

**MODELS:**

VH30100 30-100 CFM HRV

VH30120R 30-120 CFM HRV with Recirculation

VH30160 30-160 CFM HRV

VH30160R 30-160 CFM HRV with Recirculation

VH70220 70-220 CFM HRV

VE30100 30-100 CFM ERV

VE30160 30-160 CFM ERV

VE70220 70-220 CFM ERV

## VH SERIES HEAT RECOVERY VENTILATORS

## VE SERIES ENERGY RECOVERY VENTILATORS

### Homeowner's Guide



**IMPORTANT: READ AND SAVE THESE INSTRUCTIONS. THIS GUIDE TO BE LEFT WITH EQUIPMENT OWNER.**



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**⚠ CAUTION!**

Do not install in a cooking area or connect directly to any appliance. Turn off all integral disconnects before servicing.

**Notice:** Prior to installing, serious consideration must be taken to ensure this ventilation system will operate properly if integrated with any other type of mechanical system such as a forced air system or an air handling unit. To ensure proper operation and compatibilities of both systems, the airflows of the Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV) must be balanced by the installer, by following the procedures found in the Installation and Operation manual supplied with this ventilator.

The way in which your HRV/ERV is installed may make a significant difference to the electrical energy consumed when operating. To minimize the electricity use of the HRV/ERV, a stand-alone fully ducted installation is recommended. If you choose a simplified installation that operates your furnace or air handler for room-to-room ventilation, electrical energy consumption and operating cost will be greatly reduced if the blower of the system's furnace or air handler has an electronically commutated (ECM) motor.

**Limitations:** The product is for residential applications only and must be installed in accordance with all national and local regulations, building and safety codes.

**Proprietary Notice**

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**Liability Notice**

Daikin North America LLC does not accept any liability for installations of ventilation equipment installed by unqualified personnel or the use of parts/components/equipment that are not authorized or approved by Daikin.

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**\*INSTALLATION DATE (MM/DD/YYYY) ( / / )**

**MODEL#:** \_\_\_\_\_

**SERIAL#:** \_\_\_\_\_

**\*Ask Dealer to provide this information.**



**Our continuing commitment to quality products may mean a change in specifications without notice.**

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 www.cleancomfort.com

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**⚠ WARNING!**

- To reduce the risk of injury, disconnect power to the ventilation system while performing service on the unit. There are impeller wheels turning at a very high speed that must fully stop rotating prior to accessing the inside of the unit.
- To reduce the risk of electric shock or fire, do not perform any service to the HRV system other than as stated in the operating manual instructions.
- To reduce the risk of electric shock, this ventilation system comes equipped with a 3-prong plug. This plug will fit in a polarized 120VAC outlet in only one orientation. Do not modify the power plug in any way; if modified, there is risk of electric shock or fire.
- Do not use the ventilation system for removal of flammable fumes, gases or connect directly to any appliances.
- Do not modify, repair or disassemble this system. These tasks are to be performed by authorized serviced personnel only. Fire, electrical shock and/or bodily injury may result if these warnings are not followed.
- Always assess the operation of the ventilation system with regard to how it may interact with vented combustion equipment (i.e. Gas Furnace, Oil Furnace, Combustion, Appliances, etc.)

**⚠ CAUTION!**

- Do not use this ventilation system for outdoor applications. The electrical components in this ventilation system are only certified only for indoor use.
- Do not pull or twist the ventilation system's power cord when disconnecting it from the power receptacle. Grasp the plug firmly, not the cord.
- Do not obstruct or cover the air intake or air outlet of the ventilation system.
- Do not use for ventilation of areas with swimming pools or spas.



# VENTILATOR OPERATION

This ventilation system has been engineered and designed to improve the indoor air quality in your home. It does this by replacing stale, polluted indoor air with fresh filtered air from the outdoors and reducing excess humidity inside the home.

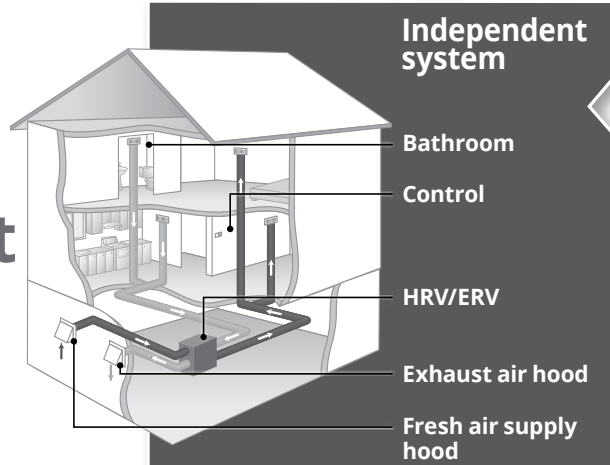
In the winter months, the ventilator's heat recovery core will reclaim the heat from the outgoing stale air and use this heat to temper the incoming fresh air, reducing the cost of ventilating your home during winter compared to ventilation without heat recovery.

In warmer seasons, the heat recovery core will use the (cool) conditioned outgoing stale air to temper the hot, incoming fresh air. If your ventilator is an Energy Recovery Ventilator (ERV), it will also transfer moisture through the heat exchange core, helping to reduce humidity loss from the home during the winter months and humidity gain in the home during the summer months.

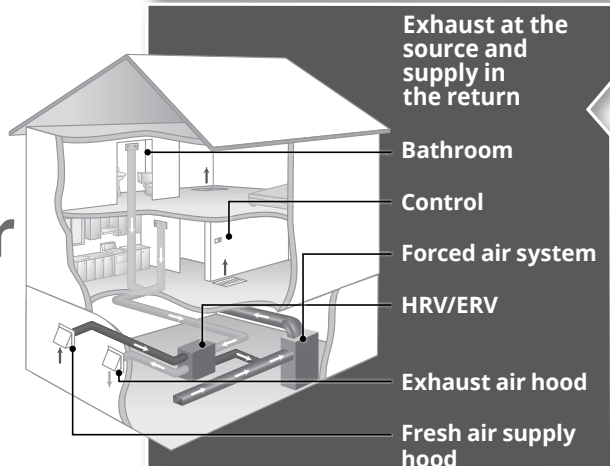
## Types of Installations

Fresh air  
 Exhaust air

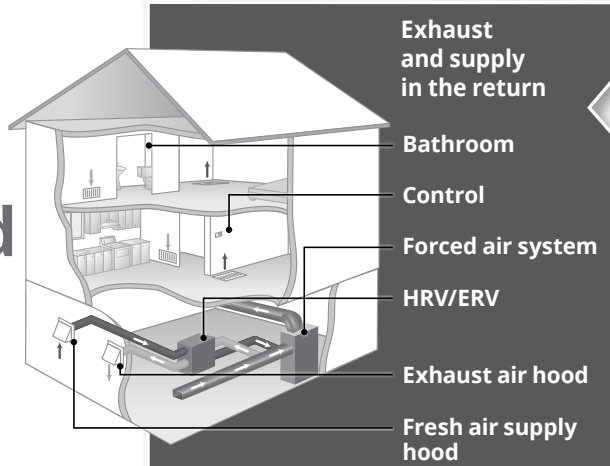
**Best**



**Better**



**Good**

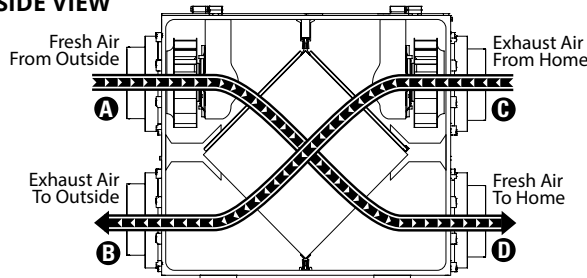




**Ventilation System**

All models except VH30120R and VH30160R

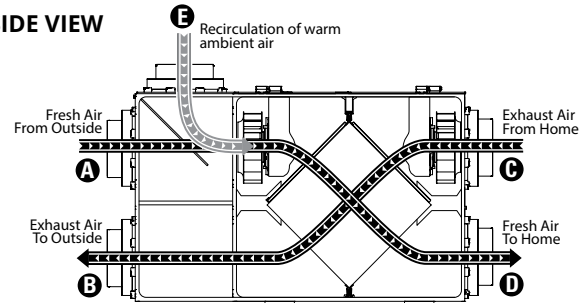
**SIDE VIEW**



**Ventilation System with Recirculation Mode**

VH30120R and VH30160R only

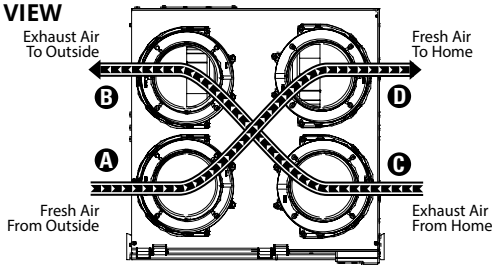
**SIDE VIEW**



**Compact Ventilation System**

VH30100 and VE30100 Models

**TOP VIEW**



- Fresh Air from Outside Port **A**: Inlet for fresh outdoor air.
- Exhaust Air to Outside Port **B**: Outlet for exhausting stale, humid and polluted air to the outdoors after transferring its heat through the recovery core.
- Exhaust Air From Home Port **C**: Exhausts stale, humid and polluted air to the outside from multiple locations of the home or from the return air of the forced air system, prior to passing through the heat recovery core. e.g. Bathroom, laundry room etc.
- Fresh Air to Home Port **D**: Introduces and distributes clean and fresh air to your home. The home's fresh air registers are normally installed in the main living areas or in the return/supply duct of the forced air system. e.g. living room, bedrooms, recreation room etc.
- 5th Port on "R" Models only **E**: Recirculation port; used during defrost sequence or when the homeowner has selected RECIRC mode on the remote wall control, if installed.
- Ventilation Control: Use for selecting ventilation modes as well as adjusting continuous (CONT) air flow rates: Increasing (+)/Decreasing (-)
- German-Engineered Motors (2): Designed with high performance and reliability, they are maintenance-free for your comfort and peace of mind.
- Synthetic Filters: Capture large debris from the air stream and protect your heat recovery core from potential obstruction by these particles.

- Heat Recovery Core: A cross-flow type that is designed to transfer the heat between both exhaust and supply air streams without allowing them to mix. This heat recovery helps to conserve energy while maintaining a supply of fresh air to the home, compared to ventilating without heat recovery.
- Energy Recovery Core: An energy recovery core transfers heat like the heat recovery core plus it transfers latent energy (humidity) as well. This is particularly useful for keeping humidity in the home (during dry winter months) or out of the home (during humid summer months).
- Condensate Drain Pan and Drainage Hose: Captures the water that accumulates during the heat transfer and defrost sequence in the fall, winter and early spring seasons. A drain hose is connected to the drain pan and serves to remove the accumulation of water. It is normal during summer months to find no condensation in either the drain pan or the drain hose.
- Automatic Defrost Sequence: The defrost sequence is electronically controlled according to the outdoor air temperature. The sequence is activated at -5°C (23°F) and colder. This process helps to prevent ice buildup on the heat recovery core during winter.

**Defrost Sequence of Operations:**

**VH30120R**

- An automatic motorized damper closes the fresh air (supply) and exhaust air ports and opens the recirculation damper. This allows the ventilator to recirculate the ambient air in the house while the fresh air motor is turned off.

**VH30160R**

- An automatic motorized damper closes the fresh air (supply) port, the exhaust fan shuts off, the supply fan increases its speed according to the outside temperature, and the ventilator draws air from the 5th port located on the top of the unit.

**All other Clean Comfort Ventilators**

- Supply fan shuts off and the exhaust fan increases its speed according to the outside temperature.



## VENTILATION CONTROL

The control mounted on the ventilator serves two purposes:

### 1. Acts as a mode selector (OFF, CONT, and INTER)

- **INTER (Intermittent):** When the selector switch is in the Intermittent (INTER) position, the ventilation system will only run when there is a request for ventilation from a remote wall control. At this time, the ventilator will operate on high speed until the relative humidity level is below the wall control's set point or the VHP-T3 timer has completed its programmed time period.
- **CONT (Continuous):** When the selector switch is in the Continuous (CONT) position, the ventilation system will exhaust stale indoor air to the outside and will introduce fresh outdoor air continuously into the house at low speed. When there is a request for ventilation from a remote wall control, the ventilation system will operate at high speed. (This mode is recommended for best indoor air quality)
- **OFF:** When the selector switch is in the OFF position, the ventilation system will not run even if there's a request for ventilation from a remote wall control.

**Tip:** During hot and humid days, it is recommended that the wall control be set to INTERM mode (if your wall control offers that feature). This will reduce the amount of warm and humid fresh air drawn into the house.

**Note:** The VHP-RD3P or VHP-RD3D wall controls, if installed, can override any setting on the ventilator's control except when the ventilator's control is set to the OFF position.

### 2. Acts as a variable speed selector

- When the (+) button is pushed this will increase the CONT speed of both ventilation system motors from the previous settings.
- When the (-) button is pushed this will decrease the CONT speed of both ventilation system motors from the previous settings.
- **Note:** When the LED stops blinking the unit is at its maximum high speed or at its minimum low speed.
- **Important:** If the ventilator speed is set too high, extreme dryness can occur in the home during winter months and extreme humidity levels can occur in the home during hot humid days. If the ventilator speed is set too low, the home can become too humid and the levels of pollutants in the home can become unacceptably high.





## VHP Ventilation Controls

The humidity sensor dial on a VHP remote wall control should be set relative to the outdoor conditions. During the winter season, the humidity sensor dial should be set within the comfort zone range, between 30% and 60% relative humidity. If the home has excess dryness, turn the humidity sensor dial counterclockwise to a higher setting. If the home has excess humidity, turn the humidity sensor dial clockwise to a lower setting. To determine the relative humidity level in your home, turn the humidity sensor dial counterclockwise to the OFF position, then slowly turn it back clockwise until you hear a “click”. The position where the control makes a “click” sound is the approximate level of relative humidity in the home.

**Note:** The comfort zone for relative humidity is between 30% and 60%; please adjust according to your needs or requirements.

### Relative Humidity Sensor Dial (Off/60%/Comfort Zone/30%):

- Overrides the ventilator control and operates ventilator at high speed when the measured humidity level is above the set point on the wall control.
- If the ventilation system is in CONT or INTER mode, the ventilation system will automatically return to its original mode once the level of humidity is below the set point.

**Note:** Always leave a small gap when closing curtains and blinds in the winter months, this will allow proper circulation and will reduce the likelihood of condensation forming on windows, that can occur when warm air is trapped between cold windows and curtains or blinds.

## VHP-RD1

### Remote Ventilation Wall Control

#### Features

- Humidity Sensor Dial to control ventilation operation
- Compatible with all Clean Comfort HRVs and ERVs



## VHP-RD2 Remote Ventilation Wall Control and VHP-RD3P Advanced Remote Ventilation Wall Control

#### Features

- Humidity Sensor Dial to control ventilation operation
- Compatible with all Clean Comfort HRVs and ERVs
- Range Control (OFF, NORMAL and REDUCED)
- Mode Control (INTERM and CONT) (on VHP-RD3P only)
- Green LED light on = Ventilator is operating in OVERRIDE mode
- Orange LED light on = Ventilator is operating in CONT/INTERM mode

### Range Selector Switch (OFF/NORMAL/REDUCED):

- OFF - Turns off the ventilation system
- NORMAL - The ventilation system operates at the Continuous (CONT) speed set by the installer
- REDUCED - The ventilation system operates at 30% lower speed when in CONT mode and 15% lower speed when in OVERRIDE mode

**Note:** REDUCED mode will not operate below the minimum low speed of the ventilation system



### Mode Selector Switch (INTERM/CONT):

- **INTERM** - When the selector switch is in the INTERM position, the ventilation system will sit idle until there is a request for ventilation from a remote wall control. At this time, the unit will run on high speed until the relative humidity is below the set point on the wall control or the VHP-T3 timer, if installed, has completed its time period.
- **CONT** - Provides continuous ventilation at the speed set by the installer. The ventilation system will increase to high speed when the relative humidity is above the set point on the wall control or the VHP-T3 timer, if installed, has been activated. This mode is recommended for best indoor air quality.





## OPERATING YOUR WALL CONTROLS



### VHP-RD3D

#### Deluxe Remote Ventilation Wall Control

##### Features

- Humidity Sensor Dial to control ventilation operation
- Compatible with Clean Comfort VH30120R and VH30160R HRVs models only
- Range Control (OFF, NORMAL and REDUCED)
- Mode Control (INTERM, RECIRC and CONT)
- Green LED light on = OVERRIDE
- Orange LED light on = CONT/INTERM

##### Range Selector Switch (OFF/NORMAL/REDUCED)

- **OFF** - Turns off the ventilation system
- **NORMAL** - The ventilation system operates at the Continuous (CONT) speed set by the installer
- **REDUCED** - The ventilation system operates at 30% lower speed when in CONT mode and 15% lower speed when in OVERRIDE mode

**Note:** REDUCED mode will not operate below the minimum low speed of the ventilation system

##### Mode Selector Switch (INTERM/RECIRC/CONT):

- **INTERM** - When the selector switch is in the INTERM position, the ventilation system will sit idle until there is a request for ventilation from a remote wall control. At this time, the unit will run on high speed until the relative humidity is below the set point on the wall control or the VHP-T3 timer, if installed, has completed its time period.
- **RECIRC** – Operates the ventilator on Recirculation mode. The fresh air intake port of the HRV is closed in order to recirculate the air within the house, preventing fresh outdoor air from entering the house through the HRV.
- **CONT** - Provides continuous ventilation at the speed set by the installer. The ventilation system will increase to high speed when the relative humidity is above the set point on the wall control or the VHP-T3 timer, if installed, has been activated. This mode is recommended for best indoor air quality.



### VHP-T3

#### Push Button Timer

##### Features

- 20/40/60 minutes of ventilation at high speed
- Green LED light on = Ventilator is operating in OVERRIDE (high speed) mode

##### Operation

- Press the button until the LED blinks once and then release. This operates the ventilation system on high speed for 20 minutes.
- Press the button until the LED blinks twice and then release. This operates the ventilation system on high speed for 40 minutes.
- Press the button until the LED blinks three times and then release. This operates the ventilation system on high speed for 60 minutes.
- To turn off, press the button once. This will cancel the programmed ventilation time period and your ventilation system will return to previous settings.

**Tip:** The VHP-T3 model push button timer allows the homeowner to temporarily increase ventilation in the home to reduce airborne pollutants to or lower the humidity level.

#### CAUTION!

It is normal to experience condensation on your windows when there are large swings in indoor or outdoor temperatures, when excess humidity is generated in the home (e.g. cooking, showers), or when curtains and blinds are fully closed.





## TROUBLESHOOTING

Question / Item	Diagnosis / Solution
<ul style="list-style-type: none"> <li>Ventilator not running</li> </ul>	<ul style="list-style-type: none"> <li>Verify breaker in main electrical panel</li> <li>Verify the HRV or ERV is in the ON position</li> <li>Verify all wall controls connected to the ventilator are activated to supply power to the unit</li> <li>Unplug ventilator and verify that the wall control is wired correctly to the connection box on the side of the unit</li> <li>Verify main outlet polarization</li> </ul>
<ul style="list-style-type: none"> <li>Air is too dry</li> </ul>	<ul style="list-style-type: none"> <li>Increase the humidity level on the wall control (Turn dial towards 60%)</li> <li>Reduce continuous airflow rate</li> <li>Switch ventilation mode from continuous to intermittent</li> <li>Increase the humidity level in the home by installing a whole home humidifier</li> </ul>
<ul style="list-style-type: none"> <li>Air too humid</li> </ul>	<ul style="list-style-type: none"> <li>Suggest continuous operation of ventilator</li> <li>Reduce humidity setting on the wall control (Turn dial towards 30%)</li> <li>Increase continuous airflow rate (ventilator fan speed)</li> <li>Insufficient ventilation, check that the capacity of the ventilator is sufficient for the size of the home</li> <li>Internal source of moisture, e.g. heating wood stove in basement, possible water leaks in foundation or poor insulation R-value or clothes dryer is venting in basement</li> </ul>
<ul style="list-style-type: none"> <li>Vibration or noise</li> </ul>	<ul style="list-style-type: none"> <li>Verify that the correct mounting equipment (vibration mounting straps, hanging chains or wall bracket) was used when hanging the ventilator.</li> <li>Verify that a section of flexible duct is installed between the ventilator and the rigid duct.</li> <li>Verify that the motors are operating properly and the fans are rotating freely and are not obstructed by any debris</li> </ul>
<ul style="list-style-type: none"> <li>Cold air</li> </ul>	<ul style="list-style-type: none"> <li>Misplaced supply outlets</li> <li>Defrost not operating correctly</li> <li>The ventilator is not properly balanced</li> <li>High airflow on furnace continuous mode</li> <li>Ensure ventilator is interlocked when integrated with forced air system</li> </ul>
<ul style="list-style-type: none"> <li>Pollutants</li> </ul>	<ul style="list-style-type: none"> <li>Ensure proper clearance of ventilation hoods from source of pollutants</li> <li>Refer to section "Installing Ventilation Hoods for Fresh Air and Exhaust".</li> </ul>
<ul style="list-style-type: none"> <li>Condensation</li> </ul>	<ul style="list-style-type: none"> <li>Verify that the ventilator is level to ensure proper drainage</li> <li>Verify that the duct connections are secured with screws to the ventilator.</li> <li>Verify the fresh (supply) side duct connections are fully insulated and that the home has a properly-installed vapor barrier to ensure the home is sealed tightly.</li> <li>Look for any sections of crushed ducting, failing duct straps, punctured vapor barrier, or missing insulation.</li> <li>Look for signs of water accumulation/leakage/dripping</li> <li>Verify that the drain connection is not kinked; i.e. that the "P" trap is not too close to the ventilator or is blocked with debris.</li> </ul>



**ROUTINE MAINTENANCE**

**Seven-Step Maintenance Schedule**

With routine preventative maintenance, you can avoid unnecessary problems, ensure the effectiveness of your ventilator, and prolong its life.

**⚠ WARNING!**

Be sure to disconnect the electrical power before servicing your system

**1. Clean or replace air filters.**

Filters, which are located within the ventilator, should be cleaned every two to three months. Filters should be vacuumed first, then washed with a mild soap and water. Most washable filters will last several years before needing to be replaced.

**2. Clean the exterior intake and exhaust vents of obstructions.**

Check the outside vents regularly to ensure that the screen openings are not obstructed by grass, bushes, leaves, snow or other debris.

**3. Clean and inspect the heat-exchange core**

Do this twice a year and clean the core as required. A build-up of dust and dirt can restrict airflow and reduce the efficiency of the ventilator. After inspection and cleaning, make sure the core is replaced right-side-up.

**4. Clean the condensate drain and pan**

Twice a year, check the condensate drain, pan and tubing to ensure that they are open and free-flowing. The tubing can be disconnected for cleaning. The condensate drain must have a "trap" in the tubing that traps a quantity of water and helps prevent unpleasant odors from entering the ventilator via this tubing.

**5. Inspect the fans**

The fan motors on the ventilator are designed to operate continuously without lubrication and should not require inspection. Inspect the blower fans periodically for dirt on the blades, and remove it by gently brushing the blades or using a vacuum cleaner.

**6. Clean the grilles and inspect the ductwork**

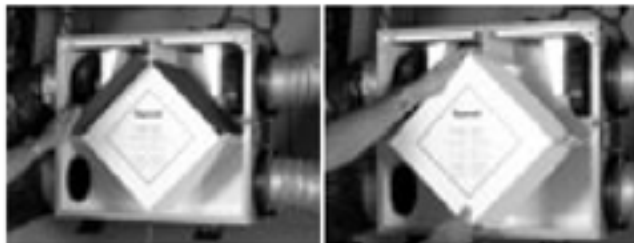
Clean the grilles when they are dusty. At least once a year, visually inspect the ductwork leading to and from the ventilator. Damaged ducts can lead to condensation problems, including wet insulation, water on the floor and, ice build-up.

**7. Arrange for an annual servicing**

Your ventilator should undergo annual general servicing by a certified contractor who is familiar with its operation. If possible, have your furnace and ventilator serviced at the same time.

Daikin reserves the rights to modify a product, without prior notice, whether in price, design, color or codes, in order to offer at all times quality products that are highly competitive.

**Install and service this equipment in compliance with applicable national and local building and safety codes.**



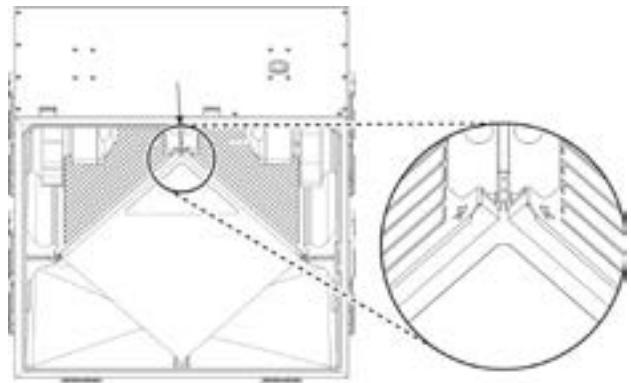
1. Slide out the filters.

2. Slide out the energy core.



3. Vacuum the filters.

4. Wash out the walls of the unit.



Louver Orientation



**WARRANTY**

**Limited Warranties**

**Coverage**

Daikin North America LLC (“Daikin”) warrants this product, to the original consumer, to be free from defects in materials and workmanship under normal use and service, for the applicable time periods listed below.

Warranty Period (Years after installation)			
Product	Ventilation motors	Heat Exchange Core	Controls, sensor and electronics
VH30100	5	As long as the original owner owns the product (Polypropylene heat recovery core)	5
VH30120R	5		5
VH70220	10		5
VH30160	10		5
VH30160R	10		5
VH30160NC	2		2
VH70220NC	2		2
VE30100	5	5 (Enthalpy energy recovery core)	5
VE30160	10		5
VE70220	10		5

**Terms Applicable to All Warranties**

THE WARRANTIES SET FORTH HEREIN ARE THE ONLY EXPRESS WARRANTIES ON THE PRODUCT, AND DAIKIN EXPRESSLY LIMITS THE DURATION OF ANY IMPLIED OR STATUTORY WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, WORKMANSHIP, OR FITNESS FOR A PARTICULAR USE, TO THE DURATION OF THE APPLICABLE EXPRESS WARRANTY. Some states and provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Daikin’s exclusive obligation, and the purchaser’s only remedy, under these warranties shall be for Daikin to supply, without charge, a new or remanufactured replacement for any covered component or part of the product which is found to be defective within the applicable warranty period; provided, however, that Daikin reserves the option to repair and return the defective

part or component. None of these warranties include labor or other costs incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts/components or replacement parts/components. DAIKIN SHALL NOT HAVE ANY OTHER RESPONSIBILITY, INCLUDING ANY LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, RESULTING DIRECTLY OR INDIRECTLY FROM ANY BREACH OF WARRANTY, EXPRESS OR IMPLIED, OR OTHER CONTRACT BREACH, NEGLIGENCE OR OTHER TORT. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Any part replaced pursuant to this warranty is warranted only for the unexpired portion of the warranty term applying to the original part.

Warranties apply only to products installed in their original location. Installation, use, care, and maintenance must be normal and in accordance with instructions contained in the Installation Instructions and the Owner’s Manual and service information. Defective parts must be returned to the distributor for credit. All work shall be performed by a licensed technician. Replacement parts replaced after expiration of the previously applicable limited warranty period (if any) are warranted for a period of one year.

Daikin will not be responsible for normal maintenance, installation, including filter cleaning and/or replacement, damage or repairs required as a consequence of faulty installation, misapplication, abuse, improper servicing, unauthorized alteration or improper operation, damage as a result of floods, winds, fires, lightning, accidents, corrosive environments or other conditions beyond the control of Daikin, parts not supplied or designated by Daikin, or damages resulting from their use.

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

Upon notice of warranted failure, information should be gathered specific to the cause and results of the failure. Warranty claim request must be filed within 30 days of failure.

Contact Daikin Technical Support Line at 1-888-724-5211 and explain the situation, including model and serial number of the machine. We will advise as to proper procedures to either repair or replace as necessary and the warranty coverage available. Important - the unit model as well as the serial number must be stated to ensure replacement parts are accurate

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# VENTILATORS

**CLEAN COMFORT™**  
INDOOR AIR ESSENTIALS