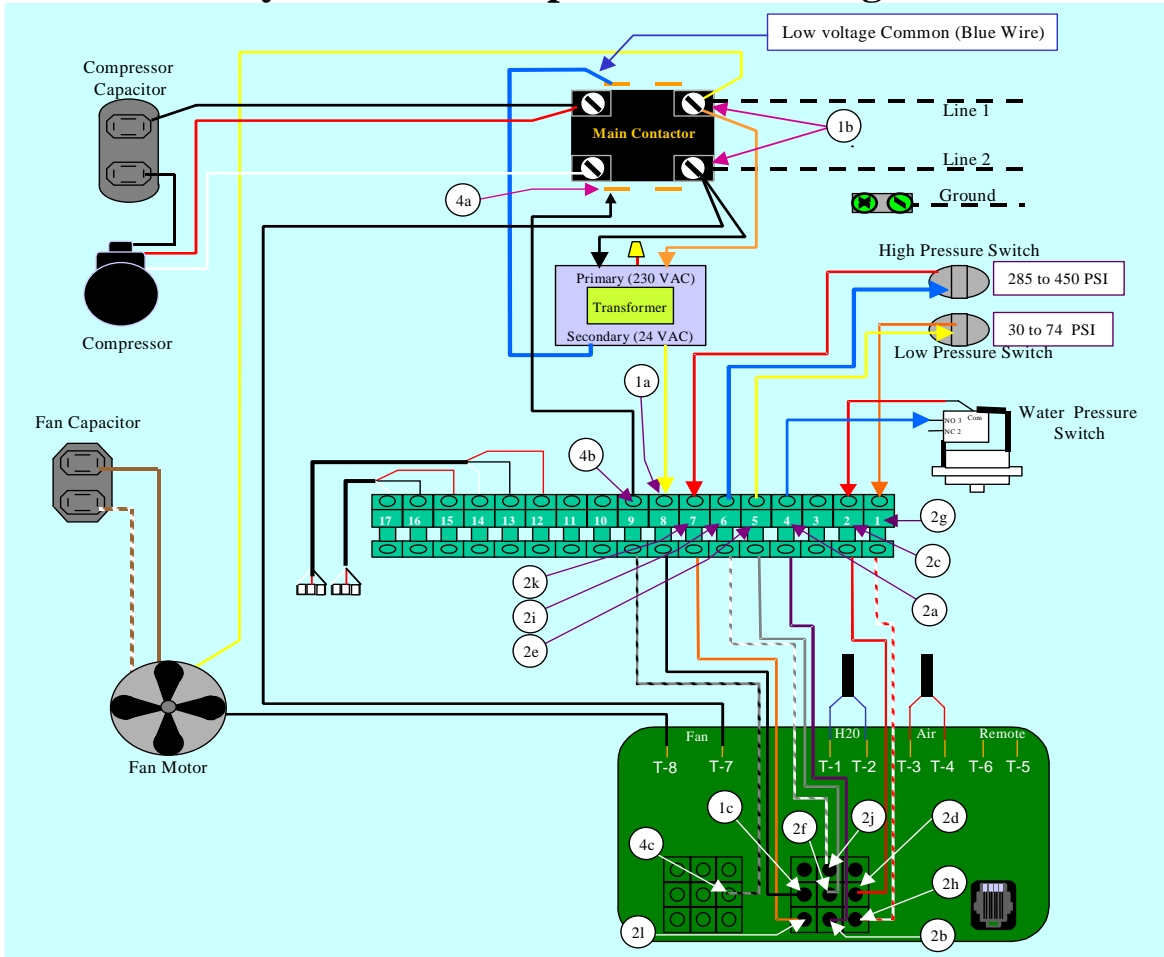
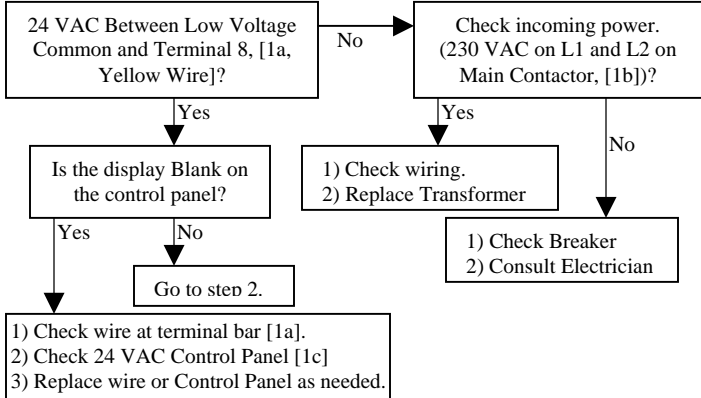


Jandy AE Heat Pump Troubleshooting Guide

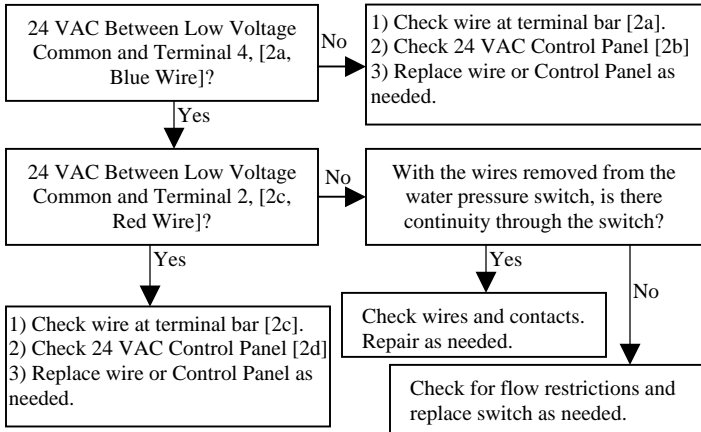


Step 1 – Check Transformer – Set Meter to ACV above 240

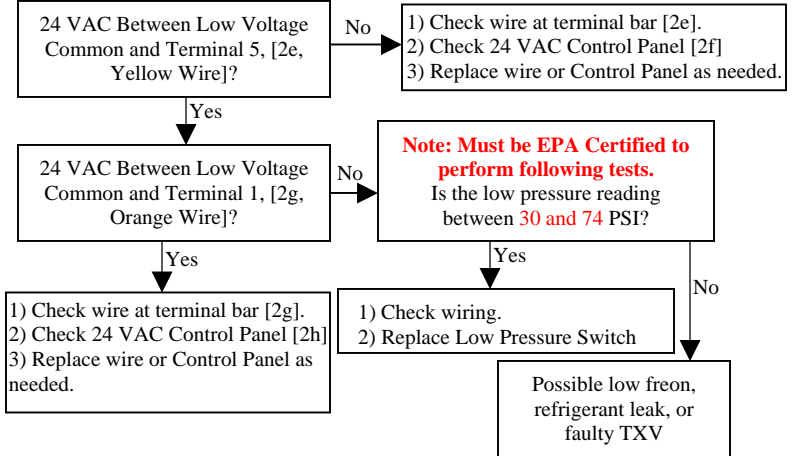


Step 2 – Check Water and Refrigerant Pressure Switches – Set Meter ACV to above 24 (Note: These switches are parallel, and all receive voltage at the same time)

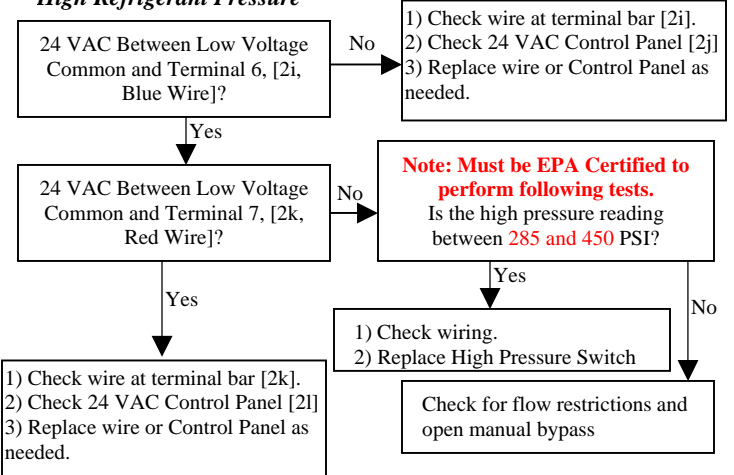
Low H2O



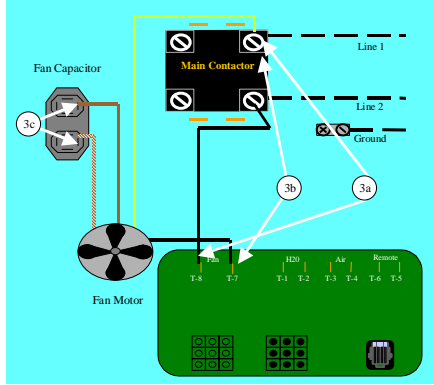
Low Refrigerant Pressure



High Refrigerant Pressure



Step 3 – Fan Testing

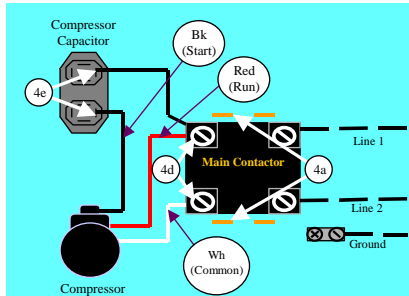


```

    graph TD
      Q1{230 VAC Between L1 on the Main Contactor and T8 on the Control panel [3a]?}
      Q2{230 VAC at L1 and L2 on Main Contactor?}
      Q3{230 VAC Between L1 on the Main Contactor and T7 on the Control panel [3b]?}
      Q4{Capacitor Test. [3c]* Remove Brown and Brown/White wires from Capacitor. Is the Micro-Farad reading 7.5 ± 10%? [3c]}
      A1[Check Wire Connection]
      A2[1) Check Breaker  
2) Consult Electrician]
      A3[1) Confirm Control Panel is calling for heat  
2) Replace Control Panel]
      A4[Replace Fan Motor]
      A5[Replace Capacitor]

      Q1 -- No --> Q2
      Q1 -- Yes --> Q3
      Q2 -- Yes --> A1
      Q2 -- No --> A2
      Q3 -- No --> A3
      Q3 -- Yes --> Q4
      Q4 -- Yes --> A4
      Q4 -- No --> A5
    
```

Step 4 – Compressor Testing



```

    graph TD
      Q1{24 VAC Between Low Voltage Common and Coil on Main Contactor, [4a, Black Wire]?}
      Q2{24 VAC Between Low Voltage Common and Terminal 9 [4b, Black Wire]?(Use Front Diagram)}
      Q3{230 VAC on the secondary side of the contactor? [4d]}
      Q4{240 VAC at Line I and Line 2 on Main Contactor?}
      Q5{Serial Numbers Rev. "I" and earlier. Capacitor Test. [4e]* Remove both black wires from the Capacitor. Is the Micro-Farad reading: AE2000 = 55 ± 10% AE2500 = 60 ± 10% AE3000 = 80 ± 10%}
      Q6{Serial Numbers Rev. "J" and later. Capacitor Test. [4e]* Remove both black wires from the Capacitor. Is the Micro-Farad reading: AE2000, 2500, & 3000 = 80 ± 10%}
      A1[Check Wire Connection]
      A2[1) Check wire at terminal bar [4b].  
2) Check 24 VAC Control Panel [4c]  
3) Replace wire or Control Panel as needed.]
      A3[Replace Main Contactor]
      A4[1) Check Breaker  
2) Consult Electrician]
      A5[Replace Capacitor]

      Q1 -- No --> Q2
      Q1 -- Yes --> Q3
      Q2 -- Yes --> A1
      Q2 -- No --> A2
      Q3 -- No --> Q4
      Q3 -- Yes --> Q5
      Q4 -- Yes --> A3
      Q4 -- No --> A4
      Q5 -- No --> A5
      Q6 -- No --> A5
      Q5 -- Yes --> A6
      Q6 -- Yes --> A6
    
```

*** Note: Discharge capacitor prior to testing.**

Serial Numbers Rev. "I" and earlier.
Capacitor Test. [4e]* Remove both black wires from the Capacitor. Is the Micro-Farad reading:
AE2000 = 55 ± 10%
AE2500 = 60 ± 10%
AE3000 = 80 ± 10%

Serial Numbers Rev. "J" and later.
Capacitor Test. [4e]* Remove both black wires from the Capacitor. Is the Micro-Farad reading:
AE2000, 2500, & 3000 = 80 ± 10%

Disconnect the Red wire and White wire from the secondary side of the Main Contactor and the Black Wire off of the capacitor going to the Compressor. Ohm out these three wires to the compressor.
White(Common) to Red(Run) = 0.3 to 0.8, Black(Start) to White(Common) = 0.8 to 1.1, and Black(Start) to Red(Run) = Sum of the first two.
If the readings are outside the above ohms (± 10%), check the wire connections again and replace the compressor as needed.

Average Refrigerant Pressure Readings

(A qualified, licensed refrigerant technician is required for these tests)

These numbers are based on a water flow of 50 gallons per minute and 80° water temp. The lower the flow and higher the water temperature, the higher the pressure.

Low Refrigerant Pressure Chart

Ambient Air Temp.	Low Pressure Lbs.
40° - 45°	40 - 60
45° - 50°	45 - 65
50° - 55°	50 - 70
55° - 60°	55 - 75
60° - 65°	60 - 80
65° - 70°	65 - 85
70° - 75°	70 - 90
75° - 80°	80 - 95
80° - 85°	85 - 105
85° - 90°	90 - 110
90° - 95°	95 - 115
95° - 100°	100 - 120

High Refrigerant Pressure Chart

Water Temperature	High Pressure Lbs.
50° - 55°	135 - 165
55° - 60°	140 - 170
60° - 65°	145 - 175
65° - 70°	150 - 180
70° - 75°	160 - 190
75° - 80°	180 - 220
80° - 85°	210 - 250
85° - 90°	225 - 265
90° - 95°	230 - 270
95° - 100°	245 - 300

Compressor Running Amp Loads

These numbers are based on a water flow of 50 gallons per minute and 80° water temp. The lower the flow and higher the water temperature, the higher the Amp draw.

Single Phase:
AE2000 = 28.8 Amps
AE2500 = 29.0 Amps
AE3000 = 35.0 Amps

Three Phase:
AE2000 = 16.0 Amps
AE2500 = 20.0 Amps
AE3000 = 21.8 Amps

Testing of the Air and Water temperature sensors becomes necessary when the readings on the Control Panel are different then actual temperatures.

To test these, remove the leads of the sensors from the back of the control panel. (Water = T1 and T2, Air = T3 and T4). Set your meter to test resistance above 20 K Ohms. Using the chart below, compare the actual temperature to the resistance reading to determine if the sensor is Good.

Temperature	Resistance
50° to 54°	19.898 to 17.902 K Ohms
55° to 59°	17.473 to 15.710 K Ohms
60° to 64°	15.314 to 13.823 K Ohms
65° to 69°	13.477 to 12.186 K Ohms
70° to 74°	11.893 to 10.765 K Ohms
75° to 79°	10.502 to 9.483 K Ohms
80° to 84°	9.284 to 8.450 K Ohms
85° to 89°	8.253 to 7.509 K Ohms
90° to 94°	7.335 to 6.685 K Ohms
95° to 99°	6.531 to 5.963 K Ohms
100° to 104°	5.829 to 5.327 K Ohms