

INSTALLATION AND OPERATION MANUAL

*InspirAIR® Commercial
Series*



CAUTION

Always turn off electrical power and verify that the unit is electrically safe before performing any maintenance on the unit. This unit contains high-voltage electrical components.

**CAUTION**

This unit has moving parts. All repairs and maintenance should be performed by a qualified technician to avoid serious injuries.

**IMPORTANT – Read this manual before installation**

- Always turn **OFF** electrical power and verify that the unit is electrically safe before performing any maintenance on the unit.
- NO** modifications shall be made to the unit under any circumstances. **WARRANTY** will be immediately voided.
- Do not use this device to **EXHAUST** steam, inflammable or explosive gases.
- Electrical connections shall be made by a **QUALIFIED** electrician.
- Airflows shall be as per the **APPROVED SUBMITTAL** in order for the ventilation system to function properly and the **WARRANTY** be honored.
- Installation shall be completed in **CONFORMANCE** with **LOCAL** construction and safety codes.
- ALL** drawings, photos and diagrams contained in this document are for **REFERENCE** purposes only. Units may differ.
- ALDES reserves the **RIGHT** to **MODIFY** unit and its components without prior warning.



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4 Warranties and Exclusions



Warranty

ALDES products are guaranteed to be defect-free for a period of (2) years from the date of purchase.

- Labor not included.
- **EC** motors are guaranteed for **(1)** year

Warranty does not apply if:

- Modifications were made by or for the client.
- Product was **POORLY** installed.
- Maintenance, cleaning and lubrication were **NOT EXECUTED** in accordance with ALDES recommendations.

Warranty Exclusions

- ALL installation fees and labor relating to product repairs.
- ALL fees related to a loss of operations, merchandise, inventory or equipment due to a defective ALDES product.

Unpacking Your Unit

Remove the protective wrapping from the unit including the foam protection at each corner. Extra care should be taken to not scratch the painted surfaces. Appropriately dispose of materials accordingly to local and/or project specific requirement.

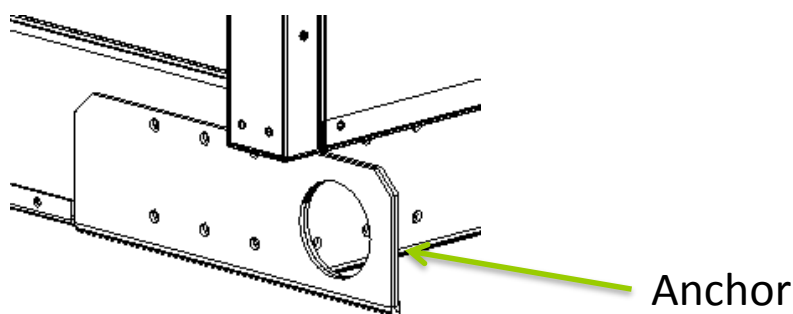
Inspecting Your Unit

Visually inspect the unit to ensure that no sheet metal has been dented or scratched. Verify that the air intake and exhaust hoods have not been damaged in transport.

Warning: Do not remove the shipping attachments until the unit has been moved to its final location.

Transport Method

Your unit is equipped with anchors for handling purposes only. Strictly follow Lifting Standards before handling your unit. Always use **ALL** anchors points **SIMULTANEOUSLY**.

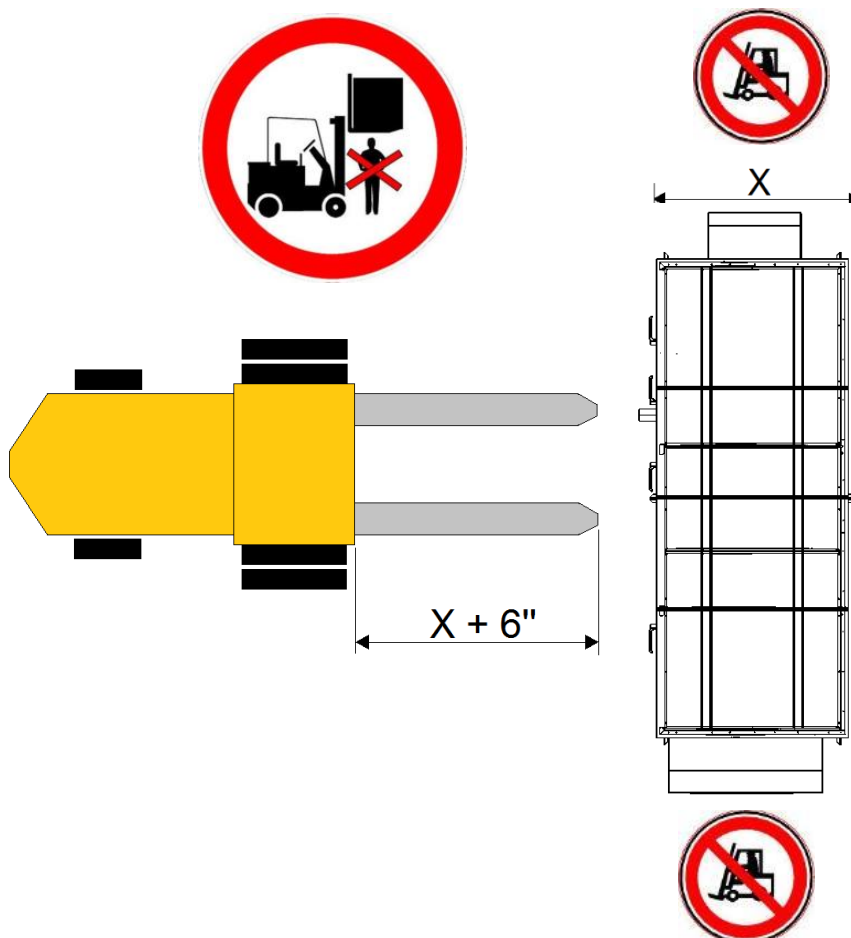


Anchor

Using a Forklift to Move the Unit

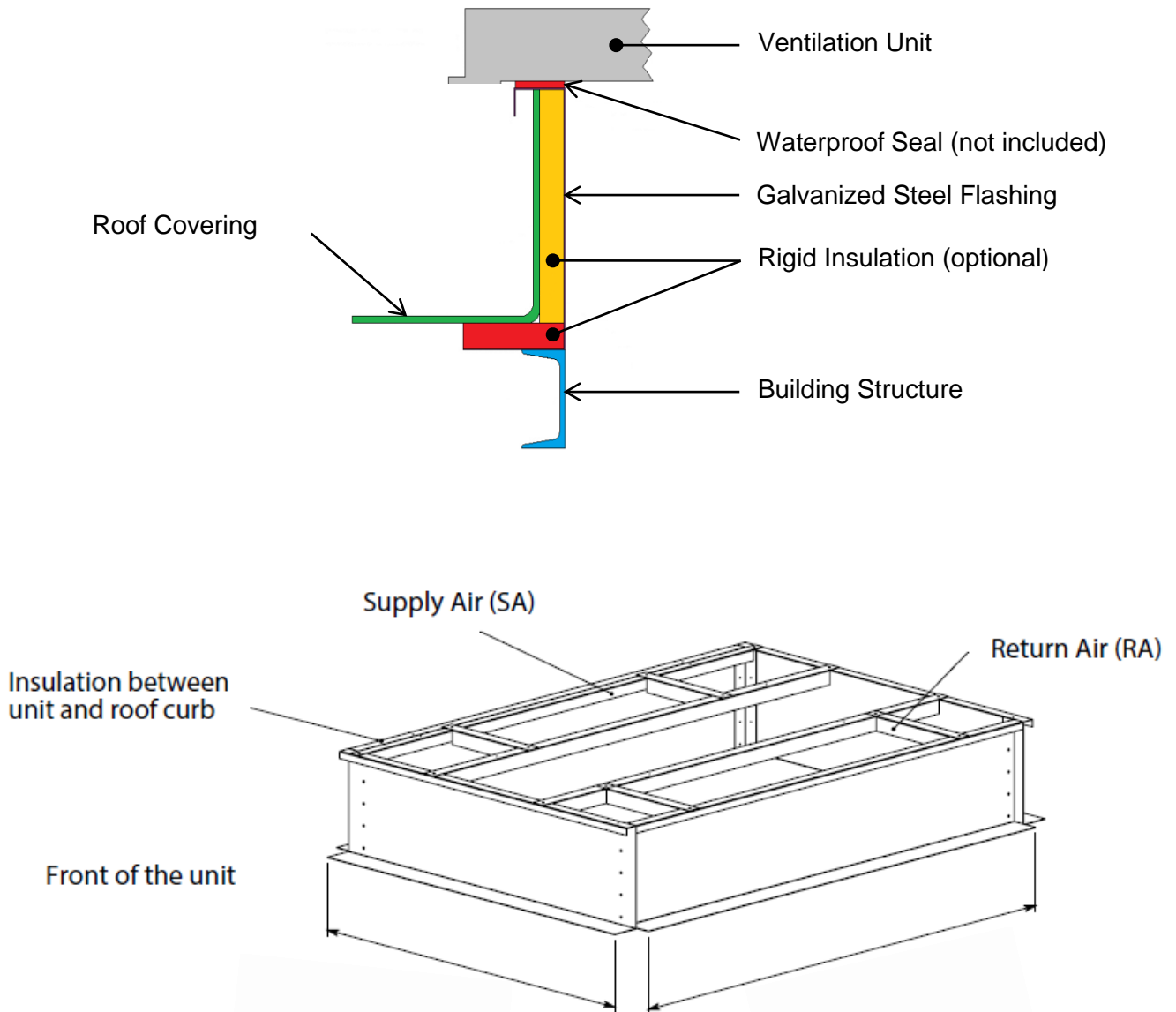
Before using a forklift to move your unit, you must follow several safety rules:

- The capacity of the forklift must exceed the weight of the unit.
- Raise the device as shown in the diagram below. This is the only method authorized by ALDES to move the unit using a forklift.
- Transportation of the unit must be executed by a qualified forklift operator.
- Ensure that the forklift skids are a minimum of 6 inches longer than the width of the unit.



Roof curb Installation (optional)

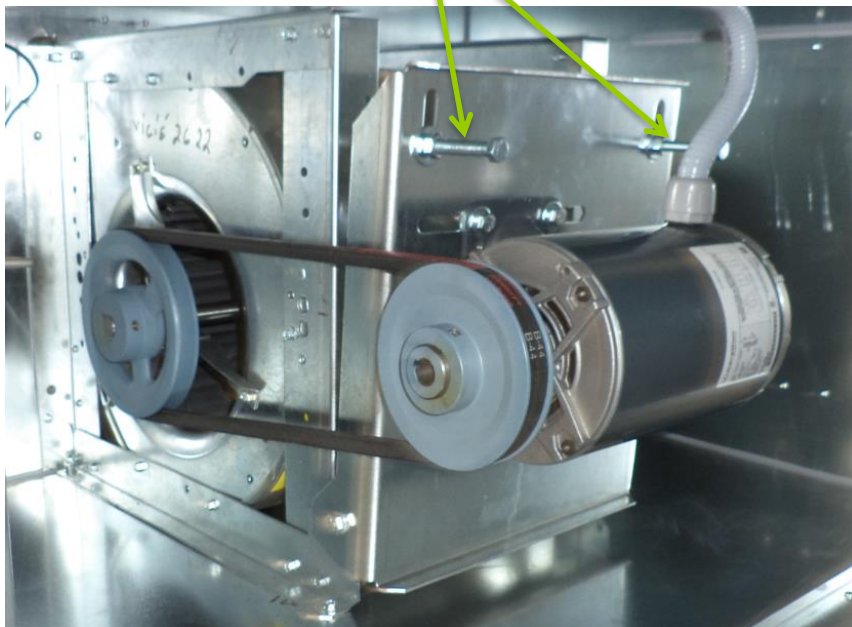
Install the roof curb as indicated in the accompanying document provided.



Blower Belt tension setting

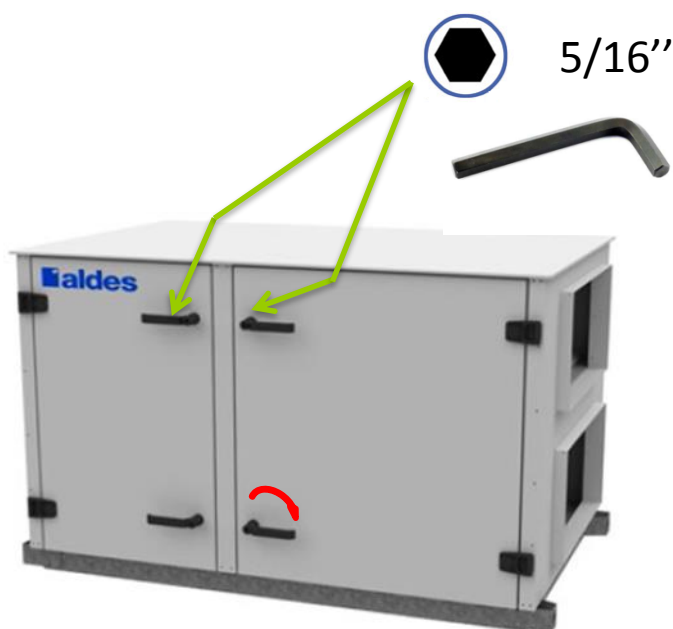
In order to avoid unusual wear of moving pieces, adjust belt tension at minimum value to avoid slipping. Belt tension is adjusted by the adjusting screws as illustrated below.

Adjustment bolts



DANGER

This device contains high-voltage electrical components. All maintenance shall be done by a qualified technician to prevent serious injuries and possible death. Installation shall be completed in conformance with local building and safety codes.

**Picture 1**

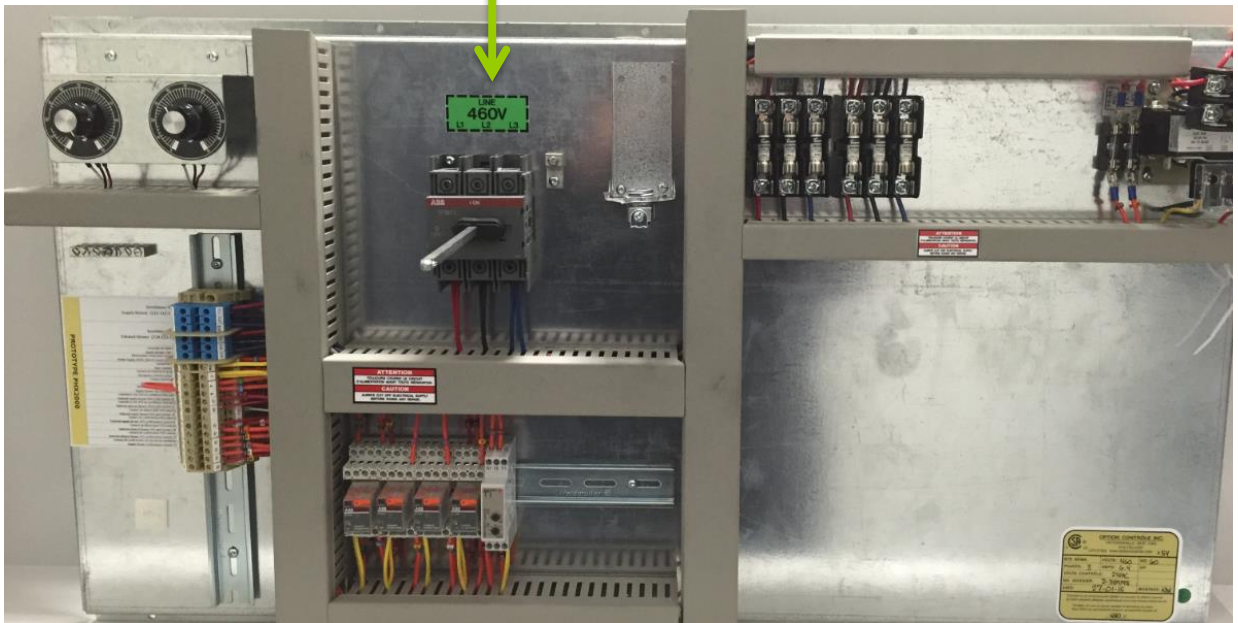
- Open the exterior panel using the handles (Picture 1).
- You must unlock the handles with the appropriate key in order to open the panel (Picture 1).
- Turn the handles downward as indicated in the Picture 1.

DANGER

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Connect the unit to the power grid using the disconnect switch. Such connection shall be made by a certified electrician in accordance with the applicable electrical code.



** Unit's specific control panel may differ. For reference only.*

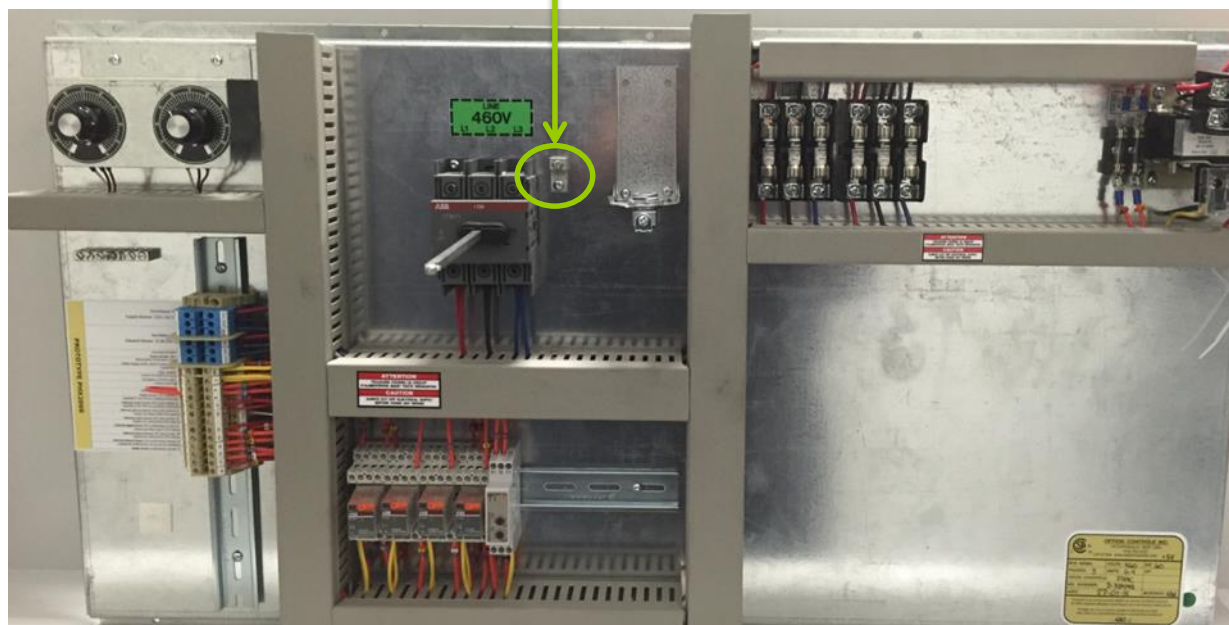
11 Set-Up Sequence

DANGER

This device contains high-voltage electrical components. All maintenance shall be done by a qualified technician to prevent serious injuries and possible death. Installation shall be completed in conformance with local building and safety codes.



Make sure the Ground Wire is securely fasten to the appropriate socket. Such connection shall be made by a certified electrician in accordance with the applicable electrical code.



** Unit's specific control panel may differ. For reference only.*

DANGER

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- Measure the voltage of the main circuit breaker and note the values(1 Phase or 3 Phases). Such Measurement shall be made by a certified electrician in accordance with the applicable electrical code.

- L1 – L2 : _____
- L1 – L3 : _____
- L2 – L3 : _____
- L1 – G : _____
- L2 – G : _____
- L3 – G : _____

A maximum deviation of $\pm 5\%$ is acceptable.



- Use the Electrical Wiring Diagram (supplied separately) as a reference to , close the *Start/stop* and *Occupancy control* Dry contact (optional).
- 3- Close the main disconnect switch, the unit will start



WARNING: from this point on, the unit is no longer electrically safe.

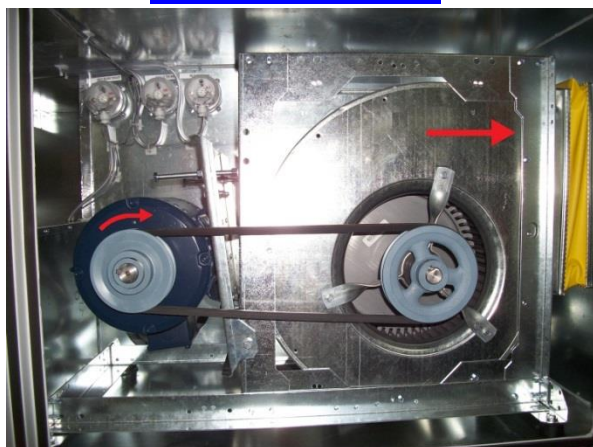
DANGER

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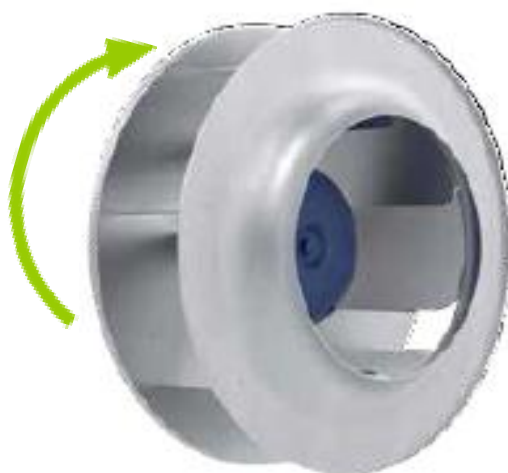


- Verify that the motors and blowers are rotating in the proper direction.

AC Motors



EC Motors



DANGER

This device has moving parts. All repairs should be made by a qualified technician in order to avoid serious injury.



RECOMMENDATION

Before turning on your new device, inspect the condition of the ventilation ducts. Clean the ducts before turning on your device. If building construction has not yet been completed, we recommend that you wait until work has been finished before starting up your device. An abnormal volume of dust in the air could clog the device filters and cause damage to the motors. Ensure that all diffusers are opened to their maximum capacity before turning on your device. It is common to notice a faint smell of burning upon the first start-up.



CAUTION

This device should be installed and balanced by a specialized contractor in ventilation services.



WARNING

Electrical currents remain at the capacitors for 5 minutes after circuits disconnect have been opened. The following electrical components may not be electrically safe immediately:

- Variable Frequency Drive for the blowers motors.



IMPORTANT

The following options may not be included with your device. Consult the specifications form provided with your device for more information.

Control Options**Dirty filters contact :**

A dry contact, available at the unit's terminal board, closes when the pressure drop accros a specific filter banks reaches its final pressure drop.

Blowres rotation detection:

Unit stops if rotation if the pressure increase in the supply air blower is null.

End switch on Dampers :

Unit start-up conditionnaly to the dampers openings

Low Temperature limit:

Unit will stop if supply air temperature is under set point (adjustable) for more than 5 minutes

Programmable Timer**Phase Loss Detection:**

Unit will stop when a phase loss occurs, automatic restart (3-phase power only)

BacNet compatible Controler :

Unit is controlled using a BacNet compatible controller. The controller can communicate with either a:

- MS/TP connection or
- IP connection

Remote Displays:

Offered with command buttons or with touch screen (Only available with the BacNet controller).

IMPORTANT

All of the defrost modes listed below may not be included with your device. Consult the specifications form provided with your device for more information.

Defrost Options

- Built-in self controlled electric preheating coil (SSR-controlled).
 - The unit preheat the outside air at a given set point at which no frost will occur. The electric coil is Self controlled and powered by the unit (single point power connection).
- Built-in liquid preheating coil
 - The unit preheat the outside air at a given set point at which no frost will occur. A 0 to 10VDC control signal is available to control external hydronic valves (supplied by others)
- Fan defrost.
 - The unit monitors the exhaust air temperature and when it drop below a reference temperature, the unit shut off the supply air blower and close the outside air damper. The exhaust mode will continue until the exhaust air temperature reach back the reference temperature.
- Recirculation defrost cycles.
 - The unit monitors the outdoor air and when it reaches below a specific temperature, the unit start the recirculation cycles. The exhaust blower will be shut down, the outside air damper will be closed and the recirculation damper will be opened.

Fixed plate exchanger			
°C	°F	Temps dégivrage	Temps échange
$T^{\circ} > T_0^{\circ}\text{C}$	$T^{\circ} > 23^{\circ}\text{F}$	N/A	Continu
$-25^{\circ}\text{C} < T^{\circ} < -5^{\circ}\text{C}$	$-13^{\circ}\text{F} < T^{\circ} < 23^{\circ}\text{F}$	7 min	32 min
$T^{\circ} < -25^{\circ}\text{C}$	$T^{\circ} < -13^{\circ}\text{F}$	7 min	20 min

- $T_0 = -5^{\circ}\text{C}$ For Aluminium and Polypropylene cores (HRV).
- $T_0 = -10^{\circ}\text{C}$ For Enthalpy cores (ERV)
- $T_0 = -15^{\circ}\text{C}$ For Enthalpy wheel cores (ERV)

IMPORTANT



The following options may not be included with your device. Consult the specifications form provided with your device for more information.

Components Options

MERV13 Filters :

Replacement of the original filters by a HE filters (Merv 13).

Extruded Aluminum Insulated dampers:

Activated by a servomotor upon admission of fresh or exauhst air.

Non-Insulated Backdraft Gravity dampers (for evacuation purposes only).

Post-Heating Coil:

Electric or liquid (0-10 VDC signal provided by other components to maintain air input temperature).

IMPORTANT

The following options may not be included with your device. Consult the specifications form provided with your device for more information.

**Unit Features****Intake and Exhaust Hoods:**

Hoods on the intake opening and the exhaust opening to protect from rain and snow. Comes with bird screen mesh.

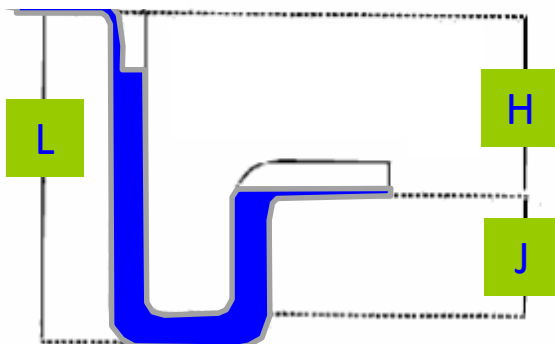
Roof curb:

14 inches in height, insulated or non-insulated, in 18-calibre galvanized steel.

Piping connection (for hydronic coils and drain pan) :

Can be located either at the front of the unit (same side as the doors) or at the back of the unit (opposite side of the doors).

Always consult a professional plumber to connect the drain pans. Typical installation uses a properly sized P-Trap. (For outdoor installation, the P-trap can be removed to avoid frozen condensation).

**Negative pressure
P-trap dimensions**

- Use the submittal sheet as reference to calculate H, J and L
- $H = 1''$ for each 1'' of maximum negative static pressure + 1''.
- $J = \text{Half of } H.$
- $L = H + J + \text{Pipe diameter} + \text{Insulation}$

IMPORTANT

The following options may not be included with your device. Consult the specifications form provided with your device for more information.

Blowers Motor Options**Construction : TEFC**

Available with AC motorisation

Two speeds application:

- AC motorisation: Preprogrammed VFD for a two speed application is used. The unit goes into high speed using a dry contact.
- EC motorisation : preprogrammed speeds on the motor. The unit goes into high speed using a dry contact.

Variable speeds :

- AC motorisation: A single speed motor is controlled with a VFD. The unit speed is controlled using a 0-10 VDC signal provided by others.
- EC motorisation : The unit speed is controlled using a 0-10 VDC signal provided by others.

CAUTION

Always turn off electrical power before performing device maintenance. Device contains high-voltage electrical components.

**Every 3 months**

- Check the condition of the filters and make replacements if necessary.
- Check the condition and tension of belts. Adjust or replace if necessary.
- Check the condition of ventilators and clean if needed.
- Check the condition of the wheel. The wheel is normally self-cleaning due to reversing of cool and contaminated air currents; however, certain conditions may cause grease build-up or accumulation of particles. Clean the wheel with water and mild soap. Note that the desiccant will not be affected during cleaning operations.
- Check the condition of the brushes on the thermal wheel and make adjustments if necessary.
- Check the condition of the belt on the thermal wheel.

Every 12 months

- Polypropylene or aluminum cores: remove and clean with water and mild soap.
- Enthalpic cores: clean with compressed air or vacuum cleaner.
- Thoroughly clean the inside of the unit.

IMPORTANT – Please read the following before placing a service call

Before making a service request, please have the following information ready concerning your device:



- Device series number
- Model number
- Project number

This information is necessary in order to address your problem as quickly as possible. The information is available on the specification card located on your device (see photo below).



CAN: 1-800-262-0916
USA: 1-800-255-7749



		CW3000 ← Model number	
VOLTS	575	PH	3
		HZ	60
MCA	86.6	MOP	90
		SCCR	5 KA
Mot.1:	5HP	Mot.2:	5HP
KW (Electr.):	22	Temp.:	22.6C
N° Série/Serial N°:		CW3000i1311001 ← Serial number	
Projet/Project:		130368 ← Project number	
 <p>CONFORME SELON UL 1995 CONFORMS TO UL 1995 CERTIFIÉ SELON CSA C22.2 NO.236 CERTIFIED TO CSA C22.2 NO.236 MADE IN CANADA - FABRIQUÉ AU CANADA</p>			

Air balancing instruction

- **With EC motor option.**

For balancing put unit on high speed. You need to apply 10VDC to the EXTERNAL SUPPLY BLOWER SPEED 0-10VDC CONTROL (27) and to EXTERNAL EXHAUST BLOWER SPEED 0-10VDC CONTROL (29).

If the external control was not done you can use the 10VDC REFERENCE FROM SUPPLY ECM MOTOR (27A) and 10VDC REFERENCE FROM EXHAUST ECM MOTOR (29A).

The balancing potentiometer is use to set the maximum speed of the air circuit. When the air flows are balanced, note the value of the potentiometers on the sticker in case they are later changed inadvertently.



Air balancing instructions

- **With EC motor option and Distech controller.**

For balancing put unit on high speed.

