THE CLEAN AIR ACT OF 1990 BANS THE INTENTIONAL VENTING OF REFRIGERANT (CFCs, HCFCs AND HFCs) AS OF JULY 1, 1992. APPROVED METHODS OF RECOVERY, RECYCLING OR RECLAIMING MUST BE FOLLOWED. FINES AND/OR INCARCERATION MAY BE LEVIED FOR NONCOMPLIANCE.

CAUTION
AS WITH ANY MECHANICAL EQUIPMENT, CONTACT WITH SHARP SHEET METAL EDGES CAN RESULT IN PERSONAL INJURY. TAKE CARE WHILE HANDLING THIS EQUIPMENT AND WEAR GLOVES AND PROTECTIVE CLOTHING.

IMPORTANT INFORMATION FOR INSTALLER
This unit has a delay relay that delays the supply blower “ON” for 1 second and keeps the blower “ON” for 45 seconds on all fan and cooling demands.
Requirements

⚠️ WARNING
Excessive Weight Hazard - Use two or more people when moving and installing the unit. Failure to do so can result in back or other type of injury.

⚠️ IMPORTANT
CBX25UH units include a factory-installed check/expansion valve which will provide optimal refrigerant control and system performance with outdoor units of varying capacities. These units must be installed as a part of a matched system as outlined in the CBX25UH Product Specification bulletin.

These instructions are intended as a general guide and do not supersede local or national codes in any way. Consult authorities having jurisdiction before installation. Compliance with all local, state, or national codes pertaining to this type of equipment should be determined prior to installation. Read this instruction manual, as well as the instructions supplied in separate equipment, before starting the installation.

All models are designed for indoor installation only. The installation of the air handler, field wiring, duct system, etc. must conform to the requirements of any state laws, and local ordinances (including plumbing or waste water codes).

Local authorities having jurisdiction should be consulted before installation is made. Such applicable regulations or requirements take precedence over the general instructions in this manual.

The air handler is shipped from the factory completely assembled. The unit is provided with flanges for the connection of the duct system. Do not remove the cabinet knockouts until it has been determined which knockouts will need to be removed for the installation.

Select the air discharge position which best suits the site conditions. Consider required clearances, space, routing requirements for refrigerant line, condensate disposal, filters, duct system, wiring, and accessibility for service. Refer to the rating plate on the air handler for specific information.

⚠️ WARNING
Danger of explosion. Keep flammable materials and vapors, such as gasoline, away from air handler. Place air handler so that heating elements are at least 18 inches (46 cm) above the floor for a garage installation. Failure to follow these instructions can result in death, explosion, or fire.

⚠️ IMPORTANT
Excessive condensation may occur if the unit is installed in a warm, humid place. When the unit is installed in an unconditioned space, apply sealant around electrical wires, refrigerant piping and condensate lines at the point where they enter the cabinet. Apply sealant on the inside of the cabinet at the point where the electrical wires exit through the conduit opening. This will also keep warm and moist unconditioned air out of the air handler cabinet where it will form condensate on the cooler control box and electrical controls.

⚠️ IMPORTANT
This unit is approved for installation clearance to combustible material as stated on the unit rating plate. Accessibility and service clearances must take precedence over combustible material clearances. The air handler must be installed so that free access is allowed to the coil/filter compartment and blower/control compartment.

NOTES –
During cooling operation, excessive sweating may occur if the air handler is installed in a warm and humid space. If installed in an unconditioned space, sealant should be applied around the electrical wires, refrigerant tubing, and condensate lines where they enter the cabinet. Electrical wires should be sealed on the inside where they exit the conduit opening. Sealant is required to prevent air leakage into, and condensate from forming inside of, the air handler, the control box, and on the electrical controls.

Installation Clearances

NON-DUCTED RETURN CLOSET INSTALLATION
The air handler can be installed in a closet with a false bottom to form a return air plenum. It may also be installed with a return air plenum under the air handler. Louvers or return air grilles are field-supplied. Local codes may limit application of systems without a ducted return to single-story buildings.

When a CBX25UH unit is installed in a closet with a louvered return opening, the minimum open area for the louvers will be:
• 2065 square centimeters for -018 and -024 models;
• 2323 square centimeters for -030 and -036 models;
• 2903 square centimeters for -042 thru -060 models
If the free area is not known, assume a 25% free area for wood or a 75% free area for metal louvers or grilles. Using the louver dimensions and the 25% or 75% assumption, determine if the open area meets the minimum open area listed above.
If a return air plenum is used, the return air grille should be immediately in front of the opening in the plenum to allow for the free flow of return air. When not installed in front of the opening, there must be adequate clearance around the air handler to allow for the free flow of return air.

**Installation**

Each unit consists of a blower assembly, refrigerant coil, and controls in an insulated galvanized steel factory-finished enclosure. Knockouts are provided for electrical wiring entrance.

For ease in installation, it is best to make any necessary coil configuration changes before setting air handler in place.

**REFRIGERANT METERING DEVICE**

CBX25UH units are equipped with a factory-installed check/ expansion valve.

**UPFLOW APPLICATION**

1 - The air handler must be supported on the bottom only and set on solid floor or field-supplied support frame. Securely attach the air handler to the floor or support frame.

2 - If installing a unit in an upflow application, remove the horizontal drain pan. **IMPORTANT** - The horizontal drain pan is not required in upflow air discharge installations; its removal provides the best efficiency and air flow.

3 - Place the unit in the desired location and slope unit. Connect return and supply air plenums as required using sheet metal screws.

4 - Install units that have no return air plenum on a stand that is at least 36cm from the floor. This will allow proper air return.

**HORIZONTAL APPLICATIONS**

![FIGURE 1. Upflow Configuration](image1)

![FIGURE 2. Left-Hand Discharge Configuration](image2)

**IMPORTANT**

When removing the coil, there is a possibility of danger of equipment damage and personal injury. Be careful when removing the coil assembly from a unit installed in right- or left-hand applications. The coil may tip into the drain pan once it is clear of the cabinet. Support the coil when removing it.

**NOTE** - When the unit is installed in horizontal applications, a secondary drain pan is recommended. Refer to local codes.

**NOTE** - This unit may be installed in left-hand or right-hand air discharge horizontal applications. Adequate support must be provided to ensure cabinet integrity. Ensure that there is adequate room to remove service and access panels if installing in the horizontal position.

**LEFT-HAND AIR DISCHARGE**

1 - Determine which plugs are required for drain line connections.

2 - With access door removed, remove drain line plugs to install drain lines.

3 - Set unit so that it is sloped toward the drain pan end of the unit (see figure 11).

4 - The horizontal configuration is shown in figure 2.

5 - If the unit is suspended, the entire length of the cabinet must be supported. If you use a chain or strap, use a piece of angle iron or sheet metal attached to the unit (either above or below) to support the length of the cabinet. Use securing screws no longer than 13mm to avoid damaging the coil or filter. See figure 3. Use sheet metal screws to connect the return and supply air plenums as required.
RIGHT-HAND AIR DISCHARGE

For horizontal right-hand air discharge, the following field modifications are required.

1. Remove and set aside blower and coil access panels.
2. Remove brackets securing pan to unit. See figure 4.
3. Remove coil assembly, bottom drain pan and horizontal drain pan as one unit from the air handler.
4. Remove the blow-off prevention brackets, top cap and drip pan between slabs. Move the horizontal drain pan to the opposite side of the coil.
5. Rotate drip pan 180° and reinstall on coil as shown by the arrow above. Reinstall the top cap. Rotate the blow-off prevention brackets 180° and reinstall using the same screws. Use the correct mounting holes; the brackets must cover the hairpins. See figure 7.
6 - Slide coil assembly, bottom drain pan and horizontal drain pan as one unit back into the air handler.

7 - Reinstall the brackets that hold the coil and horizontal drain pan in place. See figure 9.

8 - Reinstall the blower and coil access panels.
On units of this type, where the blower “draws” rather than “blows” air through the coil, traps must be installed in the condensate drain lines (primary and auxiliary, if used). Traps prevent the blower from drawing air through the drain lines into the air supply.

**Figure 10. Typical Main and Overflow Drain**

**IMPORTANT**

A field-fabricated secondary drain pan, with a drain pipe to the outside of the building, is required in all installations over a finished living space or in any area that may be damaged by overflow from the main drain pan. In some localities, local codes may require a secondary drain pan for any horizontal installation.

**SLOPING THE UNIT**

Make sure the unit is sloped (similar to the slope shown in figure 11) so that the drain pan will empty completely without water standing in the pan.

**Figure 11. Sloping the Unit for Proper Drainage**
NOTE - Check local codes before connecting the drain line to an existing drainage system. Insulate the drain lines where sweating could cause water damage.

TEST CONDENSATE DRAIN
Test the drain pan and drain line after installation:
1 - Pour several quarts of water into drain pan. Use enough water to fill both the drain trap and the line.
2 - Check the installed drain pan. Drain pan must be draining completely. Drain line fittings must not be leaking. Water must be draining from the end of the primary drain line.
3 - Correct any leaks found.

DUCT SYSTEM AND FILTERS

DUCT SYSTEM
The air handler is provided with flanges for the connection of the supply plenum.

Supply and return duct system must be adequately sized to meet the system’s air requirements and static pressure capabilities. The duct system should be insulated with a minimum of 25mm thick insulation with a vapor barrier in conditioned areas or 51mm minimum in unconditioned areas.

Supply plenum should be the same size as the flanged opening provided around the blower outlet and should extend at least .9m from the air handler before turning or branching off plenum into duct runs. The plenum forms an extension of the blower housing and minimizes air expansion losses from the blower.

FILTERS
A filter is provided. Table 1 lists the filter size for each unit.

<table>
<thead>
<tr>
<th>TABLE 1. Unit Air Filter Size Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBX25UH</td>
</tr>
<tr>
<td>-018, -024, -030</td>
</tr>
<tr>
<td>-036, -042, -048, -060</td>
</tr>
</tbody>
</table>

IMPORTANT - Horizontal runs must have an anti-siphon air vent (standpipe) installed ahead of the horizontal run. See figure 10. An extremely long horizontal run may require an oversized drain line to eliminate air traps.

NOTE - Do not operate air handler without a trap in the main (primary) drain. The condensate drain is on the negative pressure side of the blower; therefore, air being pulled through the condensate line will not allow positive drainage without a proper trap.
INSTALLING DUCT SYSTEM
Connect supply air duct to the flange on top of the air handler. If an isolation connector is used, it must be nonflammable.

FIELD-FABRICATED RETURN AIR DUCT FLANGE FOR HORIZONTAL APPLICATIONS
A return air duct system is recommended, but not factory-provided. If the unit is installed in a confined space or closet, run a full-size return connection to a location outside the closet.

![Cabinet and Duct Flange Diagram]

**FIGURE 13. Cabinet and Duct Flange**

**Brazing Refrigerant Lines**
Refrigerant lines must be connected by a qualified technician in accordance with established procedures.

**IMPORTANT**
Refrigerant lines must be clean, dry, refrigerant-grade copper lines. Air handler coils should be installed only with specified line sizes for approved system combinations.
Handle the refrigerant lines gently during the installation process. Sharp bends or kinks in the lines will cause a restriction.
Do not remove the caps from the lines or system connection points until connections are ready to be completed.

**WARNING**
Polyol ester (POE) oils used with HFC-410A refrigerant absorb moisture very quickly. It is very important that the refrigerant system be kept closed as much as possible. DO NOT remove line set caps or service valve stub caps until you are ready to make connections.

**WARNING**
Danger of fire. Bleeding the refrigerant charge from only the high side may result in pressurization of the low side shell and suction tubing. Application of a brazing torch to a pressurized system may result in ignition of the refrigerant and oil mixture. Check the high and low pressures before applying heat.

**WARNING**
When using a high pressure gas such as nitrogen to pressurize a refrigeration or air conditioning system, use a regulator that can control the pressure down to 1 or 2 psig (6.9 to 13.8 kPa).

**CAUTION**
Brazing alloys and flux contain materials which are hazardous to your health.
Avoid breathing vapors or fumes from brazing operations. Perform operations only in well-ventilated areas.
Wear gloves and protective goggles or face shield to protect against burns.
Wash hands with soap and water after handling brazing alloys and flux.

**IMPORTANT**
To prevent the build-up of high levels of nitrogen when purging, it must be done in a well-ventilated area. Purge low-pressure nitrogen (1 to 2 psig / 6.9 to 13.8 kPa) through the refrigerant piping during brazing. This will help to prevent oxidation and the introduction of moisture into the system.
NOTE - When installing refrigerant lines longer than 15.2 meters, see the Lennox Refrigerant Piping Design and Fabrication Guidelines, CORP 9351-L9, or contact Lennox Technical Support Product Applications for assistance. To obtain the correct information from Lennox, be sure to communicate the following information: Model and capacity.

1 - Route the suction and liquid lines from the fittings on the indoor coil to the fittings on the outdoor unit. Run the lines in a direct path, avoiding unnecessary turns and bends.

2 - Make sure that the suction line is insulated over the entire exposed length and that neither suction nor liquid lines are in direct contact with floors, walls, duct system, floor joists, or other piping.

3 - To avoid damaging the rubber grommets in the cabinet while brazing, slide the rubber grommets over the refrigerant lines until they are away from the heat source.

NOTE - Place wet rags against piping plate and around suction line connections.

4 - Connect the suction and liquid lines to the evaporator coil. Take care to protect the cabinet and internal components as detailed in figure 14.

5 - Braze using an alloy of silver or copper and phosphorus with a melting point above 1,100°F (593°C).

NOTE - Do not use soft solder.

6 - Allow refrigerant pipes to cool to room temperature.

NOTE - Make sure to route copper refrigerant tubing away from sharp edges and make sure that it does not touch other metal surfaces. This prevents damage caused by vibration or metal-on-metal contact.

7 - Reinstall the rubber grommets into the refrigerant piping panel.

NOTE - Make sure expansion valve capillary tube is not touching metal edges or copper tubing.

8 - Make sure outdoor unit has been placed according to the Installation Instructions and is connected to the refrigerant lines.
PLEASE READ IMPORTANT ISSUES CONCERNING BRAZING OPERATIONS ON PREVIOUS PAGES BEFORE PROCEEDING.

NOTE - REFER TO OUTDOOR UNIT INSTALLATION INSTRUCTIONS FOR REFRIGERANT PIPING SIZE REQUIREMENTS.

NOTE - Use silver alloy brazing rods with five or six percent minimum silver alloy for copper-to-copper brazing, 45 percent alloy for copper-to-brass and copper-to-steel brazing.

A REMOVE ACCESS PANEL

B REMOVE RUBBER PLUG FROM BOTH LIQUID AND SUCTION LINES

NOTE - CBX25UH SERIES UNITS USE NITROGEN OR DRY AIR AS A HOLDING CHARGE. IF THERE IS NO PRESSURE WHEN THE RUBBER PLUGS ARE REMOVED, CHECK THE COIL FOR LEAKS BEFORE INSTALLING.

C EITHER REMOVE OR PUSH PIPE WRAPPING BACK THROUGH HOLE IN PIPING PLATE BEFORE LINE SET CONNECTION AND BRAZING.

D CONNECT PIPES

NOTE - REFRIGERANT LINE SETS SHOULD BE ROUTED TO ALLOW FILTER ACCESSIBILITY.

E CONNECT GAUGES AND START NITROGEN FLOW

FLOW REGULATED NITROGEN (AT 6.9 TO 13.8 kPa) THROUGH THE REFRIGERATION GAUGE SET INTO THE VALVE STEM PORT CONNECTION ON THE OUTDOOR UNIT LIQUID LINE SERVICE VALVE AND OUT OF THE VALVE STEM PORT CONNECTION ON THE SUCTION SERVICE VALVE.

F PLACE A WET RAG AGAINST PIPING PLATE AND AROUND THE SUCTION LINE CONNECTION.

G BRAZE CONNECTION. ALLOW PIPE TO COOL BEFORE REMOVING WET RAG FROM CTXV SENSING BULB AND PIPING PANEL AREA.

H REPEAT PREVIOUS PROCEDURE FOR LIQUID LINE.

FIGURE 14. Brazing Connections
Sealing the Unit

Seal the unit so that warm air is not allowed into the cabinet. Warm air introduces moisture, which results in water blow-off problems. This is especially important when the unit is installed in an unconditioned area.

If installed in an unconditioned space, sealant should be applied around the electrical wires, refrigerant tubing, and condensate lines where they enter the cabinet.

**WARNING**

There must be an airtight seal between the bottom of the air handler and the return air plenum. Use fiberglass sealing strips, caulking, or equivalent sealing method between the plenum and the air handler cabinet to ensure a tight seal. Return air must not be drawn from a room where this air handler or any gas-fueled appliance (i.e., water heater), or carbon monoxide-producing device (i.e., wood fireplace) is installed.

**IMPORTANT**

Use duct tape and/or Permagum to seal closed any space around the holes where the drain lines exit the cabinet. Warm air must not be allowed to enter through any gaps or holes in the cabinet.

Electrical Connections

**WARNING**

Electric shock hazard! - Disconnect all power supplies before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

**WARNING**

Run 24V Class II wiring only through specified low voltage opening. Run line voltage wiring only through specified high voltage opening. Do not combine voltage in one opening.

**WARNING**

Electric Shock Hazard. Can cause injury or death. Unit must be properly grounded in accordance with national and local codes. Line voltage is present at all components when unit is not in operation on units with single-pole contactors. Disconnect all remote electric power supplies before opening access panel. Unit may have multiple power supplies.

- Wiring must conform to local building codes. Refer to the following wiring diagrams. See unit nameplate for minimum circuit ampacity and maximum over-current protection size.
- Electrical wiring, disconnect means and over-current protection are to be supplied by the installer. Refer to the air handler rating plate for maximum over-current protection, minimum circuit ampacity, as well as operating voltage.
- The power supply must be sized and protected according to the specifications supplied on the product.
- This air handler is factory-configured for 220/240 volt, single phase, 50 cycles.
- Separate openings have been provided for 24V low voltage and line voltage. Refer to the dimension illustration of specific location.
- This unit is provided with holes for conduit. Use provided caps to seal holes not used.
- Typical unit wiring is given in figure 19.
1 - Disconnect all power supplies.
2 - Remove the air handler access panel.
3 - Route the field supply wires to the air handler electrical connection box.
4 - Use wire nuts to connect the field supply conductors to the unit black and yellow leads, and the ground wire to ground terminal marked GND.
5 - Replace the air handler access panel.

**NOTE** - To avoid the possibility of moisture damage to the control in some right-hand discharge configurations, the control panel can be relocated to the end panel as shown in figure 16.

**WARNING**
Electrically ground air handler. Connect ground wire to ground terminal marked "GND". Failure to do so can result in death or electrical shock.
FIGURE 17. Typical Wiring Diagram – CBX25UH-T Air Handler

NOTES:
1. FACTORY SPEED SET TO MEDIUM (BLUE) FOR -024,-030,-036,-048, AND -060
2. ALL WIRES NOT LABELED ARE PART OF ITEM 1010

FIGURE 18. Low Voltage Connections (3-Speed PSC Motor) – Field Wiring

*NOTE - Connect common wire only if required (Refer to the appropriate thermostat installation instructions).
Air Flow – Cooling Blower Speed

The cooling blower speed is factory configured to provide correct air flow for an outdoor unit that matches the cooling capacity rating of the air handler.

If the outdoor unit is smaller than the maximum cooling capacity rating for the air handler, the cooling blower speed may need to be changed. Refer to the Blower Data tables on pages 17 and 18.

NOTE - Refer to wiring diagram located on the unit access panel, this figure and Blower Data tables in this instruction.

- All air data measured external to unit with 25mm non-pleated air filter in place.
- All factory settings are medium speed.
- All data given while air handler is operating with a dry DX coil.
- All downflow applications run on high speed when utilizing electric heat.

WARNING

Electric shock hazard! - Disconnect all power supplies before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

NOTE - Reuse the factory-installed wire nut on the unused wires.

CHANGE BLOWER SPEED

1 - Disconnect all power supplies.
2 - Remove the air handler access panel.
3 - Locate pin number 2 on the blower relay. Two black wires are connected to this terminal pin. One connects to pin number 5 on the blower relay, one connects to an in-line splice connecting to a blue wire.
4 - Select the required blower motor speed. Connect red-LO or black-HI and plug it into the 4-pin blower relay harness connector.
5 - Replace all panels.
6 - Reconnect power.

FIGURE 19. Changing Blower Speed
### CBX25UH-024 BLOWER PERFORMANCE

<table>
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<td>Pa</td>
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<td>75</td>
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<td>100</td>
<td>0.40</td>
<td>290</td>
</tr>
<tr>
<td>125</td>
<td>0.50</td>
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NOTE - All air data measured external to unit with dry coil and 25 mm (1 inch) non-pleated air filter in place.

### CBX25UH-030 BLOWER PERFORMANCE

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<tr>
<th>External Static Pressure</th>
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<tbody>
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<tr>
<td>Pa</td>
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<td>L/s</td>
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<td>125</td>
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NOTE - All air data measured external to unit with dry coil and 25 mm (1 inch) non-pleated air filter in place.

### CBX25UH-036 BLOWER PERFORMANCE

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<tr>
<td>Pa</td>
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NOTE - All air data measured external to unit with dry coil and 25 mm (1 inch) non-pleated air filter in place.

### CBX25UH-048 BLOWER PERFORMANCE

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<td>L/s</td>
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<tr>
<td>125</td>
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NOTE - All air data measured external to unit with dry coil and 25 mm (1 inch) non-pleated air filter in place.

### CBX25UH-060 BLOWER PERFORMANCE

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<th>External Static Pressure</th>
<th>Air Volume at Various Blower Speeds</th>
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<td>Pa</td>
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<td>854</td>
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NOTE - All air data measured external to unit with dry coil and 25 mm (1 inch) non-pleated air filter in place.
Check-out Procedures

NOTE – Refer to outdoor unit installation instructions for system start-up instructions and refrigerant charging instructions.

PRE-START-UP CHECKS
• Is the air handler properly and securely installed?
• If horizontally configured, is the unit sloped up to 16mm toward drain lines?
• Will the unit be accessible for servicing?
• Has an auxiliary pan been provided under the unit with separate drain for units installed above a finished ceiling or in any installation where condensate overflow could cause damage?
• Have ALL unused drain pan ports been properly plugged?
• Has the condensate line been properly sized, run, trapped, pitched, and tested?
• Is the duct system correctly sized, run, sealed, and insulated?
• Have all cabinet openings and wiring been sealed?
• Is the indoor coil factory-installed TXV properly sized for the outdoor unit being used?
• Have all unused parts and packaging been disposed of?
• Is the filter clean, in place, and of adequate size?
• Is the wiring neat, correct, and in accordance with the wiring diagram?
• Is the unit properly grounded and protected (fused)?
• Is the thermostat correctly wired and in a good location?
• Are all access panels in place and secure?

CHECK BLOWER OPERATION
• Set thermostat to FAN ON.
• The indoor blower should come on.

CHECK COOLING OPERATION
• Set thermostat to force a call for cooling (approximately 2°C lower than the indoor ambient temperature).
• The outdoor unit should come on immediately and the indoor blower should start between 30 - 60 seconds later.
• Check the air flow from a register to confirm that the system is moving cooled air.
• Set the thermostat 2°C higher than the indoor temperature. The indoor blower and outdoor unit should cycle off.

Operation

TIME DELAY RELAY
Blower time delay operation:
1 - When cooling demand is initiated, there is a 1 second motor-on delay.
2 - After the motor-on delay expires, motor ramps up to 100% and runs at 100% until cooling demand is satisfied.
3 - Once demand is met, motor runs at 100% for 45 seconds.
4 - Motor ramps down to stop.

FIGURE 20. Blower Time Delay

COOLING (COOLING ONLY OR HEAT PUMP)
When the thermostat calls for cooling, 24 volts is put on the blower time-delay relay coil and then the indoor blower relay energizes. The normally open contacts close, causing the indoor blower motor to operate. The circuit between R and Y is completed, closing the circuit to the contactor in the outdoor unit, starting the compressor and outdoor fan motor.

On heat pumps, circuit R and O energizes the reversing valve, switching the valve to the cooling position. (The reversing valve remains energized as long as the thermostat selector switch is in the COOL position.) At the completion of the cooling demand the indoor blower and outdoor unit should cycle off. Air handler should cycle off 45 seconds after the outdoor unit shuts off.

HEATING (HEAT PUMP)
When the thermostat calls for heating, 24 volts is applied to the blower time-delay relay coil. Then, normally open contacts close, causing the indoor blower motor to operate. The circuit between R and Y is completed, closing the circuit to the contactor in the outdoor unit, starting the compressor and outdoor fan motor.

If the room temperature continues to decrease, the circuit between R and W1 is completed by the second-stage heat room thermostat. Circuit R-W1 energizes a heat sequencer. The completed circuit will energize supplemental electric heat (if applicable). Units with a second heat sequencer can be connected with the first sequencer to W1 on the thermostat. They may also be connected to a second heating stage W2 on the thermostat sub-base.

EMERGENCY HEAT (HEATING HEAT PUMP)
If the selector switch on the thermostat is set to the emergency heat position, the heat pump will be locked out of the heating circuit, and all heating will be electric heat (if applicable). A jumper should be placed between W2 and E on the thermostat sub-base so that the electric heat control will transfer to the first-stage heat on the thermostat. This will allow the indoor blower to cycle on and off with the electric heat when the fan switch is in the AUTO position.
Homeowner Maintenance

⚠ IMPORTANT
Do not operate system without a filter. A filter is required to protect the coil, blower, and internal parts from excessive dirt and dust. The filter is placed in the return duct by the installer.

- Inspect air filters at least once a month and replace or clean as required. Dirty filters are the most common cause of inadequate heating or cooling performance.
- Replace disposable filters. Cleanable filters can be cleaned by soaking in mild detergent and rinsing with cold water.
- Install new/clean filters with the arrows on the side pointing in the direction of air flow. Do not replace a cleanable (high velocity) filter with a disposable (low velocity) filter unless return air system is properly sized for it.
- If water should start coming from the secondary drain line, a problem exists which should be investigated and corrected. Contact a qualified service technician.

Repairing or Replacing Cabinet Insulation

⚠ IMPORTANT
DAMAGED INSULATION MUST BE REPAIRED OR REPLACED before the unit is put back into operation. Insulation loses its insulating value when wet, damaged, separated or torn.

Matte- or foil-faced insulation is installed in indoor equipment to provide a barrier between outside air conditions (surrounding ambient temperature and humidity) and the varying conditions inside the unit. If the insulation barrier is damaged (wet, ripped, torn or separated from the cabinet walls), the surrounding ambient air will affect the inside surface temperature of the cabinet.

The temperature/humidity difference between the inside and outside of the cabinet can cause condensation on the inside or outside of the cabinet which leads to sheet metal corrosion and, subsequently, component failure.

REPAIRING DAMAGED INSULATION
Areas of condensation on the cabinet surface are an indication that the insulation is in need of repair.

If the insulation in need of repair is otherwise in good condition, the insulation should be cut in an X pattern, peeled open, glued with an appropriate all-purpose glue and placed back against the cabinet surface, being careful not to overly compress the insulation so the insulation can retain its original thickness. If such repair is not possible, replace the insulation. If using foil-faced insulation, any cut, tear, or separations in the insulation surface must be taped with a similar foil-faced tape.

Use of Air Handler During Construction
Lennox does not recommend the use of its air handler unit during any phase of construction. Very low return air temperatures, harmful vapors and operation of the unit with clogged or misplaced filters will damage the unit.

Air handler units may be used for heating (heat pumps) or cooling of buildings under construction, if the following conditions are met:
- A room thermostat must control the air handler. The use of fixed jumpers is not allowed.
- Air filter must be installed in the system and must be maintained during construction.
- Air filter must be replaced upon construction completion.
- The air handler evaporator coil, supply fan assembly and duct system must be thoroughly cleaned following final construction clean-up.
- All air handler operating conditions must be verified according to these installation instructions.
FIGURE 22. Start-up and Performance Checklist (Upflow Configuration)
FIGURE 23. Start-Up and Performance Checklist (Horizontal Configuration)