



IMPORTANT SAFETY INSTRUCTIONS

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

FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH. THIS PUMP SHOULD BE INSTALLED AND SERVICED ONLY BY A QUALIFIED POOL SERVICE PROFESSIONAL. INSTALLERS, POOL OPERATORS AND OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS IN THE OWNW30A) 2 MANU 9 TRU.6 (BEFO)14 USING 14.2 / P k ang (enUS)/MCID 0 DC B1 0 Tc 0 B Tw 9 0 35.55 211.54 7 T 0 (00

IMPORTANT SAFETY INSTRUCTIONS

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

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

relief valve in the open position and wait for all pressure in the system to be relieved.

Before starting the system, fully open the manual air relief valve and place all system valves in the "open" position to allow water to flow freely fro

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CUSTOMER SERVICE AND TECHNICAL SUPPORT

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

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USING THE DRIVE KEYPAD

Before operating the pump for the first time, the pump's internal clock and operational schedules must be programmed. Refer to *Setting the Clock and Pump Address, page 8* and *Programming Custom Schedules, page 9* for instructions regarding the programming of this pump for scheduled operation.

The pump can be programmed and controlled from the drive keypad. Pump features and settings are also accessed using this keypad.

Note: Functionality may vary based on other active features such as External Control Only Mode and/or Keypad Lockout.

Note:

Fittings and Valves

1. Do not install 90° elbows directly into suction port.
2. Flooded suction systems should have gate valves installed on suction and discharge pipes for maintenance, however, the suction gate valve

External Control via Digital Inputs

When paired with either the RS-485 Automation Wiring Kit (P/N 356324z) or Digital Input Wiring Kit (discontinued), the pump can be externally controlled by digital input signals.

Note: If the pump is manually stopped using the **Start/Stop** button, the pump will not run until the **Start/Stop** button is pressed. If the Start/Stop LED is illuminated, the pump is active and can be controlled externally.

The communication cable provided with these kits features a watertight connection that plugs into the Pump Com Port (**Figure 5** on page 5). The opposite end of the cable has either 6 or 8 wires defined in **Table 1**.

A trigger signal is required to externally control the pump via digital inputs. This required output signal can be provided in one of the following ways:

- By the pump drive. Refer to *Using the Pump's Output Signal*.
- By an external low voltage signal. Refer to *Using an External Input Signal* on page 7.

Using the Pump's Output Signal

1. Route the communication cable from the Pump Com Port (**Figure 5** on page 5) to the control system wiring compartment.
2. Ensure the cable reaches all necessary terminals and cut to the necessary length.
3. Strip 3/4 in. (19 mm) of sheathing from the communication cable.
4. Strip 1/2 in. (13 mm) of sheathing from all 24 AWG wires.
5. **If using RS-485 Automation Wiring Kit (P/N 356324z):** Wire communication cable to control system as shown in **Figure 6A**.
Note: Unused wires should be cut off and terminated according to local and national electrical codes.

If using Digital Input Wiring Kit

(discontinued): Wire communication cable to control system as shown in **Figure 6B**.

6. Using the pump keypad, program the pump's internal clock. Refer to *Setting the Clock and Pump Address* on page 8.
7. Using the pump keypad, disable priming. Refer to *Priming* on page 11.
8. When ready to start the pump, place the pump into External Control Only mode. Refer to *External Control Only Mode* on page 7.
9. Plug the communication cable into the Pump Com Port.
10. Press the **Start/Stop** button to start the pump.

Using an External Input Signal

When using an externally supplied low voltage signal for external control, input voltage must be within 5-30V AC/DC. The wiring kit's RED wire is only intended to carry the +5V output signal from the drive and will NOT be used.



The +5V signal (RED wire) is output from the drive only and should never be wired to another power supply. Improper wiring will damage the drive.

OPERATION

Before operating the pump for the first time, the pump's internal clock and operational schedules must be programmed

Programming Custom Schedules

To customize your pump's schedule, the pump must be stopped. Ensure that the Start/Stop LED is not illuminated.

The clock must be set before programming a custom schedule, unless externally controlling the pump through digital inputs. When controlling the pump by digital inputs, schedules will be based on the actual system clock.

When programming, the LED next to the parameter you are editing will blink.

“**Speed**” - Run Speed

“**Time**” - Start Time

“**Duration**” - Run Time

TO PROGRAM A CUSTOM SCHEDULE:

1. Press **Start/Stop** to stop the pump.
2. Press “**1**”. The SPEED 1 LED and the “Speed” parameter LED will blink while editing. See **Figure 9**.

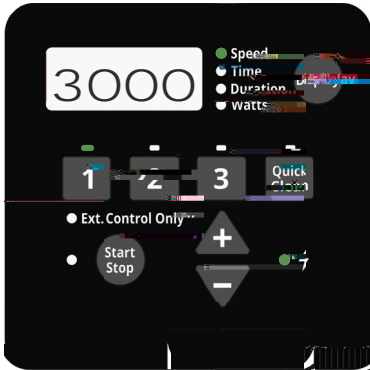
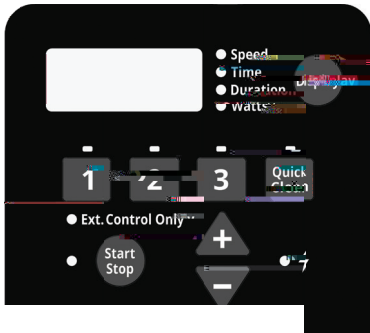


Figure 9

3. Use “+” and “-” to adjust the speed in RPM for SPEED 1.
Note: If operating the pump with external controls, program SPEED 1 speed to 0 RPM.
4. Press “**1**”. The SPEED 1 start time will display. The “Time” parameter LED will begin to blink. See **Figure 10**.



This pump is shipped with Priming mode ENABLED.

Programming Quick Clean

The pump is equipped with a Quick Clean feature, which can be engaged to temporarily run at higher or lower speeds ranging from 450 to 3450 RPM.

At the end of a Quick Clean cycle, the pump will automatically return to the appropriate point in its programmed schedule.

Note: Pressing and holding Quick Clean for more than 3 seconds will cancel a Quick Clean cycle. The pump will then return to the appropriate point in its programmed schedule.

TO PROGRAM QUICK CLEAN:

1. Press **StaBT9.7 4896 606.5812 T2/TT0 1 Tf0 Tc 0 Tw 9.7 0 0p**Press

Factory Reset

The drive can be reset to factory settings if necessary. A Factory Reset will erase all programmed settings and schedules, except for the time of day. Be sure that it is necessary before performing a Factory Reset, as the results are immediate.

Note: Factory Reset can not be performed when in Keypad Lockout mode.

TO PERFORM A FACTORY RESET:

1. If the pump is running, press the **Start/Stop** button to stop the pump.
2. Record all of the custom schedule settings in **Table 3**. You can find these settings by pressing the "1", "2", "3", and **Quick Clean** buttons and cycling through all the screens.
3. Record the programmed Priming Speed in **Table 3**.
4. Press and hold "1", "2", "3" and **Quick Clean** for 3 seconds.
5. "Fact rSt" will display if factory reset is successful. See **Figure 16**.
6. Reprogram the schedule and priming speed as described in the previous sections.

The pump must be turned back on with the **Start/Stop** button before it will run again. The pump will run the programmed schedule upon initial start-up.

	Speed		

MAINTENANCE

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⚠ WARNING

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



DO NOT open the strainer pot if pump fails to prime or if pump has been operating without water in the strainer pot. Pumps operated in these circumstances may experience a build up of vapor pressure and may contain scalding hot water. Opening the pump may cause serious personal injury. In order to avoid the possibility of personal injury, make sure the suction and discharge valves are open and strainer pot temperature is cool to touch, then open with extreme caution.

Restarting the Pump

If pump is installed below the water level of the pool, close the water and suction lines prior to open

TROUBLESHOOTING

Diagnosing certain symptoms may require interaction with, or close proximity to, components that are energized with electricity. All servicing should be performed by a qualified service professional. Contact with electricity can cause death, personal injury, or property damage.

Troubleshooting Chart

Problem	Possible Cause	Corrective Action
Pump failure.	Pump will not prime - Air in suction line or pump	<ol style="list-style-type: none"> 1. Inspect suction line plumbing and valve(s) for damage or loose connections. 2. Ensure the strainer pot lid is sealing properly. Verify lid O-ring is in place. 3. Ensure proper pool water level and water is available to the skimmer.
	Pump will not prime - Not enough water	<ol style="list-style-type: none"> 1. Ensure suction line and pump strainer pot are full of water. 2. Ensure suction line valve is working and open (some systems do not have valves). 3. Ensure proper pool water level and water is available to the skimmer.
	Strainer basket excessively dirty or full	Clean strainer basket. See <i>Cleaning the Pump Strainer Basket</i> , page 14.
	Strainer pot O-ring is damaged	Inspect strainer pot O-ring for damage. Replace if necessary.
Reduced capacity and/or head.	Air in suction line or pump head.	<ol style="list-style-type: none"> 1. Inspect suction line plumbing and valve(s) for damage or loose connections. 2. Ensure the strainer pot lid is sealing properly. Verify lid O-ring is in place. 3. Ensure proper pool water level and water is available to the skimmer.
	Clogged impeller	Disassemble pump (<i>Pump Disassembly</i> , page 16) and remove debris from impeller.
	Strainer basket excessively dirty or full	Clean strainer basket. See <i>Cleaning the Pump Strainer Basket</i> , page 14.
Pump fails to start.	Mains voltage is not present	<ol style="list-style-type: none"> 1. Replace fuse, reset breaker/GFCI. 2. Tighten mains wire connections.
	Motor is locked	Disassemble pump (<i>Pump Disassembly</i> , page 16) and attempt to rotate motor shaft by hand to remove any blockage.
	Motor shaft is damaged	Replace pump.
Pump runs then stops.	Over temperature FAULT	Ensure motor fan cover at the rear of the motor is free of dirt and debris. Use compressed air to clean.
	Over current FAULT	Pump will automatically restart after one (1) minute.
Pump is noisy.	Debris in contact with fan	Ensure motor fan cover at the rear of the motor is free of dirt and debris. Use compressed air to clean.
	Strainer basket excessively dirty or full	Clean strainer basket. See <i>Cleaning the Pump Strainer Basket</i> , page 14.
	Loose mounting	Ensure mounting bolts and pump bolts are tight.

Problem	Possible Cause	Corrective Action
1.	Impeller is loose Air in suction line or pump Clogged or restricted plumbing	Ensure fan at the rear of pump is spinning. If so, disassemble pump (<i>Pump Disassembly, page 16</i>) and ensure impeller is correctly installed. 1.

NOTES



1620 HAWKINS AVE., SANFORD, NC 27330 • (919) 566-8000
10951 WEST LOS ANGELES AVE., MOORPARK, CA 93021 • (805) 553-5000

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P/N 074167 REV. A 3/3/22