

WHOLE HOUSE DEHUMIDIFIER INSTALLATION INSTRUCTIONS

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WHOLE HOUSE DEHUMIDIFIER SAFETY

Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.

This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word "DANGER" or "WARNING." These words mean:

A DANGER

À WARNING

You can be killed or seriously injured if you don't immediately follow instructions.

You can be killed or seriously injured if you don't follow instructions.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

Whirlpool Gold®Models WGDH160UH and WGDV160UH Whirlpool® Models WPDH160XS and WPDV160XS

400-1014

INSTALLATION REQUIREMENTS

These instructions are intended as a general guide only for use by qualified persons and do not supersede any national or local codes in any way. Compliance with all local, state or national codes pertaining to this type of equipment should be determined prior to installation.

Read this entire instruction manual as well as instructions supplied with separate equipment before starting the installation.

The installation of the whole house dehumidifier must conform to the requirements of the National Fire Protection Association, the National Electrical Code, ANSI/NFPA No. 70 (latest edition) in the United States, and any state laws, local ordinances (including plumbing or wastewater codes). Local authorities having jurisdiction should be consulted before installation is made. Such applicable regulations or requirements take precedence over the general instructions in this manual.

Gather the required tools and parts before starting installation.

Read and follow the instructions provided with any tools listed

Screwdriver

Tin snips

Install the conditioned air plenum, ducts and air filters (not provided) in accordance with NFPA 90B Standard for the Installation of Warm Air Heating and Air-Conditioning Systems (latest edition).

The whole house dehumidifier is designed and approved for indoor use only.

It is recommended that the whole house dehumidifier be matched to the HVAC system to ensure proper operation and efficient performance.

Refer to the rating plates located on the whole house dehumidifier and on the HVAC system.

It is recommended that the whole house dehumidifier be connected to only one existing HVAC system. If there are multiple HVAC systems in the building, use one dehumidifier per system.

Tools and Parts

Parts Needed

- Sheet metal screws or rivets
- Shop-fabricated sheet metal turning vanes, offsets, and transitions, if needed
- Sealant
- Insulated flexible duct
- ¾"-16 all-thread rod for suspended applications
- Insulated duct for fresh air ventilation

Check local codes and HVAC supplier. Check existing electrical supply, and read "Electrical Requirements" and "Location Requirements" before purchasing parts.

Location Requirements

- The dehumidifier may be installed on all new or existing furnaces or air handlers used in residential applications.
- The whole house dehumidifier is designed to be located indoors.
- Locate the whole house dehumidifier as close to the return air duct of an existing furnace or air handler as possible to minimize the required ductwork for connecting the dehumidifier to the existing furnace or air handler.
- The location should allow for access to the filter access panel at the front of the dehumidifier for inspection and replacing the filter. See the Minimum Clearance Requirements chart.
- The location must allow for access to the electrical access panel for servicing and maintenance.
- Locate the whole house dehumidifier in an area where the temperature is between 40°F (4°C) and 125°F (52°C). If the dehumidifier is located in an area of extreme heat or high humidity, additional external insulation may be required to prevent condensation on the exterior of the dehumidifier.

- If the dehumidifier is located above a living area or above an area where water leakage may cause damage (see local codes for other requirements), a secondary drain pan must be installed under the dehumidifier.
- The controls for the whole house dehumidifier are remote from the dehumidifier and must be located in the space that is to be conditioned. The controls are low voltage (24-volt) and should be connected to the dehumidifier with code approved, low voltage thermostat cable.
- If the dehumidifier is located directly on structural building members, use vibration absorbers/eliminators.

Minimum Clearance Requirements

	For Optimum Service Access
Front	24"
Rear	12"
Blower End	12"
Тор	12"

here.

Tools Needed

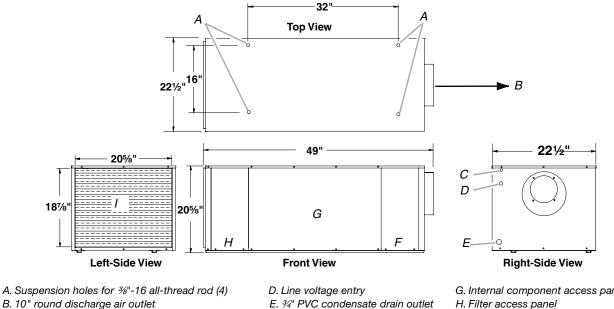
Parts Supplied

Locking pliers

Drill and drill bit

Grommet plugs (4)

Horizontal Installation Dimensions



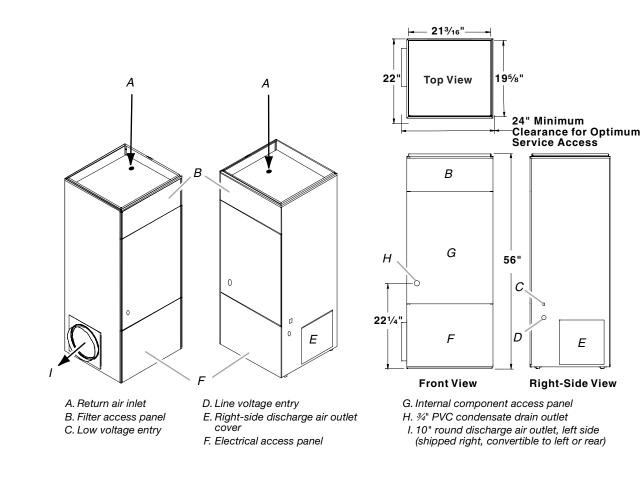
C. Low voltage entry

E. 3/4" PVC condensate drain outlet F. Electrical access panel

G. Internal component access panel H. Filter access panel

I. Duct flange on return air inlet

Vertical Installation Dimensions-Upflow/Counterflow



Installation Configurations

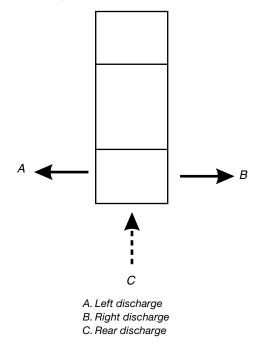
For ease in installation, it is best to make any necessary configuration changes before setting the dehumidifier in place. See "Installation Configuration Options" for the specific installation.

Vertical Installations

Counterflow/Side Discharge

The dehumidifier must be supported on the bottom only and set on a field-supplied supporting frame with a return air inlet opening. Securely attach the dehumidifier to the supporting frame.

Installation Configuration Options



Horizontal Installations

Horizontal installations can be only right-hand air supply. The cabinet must be supported by the building structure to ensure cabinet integrity. Ensure that there is adequate room to remove the access panels if installing in the horizontal position. See Minimum Clearance Requirements in "Location Requirements."

Installation Configuration Options



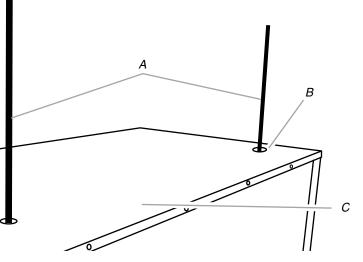
A. Left to right airflow

Suspended Cabinet Installation

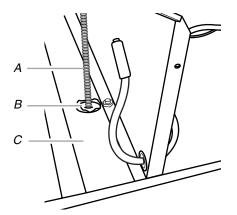
NOTE: Ensure there is adequate room to remove the dehumidifier access panels. See Minimum Clearance Requirements chart in "Location Requirements."

- The suspending installation uses field-fabricated %"-16 allthread rod passing through the top panel and connected to the dehumidifier base.
- The %"-16 all-thread rod should be attached to the appropriate lengths of angle iron or equivalent structural steel which is attached to building structure capable of supporting the weight of the dehumidifier.
- If the dehumidifier is not suspended by %"-16 all-thread rod, use the grommet plugs to cover the holes in the grommets.

Installation Configuration Options



A. ¾"-16 all-thread rod B. Grommet C. Top panel



A. ³/₈"-16 all-thread rod B. ³/₈" threaded hole C. Dehumidifier base

Ductwork Requirements

Install the conditioned air plenum, ducts and air filters (not provided) in accordance with NFPA 90B Standard for the Installation of Warm Air Heating and Air-Conditioning Systems (latest edition).

For the best performance, draw air from the central part of the building and return it to the outer areas of the building.

Insulated flexible duct may be used on the discharge air supply side of the dehumidifier to reduce air noise from the fan.

Flexible duct is recommended on all connections to reduce noise and vibration transmitted to rigid ductwork in the building.

Duct Size

- For supply duct lengths up to 25 ft, use a minimum of 10" diameter round or equivalent rectangular duct. For return duct lengths up to 25 ft, use a minimum of 12" diameter round or equivalent rectangular duct.
- For supply duct lengths longer than 25 ft, use a minimum of 12" diameter or equivalent rectangular duct. Grilles or diffusers installed on the duct ends should not restrict airflow. For return duct lengths longer than 25 ft, use a minimum of 14" diameter round or equivalent rectangular duct.
- For two or three isolated areas that do not have any heat or air conditioning ductwork, use a minimum of 8" diameter branch duct to each area.
- For four or more isolated areas with stagnant air, use a minimum of 6" diameter branch duct to each area.

Electrical Requirements

AWARNING



Electrical Shock Hazard

Use 12 gauge solid copper wire.

Electrically ground dehumidifier.

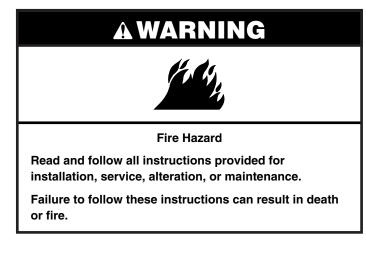
Connect ground wire to green ground lug.

Failure to follow these instructions can result in death, fire, or electrical shock.

Recommended Grounding Method

- A 110- to 120-volt, 14.5 FLA amps, 60 Hz, AC only 20-amp fused, grounded electrical supply is required.
- All field wiring must be done in accordance with National Electrical Code requirements, applicable requirements of UL, or local codes, where applicable.

INSTALLATION INSTRUCTIONS



Inspect Shipment

AWARNING

Excessive Weight Hazard

Use two or more people to move and install dehumidifier.

Failure to do so can result in back or other injury.

This whole house dehumidifier is shipped in one package, completely assembled and wired.

- 1. Check the dehumidifier rating plate to confirm specifications are as ordered.
- **2.** Upon receipt of equipment, inspect it for possible shipping damage. Examine the dehumidifier inside the carton if the carton is damaged.

If damage is found, it should be noted on the carrier's freight bill. Damage claims should be filed with the carrier immediately. Claims of shortages should be filed with the seller within 5 days.

NOTE: If any damages are discovered and reported to the carrier, do not install the dehumidifier, because your claim may be denied.

Install Dehumidifier-Existing Furnace or Air Handler

Requirements."

properly.

air handler.

return air grille.

"Location Requirements."

2. Place the dehumidifier in final location. See "Location

5. If needed, install a condensate pump kit (optional).6. Using a 10" duct, attach the discharge air supply on the dehumidifier to the return air supply on the existing furnace or

3. Attach 3/4" PVC pipe to the condensate drain outlet. See

4. Run the PVC pipe to an outdoor drain. Any horizontal run of drain pipe must have an anti-siphon vent for it to drain

NOTE: Install ductwork in accordance with NFPA 90B Standard for the Installation of Warm Air Heating and Air Conditioning Systems (latest edition) and any local codes.
7. Attach the return air supply on the dehumidifier to the return

air supply on the existing furnace or air handler near the

laundry room or unconditioned isolated basement.

NOTE: Do not draw air directly from the kitchen, bathroom,

AWARNING
2
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

NOTE: When using the existing duct system, the dehumidifier fan and the existing system fan must be interlocked by using the low voltage interlock method provided with the dehumidifier. See the wiring diagrams in the "Electrical Connections" section.

1. Disconnect power.

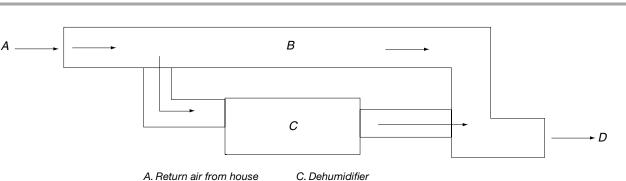
AWARNING

Excessive Weight Hazard

Use two or more people to move and install dehumidifier.

Failure to do so can result in back or other injury.

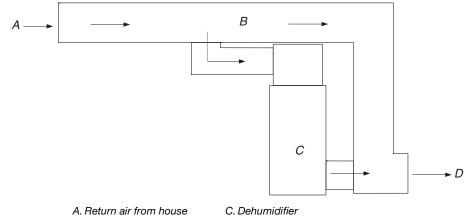
Horizontal Installation



B. Existing return air duct

D. To existing furnace or air handler

Vertical Installation



B. Existing return air duct

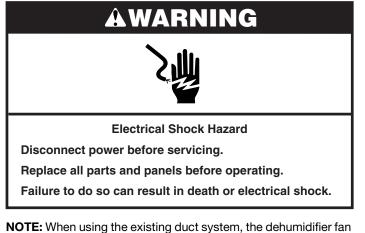
C. Dehumidifier D. To existing furnace or air handler

Install Dehumidifier—Existing Furnace or Air Handler with Fresh Air Duct

NOTE: Locate the outside air intake away from undesirable fumes, gases or odors.

Advantages of fresh air ventilation:

- Outside air is filtered before entering the building.
- Outside air will be dehumidified by the dehumidifier before entering the building.
- Outside air entering the building through the dehumidifier helps equalize pressure to prevent humid air from entering the building through other means.
- In cold climates, outside air can have a lower dew point and can lower humidity inside the building without running the dehumidifier.



NOTE: When using the existing duct system, the dehumidifier fan and the existing system fan must be interlocked by using the low voltage interlock method provided with the dehumidifier. See the wiring diagrams in the "Electrical Connections" section.

1. Disconnect power.

AWARNING

Excessive Weight Hazard

Use two or more people to move and install dehumidifier.

Failure to do so can result in back or other injury.

- **2.** Place the dehumidifier in final location. See "Location Requirements."
- **3.** Attach ³/₄" PVC pipe to the condensate drain outlet. See "Location Requirements."
- 4. Run the PVC pipe to an outdoor drain. Any horizontal run of drain pipe must have an anti-siphon vent for it to drain properly.
- 5. If needed, install a condensate pump kit (optional).
- 6. Using a 10" duct, attach the discharge air supply on the dehumidifier to the return air supply on the existing furnace or air handler.

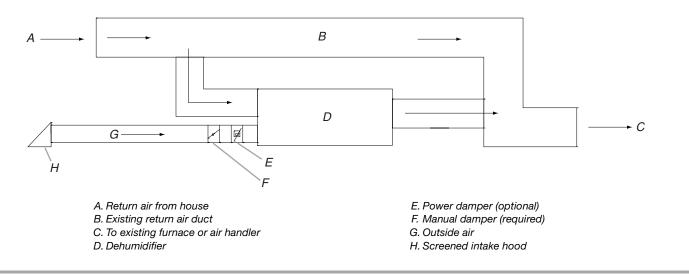
NOTE: Install ductwork in accordance with NFPA 90B Standard for the Installation of Warm Air Heating and Air Conditioning Systems (latest edition) and any local codes.

7. Attach the return air supply on the dehumidifier to the return air supply on the existing furnace or air handler near the return air grille.

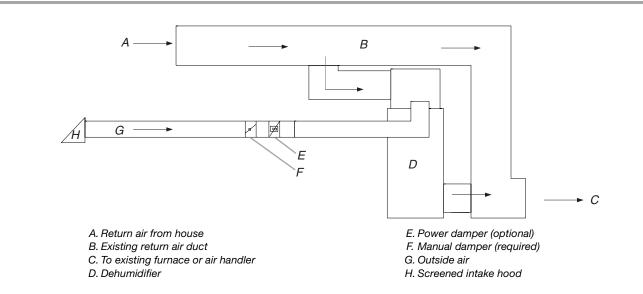
NOTE: Do not draw air directly from the kitchen, bathroom, laundry room or unconditioned isolated basement.

- **8.** Using a 6" diameter insulated duct, attach to the return plenum on the dehumidifier.
- **9.** Install the outside air intake in a location away from undesirable fumes, gases and odors.
- **10.** Install a screened intake hood on the outside air intake duct. Be sure screen is clear of debris at all times to ensure proper air flow to dehumidifier.
- **11.** Install a manual damper on the return air side of the dehumidifier.

NOTE: If desired, a power damper may be installed.



Vertical Installation



Install Dehumidifier-Existing Furnace or Air Handler with Dry Air to the Basement or Crawl Space

To reduce the humidity that can be found under buildings and in damp basements, install a supply air duct from the dehumidifier to the basement or crawl space.



NOTE: When using the existing duct system, the dehumidifier fan and the existing system fan must be interlocked by using the low voltage interlock method provided with the dehumidifier. See the wiring diagrams in the "Electrical Connections" section.

1. Disconnect power.

AWARNING

Excessive Weight Hazard

Use two or more people to move and install dehumidifier.

Failure to do so can result in back or other injury.

2. Place the dehumidifier in final location. See "Location Requirements."

- **3.** Attach ³/₄" PVC pipe to the condensate drain outlet. See "Location Requirements."
- 4. Run the PVC pipe to an outdoor drain. Any horizontal run of drain pipe must have an anti-siphon vent for it to drain properly.
- 5. If needed, install a condensate pump kit (optional).
- 6. Using a 10" duct, attach the discharge air supply on the dehumidifier to the return air supply on the existing furnace or air handler.

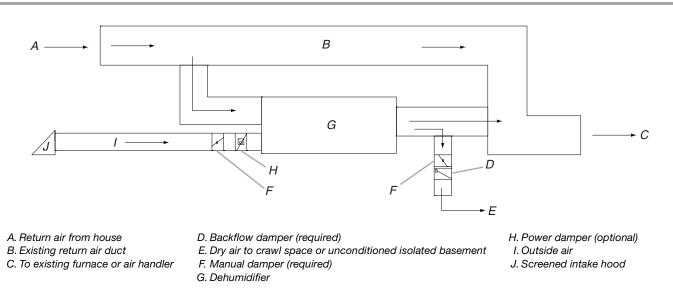
NOTE: Install ductwork in accordance with NFPA 90B Standard for the Installation of Warm Air Heating and Air Conditioning Systems (latest edition) and any local codes.

7. Attach the return air supply on the dehumidifier to the return air supply on the existing furnace or air handler near the return air grille.

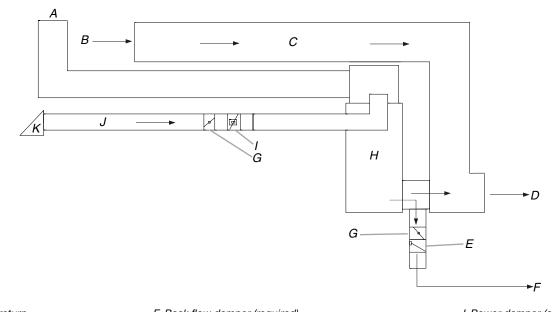
NOTE: Do not draw air directly from the kitchen, bathroom, laundry room or unconditioned isolated basement.

- 8. Attach insulated flexible duct to the discharge air supply on the dehumidifier.
- 9. Run duct to the basement or crawl space of the building.

Horizontal Installation



Horizontal Installation with Added Return



A. Added return

- B. Return air from house
- C. Existing return air duct

D. To existing furnace or air handler

- E. Back flow damper (required)
- F. Dry air to crawl space or unconditioned isolated basement
- G. Manual damper (required) H. Dehumidifier

I. Power damper (optional)

J. Outside air K. Screened intake hood

Install Dehumidifier—Attic Installation



Failure to do so can result in death or electrical shock.

NOTES:

- Install a secondary drain pan with a drain or float interrupt under the dehumidifier to prevent damage to ceiling or living space below.
- When using the existing duct system, the dehumidifier fan and the existing system fan must be interlocked by using the low voltage interlock method provided with the dehumidifier. See the wiring diagrams in the "Electrical Connections" section.
- 1. Disconnect power.

AWARNING

Excessive Weight Hazard

Use two or more people to move and install dehumidifier.

Failure to do so can result in back or other injury.

2. Place the dehumidifier in final location. See "Location Requirements."

- **3.** Attach ¾" PVC pipe to the condensate drain outlet. See "Location Requirements."
- 4. Run the PVC pipe to an outdoor drain. Any horizontal run of drain pipe must have an anti-siphon vent for it to drain properly.
- 5. If needed, install a condensate pump kit (optional).
- 6. Place a secondary drain pan under the dehumidifier.
- 7. Using a 10[°] duct, attach the discharge air supply on the dehumidifier to the return air supply on the existing lower level furnace or air handler.

NOTE: Install ductwork in accordance with NFPA 90B Standard for the Installation of Warm Air Heating and Air Conditioning Systems (latest edition) and any local codes.

8. Attach the return air supply on the dehumidifier to the return air supply on the existing upper level furnace or air handler near the return air grille.

NOTE: Do not draw air directly from the kitchen, bathroom, laundry room or unconditioned isolated basement.

- 9. If desired, install a fresh air duct. See "Install Dehumidifier— Existing Furnace or Air Handler with Fresh Air Duct."
- 10. If desired, install a supply air duct to the basement or crawl space. See "Install Dehumidifier—Existing Furnace or Air Handler with Dry Air to the Basement or Crawl Space."

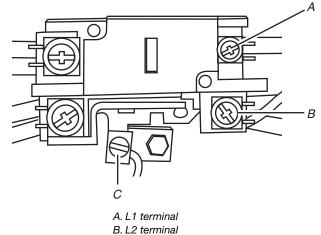
Complete Installation

- 1. If the dehumidifier is installed on an existing system, seal all joints in the return air system between the discharge air supply duct and the return air supply duct on the dehumidifier and the return air duct of the existing system.
- 3. Replace any access doors removed during the installation.
- **4.** Run the furnace or cooling system through one complete cycle to be sure the system operates as desired.
- 2. If fresh air ventilation is used, remove any debris from screened intake hood.

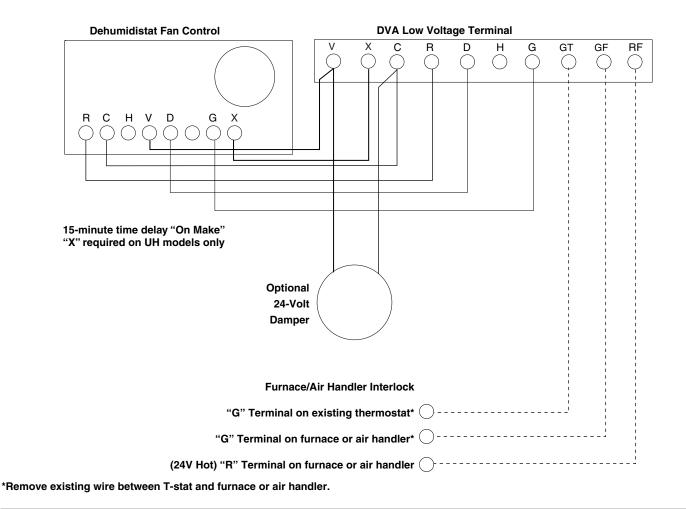
AWARNING Electrical Shock Hazard Disconnect power before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

- 1. Disconnect all power supplies.
- 2. Remove the electrical access panel.
- 3. Remove the control box cover.
- **4.** Route the field supply wires to the dehumidifier's electrical connection box.

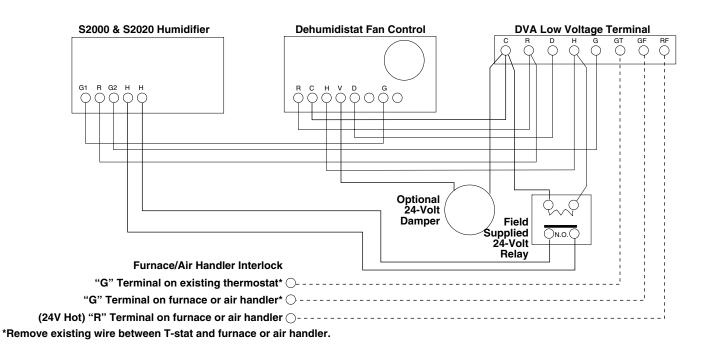
- **Make Electrical Connections**
 - **5.** Connect the line voltage wire to the L1 terminal of the contactor.
 - 6. Connect the neutral wire to the L2 terminal of the contactor.
 - 7. Connect the ground wire to the green ground lug marked "Ground."

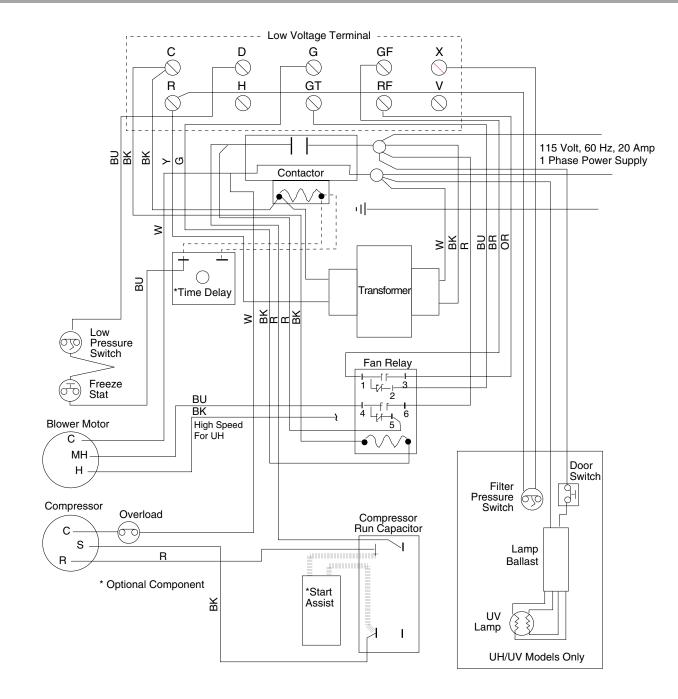


- C. Green ground lug
- 8. Replace the control box cover.
- **9.** Replace the electrical access panel.









SEQUENCE OF OPERATION

Whole House Dehumidifier

The whole house dehumidifier is designed to deliver dehumidified, filtered air to the living space. Ventilation air can also be delivered in a controlled fashion using the outside air venting option.

When the relative humidity exceeds the humidistat set point by approximately 3%, the humidistat will energize the dehumidification and air circulation components of the dehumidifier (with 15-minute delay on digital humidistat). If the dehumidifier is connected and interlocked with an existing furnace or air handler, the system's circulation fan will also be energized. The dehumidifier will continue to operate until the humidistat and then will cycle off. During this cycle, the air circulated through the dehumidifier will be filtered and dehumidified. If an outside ventilation air duct has been installed, fresh air will be filtered and dehumidified and introduced into the space during this cycle.

Coil Freeze Protection

The dehumidification coil (evaporator) is equipped with a low temperature freeze thermostat. If the coil temperature is reduced to the point of ice buildup, the thermostat will turn off the compressor while allowing the fan to continue running. Once the coil has returned to normal conditions, the thermostat will allow the compressor to restart. The prevailing conditions of the return air, temperature and humidity will determine the length of this cycle.

Low Pressure Control

If the low-side refrigerant pressure drops to 20 psig, the low pressure control opens and turns off the compressor. It is an automatically reset control that will close when the pressure rises to 50 psig. It may also open if the dehumidifier is installed in a cool area below 40°F and then started. Under these conditions, the dehumidifier will restart within several minutes. Until the whole house dehumidifier warms up, it may repeat the cycle several times.

WHOLE HOUSE DEHUMIDIFIER MAINTENANCE

To assure optimum performance from the whole house dehumidifier, the pre-filter should be replaced every three to six months, and the HEPA air filter every 18 to 30 months.

Pre-filter

The dehumidifier is equipped with a 2" pleated pre-filter. Operating the dehumidifier with a dirty pre-filter will reduce dehumidifier capacity and efficiency and may cause the compressor to cycle off and on unnecessarily. Under normal operating conditions, the pre-filter should be replaced every 6 months. However, in high particulate concentrations, more frequent replacements may be necessary. It is recommended that the pre-filter be inspected regularly for the first 3 to 4 months to determine the correct replacement intervals.

To replace the pre-filter

- 1. Locate the filter access panel on the left-hand side of the dehumidifier. See "Location Requirements."
- 2. Remove the 5/16" hex screws from the panel marked "Filter Access."

3. Slide the panel out and down until it is free from underneath the top panel.

4. Remove the pre-filter by pulling the pre-filter straight out of the dehumidifier.

Replacement pre-filters may be purchased from your installation contractor or ordered from the factory if a local representative is not available. Do not operate the dehumidifier without the prefilters, or with less effective pre-filters than originally supplied. The heat exchange coils inside the dehumidifier could become clogged and require disassembly to clean.

HEPA or MERV 11 Air Filter

The UH model is equipped with a high efficiency HEPA air filter. This filter is rated MERV 20, and is more efficient and traps smaller allergy-causing particles than standard air filters. Under normal operating conditions, the HEPA air filter should be replaced every 18 to 30 months. However, in high particulate concentrations more frequent replacements may be necessary. The dehumidifier is equipped with a pressure sensing system that monitors the HEPA air filter and signals when the filters should be serviced. The LED indicator light on the digital humidistat will flash "FL" when the filters require service. If the filters are not serviced promptly, damage to the dehumidifier may occur. The filters may be changed prior to signal.

The HEPA air filter should be used in conjunction with the 2" prefilter. It should be installed in the filter enclosure directly to the right, or downstream of the 2" pre-filter. The 2" pre-filter serves to prolong the life of the HEPA air filter.

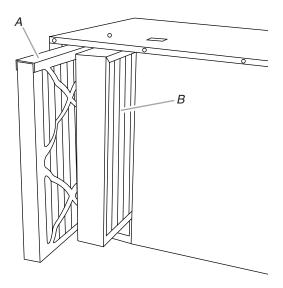
The XS model is equipped with a 4" MERV 11 filter and should also be used with the 2" pre-filter.

To replace the air filter

- 1. Locate the filter access panel on the left-hand side of the dehumidifier. See "Location Requirements."
- 2. Remove the ⁵/₁₆" hex screws from the panel marked "Filter Access."
- **3.** Slide the panel out and down until it is free from underneath the top panel.
- **4.** Remove the HEPA air filter by pulling the air filter straight out of the dehumidifier.

NOTES:

- Handle the HEPA air filter gently to prevent damage to the fabric media.
- The HEPA air filter should not be cleaned. It should be replaced when it becomes restrictive.





Fresh Air Return

If your system includes the optional fresh air return, it will have an outside air intake. Check and clean the hood screen on the outside air intake seasonally. The intake hood screen must remain clear of any debris that could restrict airflow into the dehumidifier.

UVC Germicidal Light

WGDH160UH and WGDV160UH models are equipped with UVC germicidal ultraviolet lights. The bulb for the germicidal ultraviolet light is rated for at least 9,000 hours (1 year) when used in accordance with the whole house dehumidifier installation instructions. The bulb may last longer in some situations, but annual bulb replacement is recommended since UVC ouput is typically reduced by about 25 percent at 9,000 hours and drops off more rapidly afterward.

CAUTION: UV Light Hazard RG-3. Harmful to bare skin and eyes. Can cause temporary or permanent loss of vision. Never look at the lamps while illuminated. This heating/air conditioning system is equipped with an ultraviolet air treatment system. To prevent exposure to ultraviolet light, disconnect power to the ultraviolet air treatment system before servicing any part of the heating/air conditioning system.

To replace the UVC light bulb



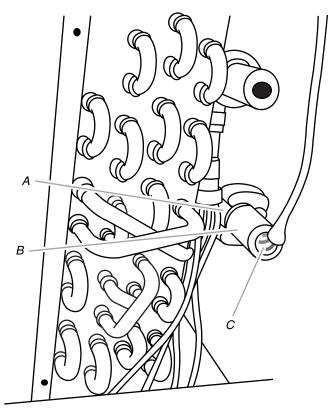
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

- 1. Disconnect power.
- **2.** Remove the filter access panel.
- 3. Remove the electrical access panel.
- 4. Remove the internal component access panel.
- 5. Remove the connector from the UVC light and sleeve.
- 6. Remove the connector sleeve from the UVC bulb.
- 7. Remove the UVC bulb.



A. UVC germicidal light bulb B. Connector sleeve C. Connector

- 8. Replace the UVC bulb.
- 9. Replace the connector sleeve.
- 10. Replace the connector.
- 11. Replace the internal component access panel.
- 12. Replace the filter access panel.
- **13.** Reconnect power.

ASSISTANCE OR SERVICE

If you need further assistance, you can write to the below address with any questions or concerns:

Whirlpool[®] Home Cooling and Heating 14610 Breakers Drive Jacksonville, FL 32258

Please include a daytime phone number in your correspondence.

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