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Dallas, Texas, USA

HUMIDIFIERS

506157-01
KAZ #C.6149
09/2008
Supersedes 505,280M & 505,281M

HCWB2 BYPASS HUMIDIFIERS

INSTALLATION INSTRUCTIONS FOR HCWB2 BYPASS HUMIDIFIERS

Shipping & Packing List

Package 1 of 1 contains the following:

- 1 - Assembled bypass humidifier
- 1 - Manual humidistat (-12 and -17 models)
- 1 - Universal humidistat (-12A and -17A models)
- 1 - Hardware bag assembly which includes:
 - 1 - 120V/24V step-down transformer
 - 1 - Saddle valve with mounting hardware
 - 1 - Drain spud
 - 4 - #8 - 18 X 3/4" sheet metal screws
 - 4 - #8 - 18 X 1-1/4" sheet metal screws
 - 2 - #8 - 18 X 3/4" Phillips head screws
 - 2 - 3/4" plastic anchors
 - 1 - Outdoor temperature sensor with hardware (-12A and -17A only)
 - 1 - Mounting template

Shipping Damage

Check equipment for shipping damage. If damage is found, immediately contact last carrier.

Specifications -- HCWB2-12 & HCWB2-12A

- - Unit dimensions: 11-13/16" W x 12" H x 10" D, 6" diameter opening
- - Plenum opening: 9-1/2" W X 10" H
- - Water feed rate: 3 gph
- - Electrical data: 24V, 60Hz, 0.5 AMP

Specifications -- HCWB2-17 & HCWB2-17A

- - Unit dimensions: 13-1/8" W x 15-1/2" H x 9-1/8" D, 6" diameter opening
- - Plenum opening: 9-1/2" W X 13-1/2" H
- - Water feed rate: 3 gph
- - Electrical data: 24V, 60Hz, 0.5 AMP

General Information

⚠ WARNING

Risk of property damage, injury, or death.

Installation and service must be performed by a qualified installer or service agency.

Installation must conform to all local, state and federal codes.

⚠ CAUTION

As with any mechanical equipment, personal injury can result from contact with sharp sheet metal edges. Be careful when you handle this equipment.

⚠ CAUTION

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.

NOTICE

Risk of property and equipment damage.

Water heating system can be damaged if water supply remains off.

Restore hot water supply as soon as humidifier installation is complete.

Water heating system must be de-energized if the main water supply remains shut off.

Do not set humidity level to or above the recommended level if condensation exists on inside windows of any unheated space. Condensate damage may result. Excess humidity can cause moisture accumulation which can allow the possibility for mold growth in the home.

Do not install humidifier in location where freezing temperatures may occur. The water line could freeze and crack, causing water damage to the home.

Do not install humidifier or bypass connection on furnace cabinet.

Do not install humidifier on cooling coil cabinet or cooling coil plenum.

Do not install bypass humidifier on supply plenum where static pressure exceeds 0.3" w.c.

Do not install humidifier to bypass connection on blanked off end of cooling coil where airflow will be restricted.

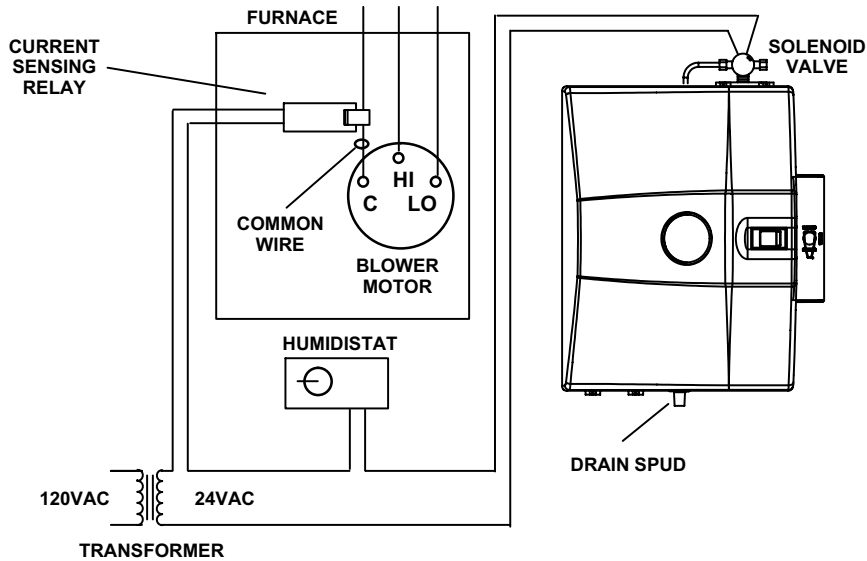
Do not connect the transformer to the multi-speed furnace blower motors or blower motors other than 120VAC.

Normal operating water pressure is 60 psi.

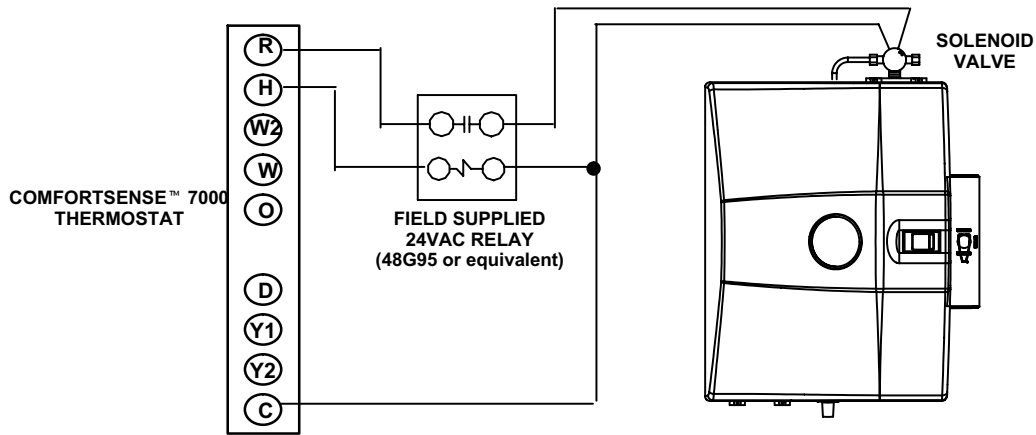
Do not install humidifier where water pressures exceed 125 psi. Humidifier damage may result. Follow applicable codes concerning pressure reduction.

Do not operate heating or cooling system unless humidifier cover is installed.

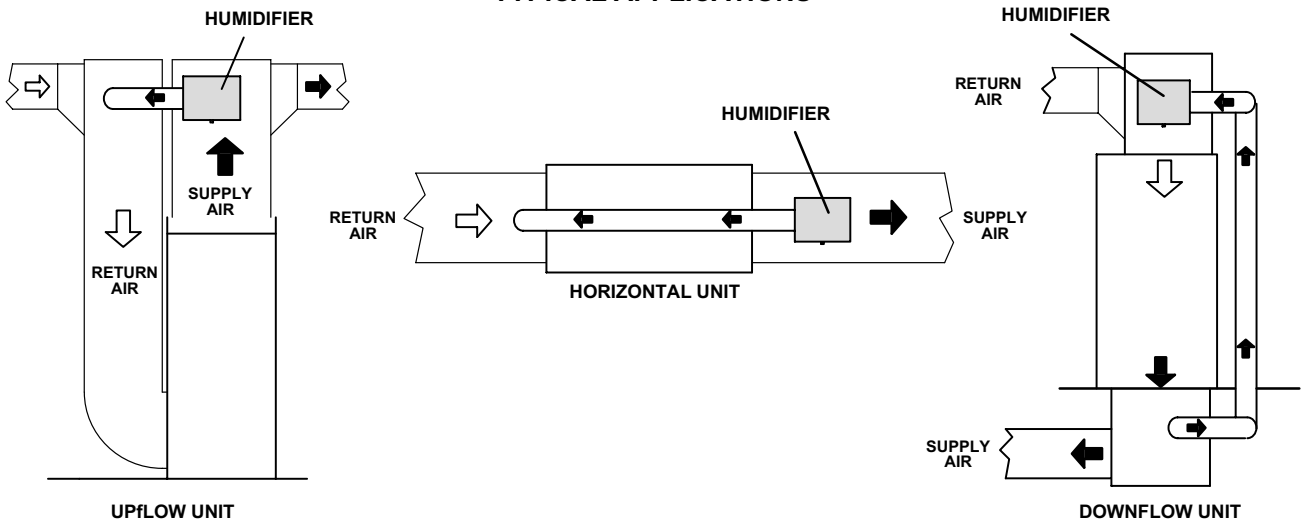
WIRING DIAGRAM -- HUMIDIFIER WITH MANUAL HUMIDISTAT



WIRING DIAGRAM -- HUMIDIFIER WITH COMFORTSENSE™ 7000 THERMOSTAT



TYPICAL APPLICATIONS



Installation

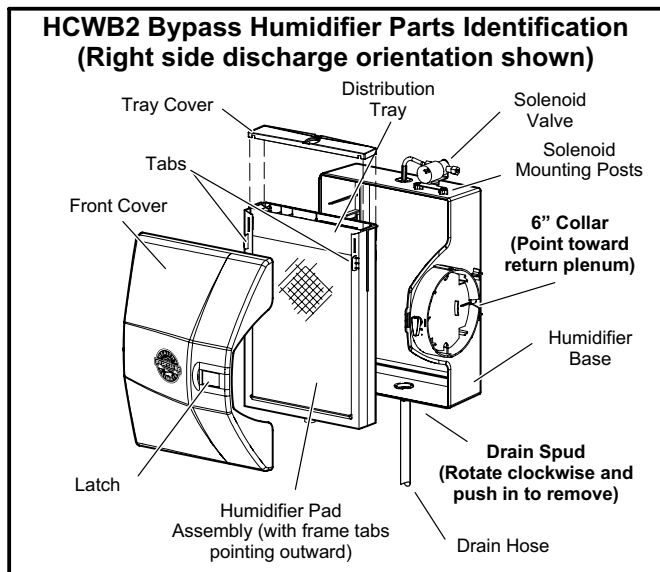
Humidifier Cabinet Installation

⚠ WARNING

**Electric shock hazard.
Can cause injury or death.
Disconnect all electrical power supply to furnace
before proceeding.**

- 1 - The HCWB2-12, -12A, -17 and -17A bypass humidifiers provide optional humidification. Bypass humidifiers are preferred in applications which include a furnace with horizontal air discharge. The bypass humidifier is installed in the supply air plenum and a 6" bypass duct is installed in the return air plenum. Use a level and position the provided template on the supply air plenum at least 1-1/2" above the furnace housing or cooling coil (if applicable) to provide clearance for the drain line. Trace around template edges and remove template.
- 2 - Accurately cut plenum along the traced edges. Take care to avoid cuts caused by sharp sheet metal edges.
- 3 - Use the following steps to open the humidifier assembly and remove the humidifier pad:
 - a - Slide the plastic latch to release the humidifier assembly cover. Swing the cover open and then lift it away from the assembly.
 - b - Grasp the tabs on the humidifier pad frame and lift the frame assembly out of the humidifier cabinet.

NOTE - It is sometimes easier to remove the frame by pulling on one tab at a time.



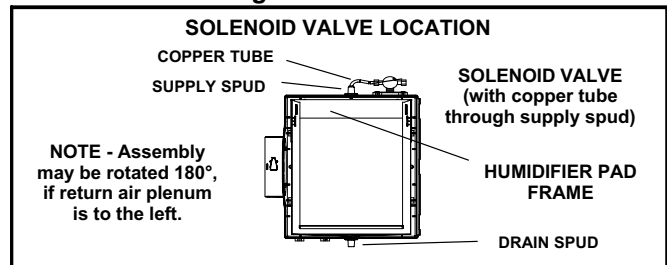
- 4 - Install the provided drain spud by inserting it into the drain hole from inside the cabinet. Rotate the spud counterclockwise to lock it into place.
- 5 - The humidifier is factory-assembled for installation in a left-side bypass duct application. If the return air duct is to the right of the humidifier assembly location, remove the two screws which secure the solenoid valve to the humidifier. Position the solenoid valve over the solenoid mounting posts on the other side of the humidifier. Before securing the solenoid valve to the humidifier, make sure that the clear plastic sleeve

is pushed all the way up to the 90° bend in the copper tube. Center the copper tube inside the rigid plastic spud and carefully tighten the screws that secure the solenoid valve to the humidifier. Make sure that the tube outlet is aligned with the center of the elliptical hole in the distribution tray cover at the top of the pad frame assembly.

NOTE - The supply spud and drain spud are interchangeable.

- 6 - Position the cabinet base with the plastic flange on the inside of the plenum opening. Use four provided #8 - 18 X 1-1/4" screws to secure the humidifier base to the plenum. Two screw holes are provided along the top of the base and two are provided along the bottom of the base. Use foil tape or other preferred means to seal the joint between the humidifier and plenum.

NOTE - Make sure that the surface of the plenum flange is flat. Use field-supplied gasket material between the plenum flange and the humidifier base if the flange surface is uneven.



- 7 - Align the humidifier pad assembly drain with the drain in the cabinet base. Slide the pad assembly back into place. Make sure that the distribution tray cover is pressed firmly on the distribution tray.
- 8 - Insert the cover tabs into the slots on the side of the humidifier cabinet base. Close cover and press gently to make sure that latch is secure. Slide the spring-loaded latch forward, if necessary.

IMPORTANT - Humidifier cover MUST be in place during bypass duct installation.
- 9 - Install a field-provided 6" diameter collar on the return air plenum. Install a 90° elbow over the collar and measure the length of round duct that will be required to create the bypass duct. Install the round duct between the elbow and the round outlet on the humidifier. Do not pull the humidifier collar forward.

Size the duct length with the humidifier cover in place. Make sure that the humidifier cover can be installed and removed easily, then use field-provided sheet metal screws to secure sections of the bypass duct. Use foil tape or other preferred means to seal the seams.

NOTE - Support bypass duct every 4 feet to prevent sagging.
- 10 - Check bypass damper operation to make sure that there are no obstructions.

Manual Humidistat -- HCWB2-12 and 17 Units Only
A manual humidistat is provided with the HCWB2-17 to control the humidifier operation. Follow the instructions below to properly position, install and wire the humidistat with these units.

NOTE - For HCWB2-12A and 17A units, follow the instructions provided with the humidifier control (universal humidistat) shipped with the unit.

Locate the humidistat per the following recommendations:

- Position the humidistat either on an inside wall in the living area approximately 5 feet above the floor, or on the furnace return air plenum. An adapter plate is provided for return air plenum installation.
- Locate the humidistat out of the way of drafts caused by furnace discharge air, or drafts which may occur near open doors or windows.
- Locate the humidistat where it will not be affected by heat generated by lamps, sunlight, fireplace registers, radiators, concealed air ducts and pipes.
- Locate the humidistat where it will not be affected by activities that may generate moisture.

Wire the humidistat per the diagram on the other side of this instruction. The following recommendations apply to the humidistat and its wiring connections:

- **Do not attempt to calibrate or repair this control.**
- The humidistat requires 24VAC power only. **Do not apply higher voltages to the control.**
- Check to ensure that wire insulation is not damaged and that no bare wire is exposed. Wire insulation should extend to the head of the binding screws.
- Splices must be secure.
- Use 18-gauge copper wire for runs up to 150 feet.
- If wiring may be exposed to UV light, wrap wires in foil tape to prevent damage to wire insulation.
- Remove any dirt or debris from the inside of the control using a fine, soft brush.

Water Supply

NOTICE

Before tapping into water supply, shut off water supply at the main valve. Open any faucet to relieve water pressure before proceeding.

Either cold or hot water which is either softened or unsoftened may be used as a water supply for the humidifier. Domestic hot water with a temperature **no higher than 140°F** along with continuous blower operation will provide maximum humidifier capacity.

- 1 - Saddle Valve Installation - Install the saddle valve per the appropriate method depending on the pipe material.

NOTE - The provided saddle valve should be fully opened or fully closed. It is not designed to regulate water flow.

Copper or Plastic Pipe

Use the following steps to install the provided saddle valve on copper or plastic pipe:

- a - Place a rubber gasket in the center of the hole in the top saddle clamp.
- b - Place both top and bottom clamps around the water pipe where the tap is to be made. Use bolts to tighten the clamps evenly. Do not overtighten the clamps.
- c - Screw the valve body into the opening in the top saddle clamp and tighten.
- d - Tighten the nut on the valve body.
- e - Install a 1/4" supply line to the humidifier using compression fittings.
- f - Turn the handle until the spindle is firmly seated

into the valve body. This will pierce the water pipe. Turning the spindle in will shut the valve.

Steel or Brass Pipe

Use the following steps to install the provided saddle valve on steel or brass pipe:

- a - Drill a 3/16" diameter hole in the pipe where the tap will be located.
- b - Place a rubber gasket in the center of the hole in the top saddle clamp.
- c - Position the top clamp so that the spindle from the valve fits into the hole
- d - Place both top and bottom clamps around the water pipe. Use bolts to tighten the clamps evenly. Do not overtighten the clamps.
- e - Screw the valve body into the opening in the top saddle clamp and tighten.
- f - Tighten the nut on the valve body.
- g - Install a 1/4" supply line to the humidifier using compression fittings.

NOTE - If the pipe is larger than 1" O.D., use 1/4" - 20 X 1-3/4" bolts.

- 2 - Connect field-provided 1/4" copper tubing from the saddle valve to the inlet side of the solenoid valve. Use the double wrench technique to tighten the connection in order to prevent leaking and to avoid damage to the valve. Support the copper tubing, as necessary. Strain from the weight of the tubing can affect the solenoid assembly alignment.
- 3 - Connect a field-provided 1/2" I.D. plastic hose from the humidifier drain spud to a floor drain. The drain line must have a continuous slope. Use a spring-type hose clamp to connect the drain line to the drain spud. Install a P-trap if backward pressure at the drain is possible.

NOTE - If a screw-type hose clamp is used, DO NOT overtighten the clamp. This may result in damage to the drain spud.

NOTE - Drain and water supply piping must be protected from freezing temperatures, where applicable.

- 4 - Turn on water supply.

NOTICE

**Do not sweat or attach a metal drain line to the drain stub on the humidifier.
Do not use a solvent-type adhesive when connecting a plastic drain hose.
Either practice could damage the drain line fitting.**

Start-Up

- 1 - Open saddle valve completely.
- 2 - Turn on power to the furnace and initiate a heating demand.
- 3 - HCWB2-12 and -17 -- Adjust the humidistat setting so that the humidifier will turn on. Allow the humidifier to run until water can be seen coming out of the drain line. Check to make sure that system is watertight. Set humidistat to recommended level.
HCWB2-12A and -17A -- Check to make sure that system is watertight. Follow System Checkout procedures given in humidifier control (universal humidistat) instructions.