



# INSTALLATION INSTRUCTIONS

# INTELLIMIST™ Residential Atomizing Humidifier and Control

Part Numbers: P110-6000 (INTELLIMIST Humidifier and Humidistat)  
P110-6001 (INTELLIMIST Humidifier and INTELLISTAT™ Control)

## CONTENTS

	Page
<b>SAFETY CONSIDERATIONS</b> .....	1
<b>GENERAL</b> .....	1
<b>INSTALLATION</b> .....	1-4
<b>Location</b> .....	1
<b>Humidifier and Filter Installation</b> .....	2
<b>Water Supply Connection</b> .....	3
<b>Drainage</b> .....	3
<b>Wiring</b> .....	3
<b>Humidistat or INTELLISTAT Control Configuration</b> .....	3
<b>OPERATION</b> .....	5
<b>MAINTENANCE</b> .....	6
<b>TROUBLESHOOTING</b> .....	6

## SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform basic maintenance functions such as changing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit or accessory, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves.

### ▲ WARNING

Before installing an accessory or performing maintenance or service on humidifier, turn off main power switch to unit. Electrical shock can cause injury or death. There may be more than one disconnect switch.

## GENERAL

The INTELLIMIST humidifier is an atomizing humidifier. The INTELLIMIST humidifier is normally located in the supply plenum and adds up to 24 gallons of humidity per day to the supply air using MICROPULSE™ technology to assure maximum efficiency. The INTELLIMIST humidifier is designed for use with 1 to 7.5 ton HVAC systems. Only the following controls may be used with the INTELLIMIST humidifier: the P110-0009 Humidistat, and the P374-1600 INTELLISTAT combination temperature and humidity control. Humidifier dimensions are shown in Fig. 1.

### ▲ CAUTION

Do not use the humidifier with any non-approved humidistat or control. Damage to the unit may result.

NOTE: Refer to Humidistat or INTELLISTAT control Installation and Operating Instructions for more information on those devices.

## PACKAGE CONTENTS

QUANTITY	ITEM
1	Humidifier
1	Humidistat (P110-6000) or INTELLISTAT Control (P110-6001)
1	Spray Nozzle
1	1/4-in. OD Plastic Tubing (20 ft)
1	In-Line Water Filter
1	Water Filter Mounting Bracket
1	Mounting Kit Containing: 1 — Humidifier Mounting Template 8 — No. 6 Mounting Screws 2 — Threaded Adapters 3 — Locking Nuts 1 — Self Piercing Valve Installation Kit* 1 — Teflon Tape 2 — Plastic Water Filter Mounting Bands

\*Contains the following: self-piercing valve, rubber gasket, 2 bolts and nuts, flange, brass nut, brass ferrule, brass insert.

## INSTALLATION

**Location** — The INTELLIMIST humidifier should be located on the supply air plenum. Use only with central air-conditioning systems. See Fig. 2.

### ▲ CAUTION

The humidifier must be mounted over the evaporator coil or evaporator coil drain pan. Water damage may result.

### ▲ CAUTION

Adequate air and moisture mixing is essential to ensure that water does not accumulate in ductwork.

Make sure site can be supplied with the necessary power requirements. Ensure that there is adequate clearance for service.

Humidifier must not be installed where freezing temperatures may occur. Do not install on furnace jacket or where humidifier or components may be exposed to hot surfaces.

On vertical equipment, allow clearance for the humidifier, filter, and water line away from furnace exhaust vent.

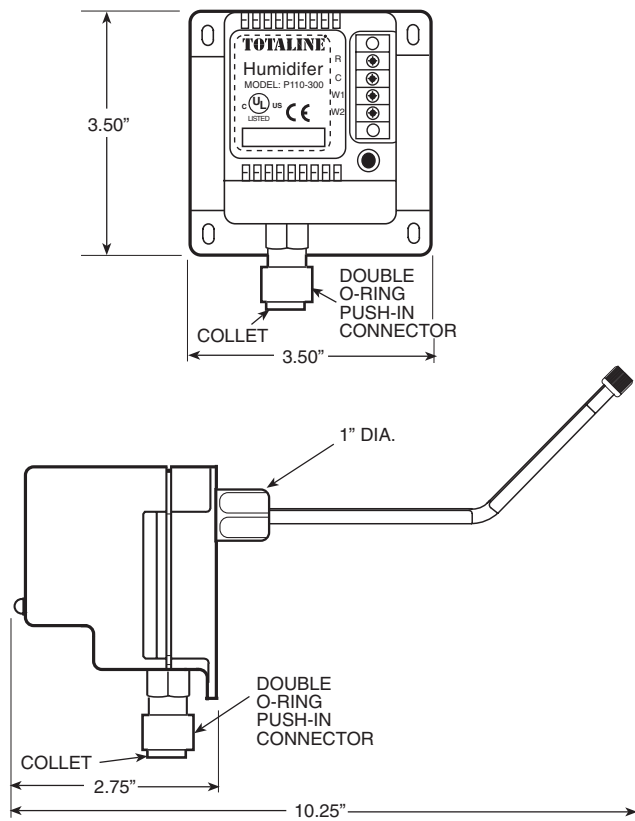
### ▲ CAUTION

Always install downstream of electric heat elements and electronic air cleaner.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

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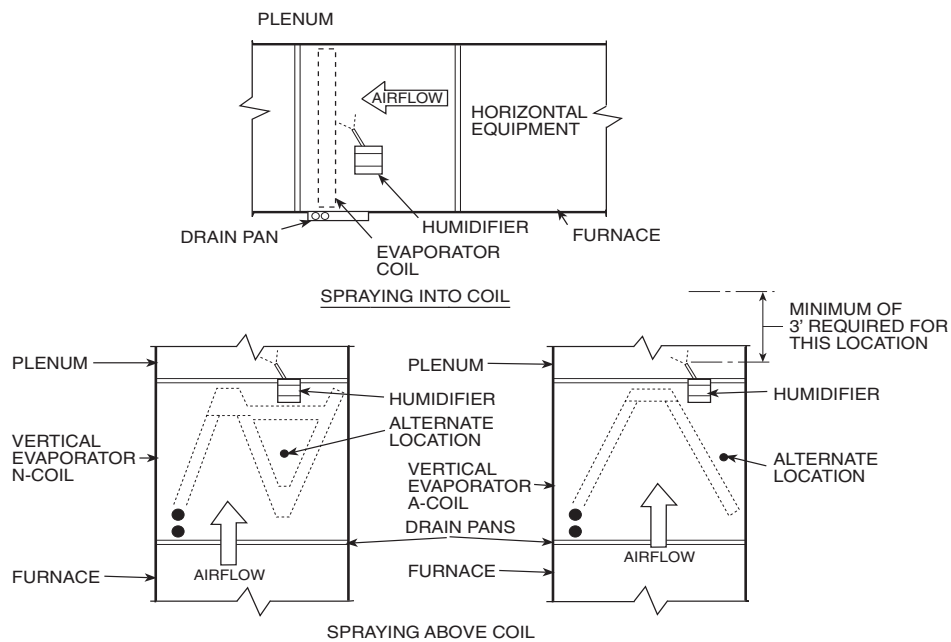
LITERATURE NUMBER HUM-55SI  
CATALOG NUMBER 570-452  
REPLACES: HUM-53SI



**Fig. 1 — Humidifier Dimensions**

**Humidifier and Filter Installation** — Perform the following procedure to install the humidifier and filter:

1. Turn off all power to HVAC equipment.
  2. The humidifier should be installed on the supply plenum, preferably near the coil. Mounting near the evaporative coil, if applicable, will allow any excess moisture to exit the system via the condensate drain pan.
  3. On vertical equipment, allow clearance of the humidifier and related components such as the water filter and plastic water line, from the exhaust vent.
  4. Place the humidifier mounting template on the supply air duct in the desired mounting location.
  5. Drill four mounting holes for no. 6 screws on template. Cut or drill 1-in. spray nozzle hole in duct per template. Remove template from duct and discard.
  6. Slide plastic locking nut over end of spray nozzle. Push metal end of spray nozzle into back of humidifier nozzle connection. Tighten locking nut onto nozzle connection, locking spray nozzle to humidifier. Turn locking nut to finger tight, then tighten an additional 1/4 turn with pliers or a wrench. Do not overtighten. Overtightening fittings will cause them to crack and split, which will create water leaks. See Fig. 3.
- NOTE:** The nozzle assembly can still be rotated 360 degrees after tightening.
7. Route spray nozzle through 1-in. hole in duct. Mount humidifier to supply air duct using four no. 6 screws provided.
  8. On vertical equipment, if the nozzle is spraying away from the coil, there should be a minimum of three feet from the nozzle to the top of the plenum. If this is not available, then point the nozzle of the humidifier directly into the evaporator coil.
  9. The water filter mounting bracket is installed below the humidifier. Mount the bracket to the supply duct or another suitable location using 2 screws provided. Bracket must be installed in vertical position.
  10. Cut a piece of tubing of correct length to run from the humidifier water intake valve to the top of the water filter. See Fig. 4.
  11. The water filter should be cleaned before use. Run at least 3 gallons of water through the water filter in the correct direction, until the outlet water appears clear (not grey or cloudy).
  12. Remove plastic cap from double o-ring push-in connector on top of water filter. Ensure tube ends are cut square and push tube into double o-ring push-in connector until a stop is felt. Plastic or copper tube may be used. To remove tube, hold collet (inner ring) against connector body and pull.
  13. Remove plastic cap from double o-ring push-in connector on bottom of humidifier.



**Fig. 2 — Mounting Location**

- Ensure tube ends are cut square and push tube into double o-ring push-in connector on humidifier until a stop is felt. Plastic or copper tube may be used. To remove tube, hold collet against connector body and pull.
- Place water filter in mounting bracket and lock into place with 2 plastic mounting bands. See Fig. 4.

**Water Supply Connection** — After the humidifier and filter installation, the water supply connection needs to be completed. Perform the following procedure to connect the water supply:

- Locate 20-ft, plastic, water supply tube provided.
- Remove plastic cap from double o-ring push-in connector on bottom of water filter. Ensure tube ends are cut square and push tube into double o-ring push-in connector until a stop is felt. Plastic or copper tube may be used. To remove tube, hold collet (inner ring) against connector body and pull.
- Select a convenient location within 20 ft of water filter for the self-piercing needle valve. Attach to either cold or hot water pipe. Attach valve body, rubber gasket, and flange to pipe with two bolts and nuts provided. See Fig. 5.

NOTE: Self-piercing water valve will only pierce copper pipes. For all other pipe material, a 1/8-in. hole will need to be drilled in pipe.

- Turn the valve all the way closed. Self-piercing valve will pierce the copper pipe and create a hole for water flow. Do not open valve at this time.
- Connect other end of tube to water valve. Slide brass nut over tube end with threaded end facing end of tube. Slide brass ferrule over tube end. Push brass insert into end of tube. Position ferrule over brass insert. Ferrule and insert will form a compression fitting to prevent leakage.
- Push end of tube into water valve. Slide brass nut over ferrule and tighten onto brass connector on valve, attaching tube to valve.
- Open the valve to allow water flow through the valve to the humidifier water filter.
- Check all fittings for leaks and tighten if necessary. Copper tubing may be used in place of plastic tubing if required. Make sure plastic tubing is secured away from any heated surfaces or exhaust vents.

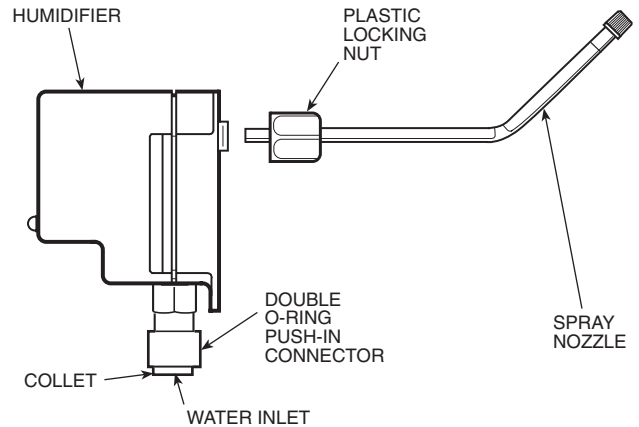
**Drainage** — The humidifier should be mounted over the evaporator coil or evaporator coil drain pan. This will provide adequate drainage. Water damage may result if a drain pan is not provided under the humidifier installation location.

**Wiring** — The humidifier is wired differently when connected to the P110-0009 Humidistat, and the P374-1600 INTELLISTAT™ control. Refer to the respective Installation Instructions.

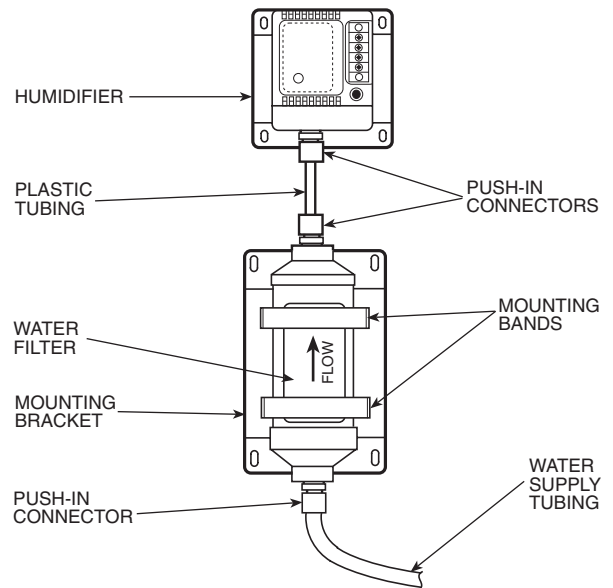
Use field-supplied wire. Follow NEC (National Electric Code) and all local codes.

Refer to Fig. 6A-8 for wiring connections to the Humidistat and the INTELLISTAT control.

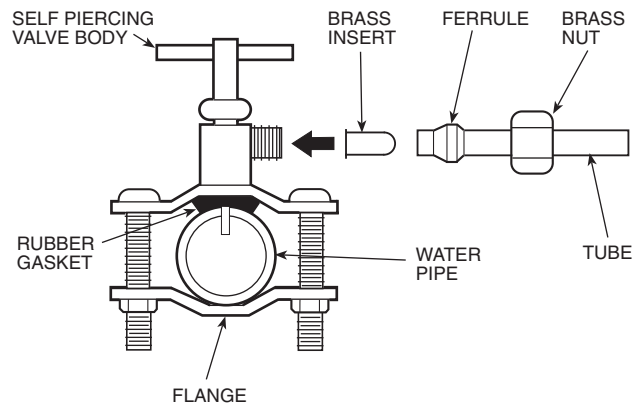
**Humidistat or INTELLISTAT Control Configuration** — The Humidistat or INTELLISTAT control must be installed and configured before the humidifier will operate. Refer to the Humidistat or INTELLISTAT control installation instructions for information on installing, calibrating and configuring the control.



**Fig. 3 — Spray Nozzle Installation**

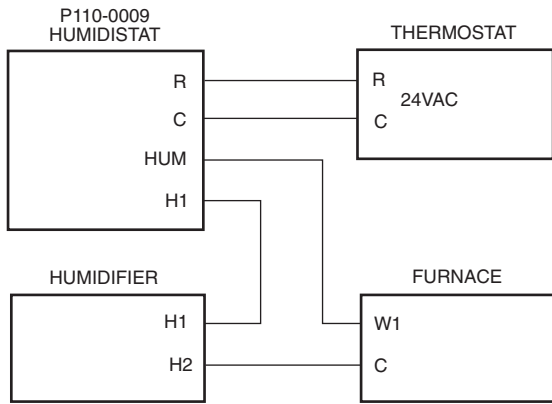


**Fig. 4 — Water Filter Installation**

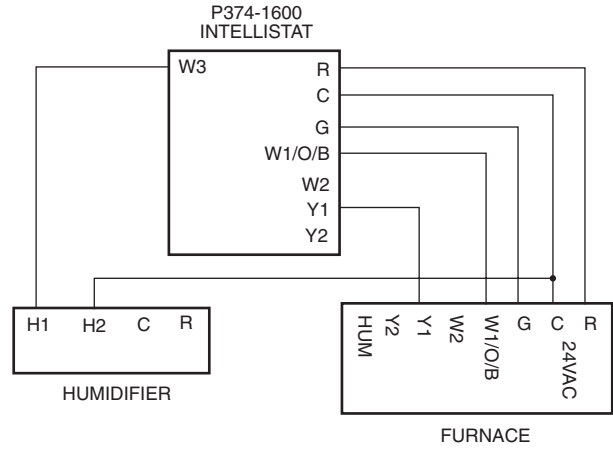


NOTE: All parts are included in self-piercing valve installation kit.

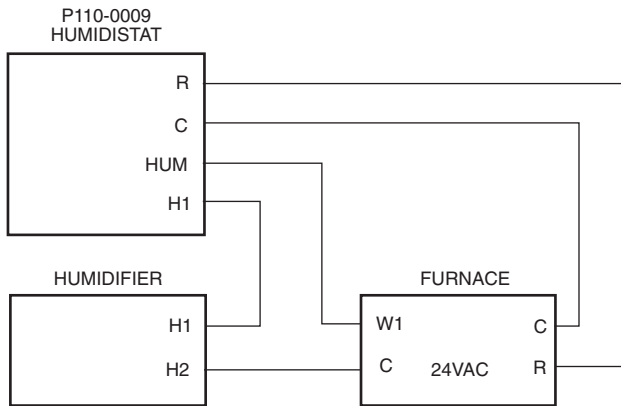
**Fig. 5 — Water Supply Valve Connections**



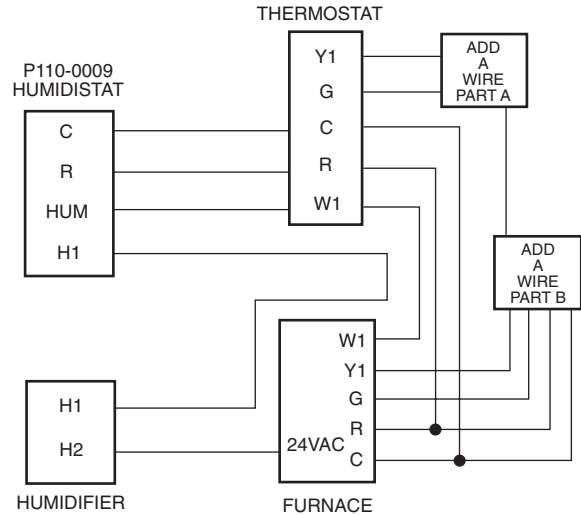
**Fig. 6A — Wiring to P110-0009 Humidistat (With Thermostat)**



**Fig. 7 — Wiring to P374-1600 INTELLISTAT™ Control**

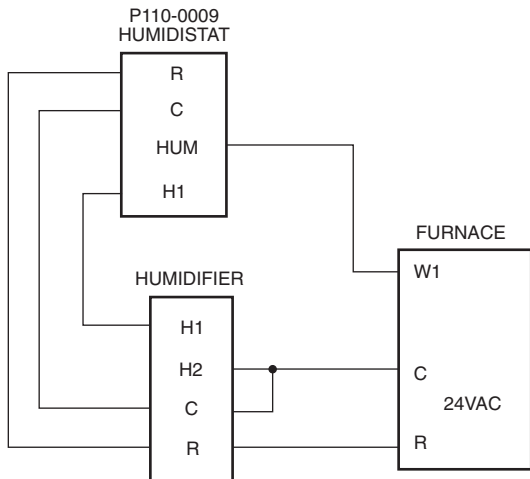


**Fig. 6B — Wiring to P110-0009 Humidistat (Without Thermostat)**



NOTE: When only 5 wires are available to the thermostat and Humidistat, a P474-0410 Add-A-Wire accessory may be used as shown.

**Fig. 8 — Wiring with Add-A-Wire™ Accessory**



NOTE: The C and R terminals on the INTELLIMIST™ humidifier are not connected internally. They are provided for an easy 'tie-off point' when using one multi-conductor cable from the humidifier to the Humidistat. In this case H2 would need a jumper to C.

**Fig. 6C — Wiring to P110-0009 Humidistat (Without Thermostat, Terminals R and C Are Used)**

## OPERATION

To start up the humidifier, open all supply water valves to allow water flow to the humidifier. Set the Humidistat or INTELLISTAT™ control to highest demand (99% humidity). When the humidifier is on (mist spray is activated), the red LED on the humidifier will be on.

When connected to an INTELLIMIST™ or Humidistat control, the red LED will go on and off with the MICRO-PULSE™ control sequence.

*Spray mist operational check: Remove screws from humidifier and remove from unit. Attach a 2-ft. section of tube to bottom of humidifier and top of filter. Hold humidifier outside of the plenum and check to see that the spray mist is functioning correctly. Reinstall humidifier and replace original tubing.*

Reset the Humidistat to the recommended setting once the humidifier is operating correctly. (See Troubleshooting section.)

For homes that are in very dry climates with low humidity levels (below 20% relative humidity [RH]), it may take 4 to 6 weeks to notice an increase in humidity in the home. In low humidity areas all the moisture has evaporated from the wood, drywall, carpets, draperies, and furniture. Until this moisture is replaced, these materials will absorb moisture from the air, causing very little relative humidity rise in the home.

As with any whole-house humidifier, the humidifier can only increase the moisture in the house when the fan is running. Therefore, in climates where little heating is required and the heating/fan system is therefore run very few hours per

day, the fan must be run in the non-heating modes to increase the humidity in the rooms. (See Tables 1 and 2.)

This can be accomplished in one of three ways.

1. The INTELLISTAT control can be set to ON (see INTELLISTAT control Installation Instructions), then the INTELLISTAT will run the fan and humidifier any time the humidity is below the set point.
2. The fan (see INTELLISTAT control Installation Instructions) can be programmed to run so many minutes per hour during certain hours of the day. The humidifier will run any time the fan runs and the humidity is below the set point.
3. The fan can be run continuously with the fan ON button. The humidifier will then run constantly on a call for humidity.

Even though the INTELLIMIST humidifier can put out up to 24 gallons of water into the air per day, it may not be possible to increase the humidity to a high level, especially if the outside humidity is fairly low. For instance, when outdoor air at 40 F and 20% relative humidity is heated up to 72 F, the resulting humidity in the house is 8%. The amount of humidity that can be added to the air is limited by the airflow in the ductwork and the temperature of the air. Hot air (furnace is running) can hold 6 times as much moisture as the air can hold when only the fan is running. It is much easier to increase the humidity in the house with the furnace running versus when only the fan is running. Both applications are limited by the amount of moisture that can be put into the air going through the ductwork without the moisture actually condensing in the ductwork.

**Table 1 — Recommended Indoor Humidity Levels**

OUTSIDE TEMP (F)	RECOMMENDED RH
40	45%
30	40%
20	35%
10	30%
0	25%
-10	20%
-20	15%

LEGEND

RH — Relative Humidity

**Table 2 — Outside Temperature at Which Condensation is Likely to Occur**

INDOOR RH (% RH)	WINDOW TYPE/CONDENSING TEMP (°F)		
	Single Pane	Double Pane	Triple Pane
50	43	18	10
45	38	11	0
40	34	2	-10
35	28	-8	-25
30	22	-20	-35
25	15	-30	—
20	8	—	—
15	0	—	—
10	-11	—	—

LEGEND

RH — Relative Humidity

NOTE: With a constant indoor temperature of 70 F.

## MAINTENANCE

The water supply should be tested for water hardness to determine filter replacement schedule. Water hardness kits are available from local home improvement centers or hardware stores. If the water hardness is 15 grains per gallon or under, the water filter should be replaced once a year. If the water hardness is higher than 15 grains per gallon, the water filter should be replaced every 3 months during heating season. If the humidifier is being run continuously (not just during heating season), then the water filter should be replaced every 6 months.

In rare cases where white powder is noticed on the interior of the house, this is an indication that the water filter needs to be replaced.

Only use Totaline® replacement parts.

- Water filters (Part Number P110-0002 [6-in.], P110-0008 [13-in.]
- Nozzle/Tube assembly (Part Number P110-0012)
- Replacement nozzle (Part Number P110-0001)

## TROUBLESHOOTING

Refer to the table below for troubleshooting.

PROBLEM	POTENTIAL CAUSE	REMEDY
<b>Humidity Reading Will Not increase</b>	Low existing moisture	Allow more time for moisture to increase. It may take several weeks to notice an increase in humidity in your home. This is due to the fact that virtually all moisture has evaporated from wood, drywall, carpets, draperies, and furniture. Until this moisture is replaced, materials will absorb moisture from the air, causing very little humidity rise in the rooms.
	Clogged filter	Flush filter with up to three gallons of water (or until the water flow is clear) to prevent micro fine particles from clogging the sprayer nozzle.
	Cracked or split fittings	The plastic fittings supplied with the humidifier should be finger tightened, plus 1/4 turn with pliers. The brass compression fittings should be tightened with a wrench, and then re-checked for leaks.
	Improper position of spray nozzle	Correct position of humidifier spray nozzle. On short plenums, if the spray is hitting the end of the plenum, turn spray toward the coil.
	Humidifier installed on a heat pump	The lower air temperature of the heated air absorbs less water.
<b>Too Much Moisture in Duct</b>	Incorrect controller	Verify that either the Totaline Humidistat (P110-0009) or INTELLISTAT™ control (P374-1600) are being used. Any other controller will cause a continuous (non-pulsed) spray.
	Pulse not turned on	Check humidistat or INTELLISTAT control to make sure pulse is turned on. If pulse is set to off, humidifier sprays constantly, producing too much water.
	Tonnage not properly set	Set controller to correct tonnage to match the air handler.
	Improper wiring	Ensure HUM wire from humidistat is connected to W or W1 terminal on furnace, but NOT to G or fan terminal.
<b>Humidifier Will Not Spray</b>	Blocked nozzle	Remove and rinse nozzle.
	No signal or power	Check the controller to make sure there is a humidity demand. Three raindrops will be displayed on the humidistat. A small vertical bar will display in the lower left corner of display on the INTELLISTAT control. If symbol appears, check wiring.



**INTELLIMIST™ RESIDENTIAL ATOMIZING HUMIDIFIER  
LIMITED ONE-YEAR WARRANTY**

**One-Year Warranty** — This CARRIER CORPORATION (herein referred to as “COMPANY”) product is warranted to be free from defects in material and workmanship. If it appears within one year from the date of original installation, whether or not actual use begins on that date, that the product does not meet this warranty a new or remanufactured part at the COMPANY’S sole option, to replace any defective part will be provided without charge for the part itself; PROVIDED the defective part is returned to our distribution through a qualified servicing dealer.

**THIS WARRANTY DOES NOT INCLUDE LABOR OR OTHER COSTS** incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts or replacement parts. Such costs may be covered by a separate warranty provided by the installer.

THIS WARRANTY APPLIES ONLY TO PRODUCTS IN THEIR ORIGINAL INSTALLATION LOCATION AND BECOMES VOID UPON REINSTALLATION.

**LIMITATIONS OF WARRANTIES** — ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

ALL WORK UNDER THE TERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS, WHETHER NEW OR REMANUFACTURED, ASSUME AS THEIR WARRANTY PERIOD ONLY THE REMAINING TIME PERIOD OF THIS WARRANTY.

**THE COMPANY WILL NOT BE RESPONSIBLE FOR:**

1. Normal maintenance as outlined in the installation and servicing instructions or owner’s manual including filter cleaning and/or replacement and lubrication.
2. Damage or repairs required as a consequence of faulty installation, misapplication, abuse, improper servicing, unauthorized alteration or improper operation.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage as a result of floods, winds, fires, lightning, accidents, corrosive environments or other conditions beyond the control of the Manufacturer.
5. Parts not supplied or designated by the Manufacturer, or damages resulting from their use.
6. Manufacturer products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
7. Electricity or fuel costs or increases in electricity or fuel costs from any reason whatsoever including additional or unusual use of supplemental electric heat.
8. ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

Model No. \_\_\_\_\_ Unit Serial No. \_\_\_\_\_

Date of Installation \_\_\_\_\_ Installed by \_\_\_\_\_

Name of Owner \_\_\_\_\_ Address of Installation \_\_\_\_\_

**TOTALINE<sup>®</sup>**  
*Gold*

Your Assurance of Quality

**ALL Totaline<sup>®</sup> products are backed with a one-year warranty by Carrier Corporation, the world's largest manufacturer of air conditioning, heating, and refrigeration products.**