

# 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.

# FAN POWERED HUMIDIFIER MODEL EHUMD500A

### WARNING

- ELECTRICAL SHOCK HAZARD.** 120 VAC may cause serious injury from electrical shock. Disconnect electrical power to the furnace before starting installation. Failure to do so could result in serious injury from electrical shock.
- SHARP EDGES HAZARD.** Sharp edges may cause serious injury from cuts. Use care when making plenum openings and handling ductwork. Use personal protective equipment when installing or servicing HVAC equipment.
- 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.

- Do not install in attic or crawl areas.
- Do not install humidifier where freezing temperatures could occur. The water line could freeze and crack causing water damage to the home.
- Do not install humidifier on the furnace cabinet.
- Do not install humidifier on a plenum face where the blanked off ends of the cooling coil will restrict air movement through the humidifier.
- 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 the home.
- Do not connect the humidifier power cord to multi-speed furnace blower motors or blower motors other than 120 VAC. Premature component failure may result.
- When installing Humidifier Control on a downflow furnace, ensure blower continues to run after a heat call is satisfied to eliminate high temperatures from damaging the Control.
- Do not install humidifier where water pressure exceeds 125 psi, since damage to the humidifier may result. Follow codes in effect concerning pressure reduction.
- Do not install humidifier on the supply plenum where static pressure exceeds 0.4 in. wg.

### SPECIFICATIONS

#### HUMIDIFIER DIMENSIONS

Width 15<sup>29</sup>/<sub>32</sub>"  
Height (including solenoid valve and drain spud) 18"  
Depth 10<sup>11</sup>/<sub>32</sub>"

#### PLENUM OPENING

14<sup>3</sup>/<sub>4</sub>"W x 14<sup>5</sup>/<sub>16</sub>"H

#### WATER FEED RATE

6 gph

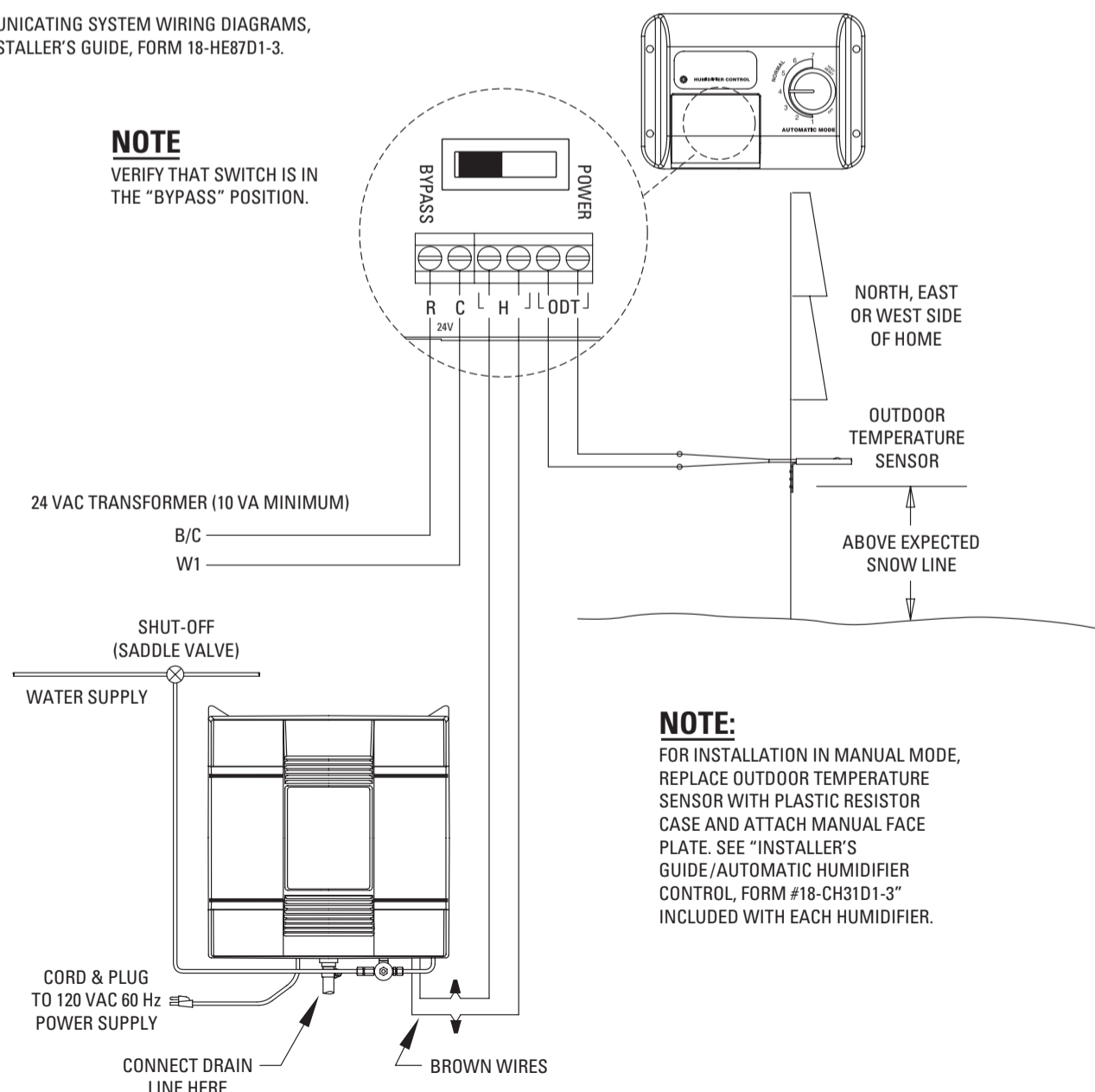
#### ELECTRICAL DATA

120 VAC-60 Hz, 0.8 AMP

## WIRING DIAGRAM

(SEE STEP 7 ON BACK AND "INSTALLER'S GUIDE / AUTOMATIC HUMIDIFIER CONTROL, FORM #18-CH31D1-3" FOR DETAILED WIRING INSTRUCTIONS)

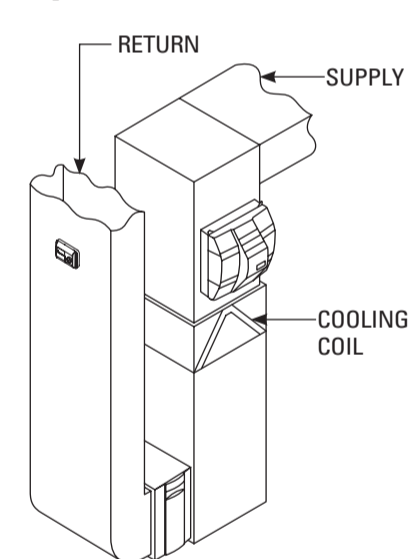
**NOTE:** FOR COMMUNICATING SYSTEM WIRING DIAGRAMS, SEE ENCLOSED INSTALLER'S GUIDE, FORM 18-HE87D1-3.



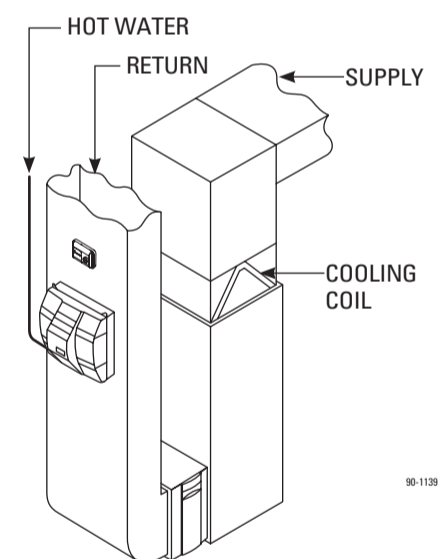
**NOTE:** FOR INSTALLATION IN MANUAL MODE, REPLACE OUTDOOR TEMPERATURE SENSOR WITH PLASTIC RESISTOR CASE AND ATTACH MANUAL FACE PLATE. SEE "INSTALLER'S GUIDE/AUTOMATIC HUMIDIFIER CONTROL, FORM #18-CH31D1-3" INCLUDED WITH EACH HUMIDIFIER.

## INSTALLATION OPTIONS

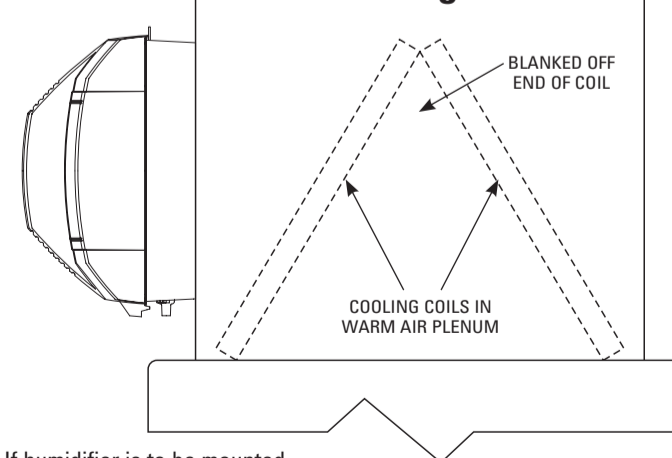
### Typical Installation



### Alternate Installation



### Orientation of Humidifier to Cooling Coils



If humidifier is to be mounted adjacent to cooling coils, install as shown in relation to coil.

### NOTES

- The humidifier is not suitable for installation on ducts with horizontal airflow. Performance will be reduced. For such applications, use a Large Bypass Humidifier.
- When installing humidifier on a heat pump system, use hot water. The heated water supplements the reduced supply air temperature as added heat for evaporation.
- If fresh air is piped directly into the return air duct, it must be installed downstream of humidifier.

**TEMPLATE MUST BE LEVEL**

READ REVERSE SIDE FIRST!

↑ TOP ↑

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FURNISHED ITEMS

- Automatic Humidifier Control
- Automatic Humidifier Control Installation Sheet
- 24 VAC Transformer
- Saddle Valve
- Humidifier Installation Template

ITEMS NOT FURNISHED

- Mounting screws (sheet metal screws)
- Water supply line (1/4" copper)
- Drain line (1/2" I.D. hose)
- Low voltage wire
- Current Sensing Relay Part No. BAYRLY10ASENSA (if required)

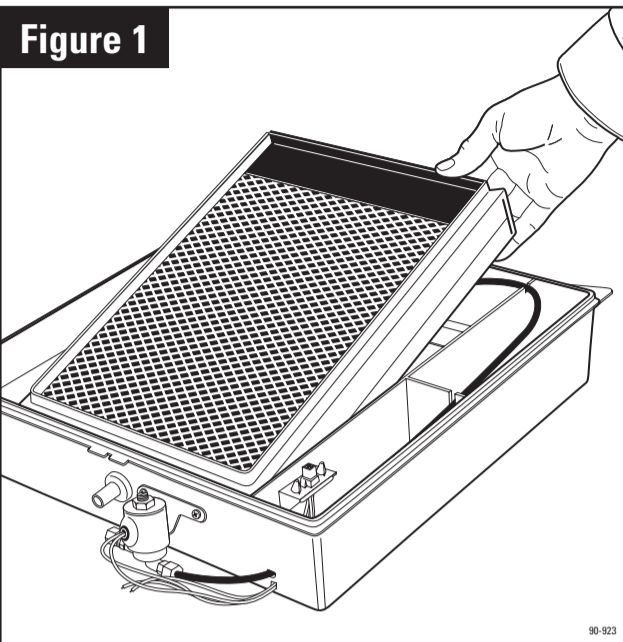


Figure 1

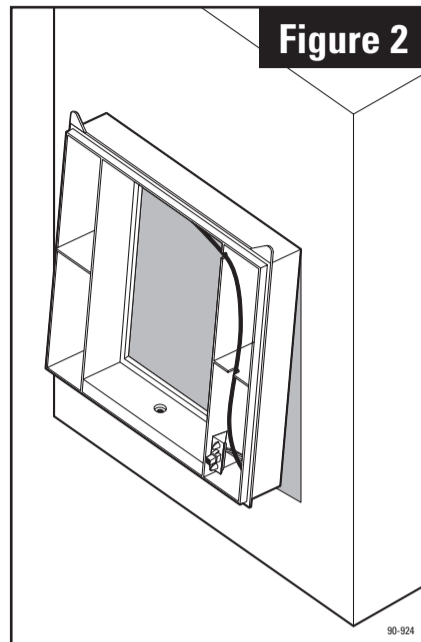


Figure 2

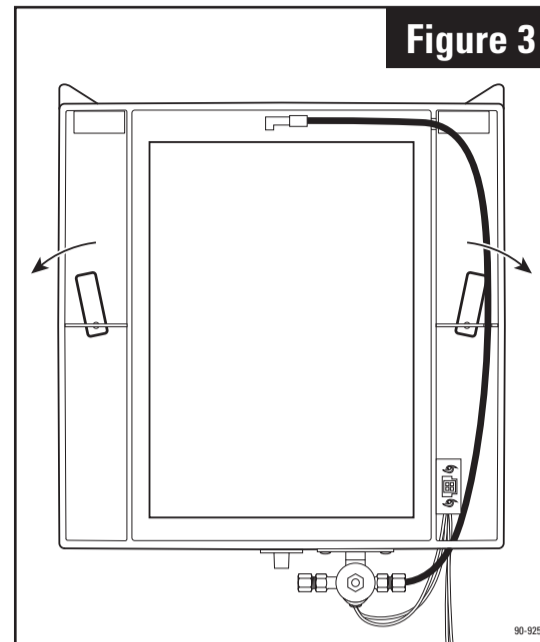


Figure 3

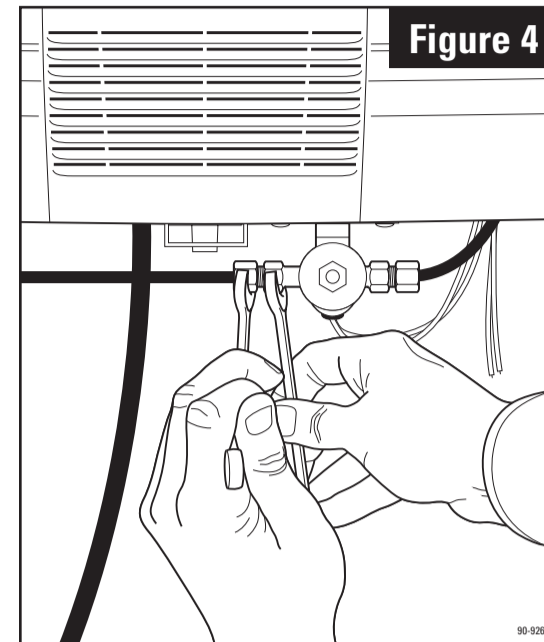


Figure 4

**1.** Place the humidifier on a flat surface. Unlatch humidifier cover assembly from base assembly at the bottom of the cover, lift and set aside. Pull out the evaporative assembly by grasping at the top and tipping out. (See Figure 1)

**2.** Using a level, position this template at least 1 1/2 inches above the furnace housing or cooling coil if applicable, for clearance of the drain line. Trace around template edges. When there is insufficient space on the supply plenum, the humidifier can be installed on the return duct provided the humidifier is supplied with hot water. Remove the template and accurately cut the plenum opening 14 3/4"W x 14 5/16"H, being careful to avoid injury from sharp edges.

**3.** Position the two plastic hooks on the top of base along the top edge of the plenum opening. Push base up to engage the two hooks and sheet metal along the top edge opening. Push base in and slide down so that the bottom four hooks engage the sheet metal at the bottom edge of the opening. Secure base to opening using top three screw holes in housing. An additional hole is provided at the bottom for securing the base to the plenum. (See Figure 2)

**4.** While pressing the base against the plenum, reach through the center opening and turn left and right swing latches down to secure the base onto the plenum. (See Figure 3)

**5.** Reinstall the evaporative assembly into the base, with the bottom of the scale control insert (5) sitting firmly in the inside of the drain spud attached to the base. Push the evaporative assembly in at the top between the retaining ribs that hold the assembly in place in a vertical position. Reinstall cover assembly by hooking at the top of base assembly and latching at the bottom.

**6.** Install the Automatic Humidifier Control in the return duct using the installation instructions enclosed (see Wiring Diagram, opposite side). For detailed installation and wiring instructions, see "Installer's Guide/Automatic Humidifier Control, Form #18-CH31D1-3" included with the humidifier.

**7.** The humidifier power cord must be plugged into a 120 VAC outlet. Do not use an extension cord. Do not power 120 VAC outlet from the furnace blower circuit. The Automatic Humidifier Control must be powered from a 24 VAC source connected to the "R" and "C" terminals on the control. The 24 VAC humidifier wires (brown) must be connected to the "H" terminals on the control. **CAUTION: Do not connect brown wires to "ACC" or "HUM" terminals on furnace or damage to the humidifier could result.**

In order for the humidifier to turn on, the furnace blower must be operating and the control must be calling for humidity. The interface between the humidifier and the furnace to detect blower operation can be accomplished several different ways:

**A.** If the humidifier is plugged into a continuously powered 120 VAC outlet and the humidifier control "R" and "C" terminals receive 24 VAC from a transformer that is powered from the "HUM" terminals of the integrated furnace control board (IFC), or 24 VAC from the low voltage terminal strip "W" and "B/C" of the IFC, the two brown wires from the humidifier can be connected directly to the "H" terminals on the humidifier control.

**B.** If the humidifier is plugged into a 120 VAC outlet that is only powered when the furnace burner and blower for air distribution is in operation, then the humidifier control "R" and "C" terminals can be supplied with continuous 24 VAC, and the two brown wires from the humidifier can be connected directly to the "H" terminals on the humidifier control.

**C.** If the humidifier is plugged into a continuously powered 120 VAC outlet and the control is powered from a continuous 24 VAC source, then a Current Sensing Relay Part No. BAYRLY10ASENSA (not included) must be installed in the humidifier circuit. (Brown wires connected to "H" terminals on control.)

**8.** Tap into 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. 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.**

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

**9.** 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 TO PREVENT LEAKING! (See Figure 4)**

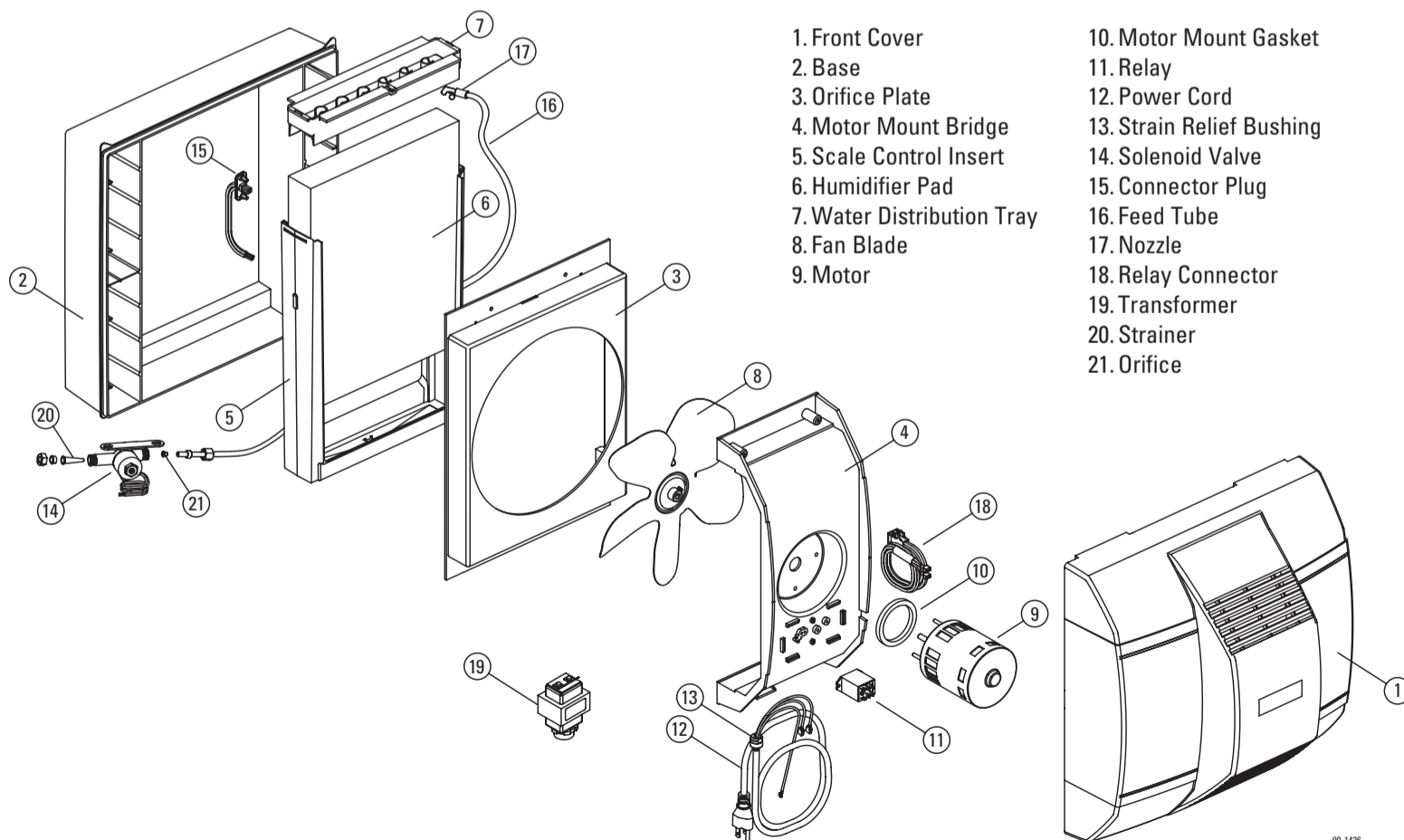
**10.** Drain spud is designed to accept 1/2" I.D. plastic hose (not furnished). Run drain line from drain spud to floor drain. **CAUTION: If hose clamp is used, do not overtighten, drain spud could crack. Be sure drain line has continuous slope. NOTE: Do not sweat or directly attach metal drain line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

**11.** Open saddle valve completely and turn on furnace. Turn up humidifier control so that humidifier will turn on. Allow humidifier to run until water is observed coming out of the drain line. Check to see if humidifier and saddle valve are watertight. Check operation to make sure that all electrical components function properly by utilizing humidification system check-out section in the "Installer's Guide/Automatic Humidifier Control, Form #18-CH31D1-3". Set humidifier control to level recommended in the "Use and Care manual".

NOTE: BEFORE LEAVING THE JOB SITE, MAKE SURE:

- 1. Saddle valve is fully open.
- 2. All plumbing connections are watertight.
- 3. Humidifier functions properly.

PARTS LIST



- 1. Front Cover
- 2. Base
- 3. Orifice Plate
- 4. Motor Mount Bridge
- 5. Scale Control Insert
- 6. Humidifier Pad
- 7. Water Distribution Tray
- 8. Fan Blade
- 9. Motor
- 10. Motor Mount Gasket
- 11. Relay
- 12. Power Cord
- 13. Strain Relief Bushing
- 14. Solenoid Valve
- 15. Connector Plug
- 16. Feed Tube
- 17. Nozzle
- 18. Relay Connector
- 19. Transformer
- 20. Strainer
- 21. Orifice

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**IMPORTANT!** Be sure Use and Care 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.