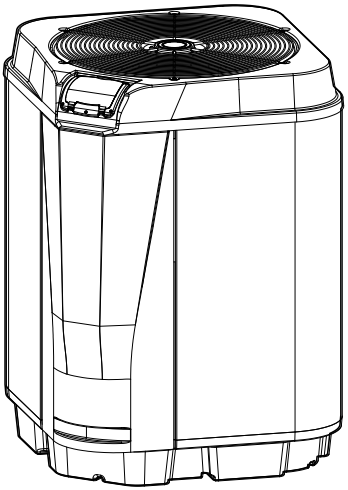
Jandy®

Installation and Operation Manual
Manuel d'installation et d'utilisation
Manual de instalación y operación



Essential installation and startup instructions are included in this manual. Additional operation and troubleshooting information is available online by scanning the QR code with your phone or visiting jandy.com

VersaTemp™ JRT Series Heat Pump

⚠ WARNING

FOR YOUR SAFETY: This product must be installed and serviced by a contractor who is licensed and qualified in pool equipment by the jurisdiction in which the product will be installed where such state or local requirements exists. In the event no such state or local requirement exists, the installer or maintainer must be a professional with sufficient experience in pool equipment installation and maintenance so that all of the instructions in this manual can be followed exactly. Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death. Improper installation and/or operation can create carbon monoxide gas and flue gases which can cause serious injury, property damage, or death. For indoor installations, as an additional measure of safety, Zodiac Pool Systems LLC strongly recommends installation of suitable carbon monoxide detectors in the vicinity of this appliance and in any adjacent occupied spaces. Improper installation and/or operation may void the warranty.

ATTENTION

Installation and service must be performed by a qualified installer or service agency.

To the Installer:



After installation, these instructions must be given to the homeowner or left on or near the heat pump.

To the User: This manual contains important information that will help you in operating and maintaining this heat pump. Please retain it for future reference.

Table of Contents

Section 1. General Information 3
1.1 Introduction 3
1.2 Consumer Information & Safety 3
1.3 Warranty 5
1.4 Codes and Standards 5
1.5 Technical Assistance 5
1.6 Materials Needed for Installation 5
1.7 Specifications 6

Section 2. Installation Instructions 8
2.1 General Information 8
2.2 Location Requirements 8

Section 3. Water Connections 10
3.1 Plumbing Layout 10
3.2 Water Connections at Heat Pump 10
3.3 Check Valve Installation 10
3.4 Multiple Unit Installation 10
3.5 Head Loss Curves 12

Section 4. Electrical Connections 13
4.1 General Information 13
4.2 Main Power 13
4.3 Bonding 16
4.4 Optional Remote Controls 16

Section 5. Operation 19
5.1 Initial Startup Precautions 19
5.2 Operating the Controller 19
5.3 Chiller Operating Feature 20
5.4 User Setup Options 21
5.5 Set Point Lockout 21
5.6 Water Pressure Switch Adjustment 21
5.7 Hot Gas Defrost 22

Section 6. General Maintenance 23
6.1 Water Chemistry 23
6.2 Winterizing 23
6.3 Spring Startup 23
6.4 Inspection and Service 23

Section 7. Professional Maintenance and Service 25
7.1 Heat Pump Design 25
7.2 Heat Pump Components and Operation 25

Section 8. Troubleshooting 26
8.1 Troubleshooting Guide 26
8.2 Diagnostics 27

Section 9. Replacement Parts 28
9.1 Ordering Information 28
9.2 Jandy JRT Heat Pumps Parts List 28
9.3 Jandy JRT Heat Pumps Exploded View . 30
9.4 Jandy JRT Single Phase Electric Box 31
9.5 Jandy JRT Three Phase Electric Box 32

EQUIPMENT INFORMATION RECORD

Date Of Installation _____

Installer Information _____

Initial Pressure Gauge Reading (with Clean Filter) _____

Pump Model _____ Horsepower _____

Notes _____

_____

_____

Section 1. General Information

READ AND FOLLOW ALL INSTRUCTIONS

1.1 Introduction

This manual provides installation and operation instructions for the Jandy JRT models of heat pumps. Read these installation and operation instructions completely before proceeding with the installation. Consult Zodiac Pool Systems LLC ("Zodiac") with any questions regarding this equipment. To obtain additional copies of this manual contact us at 800.822.7933.

Zodiac Pool Systems LLC
2882 Whiptail Loop # 100
Carlsbad, CA 92010 USA

The Jandy JRT heat pump gets electrical power from an external source and provides a dual digital thermostat control system for pool/spa combinations or preheat convenience.

This heat pump is specifically designed for heating fresh water swimming pools and spas. Do not use it as a general service heater. Consult your dealer for the appropriate Jandy products for these applications.

NOTE: "Fresh water swimming pools and spas" include systems that utilize saltwater chlorine generator units, such as the Jandy AquaPure® Electronic Chlorine Generator. Please ensure that the salt content of the pool/spa *does not exceed* 4500 ppm and water flow rate is within 30-70 gpm (114-265 lpm). Always install any type of sanitation device on the outlet of the heater with a check valve between the heater outlet and sanitation device. See *Section 3.3, Check Valve Installation.*

1.2 Consumer Information & Safety

The Jandy JRT series of heat pumps are designed and manufactured to provide many years of safe and reliable service when installed, operated and maintained according to the information in this manual and the installation codes referred to in later sections. Throughout the manual, safety warnings and cautions are identified by the "⚠" symbol. Be sure to read and comply with all of the warnings and cautions.

Spa/Hot Tub Safety Rules

⚠ WARNING

The U.S. Consumer Product Safety Commission warns that elevated water temperature can be hazardous. Consult heater operation and installation instructions for water temperature guidelines before setting temperature.

⚠ WARNING

The following "Safety Rules for Hot Tubs", recommended by the U.S. Consumer Product Safety Commission, should be observed when using the spa:

- Spa or hot tub water temperature should never exceed 104°F (40°C). One hundred degrees Fahrenheit (100°F [38°C]) is considered safe for a healthy adult. Special caution is recommended for young children.
- The drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness which could lead to unconsciousness, and subsequently result in drowning.
- **Pregnant women take note!** Soaking in water above 102°F (38.5°C) can cause fetal damage during the first three (3) months of pregnancy (which could result in the birth of a brain-damaged or deformed child). If pregnant women are going to use a spa or hot tub, they should make sure the water temperature is below 100°F (38°C) maximum.
- The water temperature should always be checked with an accurate thermometer before entering a spa or hot tub. Temperature controls may vary by as much as 1°F (1°C).
- Persons with a medical history of heart disease, diabetes, circulatory or blood pressure problems should consult their physician before using a hot tub or spa.
- Persons taking any medication which induces drowsiness (e.g., tranquilizers, antihistamines, or anticoagulants) should not use spas or hot tubs.

⚠ WARNING

Prolonged immersion in hot water can induce hyperthermia.

Hyperthermia occurs when the internal body temperature reaches a level several degrees above the normal body temperature of 98.6°F (37°C). Symptoms include dizziness, fainting, drowsiness, lethargy, and an increase in the internal body temperature. The effects of hyperthermia include:

- Lack of awareness of impending hazard
- Failure to perceive heat
- Failure to recognize need to leave spa
- Physical inability to leave spa
- Fetal damage in pregnant women
- Unconsciousness resulting in a danger of drowning

⚠ WARNING

This appliance is not intended for use 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 concerning use of the appliance by a person responsible for their safety.

⚠ WARNING

PREVENT CHILD DROWNING: Do not let anyone, especially small children, sit, step, lean or climb on any equipment installed as part of your pool's operational system. Locate the components of your operational system at least 1.5 m (5 ft) from the pool so children cannot use the equipment while in the pool and be injured or drown.

SAVE THESE INSTRUCTIONS

Swimming Pool Energy Saving Tips

It is important to note that a heat pump will not heat a pool as fast as a large gas or electric pool heater. If the pool water is allowed to cool significantly, it may take several days to return to the desired swimming temperature. For weekend use, it is *more economical* to maintain the pool water temperature at or near your desired swimming temperature. If you do *not* plan to use your pool for a prolonged period, then you might choose to turn the heat pump completely off *or* decrease the temperature setting of the control several degrees to minimize energy consumption.

Jandy offers the following recommendations to help conserve energy and minimize the cost of operating your heat pump without sacrificing comfort.

1. The American Red Cross recommends a maximum water temperature of 78°F (25°C). Use an accurate pool thermometer. A difference of 4°F (2°C), between 78°F and 82°F (26°C and 28°C), will significantly increase energy consumption.
2. Carefully monitor the water temperature of your pool in the summertime. You can reduce heat pump usage due to warmer air temperatures.
3. During the winter or when on vacation for longer than a week, turn off the heat pump.
4. Find the proper setting on the heat pump temperature control and use the Set Point Lockout or lock the cover on the heat pump controller to discourage further adjustments.
5. Set the pump time clock to start the pump no earlier than 6:00 AM during the pool heating season. This is the time when nightly heat loss balances.
6. Where possible, shelter the pool from prevailing winds with well-trimmed hedges or other landscaping, cabanas, or fencing.
7. The use of an automatic pool cover, if installed, provides a valuable safety feature, reduces heat loss, conserves chemicals, and reduces the load on filtration systems.
8. The use of a solar blanket can reduce the heat loss caused by evaporation on the surface area of the pool.

1.3 Warranty

The Jandy JRT heat pump is sold with a limited factory warranty.

Make all warranty claims to your Jandy dealer or directly to Jandy. Claims must include the heat pump serial number and model (this information can be found on the rating plate), installation date, and name of the installer. Shipping costs are not included in the warranty coverage.

The warranty does not cover damage caused by improper assembly, installation, operation, winterizing, field modification, or failure to earth bond and properly ground the unit. Any changes to the heat pump, evaporator, heat exchanger, wiring, or improper installation may void the warranty.

1.4 Codes and Standards

The Jandy JRT heat pump is listed by ETL® as complying with the latest edition of the “UL Standard for Electrical Heat Pumps, Air-Conditioners, and Dehumidifiers”, UL 60335-2-40 and CSA No. 60335-2-40.

All Jandy heat pumps must be installed in accordance with the local building and installation codes as per the utility or authority having jurisdiction. All local codes take precedence over national codes. In the absence of local codes, refer to the latest edition of the National Electrical Code® (NEC®) in the United States and the Canadian Electrical Code (CEC®) in Canada for installation.

1.5 Technical Assistance

Consult the Jandy technical support department or your local Jandy dealer with any questions or problems involving your Jandy equipment. An experienced technical support staff is ready to assist you in assuring the proper performance and application of Jandy products. For technical support call the Jandy technical support department at 800.822.7933.

1.6 Materials Needed for Installation

The following items are needed and are to be supplied by the installer for ***all*** heat pump installations:

1. Plumbing connections (2").
2. Level surface for proper drainage. (See equipment pad for pitch requirements.)
3. Suitable electrical supply line. See rating plate on unit for electrical specifications. A junction box is not needed at the heat pump; connections are made inside of the heat pump electrical compartment. Conduit may be attached directly to the heat pump jacket.

NOTE: Flex conduit is recommended for connecting the electrical supply wires to the heat pump so that the front panel may be removed easily for servicing.

4. Electric cutout switch that will interrupt all power to the unit. This switch *must* be within line of sight of the heat pump.
5. Watertight conduit to run the electrical supply line.

1.7 Specifications

Suitable for outdoor use only. Clearances shown in *Table 2* must be adhered to.

Water Pipe/Heater Connection	
Plastic	2" PVC (Unions included)
Flow Rate	
Maximum	70 gpm (265 lpm)
Optimum	JRT2000R = 42 gpm (159 lpm), JRT2500R = 48 gpm (182 lpm), JRT3000R/R3 = 57 gpm (216 lpm)
Minimum	JRT2000R/2500R = 20 gpm (76 lpm) JRT3000R/R3 = 30 gpm (114 lpm)
Operating Water Temperature	
Minimum	32°F (0°C)
Maximum	104°F (40°C)
Maximum Working Water Pressure	
	75 psi
Electrical Supply	
Voltage Requirements 1-Phase 3-Phase	 230 VAC 60Hz 208-230 VAC 60Hz (for JRT3000R3 model only)
Maximum Working Refrigerant Pressure	
	600 PSI
Dimensions	
See *Figure 1* for heat pump's dimensions and for dimensions to critical connections.	
Technical Specifications	
See *Table 1* for the Jandy JRT heat pump technical specifications.	

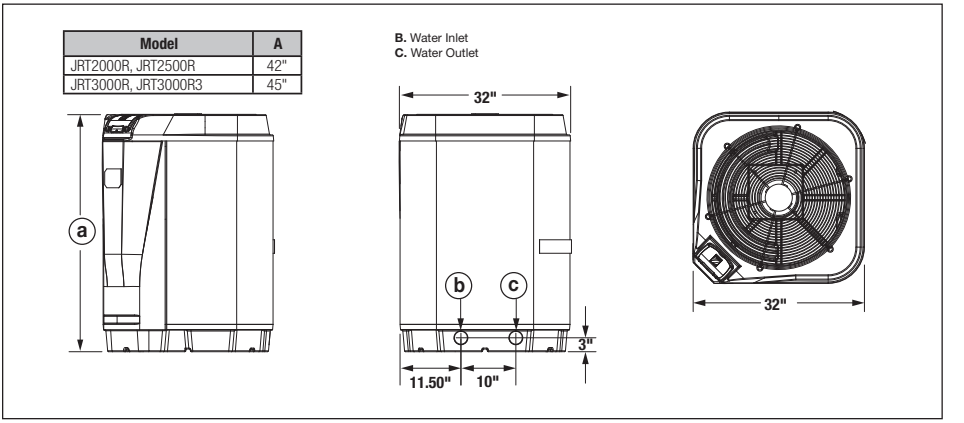


Figure 1. Jandy JRT Heat Pumps Dimensions

Model	JRT2000R	JRT2500R	JRT3000R	JRT3000R3
Voltage	208/230V/60HZ	208/230V/60HZ	208/230V/60HZ	208/230V/60HZ
Output (80/80/80)*	103,000 BTUs	116,000 BTUs	130,000 BTUs	130,000 BTUs
Input (80/80/80)*	4.72 kW	5.23 kW	6.57 kW	6.2 kW
COP (80/80/80)*	6.4	6.5	5.8	6.1
Output (80/63/80)**	96,000 BTUs	109,000 BTUs	124,000 BTUs	124,000 BTUs
COP (80/63/80)**	6.1	6.1	5.6	5.9
Output (50/63/80)**	62,000 BTUs	70,000 BTUs	82,000 BTUs	85,000 BTUs
COP (50/63/80)***	4.1	4.1	4.0	4.4
RLA (Running Load Amps)	28.3A	29A	32.5A	33A
LRA (Locked Rotor Amps)	178A	145A	148A	179A
Minimum Circuit Ampacity	38A	39A	40A	40A
Max Over Current Protection#	40A	50A	50A	50A
Chiller Feature	YES	YES	YES	YES
Hot Gas Defrost	YES	YES	YES	YES
Heat Exchanger	Ti Twisted Coil			
Compressor	Scroll			
Cabinet	ABS			
Maximum Height Below Water Level	10 feet			
Minimum Height Above Water Level	5 feet			
Optimal Water Flow	42 GPM	48 GPM	57 GPM	57 GPM
Minimum Water Flow	20 GPM	20 GPM	30 GPM	30 GPM
Maximum Water Flow	70 GPM			
Air Flow	3600 CFM			
Union Size	2" PVC Tail Piece / Nut			
Weight	232 lbs	242 lbs	252 lbs	300 lbs

* Rated in accordance with AHRI Standard 1160. Test Conditions: 80°F Air, 80% RH, 80°F Water.
** Rated in accordance with AHRI Standard 1160. Test Conditions: 80°F Air, 63% RH, 80°F Water.
*** Rated in accorance with AHRI Standard 1160. Test Conditions: 50°F Air, 63% RH, 80°F Water.
**** Max Over Current Protection refers to the maximum breaker size allowed. If this value is not a standard breaker size, use the next smallest standard size breaker. The breaker size must not be smaller than the Minimum Circuit Ampacity value.

Table 1. Jandy JRT Heat Pump Technical Specifications

Section 2. Installation Instructions

2.1 General Information

Install the Jandy heat pumps in accordance with the procedures in this manual, local codes and ordinances, and in accordance with the latest edition of the appropriate national code. (See *Section 1.4, Codes and Standards*.) Correct installation is required to assure safe operation. The requirements for Jandy heat pumps include the following:

1. Field assembly (if required).
2. Appropriate site location and clearances.
3. Sufficient air ventilation.
4. Proper electrical wiring.
5. Adequate water flow.

This manual provides the information needed to meet these requirements. Review all application and installation procedures completely before continuing the installation.

2.2 Location Requirements

NOTE: Indoor installations are not recommended. Call Jandy technical support for more information at 800.822.7933.

⚠ CAUTION

When pool equipment is located below the pool surface, a leak from any component can cause large scale water loss or flooding. Zodiac® cannot be responsible for such water loss or flooding or resulting damage.

Avoid placing the heat pump in locations where it can cause damage by water or condensate leakage. If this is not possible, provide a suitable drain pan to catch and divert any leakage.

All criteria given in the following sections reflect minimum clearances. However, each installation must also be evaluated, taking into account the prevailing local conditions such as proximity and height of walls, and proximity to public access areas.

Clearances

The heat pump must be placed to provide clearances on all sides for maintenance and inspection. See *Table 2*.

Access in front of the heat pump of 24" (60 cm) provides adequate room for serviceability.

If the heat pump is to be installed under a vertical overhang, the unit must have a minimum of 5 feet (1.5 meters) clearance from the top of the heat pump.

Side of Heat Pump	Minimum Clearances for Operation		Recommended Clearances for Serviceability	
	inches	cm	inches	cm
Front	24	60	36	90
Rear	12	30	24	60
Left	12	30	24	60
Right	12	30	24	60
Top	60	150	60	150

Table 2. Heat Pump Clearances

NOTE: Clearances listed in *Table 2* are manufacturer's tested values. These are given as minimum values. Where local and national codes apply, and values are different than those listed in *Table 2*, use the greater value to ensure safe and proper operation.

In the U.S., the heat pump must be installed at least 5 feet (1.5 meters) from the inside wall of the pool or spa unless the heat pump is separated from the pool or spa by a 5 foot (1.5 meters) high solid fence or other permanent barrier.

In Canadian installations, the minimum distance to be maintained from the inside wall of the pool or spa is 3 meters (approx. 10 feet).

Equipment Pad

Place the heat pump on a flat slightly pitched surface, such as a concrete or fabricated slab (pad). This allows proper drainage of condensation and rain water from the base of the unit. If possible, the pad should be placed at the same level or slightly higher than the filter system equipment pad.

NOTE: Ensure that the pad is pitched not more than ¼ inch per foot per toward the compressor end (front) of the heat pump. Pitch slab from back to front ¼ inch per foot maximum and level from side to side.

Condensation and Drainage

Condensation will occur from the evaporator coil while the unit is running and drain at a steady rate, usually 3 to 5 gallons (11.4 to 18.9 liters) per hour, depending upon ambient air temperature and humidity. The more humid the ambient conditions, the more condensation will be produced. Keep the drain holes of the base of the unit clear of debris.

Lawn Sprinklers

Keep lawn sprinkler heads from spraying on the heat pump to prevent corrosion and damage. Use a deflector if needed.

Roof Run-off

Make sure the heat pump is not located where large amounts of water may run-off from a roof into the unit. Sharp sloping roofs without gutters will allow massive amounts of rain water, mixed with debris from the roof to be forced through the unit. A gutter or down spout may be needed to protect the heat pump.

Installation of Anchor Clamps

In Florida, building codes require that the heat pump be anchored to the equipment pad or platform to withstand high wind pressures created during hurricanes. Other jurisdictions may have similar requirements. Please check your local codes for further details.

This heat pump is provided with anchor clamps designed to hold the unit to the equipment pad in high wind conditions. Installation of the anchor clamps is recommended in all installations and are required in Florida (reference Florida Building Code, Mechanical Section 301.13).

To install the anchor clamps:

1. Be sure that the heat pump is in its permanent location on the equipment pad.
2. Place the clamps at the base of the heat pump in the locations indicated in *Figure 2*.
3. Fit the hook of each clamp over the lip on the base panel of the heat pump. The hook should fit between the lip of the base panel and the evaporator coil guard (see *Figure 3*).
4. Mark the position of the hole in each clamp on the equipment pad.
5. Drill a hole in the cement using a masonry drill bit, with a diameter as determined by the concrete anchor, at each of the marks on the equipment pad. The hole should be approximately 1-3/4" deep.
6. Insert a bolt anchor into each of the holes. Be sure the anchors are set completely into the holes.
7. Position the anchor clamps so that the holes in the clamps are over the bolt anchors. Be sure that the clamp hooks are over the lip of the heat pump base (see *Figure 3*).
8. Insert an anchor bolt through each clamp into the anchor and tighten to secure the clamp and heat pump to the equipment pad.

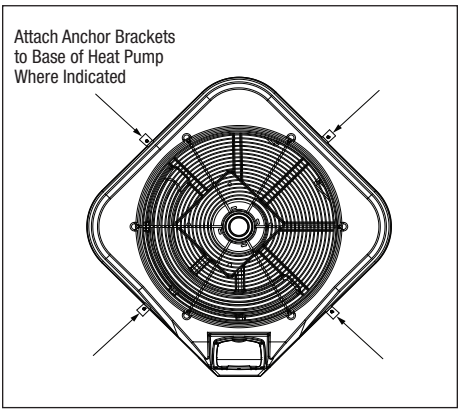


Figure 2. Anchor Clamp Positions

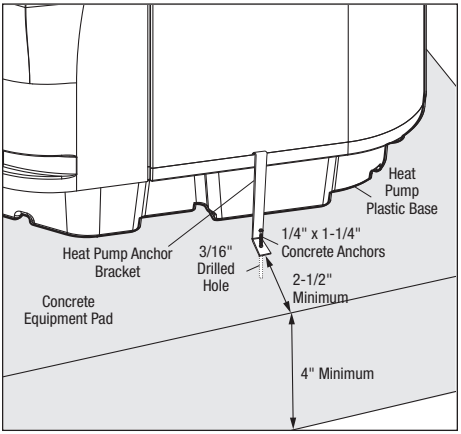


Figure 3. Anchor Clamp Installation

Section 3. Water Connections

3.1 Plumbing Layout

Figure 4 illustrates the standard plumbing layout with a single heat pump unit. Following the diagram from right to left, the plumbing sequence is as follows:

Pool > Pool Pump > Filter > Heat Pump > Check Valve > Chemical Loop > Chlorinator > Pool

NOTE: For normal installations, do not install a shutoff valve or any kind of variable restriction in the water piping between the heat pump outlet and the pool/spa.

Arrangement of pool system components other than as illustrated in the preceding and following diagrams can affect the operation of the heat pump's water pressure switch. Location of the heat pump above or below the pool water surface can also affect operation of the switch. In general, the pressure switch can be adjusted to accommodate this effect if the heat pump water connections are no more than 10 feet below the pool water surface or no more than 5 feet above it. See instructions for pressure switch adjustment (*Section 5.6, Water Pressure Switch Adjustment)* in the heat pump startup section of this manual for more information. If the heat pump is installed outside of this range, an external flow switch may need to be installed in the plumbing upstream of the heat pump. Call the Jandy technical support department at 800.822.7933 for details.

Be advised that when pool equipment is located below the pool surface a leak can result in large scale water loss or flooding. Jandy cannot be responsible for such water loss or flooding or the damage caused by either occurrence.

3.2 Water Connections at Heat Pump

Filtered water is plumbed to the inlet, located on the lower rear of the heat pump. The inlet water connection is on the left. Heated water flows through the outlet, located on the left. Two inch (2") unions are provided. Plastic piping (PVC Schedule 40) should be connected to the heat pump. The unions, provided with the unit, accept 2" PVC pipe.

If the water flow is greater than 70 GPM, then an external bypass must be installed. See piping diagram for more detail.

⚠ CAUTION

Make sure that flow requirements and pool water turn over rates can be maintained with the installation of additional heat pumps and plumbing restrictions.

3.3 Check Valve Installation

⚠ WARNING

A check valve can interfere with the proper operation of certain Suction Vacuum Release System (SVRS) products. To avoid possible entrapment hazard, serious injury, or death, make sure to review the operation/owners manual of your particular SVRS product before installing the check valve.

The heat pump must be protected from back-siphoning of water. If there is any chance of back-siphoning, provide a check valve between the pool and the filter pump inlet.

When an automatic chemical feeder is installed in the plumbing, it must be installed downstream of the heat pump. A check valve must be installed between the heat pump and the chemical feeder to prevent back-siphoning of chemically saturated water into the heat pump where it will damage the components.

3.4 Multiple Unit Installation

Heat Pump and Heater Combination

In certain regions of the country it may be more economical to run a heat pump during the warmer months and a gas heater during the cooler months. In some situations it may be desirable to run the heat pump in the "Chiller" mode during the hottest portion of the year and a heater during the cooler months. The Jandy heat pump may be plumbed with a gas or electric heater or any combination of heat sources including solar. All heat sources must be plumbed in series to work correctly and efficiently.

Figure 5 illustrates a recommended plumbing layout for a heat pump / heater / solar combination heating system for a pool / spa combination. Your system may not contain all of these components, but the basic plumbing will apply by eliminating the component in the illustration that is not a part of your system.

Multiple Heat Pump Connections

All plumbing on multiple heat pump installations must be done in parallel (see *Figure 6* and *Figure 7*). An equal flow of water to each heat pump is important for optimum operation.

NOTE: It may be necessary to adjust water pressure switch if a unit is installed below the water level. See *"Section 5.6, Water Pressure Switch Adjustment"* for details on when and how to adjust the pressure switch.

NOTE: Each heat pump allows a maximum flow rate of 70 gpm (265 lpm) and requires a minimum of 20 gpm (76 lpm) for JRT2000R/2500R and 30 gpm (114 lpm) for JRT3000R/JRT3000R3.

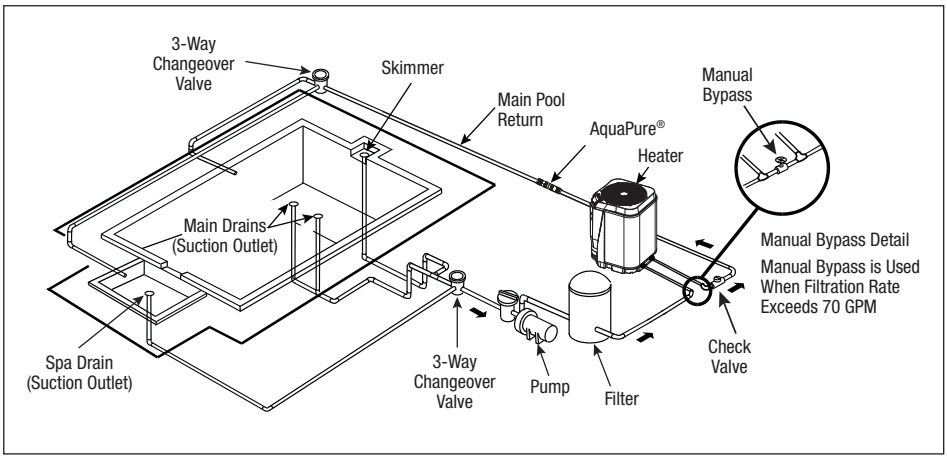


Figure 4. Standard Plumbing Layout

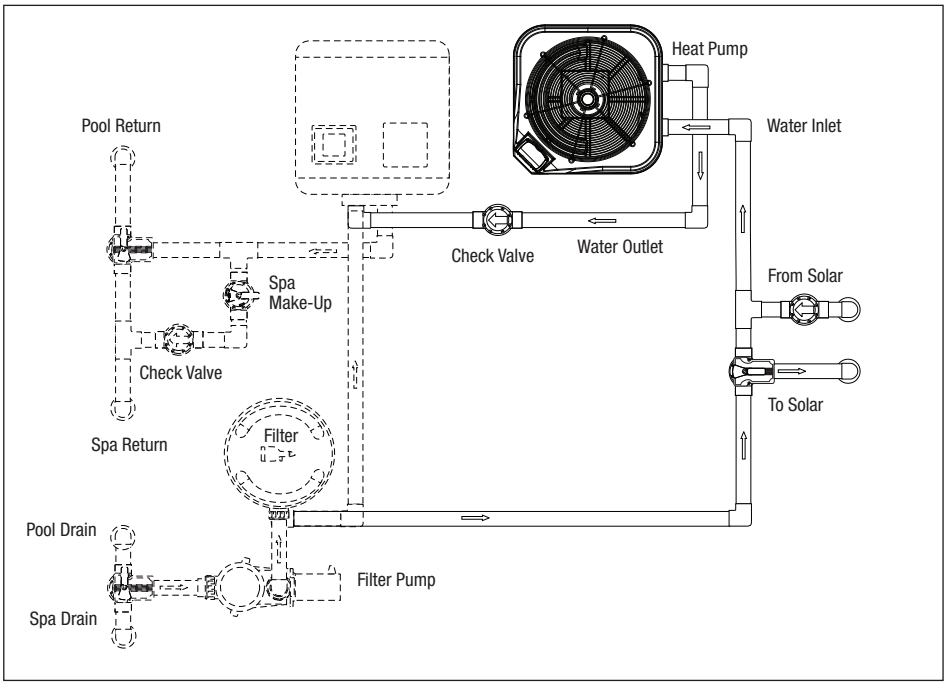


Figure 5. Plumbing for Heating System Combinations

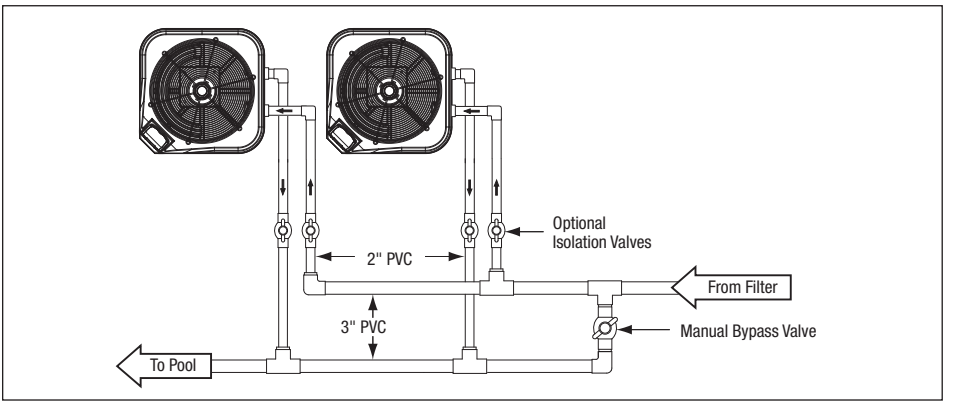


Figure 6. Two (2) Heat Pump Plumbing Layout

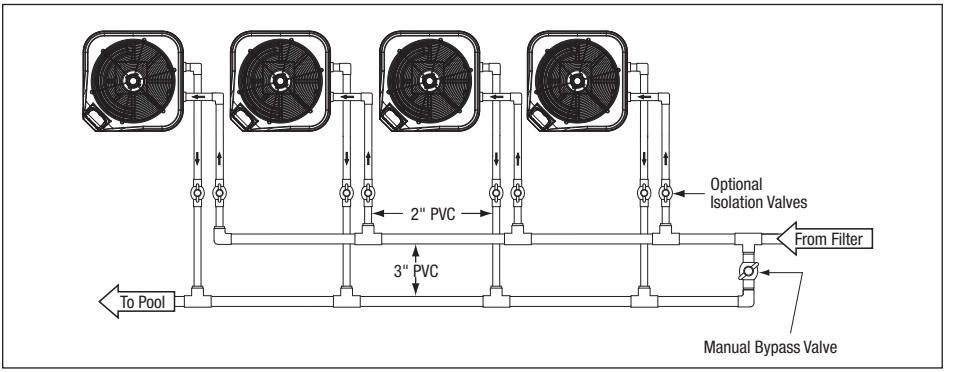
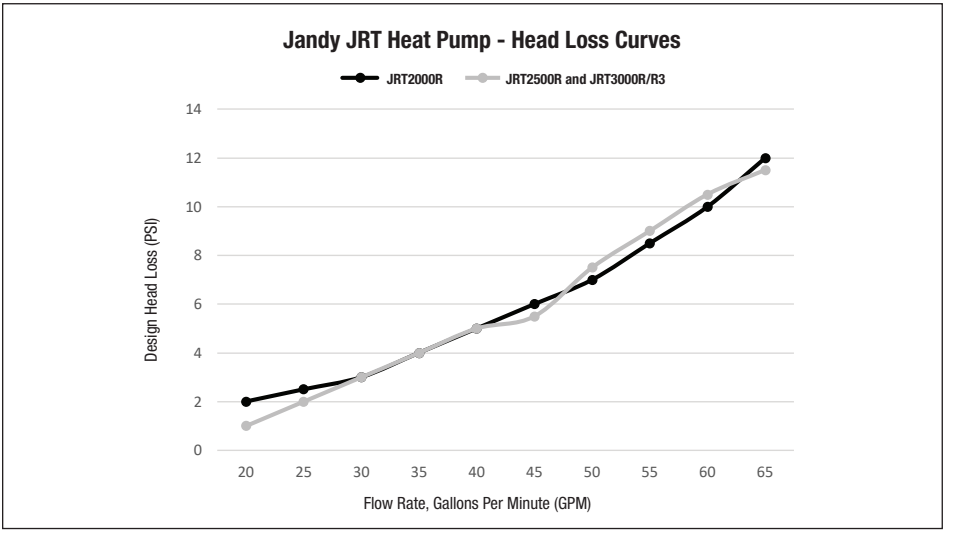


Figure 7. Four (4) Heat Pump Plumbing Layout

3.5 Head Loss Curves



Section 4. Electrical Connections

4.1 General Information

Wiring connections must be made exactly as shown in the wiring diagram found on the inside of the heat pump access compartment (see *Figure 8* for single phase electrical wiring). The heat pump must include a definite means of grounding and bonding. There is a bonding lug on the right side of the heat pump, where a bond wire must be attached.

4.2 Main Power

Electrical wiring to the heat pump must be in accordance with the latest edition of the National Electric Code® (NEC®), ANSI/National Fire Protection Association (NFPA 70®) in the United States, and in Canada, the Canadian Electrical Code (CSA® C22.1), unless local code requirements indicate otherwise.

The heat pumps come factory-wired intended for use with 230 VAC, 60 Hz single phase. See the rating plate for the electrical specifications. All wiring must be done by a certified electrician.

The following is the procedure to wire the Jandy JRT heat pump to the electrical source specified on the rating plate:

1. Be sure the power to the circuit for the heat pump is turned off.
2. Remove the three (3) screws that attach the service/access panel to the heat pump unit (see *Figure 10*).
3. Remove the front panel.
4. Remove the screw on the right side of the control box.
5. Open the control box.
6. Run the electrical conduit through the base of the unit.
7. Connect the electrical conduit to the right-side of the control box with the conduit connector.
8. Connect the wires to the terminals on the main contactor as shown in the wiring diagram. See *Figure 8*.
9. Connect the ground wire to the ground lug provided in the electrical compartment.
10. Close the control box and secure with the provided screw.
11. Reseat the service access panel and secure with the provided screws.
12. Connect a copper bonding wire (8 AWG). In Canada, it shall be not smaller than 6 AWG (13.3 mm^2) to the bonding lug on the right side of the heat pump.

⚠ WARNING

ELECTRICAL SHOCK HAZARD. This heat pump contains wiring that carries high voltage. Contact with these wires may result in severe injury or death. Disconnect power circuit before connecting the heat pump.

⚠ WARNING

Follow all applicable installation codes. Prior to installation or performing any service, turn off all switches and the main breaker in the pool/spa pump electrical circuit. Failure to comply may cause a shock or hazard resulting in severe personal injury or death.

While disconnecting and/or connecting any electrical wiring, be careful not to damage or abrade any of the wiring.

⚠ CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

4.2.1 Disconnect Means

A means for disconnecting the power to the heat pump must be located within sight of the equipment and installed in accordance with local code.

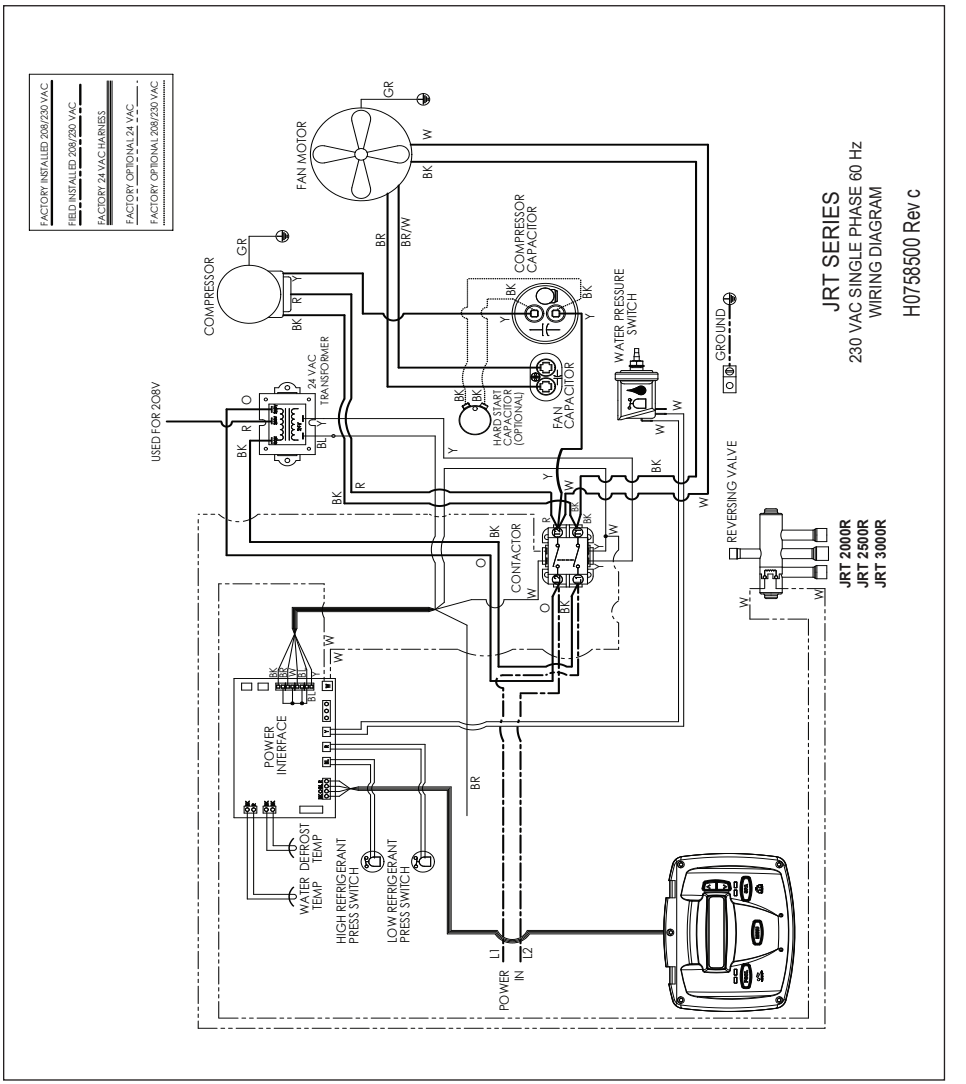


Figure 8. JRT Single-Phase Electrical Supply Wiring Diagram

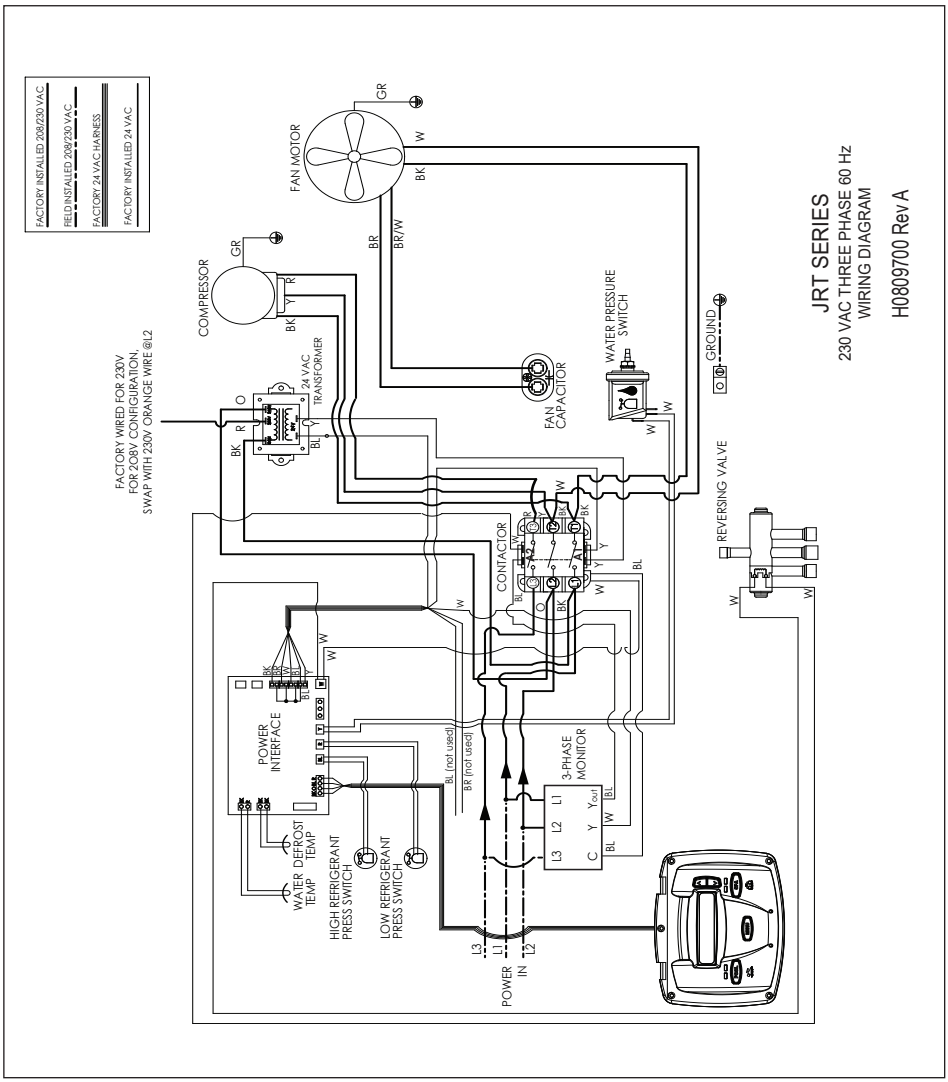


Figure 9. JRT Three-Phase Electrical Supply Wiring Diagram

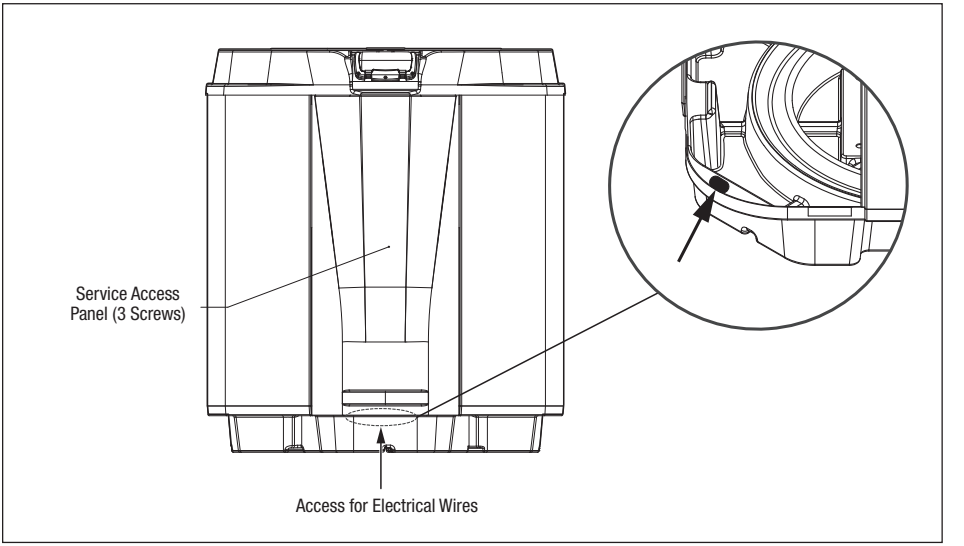


Figure 10. Jandy JRT Heat Pump Front View

4.3 Bonding

⚠ CAUTION

This heat pump must be connected to a bonding grid with a solid copper wire not smaller in diameter than 8 AWG (In Canada, it shall be no smaller than 6 AWG.)

The National Electrical Code® (NEC® in the United States) or the Canadian Electrical Code (CEC in Canada) requires pool equipment to be bonded to each other. Check your local codes to determine if the NEC or CEC and/or other local installation codes are enforced by the Authority Having Jurisdiction (AHJ in the United States) or the local competent authorities in Canada. A solid, copper 8.37 mm^2 (8 AWG) wire is required per the NEC, and 13.3 mm^2 (6AWG) per the CEC, for bonding the equipment to a permanent bonding connection that is acceptable to the local AHJ or the local competent authorities in Canada.

Refer to your locally enforced codes for the acceptable bonding wire gauge. Connect to the bonding point located on the bottom of the heat pump to a common bonding point. Do not use the heat pump as the common bonding point. Each piece of non-related pool equipment requiring a ground should also be bonded to the common, approved bonding point.

National Electrical Code® (NEC®) requires bonding of the Pool Water. Where none of the bonded pool equipment, structures, or parts are in direct connection with the pool water; the pool water shall be in direct contact with an approved corrosion-resistant conductive surface that exposes not less than 5800 mm^2 (9 in^2) of the surface area to the pool water at all times. The conductive surface shall be located where it is not exposed to physical damage or dislodgement during usual pool activities, and it shall be bonded in accordance with the bonding requirements of NEC Article 680. Refer to locally enforced codes for any additional pool and spa bonding requirements.

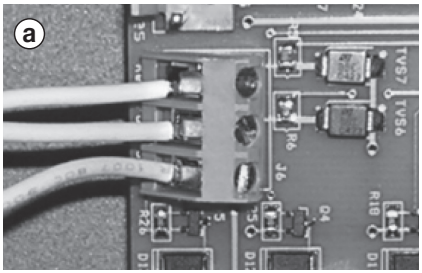
4.4 Optional Remote Controls

Electrical wiring must be in accordance with all applicable national and local codes and ordinances.

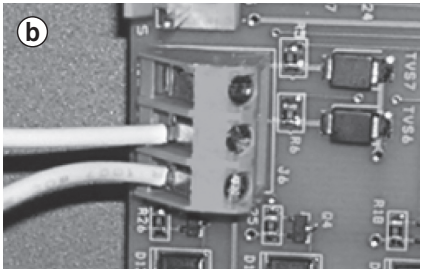
Connection to a Remote Pool-Off-Spa Selector (3-Wire Connection)

Install the Remote Pool-Off-Spa Selector

1. Turn off the power to both the pool/spa control system and the heat pump unit.
2. Remove the screws that attach the service/access panel to the heat pump unit and the cover to the junction box (see *Figure 10*).
3. Run the wires from the pool/spa control system into the conduit connection labeled “Low Voltage Connection”, located on the lower right hand side of the heat pump (see *Figure 12*). Ensure conductors are not pinched or damaged.
4. Connect the wiring from the pool/spa control system to the heat pump remote control terminal. See *Figure 11(a*).
5. Restore power to the heat pump and the pool/spa control system.



Remote Pool-Off-Spa Connection (3-Wire Connection)



AquaLink® RS or Remote TSTAT Connection (2-Wire Connection)

Figure 11. Remote Control Wiring

Configure the Control Panel

1. Make sure the control is in the **OFF** mode.
2. To enter the Service Setup mode, press and hold the **MENU**, **POOL**, and **SPA** buttons for 5 seconds.

NOTE: The display will revert back to **OFF** after one minute since the last key press.

3. Press the **Up** or **Down** button to display **REMOTE**. Press the **MENU** button. The **SELECT REMOTE OFF** (default remote) appears, use the **Up** or **Down** button to scroll through the Remote options. When you reach **HI-LO-COM**, press the **MENU** button to select the remote. Press **POOL** or **SPA** to exit the Service Setup mode.

Two-Wire Connection to an AquaLink® RS or TSTAT

A 2-wire remote will only control one function; heating or cooling. It cannot control both functions with the remote control.

Configure the AquaLink RS Control System

1. Turn off the power to both the pool/spa control system and the heat pump unit.
2. Connect two (2) wires to the AquaLink RS green 10-pin terminals 1 and 2.
3. Put DIP S2-1 (pin #1 of the 4 position DIP switch) into the ON position (see *Figure 11*).

Install the Remote TSTAT

1. Turn off the power to both the pool/spa control system and the heat pump unit.
2. Remove the screws that attach the service/access panel to the heat pump unit and the cover to the junction box (see *Figure 10*).
3. Run the wires from the pool/spa control system into the conduit connection labeled “low voltage connection”, located on the lower right hand side of the heat pump (see *Figure 10*). Ensure conductors are not pinched or damaged.
4. Connect the wiring from the pool/spa control system to the heat pump remote control terminal. See *Figure 11(b*).
5. Restore power to the heat pump and the pool/spa control system.

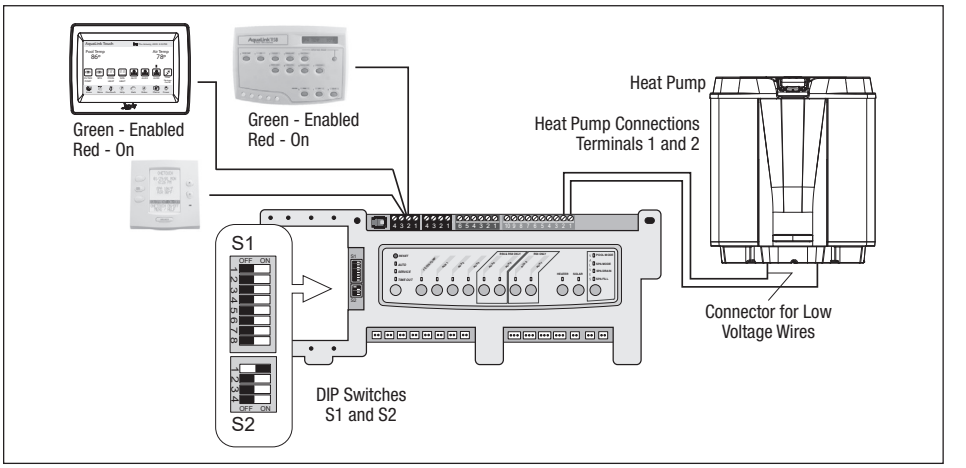


Figure 12. AquaLink® RS to Jandy JRT Heat Pump - T-Stat (2 wire) connection

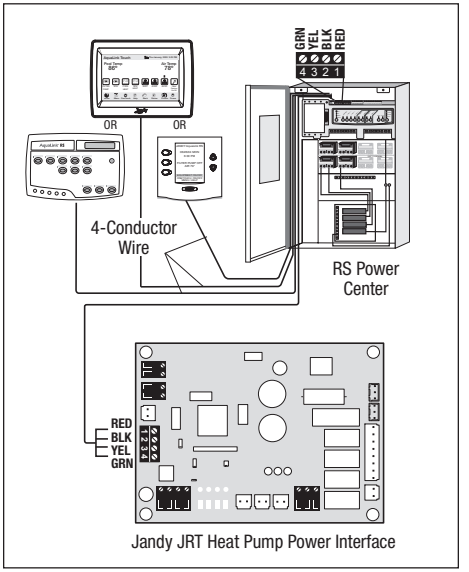


Figure 13. Jandy JRT Heat Pump to Power Center - RS485 (4 wire) connection

Configure the Control Panel

1. Make sure the control is in the **OFF** mode.
2. To enter the Service Setup mode, press and hold the **MENU**, **POOL**, and **SPA** buttons for 5 seconds.

NOTE: The display will revert back to **OFF** after one minute since the last key press.

3. Press the Up or Down button to display **REMOTE**. The **SELECT REMOTE OFF** (default remote) appears, use the **Up** or **Down** button to scroll through the Remote options. When you reach **REMOTE TSTAT**, press the **MENU** button to select the remote. Press **POOL** or **SPA** to exit the Service Setup mode.
4. Press **SPA**. For heating, adjust the setpoint to the maximum setting. For chilling, adjust the setpoint to the minimum setting.

RS485 (4 wire) Connection to AquaLink® RS

Using an AquaLink RS control and RS485 connection will allow you to control both the heating and cooling function with the remote.

NOTE: You can only switch between heating mode and chilling mode when in Pool Mode. Spa mode will only control heating, it cannot control chilling.

1. Confirm the Jandy JRT heat pump and AquaLink RS software revisions are compatible.

Jandy JRT Heat Pump Power Interface Software Rev.	AquaLink RS Software Revision
3.0 or Later	N or Later

NOTE: Only a revision "N", or higher, program chip in the RS system will support the Jandy JRT heat pump interface.

2. Turn off the power to both the heat pump and the RS control and open the RS Power Center enclosure and remove the front dead panel.
3. Remove the two (2) screws holding the bezel in place and turn the bezel over to view the circuit board on the back.
4. Locate the programmed chip on the Power Center Board. In the center of the chip is the revision letter. If the revision letter is **"N"** or higher go to step 5. If the revision level is **"MMM"** or lower, replace the board or connect as shown in *Section 4, Electrical Connections*.

5. Use 22 gauge 4-conductor wire (Zodiac® Part No. 4278) to run between the heat pump and the RS control, and match the wire color order.
6. The wires coming from the Jandy JRT heat pump can be "doubled up" on the red terminal bar with the four (4) wires coming from the indoor controller. Ensure conductors are not pinched or damaged.

NOTE: If you need to install more than two (2) wires in each terminal, order a Jandy Multiplex PCB Kit, which includes the Multiplex Board (Jandy Part No. 6584). Never put more than two (2) wires into each of the pins of the terminal bar.

7. Check all wiring, then apply power to both the heat pump and the RS control system. Operation can be verified in either Service or Auto mode. See the RS Control System manual for instructions about operation.

When the Jandy JRT heat pump is first powered and there is an RS control connected to the heat pump, the display on the heat pump will show **"JANDY REMOTE ONLINE PUSH MENU TO DISABLE"**. When the JRT heat pump is online with the RS control, all functionality of the control on the heat pump is disabled. The heat pump functions can be controlled only at the RS unit.

To temporarily use the heat pump controls, press the MENU button. The message **"JANDY REMOTE ONLINE PUSH MENU TO DISABLE"** will disappear from the heat pump display. All functionality has now been returned to the control on the heat pump. In this mode the RS unit is no longer controlling the heat pump.

To return the functionality to the RS unit, cycle (turn off and then turn on) the power to the heat pump, or press the **MENU** button for 5 seconds to enter the User Setup Mode and then enable the Jandy Remote.

NOTE: If connecting more than two (2) items to the RS Power Center red, 4-pin connector, a Multiplex PCB is required.

Connection to a Secondary User Interface

1. Turn off the power to the heat pump.
2. Remove the three (3) screws that attach the front panel to the heat pump and remove the front panel. See *Figure 10*.
3. Remove the screw on the right side of the control box.
4. Open the control box.
5. Run four (4) 22 AWG solid copper wires into the low voltage soft membrane located on the lower left-hand side of the heat pump. The wires may be up to 300 feet (91.4 m) in length.
6. Connect the wires to the 4 position terminal on the lower left-hand corner of the Power Interface PC Board, labeled "User Interface1". See *Figure 8*. The wires will be added to the existing wiring to the User Interface installed on the heat pump.
7. Ensure the wiring is consistent when connecting the wires to the second User Interface. For example, BK goes to BK, O goes to O, etc.
8. Close the control box and secure with the provided screw.
9. Reseat the service access panel and secure with the provided screws.

Section 5. Operation

⚠ CAUTION

Do not use this heat pump if any part has been under water. Immediately call a qualified service technician to inspect the heater and replace any part of the control system which has been under water.

Keep all objects off the top of the heat pump. Blocking air flow could damage the unit and may void the warranty.

5.1 Initial Startup Precautions

Be sure that there is water in the pool and that the surface level is above the skimmer or other inlet of the pool's filter system.

With any new pool or spa installation, operate the filter pump with the heat pump off long enough to completely clean the water. This will remove any installation residue from the water.

Clean the filter at the end of this operation before starting the heat pump. When raising the temperature of a cold pool, program the time clock to run the pump continuously.

This lets the filter system and heat pump operate continuously until the water reaches the temperature setting on the temperature control. When that happens, the heat pump will automatically shut off, but the filter pump will keep running.

5.2 Operating the Controller

Your new Jandy JRT heat pump is controlled by an advanced microprocessor based controller that provides a sophisticated yet simple interface to operate your heat pump for maximum efficiency and enjoyment of your pool. To locate the control buttons, see *Figure 14*.

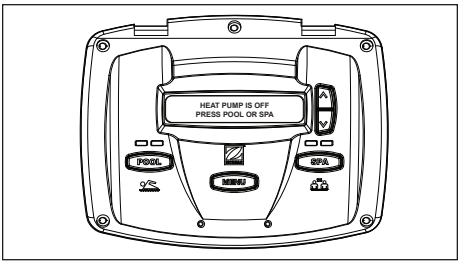


Figure 14. Main Control Panel

Off Mode

When the control panel is turned off, the screen displays **HEAT PUMP IS OFF PRESS POOL OR SPA**.

Pool Mode - (Normal Heat)

To enable the pool mode, press **POOL**. The associated left green LED indicator will light and the unit will display **SET:XXX°**.

NOTE: *XXX* represents the current temperature setting on the control. The default setting for pool temperature is 80°F (26°C).

You can change the temperature set point by pressing the **Up** or **Down** button. Repeatedly press the **Up** or **Down** button until you reach the desired temperature set point. After 5 seconds of inactivity, the new set point is stored in memory.

When the water temperature falls to 1 degree below the temperature setting *and* after a 5 minute delay, the control will start the heat pump and the associated right LED will light RED.

Pool Mode - (Optional Maintain Heat)

If connected to an AquaLink®, the Maintain Heat mode allows the heat pump to monitor the temperature of the water 24 hours a day by turning the pool pump on and sampling the water temperature.

NOTE: This feature only works when connected to an AquaLink.

When the water temperature drops below the programmed temperature set point, the control will start the heat pump.

To operate in pool mode with the Maintain Heat feature, press **POOL**, then press **MENU**, press the Down button until **MAINTAIN POOL HEAT** is displayed, press the **MENU** button.

The associated left green LED indicator will light and the unit will display **SET:XXX°**. Change the temperature set point by pressing the **Up** or **Down** button until the desired set point is displayed. After 5 seconds of inactivity, the new set point is stored in memory.

Spa Mode - (Normal Heat)

To enable the spa mode, press **SPA**. The associated left green LED indicator will light and the unit will display **SET:XXX°**.

NOTE: *XXX* represents the current temperature setting on the control. The default setting for spa temperature is 102°F (38°C).

You can change the temperature set point by pressing the **Up** or **Down** button. Repeatedly press the **Up** or **Down** button until you reach the desired temperature set point. After 5 seconds of inactivity, the new set point is stored in memory. When the water temperature falls to 1 degree below the temperature setting *and* after a 5 minute delay, the control will start the heat pump and the associated right LED will light RED.

Spa Mode - (Optional Maintain Heat)

If connected to an AquaLink®, the Maintain Heat mode allows the heat pump to monitor the temperature of the water 24 hours a day by turning the spa pump on and sampling the water temperature.

NOTE: This feature only works when connected to an AquaLink.

To operate in spa mode with the Maintain Heat feature, press **SPA**, then press **MENU**, press the **Down** button until **MAINTAIN SPA HEAT** is displayed, press the **MENU** button. The associated left green LED indicator will light and the unit will display **SET:XXX°**. Change the temperature set point by pressing the **Up** or **Down** button until the desired set point is displayed. After 5 seconds of inactivity, the new set point is stored in memory.

5.3 Chiller Operating Feature

Pool Mode - (Normal Chill)

To enable the pool mode, press **POOL**.

The associated left green LED indicator will light and the unit will display **SET:XXX°**.

NOTE: *XXX* represents the current temperature setting on the control. The default setting for pool temperature is 80°F (26°C).

Press the **MENU** button. Press the **Up** or **Down** button until you reach **POOL CHILL**, press the **MENU** button.

You can change the temperature set point by pressing the **Up** or **Down** button. Repeatedly press the **Up** or **Down** button until you reach the desired temperature set point. After 5 seconds of inactivity, the new set point is stored in memory. When the water temperature rises to 1 degree above the temperature setting *and* after a 5 minute delay, the control will start the heat pump and the associated right LED will light GREEN.

Pool Mode - (Optional Maintain Chill)

If connected to an AquaLink, the Maintain Chill option mode allows the unit to monitor the temperature of the water 24 hours a day by turning the pool pump on and sampling the water temperature.

NOTE: This feature only works when connected to an AquaLink.

When the temperature of the water rises above the desired temperature setting, the control will then turn on the unit and the associated right green LED will light.

To operate in pool mode with the Maintain Chill feature, press **POOL**, then press **MENU**, then press the **Down** button until **MAINTAIN POOL CHILL** is displayed, press the **MENU** button. The associated left green LED indicator will light and the unit will display **SET:XXX°**. Change the temperature set point by pressing the **Up** or **Down** button until the desired set point is displayed. After 5 seconds of inactivity, the new set point is stored in memory.

Cold Plunge Pool

The JRT heat pump can chill the water to 40F on a small body of water around 800 gallons or less.

NOTE: The unit must be put into the Air Defrost mode. The JRT comes from the factory in Power Defrost mode.

5.4 User Setup Options

The User Setup options allow the user to select specific Languages, Temperature Scale, Spa Timer, and Display Light options.

Language Setup

1. Make sure the control is in the **OFF** mode.
2. To enter the User Setup mode, press and hold the **MENU** button for 5 seconds.

NOTE: The display will revert back to **OFF** after one minute since the last key press.

3. To select a language, use the **Up** or **Down** button to display **SELECT USER SETUP LANGUAGE**. Press the **MENU** button. The **SELECT LANGUAGE ENGLISH** (default language) appears, use the **Up** or **Down** button to scroll through the language options. When you reach the desired language, press the **MENU** button to select the language. Press **POOL** or **SPA** to exit the User Setup mode.

Temperature Scale Setup

1. Make sure the control is in the **OFF** mode.
2. To enter the User Setup mode, press and hold the **MENU** button for 5 seconds.
3. To select temperature scale, use the **Up** or **Down** button to scroll through to display **SELECT USER SETUP TEMPERATURE SCALE**. Press the **MENU** button. The **SELECT TEMP SCALE °F** (default temperature scale) appears, use the **Up** or **Down** button to scroll through the scale options. When you reach the desired temperature scale, press the **MENU** button to select. Press **POOL** or **SPA** to exit the User Setup mode.

Spa Timer Setup

1. Make sure the control is in the **OFF** mode.
2. To enter the User Setup mode, press and hold the **MENU** button for 5 seconds.
3. To select spa timer, use the **Up** or **Down** button to scroll through to display **SELECT USER SETUP SPA TIMER**. Press the **MENU** button. The **SELECT SPA TIMER CONTINUOUS** (default spa timer setting) is displayed. To turn the spa on or off indefinitely, press the **MENU** button to select.

   To select the length of time for the spa to run, use the **Up** or **Down** button to scroll to display **SELECT SPA TIMER TIME SELECTION**. Press the **MENU** button to select. The display **SELECT SPA TIME 01:00 HRS** (default time setting) is displayed. Use the **Up** or **Down** button to select the length of time for the spa to run (between 00:15 to 23:00 hours incremented by 00:15 minutes). Press the **MENU** button to select how long the spa will run. Press **POOL** or **SPA** to exit the User Setup mode.

Display Light Setup

1. Make sure the control is in the **OFF** mode.
2. To enter the User Setup mode, press and hold the **MENU** button for 5 seconds.
3. To select display light setup, use the **Up** or **Down** button to scroll through to display **SELECT USER SETUP DISPLAY LIGHT**. Press the **MENU** button. The **SELECT DISPLAY LIGHT 2 MIN TIMEOUT** (default display light setting) is displayed. This option allows the display light to turn off after 2 minutes. Press the **MENU** button to select. Use the **Up** or **Down** button to scroll to display **SELECT DISPLAY LIGHT LIGHT OFF**, this option allows the display light to turn off, press the **MENU** button to select. Use the **Up** or **Down** button to scroll to display **SELECT DISPLAY LIGHT LIGHT ON**, this option allows the display light to turn on, press the **MENU** button to select. Press **POOL** or **SPA** to exit the User Setup mode.

5.5 Set Point Lockout

Make sure the control is in the **ON** mode (**POOL** or **SPA**), press and hold the **Up** and **Down** buttons for 5 seconds. The set point will be locked and the control will operate in the mode it was in when the Set Point Lockout occurred. If an attempt to change the set point is made while the control is in Set Point Lockout, the control will display **SET POINT LOCKED**. To unlock the Set Point Lockout, press and hold the **Up** and **Down** buttons for 5 seconds. The unit will display **SET POINT UNLOCKED**.

5.6 Water Pressure Switch Adjustment

⚠ CAUTION

The water pressure switch should be adjusted to turn the heater off when the pump is off. Setting the switch to close at too low of a flow can damage the appliance. Adjust the switch to turn the heater off, not on.

The pressure switch is preset at the factory for activation at 3 psi (21 kPa). This is the minimum setting for the water pressure switch and works for all basic installations. Only adjust the water pressure switch if the heat pump does not operate ***when the proper flow is applied to unit*** or if the heat pump does not shut off when the filter pump is off. Occasionally, unusual plumbing configurations or necessary restrictions in the plumbing may cause

pressure sensing problems. In these rare situations, the plumbing system configuration may require adjustment of the water pressure switch.

Adjustment of the pressure switch may be necessary if any part of the filter system piping is 3 feet (1 m) or more above the top of the heat pump jacket.

Do not adjust the pressure switch if the heat pump is installed more than 5 feet (1.5 m) above or 10 feet (3 m) below the pool surface. Consult your local Zodiac® dealer for recommendations.

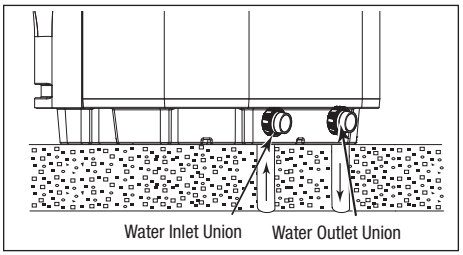


Figure 15. Winterizing the JRT Heat Pump

On some installations, the piping from the heat pump to the pool is very short. The back pressure could be too low to trigger the pressure switch. If this happens, it may be necessary to install a directional fitting or elbows where the return line enters the pool. This will increase back pressure enough for the heat pump to operate properly. If this configuration is necessary, be sure to check that the system flow is above the minimum requirement of 30 gpm (114 lpm) after the direction fitting or elbow has been installed.

Make sure the pool filter is clean before making any pressure switch adjustment: A dirty filter will restrict the water flow and the pressure switch cannot be adjusted properly.

To adjust the pressure switch:

1. Be sure that all valves in the system are set to allow water flow through the heat pump. Start the filter pump.
2. Set the heat pump control to call for heat. Set the heat pump control to the POOL HEAT mode.
3. If the heat pump control displays “NO FLOW”, then the flow in the system may be below the minimum flow of 30 gpm (114 lpm) needed for the safe operation of the heat pump. Investigate and correct any flow problems before adjusting the water pressure switch.
4. The water pressure switch is located on the water inlet pipe. Remove the blue cover.
5. Re-install the blue cover.
6. After confirming the flow rate is at a minimum of 30 gpm (114 lpm), slowly rotate the thumb wheel on the water pressure switch in a **counterclockwise** direction until the “NO FLOW” indicator disappears from the control display. Remember that there is a time delay before the heat pump compressor will start.
7. Once the heat pump is running, turn off the filter pump. The heat pump should turn off immediately.
8. If the heat pump continues to operate when the filter pump is off, turn the thumb wheel on the water pressure switch in a **clockwise** direction until “NO FLOW” is displayed on the control and the heat pump shuts down.
9. Check the setting of the water pressure switch by starting and stopping the filter pump and checking the control display and operation of the heater between each flow change.
10. If the water pressure switch cannot be adjusted to accommodate the conditions listed above, an external flow switch must be added to the plumbing system to ensure that the heat pump will not operate without the proper flow through the heat exchanger.

5.7 Hot Gas Defrost

Under certain conditions of temperature and humidity, frost might form on the surface of the Heat Pump coil. This layer of frost will interfere with the operation of the heat pump by making the unit work harder and, therefore, inefficiently.

The JRT heat pump has a cycle called a defrost cycle, which removes the frost from the outdoor coil: the unit will defrost regularly when frost conditions occur.

Two types of defrost modes are available in the JRT units:

Hot Gas (set at Factory)

The hot gas defrost process uses the naturally occurring high-temperature refrigerant vapor from the discharge side of the compressor to warm the evaporator coil and melt the ice accumulated on it.

NOTE: If using the heat pump for a cold plunge pool, the unit must be put into the Air Defrost mode.

Air Defrost

In the air defrost cycle, the heat pump is automatically operated in reverse, for a moment, in the cooling cycle. This action temporarily warms up the outdoor coil and melts the frost from the coil.

To switch from Hot gas (set as Factory) to Air defrost mode:

1. Make sure the control is in the **OFF** mode.
2. To enter the Service Setup mode, press and hold the **MENU**, **POOL**, and **SPA** buttons for 5 seconds.
3. Press the **Up** or **Down** button to display **DEFROST** and press **MENU** to enter the sub-menu.
4. Use the **Up** or **Down** button to scroll through the Defrost options (**HOT GAS** and **AIR DEFROST**).

5. Press the **MENU** button to select the option desired.
6. Press **POOL** or **SPA** to exit the Service Setup mode.

Test	Recommended Level
Free Chlorine or	1.0 to 3.0 ppm
Bromine	2.0 to 4.0 ppm
pH	7.2 to 7.8 (Ideal ranges being between 7.4 and 7.6)
Total Alkalinity (TA)	80 to 120 ppm
Calcium Hardness (CH)	175 to 400 ppm
Cyanuric Acid	30 to 50 ppm
Total Dissolved Solids (TDS)	1000 to 2000 ppm (Excluding dissolved NaCl from Salt Chlorine Generator)
* Concentration levels taken from "Basic Pool and Spa Technology" published by APSP (Association of Pool and Spa Professionals).	

Table 3. Optimal Water Chemistry Ranges

Section 6. General Maintenance

6.1 Water Chemistry

Proper chemical balances are necessary for sanitary bathing conditions as well as ensuring your heat pump's long life. Be sure to keep your chemical and mineral concentration levels within the values indicated in *Table 3*.

NOTE: For spas, it is also necessary to perform water changes in addition to chemical treatment. It is recommended to change the spa water every 60 days for light usage and every 30 days if usage is heavy.

6.2 Winterizing

⚠ CAUTION

Failure to winterize could cause damage to the heat pump and may void the warranty.

In areas where freezing temperatures occur, you should protect your pump, filter, and heat pump from the elements. Perform the following steps to completely drain the heat pump (see *Figure 15*).

1. Turn off the electrical power to the heat pump at the main breaker panel.
2. Shut off the water supply to the heat pump.
3. Disconnect the water inlet and outlet unions.
4. Cover only the top of the heat pump to prevent debris from falling into the unit. Do not wrap the sides of the heat pump with any plastic or other material that will retain heat or moisture inside the unit.

6.3 Spring Startup

If your heat pump has been winterized, perform the following steps when starting the system in the Spring:

1. Uncover the heat pump and inspect the top and sides for any debris or structural problems.
2. Connect the water inlet and outlet unions located on the lower front panel of the heat pump.
3. Turn on the filter pump to supply water to the heat pump. Circulate water through the system long enough to cycle all of the pool water through the filter. Check for leaks in and around the heat pump.
4. Check the pool chemistry and balance as necessary.
5. Turn on the electrical power to the heat pump at the main breaker panel.

6.4 Inspection and Service

Jandy heat pumps are designed and constructed to provide long performance life when installed and operated properly under normal conditions. Periodic inspections are important to keep your heat pump running safely and efficiently through the years.

Owner Inspection

⚠ CAUTION

Do not use this heat pump if any part has been under water. Immediately call a qualified service technician to inspect the heater and replace any part of the control system which has been under water.

Jandy recommends that you inspect your heat pump on a regular basis and especially after abnormal weather conditions. The following basic guidelines are suggested for your inspection:

1. Keep the top and surrounding areas of the heat pump clear of all debris.
2. Keep all plants and shrubs trimmed and away from the heat pump.

The heat pump will produce condensation (water) while in operation. The heat pump base is designed to allow the condensation to exit through the bottom drain port when the unit is running. The condensation will increase as the outdoor air humidity level increases. Check the following at regular intervals to ensure proper condensate drainage:

1. Visually inspect and clear the bottom drain ports of any debris that could clog the ports.
2. Ensure that condensate water does not puddle inside the heat pump.
3. Ensure that condensate run-off is properly directed away from the equipment pad to keep it from undermining the pad.

During normal operation, the heat pump produces 3 to 5 gallons of condensate per hour. If condensate drainage is above this range during operation or if water continues to drain from the base when the heat pump is not in operation for more than an hour, a leak in the internal plumbing may have occurred. Call a qualified heat pump technician to investigate the problem.

Keep the top air flow discharge and air flow intake area clear of debris so the air flow though the heat pump is not restricted. The cooler discharge air from the top should not accumulate and be drawn into the side air intake coils. Keep all plants and shrubs trimmed away from the heat pump.

Make sure the front of the unit is accessible for future service.

Keep lawn sprinkler heads from spraying on the heat pump to prevent corrosion and damage. Use a deflector if needed.

If the unit is installed under a very sharp roof pitch or under a roof without a gutter, a gutter or diverter should be fitted to prevent excessive water from pouring down into the unit.

Professional Inspection

Inspections performed at least once a year by a qualified technician are required to maintain your heat pump's safe and efficient operation. The following basic safety checks must be performed.

1. Check for loose or broken wires and terminal connections.
2. Verify the pressure switch or flow switch operation. Turn the heat pump OFF. Disconnect the power to the pump time clock, or turn the pump time clock to an OFF position. Turn the heat pump back ON. The heat pump must not come on.
3. Inspect the electrical controls, specifically the following:
    - High and low limits
    - Pressure switch or flow switch
    - Temperature control
4. Inspect the evaporator coil for blockage and clean as necessary.
5. Check for spider webs or debris in the condensate drain; clean if necessary.
6. Conduct a normal operating cycle and observe that the unit operates properly.

Section 7. Professional Maintenance and Service

7.1 Heat Pump Design

The Jandy heat pump is one of the most efficient ways to heat a pool or spa. The heat pump transfers heat from the outside air to the pool or spa water by means of an internal heat exchanger.

When the fan is turned on, warm air is drawn through the refrigerant charged evaporator, turning the cold liquid refrigerant to a warm gas. The gas then flows through the compressor where it is compressed resulting in a much higher temperature.

The hot gas enters the heat exchanger where the water extracts the heat. The pump pulls in cool pool water, which in turn converts the hot gas back into a liquid refrigerant and starts the cycle over again.

The JRT heat pump uses a refrigerant called R-410A. It is a non-ozone depleting refrigerant that is accepted by the EPA.

The EPA requires certification to purchase or use R-410A. It is recommended that service personnel be trained in installation, service, brazing, and maintenance procedures.

NOTE: The maximum heat output and efficiency of a heat pump is dependent upon the quality and performance of the major components used. Equally important are the environmental conditions (for example, air temperature, humidity, water temperature, and wind).

7.2 Heat Pump Components and Operation

Evaporator: As air passes through the evaporator, the refrigerant in the evaporator absorbs heat from the ambient air. The warmer the ambient air and the larger the surface area of the evaporator the more heat it can collect.

Fan: The heat pump fan produces high volume airflow. Adequate airflow is required to move warm air through the large evaporator.

Compressor: The compressor compresses the refrigerant gas to a higher pressure, increasing the temperature.

Heat Exchanger: As the final step to the heating process, the heat exchanger transfers the heat from the hot gas to the water. (Also known as a condenser.)

Reversing Valve: (For hybrid units with optional chiller and hot gas defrost.) The reversing valve reverses the flow of the refrigerant, which results in transferring cold gas to the water, thus lowering the temperature.

Section 8. Troubleshooting

8.1 Troubleshooting Guide

The following table provides symptoms and solutions for general troubleshouting problems for the heat pump.

Symptom	Corrective Action
Heat pump will not start, no control board display.	Breaker or fuse may be tripped. Reset breaker or check fuse. If heat pump still does not run, call for service. **Three-phase models only -** The phases may be reversed or there may be a loss of phase, call for service.
Heat pump will not start, control board display working.	Heat pump may be in delay count down of 5 minutes. Make sure control board thermostat is calling for heater to come on (check setting on thermostat and temperature reading). Make sure heat pump is not in cooling mode.
Heat pump runs but does not heat.	Verify cold air is blowing out the top of the heat pump. If the heat pump has just been installed or if the pool water has been allowed to cool significantly, it is necessary to run the heat pump continually for 24-48 hours. If the heat pump has been in operation for some time, increase the circulating pump time, or switch the control board to Maintain Heat function. If heating a spa, verify no air intake stand pipes are open. If heat pump still does not heat, call for service.
Heat pump does not run and control board displays: FAULT- NO FLOW	Verify circulating pump is on and all necessary valves are in the correct positions. Verify filter and skimmers are clean. Check water level in pool. Temporarily turn off all fountains and water falls that bypass the heat pump water inlet. If this does not correct the problem, call for service.
Heat pump does not run and control board display shows: FAULT- HIGH REF PRESSURE	Verify circulating pump is on and that there are no water flow restrictions to the heat pump. If the filter pump is a two speed or variable speed pump, switch to a higher speed. Make sure all necessary valves are open or in the proper positions to allow proper water flow to the heat pump. Verify filter and skimmers are clean. Check for water level in the pool. This condition may also appear if the heat pump has not been operated for an extended period. To clear the condition, cycle the heat pump, on and off, up to 3 times. If this does not correct the problem, call for service.
Heat pump does not run or short cycles and control board display shows: FAULT- LOW REF PRESSURE	Check that fan is operating and air is coming out of the top of the heat pump, while short cycling. If heat pump does not run at all, call for service.
Heat pump leaking water.	Possible heat exchanger or plumbing leak. Turn the heat pump off, then turn circulating pump off for at least one hour to see if the water leak stops. If the water leak stops, normal condensation is occurring. If the water leak continues, after the heat pump is shut off for at least one hour, call for service.

Table 4. Heat Pump Troubleshooting Guide

8.2 Diagnostics

In the event a pressure switch opens or another fault condition occurs, the LCD screen will display the fault until the problem has been resolved. Please refer to the following table for the list of diagnostic conditions.

Diagnostic Condition	Description
FAULT- NO FLOW	Low or restricted water flow through the heat pump. The external bypass valve is in the wrong position, or the water flow switch has malfunctioned. The water flow switch opens creating a fault and the heat pump shuts off.
FAULT- LOW REF PRESSURE	When the ambient temperature is low, the suction pressure can drop significantly. This fault will cause the low pressure switch to open and the control will shut off the compressor.
FAULT- HIGH REF PRESSURE	When the head pressure builds too high, the high pressure switch will open causing the heat pump to shut off immediately. The control will sense this fault condition and shut off the compressor until the switch re-closes.
FAULT- HIGH WATER TEMP	When the POOL or SPA water temperature heats to the maximum allowed temperature or above, there could be safety risks for anyone in the water. The water thermostat will read this temperature and the control will shut off the heat pump unless it is in CHILLER mode. This feature also remains active when the control calls for heat through a remote thermostat. This is to insure that water temperature does not go to an abnormally high level due to a possible malfunction of the remote sensor.
FAULT- SHORTED COIL SENSOR -or- FAULT- OPEN COIL SENSOR	In the event that the coil temperature sensor malfunctions or is not connected the control will shut off the heat pump.
FAULT- SHORTED WATER SENSOR -or- FAULT- OPEN WATER SENSOR	In the event that the water temperature sensor malfunctions or is not connected the control will shut off the heat pump.

Table 5. Heat Pump Diagnostics

Section 9. Replacement Parts

9.1 Ordering Information

To order or purchase parts for the JRT models of heat pumps, contact your nearest Jandy dealer or distributor. See the Jandy web site at www.Jandy.com for the nearest service center. If they cannot supply you with what you need, contact Jandy customer support department, telephone 800.822.7933.

9.2 Jandy JRT Heat Pumps Parts List

Key No.	Description	Model No.	Order Part No.
1	Fan Grille	All	R0933900
2	Fan Motor	All	R0934000
3	Fan Blade	All	R0934100
4	Fan Top	All	R0934200
5	Evaporator Coil / Guard	2000R, 2500R	R0934300
5	Evaporator Coil / Guard	3000R, 3000R3	R0934400
6	Compressor, CP	2000R (CP)	R0934500
6	Compressor, CP, CAN	2000R (CP)	R0934501
6	Compressor, LG	2500R (LG)	R1010100
6	Compressor, LG, CAN	2500R (LG)	R1010101
6	Compressor, LG	3000R (LG)	R1009800
6	Compressor, LG, CAN	3000R (LG)	R1009801
6	Compressor, CP	3000R3 (CP)	R0577600
7	Base	All	R0934800
8	Electrical Box Cover w/ Hardware	All	R0934900
9	Front Panel	2000R, 2500R	R0935000
9	Front Panel	3000R, 3000R3	R0935100
10	Temperature Sensor	All	7790
11	Filter Drier	All	R0935200
11	Filter Drier (Bi-flow)	All	R0935300
12	Thermal Expansion Valve	2000R, 2500R	R0935400
12	Thermal Expansion Valve	3000R, 3000R3	R0935500
13	Air Temperature Sensor	All	R0935600
14	High Pressure Switch	All	R0935700
15	Low Pressure Switch	All	R0935800
16	Water Pressure Switch	All	R0935900
17	User Interface	All	R0591900
18	Interface Cover	All	R0592000
19	Reversing Valve (optional)	All	R0936000
20	Transformer	All (not 3000R3)	R0936100
21	Power Interface PCB	All	R3009200
22	Fan Capacitor	All	R0936300
23	Run Capacitor (1 phase)	2000R (CP), 2500R (CP), 3000R (CP), 2000R (LG)	R0936200
23	Run Capacitor (1 phase)	2500R (LG), 3000R (LG)	R1009900
24	Contactor (1 phase)	All (1 Phase)	R0936400

Key No.	Description	Model No.	Order Part No.
24	Contactor (3 phase)	All (3 Phase)	R0576900
25	Phase Monitor (3 phase)	All (3 Phase)	R0577100
26*	Anchor Bracket Set	All	R0936600
27	Universal Union, Buttress Set	All	R0472700
28	Condenser/Heat Exchanger	2000R	R0936700
28	Condenser/Heat Exchanger	2500R, 3000R	R0936800
29*	Schrader Valves (2-pack)	All	R0937100
30*	External Fastener Kit	All	R0937300
31*	Compressor Blanket	All	R0951700
32*	Compressor Plug, CP	All (not 3000R3) (CP)	R1009200
32*	Compressor Plug, LG	All (not 3000R3) (LG)	R1009201
* Not Shown			

9.3 Jandy JRT Heat Pumps Exploded View

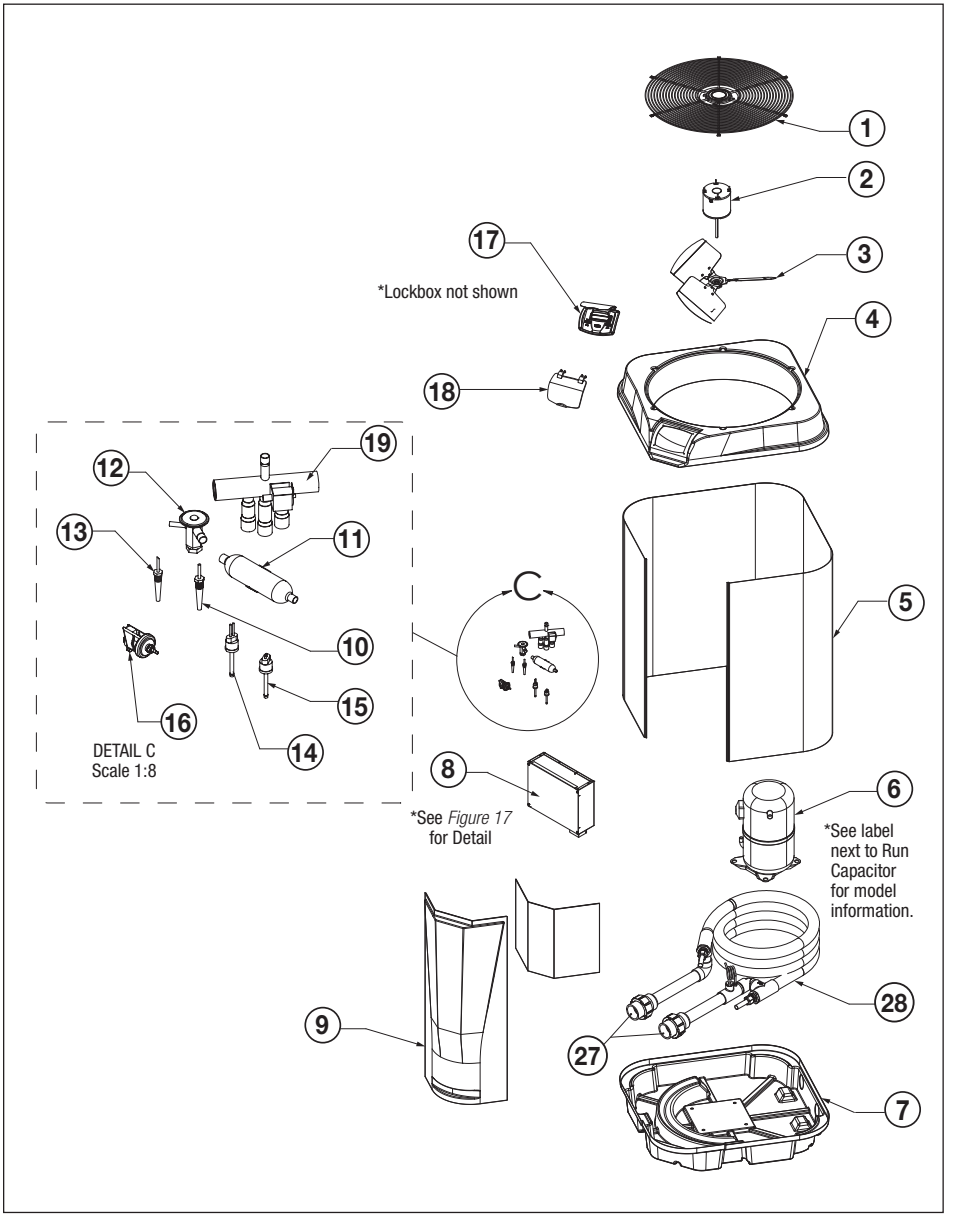


Figure 16. Jandy JRT Heat Pumps Exploded View (JRT2000R Shown)

9.4 Jandy JRT Single Phase Electric Box

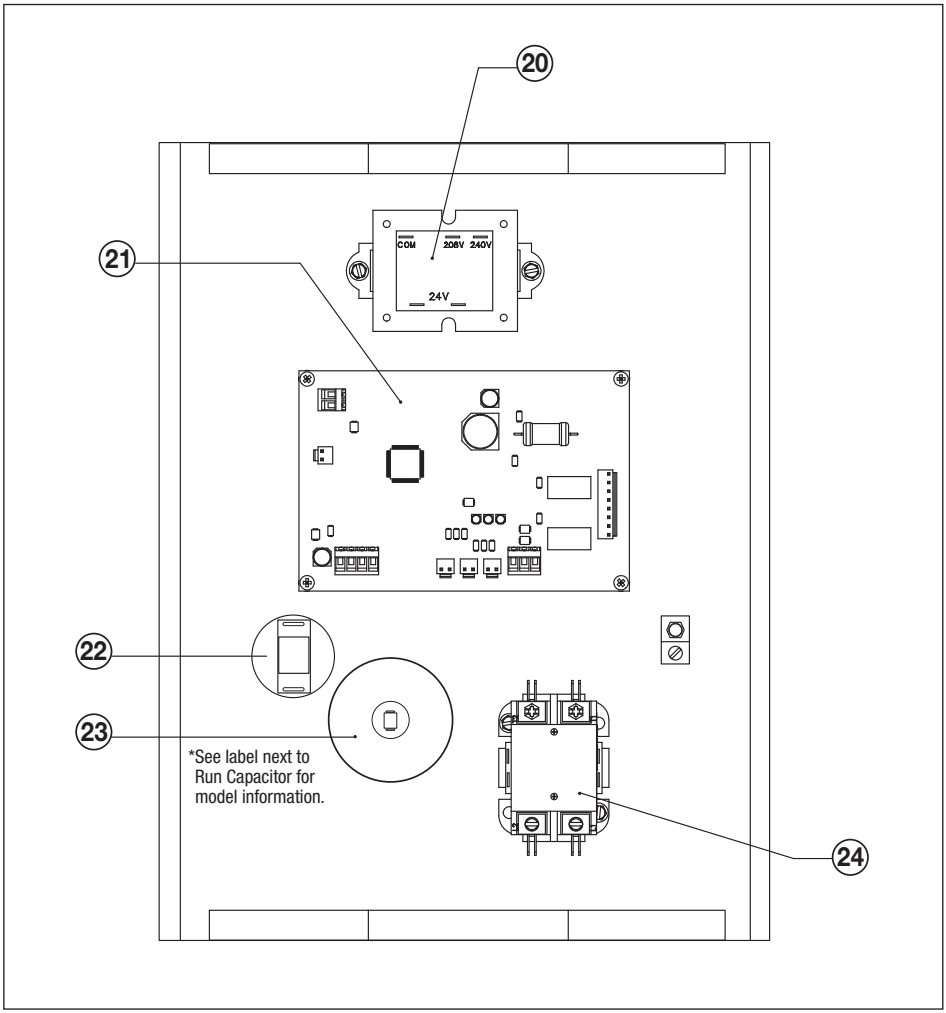


Figure 17. Jandy JRT Single Phase Electric Box

9.5 Jandy JRT Three Phase Electric Box

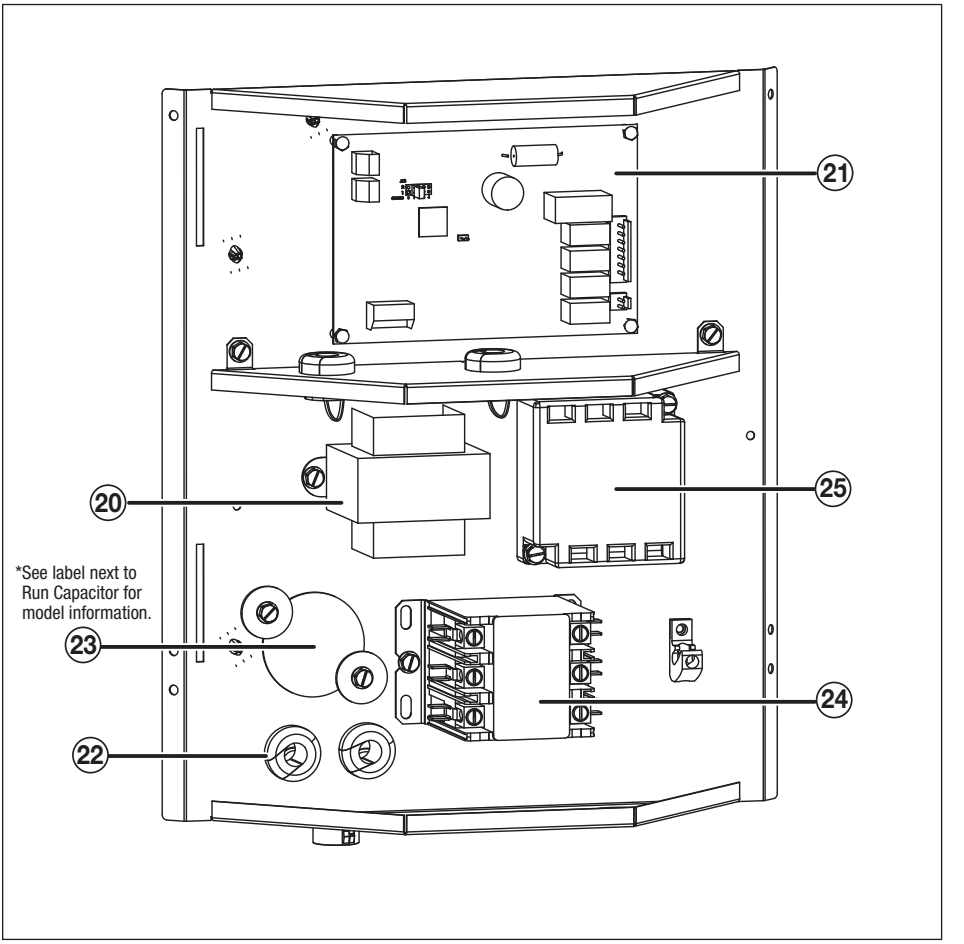


Figure 18. Jandy JRT Three-Phase Electric Box

NOTES

A Fluidra Brand | Jandy.com | Jandy.ca
2882 Whiptail Loop # 100, Carlsbad, CA 92010, USA | 1.800.822.7933
2-3365 Mainway, Burlington, ON L7M 1A6, Canada | 1.800.822.7933

©2024 Fluidra. All rights reserved. The trademarks and trade names used herein are the property of their respective owners.

H0744700_REVH

ETL LISTED
CONFORMS TO
UL 60335-2-40

CERTIFIED TO
CAN/CSA C22.2 NO.60335-2-40