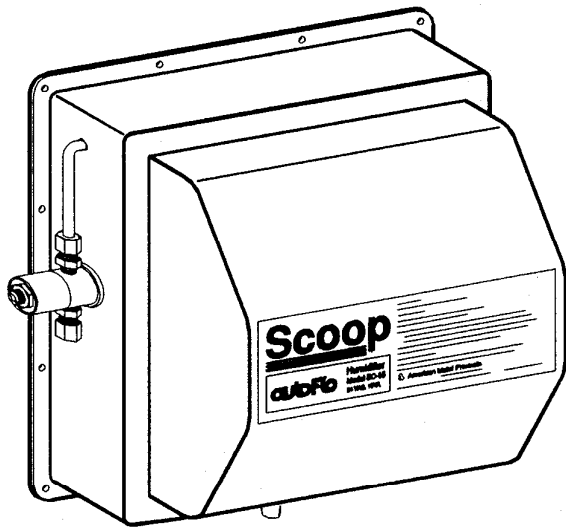


Installation Instructions & Owner's Manual

AUTOFLO MODEL SC-15 SCOOP POWER HUMIDIFIER

FOR GAS OR OIL FORCED AIR FURNACE (NOT SUITABLE FOR HEAT PUMPS OR COUNTER FLOW FURNACES)

OPERATION



The AutoFlo Model SC-15 Scoop Humidifier utilizes the evaporative flow through principle to add moisture into the warm air (supply) duct of your central heating system.

When the furnace blower is activated and the humidistat senses low relative humidity the solenoid valve is opened. Water is then fed into a distribution line at the top of the humidifier. This line has outlet holes which drop water onto a replaceable evaporative media pad. The water flowing through the solenoid valve is regulated by an orifice, located at the outlet of the solenoid.

As warm air exits the furnace, the unique design of the Scoop humidifier forces this heated air to flow through the evaporative media pad. The water is evaporated as the warm air flows across the media pad. This moisture laden air gradually increases the relative humidity within your home. Any water that is not evaporated, as it passes through the media pad, flows into a drain as waste water.

WHAT IS RELATIVE HUMIDITY?

Humidity level both inside and outside your home is expressed by the term "Relative Humidity." Relative humidity is the percentage (%) of water vapor within the air, compared to the total amount of water vapor the air is capable of absorbing. As an example, 50% relative humidity means that the air is holding half of the moisture it is capable of absorbing at the present temperature. At one extreme is 100% relative humidity. If this condition exists outdoors and condensation occurs, it is raining.

Warm air is capable of absorbing much more water vapor than cold air. When cold air is heated by your furnace it

does not necessarily lose moisture. You may wonder why air with a high relative humidity outdoors feels dry indoors after it is heated. This is because the warmer air can now hold much more moisture than it could when it was cold. Consequently the relative humidity may have dropped to an uncomfortably low level. Refer to the "Relative Humidity Chart" to determine the effects on relative humidity when air is heated to 72 degrees F.

The installation of an AutoFlo humidifier will allow you to add moisture to heated air, thereby increasing its relative humidity.

BENEFITS OF PROPER RELATIVE HUMIDITY

Some of the benefits of maintaining proper relative humidity are listed below.

You will feel warmer at a lower temperature (thermostat setting). This is because water evaporates more slowly from the skin in humid air, which gives a feeling of warmth. In drier air, water evaporates more rapidly, cooling and drying the skin.

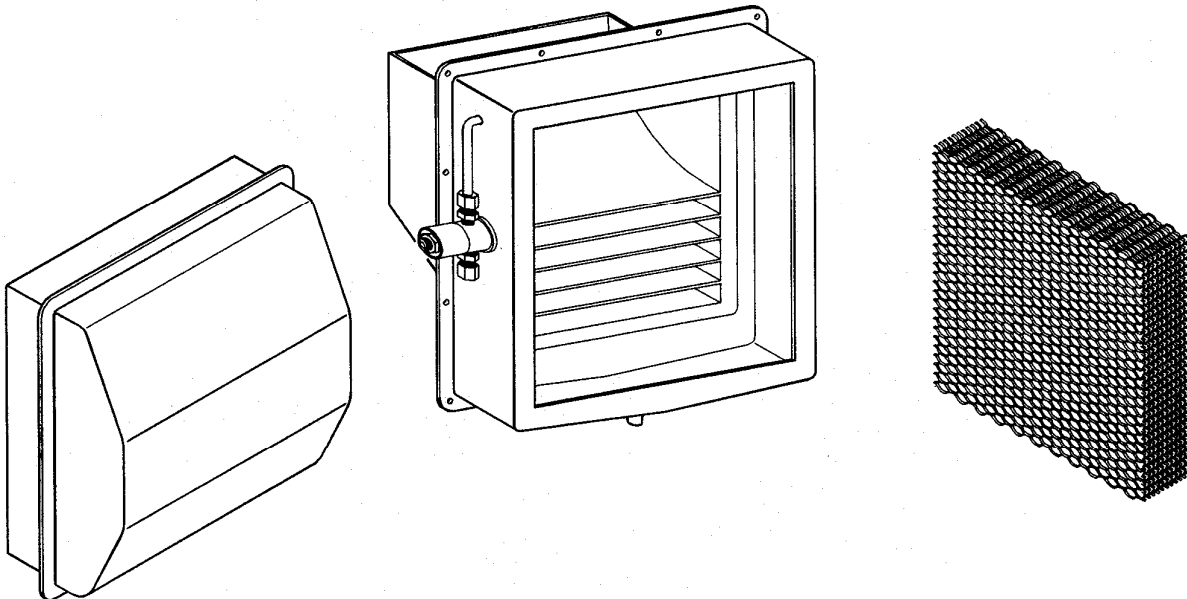
Shocks from static electricity will be reduced. This is because static charges are normally grounded through

the moisture in the air. With a low relative humidity there is insufficient moisture to ground all the static charges. In very dry air the only way these charges can be grounded is through a conductor, such as a person touching a metal object, resulting in a shock.

Shrinking and warping of woodwork and furniture will be reduced. A proper relative humidity level also reduces splitting and cracking of wallpaper and helps carpeting and draperies retain their resiliency.

PARTS LIST

1. Model SC-15 Scoop Humidifier
2. Parts Bag Containing:
 - a. Twelve #8 X 3/4 inch Sheet Metal Screws
 - b. Two Wire Nuts
 - c. Two #8 X 3/8 inch Sheet Metal Screws
3. Saddle Tapping Valve
4. 24 Volt Transformer
5. 1/4 inch Plastic Water Line
6. Evaporative Media Pad



RECOMMENDED LOCATION

1. TEMPERATURE AND SAFETY REQUIREMENTS

Refer to the rating plate label on the furnace for minimum clearances to combustible construction. All parts and connections of the AutoFlo SC-15 Scoop must be installed outside the minimum clearance requirements for rear, top, sides, and flue of the furnace. Do not install where the humidifier or water connections may be exposed to freezing temperatures of outside weather. If you have central air conditioning, carefully plan the location of plenum opening to prevent damage to the cooling coil or refrigeration lines.

2. HUMIDIFIER

The AutoFlo Model SC-15 Scoop Humidifier is designed to be mounted on the warm air (supply) plenum. The preferred position is to locate the

humidifier as close as practical to the heating unit, downstream of the air conditioning cooling coil. Humidifier should be mounted at least five inches away from the closest duct or end of plenum. (Figure 1 and 2.)

3. HUMIDISTAT

The humidistat can be mounted on the cold air return duct so that it senses the cool dry air.

The humidistat may also be located on an interior wall near the furnace wall thermostat. A wall mounted humidistat may require additional lengths of wire. Concealed routing is desirable, but often difficult to accomplish. The electrical connections and basic wiring are the same for duct or wall mounted humidistat. (Figure 1 and 2.)

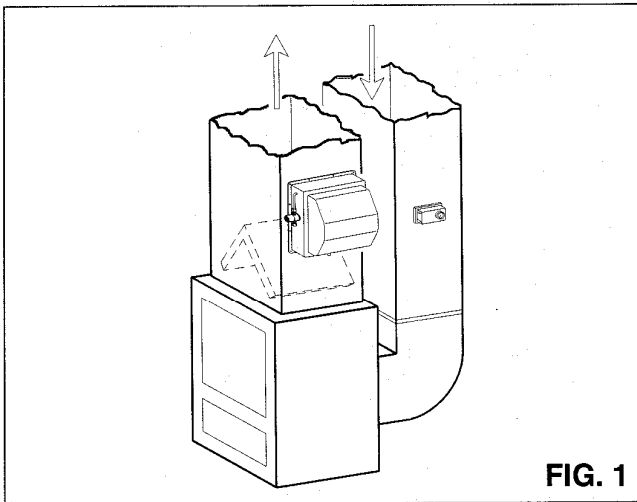


FIG. 1

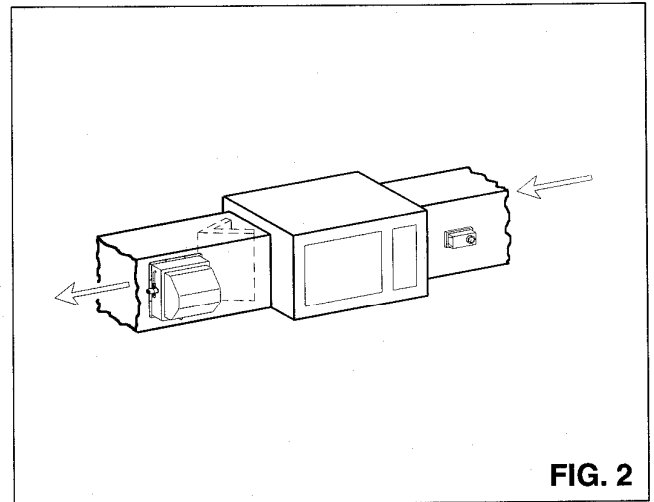


FIG. 2

STEP BY STEP INSTALLATION

1. DRILL MOUNTING HOLES AND CUT OPENING

Turn off the power to the furnace before installing the humidifier. We recommend that you use leather gloves and protective eye wear while cutting and drilling sheet metal.

Place the Scoop Housing on the side of the warm air plenum. Before proceeding, verify that adequate clearances are available for servicing the media pad. There must also be adequate room (5½ inches) inside the plenum for the louver. If necessary, relocate the unit. Use a level or plumb line to make sure the housing is level. With a permanent marker outline the inside edge of the housing. Also mark the twelve holes to be drilled. (Fig. 3.)

Center punch and drill the twelve holes as indicated by the marks. Drill a punch a starter hole and then

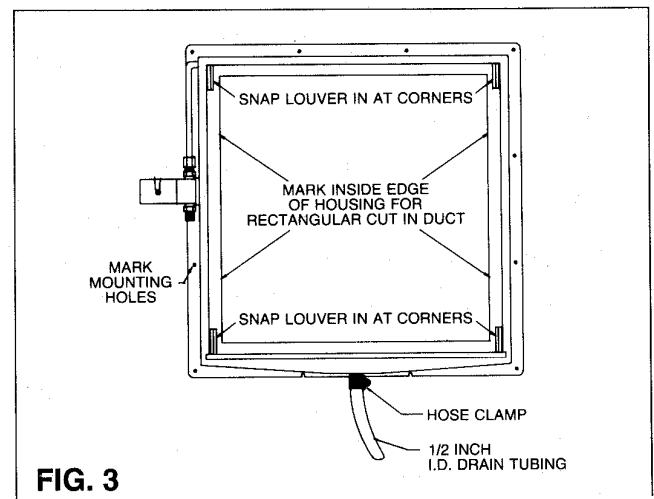


FIG. 3

use a reciprocating saw or sheet metal shears to cut the rectangular shaped opening. The rectangular opening should be 1/8 inch larger, on all four sides, than marked.

2. MOUNT HUMIDIFIER

Hold Scoop housing next to duct and start the four #8 X 3/4 inch long sheet metal screws through the holes in the bottom edge of the humidifier. With these four screws started the unit should remain in place while starting the other eight. With all twelve screws started they can now be tightened. With the housing mounted the louver can be installed. This should be done by rotating the louver to the proper direction depending on air flow. (Figure 4.) Then insert the louver through the housing. Press on corners of louver until all four have snapped into place. (Figure 3.)

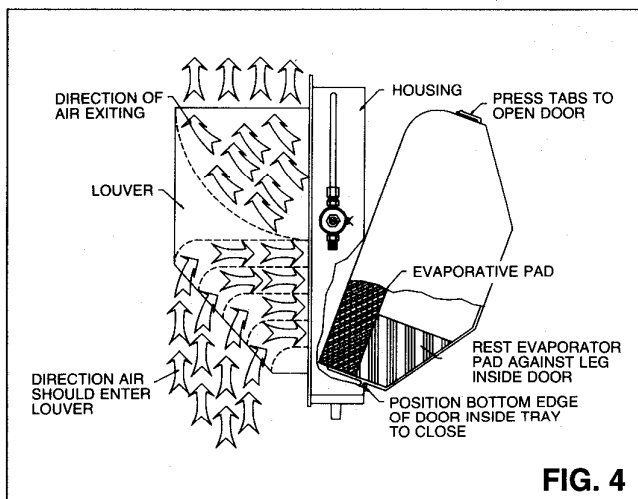


FIG. 4

3. INSTALL HUMIDISTAT

The AutoFlo Humidistat should be installed as described in the installation instructions supplied with the humidistat.

4. DRAIN CONNECTION

Use the hose clamp supplied in the parts bag to connect the 1/2 inch plastic tubing to the drain spout. The spout is located on the bottom of the housing. Keep the tubing as short as possible and avoid sharp bends. The drain line should be routed on a continuous downward slope and into a suitable drain. (Fig. 3.)

5. WATER CONNECTION

Water for the humidifier must be taken from a nearby water line. A cold water line is preferable to a hot water line because very hot water could damage the plastic water line. Also, the slight energy savings of supplying hot water to a humidifier would not offset the cost of heating the water and the demands placed on your hot water heater.

If this humidifier is installed in, above, or adjacent to a decorated living area, an emergency overflow pan (with a drain) should be installed below the humidifier. Do not use any line connected to an air conditioner. Lines connected to air conditioners generally carry refrigerant and are not water lines.

Do not use any line which is served by a water softener. If your home has a water softener, make the water connection to a water line upstream from the water softener. A water softener is not a demineralizer. It merely exchanges various hard-ions for soft-ions in the water. These soft-ions, or minerals, will build up in the humidifier, causing a need for frequent servicing. The evaporation of softened water may also produce a white powder which may be carried into the duct system and, ultimately, into your home.

You have been supplied with 10 feet of plastic tubing for making the water connection. If more tubing is required, longer lengths of 1/4 inch O.D. plastic tubing are available from your AutoFlo dealer.

The Saddle Tapping Valve should be mounted either on top of or on the side of a water line. If the valve is mounted on the bottom of the line, sediment in the water line will clog the valve. Refer to the instructions on the saddle valve package and proceed as follows. For copper water pipe no drilling is required. Turn the Tee handle of the valve counter clockwise to retract the self-piercing lance. Place the saddle valve on the pipe and use an alternating pattern to tighten both screws. Use the Tee handle to fully close the valve. This will both pierce the pipe and seat the valve. Do not open the valve until the tubing is connected between the valve and the humidifier. For iron water pipe, follow the instructions printed on the Saddle Tapping Valve Kit and install the valve.

Route and support the tubing to the humidifier. Care should be used not to route the line close to any surface that may become hot. Connect the tubing to both the saddle valve and the humidifier. Open the Tee handle on the saddle valve.

6. ELECTRICAL CONNECTIONS

Basically, the transformer should be wired in parallel with the furnace blower. This will allow the humidifier to run only when the furnace blower is operating.

The transformer is designed to be attached to a metal 4-inch square electrical outlet box. The electrical box must be mounted and wired in accordance with local building codes or the National Electric Code.

SHUT OFF THE POWER TO THE FURNACE BEFORE PROCEEDING.

Compare the wiring diagrams in these instructions to those of your furnace and determine where connections will be made.

Mount and connect the transformer. When routing low voltage (24V) wiring, make sure it is routed outside the minimum required clearances specified on the furnace name plate label. Route and support the low voltage wiring as shown in the Wiring Diagrams.

7. OPERATIONAL CHECK

With the Humidistat set at its highest setting the humidifier solenoid valve should open shortly after the furnace blower is activated. When the solenoid

valve is open, water should drip from all holes in the water distribution line. Set the humidistat and thermostat to the proper setting. Note: If solenoid valve does not open, refer to the Troubleshooting Guide in this manual.

8. INSTALL DOOR AND EVAPORATIVE PAD

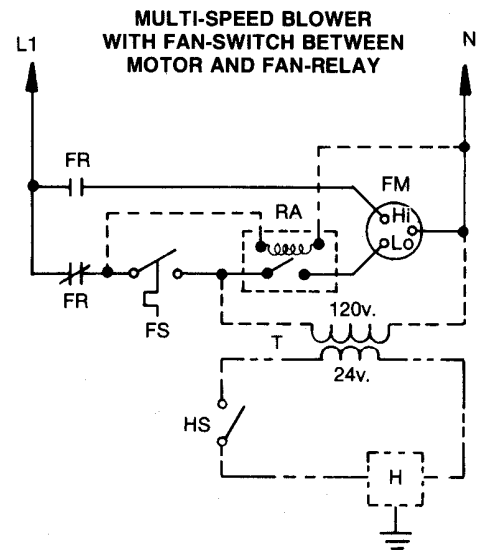
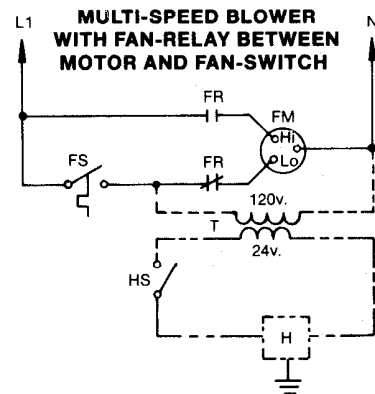
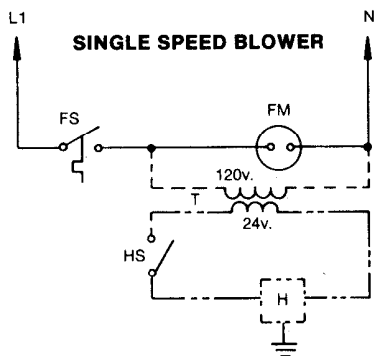
Refer to the following to make sure evaporative pad is positioned in door correctly. Black mark on edge of

pad indicates the top. Pad slides into door and rests against the four legs located inside.

Position bottom edge of door in tray located on lower opening in housing. Then simply push top of door closed until it has snapped in to place. (Fig. 4). To remove door just press down on the two tabs located at the top of the door and rotate away from housing.

IF YOU HAVE ANY DOUBT ABOUT YOUR ABILITY TO PROPERLY WIRE THIS UNIT, WITHOUT DEFEATING ANY SAFETY CONTROLS OF YOUR FURNACE, A QUALIFIED ELECTRICIAN SHOULD BE CONSULTED.

WIRING DIAGRAMS



— Existing Furnace Wiring
 FM Furnace Motor
 FS Fan-Switch
 FR Fan-Relay

--- Additional wiring required for transformer installation.
 H Humidifier
 HS Humidistat
 T Transformer
 - - - Low voltage wiring

NOTE: If you have this type of furnace we recommend the use of an additional relay (R) wired as shown. This relay should have a 120v. coil with contacts sufficient to handle the starting load of the furnace motor. This relay will prevent feedback from the low-speed tap during air conditioner operation.

SETTING THE HUMIDISTAT

The proper relative humidity for your home depends upon factors such as outdoor air temperature, type and placement of insulation, vapor barriers, effectiveness of weather stripping, type of windows and doors (including frames and jams) and whether or not storm windows and doors are used. With all these variables it is nearly impossible to recommend a proper humidity setting. The best humidistat setting is one that you are comfortable

with. Also, as the outdoor temperatures fluctuate, it may be necessary to adjust the humidity level of your system a few times during the heating season.

Refer to the "Relative Humidity Chart" as a starting point for your proper humidistat setting. Generally, in a tighter and better-insulated house, the humidistat may be set higher than in a drafty, uninsulated house.

RELATIVE HUMIDITY CHART

Outside Temperature	Outside Relative Humidity	Indoor Relative Humidity When Outside Air Is Heated To 72 Degrees F	Maximum Safe Recommended Indoor Relative Humidity
- 10 Deg. F	40%	1%	20%
	60%	2%	
	80%	2%	
0 Deg. F	40%	2%	25%
	60%	2%	
	80%	5%	
10 Deg. F	40%	4%	30%
	60%	5%	
	80%	7%	
20 Deg. F	40%	6%	35%
	60%	8%	
	80%	11%	
30 Deg. F	40%	8%	35%
	60%	13%	
	80%	17%	

DO NOT OVER-HUMIDIFY

As you know, cold air cannot hold as much moisture as warm air. Any cold drafts or cold-places such as windows and doors (including frames and jams) may cause water vapor to condense at these points. Also, if your home is well-insulated and weather-stripped but lacks effective

vapor barriers, water may seep through the walls and ceilings. This moisture may condense either inside or on the outside of walls or in the attic. If any of these conditions are observed, the humidity should be reduced before water damage occurs.

TROUBLESHOOTING GUIDE

Your AutoFlo Model SC-15 Humidifier is designed to be trouble-free. However, the following Troubleshooting Guide is provided in the event that you encounter operating problems either initially or after your unit has been in service.

1. NOT GETTING ENOUGH HUMIDITY

Open the service door.

- a. Water does not flow when the furnace blower is operating.

Note: It is normal for the solenoid valve to open *only* when the furnace blower is activated by the heating portion of your furnace. The humidifier will not receive power when the fan is operated by the

cooling (or air conditioning) section of your system. Also, depending upon how the thermostat is connected, the humidifier may or may not receive power by activating the fan manually at the thermostat.

A mineral build-up may be blocking the saddle valve or the solenoid valve filter.

Turn off the water supply at the saddle valve and disconnect the water line at the bottom of the solenoid valve. Hold the water line inside the humidifier and open the saddle valve. If water does not flow from the line the saddle valve is blocked. If water does flow the solenoid valve may be blocked.

To clean the saddle valve, TURN OFF THE MAIN WATER SUPPLY, remove the handle assembly by using a wrench on the packing nut and unscrew the assembly. Using a piece of wire (such as a straightened paper clip) remove any mineral build-up inside the valve. Reassemble the valve, turn on the main water supply. Water should flow.

To clean the solenoid filter use a large safety pin and carefully pull the screen out of the solenoid inlet fitting. Clean the screen and reassemble the filter and water line. Water should now flow into the evaporative pad when the furnace blower is operating.

If water still does not flow the transformer, solenoid valve or humidistat as well as any wire con-

nections may be at fault. A qualified installer should be consulted to determine if 24 VAC is present at the solenoid and if line voltage is being supplied to the transformer. Replacement solenoid valves and transformers are available from your AutoFlo dealer.

- b. An open fireplace damper or windows or doors will reduce the relative humidity in your home. Also, if your home was very dry when the humidifier was placed into service it may take a few days or even weeks to reach a comfortable relative humidity level.

2. IN THE EVENT OF WATER LEAKS

Leaks around the nut connections can be eliminated by tightening the nut. With the water on, tighten only enough to stop the leak. Do not over-tighten.

MAINTENANCE

All power humidifiers require some maintenance to keep them operating at peak performance. The AutoFlo Model SC-15 Humidifier has been designed to simplify this required maintenance. Routine maintenance of your AutoFlo Model SC-15 Humidifier should include the following two procedures.

1. Periodic replacement of evaporator pad.
2. An annual cleaning, general inspection, and shut-down of the unit.

The evaporator pad should be replaced with an AutoFlo Catalog No. SC-EP pad when it becomes clogged. The rate of evaporation depends upon the surface area of the pad as well as the ability of air to pass through the pad. To remove the evaporative pad, turn off the electric

power to both the furnace and the humidifier. Remove the service door and lift the pad up and out.

Remove the mineral deposits from inside the humidifier. A mild detergent or vinegar and water solution is acceptable for cleaning the plastic parts.

Annual (Spring) shut-down should consist of removing the evaporator pad, cleaning the inside of the humidifier, and closing the saddle valve. After performing these procedures, leave the water and electrical power supplies to the humidifier in the off position.

To restart the humidifier in the fall, replace the evaporative pad then simply turn on the water and electrical power supplies to the humidifier. Adjust the humidistat.

the event of a problem with warranty service or performance, you may be able to go to a small claims court, a state court, or a federal district court.

