



HUMIDIFIER

506366-01
4/2011 (Supersedes 7/2009)

HEALTHY CLIMATE® HUMIDIFIERS

INSTALLATION INSTRUCTIONS AND TEMPLATE FOR HEALTHY CLIMATE LARGE BYPASS HUMIDIFIER MODELS HCWB3-17, HCWB3-17K, HCWB3-17A & HCWB3-17AK

READ COMPLETE SAFETY INSTRUCTIONS AND INSTALLATION TEMPLATE BEFORE STARTING

ATTENTION INSTALLER:

This product must be installed by a qualified heating and air conditioning contractor. Failure to do so could result in serious injury from electrical shock.
This product must be installed in compliance with all local, state and federal codes.

⚠ WARNING



- 1. ELECTRICAL SHOCK HAZARD.** Can cause injury or death. Disconnect all electrical power supplies before servicing.
- 2. RISK OF PROPERTY DAMAGE, INJURY OR DEATH.** Installation, adjustments, alterations, service and maintenance must be performed by your Lennox dealer.
- 3. RISK OF SCALDING.** Water temperature over 125°F can cause severe burns and scalding instantly. Shut off the hot water supply before disconnecting or tapping into any hot water supply line.
- 4. RISK OF SHARP EDGES HAZARD.** Equipment sharp edges can cause injuries. Avoid grasping equipment edges without protective gloves.

⚠ CAUTION

RISK OF PROPERTY AND EQUIPMENT DAMAGE.

1. Water heating system can be damaged if water supply remains off.
2. After humidifier installation is completed, turn hot water supply back on.
3. Water heating system must be de-energized if the main water supply remains shut off.
4. Do not set humidity level above recommended or to recommended level if condensation exists on inside windows of any unheated space, as condensation damage may result. Excess humidity can cause moisture accumulation which can allow the possibility for mold growth in your home.
5. Do not install humidifier in location where freezing temperatures may occur. The water line could freeze and crack causing water damage to the home.
6. Do not install humidifier or bypass connection on furnace cabinet.
7. Do not install humidifier or bypass connection on blanked off end of cooling coil where airflow will be restricted.
8. Do not connect the transformer to blower motor wiring. Premature component failure may result.
9. Do not install humidifier where water pressures exceed 125 psi, since humidifier damage may result. Follow codes in effect concerning pressure reduction.
10. Do not install humidifier on systems with greater than 0.4 in. wg pressure differential between supply and return plenums.

SPECIFICATIONS

HUMIDIFIER DIMENSIONS

Width (including solenoid valve): 15 3/8"
Height (including drain spud): 15 3/4"
Depth: 10 1/4"

BYPASS DUCT OPENING

6" diameter

PLENUM OPENING

10"W x 12 3/4"H

WATER FEED RATE

3 gph

ELECTRICAL DATA

24 VAC-60 Hz, 0.5 AMP

RECOMMENDED WIRING DIAGRAMS

Models HCWB3-17A & HCWB3-17AK

AUTOMATIC HUMIDIFIER CONTROL

For detailed Automatic Humidifier Control installation and wiring instructions, see Publication No. 504,879M included with Control.

NOTE

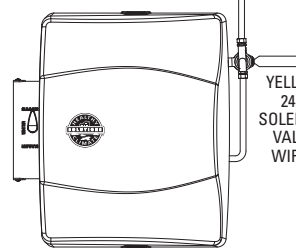
VERIFY THAT MODE SWITCH IS IN THE "BYPASS" POSITION.

NOTE

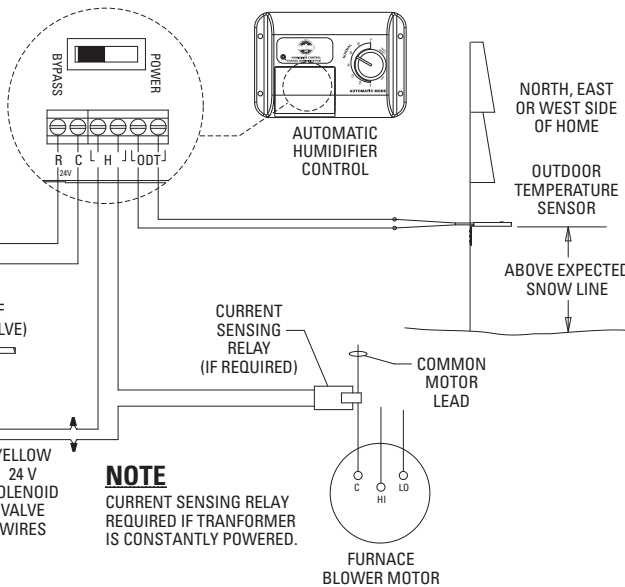
DO NOT WIRE TRANSFORMER USING FURNACE BLOWER CIRCUIT.

24 VAC FURNACE ACCESSORY TERMINALS (10 VA MINIMUM) OR 24 VAC TRANSFORMER (10 VA MINIMUM)

SHUT-OFF (SADDLE VALVE)
WATER SUPPLY



CONNECT DRAIN LINE HERE



NOTE

CURRENT SENSING RELAY REQUIRED IF TRANSFORMER IS CONSTANTLY POWERED.

Model HCWB3-17 & HCWB3-17K

MANUAL CONTROL

For detailed Manual Humidifier Control installation and wiring instructions, see Publication No. 506407-01 included with Control.

IMPORTANT

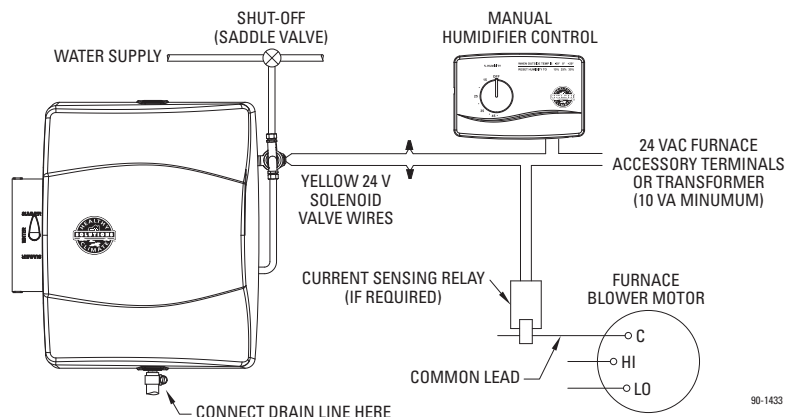
USE 120 VAC POWER SOURCE OTHER THAN FURNACE MOTOR CIRCUIT. HOWEVER, THE TRANSFORMER CAN BE POWERED OFF THE HOT 120 VAC LINE BEFORE IT ENTERS THE FURNACE.

- DO NOT WIRE TRANSFORMER INTO FURNACE BLOWER CIRCUIT.

IMPORTANT

WHEN CURRENT SENSING RELAY IS USED:

- WIRE CURRENT SENSING RELAY INTO 24 VAC HUMIDIFIER CONTROL CIRCUIT ONLY! DO NOT INSTALL IN TRANSFORMER PRIMARY CIRCUIT.



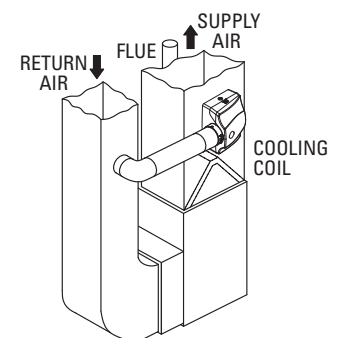
TEMPLATE MUST BE LEVEL

TRACE ALONG OUTER EDGE

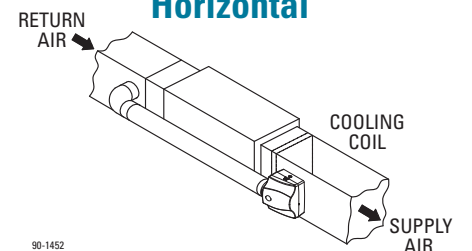
INSTALLATION OPTIONS

The humidifier can be installed on either the supply or return plenum of a forced air handling system and is easily reversible for installation with right hand or left hand bypass duct connections. The humidifier dimensions and serviceability must be considered when selecting the best location for the humidifier. Here are 2 examples of many types of installations.

Upflow



Horizontal



⚠ WARNING

Cover on humidifier must be securely in place when blower is operating. Gas fumes, which could contain carbon monoxide, can be drawn into living space resulting in personal injury or death.

READ REVERSE SIDE FIRST!

- TOP -

READ REVERSE SIDE FIRST!

READ COMPLETE SAFETY INSTRUCTIONS AND INSTALLATION TEMPLATE BEFORE STARTING

FURNISHED ITEMS

Built-in bypass damper
24 VAC Humidifier Control
24 VAC Transformer
Saddle valve
Humidifier Installation Template
Humidifier Control manuals

ITEMS NOT FURNISHED

Mounting screws
(sheet metal screws)
Water supply line (1/4" copper)
Drain line (1/2" I.D. hose)
18 gauge low voltage wire
6" bypass ductwork
Current Sensing Relay (if required)
Hose clamp

Figure 1

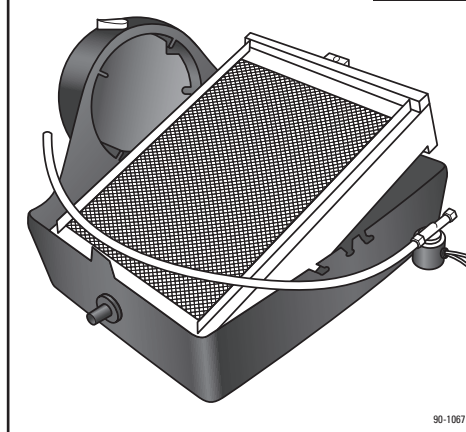


Figure 2

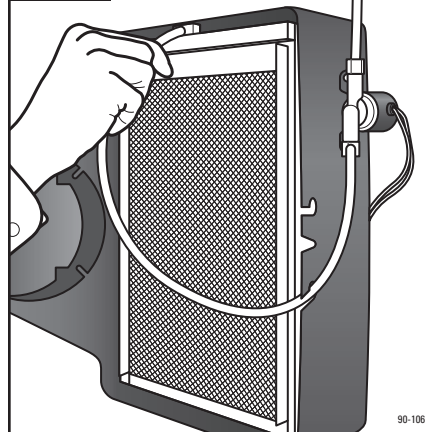
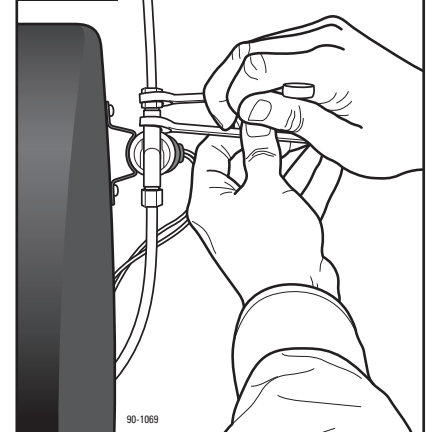


Figure 3



1. Remove front cover by pressing center tabs on top and bottom of the cover (1) and base (2). Pull feed tube (3) out of the water distribution tray (4). Tip the evaporative assembly forward and lift it out of the humidifier. (See Figure 1)

2. The humidifier comes assembled for left side discharge. If converting to right side discharge, the base can be rotated so round collar is facing to the right. Swap the location of the hole plug (10) and drain spud (9) if using a right side discharge. To remove the cap, push and twist from inside the housing while lifting the cap up slightly on the outside. To remove the drain spud, twist and push from the outside of the base.

3. Using a level, position this template at least 3 inches above the furnace housing or cooling coil, if applicable, for clearance of the drain line. Trace around template edges. Remove the template and accurately cut the plenum opening 10" W x 12 3/4" H, being careful to avoid injury from sharp edges.

4. Place the humidifier into the plenum opening, install six sheet metal mounting screws (not furnished) at the top and sides of the humidifier interior.

5. Install a 6" collar in a convenient location on the opposite plenum. Attach a 90° elbow and measure the length of 6" round duct required to make the connection. The design of the humidifier collar provides a solid connection with the bypass duct through the use of inside support ribs and pre-formed holes for sheet metal screws. Slip the duct inside the collar of the humidifier, up to the support ribs. Using the pre-formed holes at the top and bottom of the humidifier collar, secure the duct to the humidifier collar with two sheet metal mounting screws (not

furnished). Support bypass ducts longer than 4 feet to prevent sagging. Seal duct seams and humidifier base with foil tape or mastic.

6. Reinstall the evaporative assembly back into the base, with the bottom of the scale control insert (6) sitting firmly in the inside of the drain spud (9). Snap into place. If evaporative assembly does not snap into place, reverse the assembly. Push the feed tube back into the water distribution tray. (See Figure 2) Put the front cover back on. If the nameplate (11) is upside down, remove it and rotate the nameplate so it is right side up, and snap back into place. Turn damper handle (8) to the open position "WINTER" for the heating season, or closed position "SUMMER" for the cooling season.

7. Locate and install the Manual Humidifier Control by following the instructions shown in step #7A. For Automatic Humidifier Control installation instructions, see Publication No. 504,879M included with the Automatic Control. **DISCONNECT ELECTRICAL POWER TO FURNACE BEFORE PROCEEDING!**

7A. MANUAL HUMIDIFIER CONTROL INSTALLATION

INSTRUCTIONS FOR HCWB3-17 & HCWB3-17K: The enclosed Manual Humidifier Control is designed for low voltage service to control humidification equipment. An increase in relative humidity expands the nylon ribbon which opens the control switch to stop operation on the humidifier. A decrease in relative humidity reverses the process and closes the control switch. (For detailed Manual Humidifier Control installation and wiring instructions, see Publication No. 506407-01 included with Control.)

LOCATION

1. Locate on inside wall of living area approximately 5 feet above floor, or in the furnace return air plenum. If humidifier is mounted on return duct, Humidifier Control must be at least 6" upstream of humidifier.
2. Do not locate Control in the direct path of furnace discharge air or drafts from open doors and windows.
3. Do not install where operation might be affected by lamps, sunlight, fireplace registers, radiators, concealed air ducts and pipes, or next to activities that generate moisture.
4. The basic rules for location of thermostats also apply to humidifier controls.

GENERAL INSTRUCTIONS

1. Do not attempt to repair or recalibrate Humidifier Control. Humidifier Controls requiring service should be returned to your Lennox dealer.
2. Use humidifier control in low voltage (24 VAC) applications only. Install 24 VAC wiring to humidifier control as shown in Wiring Diagrams, opposite side.
3. Make sure no bare wires are exposed or insulation damaged. Insulation on wire should extend to head of binding screws.
4. Make sure all splices are mechanically and electrically secure.
5. To remove dirt or other foreign matter from nylon ribbon and control interior, dust lightly with a fine, soft brush.

8. The humidifier solenoid valve and Humidifier Control operate on 24 VAC. In order for the humidifier to turn on, the furnace blower must be operating and the Humidifier Control must be calling for humidity. See Humidifier Control manuals for Control wiring.

Do not wire transformer into furnace blower circuit. The transformer can be powered from the 120 VAC line before it enters the furnace.

9. Tap into a water supply line with the saddle valve furnished. See instructions on saddle valve package. The humidifier will function with cold, hot, softened or unsoftened water. **WARNING: RISK OF SCALDING. Water temperature over 125°F can cause severe burns and scalding instantly. Shut off the hot water supply before disconnecting or tapping into any hot water supply line.** The use of service hot water (140°F MAX.) and constant blower operation will provide maximum evaporative capacity. **When installing humidifier on heat pump system, humidifier must be supplied with service hot water. When installing humidifier on return plenum, it is recommended that the humidifier is supplied with hot water.**

NOTE: The saddle valve is designed to be fully opened or closed. Do not use it to regulate water flow.

10. Connect tubing from the saddle valve to the inlet side of the solenoid valve using 1/4" O.D. copper tubing (not furnished). **DOUBLE WRENCH AS SHOWN IN FIGURE 3 TO PREVENT DAMAGE TO VALVE BRACKET AND ENSURE WATERTIGHT CONNECTION.**

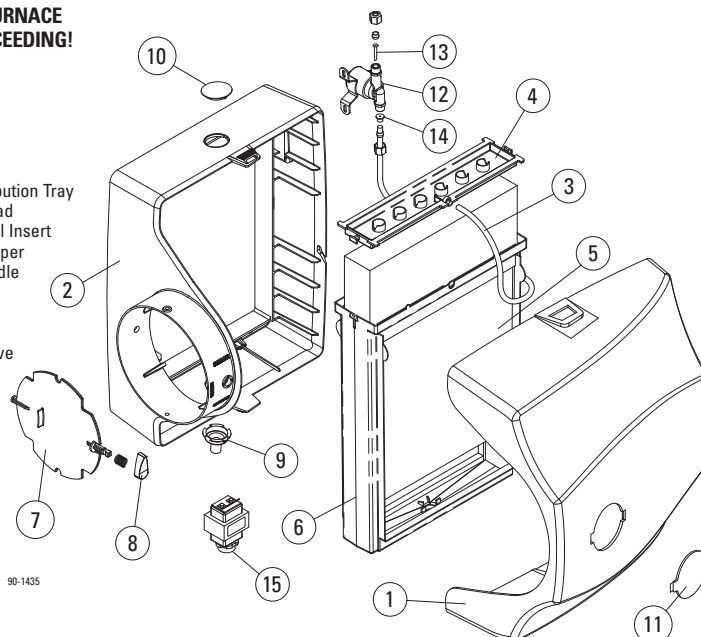
11. Drain spud is designed to accept 1/2" I.D. plastic hose (not furnished). Run drain line from drain spud to floor drain or alternate drain location. **CAUTION: If hose clamp is used, do not over tighten, drain spud could crack. Be sure drain line has continuous slope. NOTE: Do not sweat or directly attach metal drain line to fitting. Do not use solvent type adhesive when connecting plastic drain line, since damage to fitting could result.**

12. Open saddle valve completely and check for leaks. Turn on blower system. **HCWB3-17 & HCWB3-17K –** Adjust humidifier setting so that humidifier will turn on. Allow humidifier to run until water is observed coming out of drain line. Check to see if humidifier and saddle valve are watertight. Check operation to make sure that all electrical components function properly. Set Control to recommended level. (See operating instructions in owners manual.) **HCWB3-17A & HCWB3-17AK –** Use humidification "System Checkout" section of Automatic Humidifier Control Installation Instructions, Publication No. 504,879M. Check to see if humidifier and saddle valve are watertight. Check operation to make sure that all electrical components function properly.

NOTE: BEFORE LEAVING THE JOB SITE, MAKE SURE:

1. Saddle valve is fully open.
2. There are no plumbing leaks.
3. Humidifier functions properly.
4. Bypass damper is in proper position.

1. Front Cover
2. Base
3. Feed Tube
4. Water Distribution Tray
5. Humidifier Pad
6. Scale Control Insert
7. Integral Damper
8. Damper Handle
9. Drain Spud
10. Hole Plug
11. Nameplate
12. Solenoid Valve
13. Strainer
14. Orifice
15. Transformer



TEMPLATE MUST BE LEVEL

IMPORTANT! Be sure owner's manual containing instructions for operation and warranty information is given to owner in order to avoid unnecessary calls. Warranty is void unless humidifier is installed by qualified heating and air conditioning contractor due to possible misapplication of product.