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. Proper humidification and humidity control also requires that the home be constructed in accordance with local codes and good building practices.

**WARNING**

1. **ELECTRICAL SHOCK HAZARD.** Disconnect electrical power to the furnace before starting installation. Failure to do so could result in serious injury from electrical shock.

2. **SHARP EDGES HAZARD.** Sharp edges may cause serious injury from cuts. Use care when making plenum openings and handling ductwork.

3. **RISK OF SCALDING.** Water temperature over 125°F can cause severe burns and scald instantly. Shut off the hot water supply before disconnecting or tapping into any hot water supply line.

**CAUTION**

**RISK OF PROPERTY AND EQUIPMENT DAMAGE.**

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

2. Do not install humidifier or bypass connection on the furnace jacket.

3. Do not install humidifier or bypass connection on a plenum face where the blanked off ends of the cooling coil will restrict air movement through the humidifier.

4. Do not set humidity level above recommended or to a 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 the home.

5. Do not connect Model 400 or 400M transformer to blower motor wiring. Premature component failure may result.

6. When installing Humidifier Control on downflow furnace, ensure blower continues to run after a heat call is satisfied to eliminate high temperatures from damaging the Control.

7. Do not install humidifier where water pressure exceeds 125 psi, since damage to the humidifier may result. Follow codes in effect concerning pressure reduction.

8. Do not install humidifier on systems with greater than 0.4 in. wg pressure differential between supply and return plenums.

**RECOMMENDED WIRING DIAGRAM**

*(SEE STEP 7 ON BACK AND “HUMIDIFIER CONTROL SAFETY AND INSTALLATION INSTRUCTIONS” FOR DETAILED WIRING INSTRUCTIONS)*

**MODEL 400 SERIES HUMIDIFIER**

**SPECIFICATIONS**

**HUMIDIFIER DIMENSIONS**
- Width including solenoid valve: 15 3/4”
- Height including drain spud: 15 1/2”
- Depth: 10 1/4”

**BYPASS DUCT OPENING**
- 6” diameter

**PLENUM OPENING**
- 10"W x 12 1/4”H

**ELECTRICAL DATA**
- 24 VAC-60 Hz, 0.5 AMP

**INSTALLATION OPTIONS**

The Model 400 and 400M Aprilaire 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.

- **Uplow**
  - **Suppy**
  - **Return**

- **Horizontal**
  - **Suppay**
  - **Return**

**NOTE**

When installing Model 400 humidifier on a heat pump system, the evaporative capacity will be reduced due to air temperatures below 120°F. Pluming to hot water partially offsets the reduction.

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1. Press top & bottom tabs to remove cover (1). Full feed tube (3) out of distribution tray (4). Remove Water Panel® Evaporator assembly. See Figure 1.

2. Humidifier is supplied with bypass duct connection on left. For right side bypass, swap location of water level sensor assembly (9) and cap (10).

3. Position template on supply or return plenum. Make sure template is level. Allow clearance for drain line and for servicing. Trace template outline. Cut 10” wide x 12-3/4” high opening. Avoid injury from sharp edges.

4. Place humidifier base (2) in opening and secure with 6 screws in openings provided.

5. Select location for 6” collar on opposite plenum to minimize length and number of elbows in bypass duct. Install 6” bypass duct components. Attach duct to humidifier collar using 2 screws in openings provided.

6. Insert Water Panel Evaporator assembly into base. Make sure bottom of scale control insert (6) is seated in water level sensor assembly (9). Snap top of evaporator assembly into base. Insert feed tube into distribution tray. See Figure 2. Make sure float cover (14) is snapped into place and that float (13) moves freely up and down. Rotate nameplate (11) if necessary, so it is right side up. Place point bypass damper handle (8) to “WINTER” (open) for heating season and “SUMMER” for cooling season.

7. Control installation and wiring. Disconnect electrical power to furnace before wiring control. In order for humidifier to operate, furnace must be on and RH must be below set-point of control. Wiring diagram illustrates recommended method of detecting furnace operation.

- MANUAL HUMIDIFIER CONTROL, MODEL 400M:
  - Manual Control can be mounted in return duct or on wall in living space. Knob and cover must be removed to mount control. See wiring diagram for 24V control connections.

- For return duct mounting, position template at least 6” upstream of bypass duct connection or humidifier. Avoid injury from sharp edges when cutting opening. Make sure foam gasket is in place and secure control to duct using 2 screws in holes provided.

- For wall-mount, select location that will not be affected by drafts or heat sources. Remove and discard foam gasket and secure control to wall over wire access opening using screws & anchors provided.

8. Humidifier will function with cold, softened or unsoftened water. Hot water (140°F max) is strongly recommended to provide maximum evaporation capacity. Saddle valve provided may be used to tap into water supply. See installation instructions on saddle valve package. Saddle valve is designed to be fully opened or closed. Do not use to regulate flow.

9. Run 1/4” copper tubing from saddle valve to solenoid valve. DOUBLE-WRENCH TO PREVENT LEAKING. See Figure 3.

10. INSTALL DRAIN IN ACCORDANCE WITH LOCAL CODES. Run 1/2” I.D. hose from drain spud to floor drain. Make sure drain has constant downward slope and is not kinked. Do not over-tighten hose clamp onto drain spud. Do not use solvent adhesive on drain spud.

11. Check humidifier operation. Open saddle valve and turn control to highest setting. Turn on furnace. Make sure all electrical connections are secure and all plumbing connections are water-tight. Set control to proper setting.

**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.

**NOTE:** Before leaving the job site, make sure:
1. Saddle valve is fully open.
2. All plumbing connections are watertight.
3. Humidifier functions properly.
4. Bypass damper is in proper position.