

Model GF-1042DMM

Installation & Owners Manual

Please Read And Save These Instructions

- Installation by anyone other than a qualified contractor voids the warranty.
- Product designed for residential installation only. Commercial installation voids warranty.
- Modification or alteration of product, parts, installation instructions or local safety codes voids warranty.
 - Read our full warranty policy at the end of this document.



Our Brands



Last Updated: 10-2023



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WARNING!

This symbol indicates: **IMPORTANT INSTRUCTIONS!**
Failure to heed them can result in serious injury or death.



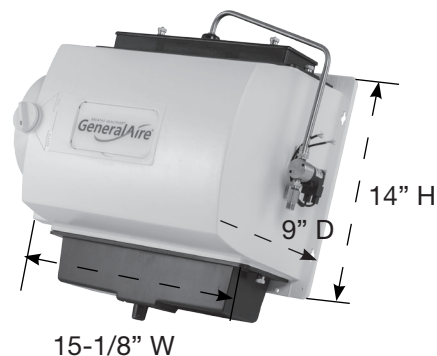
CAUTION!

This symbol indicates: **IMPORTANT INSTRUCTIONS!**
Failure to heed them can result in serious injury or material property damage.



Specifications

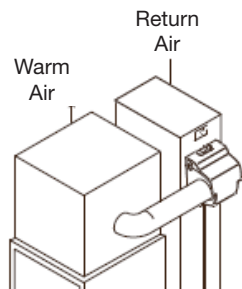
- **Model:** GF-1042DMM Legacy Flow Through Humidifier
- **Type:** Flow Through
- **GPD:** 17 Based on 120° F / 49° C Plenum Temperature
- **Warranty (Years):** 5
- **Replacement Vapor Pad®:** GF-990-13
(Replace 1-2 times per season)
- **Dimensions (Inches):** 14 H x 15-1/8 W x 9 D
- **Weight (Pounds):** 13
- **Home Size (Square Feet):** To 3,000
- **Installation:** Warm Air Plenum / Right or Left
- **Plenum Opening (Inches):** 9-1/2 H X 13-5/8 W
- **Bypass Duct (Inches):** 6
- **Pallet Qty:** 30
- **Cabinet Construction:** UV-Stable Automotive Grade Plastic
- **Humidistat:** Models: GF-MHX3 (Included)
- **Voltage:** 24VAC
- **In Box:** Humidifier, Humidistat, Installation Instructions, Vapor Pad®, Parts Kit, Drain Hose, Transformer, Metal Distributor Tube, Damper, 15' 5/8" Drain Hose, Drain Pan, Solenoid Valve, Quick Connect Tee valve w/Shut Off



Unit Location

WARNING: Disconnect electrical power before beginning installation.

- Do not install where temperatures fall below 32° F / 0° C or where plenum temperatures exceed 200° F / 93° C. When wiring into a multi-speed blower circuit see Step 7D.
- The humidifier may be mounted with the 6" outlet to the right or left by inverting the cabinet and reversing the positions of the distributor trough and drain pan. The humidifier may be mounted on the warm or return air plenum with equal efficiency.



Installation Options:

- Warm Air Plenum
- Return Air Plenum
- Vertical or Horizontal
- Furnace or Air Handler

Additional Materials That May Be Necessary

1. 1/4" Diameter plastic supply tubing or 1/4" copper supply tubing for hot water applications
2. 6" Diameter galvanized by-pass pipe
3. Electrical wire and wire nuts
4. Air pressure switch (Model GF-12500)
5. Current sensing relay (Model GF-GA50)

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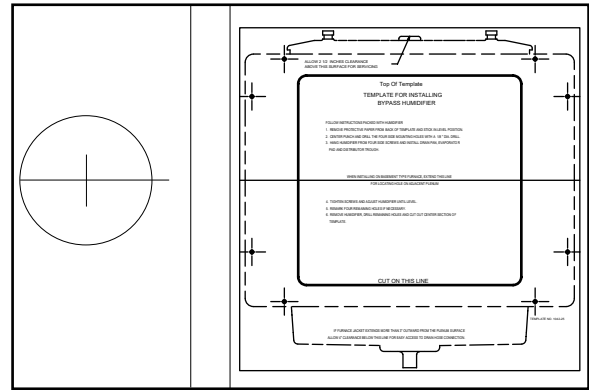


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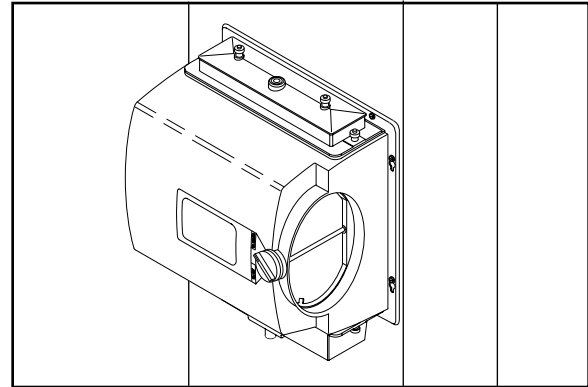
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Installation

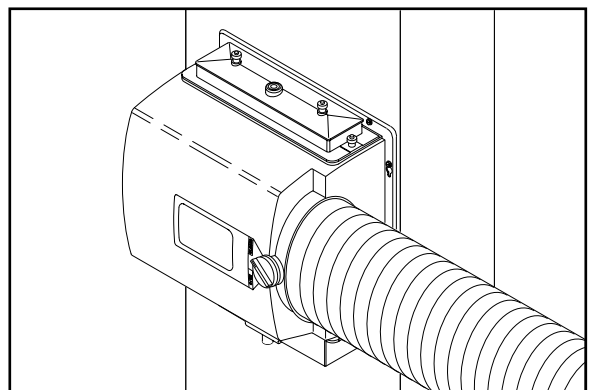
1. Select location on vertical surface of warm or return air plenum for mounting humidifier. For plenum sizes 9 1/2" to 15" use GP-1040AD adapter plate and five screws, 3 screws in top (supplied with DM model only). Affix mounting template in place making sure the template is level. Do not install humidifier or 6" bypass pipe where the blanked off ends of a cooling coil will restrict air flow to the humidifier. Extend horizontal centerline from template to the adjacent plenum. Scribe 6" circle 10" to 15" from side of humidifier, on cabinet centerline, using connecting collar as guide. Cut out center section of template and 6" hole.



2. Install four sheet metal screws in the side mounting holes until the heads project about 3/8". Hang the humidifier from the four screws. Adjust humidifier until level and tighten four screws. Install four sheet metal screws in the remaining mounting holes. Tighten all 8 screws. Install drain pan, evaporator pad and distributor trough.



3. Install connecting collar. Connect by-pass pipe to collar and humidifier cabinet. Using holes at top and bottom of humidifier bypass opening, screw by-pass pipe to humidifier cabinet.



Installation, Cont.



CAUTION: Turn off water supply.



CAUTION: Do not use plastic tubing on hot water or in contact with any hot plenum surface or duct. Installation of this saddle valve must meet or exceed local codes and ordinances.

4. Mount the Self-Tapping Saddle Valve.

Copper Pipe:

1. Retract piercing pin into valve body by turning handle counterclockwise.
2. Screw valve body into upper bracket and tighten.
3. Place rubber gasket over piercing pin.
4. Assemble saddle valve over copper pipe using enclosed screws, nuts and lower bracket.
5. Tighten screws evenly and firmly. Brackets should be parallel.
6. Complete compression connection to saddle valve outlet.
7. Turn handle clockwise to pierce tubing and close saddle valve.
8. Turn handle counterclockwise to open saddle valve, leave open for several seconds to flush dirt from pipe and tubing.

Steel, Brass or Hard Plastic Pipe:

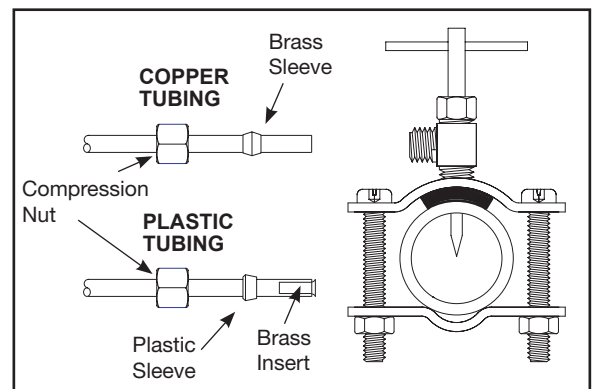
1. Shut off water supply and drain pipe.
2. Turn handle clockwise to expose piercing pin and close saddle valve.
3. Place rubber gasket over piercing pin.
4. Drill 1/8" hole in pipe.
5. Assemble saddle valve over steel, brass or hard plastic pipe using enclosed screws, nuts and lower bracket.
6. Tighten screws evenly and firmly. Brackets should be parallel.
7. Complete compression connection to saddle valve outlet.
8. Turn handle counterclockwise to open saddle valve, leave open for several seconds to flush dirt from pipe and tubing.

Threaded Pipe Fittings:

1. Turn handle clockwise to expose piercing pin and close saddle valve.
2. Seal valve body threads using pipe tape or sealant.
3. Install valve into 1/8" NPT fitting.
4. Complete compression connection to saddle valve outlet.
5. Turn handle counterclockwise to open saddle valve, leave open for several seconds to flush dirt from pipe and tubing.

5. Install the copper or plastic tubing.

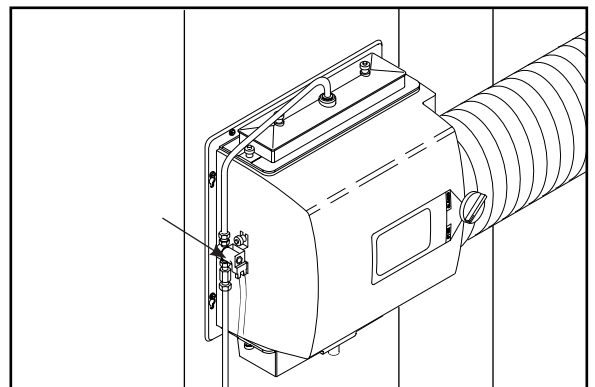
Connect 1/4" O.D. tubing to the saddle valve. Copper tubing requires a brass compression nut and brass sleeve. Plastic tubing requires a brass insert inside the tubing, a plastic sleeve on the outside with a brass compression nut. See figure to right.



6. Attach solenoid valve to side of humidifier cabinet with flow arrow pointing up, using thumb nuts provided. Do not reverse brass fittings as valve will not function if flow is reversed. Assemble distributor tube so that it is directed into the center opening of the distributor trough cover. Connect 1/4" water supply tube to brass filter at inlet of solenoid.

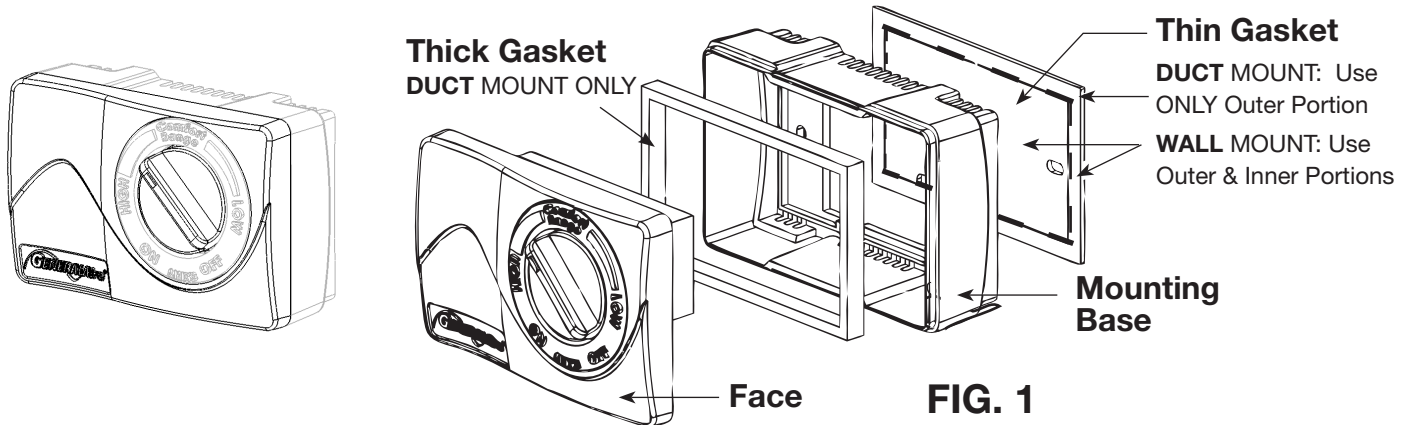


CAUTION: DO NOT USE PLASTIC TUBING IN CONTACT WITH ANY HOT PLENUM SURFACE OR DUCT. IF USING PLASTIC TUBING, USE TUBE SUPPORT PROVIDED.



Installing / Wiring The Control

WARNING: ALL WIRING SHOULD COMPLY WITH LOCAL ELECTRICAL CODES.



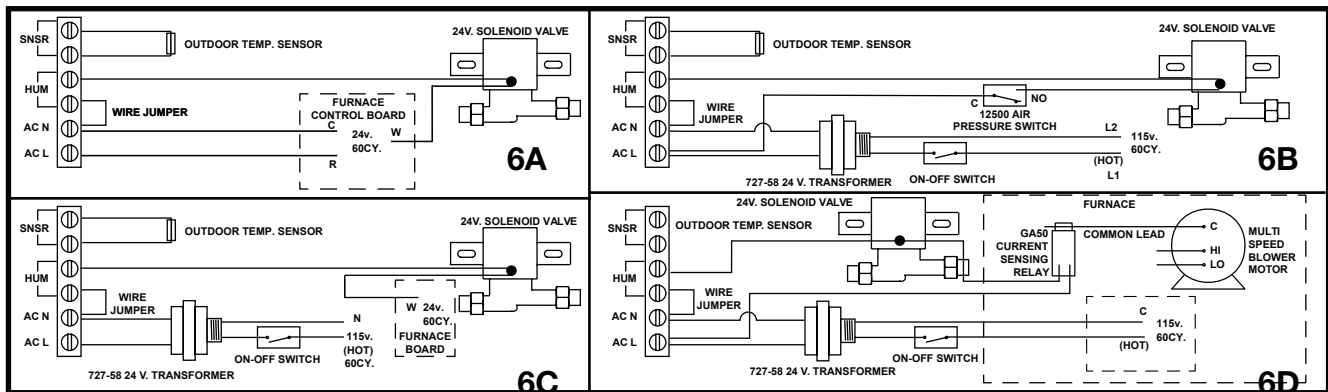
6. GF-MHX3: DUCT Mounting (Return Air Duct)

CAUTION: Do not install the humidistat on the warm air duct.

1. Locate the humidistat at least 24" upstream of the humidifier or bypass on the return air duct. Avoid areas of direct radiation like secondary heat exchangers in the fan compartment.
2. Place template using level. Cut sensor hole as shown on template. Drill four 3/32" holes (not shown).
3. Remove the housing from the base by prying with a small screwdriver at the notch in the side of the housing.
4. Gaskets: Place the outer portion ONLY of the thin foam gasket on the humidistat base and mount the base with four screws. Place the thick gasket inside the wall mount base to seal off air entering through the vents. Low voltage wire may enter the humidistat under the foam seal.
5. Connect wires to screw terminals on the control assembly as shown in wiring diagram. Replace housing.

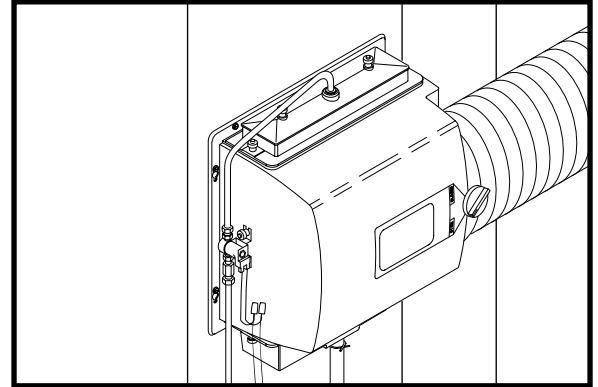
6. GF-MHX3: WALL Mounting Instructions

1. Choose a location for the humidistat about five feet above the floor on an inside wall with average room temperature and humidity conditions.
2. Drill a small hole in the wall and run low voltage wiring to the location chosen. Pull about 6" of wire through the hole. Plug the opening to prevent drafts from affecting the humidistat operation. Remove the housing from the base by prying with a small screwdriver at the notch in the side of the housing.
3. Gaskets: Place the entire outer and inner portions of the gasket on the base as shown. Do NOT install the thick gasket inside the base.
4. Mount the base horizontally over the wires using level. Attach directly to the wall, using four screws provided.
5. Connect wires to screw terminals on the control assembly as shown in wiring diagram. Replace housing.



Installation Final Steps

7. Connect drain hose to 5/8" spout on humidifier cabinet using hose clamp provided. Run 5/8" hose to suitable drain such as floor drain, laundry sink or to a condensate pump (sold separately). Be sure hose has continuous slope and is not kinked at any point.
8. Turn on water supply and check operation of humidifier. Set humidistat to a demand setting. With the furnace off, the solenoid valve should be closed. Start the furnace, the solenoid valve should open when the blower or burner circuit is energized. Check flow of water through distributor trough and evaporator pad. The standard GF-9903776 orifice will supply approximately 3.5 GPH of water at a line water pressure of 60 PSI. For low water pressures (20-40 PSI) a larger orifice GF-9903775 is available to provide the same flow. Leave humidistat set at the recommended setting.



How The Humidifier Works

- The operating principle of the humidifier is based on the most efficient and economical means of evaporating water to the air. The humidifier uses only 2.5 watts of electrical power during operation, less than the smallest household light bulb. The heat necessary for evaporating water is produced by the furnace. The water supply to the humidifier is controlled by the electric solenoid valve. The humidistat connected in series with the solenoid provides low voltage control of the humidifier. The humidistat is designed for wall mounting in the living area or surface mounting on the return air duct.
- Water flows through a strainer, is metered through an orifice to provide the proper amount of water, and is supplied to the Vapor Pad® by the distributor trough. Approximately 200 CFM of air is by-passed from the warm air plenum through the humidifier and returned to the cold air plenum. Moisture is evaporated to the air passing through the evaporator pad.
- Minerals are not blown into the air stream as occurs in atomizing humidifiers; they are left on the evaporator pad where a high percentage is carried off with the waste water.
- When the humidifier is installed and operating, no adjustments are necessary other than setting the control knob on the humidistat to the desired level of humidification. Set knob on the humidifier to "OPEN" position. To turn the humidifier off, close the water supply valve, switch electrical power off and turn the humidistat off. If furnace is used for summer cooling or ventilating set air damper on "CLOSED".

At Outside Temperature		Recommended Setting
-20°F	-29°C	15%
-10°F	-23°C	20%
0°F	-18°F	25%
+10°F	-12°C	30%
+20°F	-7°C	35%
+30°F	-1°C	40%



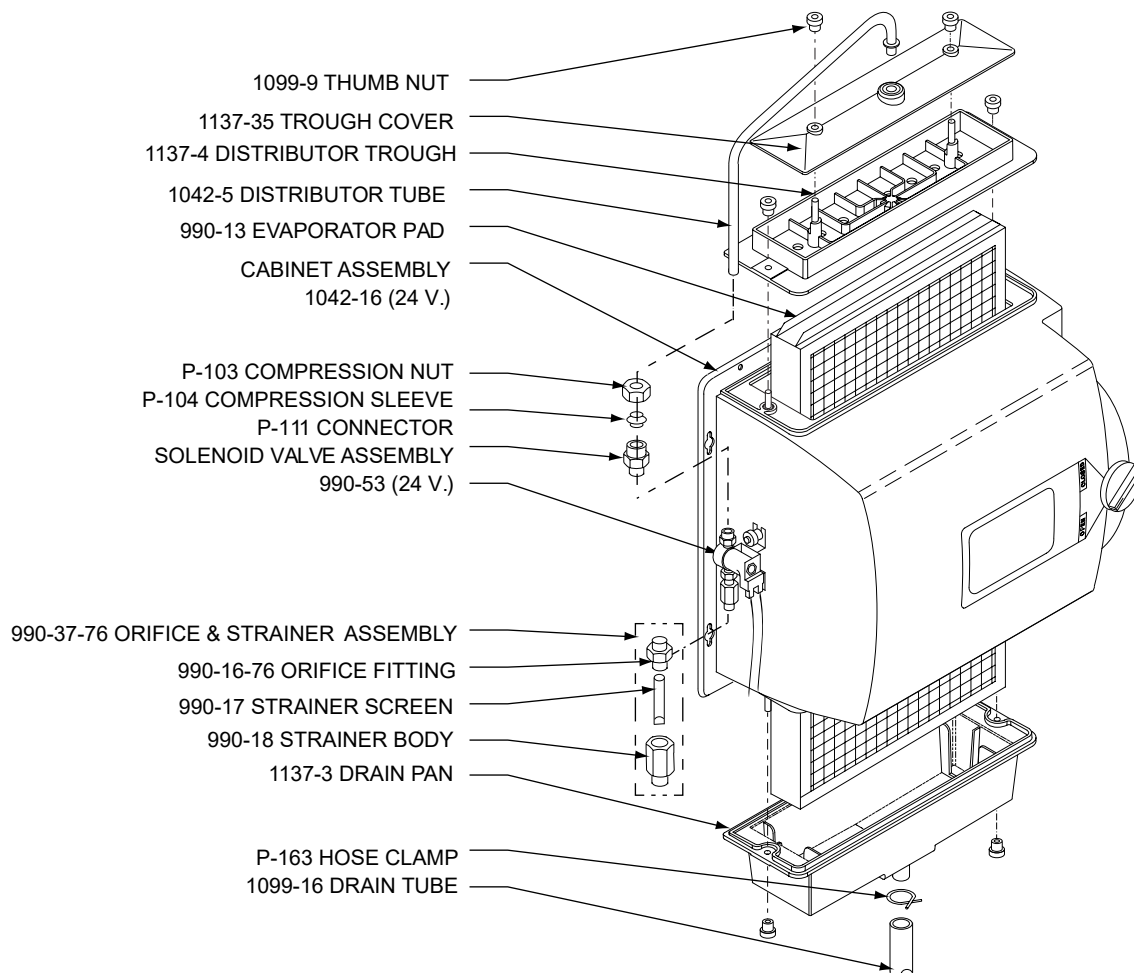
CAUTION: Do not set relative humidity too high during cold weather. Excessive humidity may cause condensation on windows or in walls. Refer to recommended settings as described in the humidistat owners manual.

Maintenance

Your humidifier is engineered to give helpful and trouble-free humidification. For maximum efficiency the following cleaning procedures should be carried out at the end of each heating season:

1. Turn off the water supply and electrical power to the humidifier.
2. Remove water distributor tube, distributor trough, used Vapor Pad® and drain pan. The Vapor Pad® may be removed from either the top or bottom of the humidifier. Clean excessive mineral deposits from the distributor trough, drain pan and humidifier cabinet. A solution of 1/2 vinegar & 1/2 water will help loosen mineral deposits.
3. Insert a new GF-990-13 Vapor Pad® (black notch on top). Install trough and drain pan. Replace the distributor tube to proper position over the distributor trough. Replace Vapor Pad® yearly for peak performance.
4. In heavy mineral areas, or if the solenoid valve fails to function, disconnect the 1/4" water supply line from the solenoid valve. Remove the brass strainer body from the solenoid valve. Carefully pull the strainer screen GF-990-17 from the orifice fitting. Clean the mineral deposits from all parts. If the orifice is clogged, it may be opened by inserting a small needle. Reinsert the filter into the orifice fitting and screw the brass strainer body into the solenoid valve.
5. Reconnect the 1/4" water line to the solenoid valve if necessary. Turn on the water supply and check all points for leakage. The operation of the unit may be checked by starting the furnace. The humidifier operates only when the furnace blower is running or the burner circuit is energized. The humidifier is now ready for operation.
6. During the summer, turn OFF the water supply and electrical power to the humidifier. Close the air damper.

Parts Drawing



Troubleshooting

1. My humidifier continues to run.

Check for the following:

- The valve might be stuck in the "open" position.
- Check for wiring errors.
- Is the unit sized properly for your home? If it is rated for a smaller-sized home than the home in which it is installed, it will work "overtime" to reach the humidification levels desired.
- Check the Vapor Pad®. If it is clogged, the pad will reduce the humidifier efficiency. Replace if necessary.

2. My solenoid valve is making a "chatter" noise.

This can be caused by any of the following:

- The power to the valve is less than 18V AC.
- The solenoid is causing a "water hammer condition" thru the water pipes (valve closes quickly and shuts off water flow, which in turn creates pressure behind the valve that has no avenue of relief). You may want to install a water hammering device with your plumbing, or contact your local plumber to determine the best solution.
- The humidistat is located too close to the humidifier or the by-pass pipe. Your humidistat should be a min. of 1.5' away or greater.
- The humidistat could have a buildup of dust, causing a faulty reading. Clean.
- The solenoid valve might be dirty. Remove, inspect and clean if necessary.
- Water supply pressure going to the valve may be too low.
- The hold down nut on top of the solenoid, as it may be loose.

3. The humidifier is not raising the humidity levels in my home.

Check for the following:

- Ensure you have changed / replaced your Vapor Pad® at the proper intervals (once per year) to ensure the greatest production of moisture.
- Check the setting of your humidistat to ensure it is set higher than current humidity levels in your home (when in doubt, turn it all the way to the right at maximum production). If you don't know what your current humidity level is, use an instrument called a thermo-hygrometer (Model GF-610) to measure both heat and humidity levels in your home.
- Calculate your humidity load (Gallons Per Day - GPD) via our humidity calculator (www.GeneralAireIAQ.ca). Check to see that your humidifier model is designed to produce the amount of moisture (GPD) you need.
- Have you recently installed hardwood floors? Have you recently remodeled and added on to your home? These can both increase your home's demand for humidity. Options include connecting your humidifier to the hot water supply (which can increase output by as much as 30%), or installing a new humidifier model that can generate more humidity.
- The unit is not recommended for heat pumps.
- Plenum temperatures must meet or exceed 120° F to achieve listed capacities.

4. My humidifier will not turn on.

The following might be occurring:

- Check to see if your humidifier is plugged in, that the breaker is engaged, and that power to other items from the same source is working.
- Check that the damper knob is in the "OPEN" position.
- Ensure a fuse has not blown.
- Check that connectors are properly inserted in the terminal block.
- Make sure the furnace is operating in the heat mode.



To ensure your safety and the longevity of your unit, we recommend contacting a licensed contractor to perform any repairs or maintenance.

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FAQ's

1. How does a humidifier help with my allergies?

Dry air can lead to a host of problems for allergy and asthma sufferers. Dry climates, winter air, and artificial heat all contribute to the discomfort by drying out your skin, throat and delicate sinus passages and airways (which can contribute to sinusitis). Winter is an especially bad time for dry air as home heating systems, especially forced-air systems, reduce the amount of moisture in the air while humidity levels outdoors typically dip as well.

2. What range of humidity is ideal?

Research shows that 40-60% relative humidity is ideal. Outside this range, your risk of being adversely affected increases.

3. How often should I change my Vapor Pad®?

We recommend replacing your Vapor Pad® at least once per year. Minerals build up on the vapor pad over time, which in turn:

- Reduces the pad's ability to absorb water.
- Prevents the warm air from flowing through the pad. (Warm air moving through the water-soaked pad causes the water in the pad to evaporate. It is this process that delivers moisture throughout your home via the home's duct system.)

4. Can I clean my Vapor Pad® instead of replacing it?

A coating is applied to the Vapor Pad® that helps it absorb water and control water flow. If you subject the Vapor Pad® to cleaning, you usually remove much of the coating and the pad becomes ineffective. This reduces the output of the humidifier and increases water consumption.

Replace the Vapor Pad® annually.

5. Why would I want to install a humidifier?

For many reasons:

1. Since the air in your home is always trying to reach its saturation point, it will absorb water wherever it can; from the bodies of you and your children, your pets, your furniture and even your house plants. As a result your skin, throat and nasal passages dry out, leaving you more susceptible to physical discomfort, colds, flu and even infection. Allergy and asthma sufferers can be especially affected by air that's too dry.
2. Dry air causes dry, itchy skin.
3. Dry air cracks expensive woodwork, floors, musical instruments, artwork and furnishings.
4. Annoying static electricity (caused by dry air) can damage computers, VCR's and other electronic equipment, requiring expensive repair.
5. Dry air can cause harm to expensive musical instruments like pianos and violins.
6. Dry air causes gaps in window & door frames, letting cold outdoor air in; causing you to turn up the heat and increasing your heating bills! Controlled humidity from a GeneralAire® Humidifier allows you the luxury of dialing the thermostat back & reducing annual heating bills. For example, 68° at 40% relative humidity feels just as warm as 74° at 20% humidity. Setting your thermostat back by as little as three degrees can reduce annual heating bills by as much as 5%.