

STEAM HUMIDIFIER MODEL 60-BC1 FREE STANDING UNIT WITH BLOWER CABINET

up to 13 gallons/day

SUPPLEMENTAL INSTALLATION INSTRUCTIONS

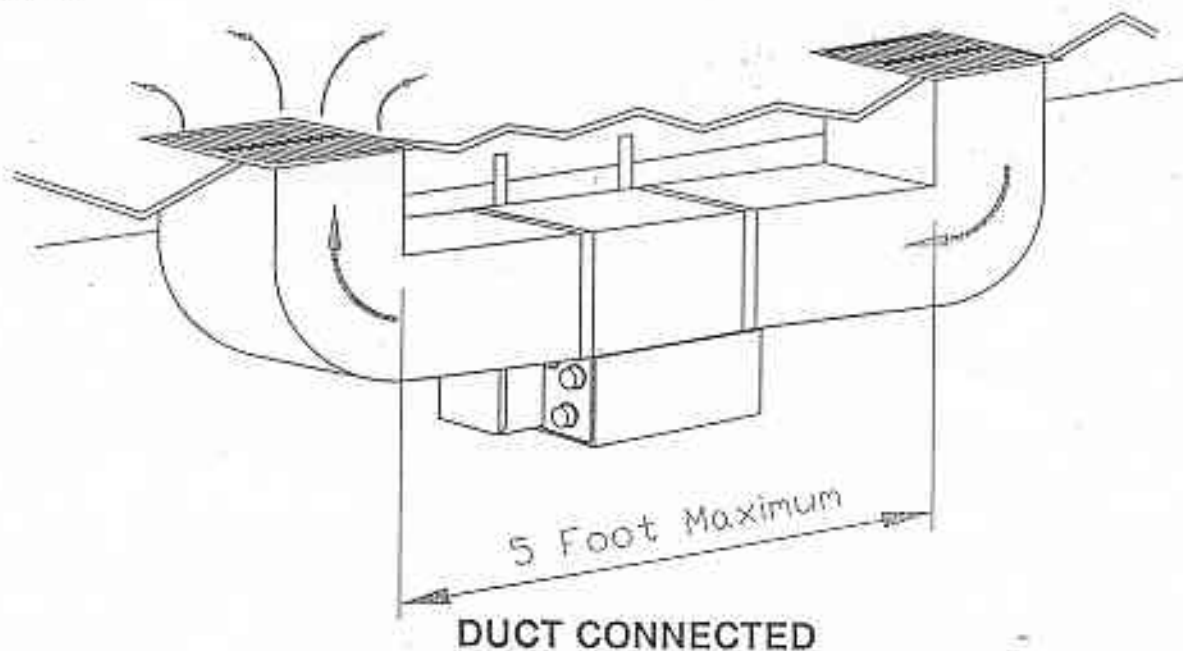
This is a supplemental instruction sheet for installation of the 60-BC1. For plumbing, wiring, maintenance instructions, & replacement parts refer to the booklet containing instructions for the model 60-1 steam humidifier.

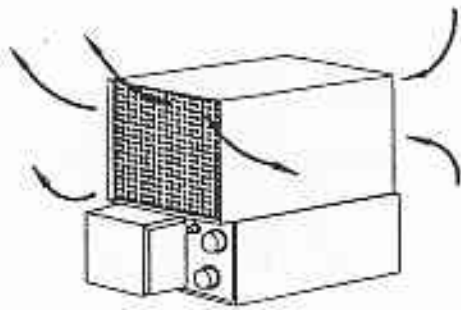
This unit is designed to be free standing, or interconnected to duct for distribution of humidified air. The unit may be placed on a shelf or table providing the surface is of a nonflammable material, preferably steel. The unit also may be hung from exposed ceiling joist as shown.

When receiving the unit you will notice the orange label on the grille. This label must be removed before installation and the removal of the cardboard packing as described, this is an excellent opportunity to check and adjust the units water level as instructed in the installation manual. If the unit is to be connected to duct the inlet and outlet grille will need to be removed, this is to help reduce the airflow restrictions that are caused by the grille.

For interconnecting the unit to ridged duct use duct size 12" x 12" and s-cleat for making the connection to the unit, the duct can then be run to a finished wall, or floor and an opening cut to fit and a grille or diffuser placed on the outlet. The same can be done for the intake side of the unit. (NOTE: When connecting to ridged duct removed the grilles both outlet & intake.)

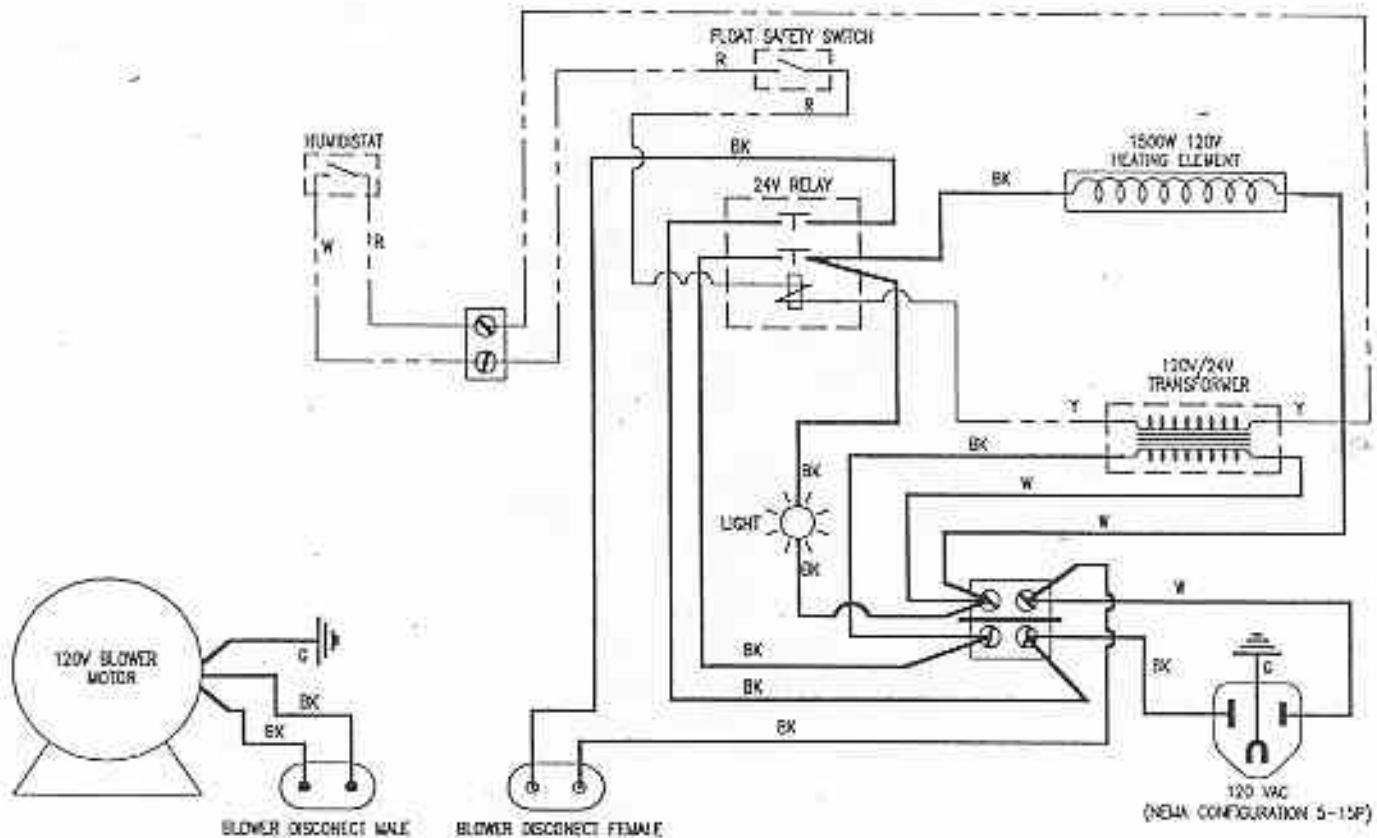
The following diagrams show various different ways of installing the unit for independent operation.





FREE STANDING

CAUTION: IN THE EVENT OF A MECHANICAL MALFUNCTION OVERFLOW OF THIS UNIT COULD OCCUR. TO PREVENT DAMAGE CONNECT THE OVERFLOW FITTING TO AN APPROPRIATE DRAIN.



WIRING DIAGRAM

STEAM HUMIDIFIER

MODEL 60-1

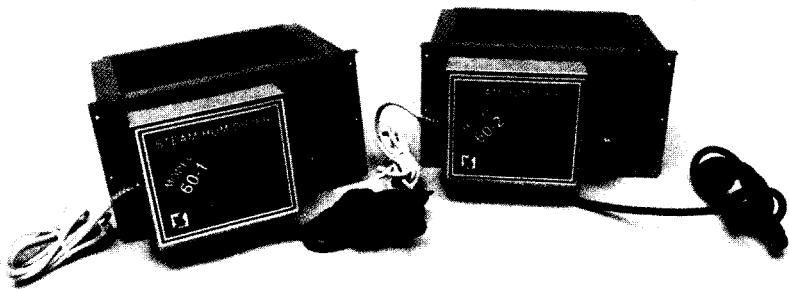
up to 13 gallons/day

and

MODEL 60-2

up to 17 gallons/day

WHOLEHOUSE CENTRAL HUMIDIFIERS



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

SKUTTLE LIMITED ONE-YEAR PRODUCT WARRANTY

This limited one-year warranty covers this Skuttle product as designated on the return portion of the warranty registration card, excluding wiring, plumbing and installation.

Skuttle Manufacturing Company warrants that this product is free from defects in material and workmanship under normal, non-commercial use and service. Skuttle will remedy any such defects if they appear within 12 months from the date of the original installation as evidenced by receipt of the warranty registration card, subject to the terms and conditions of this limited one-year warranty stated below:

1. THIS LIMITED ONE-YEAR WARRANTY IS GRANTED BY SKUTTLE MANUFACTURING COMPANY, 101 MARGARET STREET, MARIETTA, OHIO 45750.

2. This warranty shall extend only to any non-commercial owner who has purchased this residential product other than for purposes of resale.

3. The completion and return of the warranty registration card is a condition **precedent** to warranty coverage and performance. Warranty is not valid unless this card is completed and mailed to the factory within fifteen (15) days of equipment installation.

4. All components are covered by this limited warranty except expendable items.

5. If within the warranty period this product or any component requires service, it must be performed by a competent heating and/or plumbing contractor (preferably the installing contractor). Skuttle will not pay shipping charges, or labor charges to remove or replace such defective parts or components. If the part or component is found by inspection to contain such defective material and/or workmanship, it will be either repaired or exchanged, free of charge, at Skuttle's option, and returned freight collect.

6. In order to obtain the benefits of this limited one-year warranty, the owner must notify the dealer or distributor in writing of any defects within thirty (30) days of the discovery. If after reasonable time you have not received an adequate response from the dealer or distributor, notify in writing, Skuttle Manufacturing, 101 Margaret Street, Marietta, Ohio 45750.

SKUTTLE WILL RECEIVE, FREIGHT PREPAID, ONLY REMOVABLE PARTS OR COMPONENTS OF SUCH DEFECTIVE PRODUCTS.

7. This limited warranty does not apply to any part or component that is: damaged in transit or handling has been subject to abuse, neglect or accident; has not been installed, operated and serviced according to Skuttle's instructions, has been operated beyond the factory rated capacity; or altered in any such way that its performance is affected. There is no warranty due to neglect, alteration or ordinary wear and tear. Skuttle's liability is limited to replacement of defective parts or components and does not include the payment of the cost of labor charges to remove or replace such defective components or parts.

8. Skuttle will not be responsible for loss of use of any product: loss of time, inconvenience, or any other indirect, incidental or consequential damages with respect to person or property, whether as a result of breach of contract, neglect or otherwise. **SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE LIMITATION OF EXCLUSION IN THE PRECEDING SENTENCE MAY NOT APPLY TO YOU.**

9. THIS WARRANTY GIVES YOU SPECIFIC RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

10. Any warranty work will be performed within a reasonable time, usually within one hundred twenty (120) days after notice of defect and delivery to the Skuttle factory, subject to delays beyond the manufacturer's control.

11. Any warranty by Skuttle of merchantability, fitness for use or any other warranty (express, implied or statutory), representation or guarantee other than what was set forth herein shall expire at the expiration date of this limited warranty. **SOME STATES DO NOT ALLOW LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE LIMITATION IN THE PRECEDING SENTENCE MAY NOT APPLY TO YOU.**

12. Skuttle reserves the right to make changes in the design and material of its products without incurring any obligation to incorporate such changes in the units completed on the effective date of such change.

Skuttle Manufacturing Company, 101 Margaret Street, Marietta, Ohio 45750, 740-373-9169.

SAFETY PRECAUTIONS

PLEASE READ BEFORE INSTALLING HUMIDIFIER

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
-20°F.	15
-10°F.	20
0°F.	25

At Outside Temperature	Recommended Setting
+10°F.	30
+20°F.	35
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. Level
8. Hammer
9. Small Adjustable Wrench
10. Center punch
11. Knife
12. Wire and hardware to connect Fan Control
13. Honeywell Relay R8230A or R8225C per installation

FOR SOME INSTALLATIONS

14. Duct Tape
15. Additional $\frac{1}{4}$ " (copper) water line
16. Additional 2 conductor low voltage wire
17. Honeywell Sail Switch S688A

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.

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. However the softer build-up occurs faster and requires more frequent maintenance.

HOW THE HUMIDIFIER WORKS

The model 60's stainless steel steam humidifier is inserted into the supply or return plenum or mounted underduct on the supply or return duct. When the home is dryer than the selected humidity, the humidistat turns on the underwater heater. A built-in thermostat senses the water temperature and when the water is hot enough the thermostat turns on a relay (not included) to activate blower operation. The moist air is then circulated throughout the home by the heating system. Once the selected humidity is reached, the underwater heater is turned off. The blower will continue to operate until the water in the reservoir is cooled. As water is evaporated by the dry air, it is replaced automatically by the float valve. When installed the humidifier does not interfere with the heating system and activates the blower to distribute the humidity. This allows the humidifier to maintain the humidity without waiting on the heating system. Because this humidifier is designed to supply mineral free water vapor into the air, the humidifier should be cleaned and serviced every two to four months. The service interval is determined by the humidistat setting, weather conditions and water hardness. Harder water, colder weather and higher humidistat settings will increase the cleaning and service required.

SELECTING A LOCATION & CUTTING OPENING

There are three typical ways of mounting the steam humidifier as shown in Figures 1, 2, and 3. Select a location for mounting humidifier so that the humidifier can be plugged in without the use of an extension cord. Also keep in mind that the humidifier weighs approximately 18 lbs. when filled with water. Additional duct reinforcement may be necessary to maintain a level installation as this is critical to the safe, efficient and reliable operation of the humidifier.

Figure 1 mounting requires a minimum duct width of 10 inches for underduct installation and is the most preferable mounting. This mounting is most preferable because it requires the least amount of duct reinforcement to support the humidifier weight and remain level.

Figure 2 mounting is preferable over Figure 3 mounting but usually requires duct reinforcement to support the humidifier weight and remain level.

Figure 3 mounting is least desirable because of possible harmful loss in airflow and may require additional duct/plenum reinforcement necessary to support the humidifier weight and remain level.

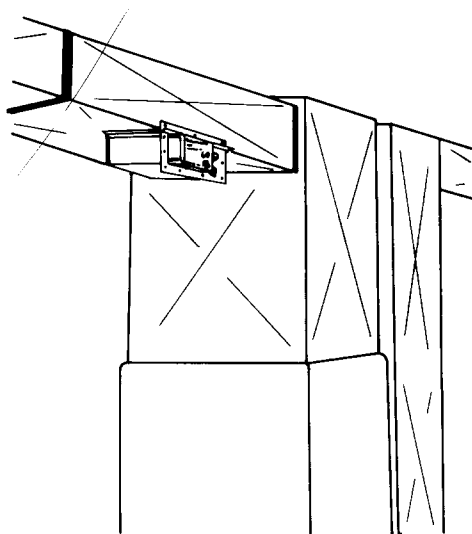
Caution: In all cases, the humidifier mounting must have sufficient strength to maintain a level position from side to side and front to back. An unstable mounting could cause water damage, heater failure, personal injury, electrical hazard, etc. Also select a location for the humidifier that will not allow the steam to condense on any fan control, limit control or anywhere water damage could result.

WEAR SAFETY GLASSES WHEN CUTTING OR DRILLING!

DANGER: Do not cut 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.

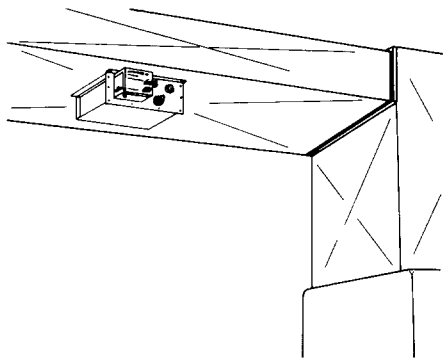
Choose one of the following:

FIGURE 1



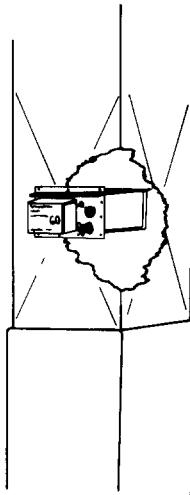
- A1. First fold template along line marked "FOLD LINE". Tape template to duct so that top/front is on the side of duct and remaining section is on the bottom of the duct.
- A2. Now with a $\frac{7}{64}$ " drill bit, drill 3 holes marked "A". Drill a $\frac{3}{8}$ " diameter hole within the center portion of the shaded area. Using tin snips, cut around the shaded area. **CAUTION: VERY CAREFULLY FOLLOW THE DOTTED LINE.**
- A3. Remove template.
- A4. Cut two pieces of the S-Cleat (provided) 8 inches long.
- A5. Place these on the narrow sides of the rectangular opening so that the opening (slot) protrudes down out of the duct.
- A6. Cut the remaining piece of S-Cleat 10½ inches long.
- A7. Place this piece on the long side of the rectangular opening closest to the center of the duct so that the opening (slot) protrudes down out of the duct.
- A8. Now using the two 8-32 screws and nuts provided, attach the mounting bracket ("L" shaped with 6 holes) to the top/front surface of the humidifier so that the upward protrusion of the "L" is on the side toward the reservoir. Now the unit is ready for mounting. **Do not mount unit until water level is adjusted. See plumbing section.**
- A9. Slide the units protruding flanges into the S-Cleat previously installed, until the back flange engages completely with the S-Cleat and the mounting bracket comes into contact with the side of the duct.
- A10. Use 3 of the #8 sheet metal screws provided to secure the humidifier to the duct.

FIGURE 2



- B1. Tape template to the bottom of duct in desired location.
- B2. Now with a $\frac{7}{64}$ " drill bit, drill 2 holes marked "B". Drill a $\frac{3}{8}$ " diameter hole within the center portion of the shaded area. Using tin snips, cut around the shaded area. **CAUTION: VERY CAREFULLY FOLLOW THE DOTTED LINE.**
- B3. Remove template.
- B4. Cut two pieces of the S-Cleat (provided) 8 inches long.
- B5. Place these on the narrow sides of the rectangular opening so that the opening (slot) protrudes down out of the duct.
- B6. Cut the remaining piece of S-Cleat (provided) 10½ inches long.
- B7. Place this piece on the long side of the rectangular opening (opposite the two holes previously drilled) so that the opening (slot) protrudes down out of the duct.
- B8. Now the unit is ready for mounting. **Do not mount unit until water level is adjusted. See plumbing section.**
- B9. Slide units protruding flanges into the S-Cleat previously installed, until the back flange engages completely with the S-Cleat.
- B10. Use two of the #8 sheet metal screws provided to secure the humidifier to the duct.

FIGURE 3



- C1. Tape template to the side of duct in desired location.
- C2. Now with a $\frac{7}{64}$ " drill bit, drill 11 holes. Drill a $\frac{3}{8}$ " diameter hole within the center portion of the rectangular area outlined with a solid bold line. Using tin snips, cut out this area. **CAUTION: FOLLOW THE BOLD LINE VERY CAREFULLY.**
- C3. Remove template.
- C4. Now using the two 8-32 screws and nuts provided, attach the mounting bracket ("L" shaped with 6 holes) to the front surface of the humidifier so that the upward protrusion of the "L" is on the side toward the reservoir.
- C5. Now the unit is ready for mounting. **Do not mount until water level is adjusted. See plumbing section.**
- C6. Insert the unit through the previously cut hole so that all wires and connections remain on the outside of the duct.
- C7. Now align the holes and secure the humidifier with the 11, #8 sheet metal screws provided.

POWER SUPPLY

All wiring must comply with local codes and ordinances. When selecting a location for mounting the humidifier, select a location so that connections may be made to the power source without the use of an extension cord. Receptacle must also be rated at correct volts and amperes or hazardous conditions could result.

Model 60-1 requires a receptacle rated at 120 VAC, 15/20 amperes (NEMA configuration 5-15R).

Model 60-2 requires a receptacle rated at 240 VAC, 15/20 amperes (NEMA configuration 6-15R).

WIRING AIR MOVER

Note: Due to high capacity design of the Models 60-1 and 60-2 steam humidifiers, it is necessary that operation of the systems air mover be wired in conjunction with the humidifier operation. See wiring diagrams.

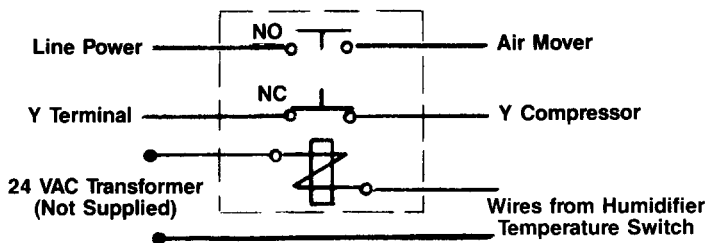
Therefore, a thermostatic sensor has been incorporated into the humidifier design. This sensor is designed for pilot duty (low voltage) applications only. The switch is attached to the humidifier wall and is a sealed type unit preset to turn on when water temperature within the unit reaches 170°F, and turn off when water temperature falls below 120°F.

Caution: Care must be taken as not to alter any of the heating/cooling systems normal functions. Care also must be taken so that none of the systems operations may be activated/deactivated or altered by this wiring except the system air mover.

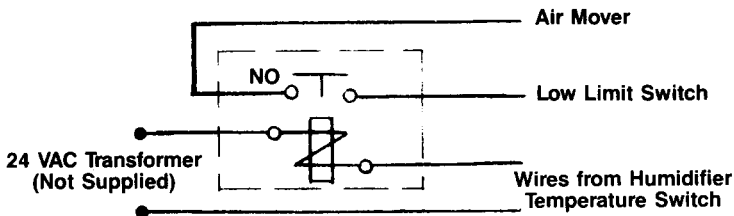
Note: If the system fan switch is set in the "ON" position at all times, it cannot be assumed that the homeowner will allow constant operation of the system fan motor. Therefore, the only further wiring necessary is that of a fan sail switch (Suggested Honeywell Part #S688A) mounted in the system supply duct and wired into the low voltage humidistat circuit so as to eliminate unit operation in case of fan failure or manual shut down of fan or possible return to automatic operation.

If these precautions are not taken, hazardous conditions could result causing serious damage to the heating/cooling system and the home.

Furnace With Air Conditioning:



Furnace Without Air Conditioning:



Fan Switch Wiring

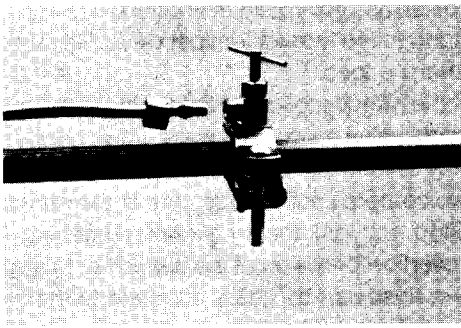
Heat Pumps: Due to the many variations and wiring complexity of heat pumps, no wiring diagrams can be suggested. If you desire that the humidifier control air mover operation, it is your responsibility to design a safe control circuit using equipment diagrams and tracing the equipment wiring.

On heat pump installations, it is suggested that the only additional wiring be that of a fan sail switch. This is due to the near continuous operation of the system air mover. The fan sail switch needs to be wired in series with the low voltage humidity control circuit. This will allow operation of the humidifier during fan operation only. The humidifier, in most cases, will operate in conjunction with the system air mover to adequately humidify the home.

PLUMBING & SETTING THE WATER LEVEL

NOTE: USE COPPER TUBING ONLY TO PLUMB HUMIDIFIER!

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. Lightly clean the tubing ends with fine sandpaper before making any connections.
3. Uncoil the copper 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 brass ferrule over the tubing.
Fully insert the tubing into the saddle valve fitting and tighten the compression nut. Do not over-tighten. Moderate tightness should prevent leaking.



Thoroughly flush supply tubing after attaching to saddle valve to clear line of debris which could block water flow at the float valve.

4. Due to various water pressures, it will be necessary to adjust the humidifier's water level prior to mounting. This can be done by setting the humidifier reservoir on a surface that is level. Attach the water line and allow the unit to fill until the float valve shuts off the incoming flow of water. The water level should be $2\frac{3}{8}$ " plus or minus $\frac{1}{8}$ " to the bottom of the water reservoir. If it is not within the given dimension, further adjustment will be required.
5. **CAUTION:** Never adjust without supporting float arm in such a manner that will prevent valve seat damage. Make adjustment in small changes. To raise water level, push down in the center of the float arm as shown in Figure 4.

To lower water level, hold float on bottom of reservoir with one hand and pull up on the center of float arm with the other hand as shown in Figure 5.

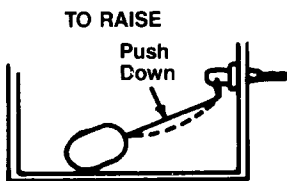


FIGURE 4

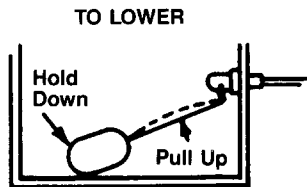


FIGURE 5

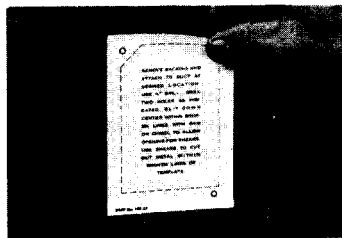
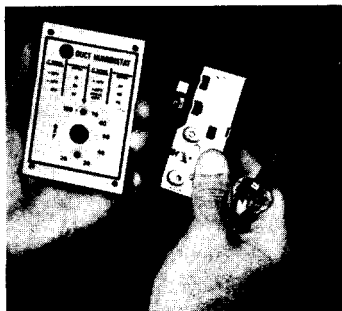
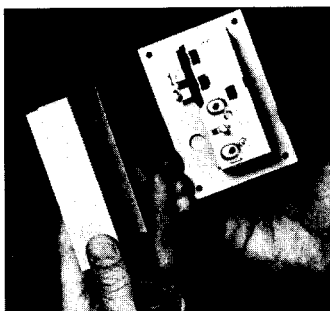
6. Remove enough water to allow float valve to automatically fill and shut off water. This will verify adjustment.

7. Mount humidifier as previously instructed.
8. Route the tubing to the humidifier float valve. Be sure to keep the tubing away from sharp edges.
9. Now connect the remaining end of the tubing to the humidifier float valve.
10. Open the saddle valve so that the water flows gently into the water pan. The water flow should be slow.
11. Check the two compression fittings, one at the saddle valve, one at the float valve. Stop any leakage by slightly tightening fitting.
12. Connect the overflow provision of the humidifier to a suitable waste drain. $\frac{5}{8}$ " I.D. garden hose can be easily attached to the overflow fitting. Provide support at many points to prevent kinks, expressly near any heat source. You may use a male $\frac{1}{2}$ " N.P.T. fitting (not supplied) to connect the overflow provision of the humidifier.

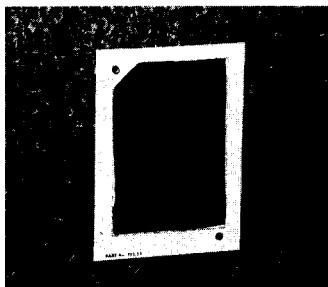
HUMIDITY CONTROL

1. This humidifier is supplied with a patented Universal Humidistat which can be wall mounted or duct mounted. The wall mounted humidistat will allow fingertip control in the living area.
2. Pull off control knob nameplate and remove cover. If wall mount is desired, read on or if a duct mount is desired, skip to step 15.
3. Drill a $\frac{1}{4}$ " hole in base plate through the depression provided.
4. Select a location for the wall humidistat. The humidistat must be located on an inside wall, away from register discharges. Also, avoid sources of heat, cold or extreme humidity variation; i.e. bathrooms, kitchens, basements.
5. The humidistat should be mounted at approximately the same height as the thermostat and you may wish to install the humidistat right next to the thermostat.
6. **NOTE:** Some installations may require additional two-conductor low voltage wire.
7. Strip the plastic insulation $\frac{1}{4}$ " to expose the copper conductor on both ends.
8. Route the wire to the humidistat, through an access hole you make in the wall to the humidifier. Seal the hole in the wall to eliminate false readings caused by drafts.

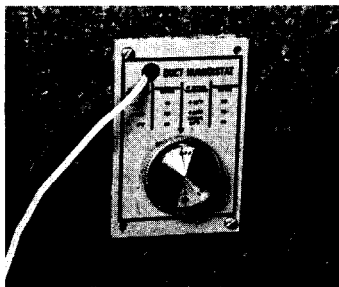
9. Take two terminal adapters and press on the humidistat terminals. Start two machine screws (6-32 x $\frac{5}{16}$) into the terminal adapters.
10. Route the wires through the drilled $\frac{1}{4}$ " hole and attach one wire to each terminal.
11. Mount the humidistat base plate to the wall with the long dimension horizontal and the control knob on the right side. Two 1" self tapping screws are provided.
12. Attach the control cover with two (#6x $\frac{3}{8}$) self tapping screws. Tighten evenly for best results.
13. Remove paper backing on name plate and press on cover. Press control knob on shaft.
14. If you have just completed a wall humidistat, skip to step 27. If you desire a duct humidistat, go to step 15.
15. The duct humidistat must be located on the return (cold) air plenum or duct work. **CAUTION: DO NOT** install humidistat on supply (hot) air plenum. Permanent damage will occur to the humidistat and improper control will result.
16. Remove the two screws that attach the base plate to the humidistat. Re-attach the base plate over the control shaft, using the screws just removed. Press control knob on shaft.
17. The humidistat mounts in a vertical (long dimension up and down) position. *If the humidifier is mounted in the return air also, then the humidistat must be mounted upstream of the humidifier. Mount the humidistat as far as possible from the humidifier to avoid false shutdown.* Remove the template backing and attach template to return (cold) air plenum in the proper location, keeping the template level.



18. Center punch and drill the two mounting holes with a $\frac{7}{64}$ " drill.
19. Drill a $\frac{3}{8}$ " hole within the center portion of the template.
20. Starting at the $\frac{3}{8}$ " hole, cut out the center opening with tin snips or aviation snips.
21. Remove the template.
22. **NOTE:** Some installations may require additional two-conductor low voltage wire.
23. Strip the plastic insulation $\frac{1}{4}$ " to expose the copper conductor on both ends.
24. Take two terminal adapters and press onto the humidistat terminals. Start two machine screws (6-32 x $\frac{5}{16}$) into the terminal adapters.
25. Place one end of the wire through the $\frac{3}{8}$ " diameter hole in the humidistat mounting plate. Fasten one wire to each terminal.



PLUG-IN TRANSFORMER



HUMIDISTAT

26. Mount humidistat to the return (cold) air plenum with two self tapping sheet metal screws.
27. **Do not allow the wiring to contact any heated surface or sharp edges.**
28. Connect the remaining end of the low voltage wire to the two screw terminals on the humidifier. See wiring diagram.

OPERATION

1. Turn water to humidifier on. Float valve should shut the water off at $2\frac{3}{8}$ ".
2. Make sure the humidifier is plugged in and the outlet is powered.
3. Turn the humidistat to its highest setting. The heater warms the water.
4. Set the humidistat control for automatic operation. Readjust the humidistat control as outdoor temperature changes occur. (See recommended settings.)

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.

ROUTINE MAINTENANCE

1. The normal service interval will vary from 1 to 3 months. Water hardness, humidistat setting, weather conditions, home construction and number of occupants all affect this interval. In all cases, a thick mineral coating on the heating element is detrimental to this humidifier.
2. Unplug humidifier, unplug fan control, disconnect humidistat wires from external screw terminals.
3. Turn off water supply and disconnect supply tubing at float valve. Disconnect overflow at humidifier.
4. Allow water to cool before continuing.
5. Turn petcock counterclockwise and drain water into bucket. Note: An occasional draining of the reservoir between cleanings will slow down the mineral buildup.
6. Remove humidifier from mounting.
7. Flush loose minerals from reservoir, then gently rub minerals off of the float, heater and safety float switch. Steel wool or other scouring pads may be used on the reservoir walls and other parts when necessary.
8. Remove valve arm and inspect for mineral buildup and deterioration. Periodic replacement of the float valve will be required.
9. Reset water level. See Step 4, 5, and 6 of "Plumbing and Setting the Water Level".
10. Remount humidifier and make all electrical and plumbing reconNECTIONS. Check for leaks or overflow and set humidistat for automatic operation.
11. NEVER OIL ANY PART OF THE HUMIDIFIER.
12. 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 humidifier over the summer season.
13. If the home is left unattended for any length of time, turn the humidistat and water supply to humidifier "OFF".
14. A proper maintenance program will prolong the life of your humidifier and provide better humidity in your home.

TROUBLE SHOOTING

PROBLEM

Low Humidity

WHAT TO LOOK FOR

1. Low water level (Less than $2\frac{3}{8}$ " deep)
2. No water in reservoir
3. Heater not operating
4. Rapid air changes (drafts)

WHAT TO DO

1. A. See Plumbing & Setting Water Level Section to readjust water level.
B. See #4.
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. A. Set humidistat higher.
B. Check for blown circuit breaker.
C. Check that humidifier is plugged in.
D. Check all external wiring connections.
E. Low water level - see #1 or #2.
F. Check the humidistat switch for continuity.
G. Call a Professional Heating Contractor.
4. 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.

High Humidity

5. Condensation on walls
6. Heavy condensation on windows

5. A. Turn humidistat off and turn water off until condensation is completely evaporated.
6. A. Turn humidistat down enough to eliminate condensation.
B. This may be a temporary condition caused by moisture from bathing, mopping, cooking, etc.

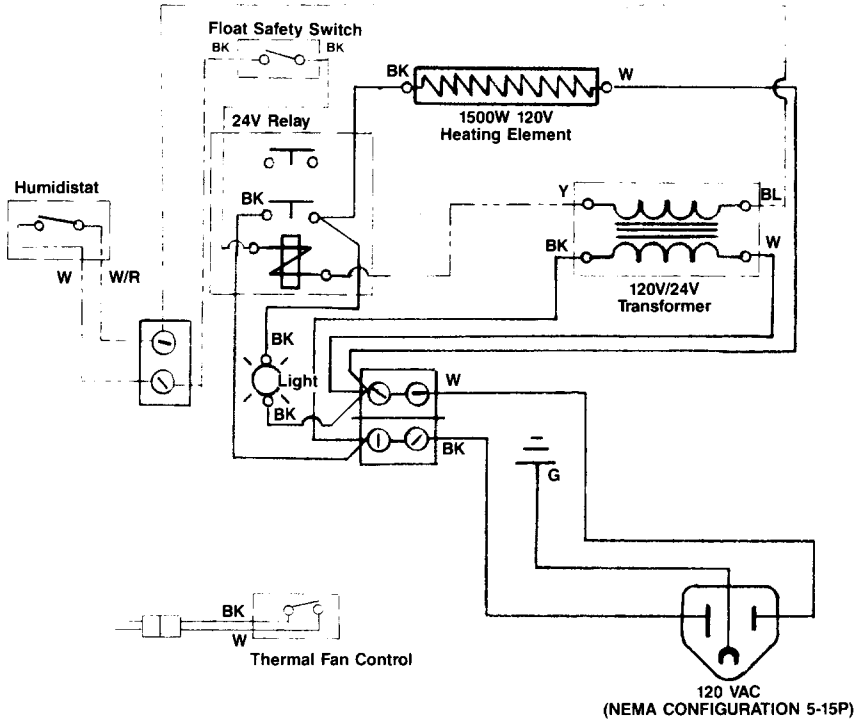
Humidifier Overflows

7. High water level

7. A. Inspect valve seat for defects.
B. Inspect valve nozzle for cracks or erosion.
C. See Plumbing & Setting Water Level section to readjust water level.
D. Humidifier must be level.

WIRING DIAGRAMS

MODEL 60-1



MODEL 60-2

