

## Models RV, RVE, and RVC Quick Start Guide

This quick start document is intended to help with getting the initial unit startup completed, but does not replace the IOM. Please read the IOM for all safety information and precautions before performing any work on the equipment. Complete pre-start checks and blower start-up prior to this procedure.

### Fans (\*See Model RV/RVE/RVC Installation, Operation and Maintenance Manual)

1. Verify discharge air sensor installation at least three duct diameters downstream of the unit discharge. (Field install)
2. Verify proper phasing of incoming power. See Figure 1 and Figure 2
3. Energize the unit supply and optional exhaust fan:
  - a. Connect jumper R to G, R to Y1, and R to Y2 (if applicable) on the control board (*jumper C to G for RV-10*).
4. Verify blower operation:
  - a. Check rotation: To reverse the rotation, disconnect and lockout the power, then interchange any **two** power leads going to the motor.
  - b. Check motor amp draw: Compare to motor nameplate FLA - record reading in the **\*Start-up Report** and reduce airflow. If amp draw is greater than FLA, record any changes you make as well.
  - c. Check for excessive noise and vibration. If present, check fasteners between motor and impeller, motor and frame, frame and unit block-off, and make sure they are tight. Check for contact between impeller and inlet cone.

### Energy Wheel (If Present, \*see Model RV/RVE/RVC Installation, Operation and Maintenance Manual)

1. Verify energy wheel rotation direction (speed may vary depending on wheel model).
2. Check energy wheel motor amp draw, and compare to motor nameplate FLA and record in **\*Start-up Report**.

### Cooling (Requires minimum 55°F outdoor air temperature) (Repeat for each circuit)




1. Place a refrigeration manifold gauge set onto each refrigeration circuit.
  - a. **Note:** For the high side connection utilize the liquid line service valve.
2. Press the  program key on the Carel controller.
3. Scroll down to **Ctrl Variables**, press the  enter key.
4. Scroll down to **Advanced**, press the enter key.
5. Scroll down to **Login**, press the enter key.
6. Set password to **9998**, press the enter key.
  - a. To change password, press enter when you first enter **Login** screen.
  - b. The cursor will move to underneath the first digit of the password. Scroll up/down to change the value.
  - c. Press enter to move the cursor to the next digit, and repeat the process until all 4 digits are correct. Then press enter one last time.
7. After a moment the controller should put you back into the **Advanced** menu, if not press the  back button.
8. Scroll down to **Manual Overrides**, and press enter.
9. In the manual overrides menu, scroll to **Manual Override Mode**, and check the **Enable Duration** box.
  - a. To check the box, press enter once you reach **Manual Override Mode**. The cursor should appear over the box.
  - b. Press up or down to put an **X** in the box. Press enter again to select the time for which **Override Mode** will be enabled. (Can be changed, but not necessary)
  - c. Press enter again to deselect everything.
10. Scroll to **Unit On Off** in the **Manual Overrides** menu.
11. Press enter and change the **Override** option to **Manual** and the **Value** option to **On**.
12. Press enter again to deselect **Value**.
13. Scroll to **Cooling Ramp 1** in the **Manual Overrides** menu. (*Note:* Be careful, DO NOT do this on either Compressor Override screen).
14. Set the **Override** option to **Manual** and the **Demand** option to **100%**.
15. If hot gas reheat is present in unit, scroll to **Hot Gas Reheat Ramp** in **Manual Overrides** menu, and set **Override** to **Manual** and **Value** to **0%**.
16. Restrict the condensing coil until the high side pressure = 450 psig, not to exceed 525 psig.

Figure 1:  
Phase Monitor Indicator  
Lights Diagnostics




Run	GREEN
Restart Delay	 GREEN
Reverse Delay	 RED
Unbalance/ Single Phase	 RED
High/Low Voltage	RED



Figure 2:  
Typical Phase Monitor

Figure 3:  
Refrigeration Values for Air  
Cooled Condensing Systems

Operating Pressure	107-145 PSI	125 PSI
Discharge Pressure	250-460 PSI	375 PSI
Liquid Pressure	Within 15 PSI of discharge	365 PSI
Superheat	10-18°F	12°F
Compressor Discharge Temp.	120-180°F	135°F
Subcooling	8-20°F	15°F
Cond Air: In	55-95°F	
Cond Air: Out	25-60°F	20°F Delta T

17. Verify operation and rotation of all condensing fans.
  - a. Check that the fan blade doesn't contact the guard around the fan impeller.
  - b. Check amperage of condensing fans while running and ensure they are below FLA. Contact technical support if this is not the case.
18. Allow the cooling system to run unimpeded for 10-15 minutes while system stabilizes.
19. Measure Circuit A's subcooling. (Record in **\*Start-up Report**, including changes you make).
  - a. Proper subcooling is 10-12°F.
  - b. If subcooling is below 10°F and sight glass is not clear, add refrigerant to obtain 10-12°F subcooling.
  - c. If subcooling is above 12°F, remove refrigerant to obtain 10-12°F subcooling.
20. Measure Circuit A's superheat. (Record in **\*Start-up Report**, including changes you make).
  - a. Proper superheat is 7-9°F.
  - b. If superheat is below 7°F, adjust the TXV clockwise.
  - c. If superheat is above 9°F, adjust the TXV counter-clockwise.
21. If circuit is equipped with hot gas reheat, change the reheat percentage to 100% for 5 minutes (reference step 15).
22. Measure the circuit subcooling. (Record in **\*Start-up Report**, including changes you make).
  - a. Proper subcooling is 10-12°F.
  - b. If subcooling is below 10°F and sight glass is not clear, add refrigerant to obtain 10-12°F subcooling.
  - c. If subcooling is above 12°F, remove refrigerant to obtain 10-12°F subcooling.
23. Measure the circuit superheat. (Record in **\*Start-up Report**, including changes you make).
  - a. Proper superheat is 7-9°F.
  - b. If superheat is below 7°F, adjust the TXV clockwise.
  - c. If superheat is above 9°F, adjust the TXV counterclockwise.
24. Change the reheat percentage to 0% and repeat steps 18-20.
25. Measure and record the compressor amp draw and compare to nameplate FLA. (Record in **\*Start-up Report**, including changes you make).

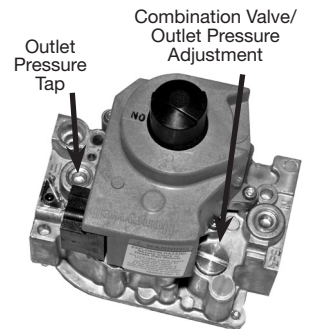


Figure 4: Combined Regulator Valve

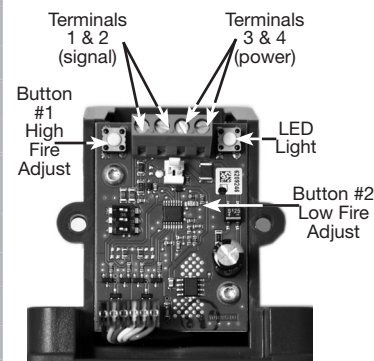


Figure 5: EXA Modulating Gas Valve (with cover removed)

- Heating Start Up (If heating components are present)**
1. Press the program key.
  2. Scroll down to **Ctrl Variables**, press enter key.
  3. Scroll down to **Advanced**, press enter key.
  4. Scroll down to **Login**, enter **9998** as password for service level access. Should then automatically back out of the login screen.
  5. Scroll down and enter the **Manual Overrides** menu.
  6. Press the down key once, and the controller will prompt you to press enter to begin IG furnace commissioning.
  7. Press enter on this screen; You have now entered furnace commissioning.

- Furnace Commissioning**
1. Adjust outlet pressure on the combination valve.
    - a. Connect manometer to outlet pressure tap on combination valve. **See Figure 4**
    - b. Adjust outlet pressure using outlet pressure adjustment screw. **See Figure 4**
  2. Adjust the High Fire setting on the modulating valve.
    - a. Connect manometer to test port on burner manifold.
    - b. Press and hold button #1 until the LED lights solid red on the modulating valve. Release button and observe pressure on manometer. **See Figure 5**
    - c. Adjust modulating valve by pushing button #1 to increase the pressure and button #2 to decrease the pressure. **See Figures 5 & 6**
    - d. Save the High Fire setting by simultaneously pressing button #1 and #2 until the LED turns off.
  3. Adjust Low Fire setting on mod valve
    - a. Press and hold button #2 until LED blinks RED. Release button and observe pressure on manometer. **See Figure 5**
    - b. Adjust low fire setting by pushing button #1 to increase or button #2 to decrease the pressure. **See Figures 5 & 6**
    - c. Save the Low Fire setting by simultaneously pressing button #1 and #2 until the LED turns off.
  4. Repeat steps 2 and 3 for high turndown furnaces.
  5. Continue through commissioning menu to verify proper furnace operation.

Figure 6: Gas Pressure Settings	
Natural Gas	5 in. wg
LP Gas	11.5 in. wg
High Fire Settings	
Natural Gas	3.5 in. wg
LP Gas	10.0 in. wg
Low Fire Settings	
Natural Gas	0.3 in. wg
LP Gas	1.0 in. wg

CUSTOMER SUPPORT 1-866-478-2574.