Installation, Start-Up and Service Instructions

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SAFETY CONSIDERATIONS

Installing, starting up, and servicing air-conditioning equipment can be hazardous due to system pressures, electrical components, and equipment location (roofs, elevated structures, etc.)

Only trained, qualified installers and service technicians should install, start-up, and service this equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained and qualified service personnel.

⚠️ WARNING

Before performing service or maintenance operations on unit, turn off all power switches to unit. Multiple switches may exist. Electrical shock could cause personal injury.

When working on equipment, observe precautions on the literature and on tags, stickers, and labels attached to the equipment.

• Follow all safety codes.
• Wear safety glasses and work gloves.
• Use care in handling, rigging, and setting bulky equipment.

Read these instructions entirely before installing Energy$Recycler. See Fig. 1.

⚠️ WARNING

Never mount the Energy$Recycler on an uninstalled unit or a unit that has not been mounted onto a roof or curb. Turn off all power to rooftop unit prior to installing the Energy$Recycler accessory.
INTRODUCTION

The accessory 62AQ EnergyRecycler unit is designed specifically for application with curb mounted, vertical discharge 3 to 12.5 ton Carrier packaged rooftop units (RTU) models 48/50D,H,L,T004-014 manufactured since August 1992 (serial number 3492G). A new filter rack will be required on units with serial numbers between 3892G and 3494G. The EnergyRecycler unit is installed using one of two accessory Mounting Rail Kits. (See Table 1.)

- Part number CRMTGKIT001A00 for installation of either a 62AQ060 or 62AQ100 EnergyRecycler unit on a 3 to 12.5 ton RTU.
- Part number CRMTGKIT002A00 for installation of either a 62AQ200 or 62AQ300 EnergyRecycler unit on a 7.5 to 12.5 ton RTU.

A hood kit is shipped with the EnergyRecycler unit. The hood kit (see Table 2) is required in order to complete this installation. The hood kit includes the necessary components for both supply-air hood and exhaust hood installation.

Retrofit installations on older Carrier rooftop units and competitive units are possible, but field modifications to mounting arrangement, attachment to the rooftop unit, and wiring will be required. For more information contact your local Carrier representative.

INSTALLATION

Step 1 — Complete Pre-Installation Checks

INSPECT SHIPMENT — File claim with shipment company if shipment is damaged or incomplete. Unpack and check accessory package contents using Tables 1 and 2.

Table 1 — Accessory Mounting Rail Kit Package Contents

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>CRMTGKIT001A00</th>
<th>CRMTGKIT002A00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossrail</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Extender Rail</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Return Air Baffle</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Return Air Side Baffle</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Wire Guard</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>No. 10 Screw</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>1/4-in. Self-Drilling Screw</td>
<td>18</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>PVC Elbow and Nipple</td>
<td>1 of each</td>
<td>1 of each</td>
<td></td>
</tr>
<tr>
<td>Gasket</td>
<td>9 ft</td>
<td>14 ft</td>
<td></td>
</tr>
<tr>
<td>Hose</td>
<td>N/A</td>
<td>42 in.</td>
<td></td>
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</tbody>
</table>

*One each for Supply Air Hood and Exhaust Hood.
†Two each for Supply Air Hood and Exhaust Hood.

Step 2 — Install Mounting Rail Kit

IMPORTANT: The mounting rail kit must be installed on the RTU before the EnergyRecycler unit is rigged. See Fig. 2. Package contents for the Mounting Rail Kit accessory are listed in Table 1.

1. Two small sections on each side of the sheet metal skirt (on the supply side and return side of the RTU) must be removed to install the extender rails. Use the paper template in the back of this installation manual to mark the location (both sides) where the cuts will be made. See Fig. 3.

NOTE: RTU units manufactured after serial number 1499G have starter notches in the skirt to identify location for saw cuts.

2. Using a reciprocating saw or similar tool, saw completely through the skirt from top to bottom on each side of the unit. See Fig. 3. Use care to avoid damaging unit end panels.

3. Remove the three screws from the RTU that are holding the corner piece of the skirt in place. Save screws for later use. Remove and discard corner piece sections exposing open ends of rooftop unit skirt.

![Fig. 1 — 62AQ EnergyRecycler](image1)
![Fig. 2 — EnergyRecycler Attached to RTU](image2)

![Table 2 — Hood Kit Package Contents](table2)
NOTE: Keep remaining skirt in place after removing corner piece sections.

4. Slide the extender rails into the ends of the RTU base rails (both sides). Ensure the 2 screw holes on the extender rails line up with the existing holes in the base rails. Use the screws saved from Step 3 to secure the extender rails in place.

5. Assemble the telescoping cross rails if installing part no. CRMTGKIT001A00. Slide the two telescoping cross rails into the extender rails (see Fig. 4) and secure with two no. 10 screws (provided in kit) on each end rail to the matching extender rail screw holes. The telescoping rails have several different holes so that they can be compatible with the different RTU sizes.

NOTE: Part no. CRMTGKIT00200 has one non-telescoping cross rail. See Fig. 5.

Fig. 3 — Removing Skirt Sections

Fig. 4 — Rail Mounting Kit, P/N CRMTGKIT001A00
(3 to 12½ Ton Rooftop Units)
Step 3 — Rig Accessory Energy$Recycler Unit

Keep Energy$Recycler unit upright and do not drop. Spread bars are not required if top crating (Fig. 6) is left on unit. See Table 3 and Fig. 7 and 8 for unit weight, physical data, and dimensions.

⚠️ CAUTION

Energy$Recycler unit is heavy. Take proper safety precautions to avoid personal injury or unit damage when moving the unit.

⚠️ CAUTION

Be sure all unit panels are securely in place prior to rigging.

Fig. 5 — Rail Mounting Kit, P/N CRMTGKIT002A00 (7½ to 12½ Ton Rooftop Units)

Fig. 6 — Packaging Assembly
Fig. 7 — Base Unit Dimensions, 62AQ060 and 62AQ100
Fig. 8 — Base Unit Dimensions, 62AQ200 and 62AQ300
Table 3 — Physical Data

<table>
<thead>
<tr>
<th>UNIT</th>
<th>060</th>
<th>100</th>
<th>200</th>
<th>300</th>
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<tbody>
<tr>
<td>OPERATING WEIGHT (lb)</td>
<td>225</td>
<td>240</td>
<td>451</td>
<td>493</td>
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<tr>
<td>Accessory Mounting Kit (lb)</td>
<td>30</td>
<td>30</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>SHIPPING WEIGHT (lb)</td>
<td>245</td>
<td>260</td>
<td>487</td>
<td>529</td>
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| TXV — Thermostatic Expansion Valve |
|------|-----|-----|-----|-----|
| COMPRESSOR |
| Quantity | 1 | 1 | 1 | 1 |
| Oil (cc) | 550 | 550 | 1922 | 1922 |
| Suction Line Diameter (in.) | \(\frac{3}{16}\) | \(\frac{1}{2}\) | \(\frac{3}{16}\) | \(\frac{3}{16}\) |
| Discharge Line Diameter (in.) | \(\frac{3}{16}\) | \(\frac{1}{2}\) | \(\frac{1}{2}\) | \(\frac{1}{2}\) |
| Liquid Line Diameter (in.) | \(\frac{3}{8}\) | \(\frac{3}{8}\) | \(\frac{3}{8}\) | \(\frac{3}{8}\) |

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<td>Operating Charge (lbs)</td>
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<th>EVAPORATOR COIL (SUPPLY COIL)</th>
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<tr>
<td>High-Efficiency Enhanced Copper Tubes, Lanced Aluminum Fins</td>
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<tr>
<td>TXV + Acutrol™ Feed Device</td>
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<tr>
<td>Number of Circuits</td>
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<tr>
<td>Rows...Fins/in.</td>
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<tr>
<td>Total Face Area (sq ft)</td>
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<td>Size (Diameter x Width)</td>
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<td>Nominal Cfm</td>
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<td>Motor Frame</td>
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<td>Motor Bearing Type</td>
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<td>Maximum Fan Rpm</td>
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<tr>
<td>Nominal Motor Shaft Diameter (in.)</td>
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<tr>
<td>Type</td>
</tr>
<tr>
<td>Motor Pulley</td>
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<td>Fan Pulley</td>
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<td>Belt</td>
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<td>Size (Diameter x Width)</td>
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<td>Nominal Cfm</td>
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<td>Motor Bearing Type</td>
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<tr>
<td>Maximum Fan Rpm</td>
</tr>
<tr>
<td>Nominal Motor Shaft Diameter (in.)</td>
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<tr>
<td>Type</td>
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<table>
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<tr>
<th>CONDENSER COIL (EXHAUST COIL)</th>
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<tbody>
<tr>
<td>High-Efficiency Enhanced Copper Tubes, Lanced Aluminum Fins</td>
</tr>
<tr>
<td>TXV + Acutrol™ Feed Device</td>
</tr>
<tr>
<td>Number of Circuits</td>
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<tr>
<td>Rows...Fins/in.</td>
</tr>
<tr>
<td>Total Face Area (sq ft)</td>
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<table>
<thead>
<tr>
<th>HIGH PRESSURE SWITCH (psig)</th>
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<td>Cutout (Auto.)</td>
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<table>
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<tr>
<th>OUTDOOR-AIR INLET SCREEN</th>
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<table>
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<tr>
<th>SUPPLY AND EXHAUST AIR FILTERS</th>
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</thead>
<tbody>
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<td>Quantity...Size (in.)</td>
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TXV — Thermostatic Expansion Valve

Step 4 — Attach the Energy$Recy$er to the Rooftop Unit (RTU)

IMPORTANT: Before attaching the Energy$Recy$er to the rooftop unit, remove the rooftop unit’s condensate trap (if previously installed) by turning it counterclockwise and unscrewing it. Save condensate trap for later use. When the rooftop unit and the Energy$Recy$er are connected, the rooftop equipment’s condensate drain line will drain into the Energy$Recy$er’s condensate pan.

1. Remove the screws on each end of the bottom wooden skids attached to the end of the Energy$Recy$er unit. See Fig. 7-9.
2. Remove and discard the wooden skid by pulling it away from the unit.

PREPARE THE RETURN AIR SECTION OF RTU TO ACCEPT THE ENERGY$RECY$ER UNIT (Fig. 10 and 11)

1. For RTU unit sizes 004-007, remove the return air duct cover. For RTU sizes 008-014, refer to Fig. 10 and 11 for dimensions of piece to remove from the lower portion of the return air duct cover of the RTU. Drill 2 pilot holes along the bottom edge of remaining piece of the return air duct cover of the RTU, as shown in Fig. 10 and 11. Save the top piece for reinstallation on the RTU.
2. Place gasket material (provided in rail mounting kit) around the perimeter of the return opening of the RTU. See Fig. 4, 5, 10 and 11.

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not overlap gasket material, as it will cause water leaks.</td>
</tr>
</tbody>
</table>
3. Remove the rooftop equipment’s filter rack assembly by removing the screws that hold the rack in place. Pull assembly out of cabinet and set aside.

4. Position the Energy$Recycler unit to the rooftop equipment by setting the Energy$Recycler unit’s filter access side base rails over the newly installed extended rails on the filter access side of the rooftop unit. See Fig. 12-14.

NOTE: The base rail on all Energy$Recycler units will project 2 in. over the extended mounting rail on the filter access side. See Fig. 13 and 14. The base rail opposite the filter access side on the 62AQ200 and 62AQ300 models will project 2 in. over the extender mounting rail when installed on a large rooftop unit. See Fig. 14.

5. Pull the wire harness from the Energy$Recycler unit directly through the rooftop unit’s horizontal return air duct opening, sliding both units together. Plug 12-pin rooftop unit plug into plug from Energy$Recycler unit.

6. With the Energy$Recycler unit positioned, gently pull the insulation back from the rooftop unit exposing the existing engagement holes.

7. Fasten the units together with the 1/4-in. self-drilling screws by drilling into the Energy$Recycler unit through the engagement holes around the perimeter of the RTU’s duct cover opening. On RTU unit sizes 008-014, two of the holes along the bottom edge of the remaining piece of the return air duct cover should have been drilled in Step 1, when the return air duct cover was modified. See Fig. 10 and 11.

8. Reinstall the filter rack frame in the rooftop unit. Refasten the screws to hold the filter rack in place.

9. Reinstall the filters.

10. Assemble return air baffle assembly per Fig. 15 and 16. Attach return air baffle to side baffles with screws provided. The wire guard has 2 wire legs that slide into return air baffle predrilled holes, on top.

11. Mount return air baffle assembly into the return air section of the rooftop equipment as shown in Fig. 15 and 16. Secure with screws provided.

NOTE: Return air baffle assembly prevents circulation of air through the Energy$Recycler unit.
Step 5 — Assemble and Mount Supply-Air Hood and Outside Cooling and Heating Thermostats for the Energy$Recycler and Set Optional Supply-Air Fan Speed — The hood kit supplied with the Energy$Recycler unit is needed to complete this installation. See Table 2 and Fig. 17. The Energy$Recycler unit's supply air hood installs around its motorized damper inlet.

NOTE: Mount the hood sides to the Energy$Recycler unit first, and then the hood top for easier installation. The thermostats are shipped factory-wired and taped behind the damper blade of the 62AQ Energy$Recycler unit. Knobs and screws are in hood package.

1. Assemble and mount supply air hood as shown in Fig. 17.
2. Discard the tape that holds the thermostats behind the damper plates. Mount thermostats to the hood sides of the Energy$Recycler unit into the holes provided, with thermostat terminals facing up. See Fig. 17. Mount outside cooling set point thermostat part number HH22HA060 (white label) on the left side of the hood. See Fig. 17.
3. Mount the outside heating thermostat part number HH22HA065 (red label) on the right side of the hood. See Fig. 17.
Fig. 15 — Return-Air Baffle (62AQ060, 62AQ100 Unit Shown)

Fig. 16 — Return-Air Baffle (62AQ200, 62AQ300 Unit Shown)
4. From the outside of the unit’s side panels fasten the thermostat(s) with two mounting screws, with the quick connect terminals face up. See Fig. 17.

5. Install thermostat knobs (provided in kit). See Fig. 17.

6. Set supply air quantity (on units with optional factory-installed supply air fan (GA) or field-installed accessory supply air fan kit [CRFANKIT001-006A00]). Select the fan speed and damper position to obtain desired cfm (see fan performance curve data, Fig. 18-35). Relocate damper stops to the desired position on the damper support rail and adjust the fan speed by relocating the wire on the supply fan motor terminal block. Factory set position is 45 degrees for the damper position, and medium speed for the motor. Relocate stops to top hole for 30 degrees, bottom hole for 60 degrees, and remove stops for 90 degrees (see Fig. 17).

7. Install the aluminum filter screen and end cap with screws along the top, as shown in Fig. 17.

Step 6 — Mount the Barometric Relief Damper and Exhaust Hood Assembly and Adjust Exhaust Fan — The hood kit supplied with the Energy$Recycler unit is needed to complete this installation. The exhaust air hood (that includes the barometric relief damper) must be assembled and installed on the 62AQ unit per the instructions below. See Fig. 36.

1. Install the barometric relief damper onto the Energy$Recycler by mounting the hinge with 2 screws then sliding in the hinge pin. See Fig. 36.

2. Install damper limiter for 30, 45, or 60 degree angles. Limiter pin not required for 90-degree setting (set to the desired position based on CFM requirements and fan speed). See Fig. 36. Fan speed is adjusted by relocating wires on fan terminal blocks. On the 62AQ300 size, adjust fan speed by changing the pulley setting.

3. Adjust exhaust fan speed (62AQ300 only). Adjust condenser/exhaust fan speed to meet application conditions. Refer to Fig. 35.

To change fan speeds:
   a. Shut off unit power supply.
   b. Loosen belt by loosening fan motor mounting nuts.
   c. Loosen movable pulley flange setscrew.
   d. Screw movable flange toward fixed flange to increase speed and away from fixed flange to decrease speed. Increasing fan speed increases load on motor.
   e. Set movable flange at nearest keyway of pulley hub and tighten setscrew.

To align fan and motor pulleys:
   a. Loosen fan pulley setscrews.
   b. Slide fan pulley along fan shaft.
   c. Make angular alignment by loosening motor from mounting plate.

To adjust belt tension:
   a. Loosen fan motor mounting nuts.
   b. Slide motor mounting plate away from fan scroll for proper belt tension (1/2-in. deflection with one finger) and tighten mounting nuts.
   c. Adjust bolt and nut on mounting plate to secure motor in fixed position.

4. Loosen compressor bolts and remove shipping blocks from under compressor on the 62AQ060 and 62AQ100 sizes only.

5. Install exhaust hood as shown in Fig. 36.

6. Install wire guard as shown in Fig. 36.

⚠️ WARNING

Never operate the unit without the wire guard in place.
Fig. 18 — 62AQ060 Supply Fan Performance Curve, 208 Volts
Fig. 19 — 62AQ060 Supply Fan Performance Curve, 230 Volts
Fig. 20 — 62AQ060 Exhaust Fan Performance Curve, 208 Volts
Fig. 21 — 62AQ060 Exhaust Fan Performance Curve, 230 Volts
Fig. 22 — 62AQ100 Supply Fan Performance Curve, 208 Volts
Fig. 23 — 62AQ100 Supply Fan Performance Curve, 230 Volts
Fig. 24 — 62AQ100 Exhaust Fan Performance Curve, 208 Volts
Fig. 26 — 62AQ200 Supply Fan Performance Curve, 208 Volts
Fig. 27 — 62AQ200 Supply Fan Performance Curve, 230 Volts
Fig. 28 — 62AQ200 Supply Fan Performance Curve, 460 Volts
Fig. 29 — 62AQ200 Exhaust Fan Performance Curve, 208 Volts
Fig. 30 — 62AQ200 Exhaust Fan Performance Curve, 230 Volts
Fig. 31 — 62AQ200 Exhaust Fan Performance Curve, 460 Volts
Fig. 32 — 62AQ300 Supply Fan Performance Curve, 208 Volts
Fig. 33 — 62AQ300 Supply Fan Performance Curve, 230 Volts
Fig. 34 — 62AQ300 Supply Fan Performance Curve, 460 Volts
Fig. 35 — 62AQ300 Exhaust Fan Performance Curve, 208, 230, 460 Volts
Step 7 — Set the Outdoor Cooling and Heating Thermostats

COOLING — During the unoccupied period, the economizer mode of operation is used as the first stage of cooling. When the outside air temperature is below the cooling thermostat set point, the outside air will be used for first stage cooling.

HEATING — The heating thermostat should be adjusted to the second stage balance point (heat output of the Energy$Recycler plus the heat output of the first stage of the rooftop unit equals building load at this temperature). Above this setting, first stage heating will be the 62AQ unit and second stage will be the first stage of the rooftop unit. Below this point, first stage heating will be the 62AQ unit plus first stage heating of the rooftop unit. The second stage will be the second stage of the rooftop unit.

Step 8 — Install Condensate Lines and Fittings on Rooftop Unit

62AQ060 AND 62AQ100 ENERGY$RECYCLER UNITS
1. Remove control access panel from the Energy$Recycler unit (see Fig. 7).
2. Install the PVC nipple and elbow (from the accessory Mounting Rail kit) in the female 3/4-in. condensate drain outlet of the rooftop unit. Condensate from the rooftop unit will drain through this fitting directly into the Energy$Recycler unit’s lower coil condensate pan.

62AQ200 AND 62AQ300 ENERGY$RECYCLER UNITS
1. Remove control access panel and the supply blower access panel from the Energy$Recycler unit. See Fig. 8.
2. Attach the threaded end of the 3/4-in. nipple (shipped in the accessory Mounting Rail kit) into the RTU.
3. Slide one end of the 3/4-in. tubing through the hole in the coil mounting bracket. Attach to the barbed end of the nipple.
4. Connect the opposite end of the 3/4-in. tubing to one end of the elbow, ensuring that the open end of the elbow will drain properly into the condensate pan.

NOTE: The condensate from the rooftop unit along with the condensate from the upper coil will drain out of the Energy$Recycler unit. The 62AQ condensate outlet must have a field-fabricated P-trap installed. Install the trap at least 4 in. deep and protect against freeze-up. If drain line is installed downstream from the external trap, pitch the line away from the rooftop unit at 1 in. per 10 ft of run. Do not use a pipe smaller than the unit connection.

Step 9 — Make Electrical Connections

**WARNING**

Unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur. This ground may consist of electrical wire connected to unit ground wire in power compartment, or conduit approved for electrical ground when installed in accordance with NEC (National Electrical Code) ANSI/NFPA (American National Standards Institute/National Fire Protection Association) latest revision, and local electrical codes. Failure to follow this warning could result in the installer being liable for personal injury of others.

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*Fig. 36 — Barometric Exhaust Air Hood Assembly*
Perform the following steps:

1. For the combination load ratings for minimum circuit amps (MCA) and maximum overcurrent protective device (MOCP), add “X” amps, found on the 230-v tap on the transformer and relocating it to the 208-v tap on the transformer.

   Refer to unit label diagram for additional information. Pigtailed wires are provided for field wire connections. Use UL (Underwriters’ Laboratories) approved connector.

   When installing units, provide a disconnect per the NEC.

   All field wiring must comply with the NEC and local requirements.

   Install field wiring as follows:
   1. Connect conduit to side panel opening.
   2. Splice power lines to pigtailed in splice compartment.

   During operation, voltage to compressor terminals must be within range indicated on unit nameplate (also see Tables 4A and 4B).

INSTALLING ACCESSORY 62AQ ON A COMMON POWER SUPPLY WITH ALL RTUs (EXCEPT RTU SIZE 014 230-V UNITS, AND 230-V 62AQ ON A 460-V POWER SUPPLY)

Perform the following steps:

1. For the combination load ratings for minimum circuit amps (MCA) and maximum overcurrent protective device (MOCP), add “X” amps, found on the 62AQ nameplate and Table 4B, to the values of MCA and MOCP for the RTU. If the calculated new MOCP is nonstandard, select the next lowest size for the combined MOCP rating. If the combined MOCP rating is now less than the MCA, select the next higher size for the MOCP.

2. Provide a disconnect for the 62AQ unit:
   - If the new MOCP is less than or equal to 60 amps, a common non-fused disconnect for the 62AQ and RTU may be used provided that: 1) the wire size to the 62AQ unit is at least 20 amps; and 2) the disconnect size is at least equal to the disconnect size marked on the RTU plus Y marked on the 62AQ nameplate and Table 4B.
   - If the MOCP is greater than 60 amps, provide a FUSED DISCONNECT for the 62AQ unit sized per the 62AQ unit nameplate and Table 4B.

3. Provide a disconnect for the RTU:
   - If the new MOCP is less than or equal to 60 amps, a common non-fused disconnect sized per Step 2 above may be used for the 62AQ and RTU.
   - If the new MOCP is greater than 60 amps and the old MOCP was less than or equal to 60 amps, a FUSED DISCONNECT no greater than 60 amps must be provided for the RTU.
   - If the old overcurrent protection device is greater than 60 amps, a non-fused disconnect sized per nameplate marking maybe used for the RTU.

INSTALLING ACCESSORY 62AQ ON A COMMON POWER SUPPLY WITH ALL SIZE 014 230-V RTUs

Perform the following steps:

1. For the combination load ratings for minimum circuit amps (MCA) and maximum overcurrent protective device (MOCP), add “X” amps, found on the 62AQ unit nameplate and Table 4B, to the values of MCA and MOCP for the RTU. If the calculated new MOCP is nonstandard, select the next lowest size for the combined MOCP rating. If the combined MOCP rating is now less than the MCA, select the next higher size for the MOCP.

2. Provide a FUSED DISCONNECT for the 62AQ unit sized per the 62AQ nameplate and Table 4B.

3. Provide a disconnect for the RTU:
   - If installing on units without electric heat a FUSED DISCONNECT sized per nameplate is required for the RTU.
   - If installing on units with electric heat, a non-fused disconnect sized per nameplate marking may be used for the RTU.

INSTALLING ACCESSORY 62AQ SIZES 060 AND 100 (230 V) ON A COMMON POWER SUPPLY WITH ALL 460-V RTUs

Perform the following steps:

1. For the combination load ratings for minimum circuit amps (MCA) and maximum over current protective device (MOCP), add “X” amps, found on the 62AQ unit nameplate and Table 4B, to the values of MCA and MOCP for the RTU. If the calculated new MOCP is nonstandard, select the next lowest size for the combined MOCP rating. If the combined MOCP rating is now less than the MCA, select the next higher size for the MOCP.

2. Provide a disconnect for the 62AQ unit:
   - If the new MOCP is less than or equal to 30 amps, a common non-fused disconnect for the 62AQ and RTU may be used provided that: 1) the wire size to the 62AQ is at least 10 amps; and 2) the disconnect size is at least equal to the disconnect size marked on the RTU plus Y marked on the 62AQ nameplate and Table 4B.
   - If the MOCP is greater than 30 amps, provide a FUSED DISCONNECT for the 62AQ unit sized per the 62AQ unit nameplate and Table 4B.

3. Install a 460 to 230 stepdown transformer (part number HT01AH853) downstream of the 62AQ unit.

4. Provide a disconnect for the RTU:
   - If the new MOCP is less than or equal to 30 amps, a common non fused disconnect sized per Step 2 above may be used for the 62AQ and RTU.
   - If the new MOCP is less than or equal to 60 amps, a non-fused disconnect sized per nameplate marking may be used for this unit.
   - If the new overcurrent protection device is greater than 60 amps, and the old overcurrent protection device was less than 60 amps, a FUSED DISCONNECT no greater than 60 amps must be provided for this unit.
   - If the old overcurrent protection device is greater than 60 amps, a non-fused disconnect sized per nameplate marking maybe used for this unit.
periods. Different heating and cooling set points and times are
accommodated with separate set points for occupied and unoccupied
periods. The Light Commercial Thermidistat must be connected to the
dehumidify input terminals on the 62AQ EnergyRecycler. See Table 4B.

Additionally, if the RTU is equipped with optional MoistureMi$er™
dehumidification accessory, a relay in the 62AQ with factory-installed
supply fans option or field-installed accessory as shown below:

Table 4A — Electrical Data — 62AQ

<table>
<thead>
<tr>
<th>UNIT SIZE 62AQ</th>
<th>V-PH-Hz</th>
<th>VOLTAGE RANGE</th>
<th>COMRESSOR</th>
<th>FANS MOTOR</th>
<th>POWER SUPPLY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
<td>RLA</td>
<td>LRA</td>
<td>FLA</td>
</tr>
<tr>
<td>060</td>
<td>208/230-1-60</td>
<td>187</td>
<td>254</td>
<td>7</td>
<td>29</td>
</tr>
<tr>
<td>060GA†</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>208/230-1-60</td>
<td>187</td>
<td>254</td>
<td>10.5</td>
<td>38</td>
</tr>
<tr>
<td>100GA†</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>208/230-1-60</td>
<td>187</td>
<td>254</td>
<td>17.9</td>
<td>87</td>
</tr>
<tr>
<td>200GA†</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>208/230-3-60</td>
<td>187</td>
<td>254</td>
<td>13.5</td>
<td>110</td>
</tr>
<tr>
<td>200GA†</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>208/230-3-60</td>
<td>187</td>
<td>254</td>
<td>17.2</td>
<td>137</td>
</tr>
<tr>
<td>300GA†</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>460-3-60</td>
<td>414</td>
<td>506</td>
<td>6.4</td>
<td>54</td>
</tr>
<tr>
<td>300GA†</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

†62AQ with factory-installed supply fan option or field-installed accessory as shown below:

<table>
<thead>
<tr>
<th>UNIT SIZE</th>
<th>V-PH (60 HZ)</th>
<th>ACCESSORY FAN KIT *</th>
</tr>
</thead>
<tbody>
<tr>
<td>060</td>
<td>208/230-1</td>
<td>CRFANKIT001A00</td>
</tr>
<tr>
<td>100</td>
<td>208/230-1</td>
<td>CRFANKIT002A00</td>
</tr>
<tr>
<td>200</td>
<td>208/230-3</td>
<td>CRFANKIT003A00</td>
</tr>
<tr>
<td>300</td>
<td>208/230-3</td>
<td>CRFANKIT005A00</td>
</tr>
</tbody>
</table>

Table 4B — Electrical Data — 62AQ MOCP Correction

<table>
<thead>
<tr>
<th>UNIT SIZE 62AQ</th>
<th>INSTALLATION COMMON POWER SUPPLY</th>
<th>62AQ</th>
<th>230 Volt RTU</th>
<th>460 Volt RTU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V-Ph (60 Hz)</td>
<td>X</td>
<td>Y</td>
<td>X</td>
</tr>
<tr>
<td>060</td>
<td>208/230-1</td>
<td>9.1</td>
<td>11.0</td>
<td>4.1</td>
</tr>
<tr>
<td>060GA*</td>
<td>208/230-1</td>
<td>12.8</td>
<td>15.0</td>
<td>6.4</td>
</tr>
<tr>
<td>100</td>
<td>208/230-1</td>
<td>15.1</td>
<td>17.0</td>
<td>7.6</td>
</tr>
<tr>
<td>200</td>
<td>208/230-1</td>
<td>22.1</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td>200GA†</td>
<td>208/230-3</td>
<td>21.9</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>208/230-3</td>
<td>26.3</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>300GA†</td>
<td>460-3</td>
<td>23.9</td>
<td>27.0</td>
<td>12.2</td>
</tr>
</tbody>
</table>

*62AQ with factory-installed supply fan option or field-installed accessory as shown below:

<table>
<thead>
<tr>
<th>UNIT SIZE</th>
<th>V-PH (60 HZ)</th>
<th>ACCESSORY FAN KIT *</th>
</tr>
</thead>
<tbody>
<tr>
<td>060</td>
<td>208/230-1</td>
<td>CRFANKIT001A00</td>
</tr>
<tr>
<td>100</td>
<td>208/230-1</td>
<td>CRFANKIT002A00</td>
</tr>
<tr>
<td>200</td>
<td>208/230-3</td>
<td>CRFANKIT003A00</td>
</tr>
<tr>
<td>300</td>
<td>208/230-3</td>
<td>CRFANKIT005A00</td>
</tr>
</tbody>
</table>

Light Commercial Thermidistat Accessory

GENERAL — A Light Commercial Thermidistat Accessory (part number TSTATCCPLH01-B) is available for each EnergySRecycler unit for field installation to control the EnergySRecycler. See Fig. 37.

The Light Commercial Thermidistat is a 7-day programmable, wall-mounted, low-voltage control which combines temperature and humidity control in a single unit. It provides separate set points for heating and cooling, and adds dehumidification with separate set points for occupied and unoccupied periods. Different heating and cooling set points and times are programmable for up to 4 periods per day and 7 days per week. The dehumidification output provides direct control of humidity. During power loss an internal memory stores programs and settings for unlimited time, and the clock continues to run for at least 8 hours. Batteries are not used.

POWER — Note that this control does not require batteries and is not “power stealing.” It does require 24 vac (R and C terminals) from the RTU’s low-voltage transformer to be connected to it for proper operation. The control will not operate without these 2 connections. See Fig. 38.

DEHUMIDIFICATION EQUIPMENT AND CONNECTIONS — The dehumidification output terminals on the Light Commercial Thermidistat must be connected to the dehumidification input terminals on the 62AQ EnergySRecycler. Additionally, if the RTU is equipped with optional MoistureMi$er™ Dehumidification accessory, a relay in the EnergySRecycler (HM) energizes the MoistureMi$er solenoid to activate the enhanced dehumidification mode. See Light Commercial Thermidistat installation instructions for more information on these and other applications.
Step 1 — Select Light Commercial Thermidistat Location

Light Commercial Thermidistat should be mounted:
- Approximately 5 ft (1.5 m) from floor.
- Close to or in a frequently used room, preferably on an inside partitioning wall.
- On a section of wall without pipes or ductwork.

The Light Commercial Thermidistat should NOT be mounted:
- Close to a window, on an outside wall, or next to a door leading to the outside.
- Exposed to direct light and heat from a lamp, sun, fireplace, or other temperature-radiating object that may cause a false reading.
- Close to or in direct airflow from supply registers and return-air registers.
- In areas with poor air circulation, such as behind a door or in an alcove.

Step 2 — Set DIP Switches — There is a 4-section DIP switch within the Light Commercial Thermidistat which must be properly set by the installer. It is easiest to set these 4 switches before the Light Commercial Thermidistat is mounted to the wall, so complete the following steps first:

1. Open hinged Light Commercial Thermidistat cover.
2. Remove cover completely by gently snapping it apart at hinge.
3. Switches are located in upper right corner of circuit board. To change switch position, use corner of a small screwdriver to slide switch to opposite position.
4. After switches have been set, do not reassemble the 2 halves. The rear plastic will be first mounted to wall.

| SWITCH 1 — Not used |
| SWITCH 2 — Not used |

SWITCH 3 — SMART/CONVENTIONAL RECOVERY — Selects between conventional or smart recovery from setback. Conventional recovery changes to new set point at preprogrammed time. Smart recovery, which is active in both heating and cooling, starts selected cycle 90 minutes earlier and smoothly adjusts set point so room will arrive at programmed temperature at programmed time.

NOTE: The occupied output is only energized at the preprogrammed time.

To Set:
- OFF — for smart recovery. This is factory default.
- ON — for conventional recovery.

SWITCH 4 — INSTALLER TEST OFF/ON — Selects a special installer test mode that assists with checkout and troubleshooting. See Step 5 — Conduct Light Commercial Thermidistat Start-Up and Checkout.

To Set:
- OFF — for normal operation. (Factory default setting.)
- ON — for Installer Test mode.

Step 3 — Install Light Commercial Thermidistat

Before installing Light Commercial Thermidistat, turn off all power to RTU and 62AQ units. There may be more than one power disconnect. Electrical shock can cause personal injury or death. Install lockout tags on disconnects.

1. Turn off all power to equipment. Tag disconnect.
2. If an existing thermostat is being replaced:
   a. Remove existing thermostat from wall.
   b. Disconnect wires from existing thermostat, one at a time.
   c. As each wire is disconnected, record wire color and terminal marking.
   d. New or additional wire may be needed to accommodate added humidity outputs transformer common.
   e. Discard or recycle old thermostat.

Mercury is a hazardous waste and MUST be disposed of properly.

3. Route wires through large hole in rear plastic. Level rear plastic (separated from front plastic in Step 2 — Set DIP Switches, above). Level rear plastic against wall (for aesthetic value only — Light Commercial Thermidistat need not be leveled for proper operation) and mark wall through 2 mounting holes.
4. Drill two $\frac{3}{16}$-in. mounting holes in wall where marked.
5. Secure rear plastic to wall with 2 screws and anchors provided. Additional mounting holes are available for more secure mounting if needed. Make sure all wires extend through hole in mounting base.
6. Adjust length and routing of each wire to reach proper connector block and terminal on mounting base with $\frac{1}{4}$-in. extra length. Strip only $\frac{1}{4}$ in. of insulation from each wire to prevent adjacent wires from shorting together when connected.
7. Match and connect equipment wires to proper terminals of each connector block. Remember R and C must be connected for proper operation (see Fig. 38).
CAUTION

Improper wiring or installation may damage Light Commercial Thermodistat. Check to make sure wiring is correct before proceeding with installation or turning on power. Refer to wiring schematic in Troubleshooting section of this manual.

8. Push any excess wire into wall and against rear plastic. Seal hole in wall to prevent air leaks. Leaks can affect operation.
9. Reattach Light Commercial Thermodistat body to mounting base by first reattaching hinge.
11. Turn on power to equipment.

On power up, all display segments will light for 2 seconds. For the next 8 seconds, a 2-digit code appears on LED display that identifies Light Commercial Thermodistat configuration:

CP — Commercial Product

Step 4 — Set Light Commercial Thermodistat Configuration (Fig. 39 and 40) — Configuration options, like DIP switch settings, are intended to be selected at installation and normally are not modified by the owner. These options must be made as part of the installation. A special procedure allows entry into the Configuration mode. While in configuration mode, up to 10 selections can be made. A description of each selection and how to use the Configuration mode are as follows:

CONFIGURATION OPTIONS — SUMMARY
Option 1 — Anticipator adjustment
Option 2 — Clean filter timer adjustment
Option 3 — English/Metric selection
Option 4 — Fan (G) ON with W selection
Option 9 — Holiday heat set point
Option 13 — Room temperature offset adjustment
Option 11 — Holiday humidity set point
Option 15 — Heat cool deadband adjustment
Option 21 — Keyboard lock

TO ENTER CONFIGURATION MODE — Press and hold FAN button for approximately 10 seconds until COOL set point display indicates a flashing “01”. The Light Commercial Thermodistat is now in Configuration mode. It will automatically exit this mode if no button is pressed for 3 minutes. Pressing HOLD End button will exit the Configuration mode immediately.

WHILE IN CONFIGURATION MODE — The upper small (COOL set point) display indicates selected option number and large display indicates selection made within that option. One of these will be flashing. The up and down set point buttons are used both to move between available options and to make selection for each option. When option number (small display) is flashing, the up and down set point buttons allows for scrolling through options moving between available option numbers. After desired option number has been selected, press SET TIME/TEMP button once. The large display will now flash, indicating that up and down set point buttons now control available choices within that option. Each press of SET TIME/TEMP button switches between available option (small display) and available selections within each option (large display).

Option 1 — Anticipator Adjustment — This adjustment controls sensitivity and cycle rate of Light Commercial Thermodistat. Higher numbers decrease sensitivity and slow cycle rate. Lower numbers increase sensitivity and cycle rate. Anticipator values can range from 1 to 9. Factory default is 3. This default selection provides optimum performance in nearly all installations. Try it first; do not change setting unless there is evidence of need to do so.

Unlike conventional anticipators, this setting is not determined by current draw. There is no need to measure, know, or compensate for current draw. There is also no droop with this Light Commercial Thermodistat. Regardless of setting and number of stages, both heating and cooling will control to their respective set points.

TO ADJUST:
1. Enter Configuration mode. The upper small (COOL set point) display will be flashing 01. If not, use up and down set point buttons to move it to 01.
2. Press SET TIME/TEMP button once to display current selection of 1, 2, 3, 4, 5, 6, 7, 8, or 9 on large display. Factory default is 3.
3. Use up and down set point buttons to move to desired anticipator setting.
4. Press SET TIME/TEMP button again to flash small upper display for selection of another option, or press HOLD End to exit Configuration mode.

Option 2 — Clean Filter Timer — Select hours of blower operation (heating, cooling, or fan) before CLEAN FILTER icon is displayed. With OFF selected, icon will never come on, disabling this feature. Time selection can range from 400 to 3600 blower operation hours by selecting numbers 1 through 9. (Time is 400 times number selected.) Factory default is 2 (800 hr). Recommended blower operation hours selections are: disposable filter — 400 to 800 hr; media filter — 1200 to 1600 hr; electronic air cleaner — 1600 to 2400 hr.

TO SELECT OR ADJUST:
1. Enter Configuration mode. Use up and down set point buttons to make small display (now flashing) indicate 02.
2. Press SET TIME/TEMP button once to display current selection of 1, 2, 3, 4, 5, 6, 7, 8, 9 on large display. Factory default is 2.
3. Use up and down set point buttons to move between available choices.
4. Press SET TIME/TEMP button again to flash small upper display for selection of another option, or press HOLD End to exit Configuration mode.

Option 3 — English/Metric — Select between Fahrenheit and Celsius operation. Factory default is Fahrenheit.

TO SELECT OR ADJUST:
1. Enter Configuration mode. Use up and down set point buttons to make small display (now flashing) indicate 03.
2. Press SET TIME/TEMP button once to display current selection of F or C. Factory default is F.
3. Use up and down set point buttons to move between F and C on large display.
4. Press SET TIME/TEMP button again to flash small upper display for selection of another option, or press HOLD End to exit Configuration mode.

Option 4 — Fan (G) ON With W — This selection determines whether fan (G) output is to be ON or OFF when any W (furnace or strip heat) output is ON. Most furnaces and fan coils manage their own blowers and do not require separate G signal. For these applications, select OFF. Some auxiliary heaters require separate G signal to turn on blower. In this case, select ON. Factory default is OF (off).

TO SELECT:
1. Enter Configuration mode. Use up and down set point buttons to make small display (now flashing) indicate 04.

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Option 9 — Holiday Heat Set Point — This selection determines the heating set point (40 to 90 minus deadband °F) when the HOLIDAY function is active.

TO SELECT:
1. Enter Configuration mode. Use up and down buttons to make small display (now flashing) indicate 09.
2. Press SET TIME/TEMP button once to flash large display.
3. Use up or down set point buttons to select desired temperature.
4. Press SET TIME/TEMP button again to flash small upper display for selection of another option, or press HOLD End to exit Configuration mode.

Option 10 — Holiday Cool Set Point — This selection determines the cooling set point (40 to 90 minus deadband °F) when the HOLIDAY function is active.

TO SELECT:
1. Enter Configuration mode. Use up and down buttons to make small display (now flashing) indicate 10.
2. Press SET TIME/TEMP button once to flash large display.
3. Use up or down set point buttons to select desired temperature.
4. Press SET TIME/TEMP button again to flash small upper display for selection of another option, or press HOLD End to exit Configuration mode.

Option 11 — Holiday Humidity Set Point — This selection determines the humidity set point (50 to 90% rh [relative humidity]) when the HOLIDAY function is active.

NOTE: This value can only be changed in the installer software Configuration mode.

TO SELECT:
1. Enter Configuration mode. Use up and down set point buttons to make small display (now flashing) indicate 11.
2. Press SET TIME/TEMP button once to flash large display.
3. Use up or down buttons to select desired humidity.
4. Press SET TIME/TEMP button again to flash small upper display for selection of another option, or press HOLD End to exit Configuration mode.

Option 14 — Heat/Cool Deadband Adjustment — This option selects the minimum difference between heating and cooling set points. A larger difference saves energy and a smaller difference decreases temperature difference between heating and cooling. Factory default is 2, which means cooling set point must be a minimum of 2 degrees above heating set point.

The attempt to move them closer will result in one “pushing” the other to maintain the required difference.

Depending on set points, moving deadband closer than 2 degrees may result in regular cycling between heat and cool when AUTO mode is selected. However, this cycling cannot occur more often than 1 transition every 10 minutes. The system has a built-in requirement that it cannot switch between heat and cool without a 10-minute “off” time between the 2 operations. Specifically, to switch from one mode to the other, there must be no demand for the old mode and a demand for the new mode, and this must exist continually for 10 minutes before transition to the new mode will occur.

TO SELECT:
1. Enter Configuration mode if not already there. Use up and down set point buttons to make small display (now flashing) indicate 14.
2. Press SET TIME/TEMP button once to flash large display.
3. Use up or down set point buttons to move between 0, 1, 2, 3, 4, 5, or 6 on large display. Factory default is 2.
4. Press SET TIME/TEMP button again to flash small upper display for selection of another option, or press HOLD End to exit Configuration mode.

Option 21 — Keyboard Lock — This option allows the installer to disable the thermostat from being changed.

TO SELECT:
1. Enter Configuration mode. Use up and down set point buttons to make small display (now flashing) indicate 21.
2. Press SET TIME/TEMP button once to flash large display.
3. Use up and down set point buttons to move between OF and ON on large display. Factory default is OF; keyboard is active.

NOTE: Once the keyboard is locked the building manager can momentarily unlock the keyboard by pressing the following keys sequentially: MODE, COPY PREVIOUS DAY, SET TIME/TEMP, and HOLD End. The sequence must be completed within a 5-second period, and the keypad will be unlocked. The keypad will return to lock once the keypad is idle for a 2-minute period or immediately if after exiting the Configuration mode.

4. Press SET TIME/TEMP button again to flash upper small display for selection of another option, or press HOLD End to exit Configuration mode.
TO TEST COOLING:
PRESS MODE button until COOL icon turns on. Y1 cooling begins within 10 seconds and remains on for 4 minutes. This is the Recycling mode and if the outdoor temperature is below the balance point it will also include first stage furnace or electric heat in AC system, and heat pump heating in heat pump system. Y1 will be on for 2 minutes followed by second stage W2 for 2 minutes. If the outdoor temperature is above the balance point, this second stage call will energize first stage furnace or electric heat in AC system and heat pump heating in heat pump system. If the outdoor temperature is below the balance point this second stage call will energize second stage furnace or electric heat in AC system and heat pump system. At the end of 4-minute run, heating stops, and MODE reverts to OFF. While heating is on, successive presses of HUMIDITY button turns the dehumidify output on and off. While this output is active, the “DEHUM” icon will be energized.

TO TEST PRIMARY HEATING:
PRESS MODE button until HEAT icon turns on. W1 heating begins within 10 seconds and remains on for 4 minutes. This is the Recycling mode and if the outdoor temperature is below the balance point it will also include first stage furnace or electric heat in AC system, and heat pump heating in heat pump system. W1 will be on for 2 minutes followed by second stage W2 for 2 minutes. If the outdoor temperature is above the balance point, this second stage call will energize first stage furnace or electric heat in AC system and heat pump heating in heat pump system. If the outdoor temperature is below the balance point this second stage call will energize second stage furnace or electric heat in AC system and heat pump system. At the end of 4-minute run, heating stops, and MODE reverts to OFF. While heating is on, successive presses of HUMIDITY button turns the dehumidify output on and off. While this output is active, “DEHUM” icon will be energized.

TO TEST PRIMARY HEATING:
PRESS MODE button until HEAT icon turns on. W1 heating begins within 10 seconds and remains on for 4 minutes. This is the Recycling mode and if the outdoor temperature is below the balance point it will also include first stage furnace or electric heat in AC system, and heat pump heating in heat pump system. W1 will be on for 2 minutes followed by second stage W2 for 2 minutes. If the outdoor temperature is above the balance point, this second stage call will energize first stage furnace or electric heat in AC system and heat pump heating in heat pump system. If the outdoor temperature is below the balance point this second stage call will energize second stage furnace or electric heat in AC system and heat pump system. At the end of 4-minute run, heating stops, and MODE reverts to OFF. While heating is on, successive presses of HUMIDITY button turns the dehumidify output on and off. While this output is active, “DEHUM” icon will be energized.

TO TEST PRIMARY HEATING:
PRESS MODE button until HEAT icon turns on. W1 heating begins within 10 seconds and remains on for 4 minutes. This is the Recycling mode and if the outdoor temperature is below the balance point it will also include first stage furnace or electric heat in AC system, and heat pump heating in heat pump system. W1 will be on for 2 minutes followed by second stage W2 for 2 minutes. If the outdoor temperature is above the balance point, this second stage call will energize first stage furnace or electric heat in AC system and heat pump heating in heat pump system. If the outdoor temperature is below the balance point this second stage call will energize second stage furnace or electric heat in AC system and heat pump system. At the end of 4-minute run, heating stops, and MODE reverts to OFF. While heating is on, successive presses of HUMIDITY button turns the dehumidify output on and off. While this output is active, “DEHUM” icon will be energized.

TO TEST PRIMARY HEATING:
PRESS MODE button until HEAT icon turns on. W1 heating begins within 10 seconds and remains on for 4 minutes. This is the Recycling mode and if the outdoor temperature is below the balance point it will also include first stage furnace or electric heat in AC system, and heat pump heating in heat pump system. W1 will be on for 2 minutes followed by second stage W2 for 2 minutes. If the outdoor temperature is above the balance point, this second stage call will energize first stage furnace or electric heat in AC system and heat pump heating in heat pump system. If the outdoor temperature is below the balance point this second stage call will energize second stage furnace or electric heat in AC system and heat pump system. At the end of 4-minute run, heating stops, and MODE reverts to OFF. While heating is on, successive presses of HUMIDITY button turns the dehumidify output on and off. While this output is active, “DEHUM” icon will be energized.
HOLIDAY — A holiday selection is available specifically for times where the building will not be occupied for an extended period. For convenience, one button selects Holiday mode which is indicated by “HOLIDAY” icon on LED display. Holiday mode also has an automatic hold, meaning that set points are not affected by the programmed schedule. While in Holiday mode, the system provides temperature and humidity protection for the building in all seasons, but not comfort.

Holiday Set Points — The settings for HEAT, COOL, and DEHUM should have been done in the Configuration mode (Options 9, 10, and 11).

OPERATIONAL INFORMATION

Five-Minute Compressor Time Guard® Device — This timer prevents compressor from starting unless it has been off for at least 5 minutes. It can be defeated for 1 cycle by simultaneously pressing FAN and UP buttons simultaneously.

Fifteen-Minute Staging Timer — In multistage heating or cooling, this timer prevents any higher stage from turning on until preceding stage has been on for 15 minutes. This timer is not in effect if temperature difference is greater than 5° F (usually due to a large change in desired temperature).

Three-Minute Minimum On Time — In normal operation, when a stage turns on, it will not turn off for a minimum of 3 minutes.

Heat/Cool Set Points (Desired Temperature) — A minimum difference of 2° F is enforced between heating and cooling desired temperatures. This is done by allowing one setting to “push” the other to maintain this difference. This difference is adjustable via Configuration Option 14.

Equipment On Indicators — When cooling equipment is on, a COOL icon preceded by a small triangle is displayed below cooling set point. While cooling equipment is delayed by the Time Guard timer, triangle will flash. The same is true for HEAT icon and its preceding triangle located under heating set point.

Dehumidify Output On Indicators — The DEHUM icon is on when the dehumidification output is energized.

Auto Changeover — When auto changeover mode is selected, a change from heat to cool (or vice versa) will not occur until an opposite mode demand has existed for 10 minutes. If set point is changed, the 10-minute requirement is deleted.

Power On Check — When AC power is first applied, all segments of display are turned on for a few seconds. Following this, temperature display indicates model/configuration via following 2-digit code: CP for commercial product. See Fig. 40.

Error Codes — If Light Commercial Thermidistat cannot properly read room temperature, display will indicate two dashes (--) and all outputs (except fan, if on) will turn off.

E4 — If Light Commercial Thermidistat’s internal memory fails, “E4” will be displayed. Replace Light Commercial Thermidistat.

E5 — If Light Commercial Thermidistat cannot properly read humidity, “E5” will be displayed. Replace Light Commercial Thermidistat.

Smart Recovery — With Smart Recovery selected (DIP SW1 is on), transition out of setback begins a fixed time period before selected recovery time and gradually adjusts room temperature so desired temperature will be achieved at selected recovery time. The fixed time period is 1.5 hours. It operates in both heating and cooling.

PRE-START-UP

**WARNING**

Failure to observe the following warnings could result in serious personal injury.

1. Follow recognized safety practices and wear protective goggles and gloves when checking or servicing refrigerant system.

2. Do not operate compressor or provide any electric power to unit unless compressor terminal cover is in place and secured.

3. Do not remove compressor terminal cover until all electrical sources are disconnected and tagged accordingly.

4. Relieve all pressure from system before touching or disturbing any connections inside compressor terminal box. If refrigerant leak is suspected around compressor terminals, use accepted methods to recover refrigerant.

5. Never attempt to repair or solder any components while refrigerant system is under pressure.

6. Do not use torch to remove any component. System contains oil and refrigerant under pressure. To remove a component, wear protective goggles and gloves and proceed as follows:
   a. Shut off electrical power to unit and tag disconnect.
   b. Recover refrigerant to relieve all pressure from system, using both high- and low-pressure ports.
   c. Cut component connection tubing with tubing cutter, and remove component from unit.
   d. Carefully unsweat remaining tubing stubs when necessary. Oil can ignite when exposed to torch flame.

Proceed as follows to inspect and prepare the unit for initial start-up:

1. Remove filter access panel, blower access panel, and control panel access cover on the 62AQ unit.

2. Read and follow instructions on all WARNING, CAUTION, and INFORMATION labels attached to (or shipped with) unit.

3. Make the following inspections:
   a. Inspect for shipping or handling damages such as broken lines, loose parts, or disconnected wires.
   b. Inspect for oil at all refrigerant tubing connections and on unit base. Detecting oil usually indicates a refrigerant leak. Leak-test all refrigerant tubing connections using an electronic leak detector.
   c. Inspect all field and factory wiring connections. Be sure that connections are completed and tight.
   d. Inspect upper (supply) and lower (exhaust) coils for damage and refrigerant leaks. If fin damage is noted, carefully straighten fins using a fin comb.

4. Tighten compressor holddown bolts to 5.5 to 6.5 ft-lbs of torque.

5. Verify the following:
   a. If installed, ensure optional supply and exhaust blower wheel set screws are tight and wheels are centered within the blower housing.
   b. Make sure supply and exhaust air filters are in place.

Proceed as follows to inspect and prepare the unit for initial start-up:

1. Remove filter access panel, blower access panel, and control panel access cover on the 62AQ unit.

2. Read and follow instructions on all WARNING, CAUTION, and INFORMATION labels attached to (or shipped with) unit.

3. Make the following inspections:
   a. Inspect for shipping or handling damages such as broken lines, loose parts, or disconnected wires.

   b. Inspect for oil at all refrigerant tubing connections and on unit base. Detecting oil usually indicates a refrigerant leak. Leak-test all refrigerant tubing connections using an electronic leak detector, halide torch, or liquid-soap solution.

   c. Inspect all field and factory wiring connections. Be sure that connections are completed and tight.

   d. Inspect upper (supply) and lower (exhaust) coils for damage and refrigerant leaks. If fin damage is noted, carefully straighten fins using a fin comb.

4. Tighten compressor holddown bolts to 5.5 to 6.5 ft-lbs of torque.

5. Verify the following:
   a. If installed, ensure optional supply and exhaust blower wheel set screws are tight and wheels are centered within the blower housing.

   b. Make sure supply and exhaust air filters are in place.
c. Make sure the 62AQ condensate drain is of correct dimensions and primed with water to ensure proper drainage.

d. Reinstall all access panels.

e. Ensure all tools and miscellaneous parts have been removed.

START-UP

Unit Preparation — Make sure the unit has been installed in accordance with installation instructions and applicable codes.

Supply and Exhaust Filters — Make sure filters are correctly installed on unit. Do not operate without filters in place.

Outdoor-Air Inlet Screens — Outdoor-air inlet screen(s) must be in place before operating the unit.

Compressor Mounting — Compressors are internally spring-mounted. Ensure wooden shipping block has been removed from under the compressor and holddown bolts are in place.

Internal Wiring — Check all low and high voltage connections for proper locations. Ensure connections are tight.

Cooling — Set Light Commercial Thermidistat mode selection to Cooling and fan mode to Auto. Ensure thermostat has been adjusted to a setting below room temperature. Refer to Table 5 for correct unit operation.

Heating — Set Light Commercial Thermidistat mode selection to Heating and fan mode to Auto. Ensure thermostat has been adjusted to a setting below room temperature. Refer to Table 5 for correct unit operation.

Operating Sequence — Refer to Step 5 — Conduct Light Commercial Thermidistat Start-Up and Checkout on page 36, and Table 5 for 62AQ operating sequence.

SERVICE

Cleaning — Inspect the unit interior during normal preventive maintenance cycles, or at the beginning of each heating and cooling season and as operating conditions warrant.

EXHAUST AIR COIL (LOWER COIL)
1. Turn power off, tag disconnect with appropriate warning.
2. Remove filter access panel and supply blower access panel.
3. Slide filters out of unit.
4. Clean coil using a commercial coil cleaner or dishwasher detergent in a pressurized spray canister. Wash both sides of coil and flush with clean water. For best results, backflush toward return-air section to remove foreign material. Flush condensate pan after completion.
5. Inspect and replace air filter as necessary.
6. Replace access panels.

SUPPLY AIR COIL (UPPER COIL)
1. Turn power off, tag disconnect with appropriate warning.
2. Remove screws holding top panel of 62AQ unit in place (three accessible sides). Remove filter access panel. Using caution, raise top panel and use filter access door to support top panel as shown in Fig. 41. This will support the top panel to allow for servicing coil.
3. Clean coil using a commercial coil cleaner or dishwasher detergent in a pressurized spray canister. Wash both sides of coil and flush with clean water. For best results, backflush toward return-air section to remove foreign material. Flush condensate pan after completion.
4. Lower top panel and secure.
5. Inspect and replace air filter as necessary.
6. Replace access panels.

CONDENSATE DRAIN — Check and clean upper and lower condensate drain pans twice yearly or during each preventive maintenance service. Inspect and clean P-trap external to unit. In winter, keep drain dry or protect against freeze-up.

FILTERS — Inspect and clean metal outside air inlet screen twice yearly or as conditions require. Inspect or replace supply (lower) and exhaust (upper) filters at the twice yearly, during preventive maintenance services or sooner if conditions require.

OUTDOOR AIR INLET SCREEN — Inspect and clean metal outside air inlet screen twice yearly or as conditions require. Do not use disposable filter in place of screen.

Lubrication

COMPRESSOR — The compressor is charged with the correct amount of oil at the factory.

FAN MOTOR BEARINGS — Exhaust blower motor (lower) and optional supply motor (upper) bearings are permanently lubricated. No further lubrication of motor is required.

ELECTRICAL COMPONENTS — Make sure all low and high voltage electrical connections are tight and show no sign of deterioration.

Refrigerant Charge — Amount of refrigerant charge is listed on unit nameplate (also refer to Table 3). Refer to Carrier HVAC Servicing Procedure Manual (020-040), Refrigerant Servicing section.

Unit panels must be in place when compressor is operating during charging procedures.

**IMPORTANT:** Unit must operate a minimum of 10 minutes before attempting to check or adjust charge.

NO SYSTEM CHARGE — Refer to Carrier HVAC Servicing Procedure Manual (020-040), Refrigerant Servicing section. After evacuating system to 500 microns, weigh in the specified amount of refrigerant. Refer to Table 3.
### Table 5 — Light Commercial Thermodistat (LCT) Operating Sequence and System Response

<table>
<thead>
<tr>
<th><strong>UNOCCUPIED</strong></th>
<th><strong>COOLING</strong></th>
<th><strong>ER Comp</strong></th>
<th><strong>ER Fans</strong></th>
<th><strong>RT Comp 1</strong></th>
<th><strong>RT Comp 2</strong></th>
<th><strong>RT Fans</strong></th>
<th><strong>RT Heat</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor Temperature Above 2nd Stage Set Point</td>
<td>Humidity Low &amp; OAT Low</td>
<td>On</td>
<td>On (cyc.)</td>
<td>On w/o MM</td>
<td>Off</td>
<td>On (cyc.)</td>
<td>Off</td>
</tr>
<tr>
<td>Humidity Low &amp; OAT High</td>
<td>Off</td>
<td>Off</td>
<td>On w/o MM</td>
<td>w/o MM</td>
<td>On (cyc.)</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Humidity High &amp; OAT Low</td>
<td>Off</td>
<td>Off</td>
<td>On w MM</td>
<td>On w MM</td>
<td>On (cyc.)</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Humidity High &amp; OAT High</td>
<td>Off</td>
<td>Off</td>
<td>On w MM</td>
<td>On w MM</td>
<td>On (cyc.)</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Indoor Temperature Between 1st and 2nd Stage Set Points</td>
<td>Humidity Low &amp; OAT Low</td>
<td>Off</td>
<td>On (cyc.)</td>
<td>Off</td>
<td>Off</td>
<td>On (cyc.)</td>
<td>Off</td>
</tr>
<tr>
<td>Humidity Low &amp; OAT High</td>
<td>Off</td>
<td>Off</td>
<td>On w/o MM</td>
<td>Off</td>
<td>On (cyc.)</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Humidity High &amp; OAT Low</td>
<td>Off</td>
<td>Off</td>
<td>On w MM</td>
<td>Off</td>
<td>On (cyc.)</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Humidity High &amp; OAT High</td>
<td>Off</td>
<td>Off</td>
<td>On w MM</td>
<td>Off</td>
<td>On (cyc.)</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Indoor Temperature Below 1st Stage Set Point</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** OAT < 55° all compression off*

<table>
<thead>
<tr>
<th><strong>HEATING</strong></th>
<th><strong>ER Comp.</strong></th>
<th><strong>ER Fans</strong></th>
<th><strong>RT Comps.</strong></th>
<th><strong>RT Fans</strong></th>
<th><strong>RT Heat</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor Temperature Above 1st Set Point</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>Indoor Temperature Between 1st and 2nd Stage Set Points</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>On (cyc.)</td>
<td>On, 50%</td>
</tr>
<tr>
<td>Indoor Temperature Below 2nd Stage Set Point</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>On (cyc.)</td>
<td>On, 100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>OCCUPIED</strong></th>
<th><strong>COOLING</strong></th>
<th><strong>ER Comp</strong></th>
<th><strong>ER Fans</strong></th>
<th><strong>RT Comp 1</strong></th>
<th><strong>RT Comp 2</strong></th>
<th><strong>RT Fan</strong></th>
<th><strong>RT Heat</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor Temperature Above 2nd Stage Set Point</td>
<td>Humidity Low &amp; OAT Low</td>
<td>On</td>
<td>On</td>
<td>On w/o MM</td>
<td>On w/o MM</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>Humidity Low &amp; OAT High</td>
<td>On</td>
<td>On</td>
<td>On w/o MM</td>
<td>On w/o MM</td>
<td>On</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Humidity High &amp; OAT Low</td>
<td>On</td>
<td>On</td>
<td>On w MM</td>
<td>On w MM</td>
<td>On</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Humidity High &amp; OAT High</td>
<td>On</td>
<td>On</td>
<td>On w MM</td>
<td>On w MM</td>
<td>On</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Indoor Temperature Between 1st and 2nd Stage Set Points</td>
<td>Humidity Low &amp; OAT Low</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>Humidity Low &amp; OAT High</td>
<td>On</td>
<td>On</td>
<td>On w/o MM</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Humidity High &amp; OAT Low</td>
<td>On</td>
<td>On</td>
<td>On w MM</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Humidity High &amp; OAT High</td>
<td>On</td>
<td>On</td>
<td>On w MM</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Indoor Temperature Below 1st Stage Set Point</td>
<td>Humidity Low</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>Humidity High</td>
<td>On</td>
<td>On</td>
<td>Off</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** OAT < 55° all compression off*

<table>
<thead>
<tr>
<th><strong>HEATING</strong></th>
<th><strong>ER Comp</strong></th>
<th><strong>ER Fans</strong></th>
<th><strong>RT Comps</strong></th>
<th><strong>RT Fans</strong></th>
<th><strong>RT Heat</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor Temperature Above 1st Stage Set Point</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>Indoor Temperature Between 1st and 2nd Stage Set Points</td>
<td>OAT &gt;Set Pt</td>
<td>On</td>
<td>On</td>
<td>Off</td>
<td>On</td>
</tr>
<tr>
<td>OAT &lt;Set Pt</td>
<td>On</td>
<td>On</td>
<td>Off</td>
<td>On</td>
<td>On, 50%</td>
</tr>
<tr>
<td>Indoor Temperature Below 2nd Stage Set Point</td>
<td>OAT &gt;Set Pt</td>
<td>On</td>
<td>On</td>
<td>Off</td>
<td>On</td>
</tr>
<tr>
<td>OAT &lt;Set Pt</td>
<td>On</td>
<td>On</td>
<td>Off</td>
<td>On</td>
<td>On, 100%</td>
</tr>
</tbody>
</table>

**LEGEND**
- Comp — Compressor
- ER — EnergyRecycler
- MM — MoistureMiser
- RT — Rooftop Unit
- OAT — Outdoor-Air Temperature
- Set Pt — Set Point

*Unless unit compressor has been rewired as described in Step 7 (page 30).*
SYSTEM CHARGING — Use Charging Chart, Fig. 42 on this page as an example for the 62AQ060 unit.

NOTE: Refer to the Charging Chart Label on each unit for specific data pertaining to each size.

Vary refrigerant until the conditions of the chart are met. Note that the charging charts are different from type normally used. Charts are based on charging the units to the correct subcooling for various outdoor temperatures incurred during the Cooling or Heating modes of operation. Accurate refrigerant pressure gauge and temperature sensing device capable of reading copper surface temperatures are required. Run gage line through field entry service port (see Fig. 7 and 8).

CHARGING IN COOLING MODE — Connect the pressure gage to the service port on the compressor hot gas Schrader port located on the compressor discharge line. Mount the temperature sensing device on the liquid line at the outlet of the exhaust coil (lower coil). Insulate probe so that outdoor ambient temperature does not affect the reading. Follow directions in To Use Heating and Cooling Charging Chart section.

CHARGING IN HEATING MODE — Connect the pressure gage to the service port on the compressor hot gas Schrader port located on the compressor discharge line. Mount the temperature sensing device on the liquid line at the outlet of the supply coil (upper coil); insulate probe so that outdoor ambient temperature does not affect the reading. Follow directions in To Use Heating and Cooling Charging Chart section.

TO USE HEATING AND COOLING CHARGING CHART (Fig. 42)

NOTE: Refer to the Charging Chart Label on each unit for specific data pertaining to each size.

1. Record the outdoor ambient temperature. On high pressure gage, record discharge pressure. Record temperature of liquid line on appropriate coil.

2. Convert the high pressure reading to a temperature using an R-22 temperature-pressure conversion chart. This will now become the refrigerant saturation temperature. The temperature measured by the thermometer is the refrigerant temperature.

3. Determine the difference between the refrigerant saturation temperature and the refrigerant temperature. This is the amount of measured subcooling.

4. On the charging chart, locate the outdoor temperature (numbers across the bottom).

5. Using the appropriate charging line, solid black for Cooling mode and dashed gray for Heating mode, compare the required subcooling on the chart to what was recorded in Step 2. If the measured subcooling is lower than required by the chart, add refrigerant slowly to raise. If the measured subcooling is higher than required by the chart, recover refrigerant slowly to lower.

6. After making refrigerant adjustment, allow system to operate 10 minutes and reverify subcooling is correct.

Example: Cooling Mode

Outdoor Temperature ........................................... 90 F
High Pressure .................................................. 220 psig
(Saturation temperature 108 F)

Required Subcooling ........................................... 22 F
Liquid Line Temperature ................................. 86 F
(Liquid line temperature may vary by ± 3°F)

Add refrigerant to lower liquid line temperature.
Recover refrigerant to increase liquid line temperature.

CHARGING CHART
62AQ060 R-22

Charge to subcooling. Superheat curve is for reference only and shows the superheat increasing in the Cooling mode above 95 degrees when the TXV MOP feature starts controlling; and increasing in the Heating mode below 15 degrees when the Acutrol™ Feed Device starts controlling.

Fig. 42 — 62AQ Charging Chart
**ENERGY$RECYCLER TROUBLESHOOTING**

Use Tables 6 and 7, and Fig. 43 when troubleshooting this unit.

**Table 6 — Heating and Cooling Troubleshooting**

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor and outdoor fan will not start.</td>
<td>Power failure.</td>
<td>Call power company.</td>
</tr>
<tr>
<td></td>
<td>Fuse blown or circuit breaker tripped.</td>
<td>Replace fuse or reset circuit breaker.</td>
</tr>
<tr>
<td></td>
<td>Defective thermostat, contactor, transformer, control relay, or capacitor.</td>
<td>Replace component.</td>
</tr>
<tr>
<td></td>
<td>Insufficient line voltage.</td>
<td>Determine cause and correct.</td>
</tr>
<tr>
<td></td>
<td>Incorrect or faulty wiring.</td>
<td>Check wiring diagram and rewire correctly.</td>
</tr>
<tr>
<td></td>
<td>Light Commercial Thermidistat program in UC1 or UC2 mode.</td>
<td>Check Light Commercial Thermidistat program. See Step 5 — Conduct Light Commercial Thermidistat Start-Up and Checkout on page 36.</td>
</tr>
<tr>
<td></td>
<td>Defective fan motor.</td>
<td>Replace fan motor.</td>
</tr>
<tr>
<td>Compressor will not start but outdoor fan runs.</td>
<td>Faulty wiring or loose connection in compressor circuit.</td>
<td>Check wiring and repair or replace.</td>
</tr>
<tr>
<td></td>
<td>Compressor motor burned out, seized, or internal overload open.</td>
<td>Determine cause. Replace compressor.</td>
</tr>
<tr>
<td></td>
<td>Defective run/start capacitor, overload, start relay, Time Guard® device.</td>
<td>Determine cause and replace.</td>
</tr>
<tr>
<td></td>
<td>No DEHUM signal from Light Commercial Thermidistat.</td>
<td>Check for DEHUM signal on Light Commercial Thermidistat LCD display.</td>
</tr>
<tr>
<td></td>
<td>Time Guard device not timed out.</td>
<td>Allow time for Time Guard device to recycle unit.</td>
</tr>
<tr>
<td>Compressor cycles (other than normally satisfying thermostat).</td>
<td>Refrigerant overcharge or undercharge.</td>
<td>Recover refrigerant, evacuate system, and recharge to nameplate.</td>
</tr>
<tr>
<td></td>
<td>Defective compressor.</td>
<td>Replace and determine cause.</td>
</tr>
<tr>
<td></td>
<td>Insufficient line voltage.</td>
<td>Determine cause and correct.</td>
</tr>
<tr>
<td></td>
<td>Blocked outdoor coil or dirty air filter.</td>
<td>Determine cause and correct.</td>
</tr>
<tr>
<td></td>
<td>Defective run/start capacitor, overload, or start relay.</td>
<td>Determine cause and replace.</td>
</tr>
<tr>
<td></td>
<td>Faulty outdoor-fan (cooling) or indoor-fan (heating) motor or capacitor.</td>
<td>Replace.</td>
</tr>
<tr>
<td></td>
<td>Restriction in refrigerant system.</td>
<td>Locate restriction and remove.</td>
</tr>
<tr>
<td>Suction pressure greater than 100 psig in Cooling mode.</td>
<td>Defective TXV.</td>
<td>Replace TXV.</td>
</tr>
<tr>
<td>Excessive head pressure.*</td>
<td>Dirty air filters.</td>
<td>Replace filters.</td>
</tr>
<tr>
<td></td>
<td>Dirty coils.</td>
<td>Clean coils.</td>
</tr>
<tr>
<td></td>
<td>Refrigerant overcharged.</td>
<td>Recover excess refrigerant.</td>
</tr>
<tr>
<td></td>
<td>Air in system.</td>
<td>Recover refrigerant, evacuate system, and recharge.</td>
</tr>
<tr>
<td></td>
<td>Condensing air restricted or air short-cycling.</td>
<td>Determine cause and correct.</td>
</tr>
<tr>
<td>Head pressure too low.*</td>
<td>Low refrigerant charge.</td>
<td>Check for leaks; repair and recharge.</td>
</tr>
<tr>
<td></td>
<td>Compressor valves leaking.</td>
<td>Replace compressor.</td>
</tr>
<tr>
<td></td>
<td>Restriction in liquid tube.</td>
<td>Remove restriction.</td>
</tr>
<tr>
<td>Excessive suction pressure.*</td>
<td>High heat load.</td>
<td>Check for source and eliminate.</td>
</tr>
<tr>
<td></td>
<td>Compressor valves leaking.</td>
<td>Replace compressor.</td>
</tr>
<tr>
<td></td>
<td>Refrigerant overcharged.</td>
<td>Recover excess refrigerant.</td>
</tr>
<tr>
<td>Suction pressure too low.*</td>
<td>Dirty air filters or coils.</td>
<td>Replace filter, clean coils.</td>
</tr>
<tr>
<td></td>
<td>Low refrigerant charge.</td>
<td>Check for leaks; repair and recharge.</td>
</tr>
<tr>
<td></td>
<td>Metering device or low side restricted.</td>
<td>Remove source of restriction.</td>
</tr>
<tr>
<td></td>
<td>Insufficient indoor airflow.</td>
<td>Increase air quantity. Check filter and replace if necessary.</td>
</tr>
</tbody>
</table>

**LEGEN D**

TXV — Thermostatic Expansion Valve

*Energy$Reycler uses TXVs with a 100 psig maximum operating pressure (MOP) feature to limit suction pressure in Cooling mode at high temperatures. Always consult charging chart (page 40) for correct operating pressures.

**Table 7 — Supply-Air Damper Troubleshooting**

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damper does not open; fan(s) off.</td>
<td>OCR not energized (thermostat in Unoccupied mode).</td>
<td>Check Light Commercial Thermidistat program settings (see Step 5 — Light Commercial Thermidistat Start-Up and Checkout section, page 36).</td>
</tr>
<tr>
<td></td>
<td>OCR defective.</td>
<td>Replace OCR.</td>
</tr>
<tr>
<td></td>
<td>Damper jammed.</td>
<td>Free damper.</td>
</tr>
<tr>
<td></td>
<td>Damper motor defective.</td>
<td>Replace damper motor.</td>
</tr>
<tr>
<td></td>
<td>Loose wiring.</td>
<td>Check wiring and correct.</td>
</tr>
<tr>
<td>Damper will not close.</td>
<td>Damper jammed.</td>
<td>Free damper.</td>
</tr>
<tr>
<td></td>
<td>Motor return spring broken.</td>
<td>Replace motor.</td>
</tr>
</tbody>
</table>

**LEGEND**

OCR — Occupied Relay
NOTES:

1. If any of the original wire furnished must be replaced, it must be replaced with 90° C wire or its equivalent.
2. Use copper conductors only.
3. TRAN is wired for 230-v unit. If unit is to be run with 208-v power supply, disconnect black wire from 230-v terminal and connect to 208-v terminal.

Fig. 43 — Typical Wiring Schematic, 62AQ Unit
ROOFTOP BASE RAIL TEMPLATE

2.25"
90 DEGREE BEND
2.875"

.525"
2.25"

CUT ALONG THIS EDGE

TOP VIEW OF UNIT

CUT ALONG DOTTED LINE

BUTT SHORT END UP TO BASE OF SCREW ON BASE RAIL

TEMPLATE

CUT
ENERGY$RECYCLER START-UP CHECKLIST
(Remove and Store in Job File)

I. PRELIMINARY INFORMATION

ENERGY$RECYCLER MODEL NO.: __________________________ SERIAL NO.: __________________________
BASE UNIT MODEL NO.: __________________________ SERIAL NO.: __________________________
DATE: __________________________ TECHNICIAN: __________________________

II. PRE-START-UP (insert checkmark in box as each item is completed)

☐ VERIFY THAT CONDENSATE CONNECTION IS INSTALLED PER INSTALLATION INSTRUCTIONS
☐ CHECK ALL ELECTRICAL CONNECTIONS AND TERMINALS FOR TIGHTNESS
☐ CHECK THAT SUPPLY AND EXHAUST AIR FILTER(S) ARE CLEAN AND IN PLACE
☐ VERIFY THAT UNIT IS PROPERLY ATTACHED TO RTU
☐ CHECK FAN WHEEL AND PROPELLE FOR LOCATION IN HOUSING/ORIFICE AND SETSCREW TIGHTNESS
☐ CHECK PULLEY ALIGNMENT AND BELT TENSION PER INSTALLATION INSTRUCTIONS (62AQ300 BELT
   DRIVE EXHAUST FAN)

III. START-UP

ELECTRICAL

SUPPLY VOLTAGE       L1-L2   L2-L3   L3-L1
COMPRESSOR AMPS      L1       L2       L3
INDOOR FAN AMPS      L1       L2       L3

TEMPERATURES

OUTDOOR-AIR TEMPERATURE    DB     WB
RETURN-AIR TEMPERATURE     DB     WB
ENTERING SUPPLY-AIR (RTU)  DB     WB

PRESSURES (IN COOLING MODE)

REFRIGERANT SUCTION    PSIG     TEMP AT COMPRESSOR   F
REFRIGERANT DISCHARGE  PSIG     TEMP AT COMPRESSOR   F

☐ VERIFY REFRIGERANT CHARGE USING CHARGING CHART LABEL ON UNIT.
III. START-UP (cont)

AIRFLOWS

SUPPLY AIR ____________ CFM

MOTOR SPEED (Circle One)  LOW  MEDIUM  HIGH
DAMPER SETTING (°) (Circle One)  30  45  60  90

EXHAUST AIR ____________ CFM

MOTOR SPEED (Circle One)  LOW  MEDIUM  HIGH
DAMPER SETTING (°) (Circle One)  30  45  60  90

IV. LIGHT COMMERCIAL THERMIDISTAT ACCESSORY

NOTE: To disable Keypad Lock, press MODE, COPY PREVIOUS DAY, SET TIME/TEMP, and HOLD End buttons in sequence within 5 seconds.

PROGRAMMED  Yes  No
KEYPAD LOCK  Yes  No

OCCUPIED SETTINGS:

ROOM TEMP  F
ROOM RH  %

TIMES:  ON  OFF
OC1
OC2

TIMES:  ON  OFF
UC1
UC2