

Operation Manual



Five Button Display v2.xxx

Important

Read this document before operating / installing this product

For additional product manuals and operation / installation procedures, please visit www.SunBlazerHP.com

[_____]
MODEL / SERIAL NUMBER

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Contacts

For further assistance, please contact the installing dealer of this product.

To better assist you, please have the heat pump model and serial number available.

- See "Identifying Model Specifications" on page 39.

Product Information:	
Website	www.SunBlazerHP.com
Service Information:	
Phone	(1) 800-928-0864
Hours	8-5 pm, Eastern M-F

SAFETY

- For personal safety, and to avoid damage to equipment, follow all safety instructions displayed on the equipment and within this manual. Repair and service of heat pump must be performed by an authorized service center.
- Warranties may be voided if the equipment has been improperly installed, maintained or serviced.
- If service is deemed necessary, please contact SunBlazer.

SAFETY SIGNALS

Throughout this document, safety signals have been placed where particular attention is required.



Failure to heed the following will result in injury or death.



Failure to heed the following may result in injury or death.



Failure to heed the following may result in damage to equipment.

When installing and using your heat pump basic safety precautions must always be followed, including the following:



Failure to heed the following will result in injury or death.

- The heat pump utilizes high voltage and rotating equipment. Use caution when servicing.
- Follow all National Electric Codes (NEC) and / or State and Local guidelines.



WARNING

Failure to heed the following may result in injury or death.

- Installation and repairs must be performed by a qualified technician.
- The Heat Pump contains refrigerant under pressure. Repairs to the refrigerant circuit must not be attempted by untrained and / or unqualified individuals. Service must be performed only by qualified HVAC technicians. Recover refrigerant before opening the system.
- Improper water chemistry can present a serious health hazard. To avoid possible hazards, maintain pool / spa water per standards as detailed in this document.
- Sudden or prolonged immersion in water warmer than normal body temperature may cause a condition known as Hyperthermia and related injuries.
 - Hyperthermia occurs when the internal temperature of the body reaches a level several degrees higher than the normal body temperature of 98.6° F (37° C).
 - The symptoms of Hyperthermia include, but are not limited to, a failure to perceive heat, slurred speech or mumbling, slow, shallow breathing, weak pulse, clumsiness, drowsiness or low energy level, confusion, poor decision-making, lack of concern about personal welfare; progressive loss of consciousness resulting in danger of drowning.
 - The effects of Hyperthermia include failure of the nervous system, respiratory system and heart; failure to recognize the need to exit spa; unawareness of impending hazard; physical inability to exit the spa; progressive loss of consciousness resulting in danger of drowning.
 - Persons having an adverse medical history, or pregnant women, should consult a physician before immersing in a warm body of water. Children and the elderly should be supervised by a responsible adult.
 - When pregnant, soaking in warm water for long periods of time can harm the fetus.
 - The use of alcohol, drugs, or medication can greatly increase the risk of fatal Hyperthermia.
 - Exit immediately if uncomfortable, dizzy, or sleepy.
- This appliance is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children must be supervised and are not to play with the appliance.
- If multiple heat pumps are on-site, confirm that the multiple heat pump configuration has been utilized. This will prevent multiple heat pumps attempting to start at the same time, causing an excessive power drop at start-up.
- Multiple heat pumps installed at the same site may benefit from automatic sequencing controllers (ASC) to avoid excessive power draws at start-up.

NOTICE

Failure to heed the following may result in damage to equipment.

- Maintain proper water chemistry to avoid damage to the pump, filter, pool shell, etc.
- Water flow exceeding the maximum flow rate requires a bypass. Damage due to excessive water flow will void the warranty.
- Failure to protect equipment against corrosive conditions will adversely affect the life of the equipment and will void equipment warranty.

SAVE THESE INSTRUCTIONS

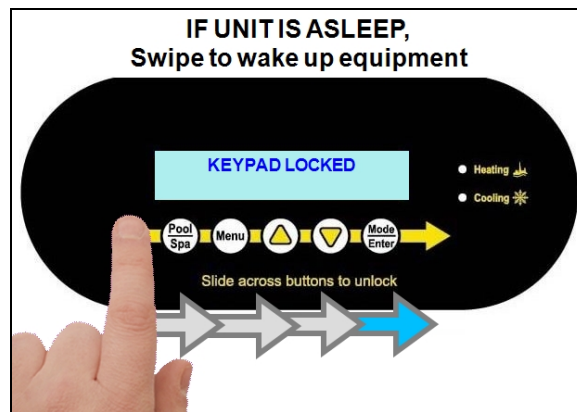
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1.1 Wake Up Heat Pump

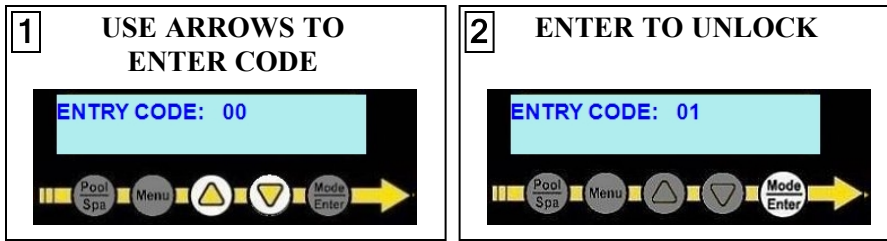
The display's backlight will be off when the heat pump is in sleep mode. To wake up the heat pump, slowly slide a finger across the buttons.

- The display will illuminate.
- The message "KEYPAD UNLOCKED" will briefly appear.
- Then the water temperature and mode will display.



1.2 Using Entry Code to Access Heat Pump

If a user entry code has been enabled in the user menu, an entry code will be required to access heat pump options.



PLEASE NOTE -

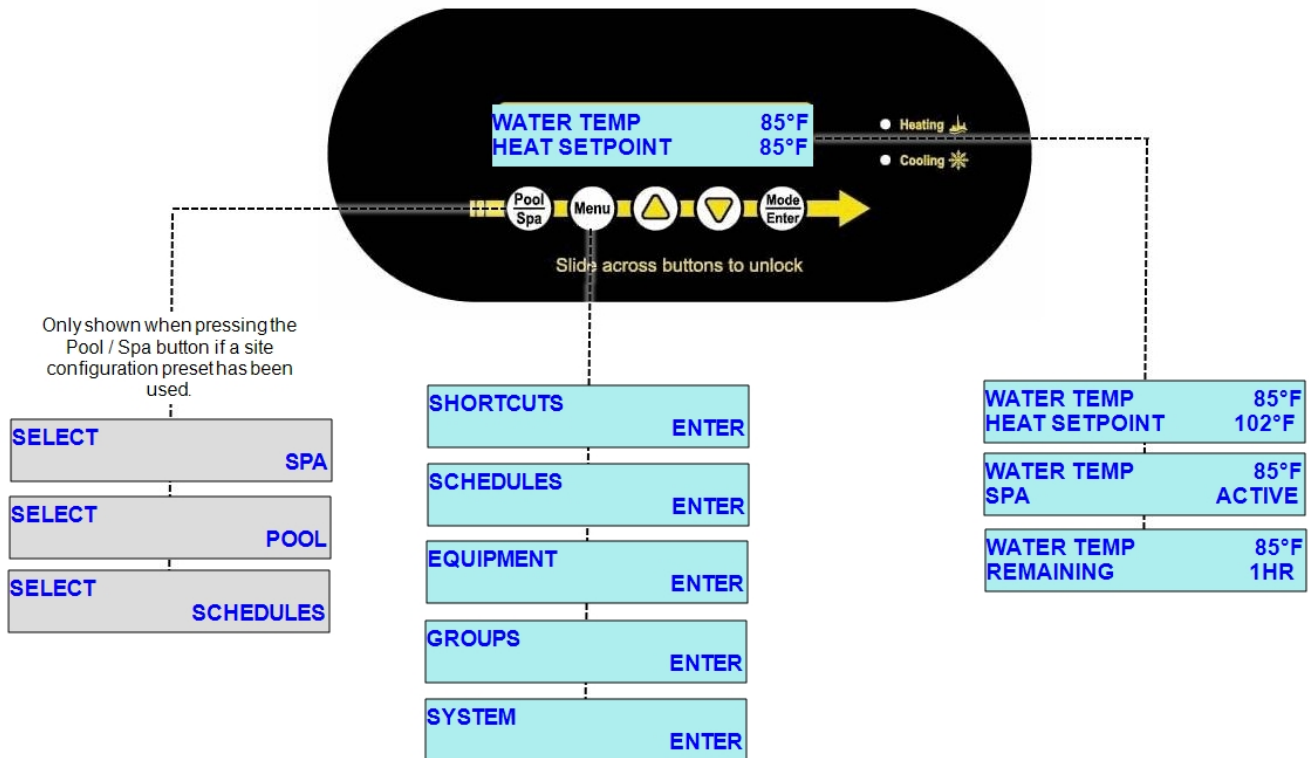
- If the entry code has been misplaced, the heat pump will need to be reset to factory defaults.
- After three minutes of inactivity, the heat pump's sleep mode will activate. See "*Wake Up Heat Pump*" on the previous page.

1.3 Display Panel







The following information outlines the operation for a standard installation.

Control Buttons will operate differently for custom installations; such as:

- When a heat pump is connected to an external controller or multiple heat pump configuration.
- When a site configuration preset has been used.




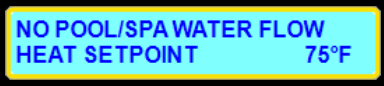

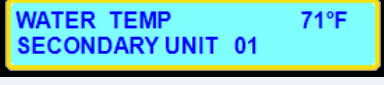



Buttons

Button	Description
	Slowly slide a finger across the buttons from left to right to disable the sleep mode. Sleep mode will automatically reactivate after three minutes have passed.
	Select either the POOL or SPA mode. Any connected valves or circulation pumps will activate. To deactivate, press the "Pool/Spa" button again. If an option is highlighted, it will automatically activate after 10 seconds.
	Enter the user menus for heat pump options. Also used to exit from a menu. Press and hold the MENU button to exit to the main status screen.
	Used to increase temperature setpoint and navigate through menu options.
	Used to decrease temperature setpoint and navigate through menu options.
	Used to select the heat pump's operating mode. Also used to edit or confirm options in a menu.

Indicator Lights

Indicator	Description
Heating	Red LED indicates the heat pump is heating the water. When calling for heating, up to a three-minute delay may occur before the compressor starts.

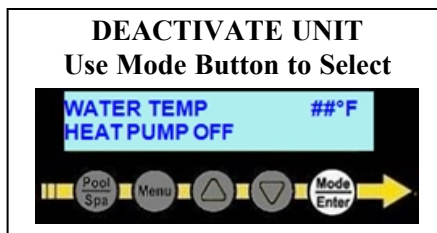
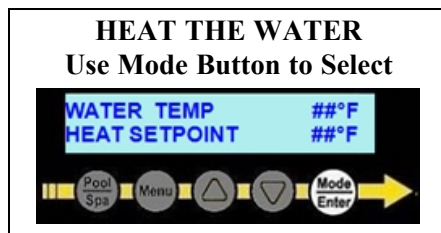
Displays

	Display	Description
Entry code required		The heat pump has a user lock enabled. See " <i>Using Entry Code to Access Heat Pump</i> " on page 4.
No water flow		No water flow is detected. The filter pump is off or the heat pump is not receiving the correct water flow.
Primary Heat Pump		Primary heat pump controlling other connected heat pumps
Remote Controlled - by primary Heat Pump		Heat Pump is set to be controlled by another connected heat pump.
Remote Controlled - by external controller		Heat Pump is set to be controlled by an external controller.
Set to 75° F - Heating		Heating water to point set on the thermostat. In this example, the pool thermostat has been set to 75° F.
Set to Off		The heat pump has been deactivated using the "Mode / Enter" button. The heat pump will automatically restart on the next scheduled call for heating. Other activated devices will continue to operate

1.4 Activate HEAT Mode, or Deactivate Equipment

Press "Mode / Enter" button until the desired mode is displayed.

- "HEAT" mode - After the fan and compressor start, the red "Heating" light will activate.
- "OFF" - The heat pump will indicate it is deactivated. Any equipment connected to the heat pump will continue to operate. To deactivate all equipment connected to the heat pump, activate the service mode. See "*Service Mode*" on page 42.



1.5 Set a desired temperature (setpoint) for the Heat Pump to activate

Press the up or down arrow to set the desired temperature (setpoint) for the water.

- The heating indicator will illuminate when heating the water.

PLEASE NOTE:

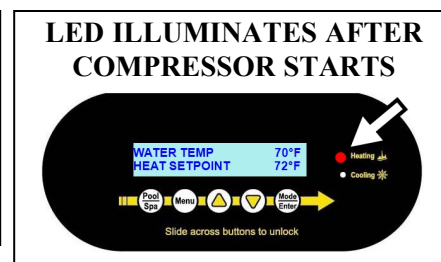
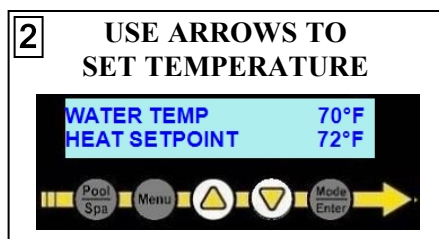
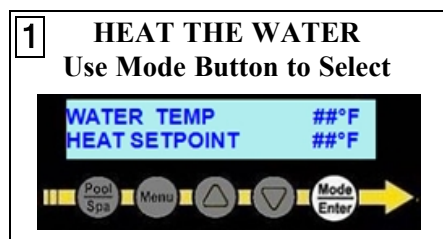
- The maximum temperature the Heat Pump can be set towards is 104° F (40° C).

PLEASE NOTE:

The heat pump will not operate if incoming water temperatures are above 110° F (43° C). If sustained water temperatures will fall below 32° F (0° C), the equipment must be winterized in order to prevent damage. See "Winterizing" on page 34.

NOTE:

If a group's schedule is active and the temperature setpoint is changed, that group's temperature setpoint will also be changed.



1.6 Using Shortcuts

The shortcuts menu provides quick access to model specific options and features. The following outlines some of these options.

Group Access

As a group is created, a shortcut automatically appears in the shortcuts menu. The user can activate the group by shortcut and will be asked how long to operate that group.

- Multiple group shortcuts can operate at the same time. The time remaining for each group to operate will appear on the status screen.
- After the group shortcut timer expires, the heat pump group will resume its normally scheduled activity.
- To cancel the group shortcut's operation before its timer expires, go to the shortcut menu, select it, and choose "STOP".
- See "Using a Group Shortcut" below.
- See "Stopping a Group Shortcut" on the facing page.

PLEASE NOTE:

The Spa and Pool groups (if applicable) will not appear in the shortcuts menu. Use the schedules or the Pool / Spa button to activate those groups.

Schedule Mode

There are three modes that can be set when running schedules.

- "AUTO" - The default mode. This allows schedules to run normally.
- "AWAY" - This mode is generally used when the user is away on vacation and doesn't want to maintain a water temperature. The heat pump will be deactivated while the rest of the schedules (including filtration) are allowed to continue.
- "OFF" - This mode turns off all schedules. The schedules resume when the schedule mode is set to "AUTO" again.
- (See "Schedule and Program Modes" on page 21 for more information.)

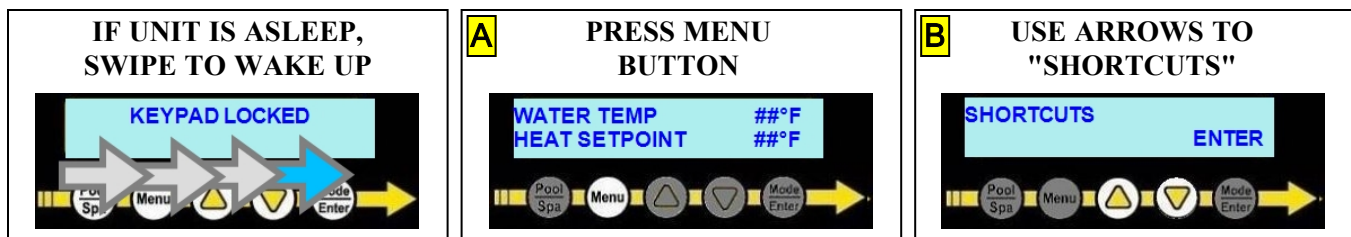
Service Mode

This mode will deactivate the heat pump as well as all equipment connected to the heat pump.

- (See "Service Mode" on page 42 for more information.)

Using a Group Shortcut

In this example, a user activates a group that was previously created called "FILTRATION".



C PRESS "ENTER"

1 ARROWS TO SHORTCUT TO USE

2 ENTER TO SELECT SHORTCUT

3 ENTER TO START

4 ARROWS TO MAXIMUM TIME TO OPERATE

5 ENTER TO ACTIVATE

MENU TO EXIT, PRESS & HOLD TO STATUS

On the status screen the group will show as active. It will then display the time remaining before the group expires.

Stopping a Group Shortcut

In this example a group called "FILTRATION" is deactivated before it's time expires.

IF UNIT IS ASLEEP, SWIPE TO WAKE UP

A PRESS MENU BUTTON

B USE ARROWS TO "SHORTCUTS"

C PRESS "ENTER"

1 ARROWS TO SHORTCUT TO STOP

2 ENTER TO SELECT

3 ENTER TO STOP

MENU TO EXIT, PRESS & HOLD TO STATUS

IN THIS SECTION:

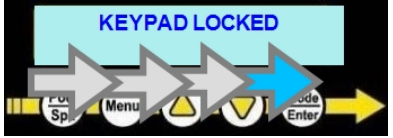

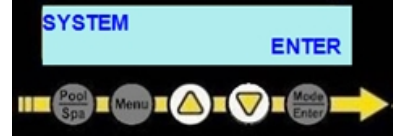

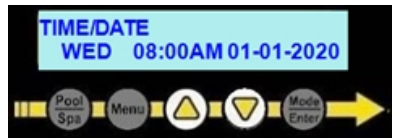

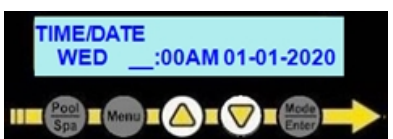
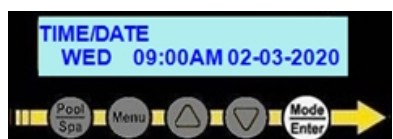

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1.7.A Setting Date and Time

The date and time are required in order to allow schedules to operate properly.
Set the heat pump's date and time using the following steps.

PLEASE NOTE:

If a PoolSync[®] device is attached and in-use, the time and date will automatically be set and maintained.

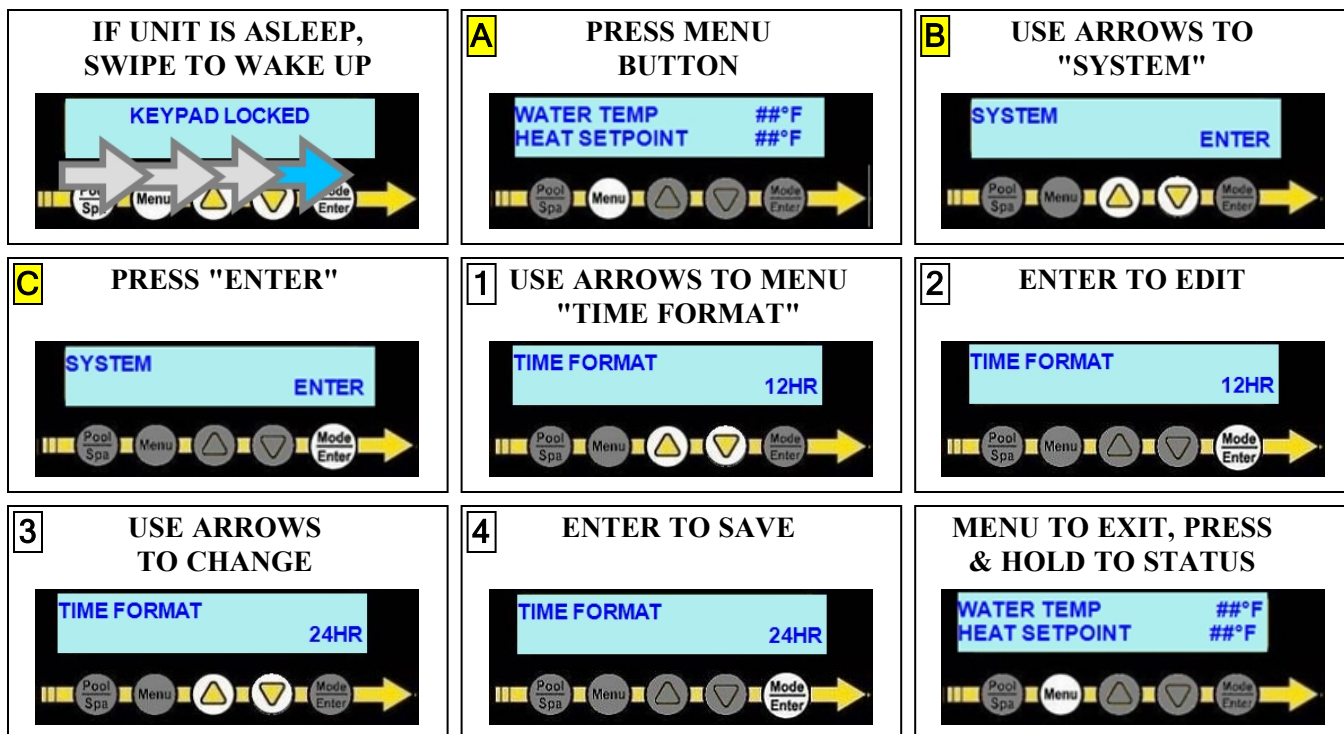
<p>IF UNIT IS ASLEEP, SWIPE TO WAKE UP</p> 	<p>A PRESS MENU BUTTON</p> 	<p>B USE ARROWS TO "SYSTEM"</p> 
<p>C PRESS "ENTER"</p> 	<p>1 USE ARROWS TO MENU "TIME / DATE"</p> 	<p>2 PRESS ENTER, ITEM TO CHANGE WILL BLINK</p> 
<p>3 USE ARROWS TO CHANGE</p> 	<p>4 ENTER TO SAVE</p> 	<p>MENU TO EXIT, PRESS & HOLD TO STATUS</p> 

1.7.B Setting Date and Time Format

The heat pump's date and time format can be customized.

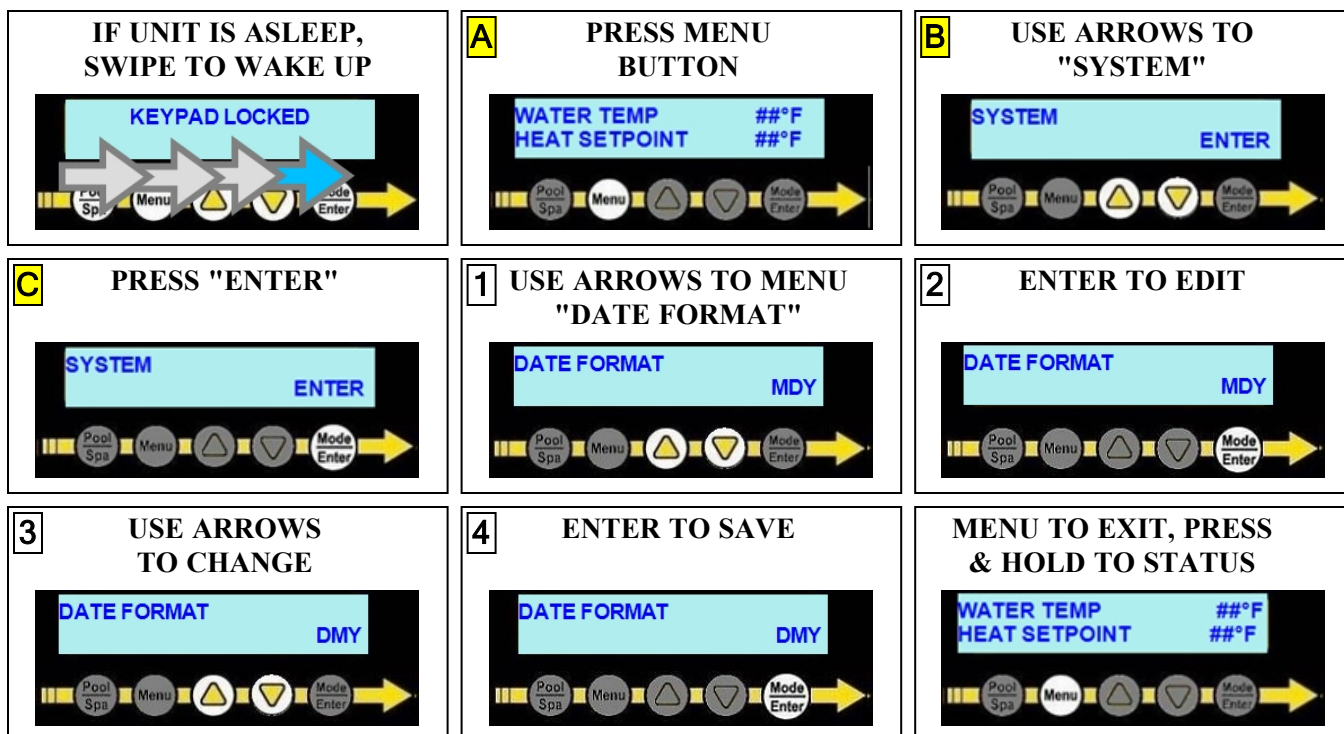
Customize Time

The time can be displayed in 24-hour *military* time (the default display is 12-hour).



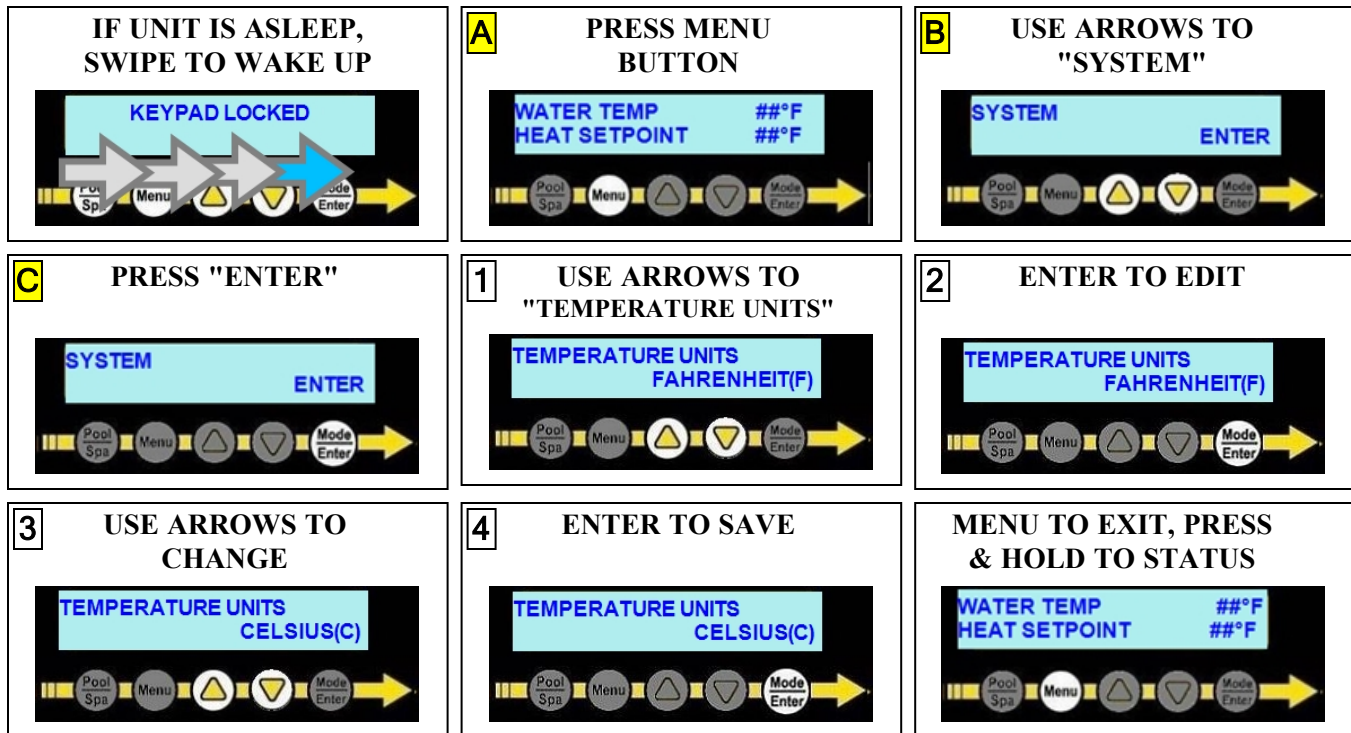
Customize Date

The date can be displayed as Day-Month-Year (the default is Month-Day-Year).



1.7.C Selecting Celsius or Fahrenheit

The user has the option of changing the way the water temperature is displayed. Either in Fahrenheit or Celsius. In the following example, the temperature units are changed from Fahrenheit to Celsius.



1.7.D Setting Entry Code Option

The entry code feature can prevent unauthorized access to the heat pump adjustments. This feature initiates after the heat pump goes into the sleep mode for the first time. This feature is commonly used on commercial applications.

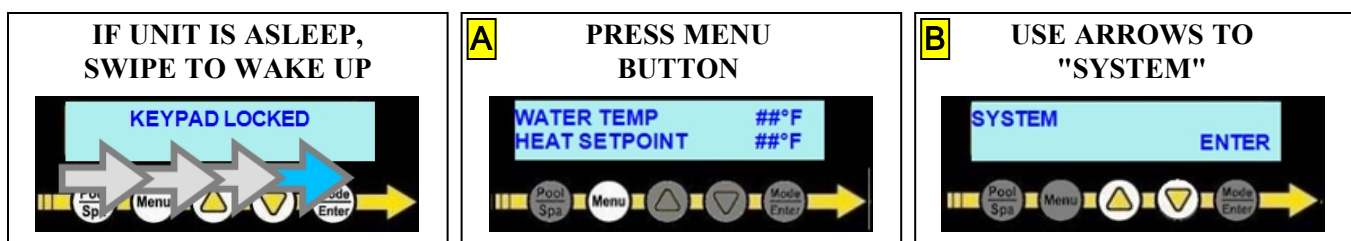
NOTICE

Failure to heed the following may result in damage to equipment.

- **Before enabling the entry code feature, be sure to record the code.** If lost, the heat pump will require a program reset to regain access. This reset may require additional configuration by the installer.

PLEASE NOTE -

*A heat pump requesting an entry code is different than the control panel's sleep mode.
(See "Wake Up Heat Pump" on page 3 for more information.)*



C PRESS "ENTER"

1 USE ARROWS TO MENU "USER ENTRY CODE"

2 ENTER TO EDIT

3 USE ARROWS TO CHANGE

4 ENTER TO SAVE

5 USE ARROWS TO MENU "USER CODE ENABLED"

6 ENTER TO EDIT

7 USE ARROWS TO CHANGE

8 ENTER TO SAVE

MENU TO EXIT, PRESS & HOLD TO STATUS

1.7.E Disabling Entry Code Option

PLEASE NOTE -

- If an entry code has already been activated, the code must be entered before proceeding to disable.

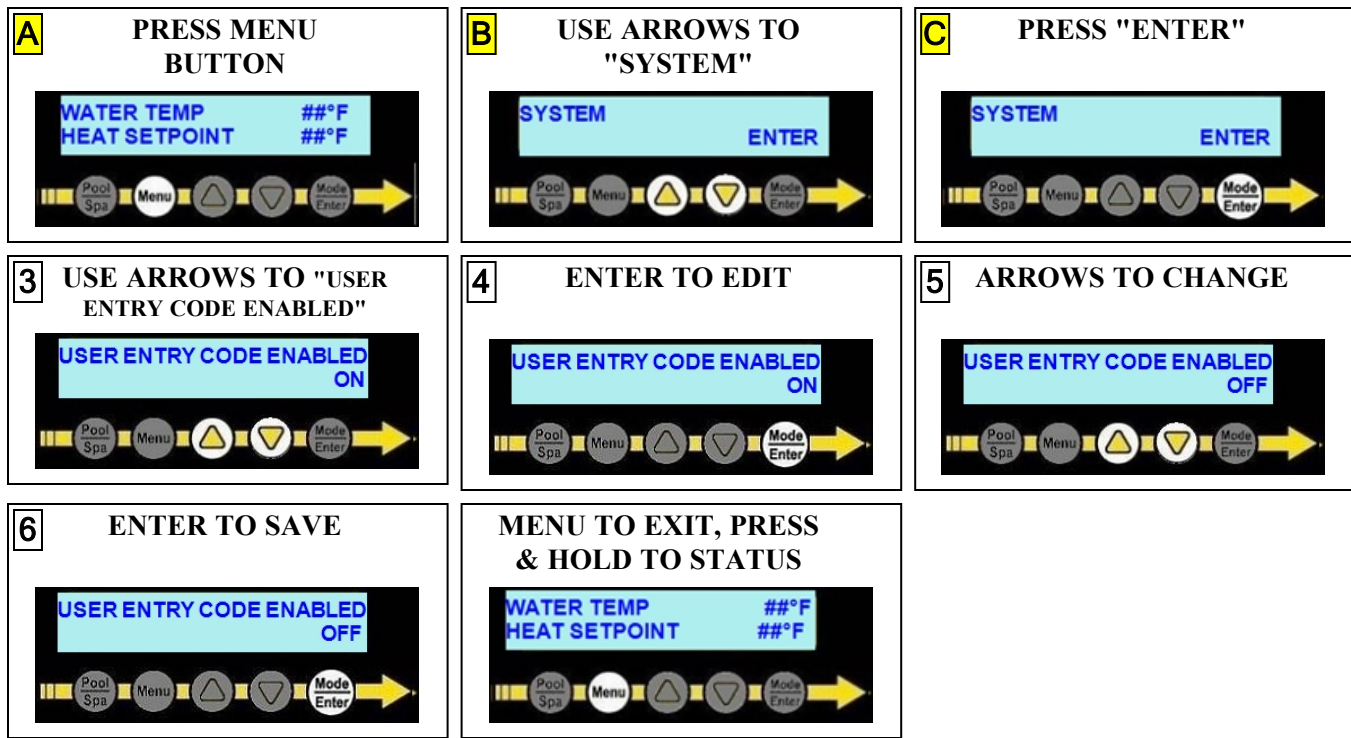
Use Entry Code

IF UNIT IS ASLEEP, SWIPE TO WAKE UP

1 USE ARROWS TO ENTER CODE

2 ENTER TO UNLOCK

Disable User Lock



1.7.F Configuring Groups

A group is used to control multiple devices (equipment) connected to the heat pump, either by manually activating the group through a shortcut, or scheduling the group to activate at a specified time.

EXAMPLES IN THIS SECTION:

F.1 Create a Group	14
F.2 Edit a Group	16
F.3 Delete a Group	17

F.1 Create a Group

EXAMPLES OF GROUPS THAT CAN BE CREATED:

- A Custom Filtration Group -
 - This group could be used if the user didn't want to regulate the temperature of the water the entire time the circulation pump is activated. A custom group can be created that separates the amount of filtration time from the amount of time allowed for the heat pump to heat the water.

The example below shows a "FILTRATION" group being created manually.
A circulation pump will be added to the group.

PLEASE NOTE

This section only describes the configuration of an already connected circulation pump. To physically wire this type of device to the heat pump, see the heat pump's installation manual.

IF UNIT IS ASLEEP, SWIPE TO WAKE UP

A PRESS "MENU" BUTTON

B USE ARROWS TO "GROUPS"

C PRESS "ENTER"

1 USE ARROWS TO "NEW GROUP SETUP"

2 ENTER TO CREATE

3 USE ARROWS TO NAME "FILTRATION"

4 ENTER TO SAVE

5 USE ARROWS TO SET MAXIMUM ACTIVE TIME

6 ENTER TO SAVE

7 USE ARROWS TO SET FREEZE PROTECT OPTION

8 ENTER TO SAVE

9 PRESS BUTTON UNDER "YES" TO SAVE

10 PRESS "ENTER" TO ADD EQUIPMENT

11 USE ARROWS TO SELECT EQUIPMENT

12 ENTER TO SAVE

13 USE ARROWS TO SET RPM

14 ENTER TO SAVE

MENU TO EXIT, PRESS & HOLD TO STATUS

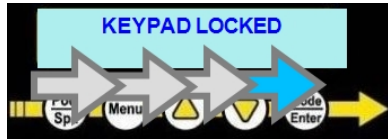
The group is now ready to be activated using a shortcut or scheduled to activate at a certain time.

- See "Using a Group Shortcut" on page 8.
- See "Create a Schedule" on page 18.

The example below shows a "FILTRATION" group being edited.

An existing variable speed circulation pump will be deleted and an attached single speed circulation pump (named "POOL PUMP") will be added. The device will be set to be "ON" when the group is active.

**IF UNIT IS ASLEEP,
SWIPE TO WAKE UP**



**A PRESS "MENU"
BUTTON**



**B USE ARROWS TO
"GROUPS"**



C PRESS "ENTER"



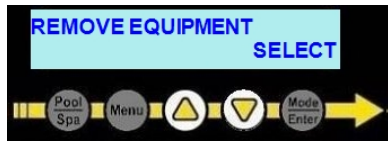
**1 USE ARROWS TO
"FILTRATION GROUP"**



2 ENTER TO EDIT



**3 USE ARROWS TO
"REMOVE EQUIPMENT"**



4 ENTER TO SELECT



**5 USE ARROWS TO
DEVICE TO REMOVE**



6 ENTER TO SELECT



**7 PRESS BUTTON UNDER
"YES" TO CONFIRM**



**8 USE ARROWS TO
"ADD EQUIPMENT"**



9 ENTER TO SELECT



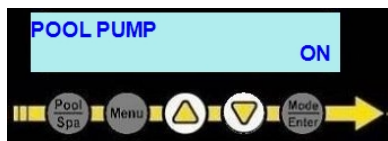
**10 USE ARROWS TO
DEVICE TO ADD**



11 ENTER TO SELECT



**12 USE ARROWS TO
SELECT DEVICE STATE**



13 ENTER TO SAVE

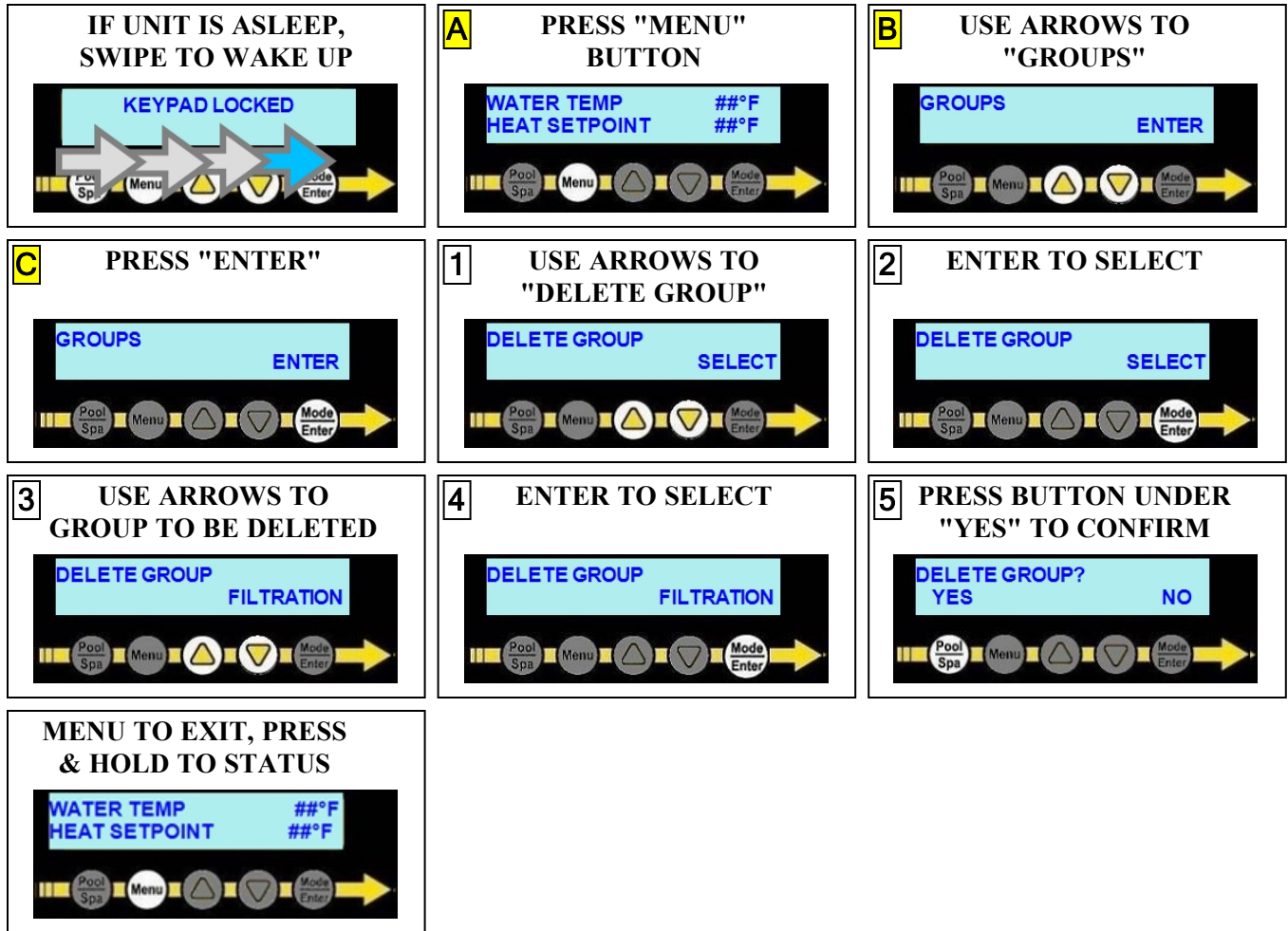


**MENU TO EXIT, PRESS
& HOLD TO STATUS**



F.3 Delete a Group

The example below shows a "FILTRATION" group being deleted.
Any schedules associated with that group will also be deleted.



1.7.G Configuring Schedules

A schedule can be used to activate a group of devices at a specified time.

- See "Configuring Groups" on page 14.

EXAMPLES IN THIS SECTION:

G.1 Create a Schedule	18
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G.1 Create a Schedule

A maximum of four (4) schedule programs can be configured for each group.

The example below shows a "FILTRATION" group being scheduled.



**MENU TO EXIT, PRESS
& HOLD TO STATUS**



G.2 Edit a Schedule

The example below shows a pool group schedule being edited:

- From 8:00AM-5:00PM SMTWTFS (everyday)
- To 9:00AM-6:00PM -MTWTF- (Monday through Friday)



WARNING

Failure to heed the following may result in injury or death.

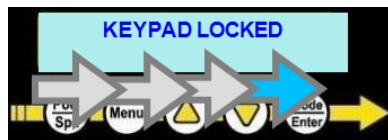
- When editing schedules containing the circulation pump, allow time for proper filtration.
- Follow all State and Local guidelines in regards to satisfying code-specified whole system turnover rates.

PLEASE NOTE:

This is not a recommended filtration schedule.

- What is shown is just an example of how to edit a schedule.
- The default schedule was initially created using one of the presets in the installer wizard.

**IF UNIT IS ASLEEP,
SWIPE TO WAKE UP**



**A PRESS MENU
BUTTON**



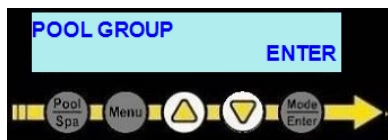
**B USE ARROWS TO
"SCHEDULES"**



C PRESS "ENTER"



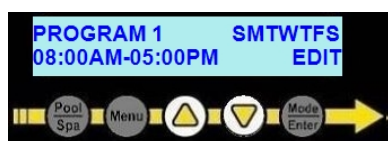
**1 USE ARROWS TO
"POOL GROUP"**



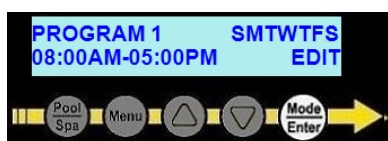
2 PRESS ENTER TO EDIT



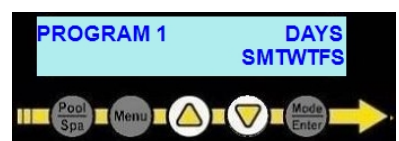
**3 USE ARROWS TO
SCHEDULE TO EDIT**



4 ENTER TO EDIT



**5 USE ARROWS TO
"PROGRAM 1 DAYS"**









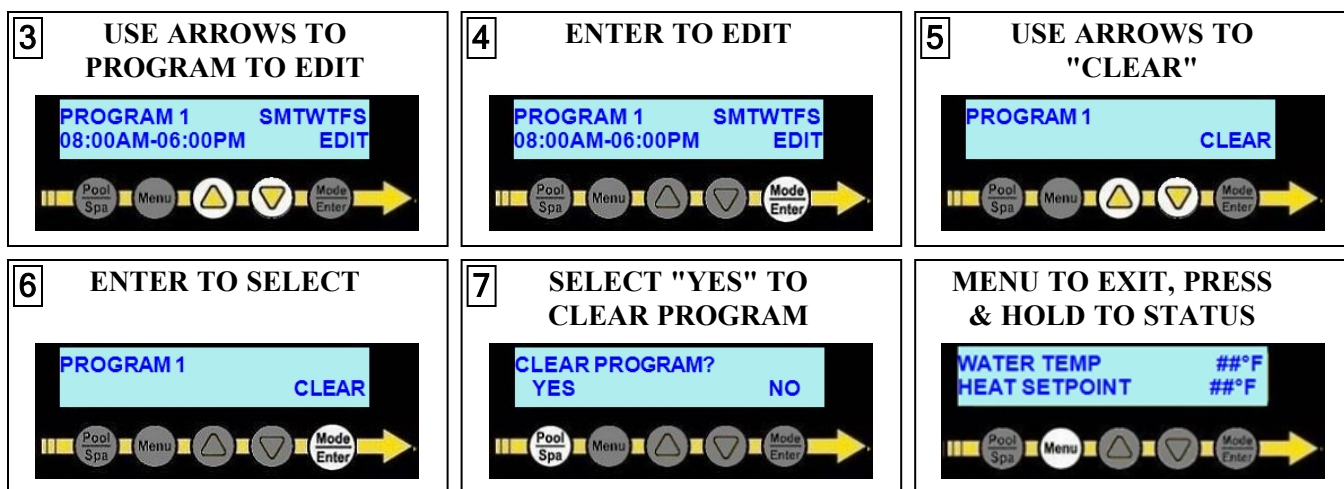
6 ENTER TO EDIT 	7 USE ARROWS TO CHANGE 	8 ENTER TO SAVE 
9 USE ARROWS TO "PROGRAM1 START" 	10 ENTER TO EDIT 	11 USE ARROWS TO CHANGE 
12 ENTER TO SAVE 	13 USE ARROWS TO "PROGRAM1 END" 	14 ENTER TO EDIT 
15 USE ARROWS TO CHANGE 	16 ENTER TO SAVE 	MENU TO EXIT, PRESS & HOLD TO STATUS 

G.3 Delete a Schedule

Select the group and then the program to edit. Use the clear option to remove the program's schedule.

In the following example, the group "FILTRATION" has a schedule in "PROGRAM 1" that will be cleared (deleted).

IF UNIT IS ASLEEP, SWIPE TO WAKE UP 	A PRESS MENU BUTTON 	B USE ARROWS TO "SCHEDULES" 
C PRESS "ENTER" 	1 ARROWS TO SCHEDULED GROUP 	2 ENTER TO EDIT 



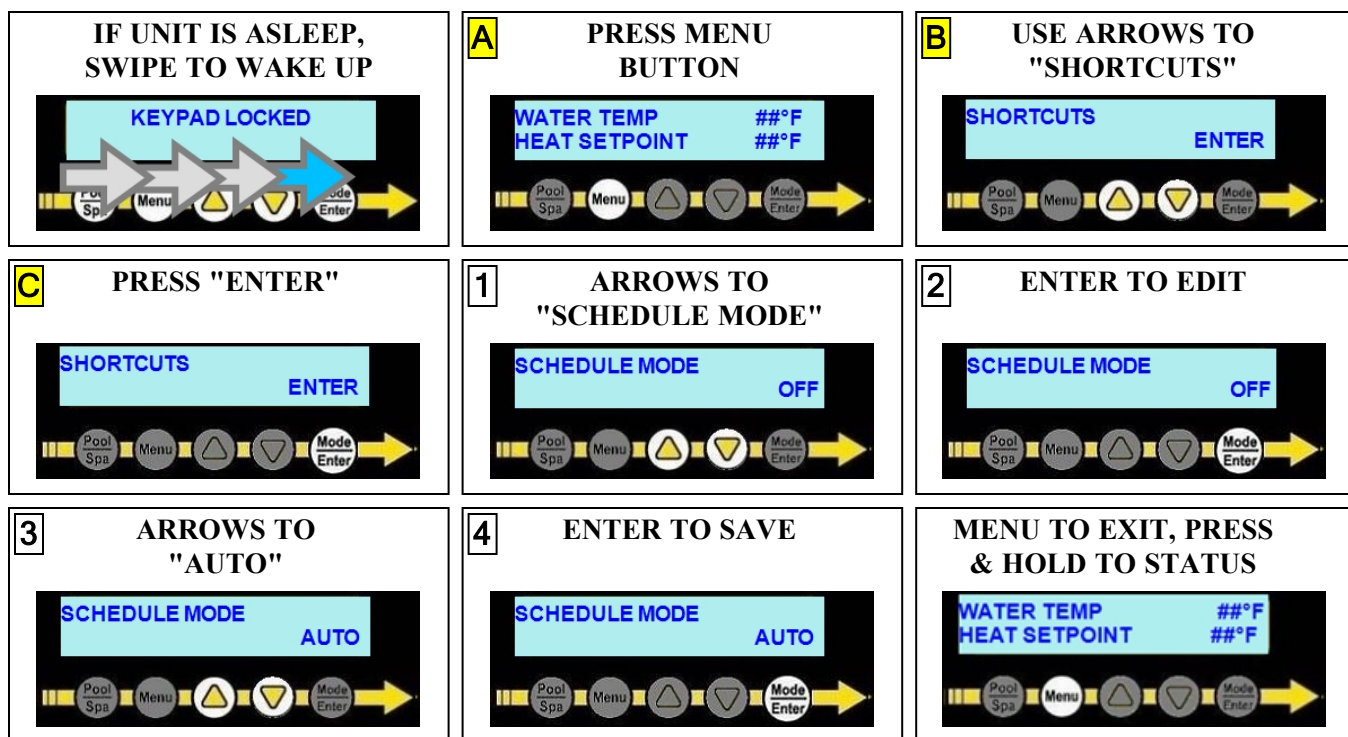
1.7.H Schedule and Program Modes

Schedules can be deactivated temporarily as needed. Either globally through a schedule mode, or individually by setting a group's program mode.

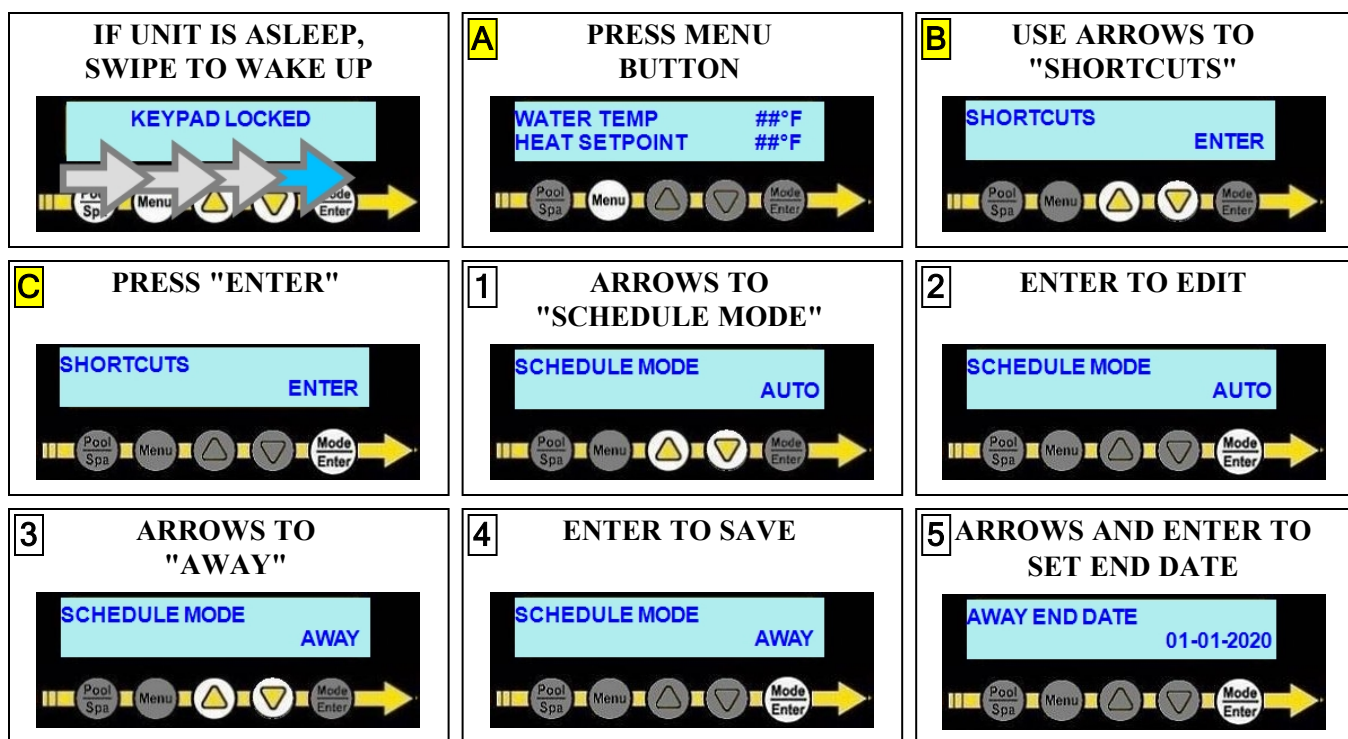
SCHEDULE MODE	Description	
"AUTO"	The default mode. This allows schedules to run normally.	See "Set Schedule Mode to "AUTO"" on the next page.
"AWAY"	This mode is generally used when the user is away on vacation and doesn't want to maintain a water temperature. The heat pump will be deactivated while the rest of the schedules (including filtration) are allowed to continue.	See "Set Schedule Mode to "AWAY"" on the next page.
"OFF"	This mode turns off all schedules. The schedules resume when the schedule mode is set to "AUTO" again. Please note - this will also halt any connected circulation pump activity. This option is not meant for long term usage.	See "Set Schedule Mode to "OFF"" on page 23.

PROGRAM MODE	Description	
"ON"	A group's scheduled programs are set to operate normally.	See "Set Group Programs to "ON"" on page 23.
"PAUSED"	A group's scheduled programs will be paused. The programs will automatically resume the next scheduled day. No other group's activities will be effected.	See "Set Group Programs to "PAUSED"" on page 24.
"OFF"	This mode turns off all schedule programs for the group indefinitely. Programs resume when the program mode is set to "ON" again.	See "Set Group Programs to "OFF"" on page 25.

Set Schedule Mode to "AUTO"



Set Schedule Mode to "AWAY"



**MENU TO EXIT, PRESS
& HOLD TO STATUS**



Set Schedule Mode to "OFF"

**IF UNIT IS ASLEEP,
SWIPE TO WAKE UP**



**A PRESS MENU
BUTTON**



**B USE ARROWS TO
"SHORTCUTS"**



C PRESS "ENTER"



**1 ARROWS TO
"SCHEDULE MODE"**



2 ENTER TO EDIT



**3 ARROWS TO
"OFF"**



4 ENTER TO SAVE



**MENU TO EXIT, PRESS
& HOLD TO STATUS**



1 - Operation

Set Group Programs to "ON"

In the following example, the "Pool" group's set of scheduled programs will be set from "PAUSED" back to "ON".

**IF UNIT IS ASLEEP,
SWIPE TO WAKE UP**



**A PRESS MENU
BUTTON**



**B USE ARROWS TO
"SCHEDULES"**



C PRESS "ENTER"

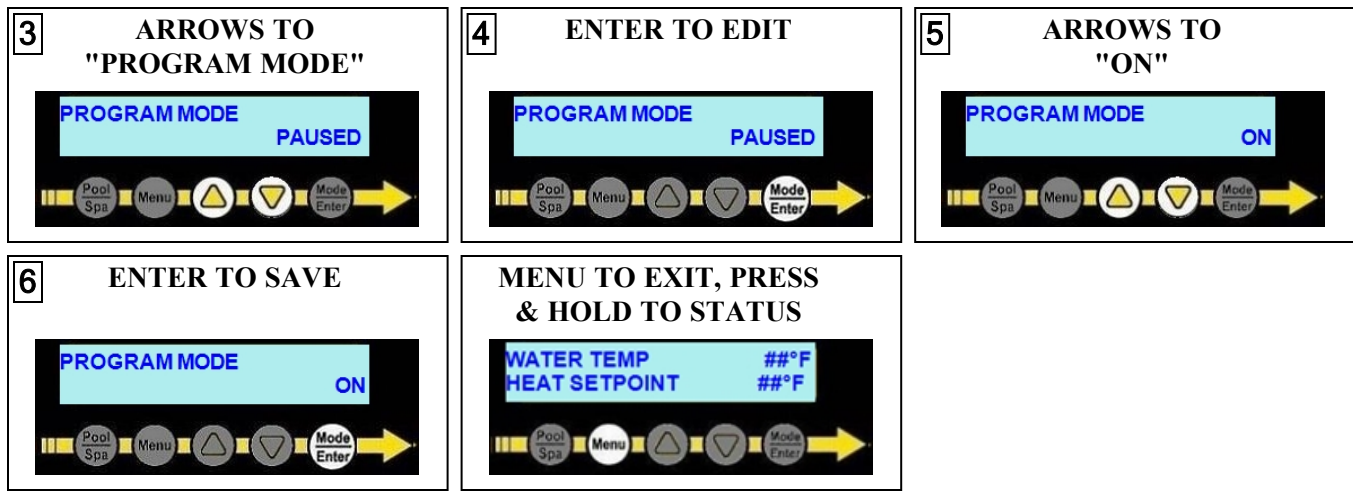


**1 ARROWS TO
"POOL GROUP"**



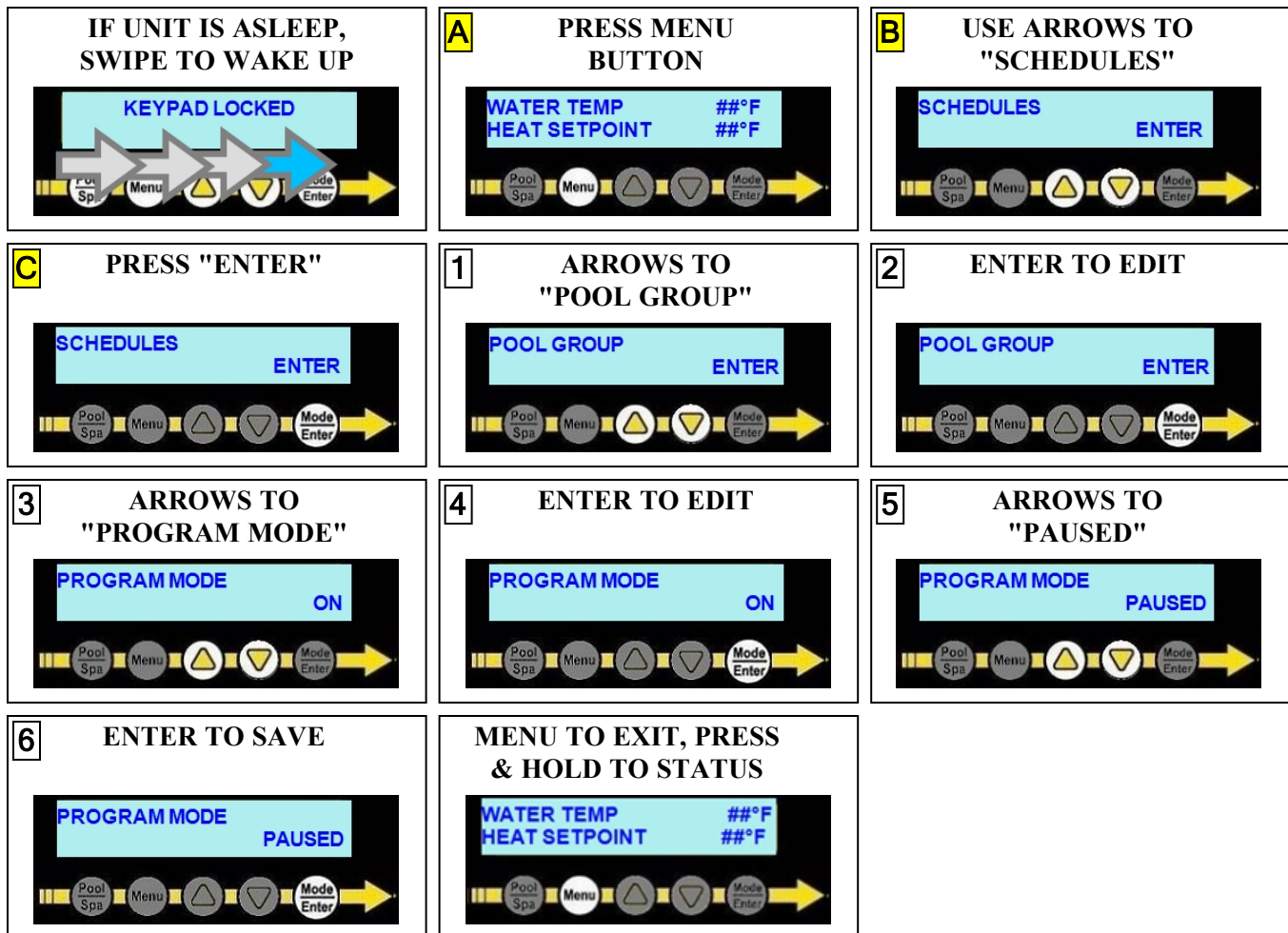
2 ENTER TO EDIT





Set Group Programs to "PAUSED"

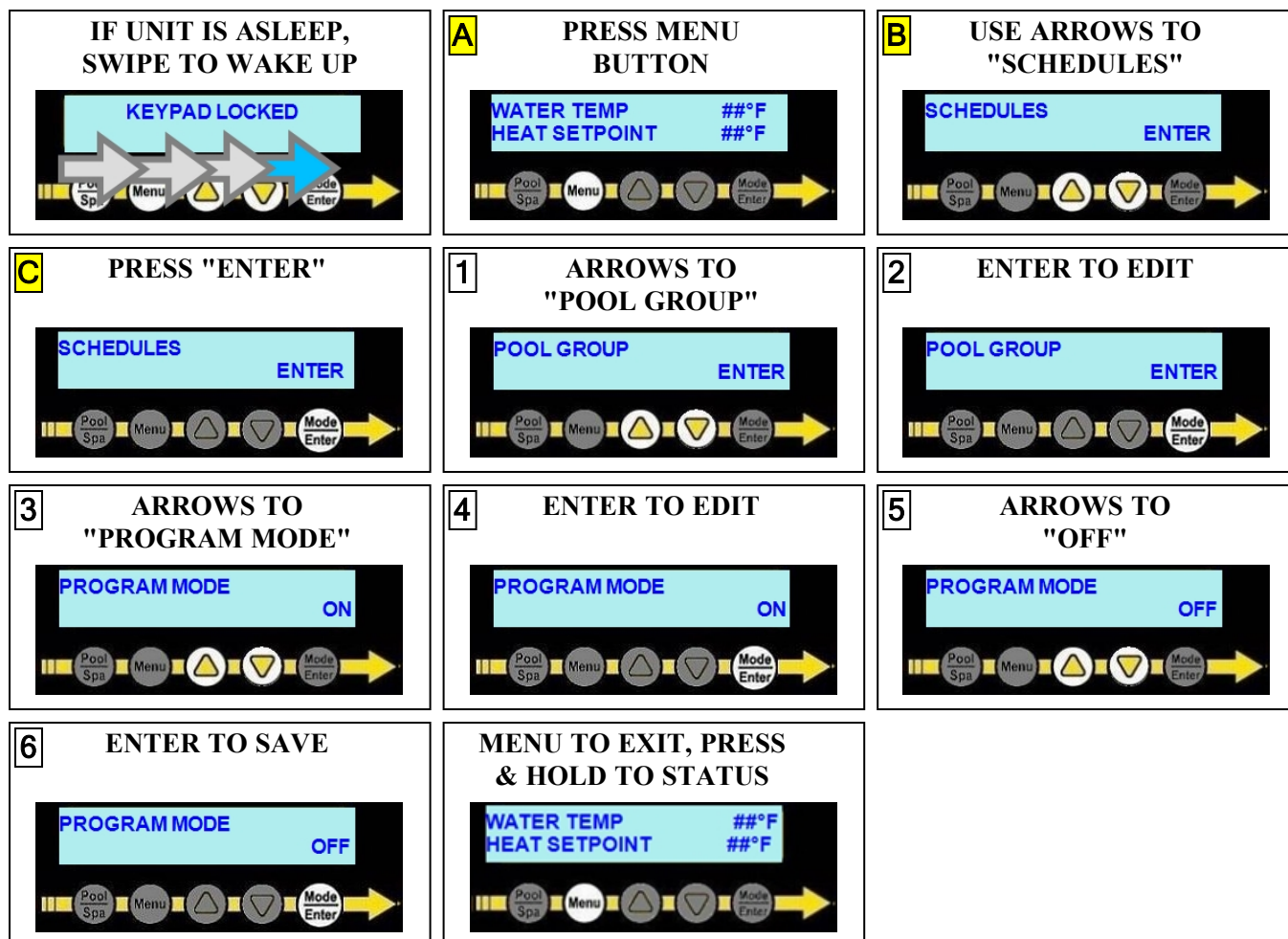
In the following example, the "Pool" group's set of scheduled programs will be paused. This will continue until the programs are set back to "ON".



Set Group Programs to "OFF"

In the following example, the "Pool" group's set of scheduled programs will be set from "ON" to "OFF".

The schedules will not resume until the programs are set back to "ON".



1.8 External Equipment

IN THIS SECTION:

1.8.A PoolSync®	26
1.8.B Operating Heat Pump (With an External Controller)	27
1.8.C Operating Multiple Connected Heat Pumps	27

1.8.A PoolSync®



Select heat pumps will automatically allow for WI-FI capabilities using a PoolSync®.

- The PoolSync® device will allow direct control of the heat pump from a mobile device.
- Contact installing dealer to order this product.
- Confirm the PoolSync® has been set as an active external control device. See "*Confirm PoolSync® is set to operate*" below.

Confirm PoolSync® is set to operate

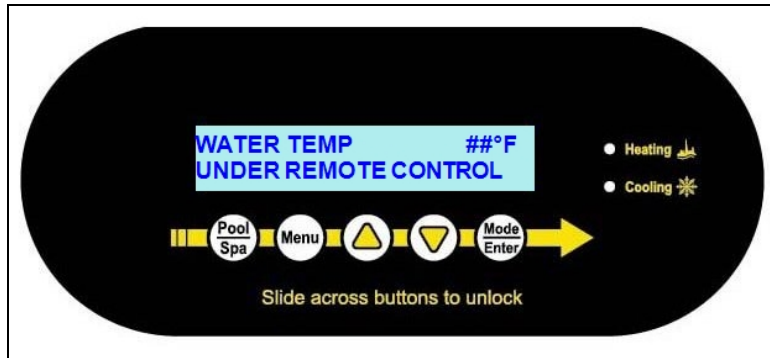
The heat pump has this device active by default. In this example, however, the heat pump is reconfigured to use the PoolSync® device instead of a prior configuration of a "SMART" external controller.

<p>IF UNIT IS ASLEEP, SWIPE TO WAKE UP</p>	<p>A PRESS MENU BUTTON</p>	<p>B USE ARROWS TO "SYSTEM"</p>
<p>C PRESS "ENTER"</p>	<p>D USE ARROWS TO "ADVANCED"</p>	<p>E PRESS "ENTER"</p>
<p>1 USE ARROWS TO "EXTERNAL CONTROL"</p>	<p>2 ENTER TO SELECT</p>	<p>3 ARROWS TO MODE</p>
<p>4 ENTER TO EDIT</p>	<p>5 ARROWS TO "POOLSUNC"</p>	<p>6 ENTER TO SELECT</p>

MENU TO EXIT, PRESS & HOLD TO STATUS



1.8.B Operating Heat Pump (With an External Controller)



If the display indicates the unit is under remote control, an external control device has been configured to control the heat pump. See the external control device manual. Or contact installer or manufacturer of that device.

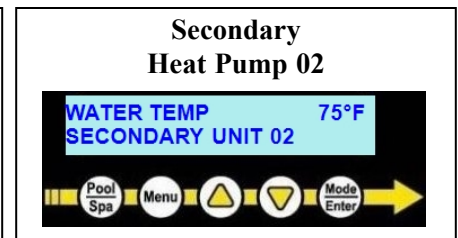
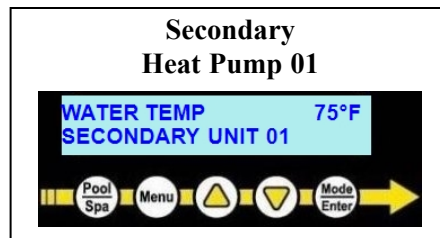
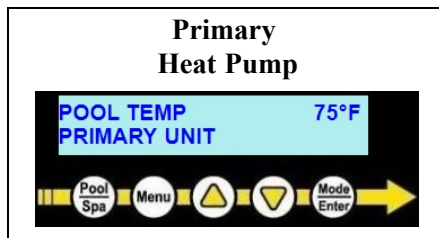
PLEASE NOTE:

When using a SMART external control device, the time-out and service modes will deactivate the Heat Pump.

1.8.C Operating Multiple Connected Heat Pumps

Each heat pump will indicate whether it is a primary or secondary unit on the display. Changes in mode and operation are made on the primary heat pump only.

- The primary heat pump will automatically start and stop the secondary heat pumps in a timed and controlled sequence.



2 - Maintenance

IN THIS SECTION:

2.1 Water Chemistry	28
2.2 Clearances	28
2.3 Cleaning Equipment	29
2.4 Irrigation and Storm Run-Off	30
2.5 Water Flow Rates	31
2.6 Freeze Protection	32
2.7 Winterizing	34

2.1 Water Chemistry

Check water chemistry regularly and maintain within recommended levels. Standards vary in different residential and commercial applications. Follow all local applicable codes.

NOTICE

Failure to heed the following may result in damage to equipment.

- Do not allow water to flow through the heat pump when refinishing or acid washing a pool. Use an installed bypass to route water away from the heat pump or deactivate the filter pump.
- To avoid damage to equipment, monitor and maintain chemistry within recommended levels.

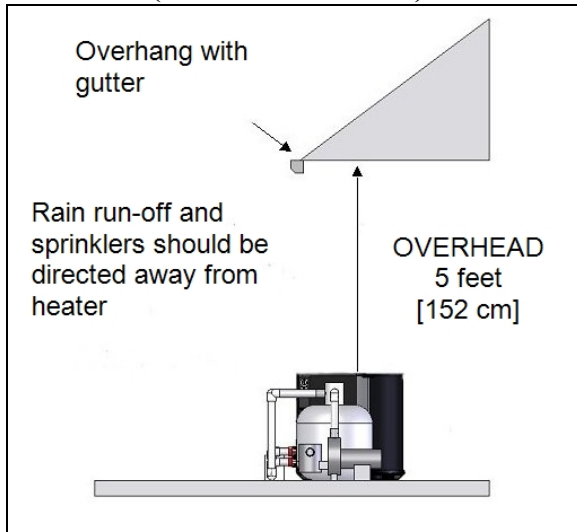
CHEMISTRY LEVEL CHART (RESIDENTIAL)		
CHEMICAL	POOLS	SPAS
Chlorine	1.0 – 3.0 ppm (1 – 3 mg/L)	3.0 – 5.0 ppm (3 – 5 mg/L)
Bromine	2.0 – 6.0 ppm (2 – 6 mg/L)	2.0 – 6.0 ppm (2 – 6 mg/L)
Cyanuric Acid	30 – 50 ppm (30 – 50 mg/L)	30 – 50 ppm (30 – 50 mg/L)
pH	7.4 – 7.6	7.4 – 7.6
Total Alkalinity	80 – 120 ppm (80 – 120 mg/L)	80 – 120 ppm (80 – 120 mg/L)
Calcium Hardness	200 – 400 ppm (200 – 400 mg/L)	150 – 250 ppm (150 – 250 mg/L)
Total Dissolved Solids*	0 – 1500 ppm (0 – 1.5 g/L)	1500 (1.5 g/L) ppm above start-up of total dissolved solids in spas

* Salt from a chlorine generator is not included in Total Dissolved Solids.

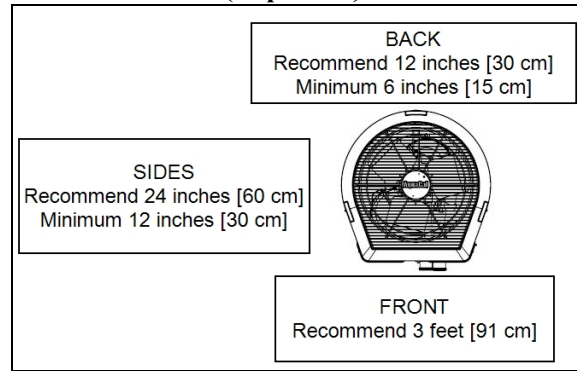
2.2 Clearances

- Proper air circulation is required for the heat pump to operate efficiently. The following diagrams show the minimum clearances required for the proper operation of the heat pump.
- Avoid placing objects near or on top of the heat pump. This includes shrubbery and lawn furniture. These objects will reduce performance and efficiency and hinder maintenance access.

(Overhead Clearance)



(Top View)



2.3 Cleaning Equipment

Cleaning and polishing the heat pump regularly can protect its appearance and longevity. More frequent servicing may be required for heat pumps located in sandy or coastal areas where sand and salt spray can damage equipment.

WARNING

Failure to heed the following may result in injury or death.

- Possible electric shock hazard - Deactivate power to all electrical devices on the pad when washing heat pump. Do not restore electrical power until equipment is completely dry.

NOTICE

Failure to heed the following may result in damage to equipment.

- Do not use a pressure cleaner to wash the heat pump. Damage to heat pump components may result. If using a hose-end spray nozzle adjust the spray pattern to low strength only.
- Do not spray water directly into the interior of the heat pump; damage to components may result.
- Do not use chemicals on the display panel.

Cleaning

1. Wash cabinet using a low-pressure water hose. A high-pressure water stream will cause damage to the aluminum fins of the heat pump. This damage is not covered under the product warranty.
2. While the heat pump is still wet, use an approved cleaning agent to clean the exterior of the heat pump. **Do not use chemicals on the display panel.**
3. Use a detergent-dampened cloth to wipe the heat pump's exterior cabinet.
4. Flush all exterior with fresh water using a low-pressure water hose.
5. Dry the cabinet using a soft cloth being careful not to damage fins.

APPROVED CLEANING AGENTS*
Fantastic®
Formula 409®
Cascade®
All Power Plain Detergent (3% Solution)

Table 1 - Cleaning Agents

- * The trademarks used in approved cleaning agents are the property of their owners and are not related to SunBlazer™.

Polishing

1. Polish the heat pump's cabinet panels using an approved polishing agent and following the manufacturer's instructions. **Do not use chemicals on the display panel.**
2. Rinse the heat pump panels with fresh water, wipe, and buff panels using a dry soft cloth.
3. Allow heat pump interior and surrounding equipment to "air-dry" for several hours prior to restoring electrical power.

APPROVED POLISHING AGENTS*
Simoniz® Wax
Glo-Coat®
Aarmor All® Protectant

Table 2 - Polishing Agents

- * The trademarks used in approved polishing agents are the property of their owners and are not related to SunBlazer™.

2.4 Irrigation and Storm Run-Off

- Irrigation water may damage heat pump components. Direct irrigation water away from the heat pump.
- The heat pump will withstand normal rainfall. Do not allow a roof slope to direct rainwater onto the heat pump. Have a gutter installed on the roof edge to direct this water away from the heat pump. Or install the heat pump in another location.
- Prevent installations in corrosive conditions that will adversely affect the life of the equipment and void equipment warranty.

2.5 Water Flow Rates

Maintain water flow rates as indicated. Please note, these specifications relate to the heat pump only. Code-specified whole system turnover rates must be satisfied.

NOTICE

Failure to heed the following may result in damage to equipment.

- Water flow exceeding maximum flow rates will negatively affect the total pool filtration performance and may damage the heat pump. This will not be covered under the equipment warranty.

MODEL	HEAT EXCHANGER TYPE	FLOW RATES	
		MINIMUM	MAXIMUM
SB128	Titanium Tube-in-Tube	30 GPM (113.6 L/min)	70 GPM (265 L/min)
SB128R	Titanium Tube-in-Tube	30 GPM (113.6 L/min)	70 GPM (265 L/min)

* Head Loss - 30 GPM = 1.5 PSI, 70 GPM = 8.2 PSI

PLEASE NOTE -

If minimum flow rates are not met, heat pump performance is reduced and performance will suffer. Internal safety devices may deactivate the heat pump with the following errors:

- **HIGH PRESSURE FAULT**
- **HP5 SYSTEM LOCKOUT**
- **LOW PRESSURE FAULT**
- **LP5 SYSTEM LOCKOUT**

- Operate water filtration devices per manufacturer's specifications. Dirty filters can cause a reduction of water flow to the heat pump. An increase of 7-10 psi (48 to 69 kPa) higher than the clean filter pressure typically reduces flow rates. This requires the filter to be cleaned or back-washed.
- Keep baskets free of debris. A large quantity of debris in the pump and skimmer baskets can reduce water flow.
- Check for improper valve settings. A partially closed valve after the filter, or a full-open bypass around the heat pump, will cause insufficient water flow through the heat pump.
- The maximum static pressure (or operating pressure) is 50 psi (345 kPa). These specifications relate to the heat pump only.
- Code-specified whole system turnover rates must be satisfied.

2.6 Freeze Protection

When freeze protection is active, water is circulated through designated group's plumbing circuits in 5 minute cycles. The water circulation lowers the chances of water freezing in those circuits.

- Freeze protection will automatically activate when the air temperature falls below 37° F (3° C).
- When the air temperature rises to 42° F (6° C), freeze protection will deactivate.
- These set temperatures and cycle times can be adjusted as needed in settings. See "*Adjusting Freeze Protection Options*" on the facing page.

PLEASE NOTE:





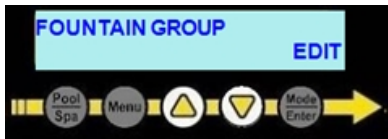
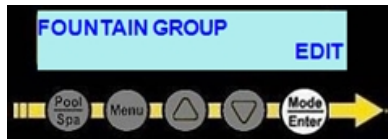
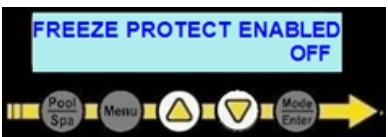


- Freeze protection is meant to be temporary. If freezing temperatures will continue for an extended time frame, the pool equipment must be winterized.
- The heat pump will not attempt to heat water in freezing conditions.
- As a group cycles on and off, any devices contained within that group will also cycle on and off. If this behavior is undesirable, the device can either be removed from the group or manually deactivated.

Requirements for Freeze Protection

- A circulation pump must exist in the group to be protected.
- Water flow must be properly directed through the group's plumbing circuit via valve actuators.
- The group's freeze protection option must be set to on.

Adjusting Groups to Allow Freeze Protection

In the following example, a "FOUNTAIN" group is edited to enable freeze protection.

<p>IF UNIT IS ASLEEP, SWIPE TO WAKE UP</p> 	<p>A PRESS "MENU" BUTTON</p> 	<p>B USE ARROWS TO "GROUPS"</p> 
<p>C PRESS "ENTER"</p> 	<p>1 USE ARROWS TO GROUP TO EDIT</p> 	<p>2 PRESS "ENTER" TO EDIT</p> 
<p>3 ARROWS TO "FREEZE PROTECT ENABLED"</p> 	<p>4 PRESS "ENTER" TO EDIT</p> 	<p>5 USE ARROWS TO CHANGE TO "ON"</p> 

**MENU TO EXIT, PRESS
& HOLD TO STATUS**



Adjusting Freeze Protection Options

NOTICE

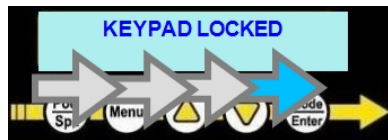
Failure to heed the following may result in damage to equipment.

- Use extreme care when setting and adjusting freeze protection options. Improper freeze protection settings can cause damage to equipment. This is not covered by heat pump warranty.

Available freeze protection options:

- "PROTECT ON SETPOINT" can be adjusted from 33° F to 39° F (.6° C to 4° C). The default is 37° F (3° C).
- "PROTECT OFF SETPOINT" can be adjusted from 40° F to 45° F (4° C to 7° C). The default is 42° F (5.5° C).
- "CYCLE TIME" can be adjusted from 5 to 20 minutes. The default is 5 minutes.
- "ACTIVE TIME" can be adjusted from 15 to 120 minutes. The default is 60 minutes.

**IF UNIT IS ASLEEP,
SWIPE TO WAKE UP**



**A PRESS MENU
BUTTON**



**B USE ARROWS TO
"SYSTEM"**



C PRESS "ENTER"



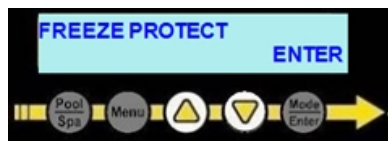
**D USE ARROWS TO
"ADVANCED"**



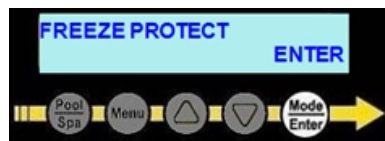
E PRESS "ENTER"



**1 USE ARROWS TO MENU
"FREEZE PROTECT"**



**2 PRESS "ENTER"
TO EDIT**



**3 USE ENTER & ARROWS
TO ADJUST
"PROTECT ON SETPOINT"**



**4 USE ENTER & ARROWS
TO ADJUST
"PROTECT OFF SETPOINT"**



**5 USE ENTER & ARROWS
TO ADJUST
"CYCLE TIME"**



**6 USE ENTER & ARROWS
TO ADJUST
"ACTIVE TIME"**



**MENU TO EXIT, PRESS
& HOLD TO STATUS**



2.7 Winterizing

Failure to properly winterize the heat pump as needed may result in serious equipment damage.



DANGER

Failure to heed the following will result in injury or death.

- Deactivate power while routing wiring to control board.
- Follow all National Electric Codes (NEC) and/or State and Local guidelines.



WARNING

Failure to heed the following may result in injury or death.

- Deactivate all electrical power to heat pump before performing hard freeze procedures.

NOTICE

Failure to heed the following may result in damage to equipment.

- Failure to winterize heat pump may result in serious equipment damage. Freeze damage is not covered under the heat pump warranty.
- While the plumbing connections are in the winterized condition (not fully tightened), it is imperative that water not run through the heat pump. Loss of water through loose plumbing connections may result in damage to circulation pump, pool and spa structures, and other equipment.

Light Freeze Conditions

A light freeze is when the ambient air temperature falls below 32 degrees Fahrenheit (0° C) for less than 8 hours. Typically during light freeze conditions circulating (or moving) water will not freeze. Temporarily activate the filter pump for continuous operation during light freeze conditions. If the heat pump is directly controlling a water circulation pump, any groups marked as requiring freeze protection will automatically have water circulated to the equipment. See "*Freeze Protection*" on page 32.

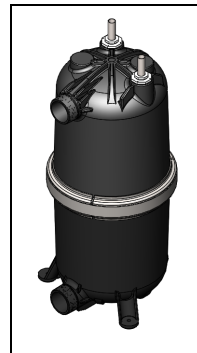
Hard Freeze Conditions

A hard freeze is when the ambient air temperature falls below 32 degrees Fahrenheit (0° C) for more than 8 hours. In areas where this condition is prevalent and sustained, the heat pump **MUST** be winterized for hard freeze conditions. Follow the correct procedure depending on the type of heat exchanger found in the heat pump.

Titanium ThermoLink[®] Exchanger (with no Drain)

1. Disconnect the plumbing to the heat pump at connection unions (removal is counter-clockwise).
2. Allow water to drain completely from the heat pump. Expect to see a lot of water drain out at first, and then a small amount to continue to drain out over a long period.
3. After heat pump has fully drained, partially reconnect plumbing connection unions.
4. Winterizing is complete.
5. When ready to use the heat pump again, hand-tighten connection unions. Reconnect electrical power, and set the operating mode on the heat pump. Activate the filter pump.

No Drain



IN THIS SECTION:

3.1 Adjusting Water Flow Using ΔT (Delta-T)	36
3.2 Available Accessories	37
3.3 Identifying Model Specifications	39
3.4 Menu Trees	40
3.5 Initial Heating Recommendations	42
3.6 Service Mode	42
3.7 Viewing System Information	43

3.1 Adjusting Water Flow Using ΔT (Delta-T)

The Delta-T is the temperature difference between the water temperatures entering and leaving the heat pump.

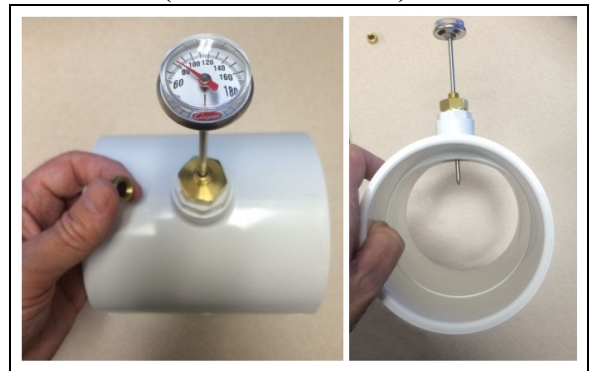
The equipment can be fine-tuned for maximum performance by balancing water flow rates to maintain an ideal ΔT .

The adjustment procedure must be completed with the unit in heating mode

PLEASE NOTE -

- The installation of temperature ports is required for all commercial applications.
- The installation of temperature ports is strongly recommended for residential installations.

**Temperature Port
(Shown with Probe)**



1. Adjust the thermostat to its lowest setting with the unit in heating mode.
2. Deactivate the water filtration pump.
3. Confirm that the filters leading to the heat pump are clean.
4. Adjust the valves controlling water headed towards the heat pump to the half-open position.
5. Adjust the valves controlling water leading away from the heat pump to a fully open position.
6. Activate the pool water filtration pump.
7. Slowly raise the thermostat temperature until the heat pump activates.
 - After a four-minute delay, the heat pump's compressor will start.
8. With the heat pump running, confirm the filtration pump is operating properly with adequate flow and no short cycling.
9. Wait for water temperatures to stabilize (approximately 5 minutes).
10. Adjust valves in the following order using the temperature chart provided.
 - a. Adjust the valve that controls water exiting the heat pump until the correct temperature differential is achieved. Match the temperature measured with a temperature probe to the chart.
 - b. Wait for water temperatures to stabilize. Then check the temperature again. Re-adjust the valve as needed.
11. Mark valves at these positions for future reference.

HEAT EXCHANGER TYPE	MODEL	TEMPERATURE
Titanium Tube-in-Tube	SB128	2° to 5° F (1.1° C to 2.8° C)
Titanium Tube-in-Tube	SB128R	2° to 5° F (1.1° C to 2.8° C)

Table 3 - Temperature Chart

PLEASE NOTE -

- Temperature differences are based on pool water temperatures of 69° to 75° F. (20.5° to 23.8° C)
- For water temperatures outside this range, contact SunBlazer™. See "Contacts" on page 1.

3.2 Available Accessories

Accessories may be purchased through an authorized dealer of SunBlazer® products.

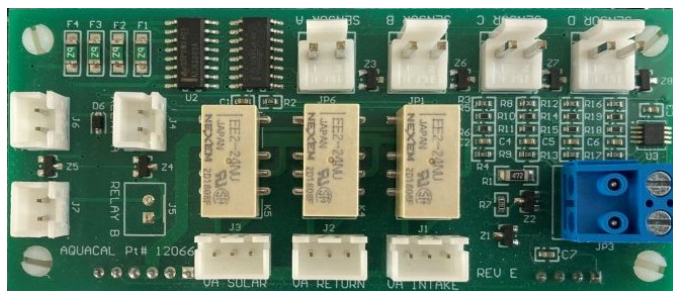
Bypass Valve Kit (# STK0135)

- When high flow rates are outside recommended specifications, please use this kit or an alternative bypass valve system.
- This kit can be used to control excessive water flow through the heat pump. It provides automatic flow adjustments for most applications.



Expansion Board Upgrade Kit (# STK0247)

- This kit contains an upgrade board that will give the heat pump direct control of actuators, circulation pumps, and relay-controlled devices.



Grid Flow Switch (# 0040S)

- Used for automatic pool/spa thermostat switching.
- This kit is not to be used on applications exceeding 50 PSI (345 kPa).

©2013 APC



Plumbing Unions

- 2 Inch Unions - (# PLS2627)



PoolSync® WI-FI Controller (ECP0343)

- This kit will add WiFi control capabilities to the heat pump.
- Contact installing dealer to order this product.



Temperature Port Kit (# STK0096)

- This port can be used to adjust water flow using Delta-T.
- The kit comes with port, installation components, and a temperature probe.



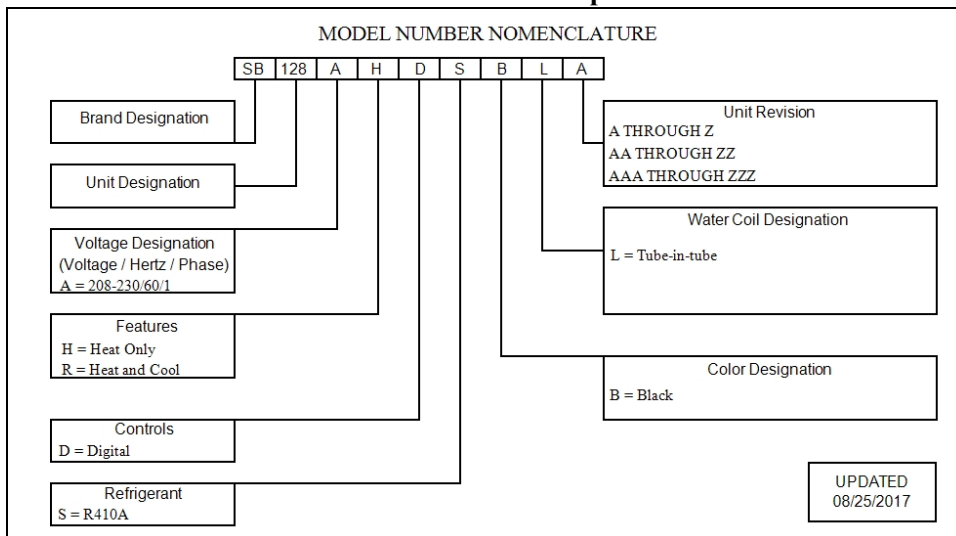
3.3 Identifying Model Specifications

1. Find Data Plate - The data plate is usually posted on the side of the equipment or the inside of the heat pump's access plate.
2. Find the model number on the data plate. The first letters and numbers indicate the model type.
3. The complete model number identifies the equipment's specifications.

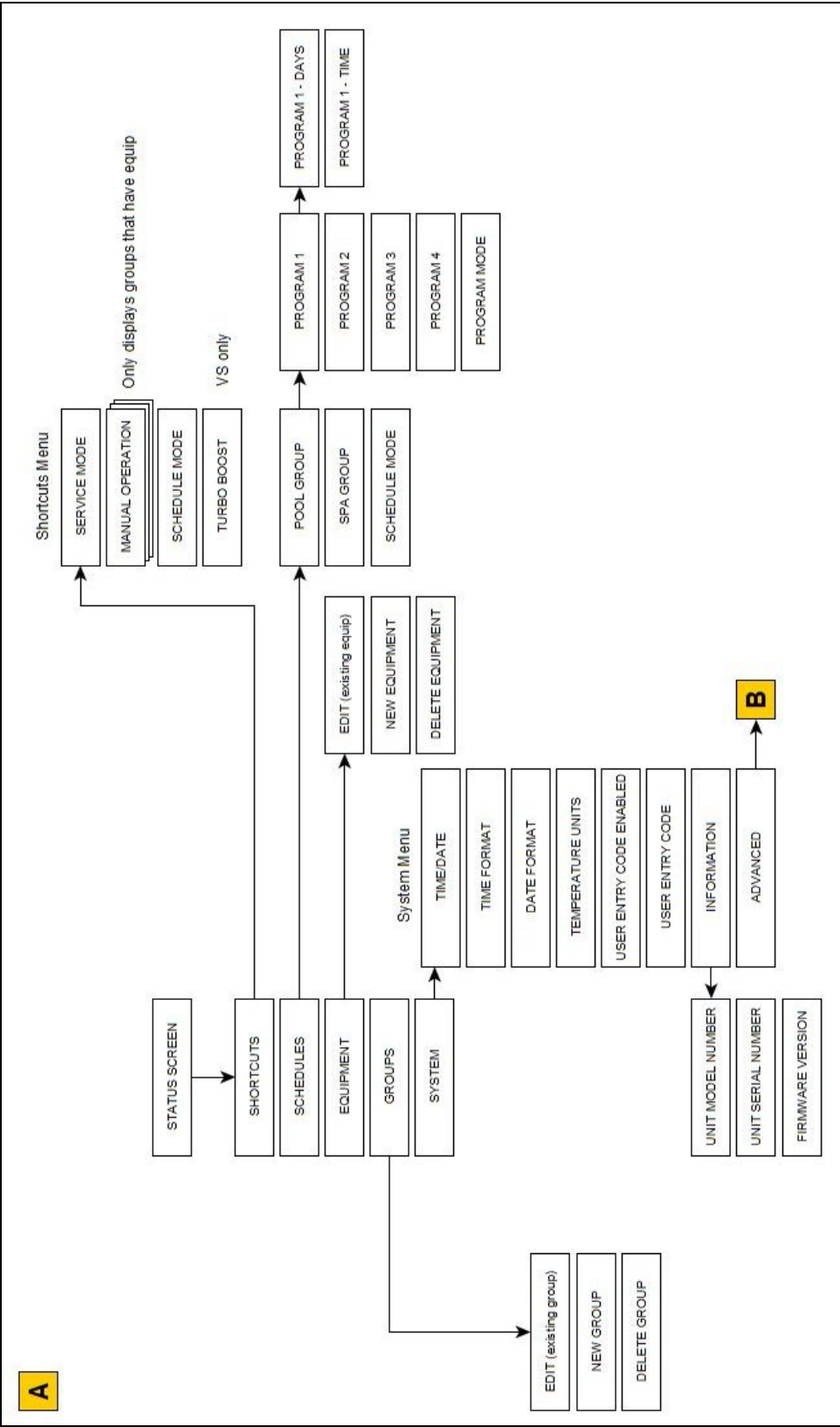
Data Plate Example

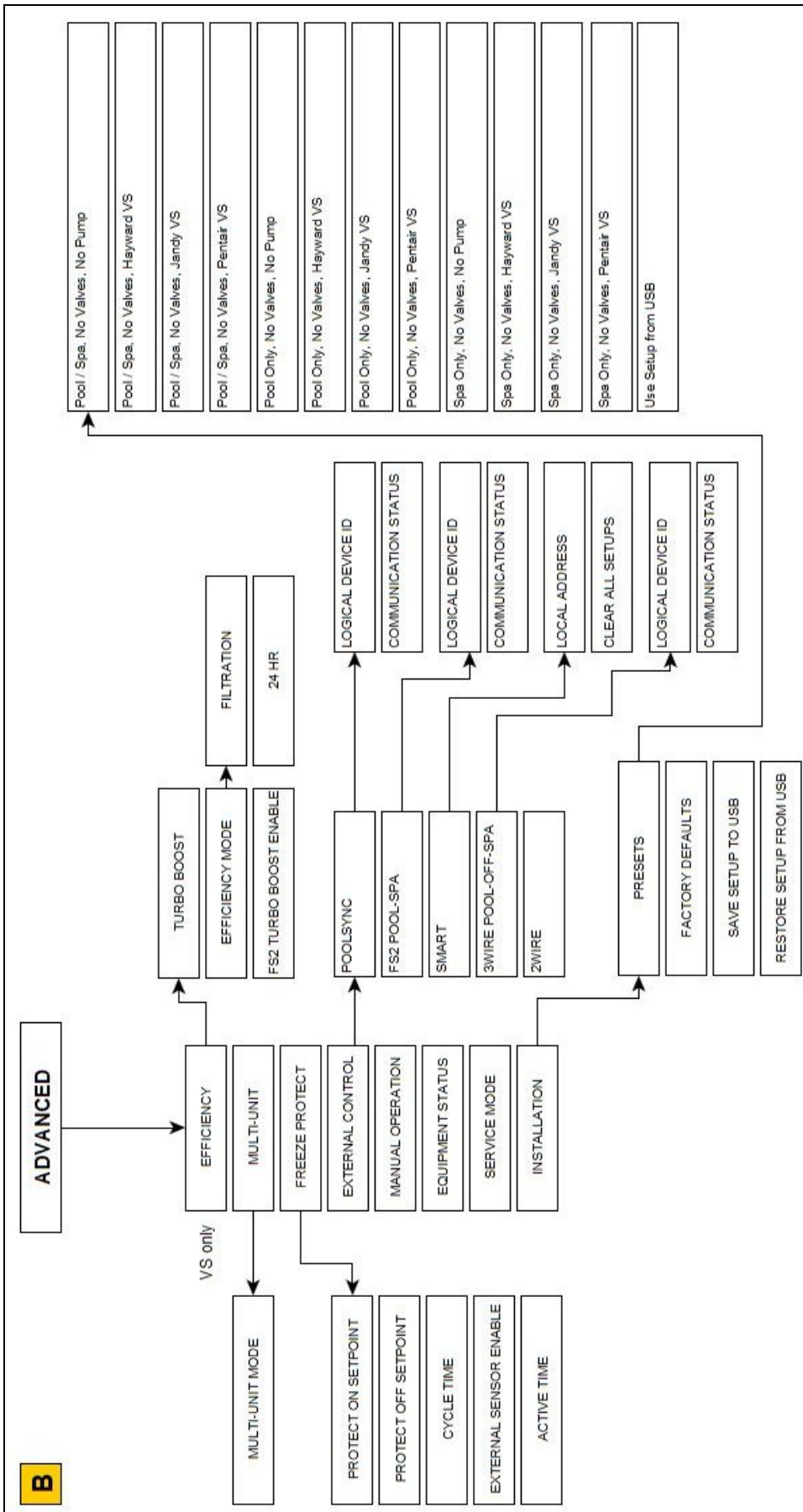
MINIMUM CIRCUIT AMPACITY		MADE IN THE USA
ELEC. SERVICE: VOLTS		PH <input type="checkbox"/> HZ <input type="checkbox"/>
MAXIMUM TIME DELAY FUSE OR HACR BREAKER		5
COMPRESSOR VOLTS	R.L.A. <input type="checkbox"/> L.R.A. <input type="checkbox"/>	
FAN MOTOR VOLTS	H.P. <input type="checkbox"/> F.L.A. <input type="checkbox"/>	
REFRIGERANT: Circuit - Factory charged	<input type="checkbox"/> Only oz/Kg <input type="checkbox"/>	
Tested to <input type="checkbox"/> psig High side / <input type="checkbox"/> psig Low side		
DATE OF TEST		
MODEL NUMBER <input type="text"/>		
IBAR CODE		
SERIAL NUMBER <input type="text"/>		
IBAR CODE		

Model Number Example



3.4 Menu Trees





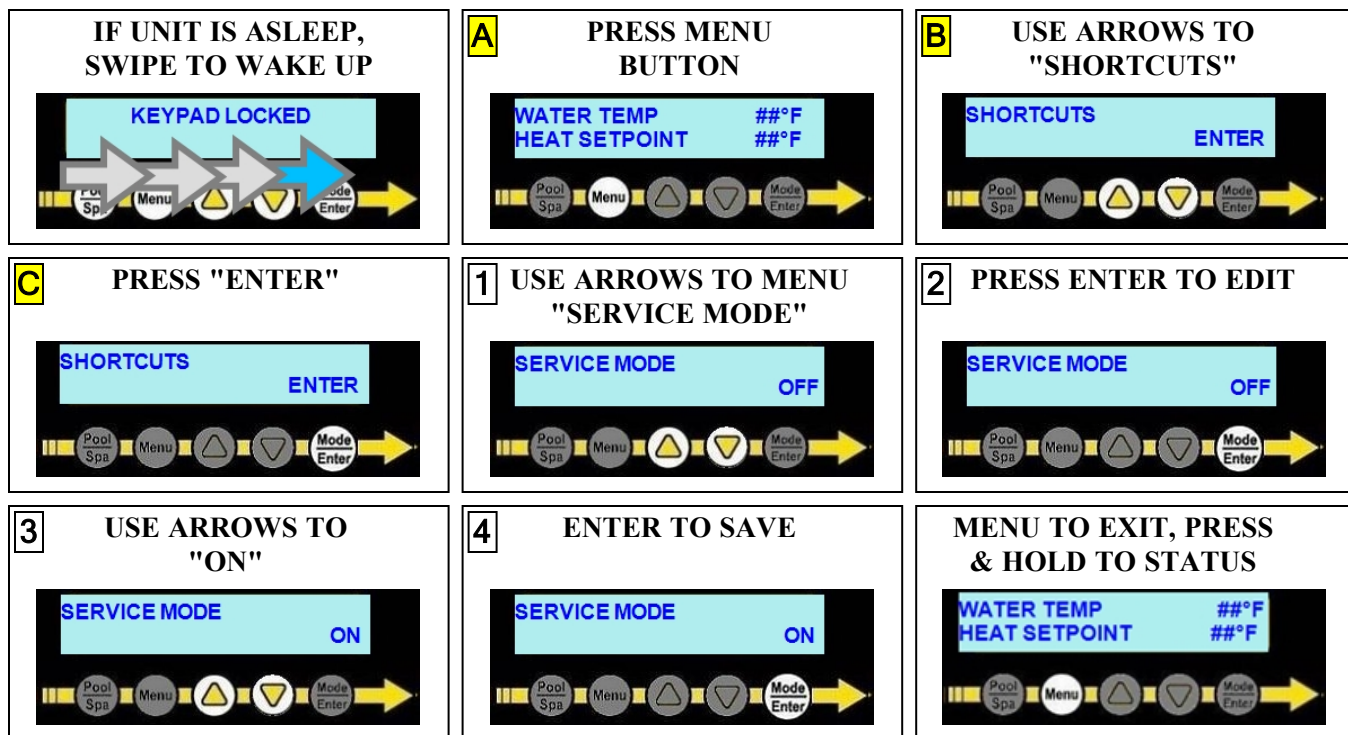
3.5 Initial Heating Recommendations

The following recommendations will reduce the amount of time required to heat a pool. **If unsure of equipment heating capability, review equipment data plate.** See "*Identifying Model Specifications*" on page 39.

1. Use the heat pump's "POOL/SPA" button to select the "POOL" group.
2. Select 48HR (48 hours) for the "SET TIME".
3. Confirm the mode has been set to "HEAT" mode.
4. Set the desired temperature "HEAT SETPOINT" for the water.
5. If a circulation pump has been connected to the heat pump, it will automatically activate.
6. Use a pool cover or blanket to reduce heating time.

3.6 Service Mode

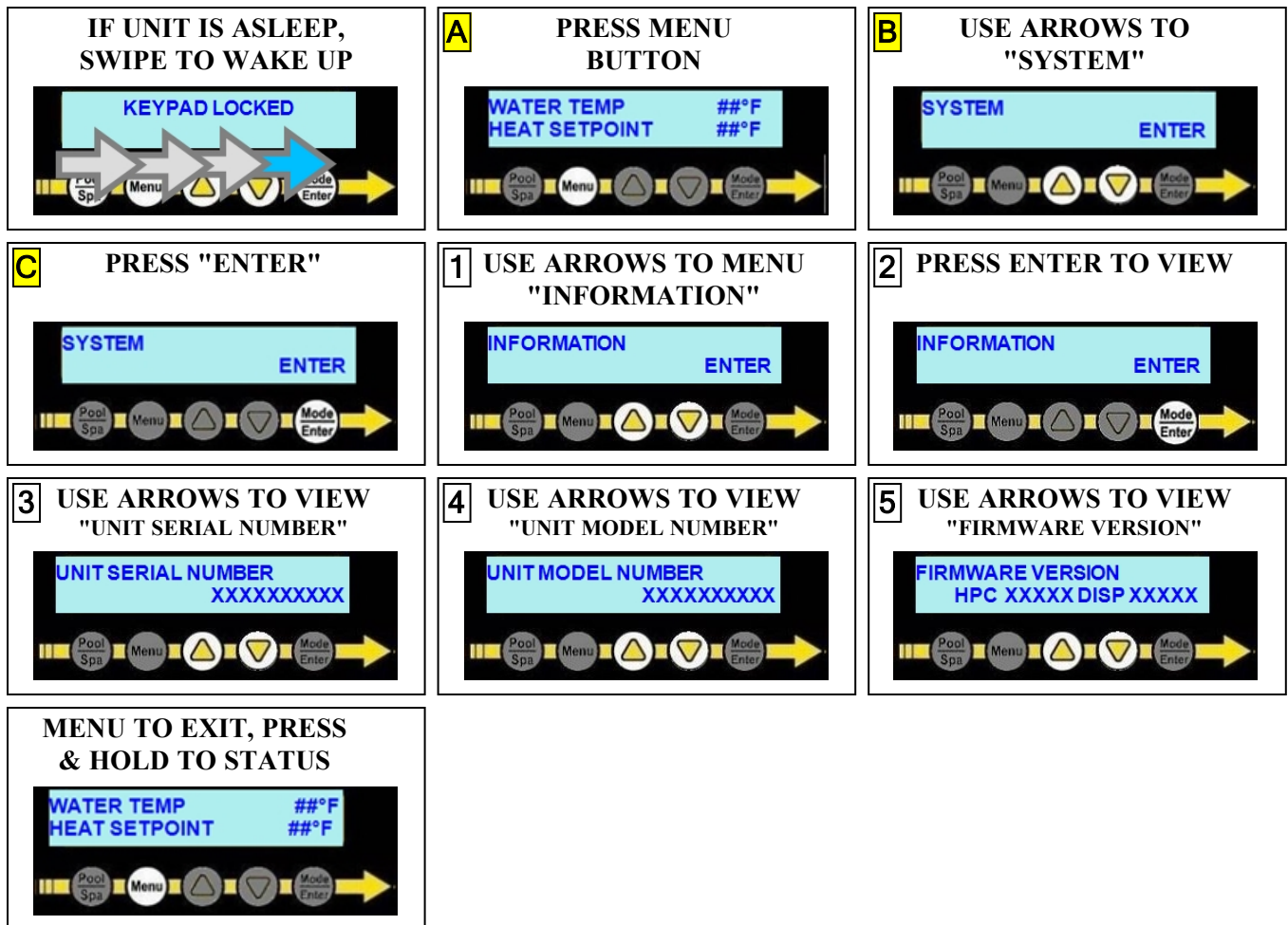
The heat pump can be set into a service mode where all connected devices including the heat pump can be deactivated for servicing. While in service mode, connected devices / equipment can be manually activated as needed.



When service is complete, repeat above steps setting SERVICE MODE to "OFF".

3.7 Viewing System Information

The heat pump model, serial number, and firmware version can be viewed in the information menus.



4 - Troubleshooting



DANGER

Failure to heed the following will result in injury or death.

- Deactivate power while routing wiring to control board.
- Follow all National Electric Codes (NEC) and/or State and Local guidelines.



WARNING

Failure to heed the following may result in injury or death.

- Repairs must not be attempted by untrained or unqualified individuals.
- The heat pump contains refrigerant under high pressure. Repairs to the refrigerant circuit must not be attempted by untrained or unqualified individuals. Service must be performed only by qualified HVAC technicians. Recover refrigerant before opening the system.

NOTICE

Failure to heed the following may result in damage to equipment.

- Service by unauthorized personnel will void the heat pump warranty.

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4.1 Fault Codes

A fault code indicates a specific issue or condition that will require action before the equipment can resume operating.

Please perform the following troubleshooting.

If the issue reoccurs, please contact SunBlazer. See "*Contacts*" on page 1.

CLOCK LOW BATTERY**ISSUE**

The real-time clock controller indicates a low battery condition.

- The time will reset to factory default.

RESOLUTION

A qualified technician should replace the battery. The date and time will need to be reset on the heat pump after replacement.

DEFROST1 SENSOR OPEN or DEFROST2 SENSOR OPEN**ISSUE**

Open defrost sensor.

RESOLUTION

A qualified technician should replace the defrost sensor.

DEFROST1 SENSOR SHORT or DEFROST2 SENSOR SHORT**ISSUE**

Shorted defrost sensor.

RESOLUTION

A qualified technician should replace the defrost sensor.

ERROR AT PRIMARY UNIT**ISSUE**

The heat pump is secondary to a primary heat pump that is displaying a fault code.

RESOLUTION

The error at the primary heat pump must be corrected before the secondary unit will resume operation.

HAYWARD VS PUMP FAULT**ISSUE**

The heat pump has either lost communication with a connected Hayward circulation pump. Or the Hayward pump needs attention.

RESOLUTION

Check circulation pump documentation for a resolution for that product.

JANDY VS PUMP FAULT**ISSUE**

The heat pump has either lost communication with a connected Jandy circulation pump. Or the Jandy pump needs attention.

RESOLUTION

Check circulation pump documentation for a resolution for that product.

PENTAIR VS PUMP FAULT

ISSUE

The heat pump has either lost communication with a connected Pentair water pump. Or the Pentair pump needs attention.

RESOLUTION

Check circulation pump documentation for a resolution for that product.

HIGH PRESSURE FAULT

ISSUE

The refrigerant system's high-pressure switch is showing as open.

RESOLUTION

Heat Only Units

Place heat pump in heating mode and perform the following troubleshooting.

Determine if an insufficient amount of water is being supplied to the equipment.

1. Confirm the filter pump is on.
2. If a multiple-speed filter pump is being used, run filter pump at a higher speed. Do not exceed the maximum flow rate for the model.
3. Confirm water is not being diverted away from the heat pump.
 - See "*Water Flow Rates*" on page 31.
 - See "*Adjusting Water Flow Using ΔT (Delta-T)*" on page 36.

HIGH WATER TEMP

ISSUE

Incoming water temperature has exceeded 108° F (42° C) and the unit has been deactivated. The heat pump will not operate until the incoming water temperature drops to 100° F (38° C) or lower.

RESOLUTION

1. Determine if a gas heater is sending water directly to the heat pump. This situation would need to be corrected before continuing.
2. If the **HIGH WATER TEMP** fault continues to display, the water temperature sensor may require replacement.

HP5 SYSTEM LOCKOUT

ISSUE

The heat pump has locked due to five high-pressure faults during one call for heating.

RESOLUTION

1. Deactivate then reactivate power to the heat pump to clear error.
2. Troubleshoot the high-pressure issue causing the error.
 - See "*HIGH PRESSURE FAULT*" above.

HPC TEMP SYSTEM LOCKOUT**ISSUE**

The heat pump's controller board is overheating.

RESOLUTION

A qualified technician should be contacted to correct the issue.

LOW PRESSURE FAULT**ISSUE**

The refrigerant system's low-pressure switch is showing as open.

RESOLUTION**Heat Only Units**

Place heat pump in heating mode and perform the following troubleshooting.

1. Check for proper fan operation. If the fan is not operating, contact SunBlazer™ Technical Support.
2. Check for obstructed airflow around the heat pump.
 - See "Clearances (SunBlazer)"
3. Check for a dirty or blocked evaporator coil.
 - See "*Cleaning Equipment*" on page 29.
4. Check for signs of heavy ice buildup on the coil.

LP5 SYSTEM LOCKOUT**ISSUE**

The heat pump has locked due to five low-pressure faults during one call for heating.

RESOLUTION

1. Deactivate then reactivate power to the heat pump to clear error.
2. Troubleshoot the low-pressure issue causing the error.
 - See "*LOW PRESSURE FAULT*" above.

MULTI-UNIT COMM FAULT**ISSUE**

Secondary heat pump is not receiving a signal from the primary heat pump.

RESOLUTION

1. Confirm the primary heat pump is operating correctly. If, for example, no power is supplied to the primary heat pump, an error will appear on the secondary heat pumps.

NO POOL/SPA GROUP EXISTS**ISSUE**

When pushing the POOL/SPA button, the heat pump displays the message "NO POOL/SPA GROUP EXISTS".

RESOLUTION

- A POOL or SPA group is only created if a preset has been used. For simple systems with only one body of water, a preset is not required. See " " for more information.

SMART COMM FAULT**ISSUE**

Heat Pump is not receiving a signal from an external controller using a smart connection point.

RESOLUTION

1. Confirm a smart external controller is being used.
 - If unsure, contact installer of heat pump for more information. The heat pump may need to be reconfigured to set external controller to "none".
2. If using a smart external controller, confirm the controller is correctly set to send signals to the heat pump. See manuals or guides provided with the external controller.

WATER TEMP1 SENSOR SHORT or WATER TEMP1 SENSOR OPEN**ISSUE**

Open or shorted water sensor.

RESOLUTION

A qualified technician should replace the water sensor. Until the sensor is replaced, the setpoint is limited to 96° F (35.5° C)

WATER TEMP2 SENSOR SHORT or WATER TEMP2 SENSOR OPEN**ISSUE**

Open or shorted water sensor.

RESOLUTION

A qualified technician should replace the water sensor. Until the sensor is replaced, the setpoint is limited to 96° F (35.5° C)

4.2 Issues and Resolutions

Please perform the following troubleshooting.

For further assistance, please contact SunBlazer. See "Contacting SunBlazer".

Blank Display**ISSUE**

The Heat Pump may have an incoming power problem.

RESOLUTION

Confirm electrical power is being supplied to the heat pump from electrical disconnect(s).

Circulation Pump Won't Activate**ISSUE**

A circulation pump controlled by the heat pump will not activate as needed.

RESOLUTION

1. Confirm circulation pump is included in any group that requires it. See "*Edit a Group*" on page 16.
2. Confirm the group containing the circulation pump has an appropriate schedule. See "*Edit a Schedule*" on page 19.
3. Confirm the schedule mode is set to "AUTO" and the scheduled program mode is set to "ON". See "*Schedule and Program Modes*" on page 21.

Display Panel Not Responding

ISSUE

The heat pump's display panel will not respond to user input.

RESOLUTION

1. If heat pump display shows "**UNDER REMOTE CONTROL**", use the external control device to control the heat pump.
2. If needed, check with the external controller manufacturer for further assistance using that device.

Displays "**DEFROSTING**"

ISSUE

The heat pump has sensed the coil is icing up. See "*Ice Forming on the Heat Pump*" on page 53. No action is required.

RESOLUTION

Heat Only Units - Passive Defrost

When ice starts to form on the coil, the compressor will stop operating while the fan continues to operate.

- The coil will begin to warm to the surrounding air temperature. When the coil's temperature rises above 38° F (3.3° C), the compressor is restarted and heating resumes.
- If the coil's temperature remains below 38° F (3.3° C), the compressor will remain off.

Displays "**FREEZE PROTECTION ACTIVE**"

ISSUE

The heat pump has sensed the air temperature has dropped below 37° F (0° C). This is the default setpoint before the heat pump begins to circulate water to groups marked as needing freeze protection. The heat pump will not heat water in these conditions. (See "*Freeze Protection*" on page 32 for more information.)

NOTICE

Failure to heed the following may result in damage to equipment.

- Freeze protection is meant to be temporary. If freezing temperatures will continue for an extended time frame, the pool equipment ***must*** be winterized.

PLEASE NOTE:

This protection is only available for heat pumps that directly control a circulation pump.

Displays "**NO SYSTEM FIRMWARE**"

ISSUE

The heat pump has encountered a software error.

RESOLUTION

Call for service.

Displays "NO POOL/SPA WATER FLOW"**ISSUE**

Low or no water detected. This is normal when the circulation pump is deactivated.

RESOLUTION

1. Confirm the filter pump is on.
2. If a multiple-speed filter pump is being used, run at a higher speed to determine if the error persists. Do not exceed the maximum flow rate for your model.
3. Confirm water is not being diverted away from the heat pump.
 - See "*Water Flow Rates*" on page 31.
 - See "*Adjusting Water Flow Using ΔT (Delta-T)*" on page 36.

Displays "SET TO SWITCH REMOTELY"**ISSUE**

If when pressing the "Pool / Spa" button the display flashes the message **"SET TO SWITCH REMOTELY"**, the heat pump is using a remote relay switch or a 3-wire controller.

RESOLUTION

- The Pool and Spa thermostat automatically switch when using these modes.
- Operation manually will not be available when using these external devices. No action is required.

Displays "UNIT MODEL NUMBER"**ISSUE**

The heat pump has encountered a software error.

RESOLUTION

- The model number and serial number will need to be re-entered into the system. The system will then operate as normal.
- If the issue reoccurs, please contact the distributor or installing dealer.

Heat Pump Not Running

ISSUE

The heat pump will not run.

RESOLUTION

1. Confirm equipment is receiving power. Is the heat pump display illuminated?
 - If not, confirm the main breaker (located at the power supply panel) and the disconnect switch (located near the heat pump) are both turned on.
 - If the display still does not illuminate, it is recommended that the heat pump installer or electrician confirm the heat pump is receiving power.
2. Confirm correct mode is selected.
 - See *"Activate HEAT Mode, or Deactivate Equipment"* on page 6.
3. Confirm thermostat is set correctly.
 - When heating the water is desired, the thermostat should be set above the current water temperature.
 - See *"Set a desired temperature (setpoint) for the Heat Pump to activate"* on page 7.
4. If an error code is displayed, diagnose and correct the cause of the code.
 - See *"Fault Codes"* on page 45.
5. If the heat pump is using an external controller, the heat pump may not be set correctly to accept the controller's signal.
 - See *"Operating Heat Pump (With an External Controller)"* on page 27.

Heat Pump's Tripping Breaker

ISSUE

The heat pump breaker(s) keeps tripping.

RESOLUTION

1. If heat pumps have been connected using a multiple heat pump configuration, the configuration may be incorrect. Please confirm settings or contact installer of equipment.
2. Have an electrician confirm breakers are correct type, in good condition, and properly sized for the heat pump.

Heat Pump Won't Shut Off

ISSUE

The heat pump will not deactivate.

RESOLUTION

PLEASE NOTE

When the heat pump is set to off, the display will show the current water temperature or no water flow indicator.

1. Confirm the correct mode has been set on the heat pump.
 - See *"Activate HEAT Mode, or Deactivate Equipment"* on page 6.
2. Confirm the heat pump has reached the desired temperature set on the thermostat. The heat pump will continue to run until the set temperature is reached.
 - See *"Set a desired temperature (setpoint) for the Heat Pump to activate"* on page 7.
3. If the heat pump is using an external controller, it may not be set correctly. See the external controller's manual.

Heat Pump Is Running, Not Heating

ISSUE

The heat pump is running. But the water is not heating.

RESOLUTION

1. If the heat pump is using an external controller, confirm it is set correctly.
 - See "*Operating Heat Pump (With an External Controller)*" on page 27.
 - If the heat pump is still not running correctly with this device, contact the installer of the device or the device's manufacturer for further assistance.
2. Confirm heat pump mode is set to heat.
3. Confirm thermostat is set to the desired water temperature.
4. Confirm valves are positioned to heat the correct body of water (either the pool or the spa). If heating a spa that overflows into a pool, confirm the spa is isolated when being heated (not flowing into the pool).
5. Confirm heat pump is transferring heat into the water.
 - Measure the temperature of air discharge coming out of the heat pump fan. If discharge air is between 8° to 10° F (4.4° to 5.6° C) colder than the outside ambient air, the heat pump is moving heat into the water.
6. If an error code is displayed, diagnose and correct cause of code.
 - See "*Fault Codes*" on page 45.
7. Confirm that the filter pump has a sufficient run-time. The heat pump will not run (or heat the water) without water flow.
 - See "*Initial Heating Recommendations*" on page 42.
8. If heating a spa, deactivate air blower or venturi (if equipped) to allow for quicker heating times. For pools, deactivate water features, such as slides, waterfalls, or fountains to allow water to retain heat. Use of a liquid pool blanket product can also compensate for excessive heat loss.

Ice Forming on the Heat Pump

ISSUE

When conditions are too cold for proper operation, the heat pump will enter a defrost mode. This prevents ice from building up on the evaporator coil.

RESOLUTION

Heat Only Units:

- The heat pump may develop a fine layer of white frost on the outside coil before entering the defrost mode. This is normal.
 - See "*Displays Defrosting*" on page 50.
- If heavy ice (not frost) starts to build up, shut off the heat pump. Contact the installer or manufacturer.
- If the ambient air temperature will be falling below 32° F (0° C) for more than 8 hours, winterize equipment.
 - See "*Winterizing*" on page 34.

"Pool / Spa" Button Isn't Working

ISSUE

The "Pool / Spa" button is disabled if the following devices have been configured on the heat pump. Check with installer if unsure of devices enabled on heat pump.

- A 2-wire external controller.
- A 3-wire external controller.
- A "SMART" external controller.
- An external flow switch.

RESOLUTION

If not used to operate the heat pump, deactivate the external control device.

Schedule Not Working

ISSUE

A device isn't operating as scheduled.

RESOLUTION

- Confirm the group has an appropriate schedule program. See "*Edit a Schedule*" on page 19.
- Confirm the schedule mode is set to "AUTO" and the scheduled program mode is set to "ON". See "*Schedule and Program Modes*" on page 21.
- Confirm the time is set correctly in the system. See equipment manual for information on changing date and time on heat pump.

Water Coming From Heat Pump

ISSUE

The water may be normal condensation produced as a by-product of the heat pump's refrigeration process.

The heat pump can produce up to 8 to 10 gallons (30 to 38 liters) of condensation per hour depending on the humidity of the ambient air. Determine if the water is condensation or a possible leak.

RESOLUTION

1. Deactivate heat pump, leaving the filter pump on. After several hours, determine if the water is still coming from the heat pump.
2. If using chlorine or bromine as a pool/spa sanitizer, test the water around the heat pump using a test strip. If the test strip indicates that chlorine or bromine is present, a leak may exist.

