



# Model DH70, DH90 & DH125 Dehumidifier Installation, Operation and Maintenance Instructions



**INSTALLATION BY A HVAC PROFESSIONAL IS RECOMMENDED**

This whole house dehumidifier can be used to control humidity in a single area (standalone) or integrated into the heating and cooling system to provide comfort, health and property protection.

**READ AND SAVE THESE IMPORTANT SAFETY INSTRUCTIONS**

**HVAC Installer: Please Leave Manual for Homeowner**

Serial No: \_\_\_\_\_ Install Date: \_\_\_\_\_

Sold by: \_\_\_\_\_

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## **SAFETY INSTRUCTIONS**

READ THE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS CAREFULLY BEFORE INSTALLING AND OPERATING THIS DEVICE. PROPER ADHERENCE TO THESE INSTRUCTIONS IS ESSENTIAL TO OBTAIN MAXIMUM BENEFIT FROM YOUR WHOLE HOUSE DEHUMIDIFIER.

### **WARNING**

THIS SYMBOL MEANS IMPORTANT INSTRUCTIONS. FAILURE TO HEED THEM CAN RESULT IN SERIOUS INJURY OR DEATH.

### **CAUTION**

THIS SYMBOL MEANS IMPORTANT INSTRUCTIONS. FAILURE TO HEED THEM CAN RESULT IN INJURY OR MATERIAL PROPERTY DAMAGE.

### **WARNING**

120 VOLTS MAY CAUSE SERIOUS INJURY FROM ELECTRIC SHOCK. DISCONNECT ELECTRICAL POWER BEFORE STARTING INSTALLATION OR SERVICING, AND LEAVE POWER DISCONNECTED UNTIL INSTALLATION OR SERVICE IS COMPLETED.

### **CAUTION**

- READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION.
- USE CAUTION AND WEAR CUT RESISTANT GLOVES WHEN HANDLING SHEET METAL, CUTTING PLENUM OPENINGS AND HANDLING DUCT WORK. SHARP EDGES MAY CAUSE SERIOUS INJURY FROM CUTS.
- DEHUMIDIFIER IS HEAVY, DROPPING UNIT MAY CAUSE PERSONAL INJURY OR EQUIPMENT DAMAGE. HANDLE WITH CARE AND FOLLOW INSTALLATION INSTRUCTIONS.
- THIS UNIT IS TO BE INSTALLED INDOORS IN AN AREA PROTECTED FROM RAIN OR MOISTURE.
- INSTALLATION, SERVICE, AND MAINTENANCE MUST BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN IN COMPLIANCE TO ALL LOCAL AND NATIONAL CODES. IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE MAY CAUSE PROPERTY DAMAGE OR INJURY.
- DO NOT USE IN OR AROUND POOL OR SPA APPLICATIONS. POOL CHEMICALS CAN DAMAGE THE DEHUMIDIFIER.
- DO NOT USE SOLVENTS OR CLEANERS ON OR NEAR THE CIRCUIT BOARD. CHEMICALS CAN DAMAGE CIRCUIT BOARD COMPONENTS AND CAN CAUSE PROPERTY DAMAGE OR PERSONAL INJURY.

## ⚠ CAUTION ⚠

- NEVER OPERATE A UNIT WITH A DAMAGED POWER CORD. IF THE POWER CORD IS DAMAGED, IT MUST BE REPLACED BY THE MANUFACTURER, ITS SERVICE AGENT, OR A SIMILARLY QUALIFIED PERSON IN ORDER TO AVOID A HAZARD.
- FOR PROTECTION OF THE COMPRESSOR, IT MUST BE TRANSPORTED AND INSTALLED IN AN UPRIGHT POSITION. IF THE UNIT WAS SHIPPED OR STORED ON ITS SIDE, A 24-HOUR SETTLING PERIOD IN THE UPRIGHT POSITION IS REQUIRED BEFORE RUNNING THE UNIT FOR THE FIRST TIME. TEMPORARY STORAGE MUST BE INDOORS, UPRIGHT IN THE ORIGINAL CARTON, AND COMPLETELY SHIELDED FROM PRECIPITATION.
- THIS APPLIANCE IS NOT INTENDED FOR USE BY PERSONS (INCLUDING CHILDREN) WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES, OR LACK OF EXPERIENCE OR KNOWLEDGE, UNLESS THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTION CONCERNING THE USE OF THE APPLIANCE BY A PERSON RESPONSIBLE FOR THEIR SAFETY. CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.

## SPECIFICATIONS

		DH70	DH90	DH125
<b>Capacity:</b> Pints per day @ 80°F DBT / 60% RH		70	90	125
<b>Unit Power Supply</b>		120 Volts / Single Phase / 60 Hz		
<b>Minimum Branch Circuit / Max Fuse size</b>		15 Amp		15 Amp (Single Outlet) or 20 Amp
<b>Rated Total Current</b>		6.5	7.0	10.0
<b>Dimensions</b>	Cabinet Length:	25.25"	25.25"	24"
	(includes duct collars)	31.38"	31.38"	30.25"
	Cabinet Width:	14"	14"	25.25"
	Cabinet Height:	15.62"	15.62"	20.75"
<b>Weight:</b> Pounds		81	82	128
<b>Compressor:</b> Rotary Type	Watts	730	790	1190
	RLA / LRA	6.7 / 42	7.15 / 32.5	10.5 / 55
<b>Refrigerant</b>	R410A - Oz	23	27	40.6
<b>Fan Motor</b>	HP / RLA	.08 HP / .60 RLA	.08 HP / .60 RLA	.12 HP / .85 RLA
<b>Air Flow:</b> CFM vs ESp	0" ESp (w.c.)	245	245	450
	.5" ESP (w.c)	120	120	275
<b>Filter</b>	Washable Nylon	10.25" x 13.75"	10.25" x 13.75"	16" x 25"
<b>Inlet Air Conditions</b>	Dehumidification	50°F – 104°F, 40°F dew point minimum		
<b>Duct Connections</b>		8" diameter		
<b>Drain Connection</b>		1/2" Vinyl tubing to 3/4" MPT		
<b>Max condensate pumping height</b>		42"		

\* All specifications and performance data are subject to change without notice.

## GENERAL OPERATION

The function of your dehumidifier is to reduce the indoor humidity levels and increase comfort. It is a high capacity dehumidifier able to remove up to 125 pints of water per day (80°F DBT / 60% RH). An internal humidity sensor (dehumidistat) senses when the relative humidity (RH) is above the set point (example: 50% RH) and signals the dehumidifier to operate until the relative humidity level has been lowered to the set point.

If the dehumidifier is located outside of the area where humidity control is desired, the unit can be configured to use a remote dehumidistat (purchased separately) that is located in the area where humidity control is desired. Locate the sensor where it can accurately sense the humidity of the area where control is desired.

The dehumidifier can be set up as a stand-alone unit that operates separately from the dwelling's HVAC system. In this type of installation the dehumidifier is not ducted to the HVAC system and is used to dehumidify a specific area. This installation is typically used for basements/ crawl spaces, attics or rooms with high moisture problems.

The dehumidifier can also be set up to be inter-connected into the dwelling's HVAC system. In this type of installation the dehumidifier is ducted to the HVAC system and used to dehumidify the area served by the dwelling's HVAC system. When connected to the HVAC system, the dehumidifier can be configured so that the dehumidifier and the HVAC system fans will operate separately of each other (Independent Operation mode) or may be configured to require that the dehumidifier and HVAC fans operate at the same time (Dependent Operation mode).

In cool damp climates, where the HVAC system runs infrequently or for short periods, Independent Operation mode is the preferred mode of operation. The short cycle times of the HVAC system, while keeping the temperature in control, does not effectively control the humidity level (not enough time to remove the excess humidity from the dwelling). Independent Operation mode will allow the dehumidifier to continually monitor the humidity level and operate as needed whenever the HVAC system is not running, working with the HVAC system to maintain temperature and humidity control.

In warm/hot humid climates where the HVAC runs frequently or for long periods, Dependent Operation mode is the preferred mode of operation. The long run time of the HVAC system will remove / control some of the excess humidity with the dehumidifier removing the rest. In the Dependent Operation mode, the dehumidifier will monitor the humidity level when the HVAC system fan is running and will turn on whenever the humidity level exceeds the set point, removing the excess humidity as needed.

Standalone mode: See page 10 for details.

Independent mode: See page 11 for details.

Dependent mode: See page 12 for details.

## UNPACKING AND CONTENTS

**Do not tip unit to remove from carton.**

- Open carton completely using cut line marked along bottom perimeter of carton.
- Remove all cardboard and inner pack from top edges and duct collars.
- Carefully remove unit from carton bottom and inspect for any shipping damage.

## LOCATION CONSIDERATIONS

### IMPORTANT PRECAUTIONS

- **Install Unit Indoors:** The device is designed to be installed indoors in a space that is protected from rain and flooding. Do not expose to elements. Do not use in pool or spa areas.
- **Location.** When choosing an installation location, consider the accessibility for service, condensate drain availability and power connection.
  - When used as a stand-alone unit, avoid directing the discharge air at people.
  - When the unit is to be inter-connected in the HVAC system, proper location is very important as it will determine the overall length of the connection ducts. Locate the unit as close as possible to the indoor portion of the heating or air conditioning system. The dehumidifier may be placed above, below or level with the heating or air conditioning system.
  - Allow sufficient clearance to handle the unit's overall dimensions, with enough space to access all sides for maintenance and service, as well as the necessary return and supply ductwork to the unit.
  - Allow sufficient clearance for filter removal and to prevent airflow obstruction.
  - Locate the unit in an area where field wiring the control (low voltage) to the unit will be possible.
- DO NOT use the dehumidifier as a bench or table.
- **Mounting:** DO NOT place the dehumidifier directly on structural building members without vibration absorbers or unwanted noise may result. The dehumidifier may be mounted on a flat surface or suspended.
  - If mounted on a flat surface, use the four rubber mounting feet provided. To minimize unwanted vibration, select a level mounting surface. Adjust the mounting feet to compensate for any surface irregularities. Make certain that the unit is sitting on all four mounting feet.
  - To suspend the unit, a separate hanger kit (HD18 for the DH70 or DH90 models, HD19 for the DH125 model, or suitable alternative) is required. This kit consists of two brackets and four rubber isolators. Threaded rods or other means of suspension must be provided by the installer and must be selected based on the unit weight and in compliance with local codes.
- **Drain Accessibility:** If a floor level drain is not located in the installation area, the condensate pump in the unit can drain water up to 42" above the base of the unit. Limit total length of drain line to 20' from unit.
- **Power:** Locate the dehumidifier in an area where the cord's length (9') easily reaches a 120 VAC electrical outlet with a minimum of a 15 Amp circuit capacity.
- **Filter Access:** Allow for 22" clearance for removal of filter. Filter is removable from either side of unit.
- **Inlet:** If the air inlet is not ducted, a minimum of 6" of open space is required from the inlet opening to an adjacent surface.
- Allow for proper drainage and routing of any needed drain pipes.
- It is recommended a drain pan be placed under the unit if installed above a living area or above an area where water leakage could cause damage.
- It is recommended that a backdraft damper be used in the discharge duct of the dehumidifier, especially when connecting to the supply ducting system. The backdraft damper prevents supply air from counter flowing through the unit when it is not operating. The dehumidifier's location should be chosen to allow installation of this accessory if necessary.

## SET UP DEHUMIDIFIER FOR INSTALLATION

### DUCTING

The unit is furnished with two beaded 8" round collars for duct connections to the inlet and the outlet of the dehumidifier. The screened inlet and outlet duct collars are factory installed for horizontal airflow. The screens will prevent entry of debris and small animals / insects.

Insulated flexible ducts in compliance with Underwriter's Laboratories (UL) *Standard for Factory Made Duct Materials, UL-18* and installed per the duct manufacturer's recommendation should be used to connect the dehumidifier to the heating or air conditioning system. The installation and connections must be in compliance with national and local codes and be completely tight and leak free. Ducts should be as short as possible, not to exceed 100 ft. equivalent length and supported in compliance with the duct manufacturer's recommendation.

### CAUTION

All duct connections must be sealed. Any air leakage in the duct work will adversely affect the operation of the dehumidifier and may lead to unsatisfactory performance.

- If necessary, the outlet duct collar may be moved to the top of the unit for vertical discharge of the airflow. For the DH70 & DH90, remove the screws and swap the top panel with the outlet duct collar panel, the panels are interchangeable. For the DH125, remove the round plate from the top and the duct collar from the end panel. Mount the duct collar to the top and the cover to the end panel.
- Make sure there are no bends within 6" of the unit in the ductwork coming to or leaving from the unit. This will ensure that the air flows freely through the unit.
- In freestanding applications (attic, basement, large single room), it is recommended to maintain a separation of 10' between the inlet and discharge of the unit, this is to prevent short-circuiting of the air and reducing the effectiveness of the unit. This can be done by using a 5' duct on both the inlet and discharge end of the unit, or by a single 10' duct on the inlet or discharge end.

### DAMPERS

Optional dampers may be installed in the outlet duct, inlet duct or in an outside air duct. These dampers must be a full-flow motorized type. Do not use any type of pressure operated damper as unacceptable pressure drop will affect unit operation. All dampers must be installed in compliance with the damper manufacturer's recommendations and be insulated and sealed per the section on ducting above.

### UNIT MOUNTED DEHUMIDISTAT

The unit is controlled by the integral control system which operates the internal fan approximately 15 minutes each hour to sample the air in the system. The air sample passes over the unit-mounted humidity sensor which should be set at approximately mid-level. After a three minute delay, if the humidity level in the sampled air is greater than the set point, the dehumidifier will turn on. The dehumidifier will operate until the humidity level is less than the sensor set point.

### OPTIONAL REMOTE DEHUMIDISTAT

The unit may also be controlled by HD16, a dehumidistat remotely located in a conditioned space. Do not locate the remote dehumidistat in the HVAC system ductwork. It is recommended that dehumidistat be located in an area close to the heating or air conditioning system thermostat, out of drafts, away from heat sources and out of direct sunlight. It should be located approximately five feet above the floor in an area with good air circulation at an average temperature and relative humidity.

## SET UP DEHUMIDIFIER FOR INSTALLATION (CONTINUED)

When a remote dehumidistat is used, the unit-mounted control must be set to the lowest relative humidity (RH) setting and never readjusted. The remote dehumidistat should be set in the comfort area of approximately 50% relative humidity. When the dehumidistat senses that the relative humidity in the space is above its set point, an electrical contact within the dehumidistat allows the dehumidifier to start. The unit operates until the relative humidity has been lowered to the set point.

Remove the jumper on terminals S1 and S2 and connect the remote dehumidistat as shown on the unit connection schematic.

### FROST CONTROL

In some cases of prolonged operation or if the conditioned space is relatively cool, frost will accumulate on the coil. Ice may eventually cover the coil, block the air flow and stop proper operation. If the coil becomes unacceptably cold for at least ten minutes, a sensor mounted on the coil will stop the compressor. To prevent frost build-up beyond an acceptable level, the fan will continue to operate to melt any accumulated ice. Once the ice has melted and the coil is warm, the compressor will restart and the dehumidification process will resume.

### DRAIN INSTALLATION

The DH70, DH90 and DH125 units use an internal condensate pump to drain the water that is removed from the air. The pump will operate as needed, which may be frequently if the air is more humid than normal or less frequently if drier. Use the provided fittings and 1/2" clear PVC tubing to drain the water from the dehumidifier. The pump can discharge the condensate into a drain located up to 42" higher than the bottom of the unit.

### FLOAT SWITCH

In addition to the condensate drain line, the unit is equipped with a float switch. If the drain line should become clogged or restricted, overflow of water could occur. To prevent this, the float switch disables the unit's compressor and fan to stop water production. The red indicator light located near the dehumidistat knob will turn on, indicating that the drain has become clogged. Once the blockage has been cleared, the power supply to the unit must be switched off and then back on - the switch will then allow the unit to return to normal operation.

### LEVELING

The feet can be adjusted to level the unit, and if required, to accommodate secondary condensate pan. Leveling is required to ensure proper drainage from the dehumidifier.

### CONDENSATE PAN, CONDENSATE PUMP AND FLOAT SWITCH

It is highly recommended that a drain pan be placed under the unit if installed above a living area or above an area where water leakage could cause damage. Adhere to local codes regarding draining of the condensate from the pan. If a condensate pump is needed, install it in the drain pan as well.

# ELECTRICAL

## WARNING

**ELECTRICAL SHOCK HAZARD:** 120-volts may cause serious injury or death from electrical shock. Disconnect and tag electrical service before starting installation or field-service. Leave electrical service disconnected until installation or field-service is complete.

**ELECTRICAL SHOCK HAZARD:** An interrupted or broken ground may cause property damage, serious injury or death should an electrical fault occur. The cabinet must be grounded in accordance with NEC ANSI/NFPA 70-2011 or local codes. In Canada, refer to Canadian Electrical Code CSA C22.1.

**FIRE HAZARD:** Use of improper wire may cause serious injury, property damage or death due to fire. Do not use aluminum wire for electrical service to the dehumidifier. Use only copper wire.

## CAUTION

Use of an undersized circuit breaker may cause property damage and/or the need for mold remediation service. See Specifications for wire and circuit breaker sizing.

**Installation must be performed by a qualified service technician and must comply with all national and local codes. Remove power to the device before installing or servicing the equipment.**

The dehumidifier is supplied with a 9 foot long 3-prong grounded power cord and is intended to be connected to a dedicated, grounded branch electrical circuit containing a properly sized fuse or circuit breaker. This circuit must run directly from the main circuit box to an electrical receptacle located within 6 to 8 feet of the intended location of the unit. This receptacle must be readily accessible or located as needed to comply with appropriate national or local codes or ordinances.

**United States Installations:** Make all electrical connections in accordance with the current edition of the NEC ANSI/NFPA 70 and any local codes or ordinances that may apply.

**Canada Installations:** Make all electrical connections in accordance with the current edition of the Canadian Electrical Code CSA C22 .1 and any local codes or ordinances that may apply.

ELECTRICAL SPECIFICATIONS	Model DH70 & DH90	Model DH125
Voltage / Freq. / Phase	110-120 VAC / 60 / 1	
Minimum Circuit Requirements - Amps / Wire size	15 A / 14 AWG	15 A / 14 AWG Dedicated circuit or 20 A / 12 AWG

## WARNING

Turn off electrical power at the fuse or service panel before making any electrical connections. Failure to do so can result in electrical shock, severe personal injury or death. The dehumidifier must be installed so that the electrical components are protected from water from any source.

# Installation Options

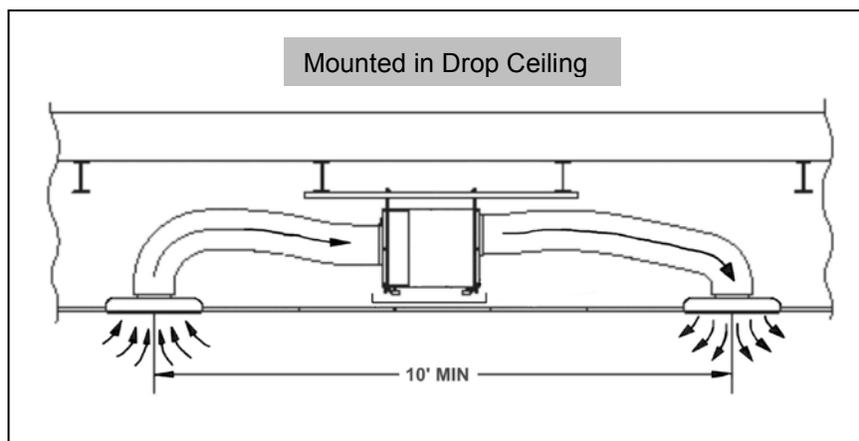
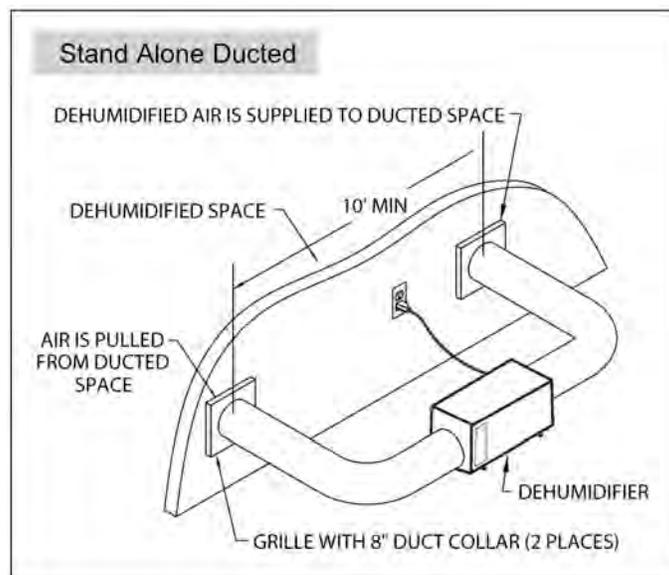
## STAND ALONE OR NOT DUCTED TO HVAC SYSTEMS

In this installation the dehumidifier is not ducted to the HVAC system and is used to dehumidify a specific area. This installation is typically used in basements, attics or crawl spaces.

### Optional Components

8" Ductwork - use insulated ductwork when dehumidifier is located in an unconditioned space (attic, garage)  
Grilles with 8" Duct Collars

- The unit can be located adjacent to, above or outside of the area to be dehumidified, with ducting used to bring air from the space to be processed then returned to the space (see below).
- In freestanding applications (attic, basement, large single room), it is recommended to maintain a separation of 10' between the inlet and discharge of the unit, this is to prevent short-circuiting of the air and reducing the effectiveness of the unit. This can be done by using a 5' long duct on both the inlet and discharge end of the unit, or by a single 10' long duct on the inlet or discharge end. Secure end of duct(s) to prevent movement.
- Make sure there are no bends within 6" of the unit in the ductwork coming to or leaving from the unit. This will ensure that the air flows freely through the unit.



## DUCTED TO HVAC SYSTEMS - Independent Operation

The dehumidifier is installed so that the dehumidifier and the central heating or air conditioning system fans operate separately of each other (Independent Operation)

**Duct Connections.** In this arrangement, the dehumidifier is connected across or in parallel with the heating or air conditioning system. The discharge of the dehumidifier is connected to the discharge ductwork of the system and the inlet connection of the dehumidifier is connected to the inlet (return air) duct of the system. When the dehumidifier is connected for independent operation, the heating or air conditioning system fan and the dehumidifier fan will not operate at the same time.

**Controls Connection.** The dehumidifier controls must interface with the heating or air conditioning system. This interface is required to do the following:

- Turn off the dehumidifier if the heating or air conditioning system is in the cooling or heating mode.
- Turn off the heating or air conditioning system fan during dehumidifier operation if the FAN switch on room thermostat has been placed in the ON position for continuous operation.

Five wires run from the heating or air conditioning system to the dehumidifier. To accomplish this independent operation interface, see the "Unit Connection Diagram" and the following:

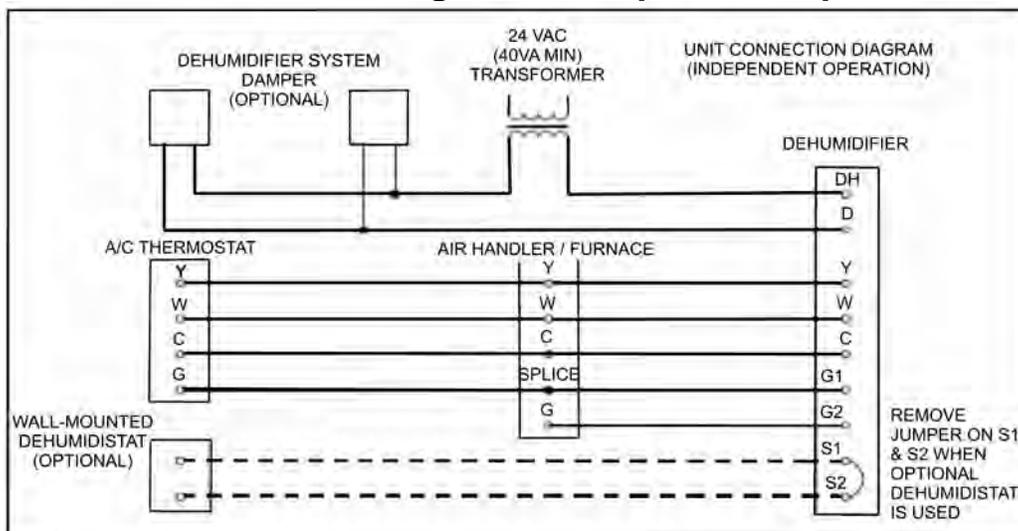
- Connect the C, W and Y terminals on the dehumidifier to the corresponding terminals on the heating or air conditioning system. Do not disconnect any of the existing wires from the C, W or Y terminals on the heating or air conditioning system.
- Disconnect the existing thermostat wire from the G terminal on the heating or air conditioning system. Using a wire nut, splice this wire to a new wire and then connect to the G1 terminal on the dehumidifier.
- Connect the G2 terminal on the dehumidifier to the G terminal on the heating or air conditioning system.

All controls wiring, including connection to a remote dehumidistat must be 18-22 gauge and meet national and local electrical codes. Entry into the dehumidifier is through a bushing located on the air-discharge-end of the dehumidifier, adjacent to the unit-mounted dehumidistat. Note: This is separate from the power entry.

**Damper Connection.** If an optional damper(s) is used in the discharge/return duct, this may be controlled by the dehumidifier. See "Unit Connection Diagram - Independent Operation", for connection details. When connected as shown in the diagram, the dehumidifier provides only the switching interface for the damper(s). Power for these devices must be provided with a separate transformer (not provided), not from the transformer located in the dehumidifier.

The damper control wiring must meet national and local electrical codes. Entry into the dehumidifier is through the control wire entry located on the air discharge end of the unit. Note: This is separate from the power entry.

### Unit Connection Diagram – Independent Operation



## DUCTED TO HVAC SYSTEMS - Dependent Operation

**Duct Connections.** In this arrangement, the dehumidifier is connected either upstream or downstream of the heating or air conditioning system. Both the discharge and the return of the dehumidifier are connected to the same side of the system. When the dehumidifier is connected for dependent operation, the heating or air conditioning system fan and the dehumidifier fan must operate at the same time.

**Controls Connection.** The dehumidifier controls must interface with the main heating or air conditioning system. This interface is required to ensure that the heating or air conditioning system fan is on when the dehumidifier is operating.

Two wires run from the heating or air conditioning system to the dehumidifier. To accomplish this dependent operation, use the interface “Unit Connection Diagram – Dependent Operation” below and the following:

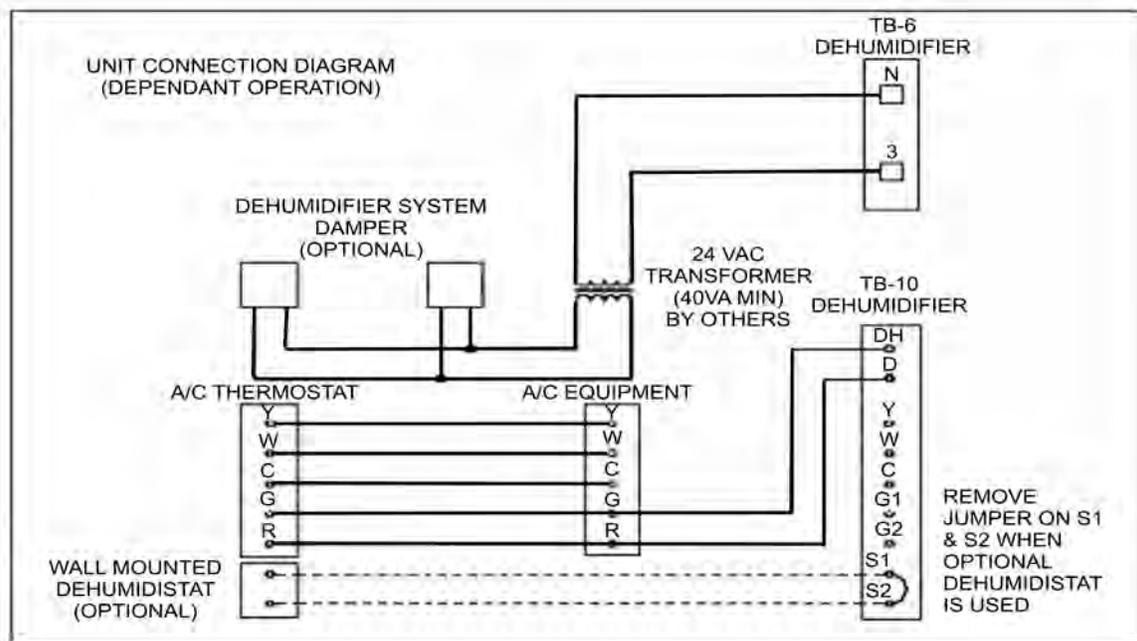
- Connect the D terminals on the dehumidifier to the R terminal on the heating or air conditioning system. Do not disconnect any of the existing wires from the heating or air conditioning system.
- Connect the DH terminal on the dehumidifier to the G terminal on the heating or air conditioning system. Do not disconnect any of the existing wires from the heating or air conditioning system.

All controls wiring, including connection to a remote dehumidistat must be 18-22 gauge and must meet national and local electrical codes. Entry into the dehumidifier is through a bushing located on the air discharge end of the unit, adjacent to the unit-mounted dehumidistat. Note: This is separate from the power entry.

**Damper Connection.** Although not necessary, if an optional damper(s) is utilized in the discharge/return duct, this may be controlled by the dehumidifier. See the “Unit Connection Diagram – Dependent Operation” below for connection details. When connected as shown in the “Unit Connection Diagram,” the dehumidifier provides the switching interface for the damper(s) as well as the line voltage power to the transformer (not included). Power for the damper(s) is provided by the dehumidifier.

The damper control wiring must meet national and local electrical codes. Entry into the dehumidifier is through the control wire entry located on the air-entry-end of the unit. Note: This is separate from the power entry.

### Unit Connection Diagram – Dependent Operation

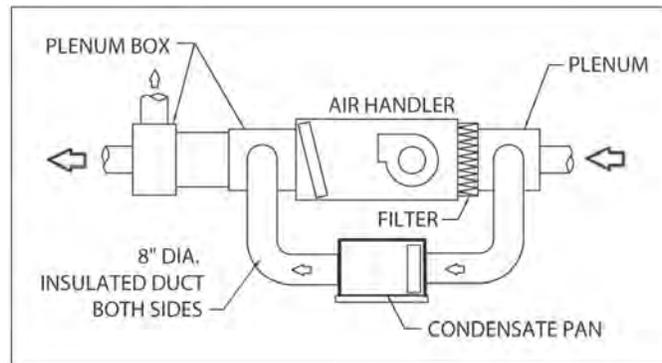
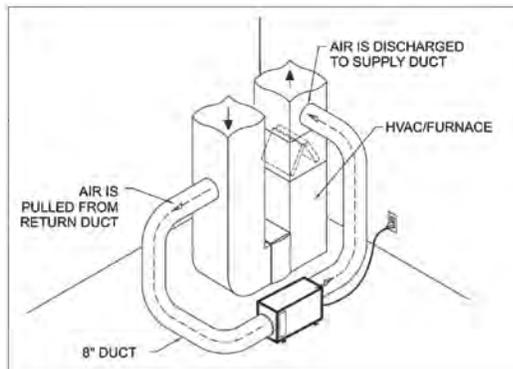


# DUCTING TO HVAC SYSTEM – BASEMENT OR ATTIC INSTALLATIONS

## Independent Operation Mode

In cool damp climates, where the HVAC system runs infrequently or for short periods, Independent Operation mode is the preferred mode of operation. The short cycle times of the HVAC system, while keeping the temperature in control, does not effectively control the humidity level (not enough time to remove the excess humidity from the dwelling). Independent Operation mode will allow the dehumidifier to continually monitor the humidity level and operate as needed whenever the HVAC system is not running, working with the HVAC system to maintain temperature and humidity control.

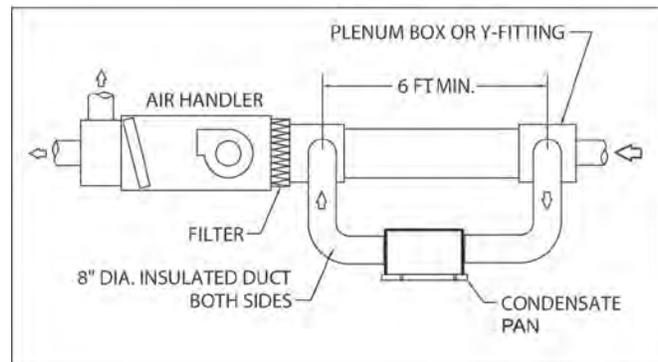
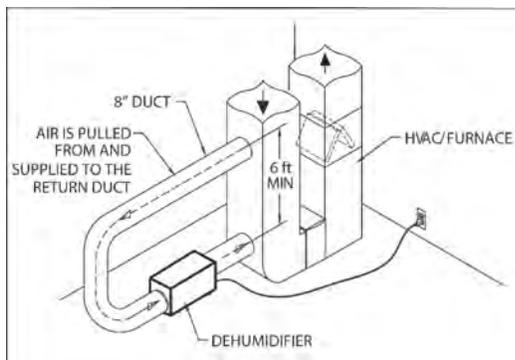
The ducting method shown allows the dehumidifier to pull air from HVAC return air duct and push dehumidified air into the HVAC supply duct. Be sure to allow adequate space before the first branch duct to ensure that the warm, dehumidified air is thoroughly mixed with the HVAC system air before being discharged into the living space.



## Dependent Operation Mode

In warm/hot humid climates where the HVAC runs frequently or for long periods, Dependent Operation mode is the preferred mode of operation. The long run time of the HVAC system will remove / control some of the excess humidity, with the dehumidifier removing the rest. In the Dependent Operation mode, the dehumidifier will monitor the humidity level when the HVAC system fan is running and will turn on whenever the humidity level exceeds the desired set point, removing the excess humidity as needed.

The ducting method shown allows the dehumidifier to pull humid air from and return dehumidified air back into the HVAC return air duct. When using this ducting method, the dehumidifier must be wired to turn on when the HVAC fan is operating.



## **Ducting Notes:**

- Use insulated duct when the dehumidifier is located in an unconditioned space.
- Use a minimum of 8" of flex duct at the dehumidifier inlet and outlet to prevent vibration noise transmission.

## DUCTING TO HVAC SYSTEM – CLOSET INSTALLATIONS

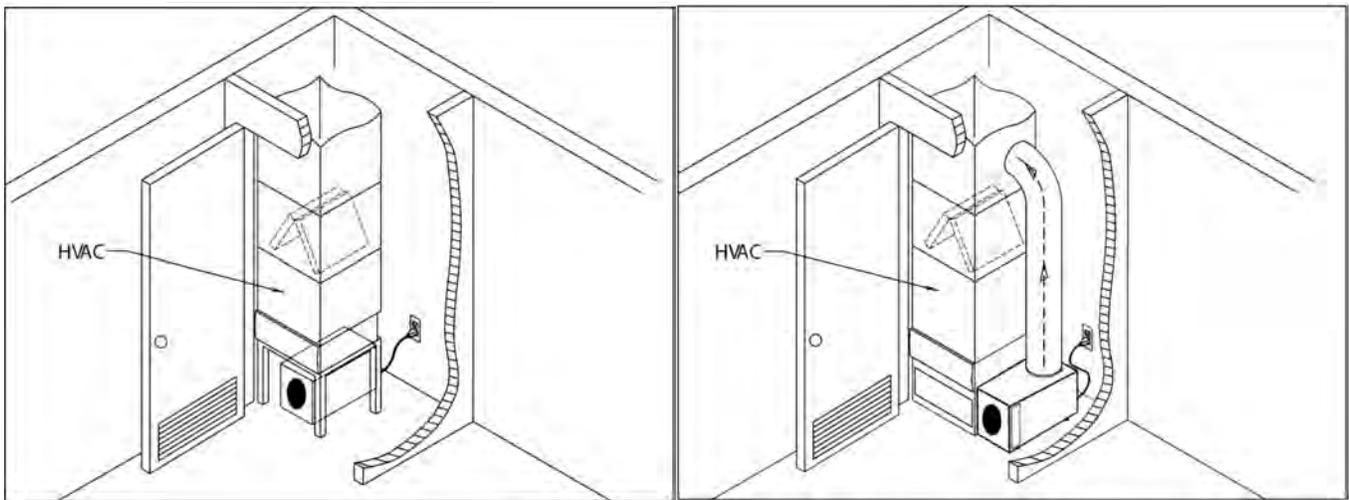
The dehumidifier in these applications is typically installed under or next to the HVAC equipment. In both types of installation, the dehumidifier inlet is not ducted and pulls air from the living space through a grille or louvers in the HVAC closet door. If space allows, locate the dehumidifier under the HVAC equipment and supply dehumidified air through the alternate outlet on the top of the unit directly to the HVAC return.

An alternate installation method is to locate the dehumidifier next to the HVAC equipment and duct the dehumidified air to the HVAC supply duct using the outlet on the top of the unit.

**NOTE:** The dehumidifier must be wired in the Dependent Operation Mode in order to activate the HVAC fan during dehumidifier operation in this installation.

### ⚠ CAUTION ⚠

When installing the dehumidifier as part of a HVAC system that has a combustion type furnace (gas, oil, propane, etc.) located in a closet, provide ducting or locate the dehumidifier inlet and outlet and seal as needed to separate the circulation air from the combustion and ventilation air. Follow all local and national building and safety codes when installing or modifying any HVAC system.



## INITIAL SET UP

Turn power to the dehumidifier on. Adjust the set point knob to approximately 60% relative humidity. For wall-controls, adjust the unit-mounted control to its minimum relative humidity (RH) setting and set the wall-mounted dehumidistat to a desired level. It is recommended that it first be set to approximately 60% RH and then adjusted, no sooner than 24 hours later, to a higher or lower set point as desired. It is recommended that all adjustments be made in no more than 3% increments at no less than 24 hour intervals.

Depending upon the conditions, the dehumidifier may operate for extended periods, especially when first started or after having been off for a while.

## MAINTENANCE

**Filter.** The dehumidifier is equipped with a permanent nylon mesh air filter. This filter is washable and should be cleaned regularly. It is recommended to clean the humidifier filter at the same time the heating or air conditioner filter is replaced. If the filter has become excessively dirty when cleaned at this interval, it may be necessary to adjust the cleaning schedule to more frequent cleaning. Excess dirt on the filter will reduce overall effectiveness of the dehumidifier.

**Drain.** The drain trap or outlet should be checked and cleaned at least annually. Flush it with water to ensure the drain is running free and clear.

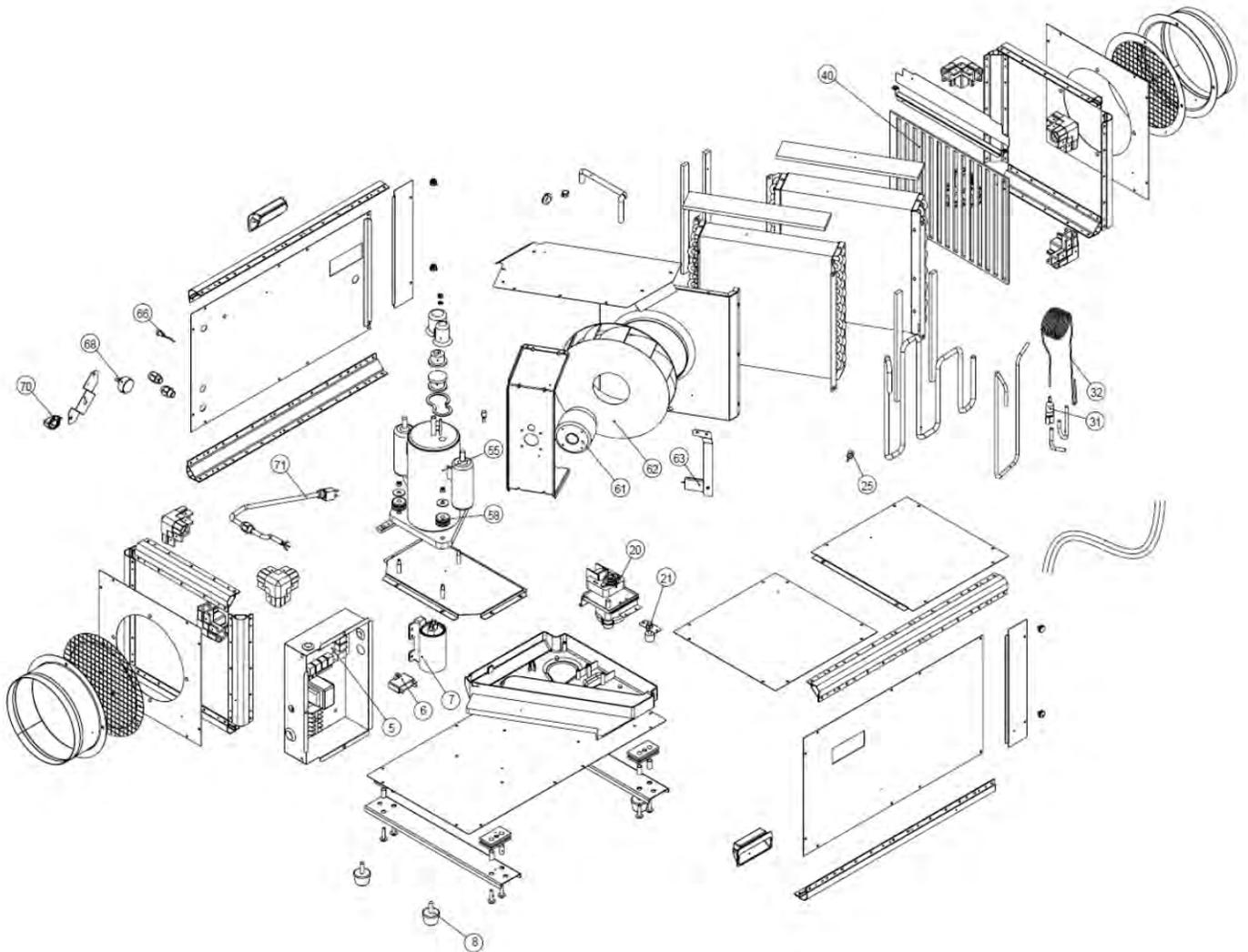
# TROUBLESHOOTING

Troubleshooting Guide		
Symptom	Possible Reason	Possible Solution (some solutions may require professional service)
Dehumidifier does not turn on / run	No power to unit No signal	<ul style="list-style-type: none"> <li>✓ Verify there is power to the receptacle (plug in another device, i.e., lamp).</li> <li>✓ Check that the circuit breaker has not tripped / fuse has blown.</li> <li>✓ Verify that the dehumidifier is correctly plugged into receptacle.</li> <li>✓ Verify that the dehumidistat is not in the max %RH position.</li> <li>✓ Check the low voltage wiring between the HVAC system and dehumidifier.</li> </ul>
Dehumidifier blower is running but with little or no airflow	Pressure drop across dehumidifier is too high	<ul style="list-style-type: none"> <li>✓ Check dehumidifier air filter - clean or replace.</li> <li>✓ Dehumidifier coils are dirty – clean coils (service technician recommended)</li> <li>✓ Check for blocked duct work – clear obstruction(s).</li> <li>✓ Verify that if a damper is installed, it is on the outlet side of the dehumidifier.</li> <li>✓ Check if backflow damper is blocked or stuck - remove obstruction.</li> </ul>
Dehumidifier blower is running but compressor is not	Drain line clogged / pump not working Compressor inoperable	<ul style="list-style-type: none"> <li>✓ To prevent overflow, switch will turn off compressor to stop water production – clean drain line / remove blockages.</li> <li>✓ Compressor or relay broken – replace (service technician required).</li> <li>✓ Defective control board – replace (service technician required).</li> </ul>
Dehumidifier blower not running but compressor is	Loose connection Obstruction Defective fan Defective fan relay	<ul style="list-style-type: none"> <li>✓ Check all connections – tighten as required.</li> <li>✓ Obstruction prevents fan impeller rotation – remove obstruction.</li> <li>✓ Replace fan assembly (service technician required).</li> <li>✓ Defective control board – replace (service technician required).</li> </ul>
Compressor not running but dehumidifier blower is.	Compressor system issues Air sampling	<ul style="list-style-type: none"> <li>✓ Defective compressor run capacitor – replace (service technician required).</li> <li>✓ Loose connection in circuit – tighten as required</li> <li>✓ Defective compressor overload – replace (service technician required).</li> <li>✓ Defective compressor – replace (service technician required).</li> <li>✓ Bad defrost thermostat – replace (service technician required).</li> <li>✓ Normal operation - system is sampling air to determine RH levels.</li> </ul>
Compressor cycles on and off, blower is running	Defrost mode Compressor Airflow	<ul style="list-style-type: none"> <li>✓ Normal operation - Low ambient temperature and/or humidity causing unit to cycle into defrost mode</li> <li>✓ Defective compressor overload – replace (service technician required).</li> <li>✓ Dirty filter or air flow restricted – clean filter / remove obstructions.</li> </ul>
Coil frosted or blocked with ice	Reduced or blocked airflow	<ul style="list-style-type: none"> <li>✓ Check dehumidifier air filter - wash or replace.</li> <li>✓ Check for blocked duct work – clear obstruction.</li> </ul>
Dehumidifier runs continuously but still too humid	Filter dirty Low refrigerant charge	<ul style="list-style-type: none"> <li>✓ Clean filter or replace.</li> <li>✓ Dehumidistat set too low for current conditions, reset to 50% RH.</li> <li>✓ Unit may need more time to 'dry' the materials/furnishings in the space.</li> <li>✓ Have unit checked (service technician required)</li> </ul>
Unit is noisy	Unit not level Loose panels	<ul style="list-style-type: none"> <li>✓ Ensure unit is sitting level and on all four feet.</li> <li>✓ Verify all panel screws are tight</li> </ul>
Dehumidifier is not draining properly	Unit not level Drain line blocked.	<ul style="list-style-type: none"> <li>✓ Verify that the unit is level.</li> <li>✓ Check the drain line blockages and for a continuous downward slope.</li> </ul>
The HVAC fan turns on unexpectedly	Dehumidifier air sampling in progress.	<ul style="list-style-type: none"> <li>✓ Normal operation - the dehumidifier will turn on the HVAC fan to sample the humidity level in the space to see if dehumidification is required.</li> </ul>
Dehumidifier is blowing hot air	Normal function.	<ul style="list-style-type: none"> <li>✓ As part of the dehumidifying process, air is reheated as it passes through the condenser coil, resulting in a temperature rise between the inlet and outlet.</li> </ul>

# SERVICE PARTS DH70/DH90

No.	Part Description	Part
5	Control System - DH70, DH90	DHCS
6	Motor Capacitor 250V, 8 $\mu$ F, 50/60 Hz	DHMC
7	Compressor Capacitor 250V, 35 $\mu$ F, 50/60Hz	DHCC
8	Rubber Feet (4)	DHFR
20	Water Pump 115V, 60Hz	DHWP
21	Water Level Sensor	DHWT
25	Temperature Probe	DHTP
31	Filter	DHFT
32	Capillary	DHCP
40	Filtration Net	DHFN
55	Compressor DH70	DHCM
	Compressor DH90	DHCO

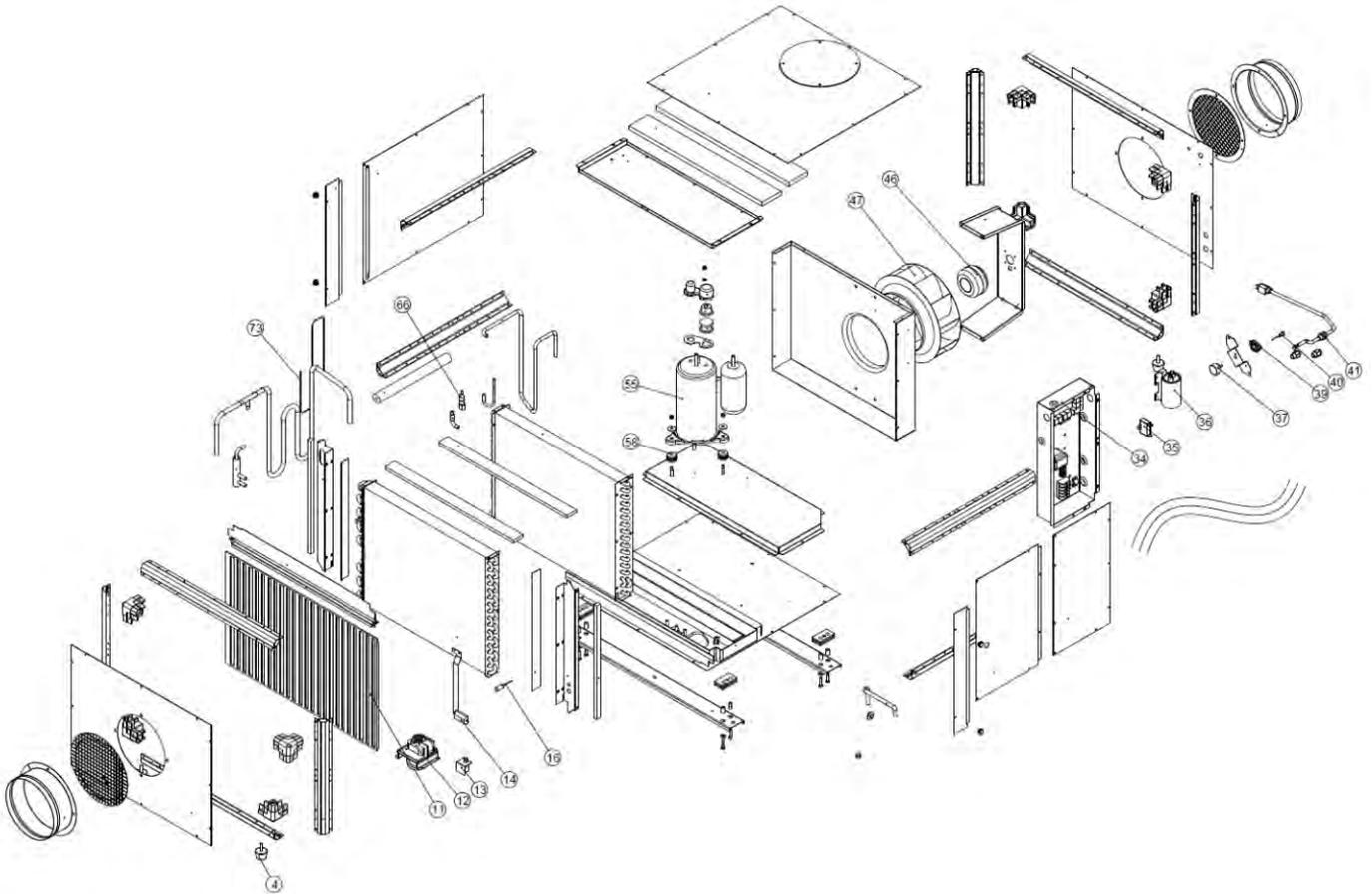
No.	Part Description	Part No.
58	Compressor Rubber Grommet (3)	DHCR
61/62	Motor Assembly	DHMT
63	Humidity Probe	DHHP
66	L.E.D. Light	DHTL
68	Humidity Regulator	DHHR
70	Adjusting Knob	DHAK
71	Power Cord, 16 AWG	DHPC



# SERVICE PARTS DH125

No.	Part Description	Part
4	Rubber Feet (4)	DHFR
11	Filtration Net	DHFL
12	Water Pump 115V, 60Hz	DHWP
13	Water Level Sensor	DHWT
14	Humidity Probe	DHHP
16	Temperature Probe	DHTP
34	Control System- DH125	DHCT
35	Motor Capacitor 250V, 12 $\mu$ F, 50/60 Hz	DHMO
36	Compressor Capacitor 250V, 50 $\mu$ F, 50/60Hz	DHCA
37	Humidity Regulator	DHHR
39	Adjusting Knob	DHAK
40	L.E.D. Light	DHTL
41	Power Cord, 14 AWG	DHPW

No.	Part Description	Part No.
46/47	Motor Assembly	DHMR
55	Compressor DH125	DHCE
58	Compressor Rubber Grommet (3)	DHCB
66	Filter	DHFI
73	Capillary	DHCL





# SERVICE RECORD

Date	Maintenance Performed	Components Required

# Warranty

**Full (One Year) Parts Warranty.** All parts of the dehumidifier are warranted to be free from defects for one year from the date of purchase by the original consumer when installed per the installation instructions and in accordance with all local, state, and national codes for normal residential use.

Transportation, handling, and labor costs to diagnose, repair or replace such defective parts are not covered by this limited parts warranty and are the owner's responsibility. Ready access to the unit for service is the responsibility of the owner.

*NOTE: In the event of any required parts replacement within the period of this warranty, replacement parts shall be furnished and will be warranted only for the period remaining on the original warranty.*

**Exceptions.** The warranty does not cover normal maintenance, labor charges, transportation charges for replacement parts, replacement of refrigerant or filters, any other service call or repairs. We will not be liable for damages or delays caused by events beyond our control, including accident, alteration, abuse, war, government restrictions, strikes, fire, flood or other acts of God.

**Duration of Warranty.** The warranty begins on the date of purchase by the original consumer. The consumer must provide a receipted bill of sale as proof of warranty period. Without this proof, the warranty begins on date of shipment from the factory.

1. There are no other express or implied warranties or any warranty of merchantability. We do not warrant that the unit is suitable for any particular purpose or can be used in buildings or rooms of any particular size or condition except as specifically provided in this document. There are no other warranties, express or implied, which extend beyond the description in this document.
2. All warranties implied by law are limited in duration to the one year term of the warranty. Your exclusive remedy is limited to the replacement of defective parts and compressor. We will not be liable for any damages caused by any defect in this unit.
3. No warranties are made for units sold outside the continental United States and Canada. Your distributor or final seller may provide a warranty on units sold outside these areas.

Some states do not allow limitation on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusions may not apply to you.

**How to Obtain Warranty Service or Parts.** If you have a warranty claim, notify your installer promptly. If within a reasonable time after contacting your installer, satisfactory service has not been received, contact:

Customer Service, 250 West Laurel Street, Colton, California 92324 U.S.A.

Enclose a report of inspection by your installer or service person. Include the model number, serial number, and date of purchase.

**Owner responsibilities are set forth in the instruction manual. Read it carefully.**



250 West Laurel Street • Colton, California 92324 U.S.A.

[www.e-wfc.com](http://www.e-wfc.com) • Telephone: (909) 825-0993