Reset

Step 1

- Press **Start/Stop** to stop the pump (if running)

Step 2

- Press and hold “1” and “2” buttons simultaneously for 3 seconds

Step 3

- A 3-second audible tone will sound to confirm a successful reset

Step 4

- Reprogram the following settings:
 - Operating schedule
 - Priming speed

Step 5

- Press **Start/Stop** to turn the pump back on
- The pump will begin running based on the newly programmed schedule

 **NOTE**

Use Quick Clean for: Heavy debris removal. After pool maintenance. Always double-check settings after a factory reset.

 **NOTE**

After a factory reset, always verify:

- Speed settings
- Timer schedule
- Quick Clean configuration

PRIMING

CAUTION

The pump is pre-set to Priming mode, which causes it to automatically accelerate to 3200 RPM upon initial start-up.

BEFORE ACTIVATING THE PUMP:

- Open the filter air relief valve
- Open all necessary valves
- Ensure the return line is fully open and free of blockages
- Make sure the pump is filled with water
- Stand clear of the filter and other pressurized equipment

WARNING

PREVENT DRY RUNNING

- DO NOT run the pump dry. Dry operation will damage the shaft seal, causing leaks.

TO PREVENT DAMAGE:

- Maintain proper pool water level (mid-skimmer level)
- If water drops below skimmer:
 - Air enters system
 - Pump loses prime
 - Pump runs dry will causes damage

CONTINUED DRY OPERATION MAY RESULT IN:

- Loss of pressure
- Damage to pump body, impeller, and seals
- Risk of property damage or personal injury

PRIMING OPERATION

- Default startup speed: 2400 RPM
- Gradually increases to 3200 RPM
- Priming duration: 5 minutes
- Display shows remaining time

PRIMING BEHAVIOR

- After priming cycle:
 - Pump continues at set priming speed until timer ends
- On restart:
 - Pump checks conditions for 20 seconds
 - Determines whether priming is needed

ADJUSTING PRIMING SPEED

- During startup, adjust speed using “+” / “-”
- Adjustable range: 3200–3450 RPM

PRIMING PROCESS (CONTINUED)

EXIT PRIMING EARLY

- Press any speed button (1, 2, 3, or 4)
- This will stop priming mode immediately

ENVIRONMENTAL CONSIDERATIONS

Priming performance depends on:

- Water temperature
- Atmospheric pressure
- Pool water level

NOTE

Always: Test priming settings multiple times. Allow system to drain between tests.

IMPORTANT MAINTENANCE TIP

- Keep the pump strainer pot filled with water
- Water level must reach the bottom of the suction port
- Prevents air from entering the system

NOTE

Best Practice: Always verify proper priming before regular operation to ensure efficiency and prevent long-term damage.

MAINTENANCE

WARNING

STRAINER POT HANDLING

- Never open the strainer pot if the pump has failed to prime or has operated without water, as vapor pressure build-up may cause scalding water inside.
- Opening under these conditions can lead to severe injury.
- Ensure both suction and discharge valves are open, and verify that the strainer pot is cool before cautiously opening it.

POWER DISCONNECTION

- Always turn off power at the circuit breaker and disconnect the digital input cable before servicing the pump. Failing to do so may result in fatal or severe electric shock injuries.
- Neglecting this step can cause fatal or severe electric shock injuries. Read and understand all service instructions prior to performing pump maintenance.

CAUTION

PUMP MAINTENANCE

- To prevent pump damage and maintain system efficiency, regularly clean the pump strainer and skimmer baskets.

CLEANING THE PUMP STRAINER BASKET

The strainer pot, located at the front of the pump, contains the strainer basket. Inspect the basket through the pot lid visually at least once a week. Regular cleaning ensures higher efficiency of the filter and heater and reduces stress on the pump motor.

CLEANING INSTRUCTIONS

- **Stop the pump** by pressing Start/Stop, and turn off electrical power at the circuit breaker.
- **Open the filter's air relief valve** to release any pressure in the filtration system.
- **Unscrew the strainer pot lid** counterclockwise and remove it.
- **Remove the basket**, clear debris, and rinse it. Replace the basket if it is cracked or damaged.
- **Reinsert the basket** into the pot, ensuring the basket's notch aligns with the strainer pot's rib.
- **Refill the strainer pot with water** to the level of the inlet port.
- **Clean the lid's O-ring** and the pot's sealing surface.

 **NOTE** Keep the O-ring clean and lubricated.

- **Replace the lid**, screwing it clockwise until the handles are aligned horizontally.

 **NOTE** Ensure the O-ring is correctly placed to avoid pinching.

 **NOTE** Ensure the "Front" label on the lid faces the front of the pump.

- **Open the filter air relief valve again** and maintain a safe distance from the filter.
- **Restore electrical power** at the circuit breaker and restart the pump.
- **Once a steady water flow** is established from the air relief valve, close the valve.

MOTOR CARE

HEAT PROTECTION

- Shield the motor from direct sunlight, ensuring that any covering provides adequate ventilation to prevent overheating.
- Facilitate cross ventilation around the motor area.

DIRT PROTECTION

- Keep foreign materials away from the motor to avoid contamination.
- Store chemicals at a safe distance from the motor to prevent accidental spills.
- Minimize dust generation near the motor during operation, as dirt damage can void the motor warranty.
- Regularly clean the lid, O-ring, and the sealing surface of the strainer pot to maintain optimal performance.

MOISTURE PROTECTION

- Protect the motor from water splashes or sprays, and shield it from harsh weather conditions.
- If the motor becomes wet internally, allow it to dry thoroughly before use.
- Do not operate a flooded pump, as water damage can void the motor warranty.



HIGH-PRESSURE SYSTEM OPERATION

- This system operates under high pressure, so servicing any component in the circulation system can introduce air, leading to pressurization. Such pressurized air may forcefully dislodge the lid, posing serious risks of injury, death, or property damage. To prevent these hazards, follow all provided instructions closely.

PUMP DISASSEMBLY AND REASSEMBLY

★ NOTE

- For a detailed parts breakdown, refer to the **PARTS DIAGRAM** section.

⚠ WARNING

POWER DISCONNECTION

- It is crucial to always shut off power at the circuit breaker before servicing the pump.
- Failing to disconnect the power source can result in potentially fatal electric shock injuries.
- Ensure you fully understand and comply with all servicing guidelines before beginning any maintenance work.

STRAINER POT HANDLING

- Do not open the strainer pot if the pump is having trouble priming or has been operating without water, as these conditions can cause vapor pressure build-up with extremely hot water inside, posing a serious risk if opened.
- For safety, confirm that both the suction and discharge valves are open and that the strainer pot is cool to the touch before attempting to open it. Proceed with extreme caution.

REQUIRED TOOLS

- Adjustable wrench
- #2 Phillips screwdriver
- Flat blade screwdriver

PUMP DISASSEMBLY

- **Stop the pump** using the Start/Stop button and disconnect power at the circuit breaker.
- **Unplug digital inputs or communication cables**, if present.
- **Close all valves** on the suction and discharge lines.
- **Release system pressure** using the filter's air relief valve.
- **Remove the drain plugs** from the bottom of the strainer pot.
- **Unscrew the two through-bolts and nuts** of the strainer pot using an adjustable wrench.
- **Remove the four remaining strainer pot bolts.**
- **Detach the motor/hydraulics assembly** from the strainer pot carefully.
- **Unscrew the diffuser** from the seal plate.
- **Hold the motor shaft** at the motor's rear to prevent it from spinning. Remove the impeller screw and washer.
- **Unscrew the impeller by hand.**
- **Remove the four bolts** from the seal plate using a 9/16 inch wrench.
- **Take off the seal plate** from the motor/drive assembly.

⚠ WARNING

ELECTRICAL SAFETY

- Always disconnect power to the pump at the circuit breaker before servicing.
- Always treat the pump system as pressurized and hot unless you are certain it is safe.

PUMP DISASSEMBLY AND REASSEMBLY (CONTINUED)

PUMP REASSEMBLY

- Align the seal plate on the motor, ensuring the "UP" marking is at the top.
- Attach the seal plate to the motor with bolts, tightening to 70–80 in-lbs.
- Hold the motor shaft and reattach the impeller to the shaft, followed by the impeller screw and washer; tighten to 25 in-lbs.

★ NOTE The impeller screw has reverse threading.

- Reinstall the diffuser onto the seal plate and secure with screws. Replace the diffuser seal and seal plate gasket if necessary, applying lubrication as needed.
- Reattach the strainer pot to the motor/hydraulics assembly with bolts and washers.

★ NOTE Tighten the through-bolts only after all bolts are finger-tightened, then secure to 110 in-lbs.

★ NOTE Ensure the seal plate gasket is properly aligned.

- Replace the drain plugs in the strainer pot.
- Refer to the Pump Restarting section for further instructions on restarting the pump.

PUMP RESTARTING

! CAUTION

Avoiding Dry Running

- Never operate the pump without water, as dry running can damage the shaft seal, requiring immediate replacement.
- Maintain the proper water level in the pool, ideally at least halfway up the skimmer opening, to prevent air intake through the skimmer.
- A low water level can cause the pump to lose prime, leading to decreased pressure, potential pump damage, property damage, or even personal injury.

PUMP RESTARTING PREPARATION

If the pump is installed below the pool's water level, close the return and suction line valves before opening the strainer pot. Ensure these valves are reopened before starting the pump.

PUMP RESTARTING INSTRUCTIONS

- Stop the pump using the Start/Stop button and disconnect power at the circuit breaker.
- Release all pressure in the filtration system by opening the filter's air relief valve.
- Unscrew and remove the strainer pot lid by turning it counterclockwise.
- Fill the strainer pot with water up to the level of the inlet port.
- Replace the lid onto the strainer pot, securing it by turning clockwise.

★ NOTE The lid is correctly locked when its handles are nearly perpendicular to the pump body.

- Restore power to the pump at the circuit breaker.
- Open the filter's air relief valve and stand back from the filter.
- Restart the pump using the Start/Stop button.
- Bleed air through the filter air relief valve until water flows steadily, then close the valve.

MAINTENANCE

WINTERIZING

Be proactive in anticipating freezing conditions, as freeze damage is not covered under warranty. In areas with mild climates where temporary freezing may occur, keep the filtering equipment running overnight to prevent freezing.

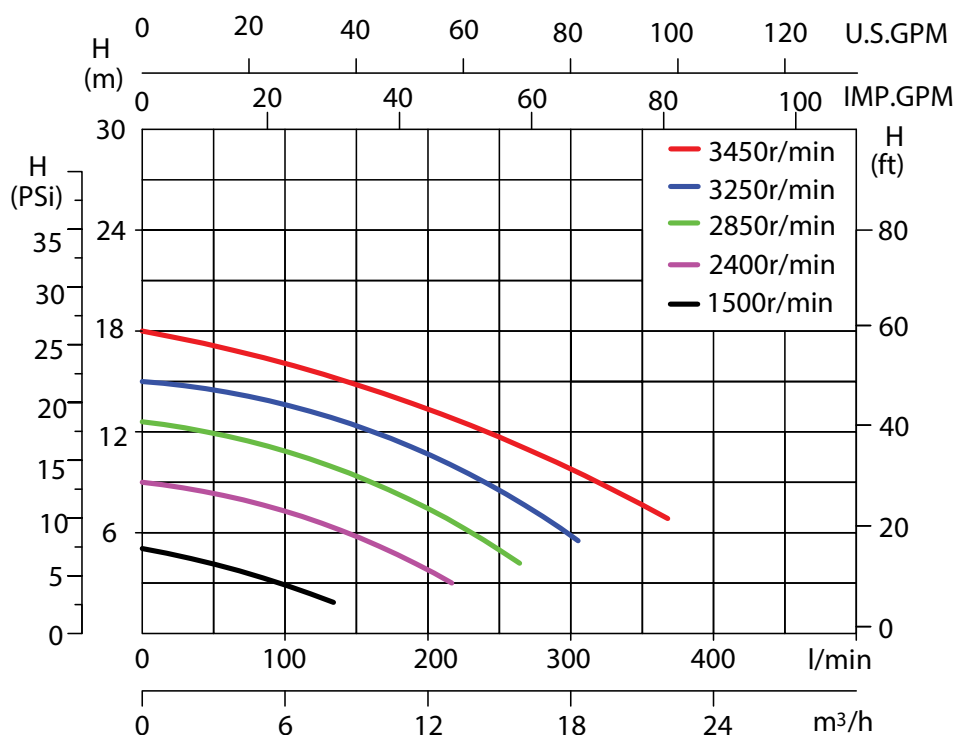
PREVENT FREEZE DAMAGE INSTRUCTIONS

- Stop the pump by pressing Start/Stop and disconnect all power at the circuit breaker. Confirm that all power sources are disconnected.
- Release pressure from the filtration system using the filter's air relief valve.
- Remove both drain plugs at the bottom of the strainer pot to drain the pump completely. Store the plugs in the strainer basket for safekeeping.
- Protect the motor by covering it to shield it from heavy rain, snow, and ice.

★ NOTE

- Avoid using plastic or airtight materials to cover the motor during winter storage.
- Ensure the motor remains uncovered if it will be operational or if the pump is expected to run.

PERFORMANCE CURVES



TROUBLESHOOTING

TROUBLESHOOTING



WARNING **ELECTRICAL SAFETY:** Risk of Electrical Exposure: Diagnosis may require proximity to live components. Servicing should only be performed by certified professionals to prevent serious risks, including death, personal injury, or property damage.

ISSUE	CAUSE	CORRECTIVE ACTION
Pump Failure	Pump Will Not Prime: Air in the suction line or pump	Inspect the suction line and valves for any signs of damage or loose connections. Confirm the strainer pot lid is sealed correctly and the O-ring is intact. Check the pool's water level is adequate for the skimmer.
	Pump Will Not Prime: Insufficient water	Make sure the pump strainer pot is filled with water. Ensure that the suction line valve is operational and in the open position (if applicable). Ensure the pool water level is sufficient for the skimmer function.
	The Strainer Basket is Dirty or Full Damaged Strainer Pot O-Ring	Refer to Cleaning the Pump Strainer Basket section and clean the basket to remove debris. Examine the O-ring for wear or damage, and replace it if necessary.
	Air in the suction line or pump	Check suction line and valves for any damage or loose connections.
Reduced Pump Capacity and Head		Check that the strainer pot lid is securely sealed and that the O-ring is present and correctly positioned. Ensure the pool's water level is at least halfway up the skimmer opening to support skimmer intake.
	Clogged impeller	Refer to Cleaning the Pump Strainer Basket section and clean the basket to remove debris. Refer to CLEANING THE PUMP STRAINER BASKET instruction.
	Dirty or full strainer basket	Inspect the circuit breaker and replace any blown fuses as needed.
Non-Starting Pump	No power from the mains	Check and secure connections to the mains wires.
	Voltage Motor is jammed	Use the Pump Disassembly instructions to manually rotate the motor shaft and clear any obstructions.
	Motor shaft is compromised	The pump may require replacement.
Pump That Runs Then Stops	Overheating (Over Temperature Fault)	Check the motor fan cover located at the back of the motor for any accumulation of dirt and debris.
	Excessive current draw (Over Current Fault)	Clean the fan cover using compressed air to remove any obstructions.

TROUBLESHOOTING

★ NOTE

The pump is designed to automatically attempt a restart after a one-minute cool down period.

ISSUE	CAUSE	CORRECTIVE ACTION
Noisy Pump	Obstruction by debris in fan area	Check the fan cover located at the rear of the motor for any accumulation of dirt and debris. Use compressed air to clean if needed
	Full or dirty strainer basket	Refer to CLEANING THE PUMP STRAINER BASKET instruction.
	Improperly secured mounting	Check and tighten all mounting bolts and pump bolts to ensure the pump is securely fastened.
Pump Running Without Water Flow	The impeller may be loose.	Verify that the fan at the rear of the pump is active. If it is, proceed to disassemble the pump as directed on page 12 and check that the impeller is properly fitted.
	There could be air in the suction line or pump.	Examine the suction line and valves for any signs of damage or loose connections. Make sure the strainer pot lid is creating a proper seal and that the O-ring is present and correctly positioned. Confirm that the pool has an adequate water level for the skimmer to function effectively.
	Plumbing may be clogged or restricted.	Look for and eliminate any obstructions in the strainer pot or suction line. Check the discharge piping for any blockages, including partially closed valves or a dirty pool filter, and clear any obstructions.

ALARMS AND FAULT CODE GUIDANCE

When an alarm triggers, the drive will halt the pump and display a fault code. To reset, turn off the power and wait for all keypad LEDs to go off before restoring power. If the fault persists, consult the error description table below for troubleshooting.

FAULT CODE DESCRIPTIONS

- **1:** Obstruction, motor wiring issue, short circuit, or excessive temperature rise.
- **2, 4, 6:** Input voltage is too high.
- **8:** Input voltage is too low.
- **16, 128:** Motor does not start under normal conditions.
- **256:** Motor phase loss or poor connection between motor and driver.
- **300:** Pump running without water (no load).
- **301:** Overheating of internal components.

TROUBLESHOOTING

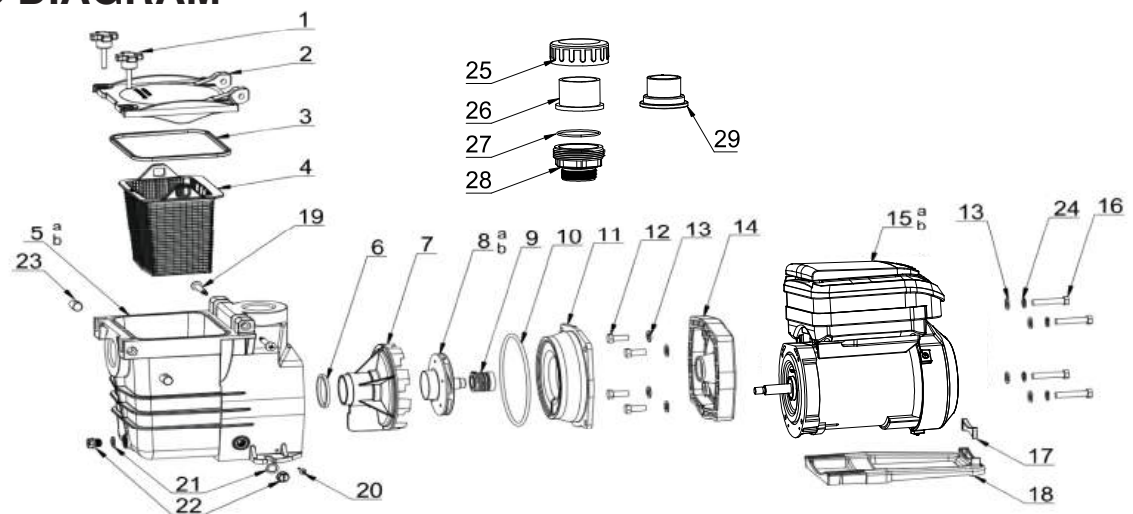
SPECIFIC FAULTS

- **Power Out Failure:** Supply voltage drops below 190 VAC, or the controller's input voltage exceeds the limit.
- **16, 128 - Motor Failure to Start:** May result from a jammed motor, improperly connected ground wire, or incorrect driver installation.
- **300 - No Load:** Indicates the pump may not be drawing water.
- **301 - Over-temperature:** Internal driver components have exceeded their temperature limit.

REPLACEMENT PARTS

REPLACEMENT PARTS

PARTS DIAGRAM



PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	648910606080	HANDLE SCREWS	2
2	48915102089	COVER	1
3	65432053080	GASKET	1
4	48910402001	BASKET	1
5	648915105080	PUMP HOUSING 2"	1
6	65432040080	O-RING	1
7	647258001080	DIFFUSER	1
8	89106201	IMPELLER	1
9	65028026000	SEAL FOR ASSEMBLY	1
10	65431121080	O-RING	1
11	647258002080	PUMP COVER	1
12	5225007000	SCREW 3/8 - 16UNC * 25.4MM	4
13	65244015000	GASKET M10	8
14	648910602080	OVER COVER	1
15	5023524000	VARIABLE SPEED MOTOR	1
16	65225008000	SCREW 3/8 - 16UNC * 50.8MM	4
17	648912301080	SUPPORTING FOOT	1
18	648910608080	MOUNTING FOOT	1
19	65212058000	SCREW ST4.8*9	2
20	65212013000	SCREW ST4.8*25	2
21	65432002080	GASKET	2
22	648860105080	DRAIN PLUG	2
23	648910607080	RESELLER	2
24	5244032000	GASKET M10	4
25	49130102001	CONNECTOR NUT	2
26	49130101001	2-INCH CONNECTOR	2
27	5431081080	O-RING $\phi 69.4^* \phi 3.1$	2
28	47310305001	ADAPTER CONNECTOR	2
29	49130301001	1.5 INCH CONNECTOR	2

DISCLAIMER

DISCLAIMER

PLEASE READ THE FOLLOWING CAREFULLY

The manufacturer and/or distributor have provided the parts list and assembly diagram in this manual for reference purposes only. They do not make any representation or warranty to the buyer that they are qualified to make repairs to the product or replace any parts of the product. In fact, the manufacturer and/or distributor expressly state that all repairs and parts replacements should be undertaken by certified and licensed technicians, and not by the buyer.

The buyer assumes all risk and liability arising from their repairs to the original product or replacement parts or arising from their installation of replacement parts. It is strongly advised that qualified professionals handle any repairs or replacements to ensure safety and proper functioning of the product. Improper installation and operation may result in injury, property damage, or voiding of warranty. The manufacturer and/or distributor shall not be held responsible for any accidents, damages, or malfunctions resulting from the buyer's installation and operation of the product. It is essential to follow all safety guidelines and recommendations provided in this manual and to seek professional assistance if unsure about the installation or operation procedures.

CUSTOMER SERVICE

If you have any questions about ordering our pool pumps and replacement parts or pool products, please feel free to contact us using the following contact information:

Customer Service and Technical Support

Phone: (909) 628-0880

Email: customer@xtremepowerusa.com

Hours of Operation: Monday – Friday, 9AM – 4PM (CST)
