

# Jandy® Heat Pump Refrigerant System Component Replacement Kits

## WARNING

**FOR YOUR SAFETY** - The products listed below must be installed by a licensed HVAC technician certified in heat pump repair and maintenance by the jurisdiction in which the product will be installed where such state or local requirements exists. The technician must possess and comply with all certifications and regulations regarding the purchasing, handling, transportation and reclamation of R-410A refrigerant. 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 an electrical hazard which can cause serious injury, property damage, or death. Improper installation and/or operation will void the warranty.

These instructions are to be used with the following Jandy Replacement Kits:

R0490905 -- Filter Drier, 165S, Jandy EE-Ti 2000-3000 Heat Pumps  
 R0490904 -- Filter Drier, 164S, Jandy EE-Ti 1500 Heat Pump  
 R0490906 -- Filter Drier, 165S, Bi-flow, Jandy EE-Ti 2500R Heat Pump  
 R0509501 -- Thermostatic Expansion Valve (TXV) 4 Ton, Adjustable, Jandy EE-Ti Heat Pump  
 R0509502 -- Thermostatic Expansion Valve (TXV) 7 Ton, Adjustable, Jandy EE-Ti Heat Pump  
 R0509503 -- Thermostatic Expansion Valve (TXV) 7 Ton, Adjustable, Jandy EE-Ti Heat Pump  
 R0509504 -- Thermostatic Expansion Valve (TXV) 8 Ton, Adjustable, Jandy EE-Ti Heat Pump  
 R0510201 -- Evaporator Coil / Guard, Jandy EE-Ti 1500 Heat Pump  
 R0510202 -- Evaporator Coil / Guard, Jandy EE-Ti 2000 Heat Pump  
 R0510203 -- Evaporator Coil / Guard, Jandy EE-Ti 2500 Heat Pump  
 R0510204 -- Evaporator Coil / Guard, Jandy EE-Ti 3000 Heat Pump  
 R0510300 -- Compressor (40k), Jandy EE-Ti 1500 Heat Pump  
 R0510400 -- Compressor (61k), Jandy EE-Ti 2000 Heat Pump  
 R0510500 -- Compressor (68k), Jandy EE-Ti 2500 Heat Pump  
 R0510600 -- Compressor (83k), Jandy EE-Ti 3000 Heat Pump  
 R0510700 -- Compressor (68k) 3 Ph, Jandy EE-Ti 2500 Heat Pump  
 R0510800 -- Compressor (83k) 3 Ph, Jandy EE-Ti 3000 Heat Pump  
 R0510900 -- Compressor (61k) 3 Ph, Jandy EE-Ti 2000 Heat Pump  
 R0522500 -- 9 Inch Receiver, Jandy EE-Ti Heat Pumps  
 R0561405 -- Heat Exchanger, Jandy EE-Ti 1500 Heat Pump  
 R0561406 -- Heat Exchanger, Jandy EE-Ti 2000 Heat Pump  
 R0561407 -- Heat Exchanger, Jandy EE-Ti 2500 Heat Pump  
 R0561408 -- Heat Exchanger, Jandy EE-Ti 3000 Heat Pump  
 R3003801 -- Reversing Valve 1/2", Jandy EE-Ti Heat Pumps (With Optional Chiller)

## 1. Refrigerant

All components in this kit are part of the Jandy EE-Ti heat pump which uses R-410A refrigerant. Since R-410A has higher operating pressures and cooling capacities than R-22, the replacement kits listed in this document for R-410A refrigerant should NEVER be used on equipment designed for R-22. The EE-Ti heat pumps with R-410A run at a pressure of approximately 1.6 times that of the AE-Ti heat pump with R-22.

Therefore, different tools are required to work with the EE-Ti heat pump as compared to the AE-Ti heat pump. They are:

- High pressure manifold gauge set that measures a

range of 400 to 800 psig

- High pressure refrigerant recovery machine
- High pressure recovery tank (DOT 4BA400 or 4BW400)

## CAUTION

To avoid damage to the heat pump, DO NOT use the mineral oils from the R-22 systems in the R-410A system.

The mineral oils commonly used in R-22 systems MUST NOT be used in the R-410A systems.

Refrigerant drained from the heat pump *must*

be recycled by an approved reclamation system operated by a U.S. Environmental Protection Agency (EPA)-certified HVAC technician. Knowingly venting R-410A refrigerant to the atmosphere is illegal, as stated in Section 608 of the U.S. Clean Air Act, and is prosecutable in federal court.

The EPA does not require certification to purchase or use R-410A. It is recommended that service personnel be trained in installation, service, brazing, and maintenance procedures.

**NOTE:** Any time the refrigerant system is drained, the filter driers should be replaced. The filter driers are standard 164S or 165S filter driers. Be sure to install the appropriate filter drier, depending on whether the heat pump offers a reversing or “chilling” feature. In this case, install a bi-flow filter drier.

Before attempting any repair that involves draining your heat pump’s refrigerant system, check with all local, state and federal regulations and be sure to comply.

Before starting to replace any parts, use the parts lists at the end of this document to identify the parts in your kit. If any parts are missing, call your local Jandy distributor. For technical assistance, call Jandy’s Technical Service Department at 1.800.822.7933.

## 2. Labeling the Component Wires

### CAUTION

Miswiring can cause damage to your heat pump. To avoid damage to the heat pump, be sure to follow the procedure carefully.

This procedure requires disconnecting the heat pump components. Use the blank labels in the kit to label the wires before disconnecting the components. Miswiring any component may cause a malfunction of the heat pump.

## 3. Disconnect Heat Pump From System Plumbing

### WARNING SHOCK HAZARD!

Turn off all switches and the main breaker for the circuit supplying power to the heat pump and the filter pump before starting the replacement procedure. Failure to comply may cause a shock hazard resulting in severe personal injury or death.

1. Turn off all switches and the main breaker that supplies power to the heat pump. Also, turn off the main breaker supplying power to the filter pump.

2. If isolation valves are installed in the plumbing to the heat pump, turn them to the OFF position.
3. Disconnect the heat pump from the plumbing by loosening the unions at the inlet and outlet connections of the unit.

**NOTE:** Some water will drain from the heat pump when the connection is broken. If the heat pump is installed indoors, you may want to make provisions to drain the water.

4. Recover the refrigerant from the system.

## 4. Disconnect Components from Electrical Box

Perform the following procedure to remove the components from the compartment on the front of the heat pump.

1. Remove the four (4) screws that hold the access panel of the component compartment to the front of the heater. (See Figure 1). Remove the panel.
2. Remove one (1) screw and remove the junction box cover.
3. Locate the component that you plan to disconnect. See Figures 2a and 2b or Figures 14 or 15 for wiring diagrams.
4. Use the labels provided in the kit to mark all the wires connected to the components to be disconnected.
5. Remove all wire connections from the components.

## 5. Remove Top Panel and Front Door From Heat Pump

Perform the following procedure to remove the top panel and the front door from the heat pump. Completely remove the top panel and front door to allow full access to the heat exchanger and compressor.

1. Remove the six (6) screws from around the perimeter of the top panel. These screws hold the top to the frame of the evaporator coil.
2. Remove the five (5) screws that hold the front door of the heat pump to the base and to the top panel.
3. Lift the top panel up enough so the bottom of the panel clears the inlet and outlet connections on the heat pump. Then pull the bottom of the front door forward, over the inlet and outlet connections. Remove the front door and place it to the side, away from the heat pump. See Figure 3.

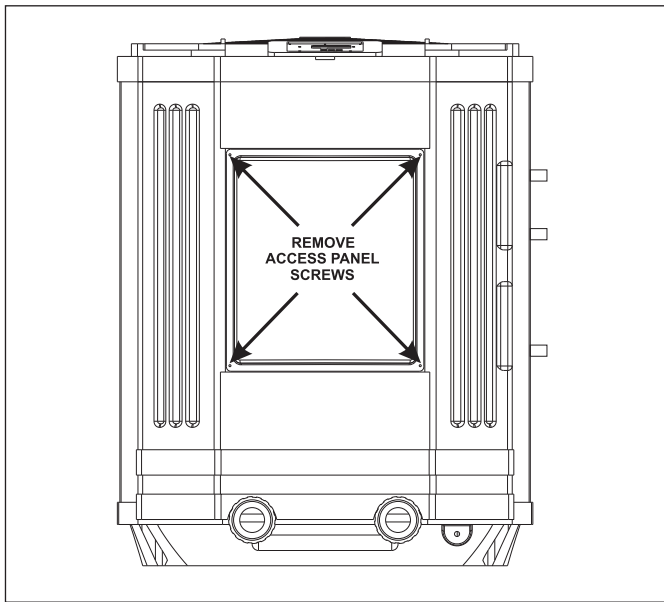


Figure 1. Remove Access Panel

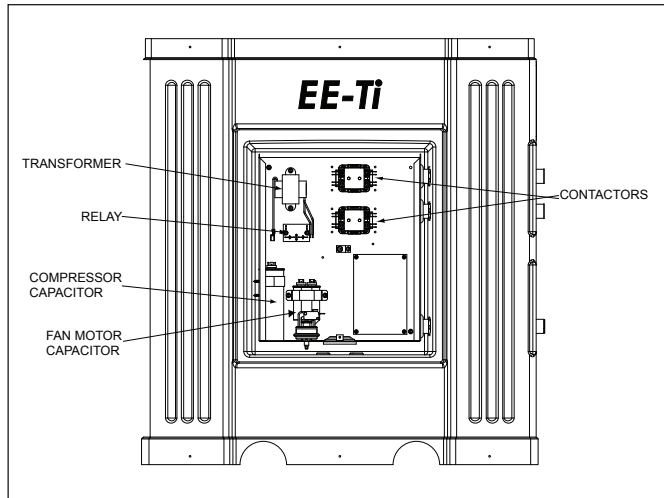


Figure 2a. Locate Components - Single Phase Units

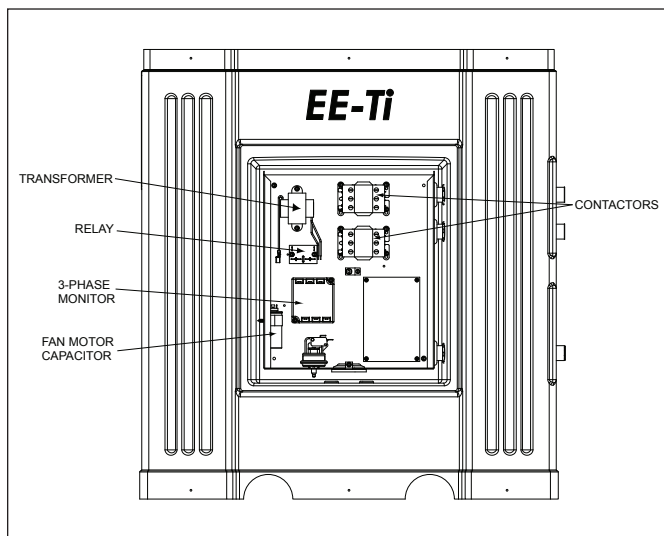


Figure 2b. Locate Components - Three Phase Units

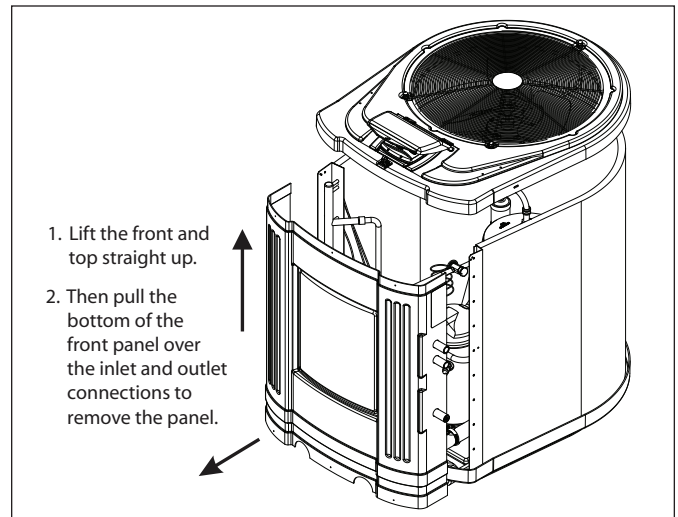


Figure 3. Remove Top Panel and Front Door

4. Lift the top panel up and move it as far to the right of the heat pump as the flexible conduit will allow.

NOTE: If a flexible conduit was not used in the original installation, the conduit may need to be cut in order to move the front panel. Zodiac Pool Systems, Inc. recommends replacing hard pipe conduit and glued connections with flexible conduit and water tight removable connections at this time for ease of future serviceability.

## 6. Replacing the Heat Exchanger

Remove the plumbing tree as part of the heat exchanger assembly.

1. Loosen the clamp that secures the water sensor to the heat exchanger inlet pipe. See Figure 4.

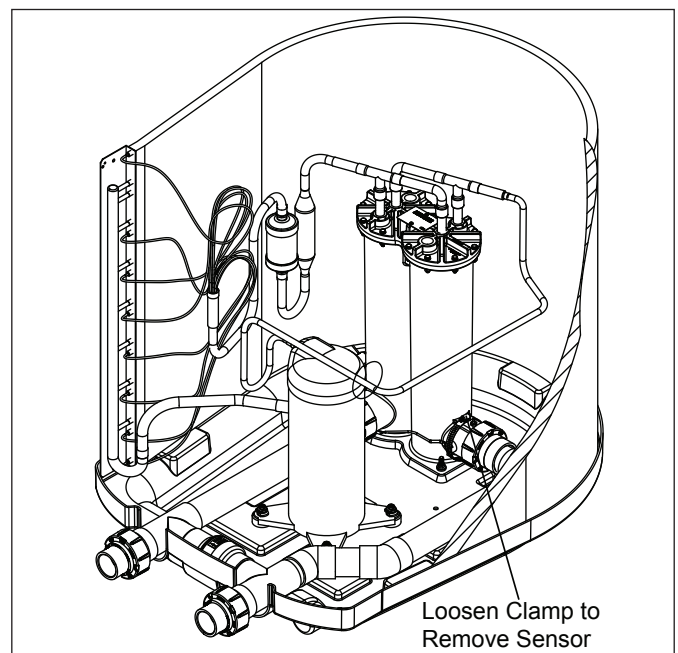
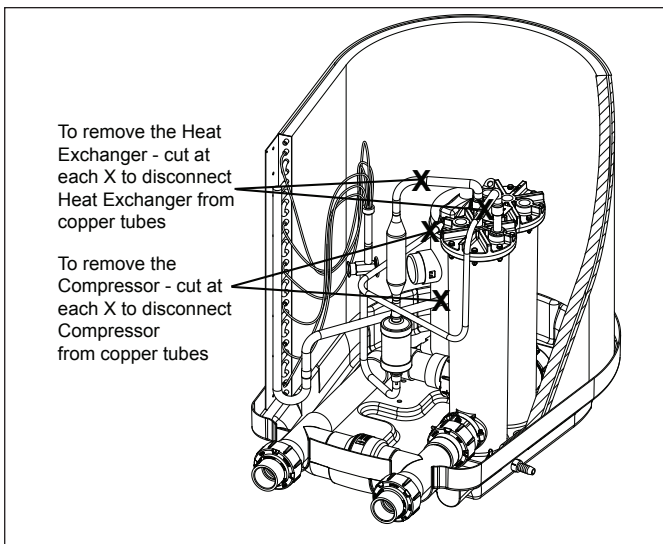


Figure 4. Remove Water Sensor - EE2000 Shown

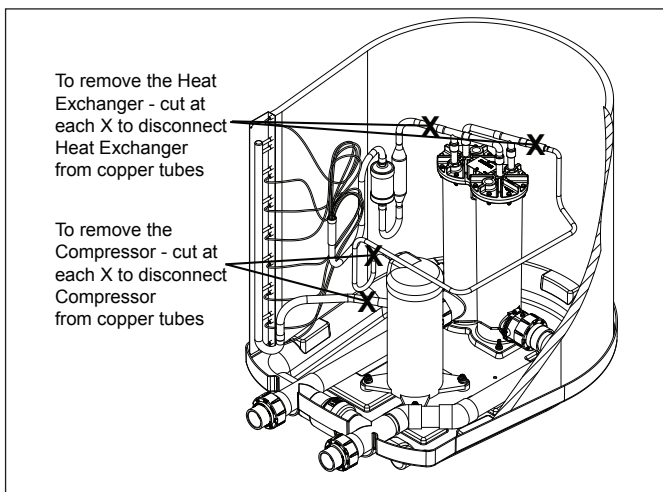
2. Remove the water sensor from the heat exchanger inlet and discard it along with the clamp.
3. Remove the pressure switch tubing from the lower right side of the heat exchanger.

**NOTE:** You need to cut the copper pipes differently when working on a reverse heat pump (EE2500T-R, EE3000T-R).

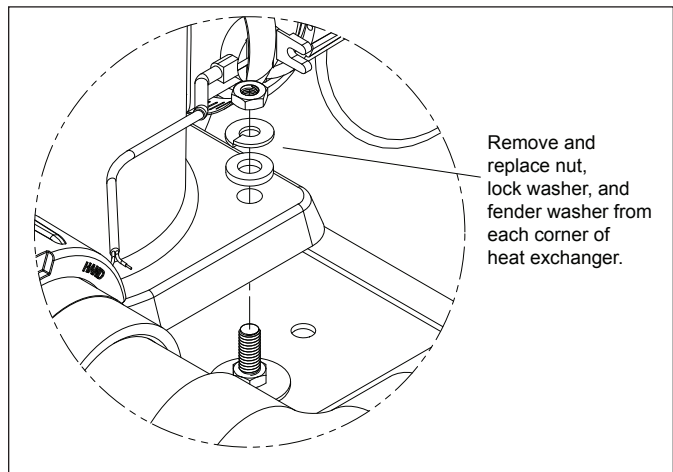
4. Evacuate the refrigerant from the system.
5. Cut the suction and discharge copper tube pipes from the heat exchanger, refer to Figures 5 or 6 depending on your model.
6. Remove the nut, lock washer, and fender washer that secure each of the four (4) corners of the heat exchanger to the base. See Figure 7.



**Figure 5. Cut Suction/Discharge Tubes from Compressor and Evaporator in Models EE1500**



**Figure 6. Cut Suction/Discharge Tubes from Compressor and Evaporator in Models EE2000 (Shown), EE2500, EE3000**



**Figure 7. Remove and Replace Heat Exchanger Hardware**

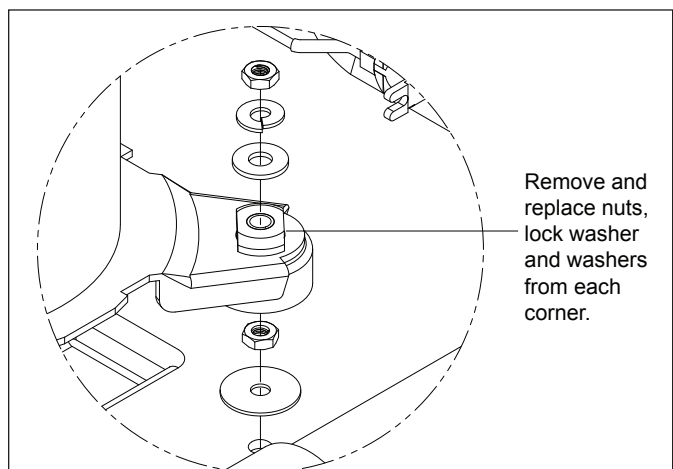
7. Disconnect the heat exchanger from the plumbing tree. Set the plumbing tree aside for reinstallation.
8. Remove and discard the heat exchanger, temperature sensor, and clamp.

#### **6a. Install New Heat Exchanger on Base (EE1500)**

1. Place the heat exchanger on the right side of the base and connect the inlet and outlet of the heat exchanger to the plumbing tree. See Figure 9.
2. Secure the nut, lock washer, and fender washer to each of the four (4) corners of the heat exchanger to the base. See Figure 7.

#### **6b. Install New Heat Exchanger on Base (EE2000, EE2500, EE3000)**

1. Place the heat exchanger on the back of the base and connect the inlet and outlet of the heat exchanger to the plumbing tree. See Figure 10.



**Figure 8. Remove and Replace Compressor Hardware**



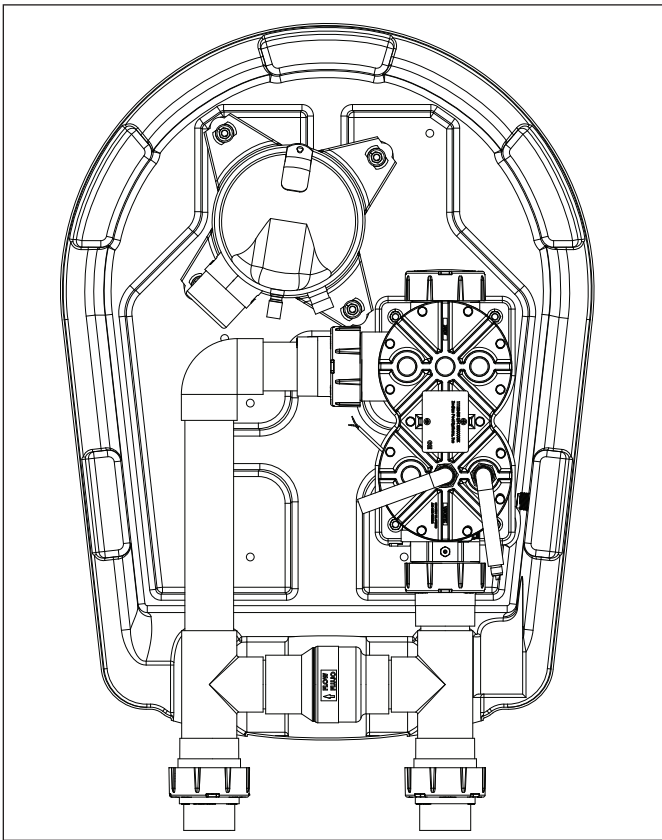


Figure 9. EE1500 Base Layout

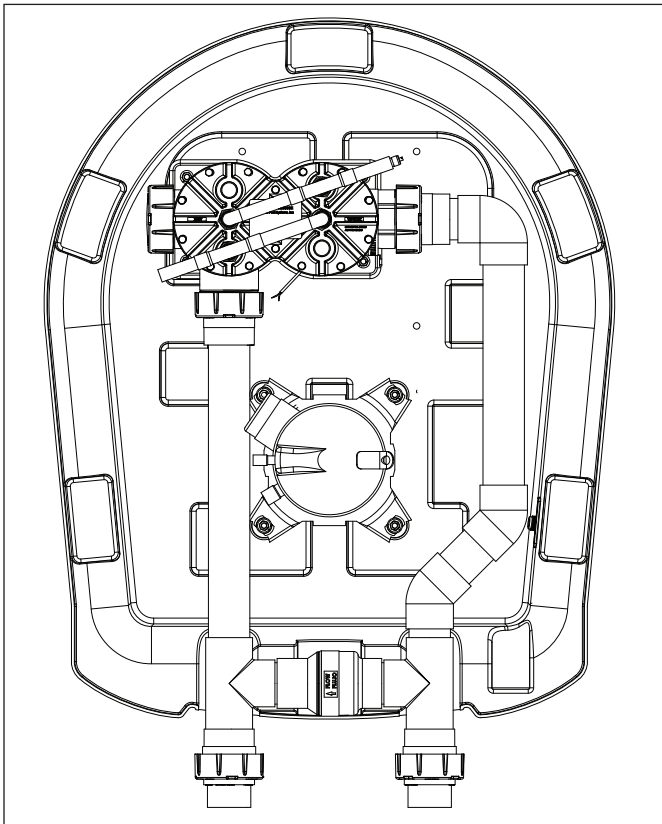


Figure 10. EE2000, EE2500, EE3000 Base Layout

2. Secure the nut, lock washer, and fender washer to each of the four (4) corners of the heat exchanger to the base. See Figure 7.

**6c. Install Water Pressure Switch Tubing and Temperature Sensor on All Models**

1. Install the water pressure switch tubing on the barbed fitting on the inlet of the heat exchanger. See Figure 11.
2. Install the water temperature sensor with the o-ring and secure them to the heat exchanger with the clamp. See Figure 11.

**7. Replacing the Compressor**

1. Evacuate the refrigerant from the system.
2. Cut the copper suction and discharge tube sections from the compressor and evaporator, as shown in Figure 5 (EE1500) and Figure 6 (EE2000, EE2500, and EE3000).
3. Discard the copper tube sections.
4. Remove the nuts, lock washer, and washers from the four (4) corners of the compressor. Refer to Figure 8.
5. Remove and discard the compressor.
6. Place the new compressor over the bolts, as shown in Figures 6.

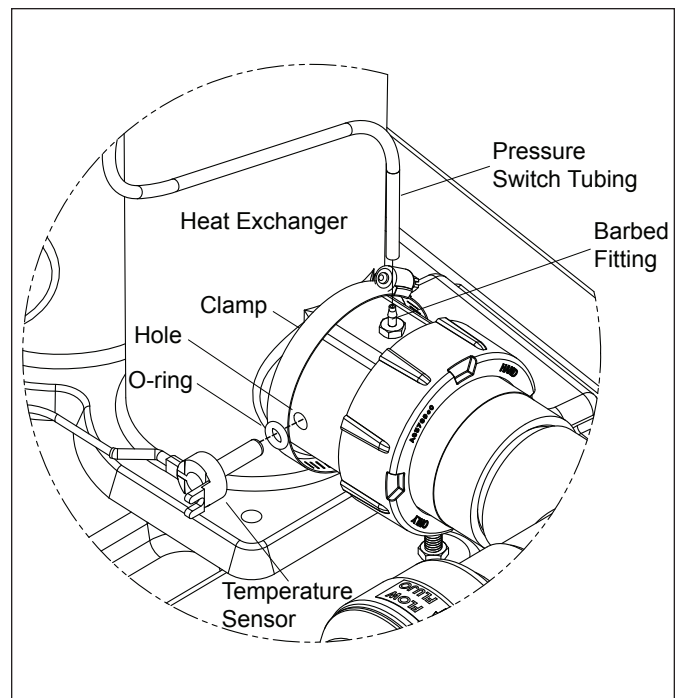


Figure 11. Install Pressure Switch Tubing and Water Temperature Sensor

- Secure the compressor to the base, as shown in Figure 7. Use the nuts, lock washers, and fender washers to secure the compressor.

## 8. Replacing the Thermal Expansion Valve, Filter Drier, Evaporator Coil, or Receiver

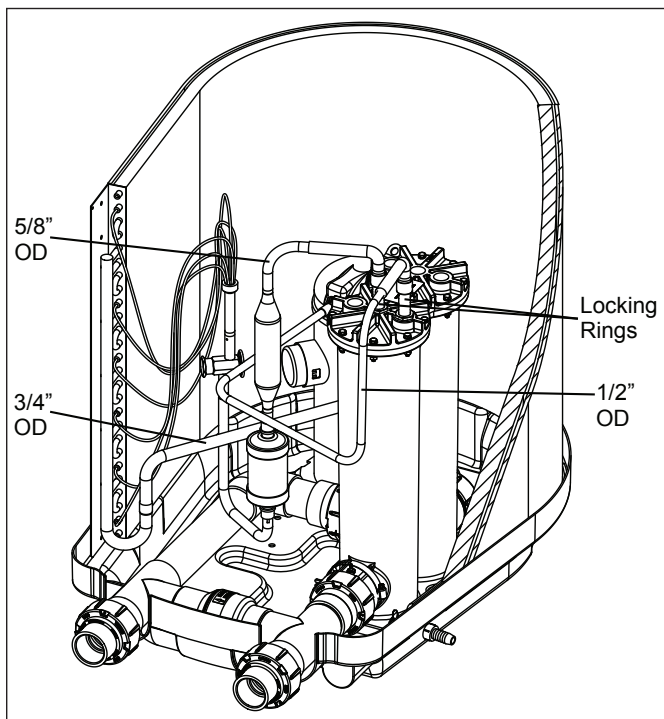
- Cut the inlet and outlet copper tubing section to each of these components.
- Remove and install the component you are replacing.
- Install and braze the component you are replacing. See Section 11 for details.

## 9. Reconnect Heat Pump to System Plumbing

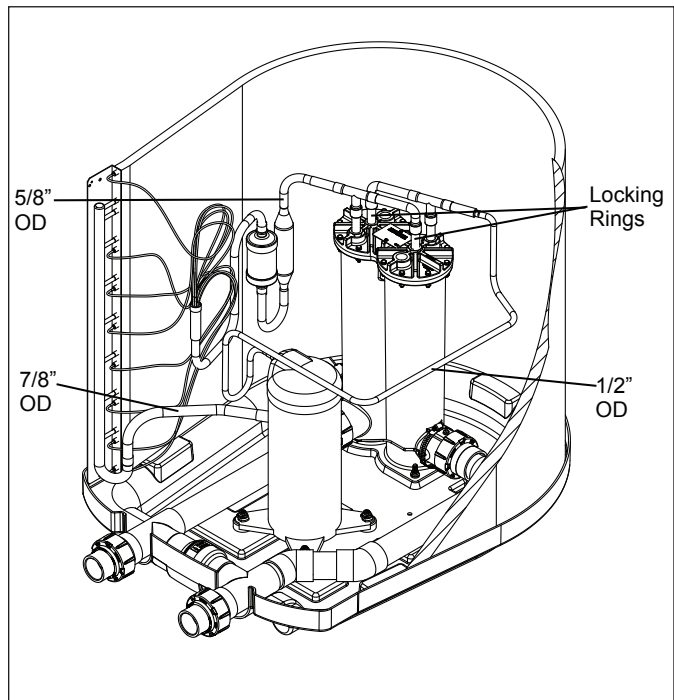
**NOTE** Make sure to apply plenty of heat sink compound/paste above the locking ring (refer to Figures 12 and 13 and up to the end of the inlet and outlet copper sections. Also, wrap a wet rag round the locking rings. This will prevent refrigeration leakage at the locking ring area. Repeat this procedure to protect the TXV.

Refer to Figures 12 and 13, depending on your model, to see how the compressor, evaporator, TXV, filter, and heat exchanger need to be connected.

- Cut the amount of copper tube section required for the model heat pump you are working on and bend



**Figure 12. Connections for EE1500 Model**



**Figure 13. Connections for EE2000, EE2500 and EE3000 Models**

it into the proper shape. Use the sizes specified in Figures 12 and 13 depending on your model.

- Install the new filter drier when reconnecting the refrigerant piping.
- Connect the sections using the fittings required and braze the sections.
- Reattach the receiver.
- Reattach the TXV bulb and insulate it.
- Reattach pressure sensors, if removed.
- Reconnect the evaporator coil.
- Pull vacuum on the system to a minimum of 500 microns to eliminate moisture and non-condensables.
- Leak check the unit to verify the integrity of the brazing operation.
- Recharge the unit with the required amount of refrigerant, as shown in Table 1.

**Table 1. Required Amount of Refrigerant**

Model	Refrigerant (oz) R-410A
1500T	64
2000T	78
2500T	90
2500T-R	100
3000T	114
3000T-R	124

11. Install the label provided with the kit indicating the new refrigerant charge next to the original rating plate on the heat pump.

## **10. Install Front Door and Enclosure**

1. Place the front door back over the base.
2. Put the top panel over the evaporator and front door.
3. If necessary, use the nine (9) screws provided in the kit to secure the front door to the base and to secure the top panel to the front door.

## **11. Reconnect the Wires**

1. Reconnect the wires to the components. Use the labels on the wires to make sure you are connecting them to the correct components.
2. Using the wiring diagrams for reference, verify the routing of the wires to the components in the electrical box. Refer to Figures 14 and 15.

## **12. Connect Heat Pump to Plumbing System**

1. Connect the heat pump to the plumbing at the inlet and outlet connections of the unit.
2. Turn the isolator valves, if installed in the heat pump's plumbing, to the ON position.
3. Turn on all switches and the main breaker that supplies power to the heat pump.
4. Turn on the main breaker supplying power to the filter pump.

## **13. Parts List**

The following parts list is for your reference. To order additional parts, please contact your local Jandy distributor.

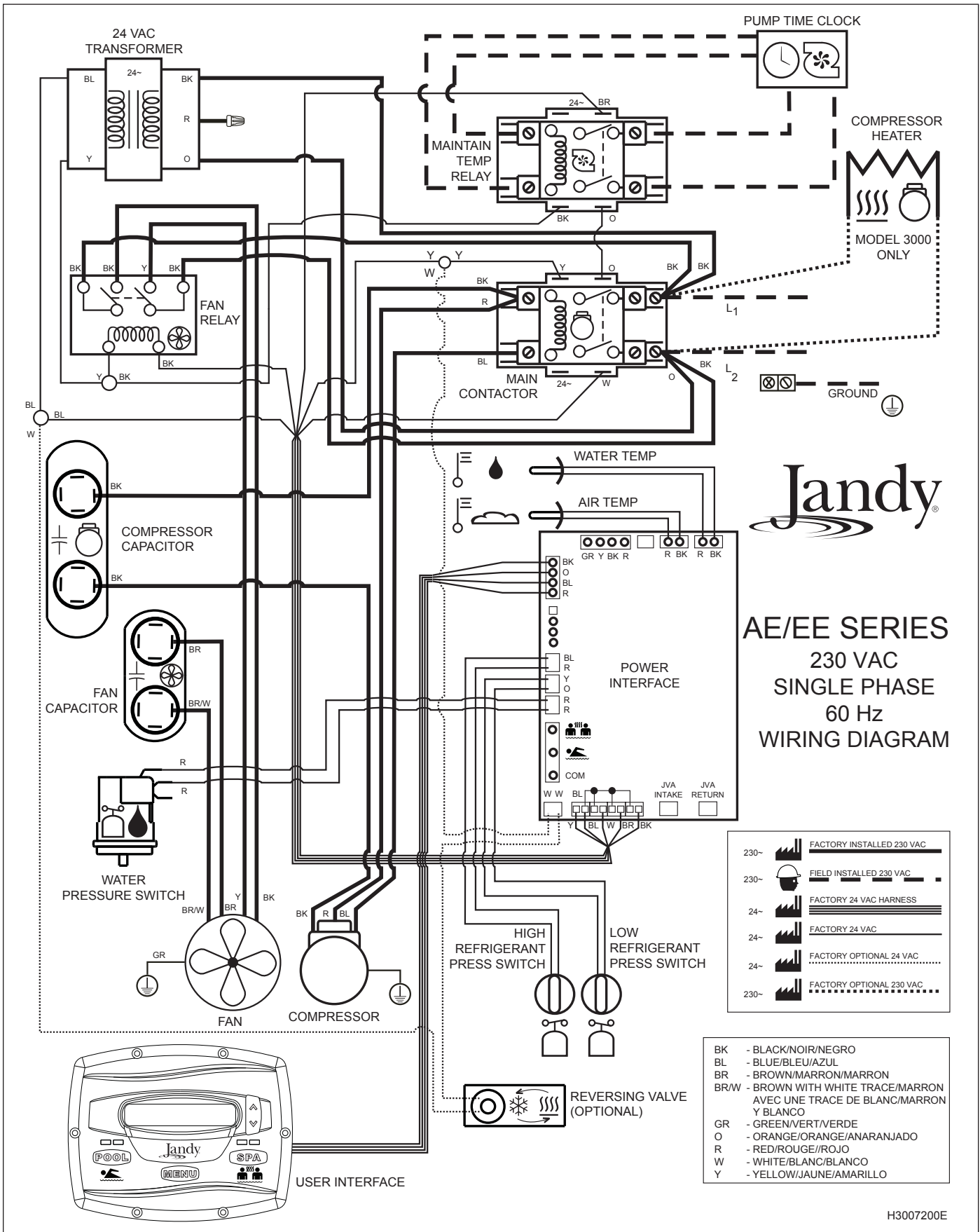


Figure 14. EE-Ti Heat Pump Single Phase Wiring Diagram



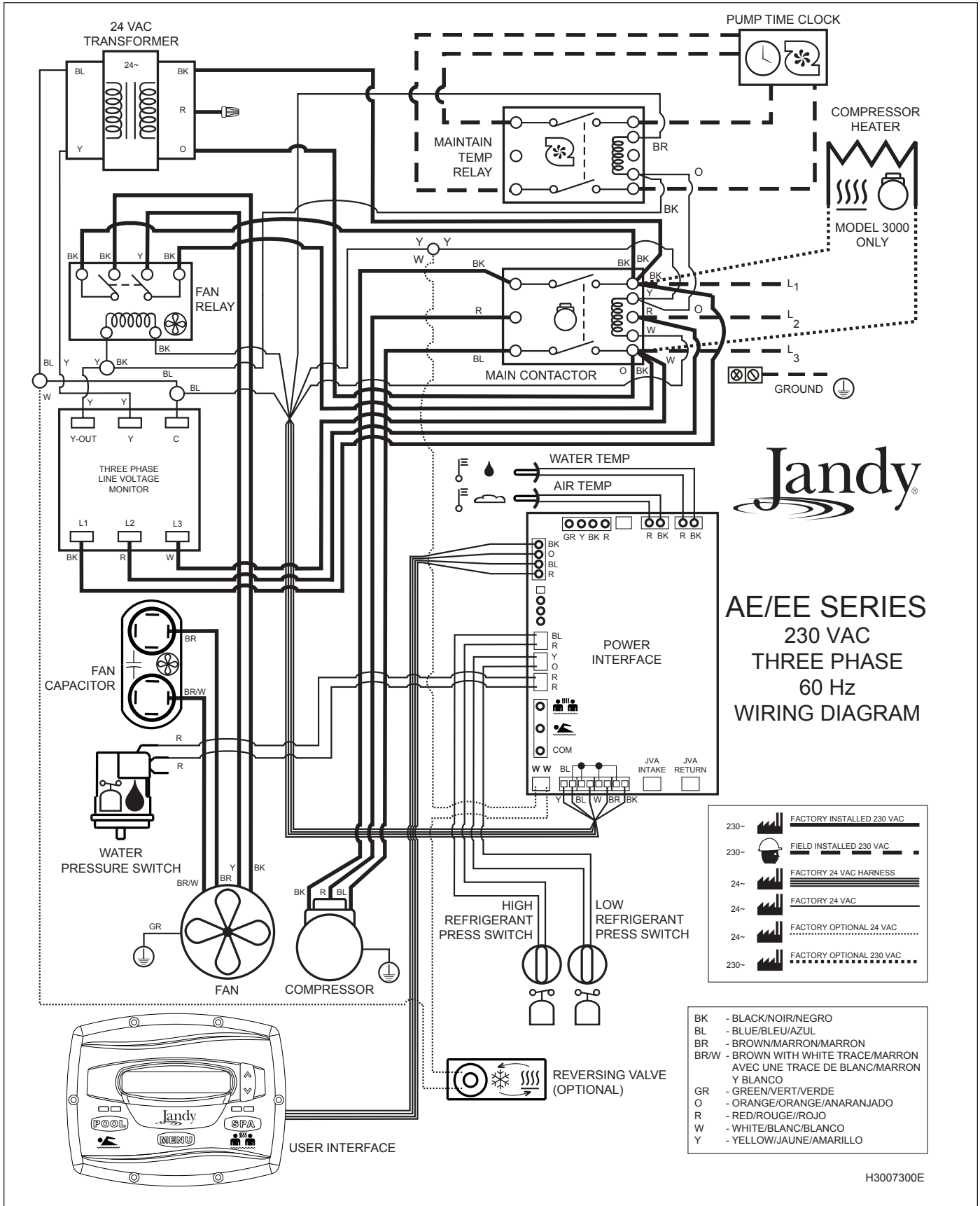


Figure 15. EE-Ti Heat Pump Three Phase Wiring Diagram

**EE-Ti R-Kit Parts List**

KIT COMPONENT		KIT NUMBER																								
ITEM NO.	COMPONENT DESCRIPTION	R0490905	R0490904	R0490906	R0509501	R0509502	R0509503	R0509504	R0510201	R0510202	R0510203	R0510204	R0510300	R0510400	R0510500	R0510600	R0510700	R0510800	R0510900	R0522500	R05661405	R05661406	R05661407	R05661408	R3003801	
1	Evaporator Coil, Single, 26", EE1500	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	Evaporator Coil, Single, 32", EE2000	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	Evaporator Coil, Single, 32", EE2500	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	Evaporator Coil, Double, 36", EE3000	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	Panel Screws	-	-	-	-	-	-	-	6	6	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	Barbed Fastener	-	-	-	-	-	-	-	14	18	18	20	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	Plastic Guard 32" x 90.5"	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	Plastic Guard 36" x 90.5"	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	Plastic Guard 26" x 72"	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	Heat Exchanger, EE1500 (1x8m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	
11	Heat Exchanger, EE2000 (2x6m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
12	Heat Exchanger, EE2500 (2x7m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	
13	Heat Exchanger, EE3000 (2x8m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	
14	3/8" Nylon Washer	-	-	-	-	-	-	-	-	-	-	-	8	8	8	8	8	8	8	8	-	4	4	4	4	-
15	3/8" Nylon Cap Nut	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	-	-	-	-	-	
16	5/16" x 2" Stainless Steel Bolt	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	-	-	-	-	-	
17	5/16" Stainless Steel Lock Washer	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	-	4	4	4	4	-
18	5/16" 1-1/4 Fender Washer	-	-	-	-	-	-	-	-	-	-	-	8	8	8	8	8	8	8	8	-	-	-	-	-	
19	5/16"-18 Stainless Steel Jam Nut	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	-	4	4	4	4	-
20	Compressor Wire Harness	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	-	-	-	-	-	
21	Clamp, Worm Drive, 4" Diameter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-
22	Temperature Sensor, Complete	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-
23	Crankcase Heater, Compressor, SR-230V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	
24	Compressor (40k), EE1500	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
25	Compressor (61k), EE2000	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	
26	Compressor (68k), EE2500	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
27	Compressor (83k), EE3000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	
28	Compressor (61k), 3 Ph, EE2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
29	Compressor (68k), 3 Ph, EE2500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
30	Compressor (83k), 3 Ph, EE3000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
31	TXV CB48KZAA B15% 4 Ton	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	TXV CB84KZAA B15% 7 Ton, Adjustable	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	TXV BB1ZE-8-6A B15% 8 Ton, Adjustable	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	Reversing Valve (Optional Chiller)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	Filter Drier, 165S, EE2000-3000	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	Filter Drier, 164S, EE1500	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	Filter Drier, 165S, Bi-Flow, EE2500R, EE3000R	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9" Receiver, EE Models	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
39	Reversing Valve (Optional Chiller), EE Models	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
40	Reducer, 7/8" x 5/8"	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
41	Instructions	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

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## Notes

