

CONGRATULATIONS

On your recent purchase of a Hamilton humidifier. With a little care it will provide years of comfort. We, the employees of Hamilton thank you and look forward to serving you again.

HUMIDITY HELP LINE

If after reading this manual you have questions about installing, operating or servicing Hamilton humidifiers, call 1-800-879-0123.

Hamilton Home Products, Inc.

P.O. Box 12039
Columbus, OH 43212
614-837-0006 • Fax 614-837-1427

HAMILTON®

MODEL 2D

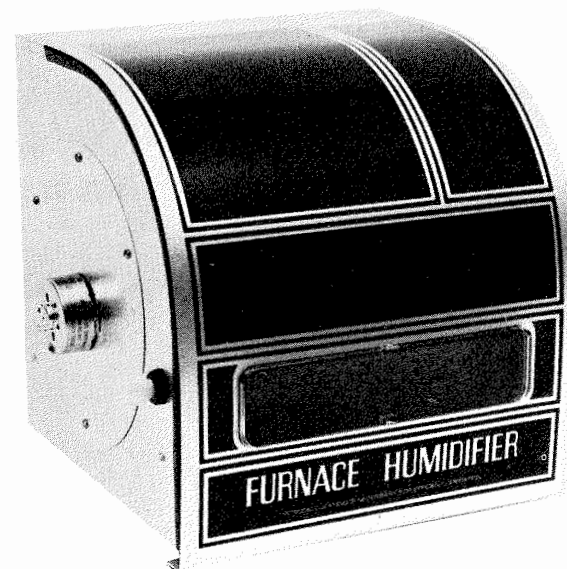
11 gallons/day

and

MODEL 4D

18 gallons/day

WHOLEHOUSE CENTRAL HUMIDIFIERS



**CAUTION: READ THESE INSTRUCTIONS THOROUGHLY
BEFORE STARTING INSTALLATION**

FILL IN FOR FUTURE REFERENCE:

Model No. _____

Serial No. _____

Installation Date _____

SAVE THIS MANUAL FOR FUTURE REFERENCE

MODEL 2D

KEY NO.	PART NUMBER	DESCRIPTION	QTY.
1	A00-0641-148	Cover Assembly	1
2	000-1317-024	Cover Window Only	1
3	EP-33	Evaporator Pad	1
4	000-1722-017	Drum End (open)	1
5	000-1722-018	Drum End (closed)	1
6	000-1526-039	Drum Shaft	1
7	000-0692-029	Drum Clip	2
8	A01-1722-18H	Drum Assembly (includes Key Nos. 4, 5, 6, 7)	1
9	000-0427-006	Nut	14
10	000-0426-002	Screw	12
11	000-1318-010	Shaft Bearing	1
12	A00-1726-013	By-Pass Opening Collar Ass'y	1
13	000-1716-015	Motor Mounting Plate	1
14	MA-042	Motor (includes Mounting Hardware)	1
15	A00-1730-074	Cabinet Basic Ass'y	1
16	000-1102-024	Gasket	2
17	A00-1526-028	Cross Bar Assembly	1
18	000-1188-030	Flexible By-Pass Tubing	1
19	000-1726-002	Plenum Collar	1
20	000-1707-077	Air Shutter	1
21	000-1106-015	Catch Basin	1
22	000-1317-020	Valve Hole Plug	1
23	000-0426-074	Screw for Cross Bar	2
24	A00-1175-9PH	Plastic tubing (10 ft. with fittings)	1
25	A00-1128-5PH	Self Piercing Valve	1
26	000-1080-002	Nylon Tube Fitting Nut	1
27	000-1114-001	Valve Attach Nut	1
28	000-1110-000	Valve Attach Washer	1
29	000-0208-000	Humidifier Tablets (accessory to control minerals and odor)	0
30	WP-039	Water Pan	1
31	FV-048	Replacement Valve Ass'y (includes Key Nos. 26, 27, 28, 31, 32)	1
32	VSR-002	Valve seat only (package of two)	1
33	PF-005	Float	1
34	PT-113	24 Volt Transformer, Plug-In	1
35	A11-0431-011	Duct Humidistat	1
36	A00-0431-011	Humidity Control Only	1
37	000-0811-007	Low Voltage Wire (10 feet)	1

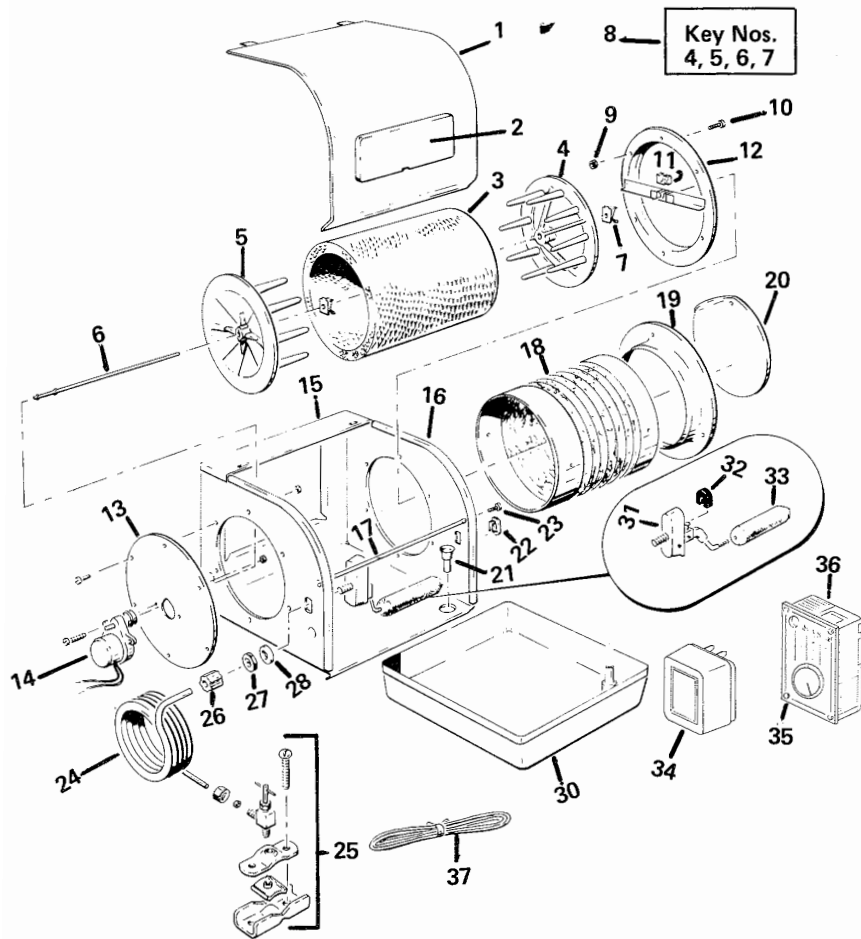
MODEL 4D

KEY NO.	PART NUMBER	DESCRIPTION	QTY.
1	A00-0641-146	Cover Assembly	1
2	000-1317-025	Cover Window Only	1
3	EP-34	Evaporator Pad	1
4	000-1722-019	Drum End (open)	1
5	000-1722-020	Drum End (closed)	1
6	000-1526-040	Drum Shaft	1
7	000-0692-029	Drum Clip	2
8	A01-1722-20H	Drum Assembly (includes Key Nos. 4, 5, 6, 7)	1
9	000-0427-006	Nut	14
10	000-0426-002	Screw	12
11	000-1318-010	Shaft Bearing	1
12	A00-1726-014	By-Pass Opening Collar Ass'y	1
13	000-1716-014	Motor Mounting Plate	1
14	MA-042	Motor (includes Mounting Hardware)	1
15	A00-1730-072	Cabinet Basic Ass'y	1
16	000-1102-025	Gasket	2
17	A00-1526-029	Cross Bar Assembly	1
18	000-1188-029	Flexible By-Pass Tubing	1
19	000-1726-007	Plenum Collar	1
20	000-1707-074	Air Shutter	1
21	000-1106-015	Catch Basin	1
22	000-1317-020	Valve Hole Plug	1
23	000-0426-074	Screw for Cross Bar	2
24	A00-1175-9PH	Plastic tubing (10 ft. with fittings)	1
25	A00-1128-5PH	Self Piercing Valve	1
26	000-1080-002	Nylon Tube Fitting Nut	1
27	000-1114-001	Valve Attach Nut	1
28	000-1110-000	Valve Attach Washer	1
29	000-0208-000	Humidifier Tablets (accessory to control minerals and odor)	0
30	WP-041	Water Pan	1
31	FV-048	Replacement Valve Ass'y (includes Key Nos. 26, 27, 28, 31, 32)	1
32	VSR-002	Valve seat only (package of two)	1
33	PF-005	Float	1
34	PT-113	24 Volt Transformer, Plug-In	1
35	A11-0431-011	Duct Humidistat	1
36	A00-0431-011	Humidity Control Only	1
37	000-0811-007	Low Voltage Wire (10 feet)	1

Due to Hamilton® Products' continuing research and development program, specifications are subject to change without notice.

SAFETY PRECAUTIONS

PLEASE READ BEFORE INSTALLING HUMIDIFIER



MODEL 2D and MODEL 4D

Parts may be purchased at your local Hamilton® Products outlet.
WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION:

1. Model Number 2. Part Number 3. Part Name

Be sure to use the correct parts list.

Due to Hamilton® Products' continuing research and development program, specifications are subject to change without notice.

1. Do not install a humidifier where the heating temperatures will exceed 200°F. Excessive temperatures will damage your humidifier and possibly cause an overflow condition and water damage to your home.
2. Do not install a humidifier where the surrounding temperature may be 32°F or colder. Freezing water will damage your humidifier and burst the supply pipe, resulting in home damage.
3. Do not cut or drill into any air conditioning or electrical accessories during humidifier installation. Fatal electrocution is possible if you come into contact with a live electrical wire. Blindness can occur if freon contacts your eyes.
4. When the humidifier is in a finished basement or any area that water damage could occur, always connect the overflow provision of the humidifier to a suitable drain.
5. For above ceiling installation, always install a drain pan plumbed to a suitable drain.
6. Below are listed the initial recommended settings for your humidity control. Because relative humidity affects everyone differently, these settings can be raised or lowered to suit your personal comfort. **WARNING:** Setting your humidity control higher than the listed setting could cause condensation that would damage your home. If excessive moisture appears on windows or walls, reduce humidity setting at humidistat enough to eliminate condensation. If the situation continues, turn off water valve until condensation is gone.

At Outside Temperature	Recommended Setting	At Outside Temperature	Recommended Setting
- 20°F.	15	+ 10°F.	30
- 10°F.	20	+ 20°F.	35
0°F.	25	Above 20°	40

7. The installation, wiring and plumbing of the humidifier must comply with local codes, ordinances and regulations.
8. Read all installation instructions before installing humidifier.
9. Manufacturer assumes no responsibility under warranty if user does not follow stated precautions.

TOOLS & MATERIALS NEEDED

1. Safety Goggles
2. Tin snips or aviation snips
3. Electric drill or hand drill
4. Drill bits $\frac{3}{8}$ " and $\frac{7}{64}$ "
5. Pliers
6. Screwdriver (flat point, medium size)
7. Pencil or grease pencil
8. Level
9. Hammer
10. Small Adjustable Wrench
11. Center punch
12. Knife
13. Straight edge ruler (yardstick)

FOR SOME INSTALLATIONS

14. Galvanized Duct (6" Dia. model 4000) or (5" Dia. model 2000)
15. Duct Tape
16. Additional $\frac{1}{4}$ " water line
17. Additional 2 conductor low voltage wire

WHAT IS RELATIVE HUMIDITY?

You've heard the term, "Relative Humidity"? Usually, it is used in connection with local weather reports. Relative humidity refers to the percentage of water vapor present in the atmosphere at any given temperature, compared to the amount of vapor that the air can fully absorb at the same temperature. In other words, 50% humidity means the air is presently holding one half of the moisture it is capable of holding at the existing temperature. Naturally, complete filling of the air with water vapor is designated as 100% humidity.

When air is heated by your central heating system, the warmer air now has the ability to hold more water than before. Without a central humidifier, moisture is not added and the relative humidity decreases.

The following table shows the drastic humidity changes when outside air is heated to 72°F.

MAINTENANCE RECORD

DATE	HUMIDIFIER CLEANED	HUMIDIFIER TABLET INSERTED	EVAPORATOR PAD REPLACED	OTHER

- 8. A. Inspect valve seat for defects. Valve seat is reversible.
- B. Inspect valve nozzle for cracks or erosion.
- C. Turn adjustment screw clockwise to lower water level.
- D. Humidifier must be level.

Outdoor Relative Humidity	100%	2%	3%	6%	9%	14%	21%	31%	46%
	90%	2%	2%	5%	8%	12%	19%	28%	41%
	80%	2%	2%	5%	7%	11%	17%	25%	37%
	70%	1%	2%	4%	6%	10%	15%	22%	32%
	60%	1%	2%	3%	5%	8%	13%	19%	28%
	50%	1%	1%	3%	4%	7%	10%	16%	23%
	40%	1%	1%	2%	4%	6%	8%	12%	18%
	30%	1%	1%	2%	3%	4%	6%	9%	14%
	20%	+ %	1%	1%	2%	3%	4%	6%	10%
	10%	+ %	+ %	1%	1%	1%	2%	3%	5%
	0%	0%	0%	0%	0%	0%	0%	0%	0%
		-20°	-10°	0°	+10°	+20°	+30°	+40°	+50°
		Outdoor Temperature							

Compare the above dry conditions to famous dry places in the world such as the Sahara Desert and Death Valley, whose humidity is approximately 20%. As you can see, desert dry conditions can be created in homes without a central humidifier.

HUMIDITY QUESTIONS & ANSWERS

1. What is the safe humidity level for my home?
 Below are listed the recommended settings for your humidity control. Because relative humidity affects everyone differently, these settings can be raised or lowered to suit your personal comfort. **WARNING:** Setting your humidity control higher than the listed setting could cause condensation that would damage your home. If excessive moisture appears on windows or walls, reduce humidity setting at humidistat enough to eliminate condensation. If the situation continues, turn off water valve until condensation is gone.

At Outside Temperature	Recommended Setting	At Outside Temperature	Recommended Setting
- 20°F.	15	+ 10°F.	30
- 10°F.	20	+ 20°F.	35
0°F.	25	Above 20°	40

2. How long will it take my humidifier to build up the humidity in my home?
 The period of adjustment can take up to three weeks. This is understandable since furniture, woodwork, carpeting, plaster and house plants will absorb the newly produced moisture until they reach normal levels.
3. Is it true that a humidifier can save me money on my heating bill?
 Not only does a dry indoor temperature affect you, but it also has a decided influence on how much fuel you use to heat your home. Engineering reports show it takes more fuel to make you feel comfortable in a dry atmosphere that it does when the air is properly moisturized or humidified. Dry air absorbs or evaporates moisture from your skin. This evaporation

process draws heat from the surrounding atmosphere, automatically lowering the temperature at the surface of your skin. You feel cooler. With adequate moisture in the air, evaporation is slowed. Even at a lower temperature, you feel more comfortable.

4. What else causes static shock besides low humidity?
Some fabrics and carpets produce extreme amounts of static electricity. Proper humidity can reduce the static level but it cannot eliminate it entirely.
5. Should my humidifier be connected to softened water?
Either hard or soft water may be used. If installed on softened water, maintenance will be easier because the mineral build-up will be softer and easier to remove.

HOW THE HUMIDIFIER WORKS

Warm dry air is forced through the humidifier cabinet by the furnace blower. When the home is dryer than the selected humidity, the humidistat turns on the low voltage drum motor. The drum motor rotates a polyurethane foam evaporator pad that lifts water into the dry air stream out of the water pan. The moist air is then circulated throughout the home by the heating system. Once the selected humidity is reached, the humidifier automatically stops. The amount of humidity is easily adjusted by the homeowner at the humidistat. The humidistat automatically turns the humidifier off and on to maintain the selected humidity. As water is evaporated by the warm dry air, it is replaced automatically by the float valve. Because this humidifier is designed to supply mineral free water vapor into the air, the humidifier should be serviced every three to eight weeks to remove the mineral build-up from the water pan and evaporator pad. The service interval is determined by the water hardness; hard water will require more frequent cleaning than soft water.

SELECTING A LOCATION

The humidifier can be mounted on either the warm air plenum or the return (cold) air plenum with the by-pass tube connected to the other plenum. **NOTE:** The warm air plenum gets hot during the heating cycle.

For the most efficient humidification, always install the humidifier so that the by-pass tubing has only one bend. For slightly higher efficiency and if no additional bends are required, mount the humidifier on the return (cold) air plenum.

The length of the by-pass tube supplied with this unit determines the distance between the humidifier side wall and the center of the by-pass tube opening. The by-pass tubing is shipped compressed and must be pulled out to install.

- B. Plug in transformer to powered outlet.
- C. Check all wiring connections.
- D. Check output voltage of transformer (24 to 29 V.A.C.).
- E. To test motor, connect good transformer directly to motor leads.
NOTE: Completely disconnect humidistat from circuit.
- F. Check the humidistat switch for continuity.
- G. Check to see that the drum shaft is engaged with motor drive coupling.
- H. Clean excessive mineral deposits off of drum.

- | | |
|----------------------------------|---|
| 4. Heavy mineral build up | 4. A. Mineral build up on pad closes off pores in pad and restricts air flow. Clean the evaporator pad per the routine maintenance instructions. |
| 5. Short blower cycles | 5. A. Call a professional heating contractor. By derating the furnace, the furnace runs longer on less fuel and the humidifier produces more moisture. |
| 6. Rapid air changes (drafts) | 6. A. Keep doors and windows closed.
B. Close fireplace damper when not in use.
C. Keep exhaust fan running time to a minimum.
D. Cold air is dry and is an added load to the humidifier. Seal around doors and windows. |
| 7. Condensation on walls | 7. A. Turn humidistat off and turn water off until condensation is completely evaporated. |
| 8. Heavy condensation on windows | A. Turn humidistat down enough to eliminate condensation.
B. This may be a temporary condition caused by moisture from bathing, mopping, cooking, etc. |

High Humidity

ROUTINE MAINTENANCE

1. Use care in removing the drum assembly from the humidifier. **DO NOT TWIST THE DRUM BACK and FORTH.** This forces the motor into motion which could damage the motor gear train.
2. Lift the bearing end of the drum one-half inch and slide drum from motor bushing.
3. Remove evaporator pad from drum by squeezing finger prongs on clip, holding the drum end in place and pulling. Each time the humidifier is serviced, it is recommended all parts be cleaned thoroughly with a 50% solution of vinegar and water. Following cleaning, rinse all parts thoroughly with fresh water before putting unit back into operation. It is recommended the pad be replaced at least once during the heating season with an identical evaporator pad to maintain the high evaporating efficiency.
4. By removing the rubber valve seat and gently raising the float, the water pan can be removed for cleaning. After cleaning replace water pan, reversible valve seat and evaporator pad/drum assembly. Allow the float valve to refill reservoir. The water level must not exceed $1\frac{3}{8}$ ". If necessary, turn adjusting screw and allow reservoir to refill. **TURN CLOCKWISE TO LOWER OR TURN COUNTERCLOCKWISE TO INCREASE WATER LEVEL.**
5. Cleaning may be required every three (3) to four (4) weeks in hard water areas and every four (4) to eight (8) weeks in a soft water area.
6. **NEVER OIL ANY PART OF THE HUMIDIFIER.**
7. At the end of each humidification season, which is approximately the same period as the heating season, this humidifier should be thoroughly cleaned and the water and electric turned off until the next season. **DO NOT** leave water in the pan over the summer season.
8. If the home is left unattended for any length of time, turn the humidistat and water supply to humidifier "OFF".
9. A proper maintenance program will prolong the life of your humidifier and provide better humidity in your home.

TROUBLE SHOOTING

PROBLEM	WHAT TO LOOK FOR	WHAT TO DO
Low Humidity	1. Low water level (Less than $1\frac{3}{8}$ " deep)	1. A. Turn adjustment screw (counterclockwise) to raise water level.
	2. No water in reservoir	2. A. Turn water on at saddle valve. B. Turn off water main and check for possible obstruction in saddle valve or float valve.
	3. Drum not rotating	3. A. Set humidistat higher.

The center of the by-pass tube collar will be approximately 14 inches from the humidifier side wall. Round galvanized air duct or flex aluminum duct is recommended for by-pass tubing where greater length is required, such as on horizontal or some Hi-Boy furnaces.

Review the typical installations shown and match the installation that best represents your situation. Familiarize yourself with your furnace before you install your humidifier.

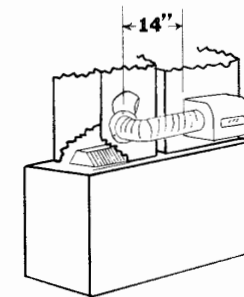
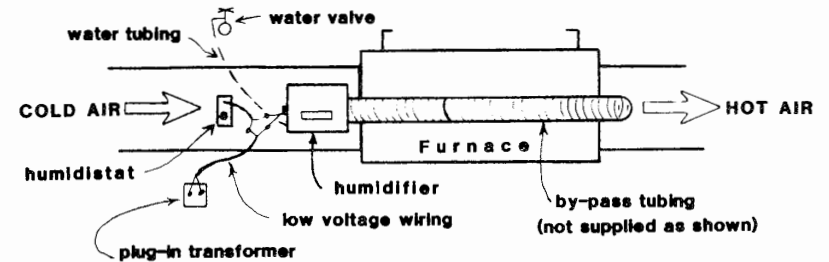
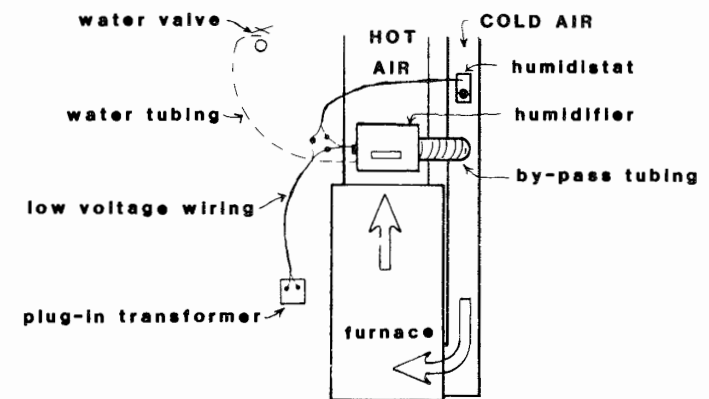


Figure 1



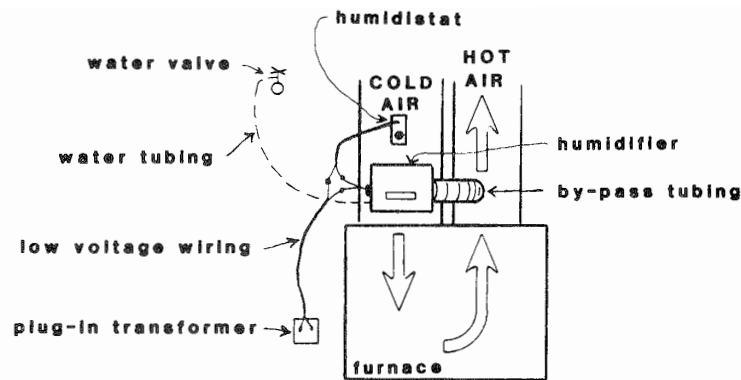
HORIZONTAL FURNACE

Figure 2



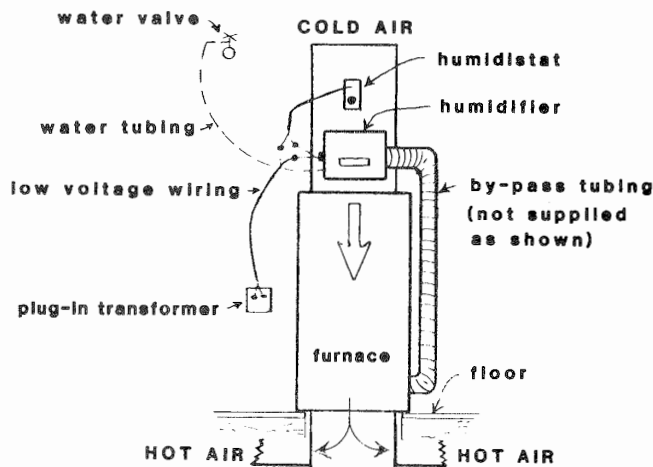
HIGHBOY FURNACE

Figure 3



LOWBOY FURNACE

Figure 4



COUNTER FLOW FURNACE

Figure 5

Locate adequate space on plenums to mount humidifier, by-pass collar and humidity control. Locate a cold water pipe within 10 feet of the humidifier. Locate a 115 volt convenience outlet within 5 feet of the humidifier. If distances are greater, additional parts are needed. (Available where you purchased your humidifier.)

The humidifier is shipped with the round air duct connection on the right hand side of the humidifier and is easily changed to the left side. (See assembly instructions.)

13. With the wire cut to reach from the transformer to the drum motor, on one end connect one wire to motor with a wire nut. Connect the other wire on the same end to the wire coming from the humidistat with a wire nut. **See wiring diagram.**
14. Connect the remaining end of the low voltage wire to the two screw terminals on the 24 volt transformer. **See wiring diagram.**
15. Plug the transformer in a powered outlet.
16. Turn the humidistat setting to "100" and observe that the evaporator drum turns slowly.
17. Turn the humidistat setting to "off" and observe that the drum has stopped.
18. Read the operations section and set control for automatic operation.

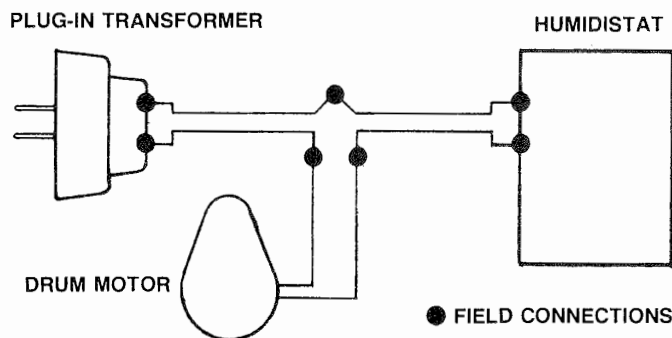
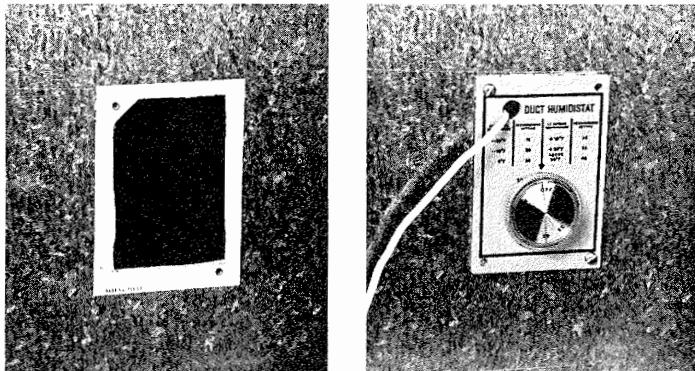
OPERATION

1. Turn water to humidifier on. Float valve should shut the water off at 1 $\frac{3}{8}$ " to adjust the water level lower, turn the adjustment screw clockwise. To raise the water level, turn the adjustment screw counterclockwise.
2. Make sure the transformer is plugged in and the outlet is powered.
3. Turn the humidistat to its highest setting. The motor should turn the drum very slowly (one revolution per minute). The motor is non-directional to prolong the life of the motor; consequently, it will run in both directions at random.
4. Set the humidistat control for automatic operation. Readjust the humidistat control as outdoor temperature changes occur. (See below.) Below are listed the recommended settings for your humidity control. Because relative humidity affects everyone differently, these settings can be raised or lowered to suit your personal comfort. **WARNING:** Setting your humidity control higher than the listed setting could cause condensation that would damage your home. If excessive moisture appears on windows or walls, reduce humidity setting at humidistat enough to eliminate condensation. If the situation continues, turn off water valve until condensation is gone.

At Outside Temperature	Recommended Setting	At Outside Temperature	Recommended Setting
-20°F.	15	+10°F.	30
-10°F.	20	+20°F.	35
0°F.	25	Above 20°	40

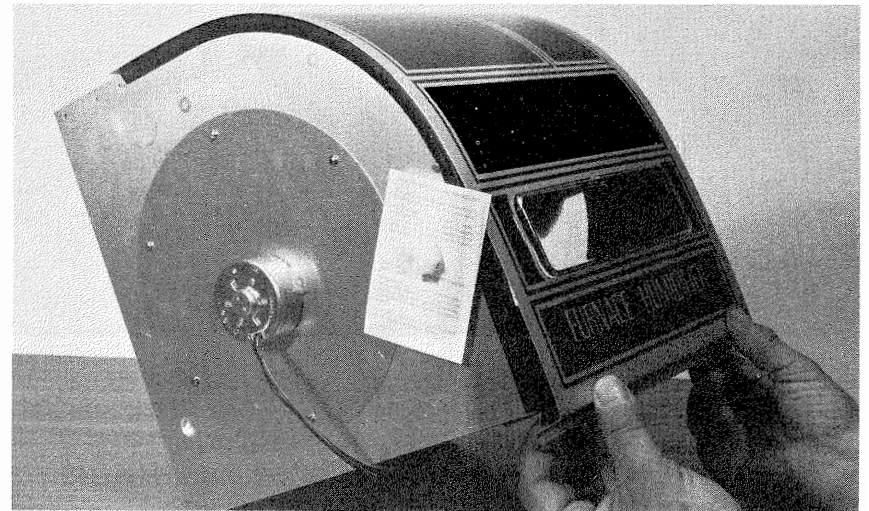
5. See routine maintenance for further information.

4. Drill a $\frac{3}{8}$ " hole within the center portion of the template.
5. Starting at the $\frac{3}{8}$ " hole, cut out the center opening with tin snips or aviation snips.
6. Remove the template.
7. Cut two lengths of low voltage wire that will easily reach from the humidistat to the motor wires and easily reach from the plug-in transformer to the motor wires. **NOTE:** Some installations may require the purchase of additional two-conductor low voltage wire.
8. Strip the plastic insulation $\frac{1}{4}$ " to expose the copper conductor on both wires. (Four (4) ends, eight (8) wires.)
9. Take two brass terminal adapters and press on to the humidistat terminals. Start two machine screws (6-32 x $\frac{5}{16}$) into the terminal adapters.
10. Place one end of the correct (see step 7) wire through the $\frac{3}{8}$ " diameter hole in the humidistat mounting plate. Fasten one wire to each terminal. See wiring diagram.
11. Mount humidistat to the return (cold) air plenum with two self tapping sheet metal screws.
12. Route the wire coming from the humidistat to the drum motor. **Do not allow the wiring to contact any heated surface.** Use a wire nut to connect one of the wires from the humidistat to one of the motor wires. Do not pre-twist wires. Set wire nut over conductors and turn clockwise until tight.

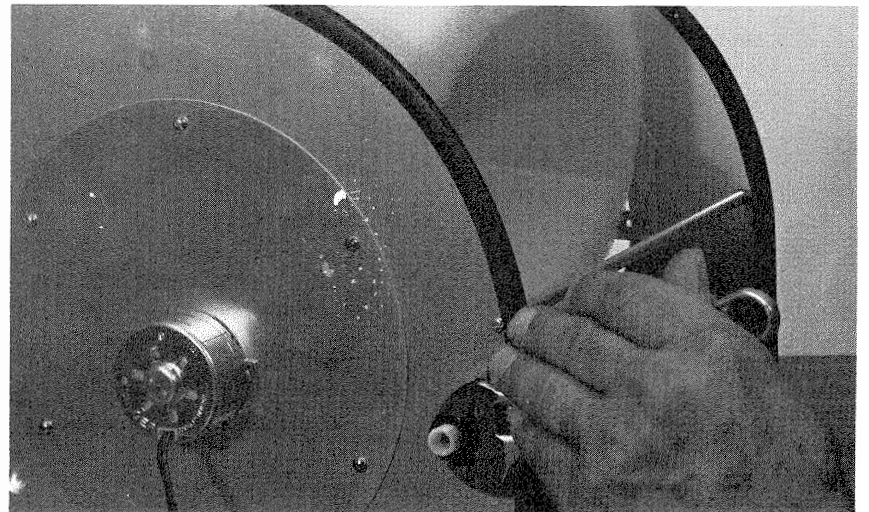


ASSEMBLY

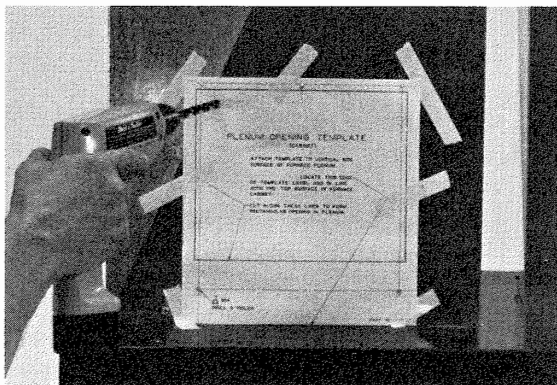
1. Review figures 1 through 5 and determine which side the by-pass tubing will enter the humidifier. For example, figure 1 shows a left hand installation and figure 3 shows a right hand installation. If your installation needs a right hand unit, skip to step number 8.
2. Remove the humidifier cover by pulling down on the lower lip of the front cover.



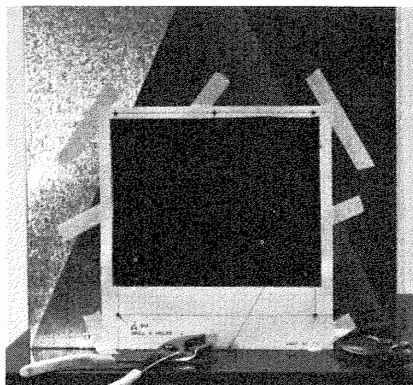
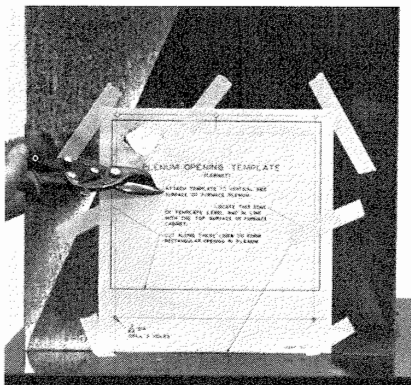
3. Remove the compression nut and instruction card from the valve assembly.
4. Using an adjustable wrench, remove plastic hex nut and remove valve assembly from humidifier.



10. **Wear Safety Glasses When Cutting or Drilling!**
11. **DANGER:** Do not cut or drill into any air conditioning or electrical accessories during installation. Fatal electrocution is possible if you come into contact with a live electrical wire. Blindness can occur if freon contacts your eyes.
12. Center punch the five mounting holes.
13. Drill the five (5) mounting holes with a $\frac{7}{64}$ " drill.
14. Drill a $\frac{3}{8}$ " hole inside the rectangle marked "cut along these lines" to start opening in plenum. It is best to drill this hole near the top. Use this hole as a starting point for cutting opening.



15. Using tin snips or aviation snips, start cutting out the rectangular opening. For best results and ease in cutting, make the first cut roughly two (2) inches inside the lines. Make the final cut on the line. The final cut should be smooth without jagged edges. Use pliers to hold sheet metal during cutting to help avoid injury. Remove template.



36. Put the door gaskets on the front edges of each side of the humidifier cabinet. Start the gaskets at the top, carefully fitting until you reach the bottom. If the gasket is too long, trim off any excess but make sure that the gasket has not been pulled away from the top during installation.

PLUMBING

1. Select the nearest cold water pipe and install saddle connector and needle valve supplied with this unit. Mount valve so water will come from top or side. This will reduce the chance of minerals, etc. from clogging the valve. It is a self-piercing unit when installed on copper pipe. Follow the instructions that are supplied with the valve. Either hard or soft water may be used. However, soft water will require more frequent maintenance but the cleaning will be easier. **ATTENTION:** Do not use any line connected to an air conditioner.
2. **PLEASE READ:**
COMPRESSION PLUMBING TIPS
 - a) When installing plastic tubing, it must not come in contact with the flue pipe, warm air plenum or heating branches.
 - b) Make sure that the tubing is fully inserted into fitting before tightening compression nut.
 - c) Use a plastic ferrule with plastic tubing and a brass ferrule with copper tubing.
 - d) When using a plastic ferrule, the long taper goes into the compression fitting and the short taper goes toward the compression nut.
 - e) When using plastic tubing, always support the inside of the tubing with a brass tubing insert.
 - f) In some areas, local plumbing codes may prohibit the use of plastic water tubing. When this condition exists, use $\frac{1}{4}$ " copper tubing.
 - g) When using copper tubing, lightly clean the tubing ends with fine sandpaper before making any connections.
3. A. Uncoil the plastic tubing and connect one end to the saddle valve. The tubing is connected to the saddle valve by means of compression fittings found in the self-piercing saddle valve parts bag. Place the brass compression nut over the tubing first. Then slide the plastic ferrule (do not use brass ferrule with plastic tubing) over the tubing with the largest diameter next to the compression nut. (See photo.) Then insert the brass tubing insert into the end of the tubing and press against a hard flat surface. **NOTE:** Assembly can be made easier by placing the end of the plastic tubing into a container of hot tap water until the tubing is more flexible, usually about 1-2 minutes.

27. If previously removed, place the rubber valve seat into float valve assembly. When installed correctly, the center portion of the rubber valve seat is not visible and is on the inside next to the nozzle tip.
28. Use the flexible valve hole plug to cover the unused valve hole opposite the float valve assembly. Insert the plug from the outside.
29. Assemble the evaporator drum by sliding the stainless steel drum shaft into the closed drum end. Slide the drum shaft so that the metal tabs engage in the slot provided in the drum end. (See figure 6.)
30. Squeeze the "Tinnerman" style clip, then slide it over the drum shaft and snug against the drum end.
31. Place the evaporator pad over the fingers of the first drum end, butting the pad against the drum end.
32. Slide the open drum end over the drum shaft with the drum fingers inside the evaporator pad.
33. Butt the open drum end up against the evaporator pad so that the evaporator pad touches both drum ends.
34. Secure the open drum end with "Tinnerman" style clip.

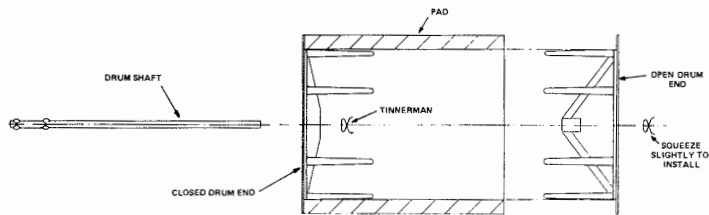
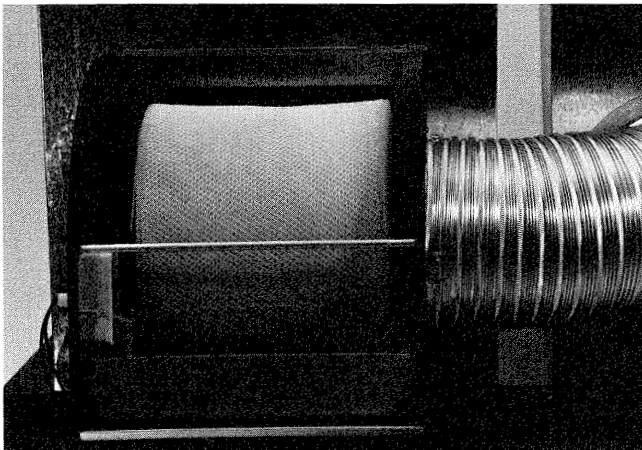
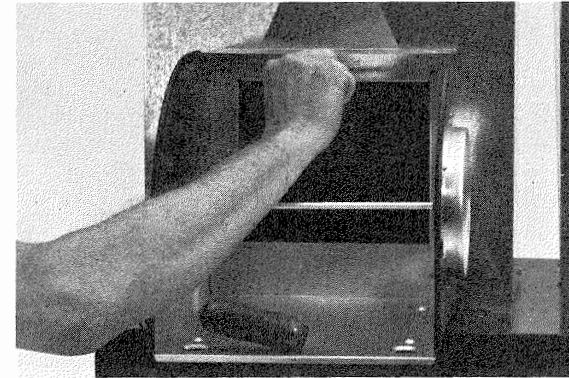


Figure 6

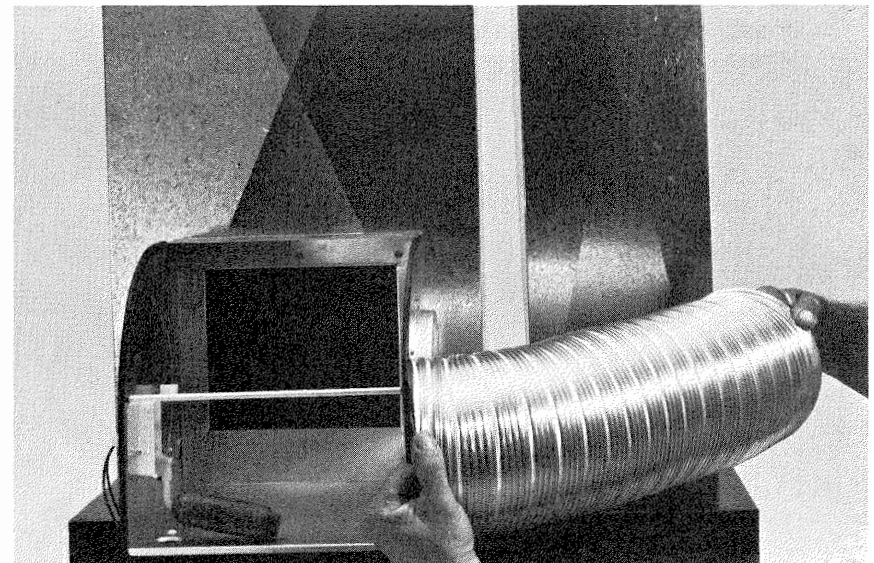
35. Place the drum assembly into the humidifier cabinet. First put the metal tabs on the end of the drum shaft into the drum motor coupling. **CAUTION: Possible Motor Damage: DO NOT STOP OR ROTATE THE MOTOR OR EVAPORATOR DRUM MANUALLY.** Then put the other end of the drum shaft into the bearing.



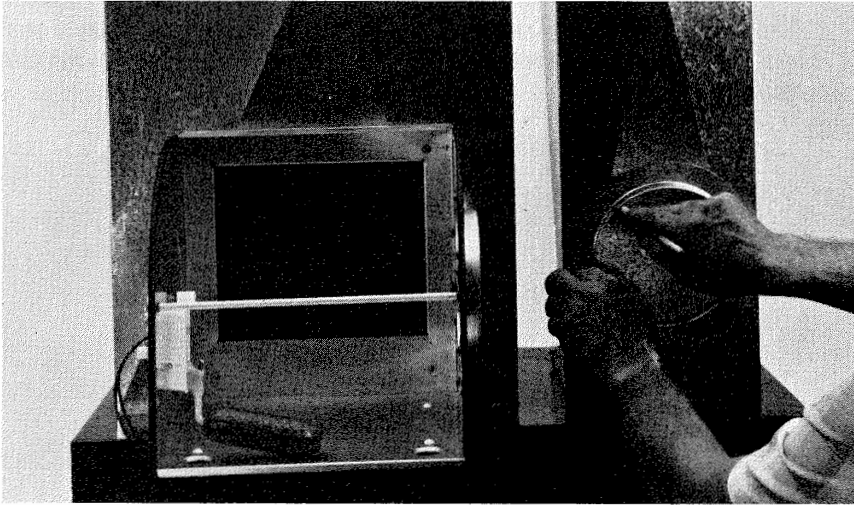
16. Attach the humidifier to the plenum with five (5) self tapping sheet metal screws. Tighten the screws securely but do not strip out threads. **NOTE:** If this is a right hand installation, the water pan must be out of the cabinet to complete this step. To remove the water pan, lift the rubber valve seat out of the float valve. This allows the float to be lifted enough to remove the water pan.



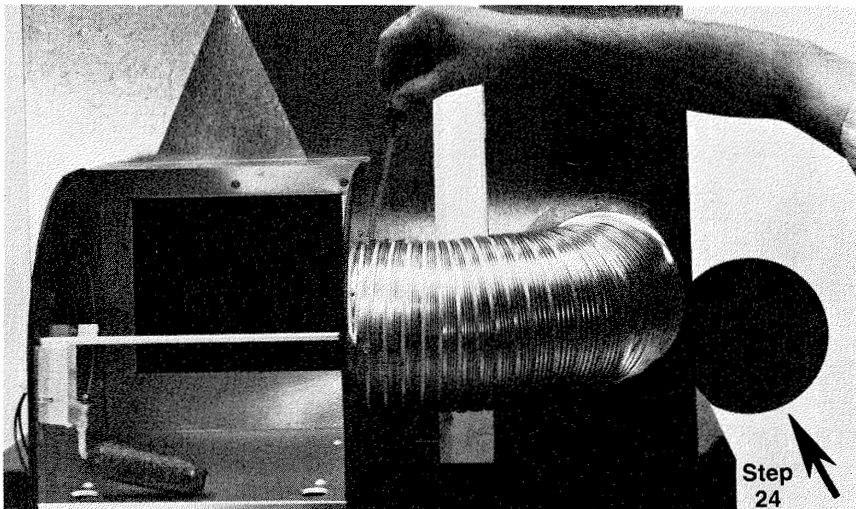
17. Pull the by-pass tubing out to the length needed and shape per installation requirements. Use the by-pass tube to locate the plenum collar by fitting the tube over both collars and marking the position of the plenum collar with a pencil. Keep the tubing as straight as possible with as few bends as possible.



18. Now position the plenum collar as marked in step 17, then mark the mounting holes and the inner circular opening with a pencil.



19. Center punch, then drill the mounting holes with a $\frac{7}{64}$ " drill.
20. Drill a $\frac{3}{8}$ " hole near the top and inside the marked circular opening.
21. Using tin snips or aviation snips, starting at the $\frac{3}{8}$ " hole, cut out the circular opening.
22. Attach the plenum collar to the plenum with self tapping sheet metal screws.
23. Attach by-pass tube and fasten in place with four (4) self tapping screws, one at the top and one at the bottom on each end of tube. Drill $\frac{7}{64}$ " holes that go through tube and collars. Two additional screws are provided for attaching the tube. Use these where most needed.



24. Where the humidifier is applied in conjunction with an air conditioning coil mounted in the furnace plenum, it is suggested that a manual volume damper (provided) be mounted in the metal portion of the by-pass tube to provide a shutoff for summer operation. See arrow, damper shown in open position.
25. Put the water pan into the humidifier cabinet so that the water level tube in water pan is in the front (next to door opening) and opposite the drum motor.



26. If previously removed, attach the valve assembly to the cabinet side wall on the same side as the drum motor. The float must be laying in the water pan. Use the rubber washer and plastic nut to attach the valve assembly. Tighten the attach nut finger tight then $\frac{1}{2}$ turn with an adjustable wrench. Make sure that the assembly is fully seated in mounting hole before tightening nut.

