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AUTOFLO 250 Owner's Manual

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FOR USE WITH GAS, OIL, and HYDRONIC FORCED AIR FURNACES

Installation Instructions Owner's Manual

MODEL SC-15 & MODEL 250 FLOW-THRU HUMIDIFIERS

SEQUENCE OF OPERATION

The AUTOFLO Model's SC-15 & 250 use the evaporative principal to add moisture to the warm air heating system. Upon a demand for humidity from the humidity control, the water solenoid valve opens and water flows in at the top of the media pad and is evaporated, as warm air passes through the media pad. When the moisture laden air re-enters the duct it is mixed with dry air already flowing through the duct. This moisture laden air gradually increases the relative humidity level in the home.

RECOMMENDED LOCATION

TEMPERATURE AND SAFETY REQUIREMENTS

Refer to the rating plate on the furnace for minimum clearances to combustible construction. All parts and connections of an AUTOFLO humidifier must be installed outside of the minimum clearance requirements for rear, top, sides, and flue of furnace. Do not install where humidifier or water connections may be exposed to freezing temperatures or outside weather. *Attic installations are NOT recommended.* If you have central air conditioning, carefully plan the location of the plenum opening to prevent damage to the cooling coil or other components inside the duct.

HUMIDIFIER MOUNTING LOCATION

The AUTOFLO model SC-15, is to be mounted on the supply duct of the furnace only. Model 250 can be mounted on the supply or the return duct of the furnace.

HUMIDISTAT MOUNTING LOCATION

The humidistat can be mounted on the cold air return duct to sense the cool dry air returning to the furnace. It can also be mounted on an interior wall near the furnace thermostat as well. The electrical connections and basic wiring are the same for duct mounted or wall mounted humidistats.

STEP BY STEP INSTALLATION

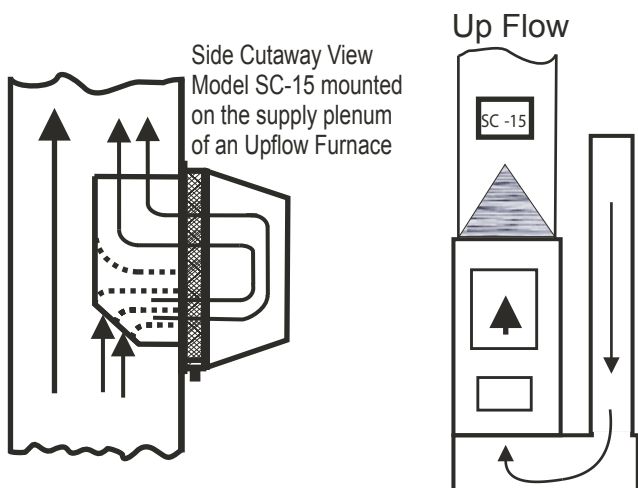
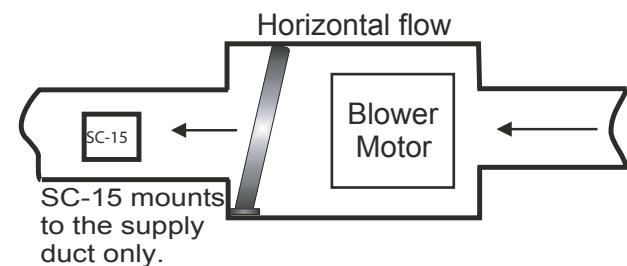
CAUTION: Installation should be performed by qualified personnel only. Use eye protection and gloves when drilling and handling sheet metal. All work must be performed to local & national codes and ordinances. Use multi-conductor 18 awg solid copper wire. Provide over-current protection as required. DO NOT omit the drain or overflow tubing.

DRILL MOUNTING HOLES AND CUT OPENING MODEL SC-15

Turn off power to the furnace before installing the humidifier. Test fit the SC-15 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 (5 1/2 inches) inside the plenum for the louver. If necessary, relocate the unit. Use a plumb line or a level 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. Center punch and drill all twelve holes as indicated by the marks. Drill or punch a starter hole and then use tin snips to cut out the rectangular shaped opening. The opening should be 1/8 inch larger on all four sides than what was marked.

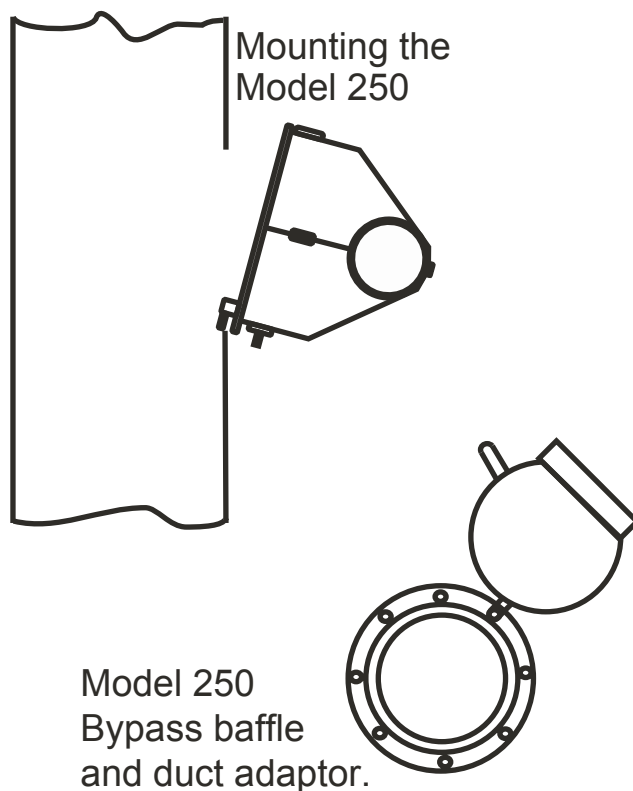
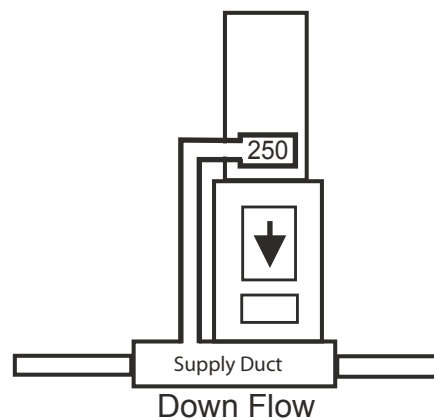
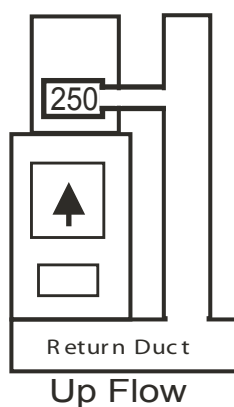
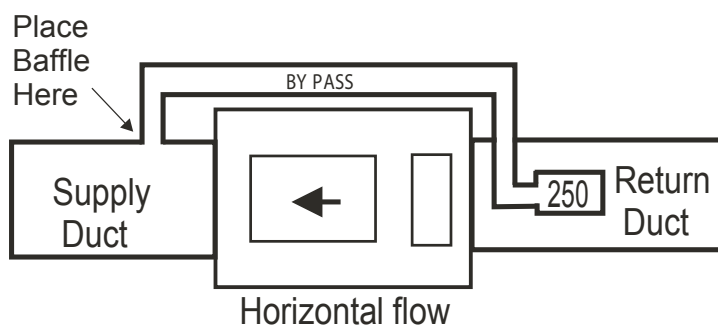
MOUNTING HUMIDIFIER

Hold the housing next to to duct and start 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 screws. With all twelve of the 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 position depending on the direction of air flow. The air flow should enter into the curved multi-louvers and exit out of the large opening.



DRILL MOUNTING HOLES AND CUT OPENING *MODEL 250*

Mount the model 250 using all the same precautions as in mounting the SC-15. Use the mounting template to locate the humidifier on the duct work. Tape down the template for the humidifier and for the by pass duct adaptor. Drill and cut all holes that go with each template. Mount the adaptor and the baffle with the (6) 3/8" screws from the kit. Mount the humidifier by first putting in the bottom of the humidifier housing to catch the lip on the back of the housing. Then use the (10) 1/2" screws that come in the kit to mount the housing to the duct. Install the **field supplied bypass duct** and end cap. First route the bypass duct from the duct adaptor to one side of the humidifier housing. Drill 2 holes through the bypass duct and the duct adaptor. Install (2) 3/8" screws from the kit on each end of the humidifier housing. There are pre-punched holes. Use them to line up and mount the bypass duct and end cap with (2) 1/2" screws from the kit. Open the Bypass Baffle during the winter and close it during the summer.



PARTS LIST

Unpack the Autoflo model SC-15 humidifier and familiarize yourself with the following parts:

1. Model SC-15 Humidifier
2. Small parts bag containing:
 - a. Two #8 x 3/4" sheet metal screws
 - b. Twelve #8 x 3/8" sheet metal screws
3. Saddle tapping valve kit
4. 24 volt humidistat
5. 24 volt transformer
6. 1/2" drain hose
7. 1/4" plastic tubing
8. Evaporative media pad
9. Owner's manual

ADDITIONAL RECOMMENDED PARTS

1. Relay, with 120 volt current sensing coil for furnaces with multi-speed blower motors.
2. 4x4 wire box to mount transformer and enclose line voltage connections.
3. #18awg thermostat wire to make up any and all 24 volt connections
4. 1/2" drain hose clamp.



PARTS LIST

Unpack the Autoflo model 250 humidifier and familiarize yourself with the following parts:

1. Model 250 Humidifier
2. Evaporative pad with holder.
3. Mounting template (not shown)
4. 24 volt transformer
5. 1/4" plastic water tubing
6. Saddle valve tapping kit
- 7 & 8. Small parts bag containing
 - a. Six #6 x 1/2" sheet metal screws
 - b. Sixteen #8 x 3/8" sheet metal screws
9. By pass adaptor template (not shown)
10. Baffle
11. End cap
12. Duct adaptor
13. Two wire nuts (not shown)
14. 1/2" draing tubing
15. 24 volt humidistat
16. Owner's manual

ADDITIONAL REQUIRED OR RECOMMENDED PARTS

1. Bypass duct material 6" diameter metal.
2. Relay, with 120 volt current sensing coil for multi-speed blower motors.
3. 4x4 wire box to mount transformer and enclose line voltage connetions
4. #18awg thermostat wire to make up any and all 24 volt connections
5. 1/2" drain hose clamp.



MODEL SC-15 & MODEL 250 FLOW-THRU HUMIDIFIERS

ELECTRICAL CONNECTIONS

The transformer should be wired in parallel with the furnace blower motor line voltage. This will allow the humidifier to run only when there is a call for fan. The transformer is designed to be attached to a 4" square outlet box. The electrical box must be mounted and wired in accordance with local building codes & the National Electrical Code. **SHUT OFF THE POWER TO THE FURNACE BEFORE PROCEEDING!** **NOTE1:** Check wiring in furnace for humidifier (HUM) terminals. If present, check to see if it is 120vac or 24vac. If it is 120vac, connect the transformer primary leads to these terminals. If it is 24vac, you do not need the transformer. Simply connect one side of the humidistat to one HUM terminal and the other HUM terminal to the solenoid valve of the humidifier. Then make the last connection of the solenoid valve to the humidistat. If you are using the transformer you will need to connect the 24vac common from the transformer to one of the solenoid valve wires and then the 24vac hot from the transformer to the humidistat. Then from the humidistat to the other wire on the solenoid valve. Make sure not to route wires where they can be burned or chaffed. See example wiring solutions to the right of this page.

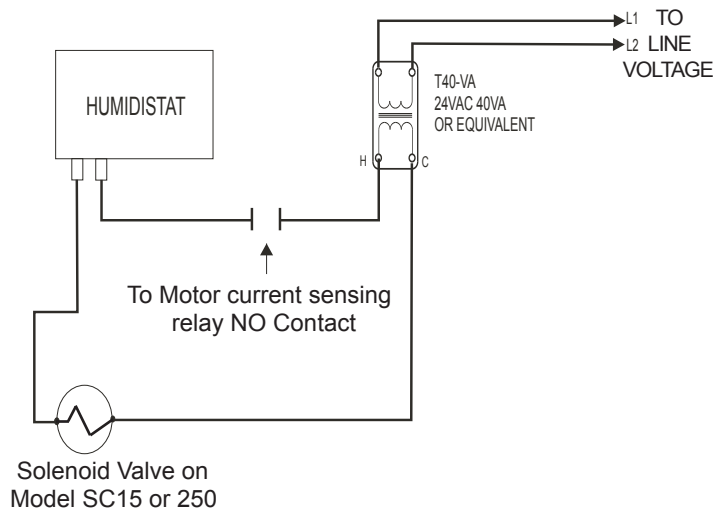
OPERATIONAL CHECK

With the humidistat set to its highest setting the humidifier solenoid should open shortly after the furnace blower is activated. If solenoid does not open refer to troubleshooting guide in this manual.

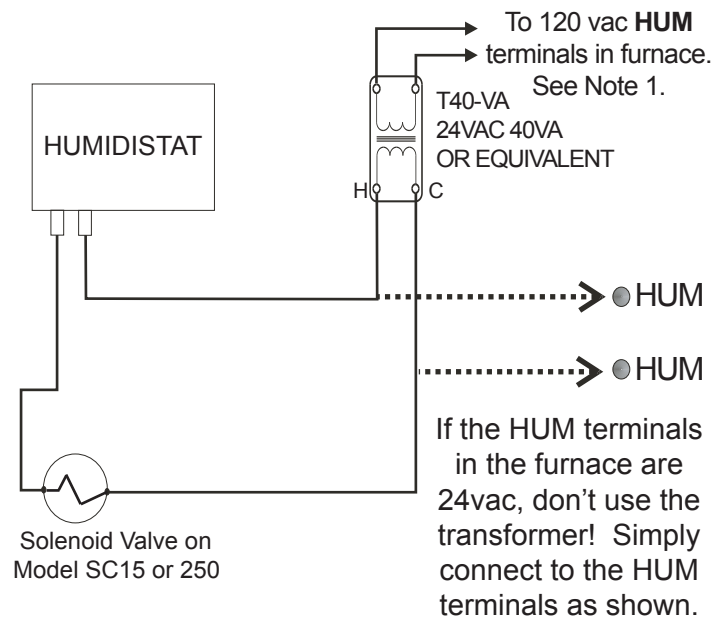
CAUTION: Check the transformer, the solenoid valve and humidistat as well as all field wiring connections as they could be at fault.

A qualified Electrician should be consulted to determine if 24 vac is present at the solenoid and at the humidistat, and that line voltage is present at the transformer.

WIRING FOR MOST COMMON FURNACES



WIRING FOR MOST COMMON 2 STAGE OR VARIABLE SPEED FURNACES



INSTALL HUMIDISTAT

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

WATER CONNECTION

Water supply for the humidifier should be taken from a nearby hot water line but cold water is acceptable. All water connections should be made at ground floor level. Do not use any water line served by a water softener. If your home has a water softener, make the water connection up stream of the water softener. A water softener is not a de-mineralizer. It merely exchanges various hard-ions for soft-ions in the water. These soft-ions or minerals, will build up in the transfer media in the humidifier, causing the need for more frequent servicing. The evaporation of softened water may also produce a white powder which may be carried in to the duct system and ultimately in to the home. The saddle tapping valve should be mounted on top of, or on the side of the water line. If the valve is installed on the bottom of the water line it could clog with sediment from the water line. Refer to the instructions on the saddle valve package and proceed as follows. For copper water lines the valve is self piercing. Mount the saddle valve to the top or side of the water line, then turn "T" handle to the clockwise until it stops to pierce and seat the valve to the pipe. Open to flush the valve and close it again. Then connect plastic water line from the valve to the humidifier making sure not to kink it or run it near any hot flue pipes. Connect water line to valve and humidifier with supplied hardware. Now open the saddle valve turning the tee handle counter clockwise until fully open. Check for water leaks and repair as necessary. *Attic installations are not recommended*

DRAIN CONNECTION

Connect the 1/2" plastic tubing to the drain spout and secure it. The spout is located at 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. **WARNING: failure to connect the drain tubing could result in a flood.**

INSTALL DOOR AND EVAPORATIVE PAD

Make sure the evaporative pad is positioned in the door correctly. The black mark on the edge of the pad indicates the top. The pad slides into the door and rests against the four legs located inside.

Position the bottom edge of the door in the tray located on the lower opening in the housing. Then simply push the top of door closed until it has snapped into place. To remove door just push down on the two tabs located at the top of the door and pull the door away from the housing.

SETTING THE HUMIDISTAT

Most people feel comfortable between 35% to 45% RH, but the proper relative humidity for your home depends upon many factors such as outside air temperature, type, and placement of insulation, vapor barrier, effectiveness of weather stripping, type of windows and doors (including frames and jams), and whether storm windows and doors are used. With all of 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 temperature fluctuates, it may be necessary to adjust the humidity level 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.



DO NOT OVER - HUMIDIFY

Cold air cannot hold as much moisture as warm air. Any cold drafts or cold-faces 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 outside the walls or in the attic. If any of these conditions are observed, the humidity level should be reduced before water damage occurs.

RELATIVE HUMIDITY CHART

Suggested Humidistat Settings

OUTDOOR TEMPERATURE	ADJUST %RH TO
+30°F	40%
+20°F	35%
+10°F	30%
+0°F	25%
-9°F	20%

Table 1. Suggested RH set points for different outdoor temperatures

MAINTENANCE

All power humidifiers require some maintenance to keep them operating at peak performance. The autoflo models SC-15 & 250 humidifiers have been designed to simplify required maintenance.

FOR the MODEL SC-15

1. Semi-annual or annual replacement of the evaporator pad.
2. An annual cleaning, general inspection, and shut down of the unit at the end of the heating season.
3. The evaporative pad should be replaced when it starts to look white and chalky. Replace it with a catalog #SC-EP pad.

FOR the MODEL 250

1. Semi-annual or annual replacement of the evaporator pad.
2. An annual cleaning, general inspection, and shut down of the unit at the end of the heating season. The replacement pad catalog # is 40EP for pad with holder.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSES & REMEDIES
Water does not flow when solenoid is energized.	<ol style="list-style-type: none"> 1. Saddle valve "T" handle is not open. 2. Saddle valve is clogged with mineral buildup. 3. Solenoid valve inlet screen is clogged. 4. Solenoid valve is stuck closed.
Solenoid will not energize.	<ol style="list-style-type: none"> 1. Humidity control is not set high enough. 2. Control transformer has failed 3. HVAC system is not in the heating mode. 4. Fan motor interlock is faulty or miswired. 5. Faulty or incorrect field wiring. 6. Solenoid coil is faulty.
No water flows out of the drain tube.	<ol style="list-style-type: none"> 1. Drain tube is kinked or blocked with debris.
RH level in the home is low or will not rise.	<ol style="list-style-type: none"> 1. Humidity control is set to low. 2. Water supply has been turned off. 3. Media pad is clogged with mineral buildup. 4. Media panel is installed incorrectly. 5. Solenoid valve is not opening or is faulty. 6. Heating system is drying out the house faster than the humidifier can replace it. A sign of extremely cold outside temperatures or the unit is undersized for the space. 7. Obtain a reliable & accurate Hygrometer to determine the RH level in the home.

TECHNICAL SUPPORT

Troubleshooting support for the AUTOFLO products when you are on the job site.

Call 1-847-683-7990 Monday-Friday 8AM to 5PM CST or for information on any AUTOFLO products including models SC-15 and 250

SERVICE NOTES