



Installation Instructions

INSTALLATION BY A HVAC PROFESSIONAL IS REQUIRED

The Envirowise 70V is a whole house ventilating dehumidifier that can be installed as a free standing unit or can be integrated into the HVAC system to provide the ultimate in comfort and property protection through:

- Fresh Air Ventilation
- Dehumidification
- Air Filtration

HVAC Installer: Please Leave Manual for Homeowner

P/N: EDHUM70V

Serial No.:

Install Date:

Sold by:

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Ingersoll Rand is committed to manufacturing quality products. To maintain our standards, product specifications may change without notice.



Ingersoll Rand, 6200 Troup Hwy. Tyler, TX 75707

Items Included in Box:

- Envirowise 70V Dehumidifier
- Envirowise 70V Installation Instructions
- Envirowise 70V Leveling Feet

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 ENVIROWISE WHOLE HOUSE VENTILATING 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.

Registrations



The 70V conforms to unified standard UL 60335-2-40 and CSA Standard C22.2.60335-2-40.

⚠ 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.

ALWAYS USE CAUTION AND WEAR CUT RESISTANT GLOVES WHEN HANDLING SHEET METAL.

IMPROPER INSTALLATION MAY CAUSE PROPERTY DAMAGE OR INJURY.

INSTALLATION, SERVICE, AND MAINTENANCE MUST BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN.

DEHUMIDIFIER IS HEAVY. HANDLE WITH CARE AND FOLLOW INSTALLATION INSTRUCTIONS.

DO NOT USE IN POOL APPLICATIONS, OR WARRANTY WILL BE VOID.

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.

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 MUST BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.

SPECIFICATIONS

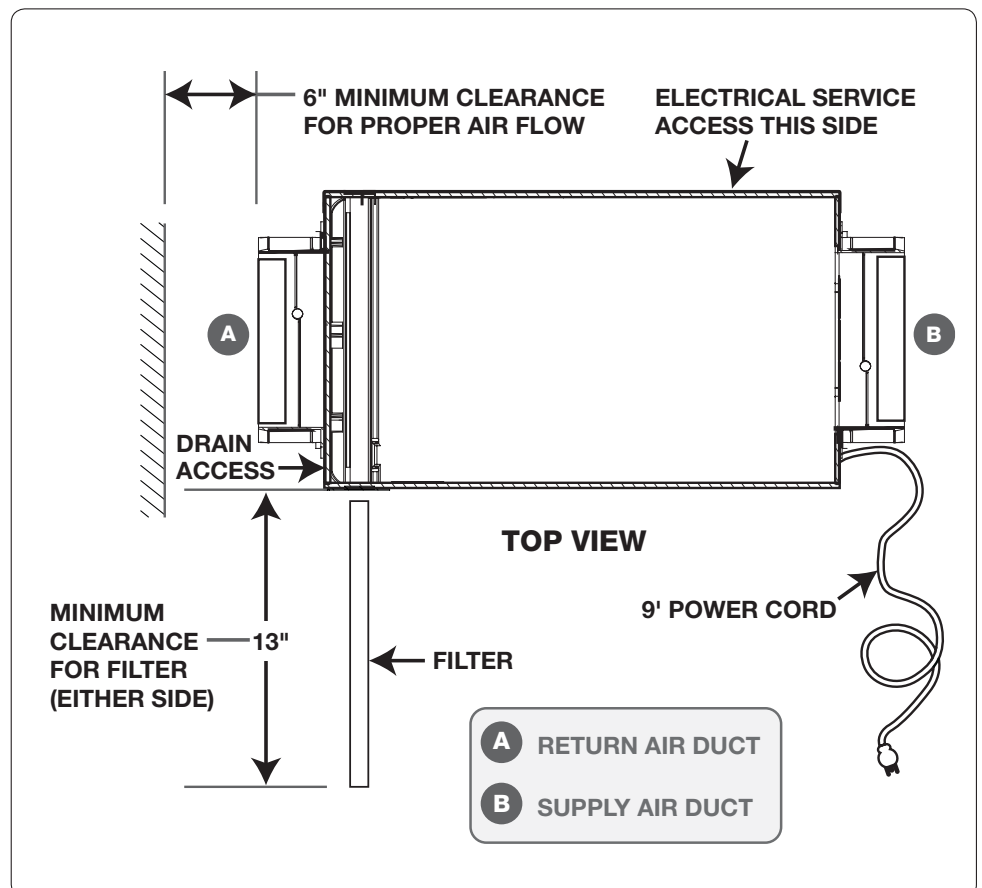
Part Number:	EDHUM70V1H1MDAA		
Blower:	150 CFM @ 0.0" WG 140 CFM @ 0.2" WG 130 CFM @ 0.4" WG		
Power:	580 Watts @ 80°F and 60% RH		
Supply Voltage:	115 VAC – 1phase – 60 Hz		
Current Draw:	5.1 Amps		
Circuit Requirement:	15 Amps		
Energy Factor:	2.4 L/kWh		
Operating Range:	49°F Min, 95°F Max (Inlet Air Temperature)		
Sized for:	Up to 1,800 Sq. Ft. - Typical Dehumidification Mode Up to 3,000 Sq. Ft. - Typical Ventilation Mode		
Water Removal at 80°F and 60% RH	Water Removal at 70°F and 60% RH		
Capacity:	70 pints/day	Capacity:	47 pints/day
Efficiency:	5.0 Pints/kWh	Efficiency:	4.0 Pints/kWh
Duct Connections:	8" Round Inlet; 8" Round Outlet		
Air Filter:	MERV-11, Mini Pleat		
Efficiency:	65% ASHRAE Dust Spot		
Size:	9" x 11" x 1"		
Optional Air Filter:	MERV-14, Embossed Pleat (will need filter housing)		
Efficiency:	95% ASHRAE Dust Spot		
Size:	20" x 24" x 4"		
Power Cord:	9', 115VAC, Ground		
Drain Connection:	3/4" Threaded Female NPT		
Refrigerant Type:	R410A (Refer to manufacturers label for more information)		
Refrigerant Amount:	15 oz.		
Dimensions:	Unit With Collars	Unit Without Collars	Shipping
Width:	12"	12"	15 5/8"
Height:	12"	12"	16"
Length:	28"	22"	31 5/8"
Weight:	55 lbs.	54 lbs.	65 lbs.
<p>The technical drawings illustrate the unit's dimensions from three perspectives:</p> <ul style="list-style-type: none"> Front View: Shows a square unit with a width of 12" and a height of 12". A circular duct opening is centered on the front face, with a diameter of 8". Side View: Shows the unit's length. The total length with collars installed is 28", while the length without collars is 22". Rear View: Shows the back of the unit, which is 12" wide and 12" high. A circular duct opening is centered on the rear face, with a diameter of 8". 			

Important Precautions

- The device is designed to be installed indoors in a space that is protected from rain and flooding.
- Install the unit with enough space to access all sides for maintenance and service. The entire shell needs to be removed in order to do repairs.
- Avoid directing the discharge air at people.
- The dehumidifier **MUST** be used in the upright position.
- If used near a water source; be certain there is no chance the unit could fall into the water or get splashed and that it is plugged into a dedicated circuit and Ground Fault Circuit Interrupter (GFCI) protected outlet.
- **DO NOT** use the dehumidifier as a bench or table.
- **DO NOT** place the dehumidifier directly on structural building members without vibration absorbers or unwanted noise may result. Place the 70V on supports to raise the base of the unit.
- A drain pan **MUST** be placed under the dehumidifier if installed above a living area or above an area where water leakage could cause damage.

Location Considerations

- Allow sufficient clearance to handle the unit's overall dimensions as well as the necessary return and supply duct-work to the unit.
- Allow sufficient clearance for filter removal and to prevent airflow obstruction.
- Electrical service access will require the removal of the outside shell. Allow sufficient clearance around the unit.
- Locate the dehumidifier in an area where the cord's length (9') easily reaches a 115 VAC electrical outlet with a minimum of a 15 Amp circuit capacity. A dedicated 20A circuit is recommended, but not required unless local code specifies.
- Locate the dehumidifier in an area where field wiring the control (low voltage) to the unit will be possible.
- A back draft damper **MUST** be used in the discharge duct of the 70V. The back draft damper prevents supply air from counter flowing through the 70V when it is not operating. The dehumidifier's location should be chosen to allow installation of this accessory.
- The 70V may be suspended with the hang kit or a suitable alternative from structural members, ensuring the assembly supports the dehumidifier's base in its entirety. **DO NOT** hang the 70V from its' cabinet.
- Allow for proper drainage and routing of needed drain pipes.



GENERAL SET UP

Ducting Considerations:

- All flexible ducting connected to the 70V should be UL listed.
- Insulated flexible ducting (8' min.) on supply and return connections to the 70V is recommended to reduce noise and vibration transmitted to rigid ductwork in the HVAC system.
- Use a minimum 8" diameter round or equivalent rectangular duct for total duct lengths of up to 25'. Use a minimum 10" diameter or equivalent for longer lengths.
- Grills or diffusers on the duct ends should not excessively restrict airflow. The minimum recommended grill size is 14" x 14" or equivalent for a central return or supply.
- Effective dehumidification may require that ducting be branched to isolated, stagnant air flow areas. When ducting to two or three areas, use 6" or larger diameter branch ducting. When ducting to four or more areas, use 4"-6" or larger diameter branch ducting. Provisions must be made to provide airflow from supply locations to the central return location. Proper air distribution is important to ensure even humidity control and heat distribution throughout the structure.
- DO NOT locate the return in a bathroom or a kitchen.

CAUTION!

**DO NOT CONNECT WITH A STATIC PRESSURE GREATER THAN OR EQUAL TO +0.5 WG.
CONTACT TECHNICAL SUPPORT FOR ADDITIONAL DETAILS.**

Electrical Requirements

The 70V plugs into a common grounded 115VAC outlet. The device draws 5.1 Amps at 80°F and 60% RH. Locate the dehumidifier in an area where the cord's length (9') easily reaches a 115 VAC electrical outlet with a minimum of 15 Amp circuit capacity. If used in an area that may become wet, a GFCI protected circuit is recommended. Consult local electrical codes for any further information.

Envirowise offers a variety of control devices for use with the 70V. The controls are to be located remotely from the dehumidifier and placed in the space to be conditioned. Low voltage (24 Volt) controls can be used with the 70V and **MUST** be connected with low voltage (18-22 gauge) thermostat wire.

⚠ WARNING!

THE REMOTE CONTROLS OF THE 70V ARE POWERED BY A LOW VOLTAGE CIRCUIT (24VAC) AND MUST NEVER CONTACT OR BE CONNECTED TO A HIGH VOLTAGE CIRCUIT.

⚠ CAUTION!

DO NOT ALLOW THE 24V TERMINAL TO CONTACT THE COM/DMPR TERMINALS ON THE 70V OR DAMAGE TO THE TRANSFORMER WILL RESULT.

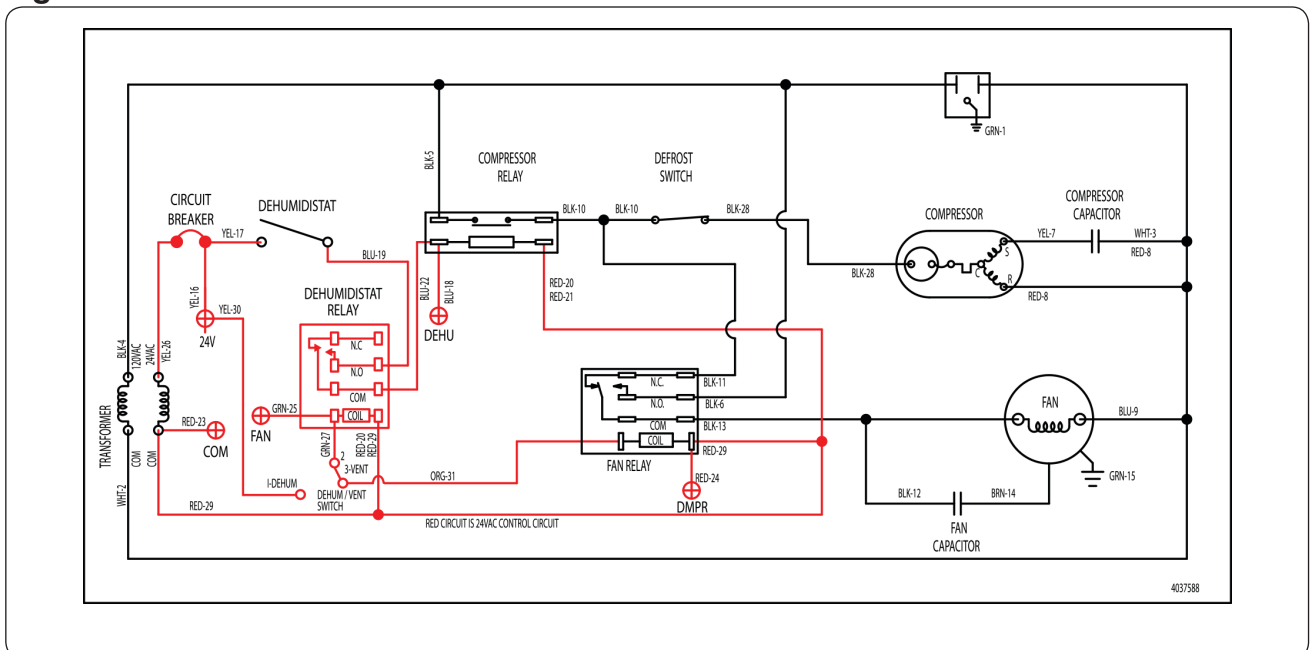
⚠ CAUTION!

SOME OF THE TERMINALS ON THE 70V MAY NOT BE USED WITH CERTAIN CONTROLS AND MUST BE LEFT UNCONNECTED.

Electrical Precautions

- Do not install the control where it may not accurately sense the relative humidity such as near HVAC supply registers, near exterior doors, on an outside wall, near a window, or near a water source.
- The Terminals on the 70V and the control are labeled to prevent confusion.
- Be sure to consult the electrical schematic in the CONTROLS Section of this manual or inside the access panel of the 70V before making control connections.

Wiring Schematic



GENERAL SET UP

Drain Installation

The 70V generates condensate and must be removed by an approved method. Do not connect to a waste drain or vent stack. Check local plumbing codes for approved drain methods.

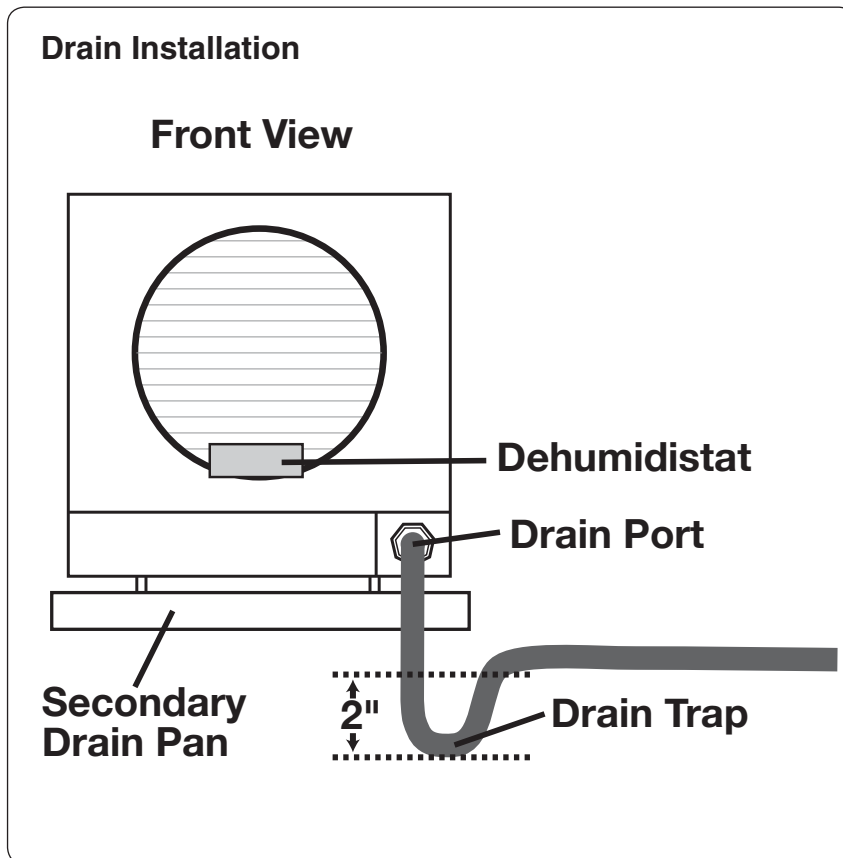
Place a secondary drain pan under the dehumidifier if it is suspended above a finished area or above an area where water leakage could cause damage.

A drain trap (2" minimum trap) is required for the dehumidifier to run properly. Install a 3/4" threaded male NPT adapter to the drain pan. Install a drain pipe assembly utilizing 3/4" PVC pipe to transport the condensate to a drain. Pitch of drain should be 1" per 10'.

An optional condensate pump kit (E437901) is available for use with the 70V and may be installed if lift is required to dispose of condensate. Condensate is automatically pumped to a remote location when the water level in the pump's reservoir rises to close the float switch.

The pump also contains a safety float switch. The white leads from this switch extend from beneath the pump cover. This switch should be installed in series with the field wire that connects to the common lead from the 70V to the control panel. If the pump fails, this switch opens the common control circuit and stops water production before the reservoir overflows. Contact a qualified electrician to install the safety float switch to the 70V dehumidifier.

Note: A condensate pump kit can be purchased as an accessory. Contact your installing contractor for more information.



Attaching Duct Collars

Fresh Air Ventilation Duct

If setting up the unit to provide fresh air ventilation there must be an operable damper installed in the O/A duct that prevents infiltration of non-conditioned air through the system when there is no ventilation call. This damper can be either manual or power open, normal close. Note: Energy Star Home program requires a powered damper. See page 10 for additional instructions on bringing fresh air through the 70V.

Return Air Inlet

An 8" diameter duct collar is attached to the unit and is connected to the return ductwork to either the system return or to a central grille. See page 10 for additional instructions on return air options for the 70V. Use caution when connecting ductwork to collar. The return collar has the on board dehumidistat control attached. Note; the dehumidistat may need to be adjusted after installation as well as during operation. Ductwork connection to collar must be accessible and easy to remove and re-connect.

Supply Air Outlet

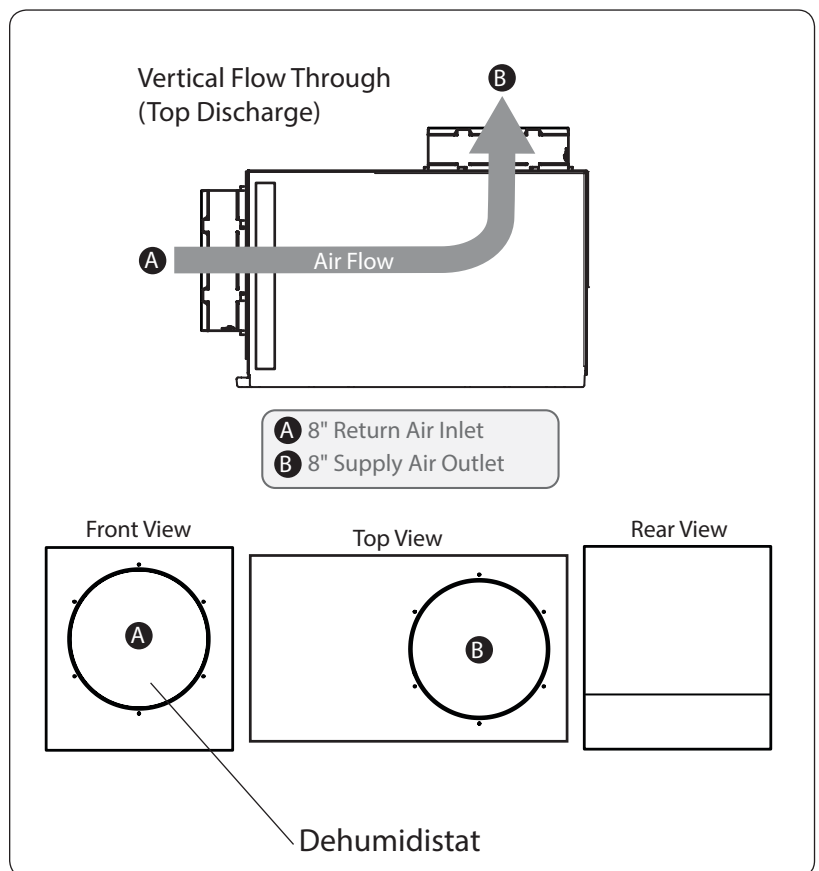
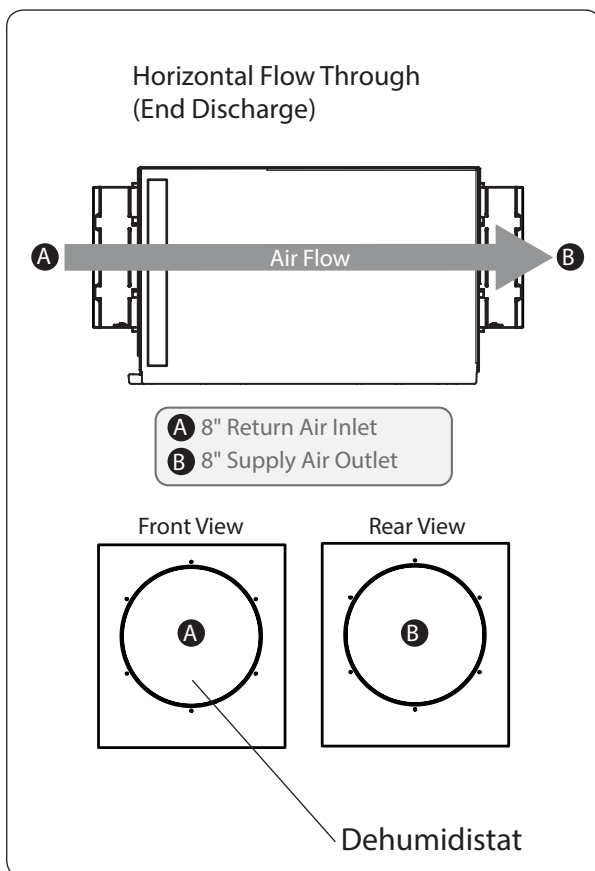
The back panel of the dehumidifier can be rotated to allow for horizontal flow through or vertical flow through of the supply air.

- **Horizontal Flow Through**

The unit ships configured for a horizontal flow through. An 8" diameter duct collar is attached to the unit.

- **Vertical Flow Through**

Remove the exhaust panel. Rotate the panel so the exhaust collar is located on the top of the unit. Align screw holes and snap the panel onto the base. Secure the exhaust panel to the base by replacing the six screws.



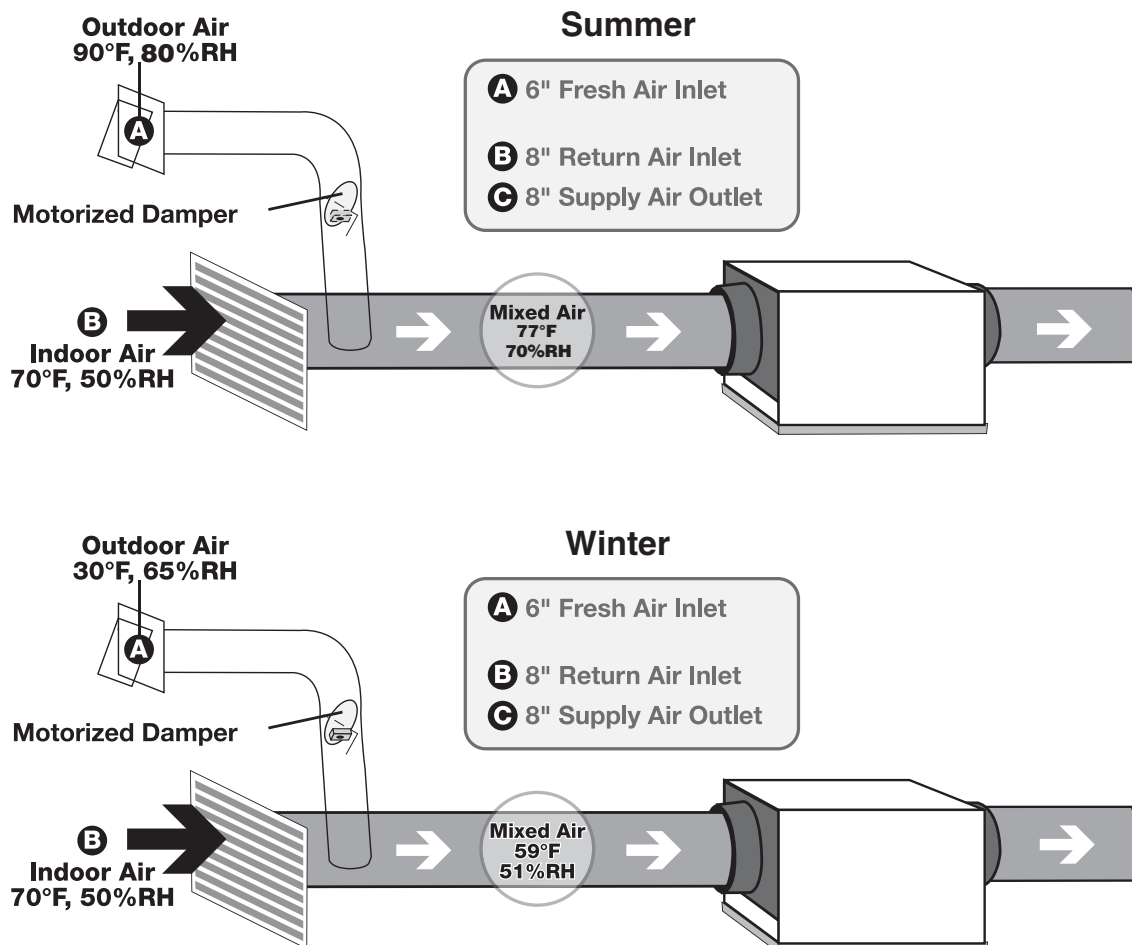
SET UP AS A DEHUMIDIFYING VENTILATOR

Fresh air may be brought into the structure by connecting an insulated duct from outside the structure to a tee located in the inlet duct of the 70V. A ventilation control is needed to program the time and frequency that the unit introduces outside air. The time and frequency of ventilation should be based on the size and occupancy of the residence.

- An insulated 8" diameter duct provides up to 120 cfm of outside air when connected in the Direct-"Single Pass" application. The amount of cfm will vary depending on static pressure and length of duct. A balancing damper installed in the Outside Air duct is recommended to calibrate the desired cfm.
- The 6" fresh air ventilation duct should tee into the 8" round collar on the front of the 70V.
- An insulated 6" diameter duct provides up to 55 CFM of outside air.
- Performance of the 70V can be impacted by inside and outside air conditions.
- When a 6" or 8" motorized damper is used, a digital control is required.

Principle of Fresh Air Ventilation - 70V in ventilation mode

Outside air mixes with return air prior to beginning the dehumidification process. Outside and inside temperature and relative humidity will impact the combined outlet air conditions.



SET UP AS A DEHUMIDIFYING VENTILATOR

Determine Ventilation Requirements

The MINIMUM ventilation requirement is calculated using ASHRAE 62.2-2013. Use one or both of the options below to determine your ventilation requirement. Follow all local and national building and safety codes.

Option 1: Calculating Airflow Requirement Using ASHRAE 62.2-2013 Airflow Equation

ASHRAE Airflow in CFM = [House Area in Sq.Ft. x 0.03] + [(Number of Bedrooms + 1) x 7.5]

NOTE: Use 'Number of Bedrooms + 1' or 'Number of Occupants', whichever is larger.

Example 1: Number of Bedrooms + 1

1800 square foot house with 3 bedrooms, 4 occupants = [1800 X 0.03] + [(3+1) X 7.5] = 84 CFM

Example 2: Number of Occupants

1800 square foot house with 3 bedrooms, 5 occupants = [1800 X 0.03] + [5 X 7.5] = 91.5 CFM

Record the required CFM _____

Option 2: Calculating Airflow Requirement Using Table 4.1 from ASHRAE 62.2-2013

See chart below to find the calculated airflow values to the nearest 5 CFM.

Ventilation Air Requirements, CFM

Floor Area (ft ²)	Number of Bedrooms				
	1	2	3	4	5
< 500	30	38	45	53	60
501-1000	45	53	60	68	75
1001-1500	60	68	75	83	90
1501-2000	75	83	90	98	105
2001-2500	90	98	105	113	120
2501-3000	105	113	120	128	**
3001-3500	**	**	**	**	**
3501-4000	**	**	**	**	**
4001-4500	**	**	**	**	**
4501-5000	**	**	**	**	**

**** VENTILATION VALUES ARE OUT OF THE OPERATING RANGE OF THE 70V**

Table 4.1 from ASHRAE 62.2-2013

Record the required CFM _____

SET UP AS A DEHUMIDIFYING VENTILATOR

HVAC System Installations (When 70V is used as a 62.2 Compliant Ventilator)

There are two recommended Installation options to use the 70V as a dehumidifying ventilator. **The mode of operation must be set to “Ventilation” in both options.**

- Indirect “Return Mix”- Draw return air from either a central grill or from the HVAC system return upstream from the Air Handler. Between the return connection point and the 70V install a Y or T connection in the duct to connect a Fresh Air duct (6”-8”) in line with the return duct to “mix” the ventilation air with conditioned house air. This reduces the latent and sensible load in the air before passing through the dehumidifier. This may improve efficiency and comfort in extreme outdoor climates. A gravity damper or an adjustable motorized damper is required in this application. Blower interlock is recommended but not required in this application.

-Direct Single Pass- Connect a 6” or 8” insulated duct from outside directly to the return of the 70V. Connect the Supply Duct from the Supply collar of the 70V to the HVAC System return upstream from the plenum by a minimum of 3’. A gravity damper or an adjustable motorized damper is required in this application. Blower interlock is recommended but not required in this application.

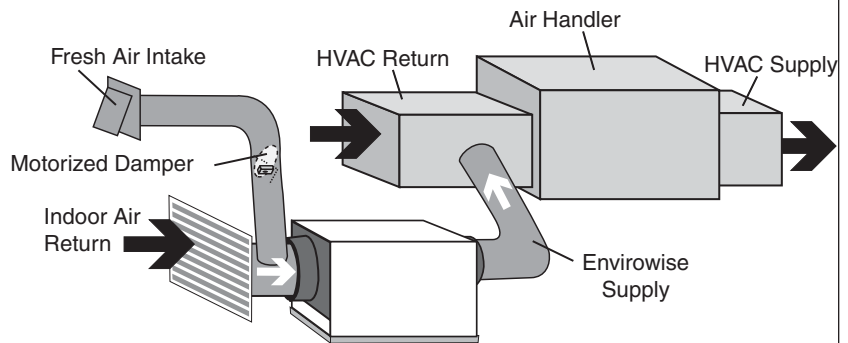
Indirect Method - Return Mix

Create a separate return for the 70V in a central area of the building.

Do not pull return air from HVAC return if connecting 70V supply to HVAC return.

A gravity damper or motorized damper is required to prevent back draft of house air or infiltration of outside air into the system.

BLOWER INTERLOCK IS RECOMMENDED BUT NOT REQUIRED

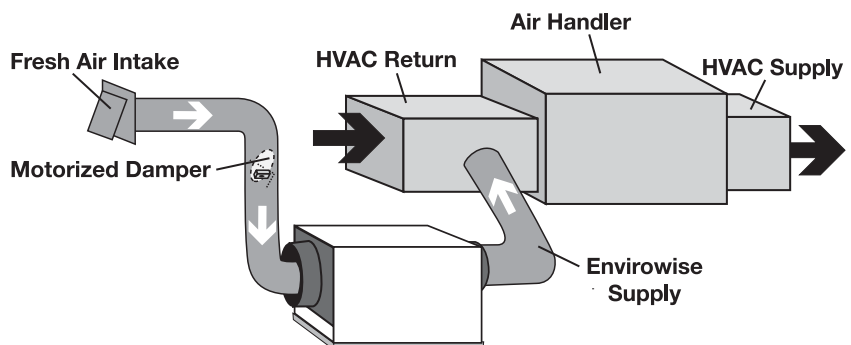


NOTE: Installing a central supply grille in a common area (hallway, basement, or other open area), and connecting duct to supply outlet of the 70V is an approved installation option. This method decouples the 70V from the HVAC system.

Direct Method - Single Pass

Duct the return of the 70V to fresh air intake. Install the supply air from the 70V in the return of the HVAC system. A motorized damper or gravity damper is required to prevent back draft of house air or infiltration of outside air into the system.

BLOWER INTERLOCK IS RECOMMENDED BUT NOT REQUIRED



NOTE: Installing a central supply grille in a common area (hallway, basement, or other open area), and connecting duct to supply outlet of the 70V is an approved installation option. This method decouples the 70V from the HVAC system.

SET UP AS A DEHUMIDIFYING VENTILATOR

Setting the Dehumidistat for Climate - Outdoor conditions can vary by climate. The 70V can be adjusted to provide optimal dehumidification by adjusting the dehumidistat on the unit to match the local climate.

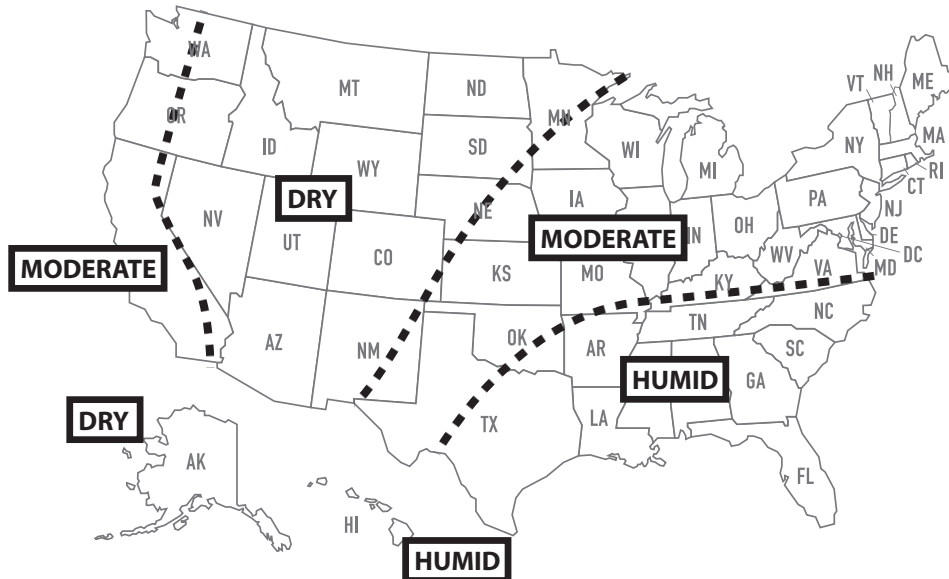
The 70V is designed to provide the proper amount of drying for your climate region. However, due to the nature of RH%, there may be some incoming air conditions where the dehumidifier will operate below the desired dew point (over-drying) and will not operate above the desired dew point (missed operation) depending on the dehumidistat setting.

The ideal dehumidistat setting for will be one that maintains sufficient drying above a 55° dew point while limiting the amount of over-drying. Using the climate map below, select the proper setting for your region.

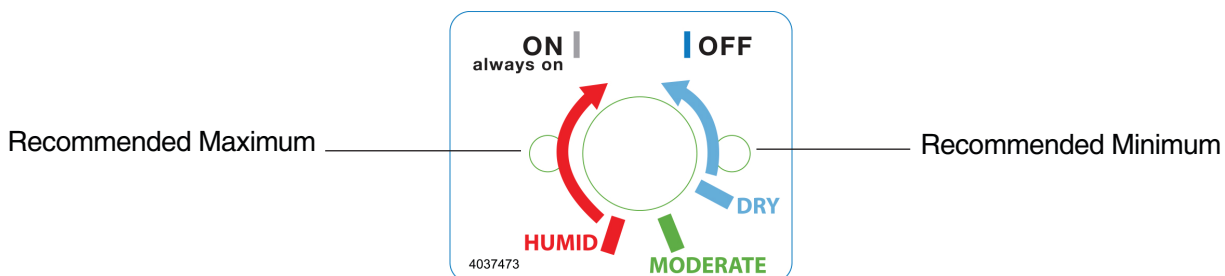
Humid Climates are generally warm and above a 55° dew point. This climate usually requires drying unless the relative humidity drops below 40%.

Moderate Climates can range from cool to warm and are generally around a 55° dew point for much of the year. This climate usually does not require drying unless the relative humidity increases above 50%.

Dry Climates can range from cool to warm and are generally below a 55° dew point. This climate usually does not require drying unless the relative humidity increases above 60%.



Once the appropriate climate zone has been identified, set the dial to the select setting as shown on the diagram below.



Setting the dial below the dry set point is not recommended as it may not provide sufficient drying.

Setting the dial above the humid set point is not recommended as it may result in over drying and higher energy use.

Turning the dial to the “Off” position will disable dehumidification compressor operation. This makes the unit an in-line ventilator only.

SET UP AS A DEHUMIDIFIER ONLY

Using the 70V as a Dehumidifier (Dehumidification Mode)

The recommended installation pulls air from a dedicated indoor air return and ducts the supply of the dehumidifier to the air supply of the existing HVAC system.

- Install a dedicated 8" air return for the 70V from a central area of the structure.
- Duct the supply of the 70V to the supply of the existing HVAC system with a back draft damper.
- If the existing system has multiple returns, instead of installing a dedicated return to the 70V, it is possible to select one from the existing HVAC system and use it for the dedicated 70V return. Always select a return from a central location in the house that is always open to the rest of the structure. **DO NOT** use a return from a room where doors are kept closed.
- Control should be located remotely from the dehumidifier and placed in a central location.
- The on-board dehumidistat must be turned to the "Off" position in the dehumidification mode. Humidity is measured from the remote mounted control.

Free Standing Installation - Using No Ductwork Installation

When installing the 70V in a structure that does not have a forced air HVAC system, a single return for the 70V should be installed in a central location.

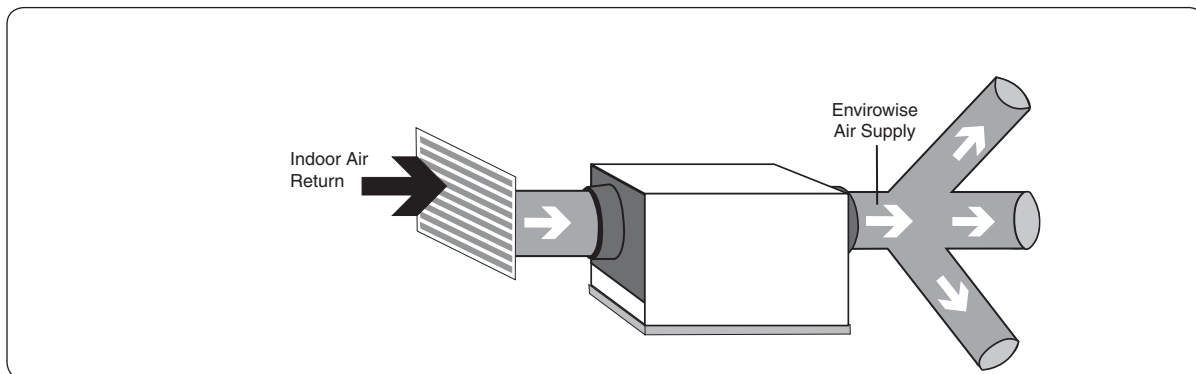
Install a 6" insulated duct from outside, teeing into the 8" return duct of the 70V to provide fresh air ventilation (optional).

The supply of the 70V should be ducted to remote areas of the structure such as bedrooms, living room, den, etc. Be sure to utilize multiple rooms to allow air inside the structure to properly circulate. Proper air distribution is important to ensure even humidity control and heat distribution throughout the structure.

A 6" diameter duct is recommended for branches to bedrooms. An 8" diameter duct is recommended for branches to larger areas.

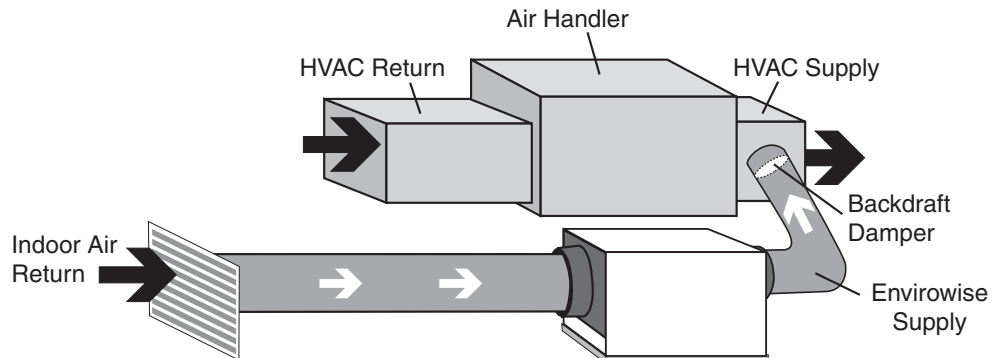
- **DO NOT** locate the return in a bathroom or kitchen.
- **DO NOT** locate the supply in smaller rooms where doors may be closed.
- Control should be located remotely from the dehumidifier and placed in a central location.

No Ductwork Installation



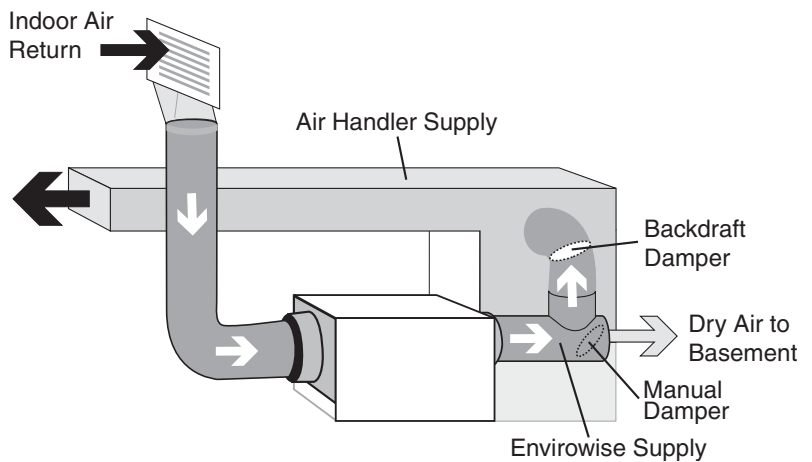
SET UP AS A DEHUMIDIFIER ONLY

Attic or Conditioned Mechanical Room Installation - Dedicated Envirowise Return to HVAC Supply



Basement/Crawlspace Installation - Dedicated Envirowise Return to HVAC Supply

Duct the supply of the 70V to a 8" x 8" x 8" tee damper that is 20 percent open to the basement/crawlspace.

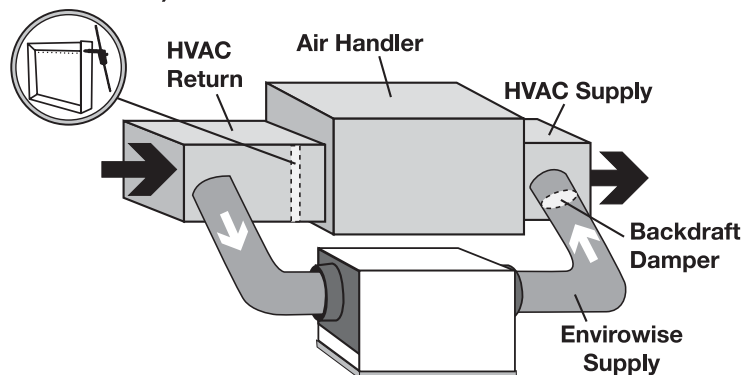


HVAC Return to HVAC Supply

Backdraft Damper must be in place between the Return and Supply connections of the dehumidifier if the dehumidifier is on without the A/C fan.

If the AC fan is on (blower interlock switch is on) when the dehumidifier is on the back draft damper is not required.

Backdraft Damper
(no A/C fan needed)



SET UP AS A DEHUMIDIFIER ONLY

Recommended Closet Installation

Due to space limitations, a closet installation may require additional considerations. Locate the dehumidifier under or next to the HVAC system as space allows. A passive vent or louver door is required to allow air to be pulled in from the living space.

- Minimum size vent or louver door should be sized to return 100% of the HVAC system capacity.
- No inlet duct is required. Air is pulled through the louvers or grille from the living space.
- Control should be placed in a central location or the on board control can be used for this installation.
- Where inlet space is restricted, the inlet duct collar is optional.
- Where outlet space is restricted, the outlet duct collar is optional or vertical flow through may be preferred.

⚠ WARNING!

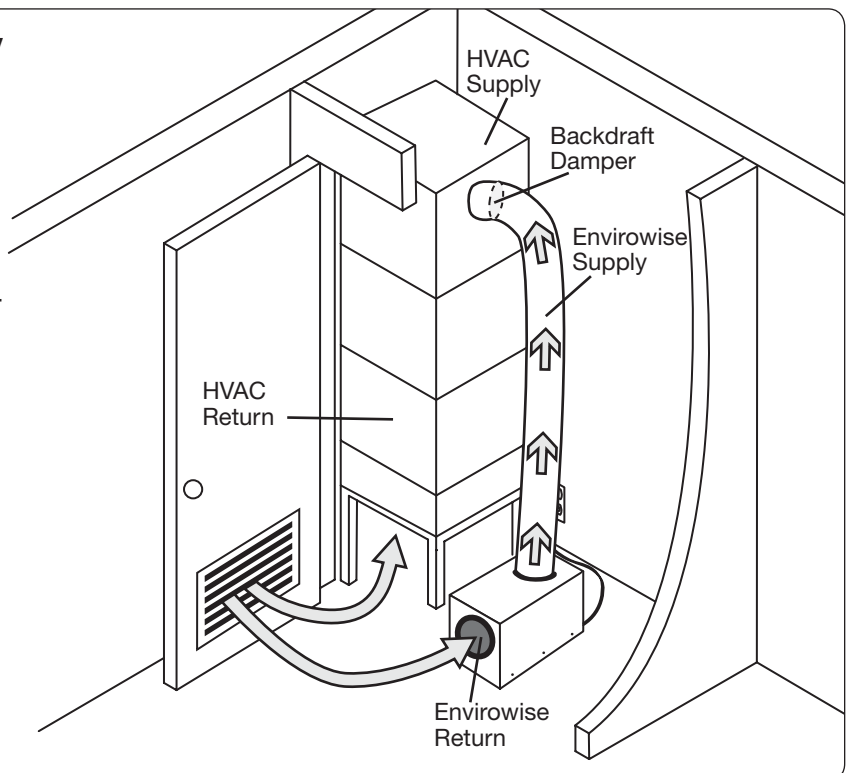
WHEN INSTALLING THE DEHUMIDIFIER AS PART OF A COMBUSTION TYPE HVAC SYSTEM (GAS, OIL, PROPANE, ETC.), FOLLOW ALL LOCAL AND NATIONAL BUILDING AND SAFETY CODES.

Central Return to HVAC Supply

Duct the supply of the 70V to the supply of the existing HVAC system with a back draft damper.

Outside ventilation air is not designed for this application.

Blower interlock switch should be activated in this application.



The 70V features a built-in dehumidistat control as well as 24 volt input terminals to operate the functions of the 70V using a wall mounted HVAC system control such as the Nexia enabled 724, 824, 850¹, 1050¹ (requires BAY24VRPAC52D** relay panel) or other 24-volt control with ventilation and/ or dehumidification enabled software. If the 70V is located outside of the area where humidity control is desired, use a remote wired humidity controller that is located in the area where humidity control is desired. When using the built-in dehumidistat to control the unit, locate the unit in an area where it can accurately sense the humidity for the space where humidity control is desired.

Adjust either the remote wired humidity control or the built in dehumidistat so that the unit maintains the desired level of humidity.

⚠ CAUTION!

WHEN USING A REMOTE WIRED DEHUMIDISTAT, BE SURE THE BUILT-IN DEHUMIDISTAT IS SET TO THE OFF POSITION BY TURNING IT COUNTERCLOCKWISE UNTIL IT STOPS. FAILURE TO DO SO MAY CAUSE THE UNIT TO SENSE THE HUMIDITY FROM THE WRONG AREA.

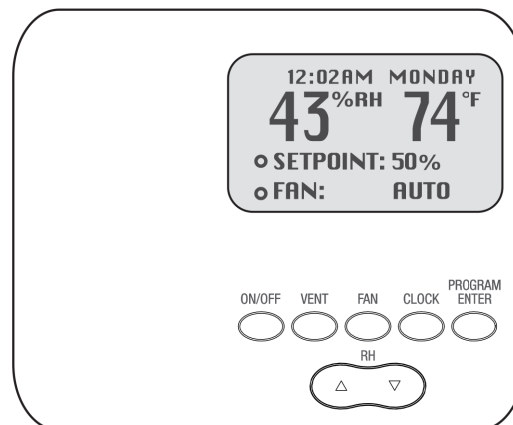
The 70V offers the D30 proprietary control. The D30 allows homeowners to monitor and control relative humidity and proper ventilation levels in their home. This control is also available with a remote sensing option.

Note: The D30 is sold as an accessory and can be purchased through your installing contractor.

Envirowise D30 Digital Control - Features

See page 20 for wiring information.

- **Central Fan Integration** – Operates HVAC fan with dehumidifier operation.
- **A/C Sensor** – Automatically activates or deactivates the dehumidifier when the air conditioner runs.
- **High Temperature Cut-Out** – Disables dehumidifier operations if household temperature reaches the cut-out set point.
- **Dry Out Cycle Timer** – Automatic fan cycling to ensure dry and clean coils.
- **Auto Reboot** – Resumes operation with prior settings in the event of power failure.



See D30 manual for detailed instructions.

Wiring Controls

⚠ CAUTION!

DO NOT ALLOW THE +24V TERMINAL ON THE ENVIROWISE 70V TO COME IN ELECTRICAL CONTACT WITH THE COM TERMINAL ON THE ENVIROWISE 70V OR DAMAGE TO THE TRANSFORMER WILL RESULT.

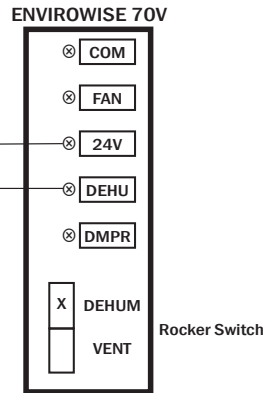
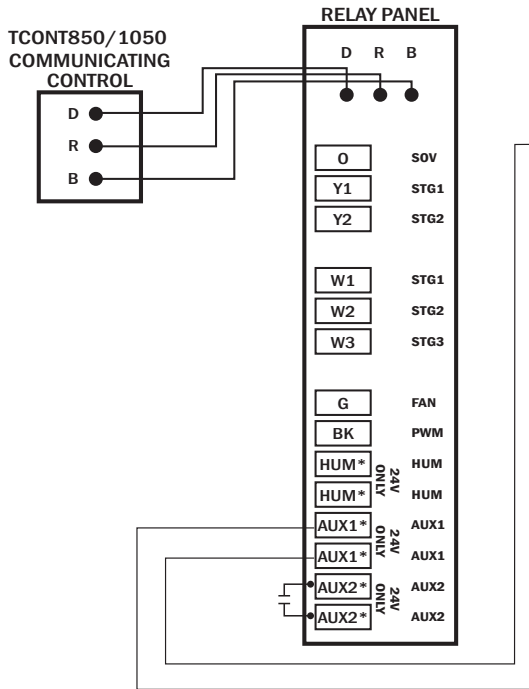
DO NOT CONNECT THE DMPR TERMINAL TO THE CONTROL IF THE OPTIONAL DAMPER IS NOT USED OR DAMAGE TO THE TRANSFORMER WILL RESULT.

Control Connections

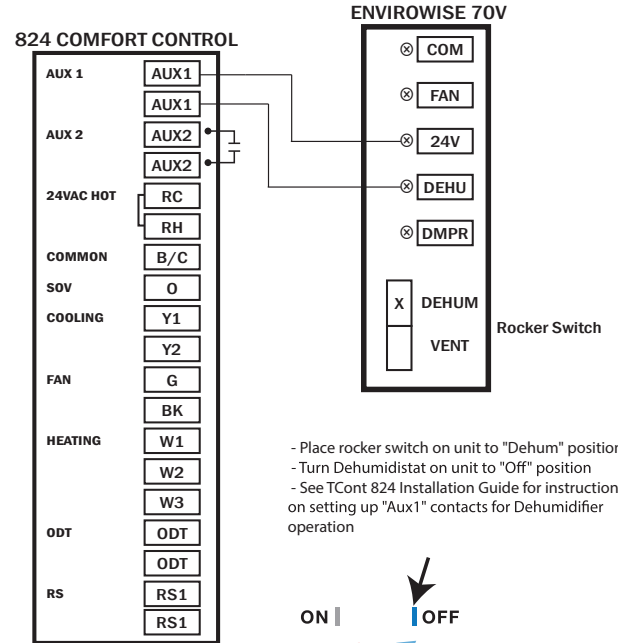
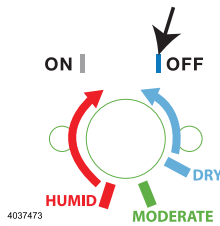
The terminal block on the 70V are labeled to prevent confusion. Depending on the control, all of the terminals on the 70V may not be used. Be sure to consult the electrical schematic in this manual or inside the access panel of the 70V before making control connections.

CONTROLS

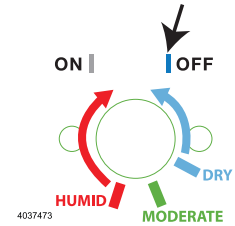
Operating as a Dehumidifier



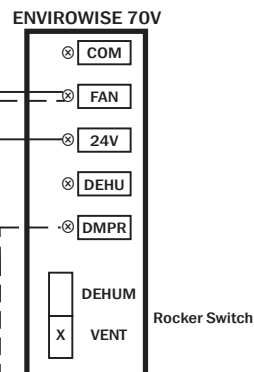
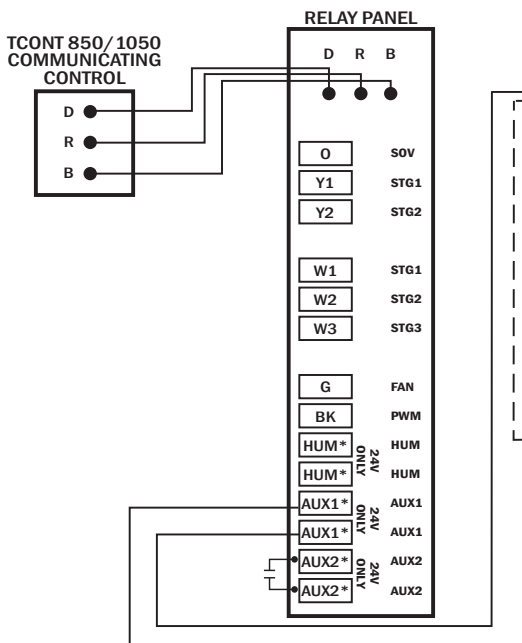
- Place rocker switch on unit to "Dehum" position
- Turn Dehumidistat on unit to "Off" position
- See TCont 850/1050 Installation Guide for instructions on setting up "Aux1" contacts on relay panel, for Dehumidifier operation



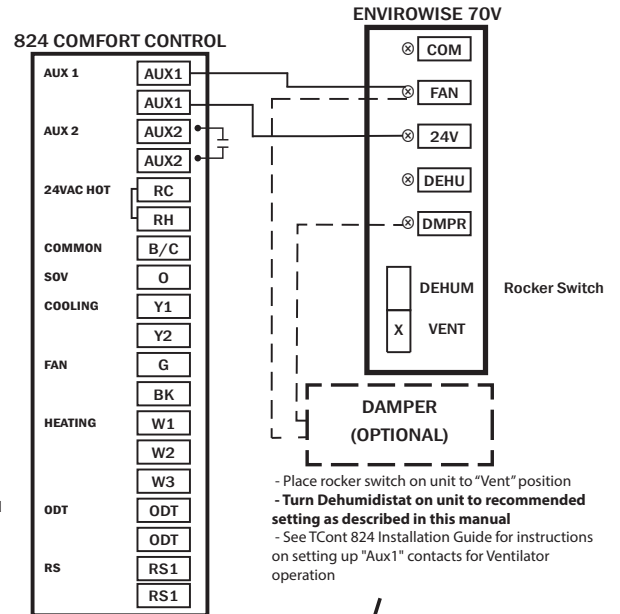
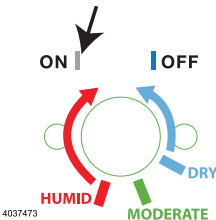
- Place rocker switch on unit to "Dehum" position
- Turn Dehumidistat on unit to "Off" position
- See TCont 824 Installation Guide for instructions on setting up "Aux1" contacts for Dehumidifier operation



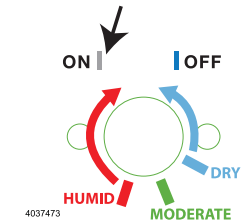
Operating as a Ventilator



- Place rocker switch on unit to "Vent" position
- Turn Dehumidistat on unit to recommended setting as described in this manual
- See TCont 850/1050 Installation Guide for instructions on setting up "Aux1" contacts on relay panel, for Ventilator operation



- Place rocker switch on unit to "Vent" position
- Turn Dehumidistat on unit to recommended setting as described in this manual
- See TCont 824 Installation Guide for instructions on setting up "Aux1" contacts for Ventilator operation



If no external control is used, the Envirowise 70V may be used as a stand alone dehumidifier. In this condition, the dehumidifier must be located within the space it is intended to dry.

TERMINAL BLOCK CONTROL OPERATION	
COM	24VAC Power transformer neutral side
FAN	Fan control
+24VAC	Transformer high side
DEHU	Dehumidification (fan and compressor) control
DMPR	24VAC Power transformer neutral side
*	Spare terminal (open)

Between the COM/DMPR terminals and the +24VAC terminal is a 40VA transformer. This low voltage power source powers the relay coils which control the fan and compressor. This 24VAC transformer can also be used to power HVAC accessories external to the dehumidifier. See sequence tables on pages 20-22.

VENT/DEHUM SWITCH CONTROL OPERATION

The Envirowise 70V may be used as either a Dehumidifying Ventilator or Ducted/Stand-Alone Dehumidifier. To accommodate these different modes of operation, the 70V is equipped with a Rocker Switch on the back-side of the unit labeled "VENT/DEHUM". Refer to pages 20-22 for instructions on how to correctly set this switch.

⚠ CAUTION!

THIS SWITCH MUST BE IN THE CORRECT POSITION BASED ON ITS MODE OF INSTALLATION AS DETAILED ON PAGES 20-22. ATTEMPTING TO USE THE 70V WITH THE INCORRECT SWITCH POSITION WILL RESULT IN NON-OPERATION.

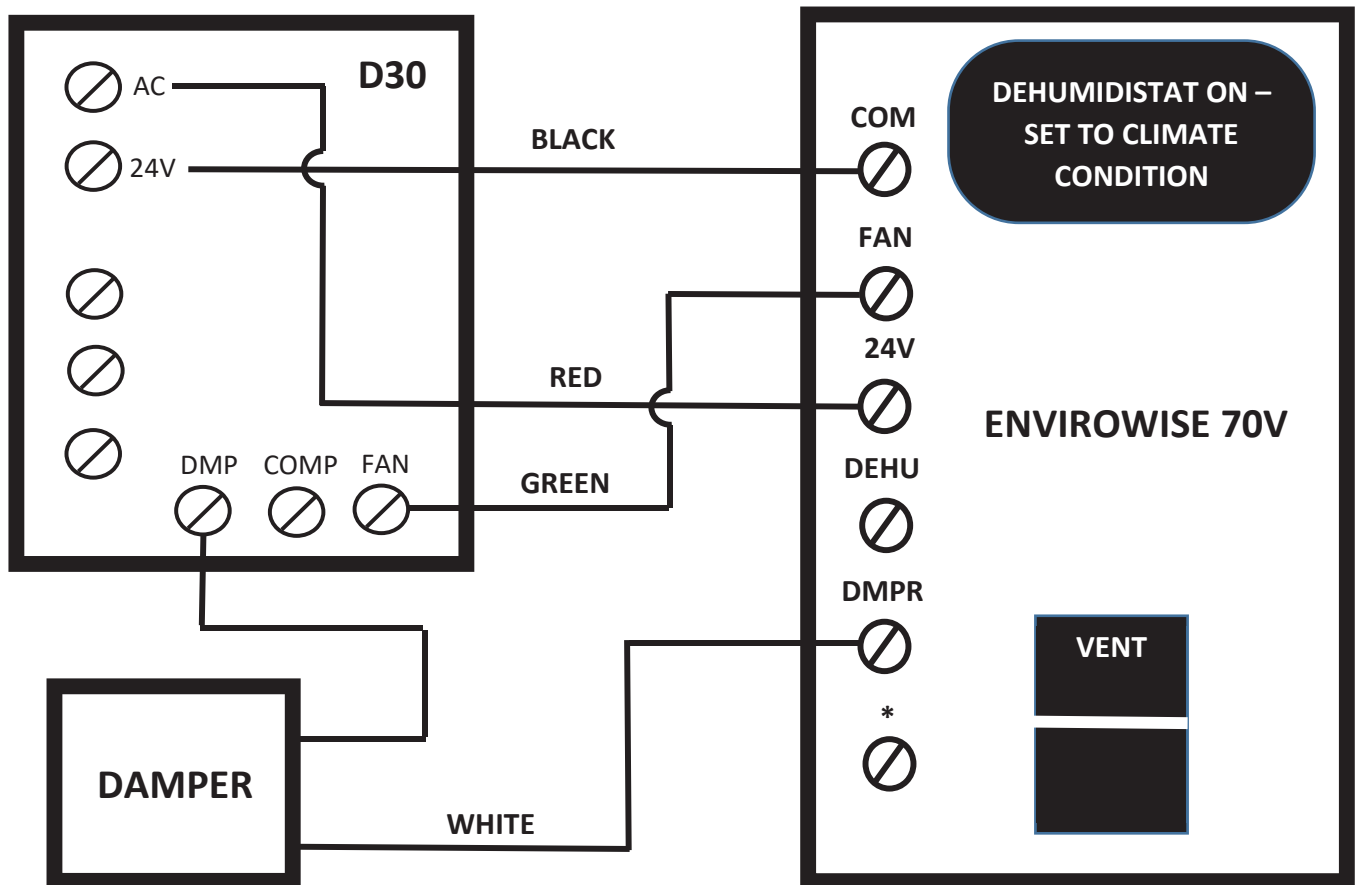
SEQUENCE AND OPERATION

Ventilator Mode (VENT):

*Dehumidistat set to Climate Condition

*VENT/DEHUM Switch set to VENT

Dehumidistat	Ventilator Control	Fan	Compressor	Damper
ON	ON	ON	ON	ON
ON	OFF	OFF	OFF	OFF
OFF	ON	ON	OFF	ON
OFF	OFF	OFF	OFF	OFF



Trane 70V Sequence Table / Control Wiring/ Operation Flow

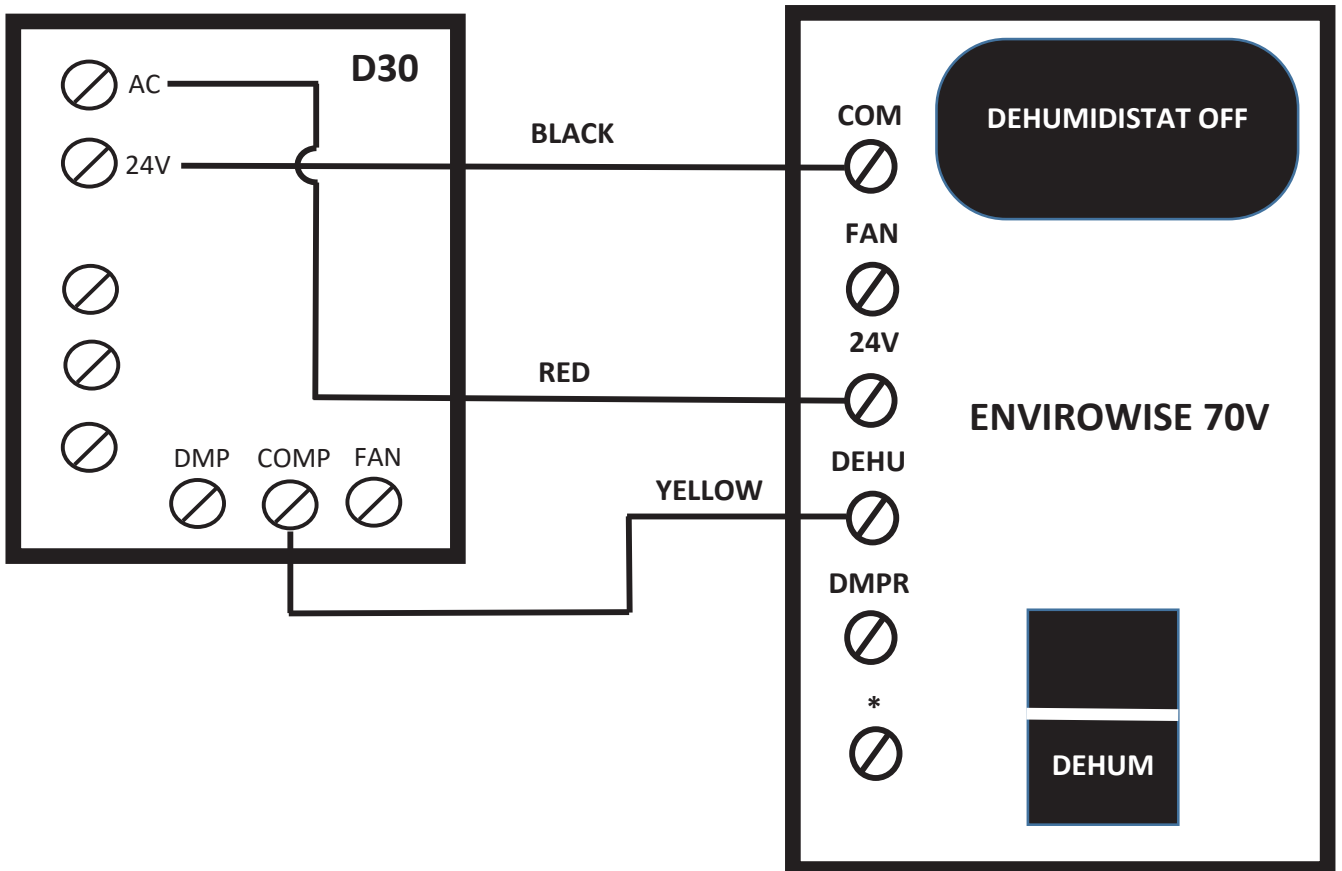
SEQUENCE AND OPERATION

Ducted Dehumidifier Mode (DEHUM):

*Dehumidistat set to OFF

*VENT/DEHUM Switch set to DEHUM

Dehumidistat	Dehumidifier Control	Fan	Compressor
OFF	ON	ON	ON
OFF	OFF	OFF	OFF



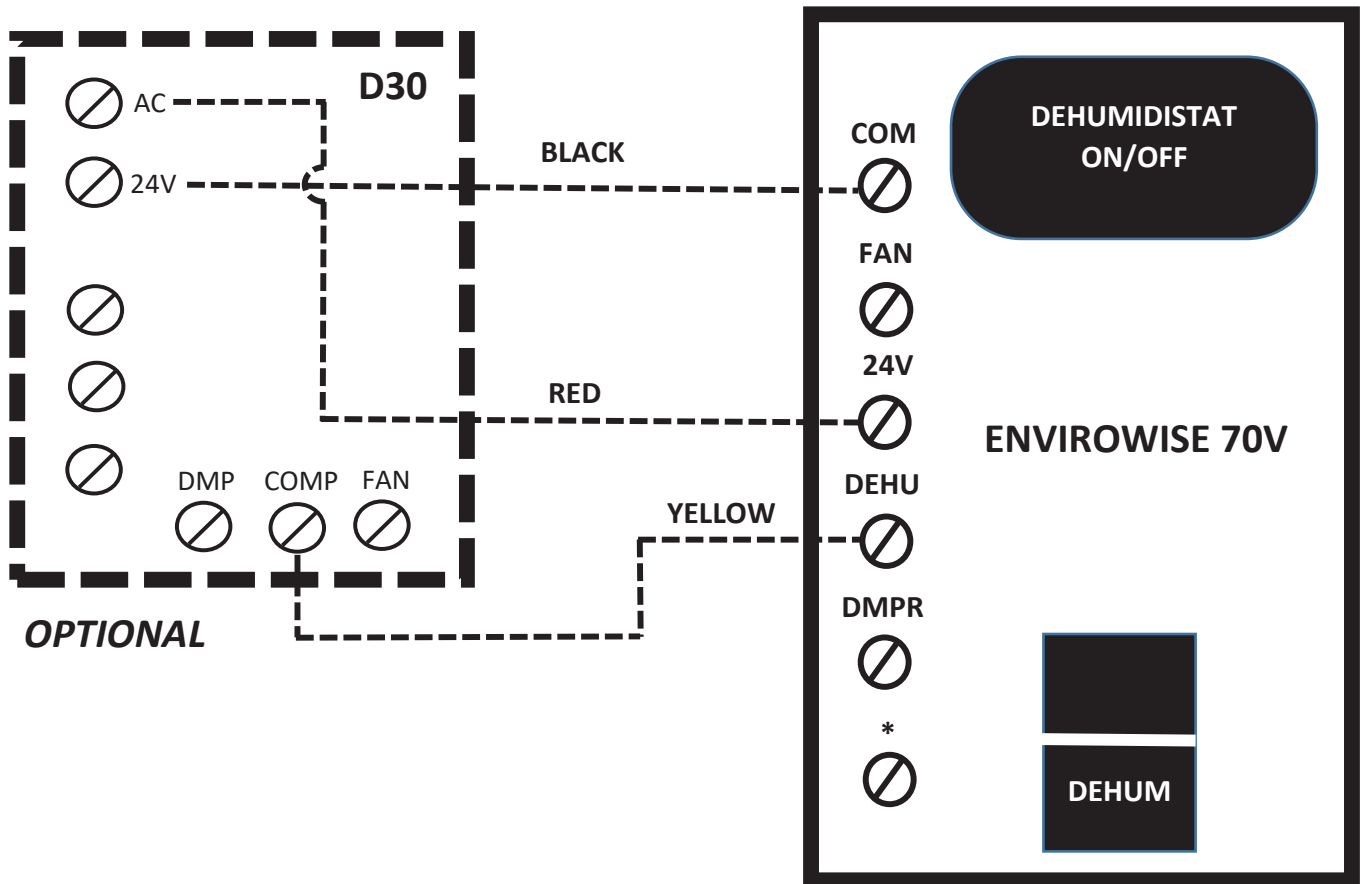
SEQUENCE AND OPERATION

Stand Alone Dehumidifier Mode (DEHUM):

*Dehumidistat set to Climate Condition - OR - OFF (with use of External Wired Control)

*VENT/DEHUM Switch set to DEHUM

Dehumidistat	Dehumidifier Control	Fan	Compressor
ON	ON	ON	ON
ON	OFF	ON	ON
OFF	ON	ON	ON
OFF	OFF	OFF	OFF



FILTER INSTRUCTIONS

The 70V is equipped with a MERV-11 air filter. A MERV-14 filter and filter housing is available as an optional accessory. Contact your installing contractor for more information. DO NOT operate the unit without the standard MERV-11 filter. Operating the unit with no filter in place will damage the coil and may void the factory warranty.

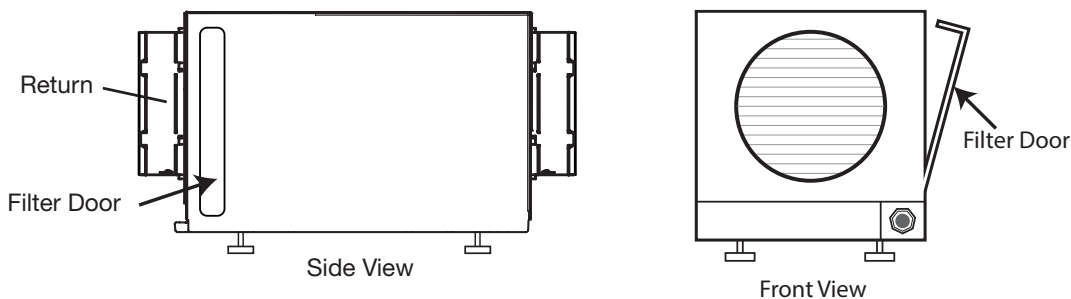
⚠ CAUTION!

MAKE SURE UNIT IS OFF BEFORE CHANGING THE FILTER.

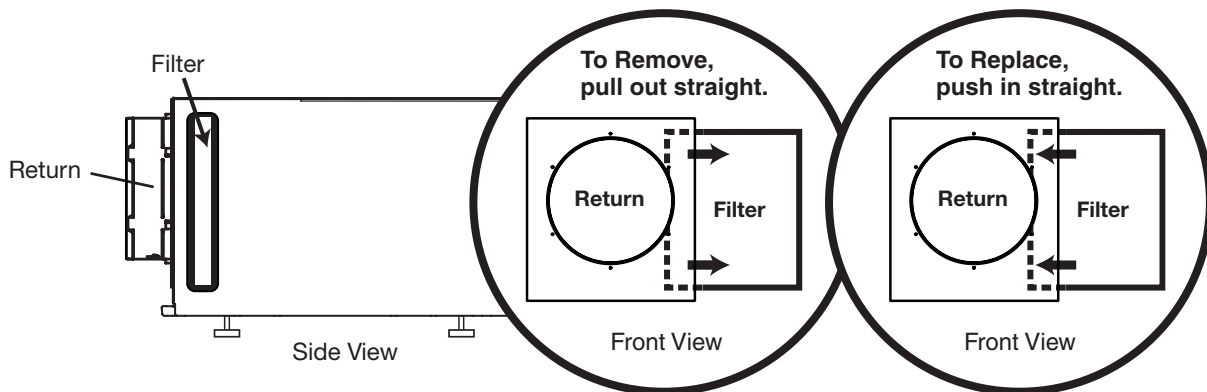
Changing the Filter

For greatest filtration and efficiency of the 70V, it is recommended the air filter be replaced every three to six months with a MERV-11 rated filter.

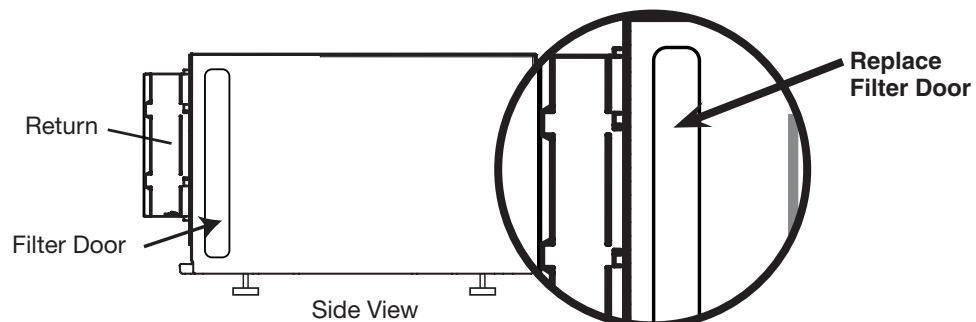
Step 1: Remove the filter door from one side of the 70V by pushing the snap button in and gently pulling the door away from the unit. Then pull up to disengage the door from the slot.



Step 2: Remove the filter by gently pulling straight out of the unit. Insert new filter by gently pushing it straight into the unit. Make sure the AIR FLOW arrow on the filter is pointing into the unit.



Step 3: Replace filter door ensuring the opening is fully covered.



OPTIONAL ACCESSORIES

Optional Accessories

E4037893	D30 Control
E4037897	D30R Control (with remote)
E4037874	MERV 11 Filters 4-Pack
E4037881	MERV 11 Filters 12-Pack
E4037901	Pump Kit
E4037869	Hang Kit
E4037887	MERV 14 Filter Housing
E4037891	MERV 14 Filters 3-Pack
E4037861	6" Motorized Damper
E4037907	6" Inlet Hood
E4037863	8" Gravity Damper

Refrigerant Charging

WARNING!

SERVICING THE 70V WITH ITS HIGH PRESSURE REFRIGERANT SYSTEM AND HIGH VOLTAGE CIRCUITRY PRESENTS A HEALTH HAZARD WHICH COULD RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR PROPERTY DAMAGE. SERVICE MUST BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN.

SERVICE

Troubleshooting

⚠ CAUTION!

TROUBLESHOOTING MUST BE PERFORMED BY A QUALIFIED HVAC TECHNICIAN.

Symptom	Possible Reason	Troubleshooting Procedure
Neither fan nor compressor running. Dehumidification is being called for.	<ol style="list-style-type: none"> 1. Dehumidifier unplugged or no power to outlet. 2. Humidity control set too high. 3. Loose connection in internal or control wiring. 4. Defective compressor relay. 5. Defective control transformer. 6. Defective Dehumidistat 7. VENT/DEHUM Switch is set to VENT. 	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>⚠ WARNING!</p> <p>ELECTRICAL SHOCK HAZARD: ELECTRICAL POWER MUST BE PRESENT TO PERFORM SOME TESTS. THESE TESTS MUST BE PERFORMED BY A QUALIFIED SERVICE PERSON.</p> </div> <p>Troubleshooting Procedure for Control Related Issues</p> <p>This method of diagnosis will test the 3 main components of the control circuit individually to indicate any potential problems. This is to be used when the control will not activate the main unit.</p> <ol style="list-style-type: none"> 1. Detach field control wiring connections from the Terminals on the main unit. 2. Connect the 24V and FAN Terminals together; only the fan should run. Disconnect the Terminals. 3. Connect the 24V and DEHU Terminals together; fan and compressor should run. Disconnect the Terminals. 4. If this test works, the main unit is working correctly from a control standpoint. 5. Reconnect field control wiring to the Terminals on the main unit. 6. Remove the control panel cover and detach the field wiring from the control connections. 7. Connect the 24V and FAN Terminals together; only the fan should run. Disconnect the wires. 8. Connect the yellow and blue wires together; fan and compressor should run. Disconnect the Terminals. 9. If this test works, then the field control wiring is ok. 10. If the problem persists, then the control is most likely faulty.
Compressor is not running. Dehumidification is being called for. Fan is running.	<ol style="list-style-type: none"> 1. Defective compressor run capacitor. 2. Loose connection in compressor circuit. 3. Defective compressor overload. 4. Defective compressor. 5. Defrost thermostat open. 	
Compressor cycles on and off. Dehumidification is being called for.	<ol style="list-style-type: none"> 1. Low ambient temperature and/or humidity causing unit to cycle through defrost mode. 2. Defective compressor overload. 3. Defective compressor. 4. Defrost thermostat defective. 5. Dirty air filter(s) or air flow restricted. 6. Defective fan or relay. 	

Troubleshooting (Continued)

Symptom	Possible Reason	Troubleshooting Procedure
Fan is not running. Dehumidification or fan is being called for.	<ol style="list-style-type: none"> 1. Loose connection in fan circuit. 2. Obstruction prevents fan impeller rotation. 3. Defective fan. 4. Defective fan relay. 	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>⚠ WARNING!</p> <p>ELECTRICAL SHOCK HAZARD: ELECTRICAL POWER MUST BE PRESENT TO PERFORM SOME TESTS. THESE TESTS MUST BE PERFORMED BY A QUALIFIED SERVICE PERSON.</p> </div> <p>Troubleshooting Procedure for Performance Related Issues</p> <p>This method of diagnosis is used to function check the internal components in the dehumidifier. This is to be used when a performance issue is suspected.</p> <ol style="list-style-type: none"> 1. Set the humidity controller all the way to the most humid setting or off position – Did the unit shut off? 2. If yes, turn the fan setting to the ON position – does the fan start? 3. If fan starts, leave in the fan ON position and set the humidity all the way to driest setting. May have to wait 5 minutes for the compressor to start. 4. Listen for a distinct buzzing/humming sound of a compressor starting up – do you hear this noise? 5. If compressor is running and continues to run, after about 15 minutes you should feel a slight increase in air temperature being discharged out of the discharge air side of the unit. 6. If so, depending on your environmental conditions (temp/Rh%), you should see some water production out of the hose within 30 minutes or so. (<i>Note: If the room temperature is 55 degrees or below and/or in area of low relative humidity, the dehumidifier will produce little to no water.</i>) 7. Collecting the water removed in a 24 hour period will give a measurement of performance.
Low dehumidification capacity (evaporator is frosted continuously). Dehumidification is being called for.	<ol style="list-style-type: none"> 1. Defrost thermostat loose or defective. 2. Low refrigerant charge. 3. Dirty air filter(s) or air flow restricted. 4. Excessively restrictive ducting connected to unit. 	
No ventilation. Ventilation is being called for.	<ol style="list-style-type: none"> 1. Loose connection in ventilation control circuit. 2. Loose connection in damper power circuit. 3. Defective fresh air damper. 4. VENT/DEHUM Switch is set to DEHUM. 	
Dehumidifier removes some water, but not as much as expected.	<ol style="list-style-type: none"> 1. Air temperature and/or humidity have dropped. 2. Humidity meter and or thermometer used are out of calibration. 3. Unit has entered defrost cycle. 4. Dirty air filter(s) or air flow is restricted. 5. Defective defrost thermostat. 6. Low refrigerant charge. 7. Air leak such as loose cover or ducting leaks. 8. Defective compressor. 9. Restrictive ducting. 	



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