

## Installation Manual

# FCVC FCVE

## Vertical Concealed/ Vertical Exposed Units

Fan Coil Unit (FCU)





## Contents

- General/Safety Information** ..... 2
- Overview/Application Note/Prerequisite** ..... 3
- FCVC Nomenclature** ..... 4
- FCVC Valve Package Nomenclature** ..... 5
- FCVE Nomenclature** ..... 6
- FCVE Valve Package Nomenclature** ..... 7
- Before You Begin** ..... 8
- Installation** ..... 9
  - Vertical Concealed Installation ..... 9
  - Vertical Exposed Installation ..... 9
  - Piping Installation ..... 9
  - Filter Installation/Replacement..... 9
- General Electric** ..... 10-11
  - Line Voltage..... 10
  - General Line Voltage Wiring ..... 10
  - Power Connection..... 10
- System Cleaning and Flushing** ..... 12
- Troubleshooting** ..... 13
- System Check List** ..... 14
- Warranty/Contact Information** ..... 16



AHRI Certified® is the trusted mark of performance for heating, air conditioning, water heating, and commercial refrigeration equipment. To find AHRI Certified products, go to [www.ahridirectory.org](http://www.ahridirectory.org).

Thank you for purchasing and installing the ICE AIR FCU (Fan Coil Unit). ICE AIR is a leading supplier of FCUs, offering superior quality, reliability and efficiency for our customers.

### ATTENTION INSTALLING PROFESSIONAL

Read this manual and familiarize yourself with the specific terms and safety warnings that must be adhered to before attempting to install or service this unit. Precautions listed are intended as supplemental to existing practices. As a professional, you have an obligation to know the product better than the customer. This includes all safety precautions and related items. It is your responsibility to install the product safely and know it well enough to be able to instruct a customer in its safe use as required.

#### **⚠️ RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION.**

- ⚠️ WARNING:** ICE AIR will not be responsible for any injury or property damage arising from improper service or service procedures. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heating and air conditioning equipment.
- ⚠️ WARNING, HIGH VOLTAGE:** Disconnect all power before servicing or installing unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

To ensure that the unit operates safely and efficiently, it must be installed according to these installation instructions and all local codes and ordinances, utilizing the best standards and practices at the time of installation or, in their absence, with the latest edition of the National Electric Code. The proper installation of this unit is described in the following sections. Following the steps in the order presented should ensure proper installation.

Precautions and preparations listed are for general knowledge and to define basic guidelines. Local codes and existing practices should be observed and preformed by a professional. Due to ICE AIRs ongoing product development programs, the information in this document is subject to change without notice.

## Overview

Installing the ICE AIR Vertical FCU's involves two main components and various accessory components.

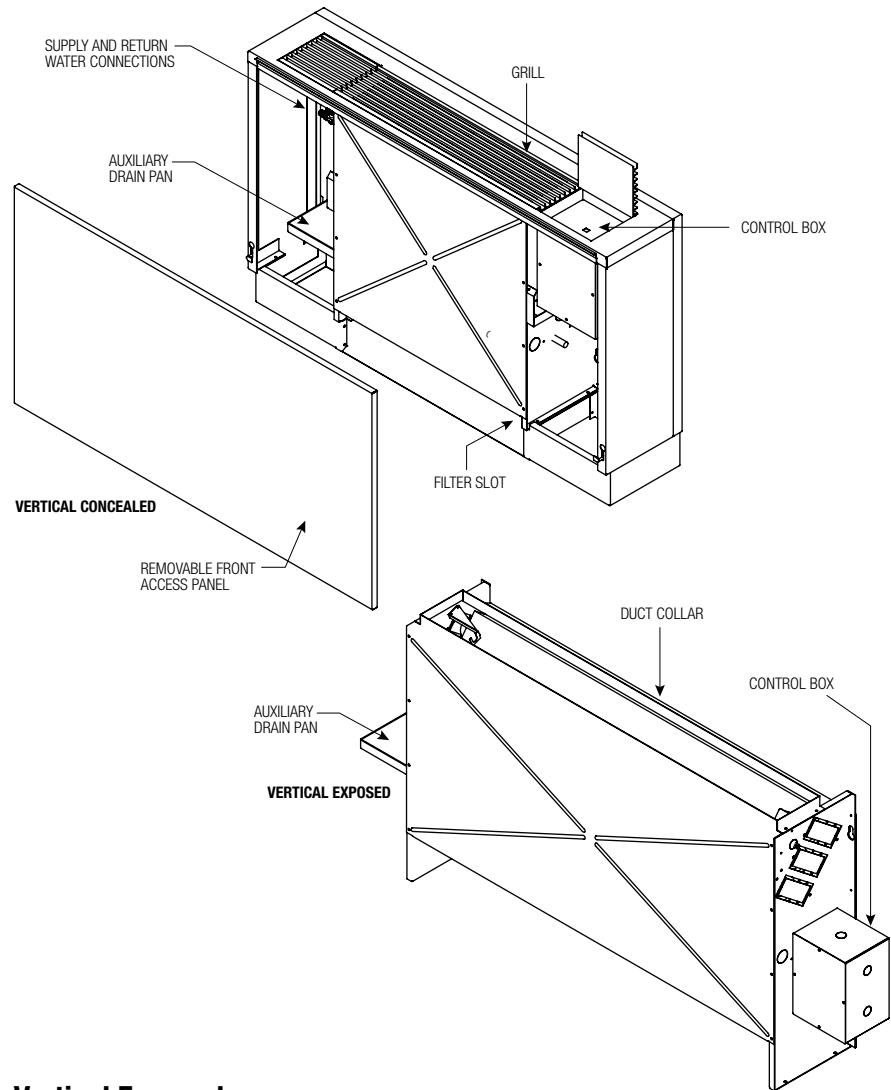
## Application Note

It is important for heating/cooling systems to be properly sized for each application in order to achieve desired temperature and humidity levels. It is highly recommended that a professional engineer match the FCU you are about to install with the building structure and climate.

## Prerequisite

### Vertical Concealed

1. Assess the ICE AIR unit to ensure all components are intact upon delivery. Identify whether the unit is (Top Discharge) or (Front Discharge).
2. Minimum 1" clearance within the wall on either left or right side of the unit, measured from the condensate drain pan.
3. Floor should be level in both horizontal directions. Installer must set the unit at zero tolerance or the unit's airflow will be misaligned.
4. Access Panel/ Removable Wall must be supplied by contractor. Ensure the access panel is flush with the wall. If (Front Discharge) a vent must be present on the door to provide airflow into the room.
5. Adequate and continuous water flow must be maintained for proper and safe unit operation. Confirm adequate drainage is also available
6. Dedicated electrical circuitry and power supply is required to properly energize the ICE AIR unit. Verify the amperage of the dedicated electrical service to the unit is correct and the unit can reach the power supply.



### Vertical Exposed

1. Assess the ICE AIR unit to ensure all components are intact upon delivery. The ICE AIR unit will arrive pre-fabricated with an enclosure. Ensure both the unit and the enclosure are properly attached.
2. Floor should be level in both horizontal directions. Installer must set the unit at zero tolerance or the unit's airflow will be misaligned.
3. Ensure access panel is off before installing the unit. Access panel is shipped with the ICE AIR unit and can be removed by pushing the door upwards.
4. Adequate and continuous water flow must be maintained for proper and safe unit operation. Confirm adequate drainage is also available
5. Dedicated electrical circuitry and power supply is required to properly energize the ICE AIR unit. Verify the amperage of the dedicated electrical service to the unit is correct and the unit can reach the power supply.





## FCVC Valve Package Nomenclature

<b>Model Selection</b>	<b>8</b>	<b>FCVC</b>	<b>08</b>	-	<b>E</b>	<b>M</b>	<b>X</b>	<b>X</b>	<b>6</b>	<b>2</b>	<b>A</b>	<b>S</b>	<b>X</b>	-	<b>1</b>	<b>A</b>	<b>G</b>	<b>A</b>	<b>X</b>	<b>1</b>	<b>P</b>	<b>P</b>	<b>M</b>	<b>F</b>	<b>S</b>
Item Number	1	2	3		4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23
	Primary Part				Secondary Parts									Valve Package Parts											

Item 13	<b>1</b>	Motorized Valve Package	<b>01-</b> Line Voltage 2 Way MV* Normally Closed <b>02-</b> Line Voltage 2 Way MV* Normally Open <b>03-</b> Line Voltage 3 Way MV* Normally Closed Routing <b>04-</b> Line Voltage 3 Way MV* Normally Closed Diverting <b>05-</b> Line Voltage 3 Way MV* Normally Open Routing <b>06-</b> Line Voltage 3 Way MV* Normally Open Diverting <b>07-</b> Line Voltage 3 Way MV* Normally Closed Routing w/ Bypass Pipe <b>08-</b> Line Voltage 3 Way MV* Normally Closed Diverting w/ Bypass Pipe <b>09-</b> Line Voltage 3 Way MV* Normally Open Routing w/ Bypass Pipe <b>10-</b> Line Voltage 3 Way MV* Normally Open Diverting w/ Bypass Pipe <b>11-</b> 24V 2 Way MV* Normally Closed <b>12-</b> 24V 2 Way MV* Normally Open <b>13-</b> 24V 3 Way MV* Normally Closed Routing <b>14-</b> 24V 3 Way MV* Normally Closed Diverting <b>15-</b> 24V 3 Way MV* Normally Open Routing <b>16-</b> 24V 3 Way MV* Normally Open Diverting <b>17-</b> 24V 3 Way MV* Normally Closed Routing w/ Bypass Pipe <b>18-</b> 24V 3 Way MV* Normally Closed Diverting w/ Bypass Pipe <b>19-</b> 24V 3 Way MV* Normally Open Routing w/ Bypass Pipe <b>20-</b> 24V 3 Way MV* Normally Open Diverting w/ Bypass Pipe <b>21-</b> Wired for 24V MV* control - MV* by others <b>X-</b> None
Item 14	<b>A</b>	Electric Heat	<b>A-</b> 1 <b>B-</b> 1.5 <b>C-</b> 2 <b>D-</b> 3 <b>E-</b> 3.5 <b>F-</b> 4.3 <b>G-</b> 5 <b>H-</b> 6 <b>I-</b> 7.5 <b>J-</b> 10 <b>X-</b> No Electric Heat
Item 15	<b>G</b>	Secondary Drain Pan	<b>G-</b> Galvanized Powder Coated (Black) <b>S-</b> Stainless Steel <b>X-</b> None
Item 16	<b>A</b>	Flow Regulation Cooling Coil	<b>A-</b> Balancing Valve <b>B-</b> Circuit Setter <b>C-</b> Autoflow Valve 0.5 GPM <b>D-</b> Autoflow Valve 1.0 GPM <b>E-</b> Autoflow Valve 1.3 GPM <b>F-</b> Autoflow Valve 1.5 GPM <b>G-</b> Autoflow Valve 2.0 GPM <b>H-</b> Autoflow Valve 2.5 GPM <b>I-</b> Autoflow Valve 2.8 GPM <b>J-</b> Autoflow Valve 3.0 GPM <b>K-</b> Autoflow Valve 3.3 GPM <b>L-</b> Autoflow Valve 3.5 GPM <b>M-</b> Autoflow Valve 4.0 GPM <b>N-</b> Autoflow Valve 4.5 GPM <b>O-</b> Autoflow Valve 5.0 GPM <b>P-</b> Autoflow Valve 5.5 GPM <b>Q-</b> Autoflow Valve 6.0 GPM <b>R-</b> Autoflow Valve 6.5 GPM <b>S-</b> Autoflow Valve 7.0 GPM <b>T-</b> Autoflow Valve 7.5 GPM <b>U-</b> Autoflow Valve 8.0 GPM <b>V-</b> Autoflow Valve 8.5 GPM <b>W-</b> Autoflow Valve 9.0 GPM <b>X-</b> None
Item 17	<b>X</b>	Flow Regulation Heating Coil	<b>X-</b> Not applicable
Item 18	<b>1</b>	Y-Strainer	<b>1-</b> Y-Strainer <b>2-</b> Y-Strainer Blow Down <b>X-</b> None
Item 19	<b>P</b>	Purge Valve	<b>P-</b> Yes <b>X-</b> No
Item 20	<b>P</b>	PT Ports	<b>P-</b> Yes <b>X-</b> No
Item 21	<b>M</b>	Air Vents	<b>M-</b> Manual <b>A-</b> Automatic <b>X-</b> None
Item 22	<b>F</b>	Condensate Overflow Switch	<b>F-</b> Float <b>E-</b> Electronic <b>X-</b> None
Item 23	<b>S</b>	Pipe Connections	<b>S-</b> Sweat <b>M-</b> Male NPT <b>F-</b> Female NPT <b>U-</b> Unions

MV = Motorized Valve

Precautions and preparations listed are for general knowledge and to define basic guidelines. Local codes and existing practices should be observed and performed by a professional. Due to ICE AIRs ongoing product development programs, the information in this document is subject to change without notice.



## FCVE Nomenclature

<b>Model Selection</b>	<b>8</b>	<b>FCVE</b>	<b>08</b>	-	<b>E</b>	<b>M</b>	<b>1</b>	<b>X</b>	<b>6</b>	<b>2</b>	<b>B</b>	<b>S</b>	<b>X</b>	-	<b>22</b>	<b>A</b>	<b>G</b>	<b>A</b>	<b>1</b>	<b>1</b>	<b>P</b>	<b>P</b>	<b>M</b>	<b>F</b>	<b>S</b>
Item Number	1	2	3		4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23
	Primary Part				Secondary Parts									Valve Package Parts											

Item 1	<b>8</b>	Voltage	<b>5-</b> 115V - 1Ph - 60Hz	<b>8-</b> 208V - 1Ph - 60Hz	<b>7-</b> 277V - 1Ph - 60Hz				
Item 2	<b>FCVE</b>	Unit	<b>FCVE</b>						
Item 3	<b>08</b>	CFM	<b>02-</b> 200	<b>03-</b> 300	<b>04-</b> 400	<b>06-</b> 600	<b>08-</b> 800	<b>10-</b> 1000	<b>12-</b> 1200
Item 4	<b>E</b>	Motors	<b>P-</b> PSC	<b>S-</b> PSC Hi Static	<b>E-</b> ECM				
Item 5	<b>M</b>	Piping	<b>A-</b> RH 2 Pipe Heat and Cool MCO <b>B-</b> RH 2 Pipe Heat and Cool w/Aux Electric Heat MCO <b>C-</b> RH 2 Pipe Heat and Cool w/Aux Electric Heat ACO <b>D-</b> RH 2 Pipe Cool w/Total Elec Heat MCO <b>E-</b> RH 2 Pipe Cool w/Total Elec Heat ACO <b>F-</b> RH 2 Pipe Heat Only <b>G-</b> LH 2 Pipe Heat and Cool MCO <b>H-</b> LH 2 Pipe Heat and Cool w/Aux Electric Heat MCO <b>I-</b> LH 2 Pipe Heat and Cool w/Aux Electric Heat ACO <b>J-</b> LH 2 Pipe Cool w/Total Elec Heat MCO <b>K-</b> LH 2 Pipe Cool w/Total Elec Heat ACO <b>L-</b> LH 2 Pipe Heat Only <b>M-</b> RH 4 Pipe Heat and Cool MCO <b>N-</b> RH 4 Pipe Heat and Cool ACO <b>O-</b> LH 4 Pipe Heat and Cool MCO <b>P-</b> LH 4 Pipe Heat and Cool ACO						
Item 6	<b>1</b>	Enclosure	<b>1-</b> Antique White Standard Size <b>2-</b> Arctic White Standard Size <b>3-</b> Custom Color Standard Size <b>4-</b> Antique White Custom Size <b>5-</b> Arctic White Custom Size <b>6-</b> Custom Color Custom Size						
Item 7	<b>X</b>	Plenums	<b>B-</b> Bottom Return	<b>R-</b> Rear Return	<b>F-</b> Front Return	<b>X-</b> No Plenum			
Item 8	<b>6</b>	Controls	<b>1-</b> Unit Mounted Fan Mode Switch <b>2-</b> Wall Mounted Fan Mode Switch <b>3-</b> Unit Mounted Fan Mode Switch and Manual (Knob) Thermostat <b>4-</b> Touchpad non programmable thermostat <b>5-</b> LCD Non programmable thermostat <b>6-</b> LCD programmable thermostat <b>7-</b> Wired for ELA11599 Non Programmable Thermostat <b>8-</b> Wired for ELA11599 Programmable Thermostat <b>9-</b> 24V Terminal for external controls by others						
Item 9	<b>2</b>	Coil Rows	<b>2-</b> 2	<b>3-</b> 3	<b>4-</b> 4				
Item 10	<b>B</b>	Coil Orientation	<b>B-</b> 1 Cool, 1 Heat						
Item 11	<b>S</b>	Drain Pan	<b>G-</b> Galvanized Powder Coated (Black)	<b>S-</b> Stainless Steel					
Item 12	<b>X</b>	Disconnect Switch	<b>F-</b> Fused	<b>N-</b> Non Fused	<b>X-</b> None				

Precautions and preparations listed are for general knowledge and to define basic guidelines. Local codes and existing practices should be observed and performed by a professional.  
 Due to ICE AIRs ongoing product development programs, the information in this document is subject to change without notice.





## FCVE Valve Package Nomenclature

<b>Model Selection</b>	<b>8</b>	<b>FCVE</b>	<b>08</b>	-	<b>E</b>	<b>M</b>	<b>1</b>	<b>X</b>	<b>6</b>	<b>2</b>	<b>B</b>	<b>S</b>	<b>X</b>	-	<b>22</b>	<b>A</b>	<b>G</b>	<b>A</b>	<b>1</b>	<b>1</b>	<b>P</b>	<b>P</b>	<b>M</b>	<b>F</b>	<b>S</b>
Item Number	1	2	3		4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23
	Primary Part				Secondary Parts									Valve Package Parts											

Item 13	<b>22</b>	Motorized Valve Package	<b>21-</b> Wired for 24V MV* control - MV* by others <b>22-</b> Line Voltage 2 Way MV* Heat NO, Cool NO <b>23-</b> Line Voltage 2 Way MV* Heat NC, Cool NO <b>24-</b> Line Voltage 2 Way MV* Heat NO, Cool NC <b>25-</b> Line Voltage 2 Way MV* Heat NC, Cool NC <b>26-</b> Line Voltage 3 Way MV* #1 NO Diverting, #2 NO Diverting <b>27-</b> Line Voltage 3 Way MV* #1 NC Diverting, #2 NO Diverting <b>28-</b> Line Voltage 3 Way MV* #1 NC Diverting, #2 NC Diverting	<b>29-</b> 24V 2 Way MV* Heat NO, Cool NO <b>30-</b> 24V 2 Way MV* Heat NC, Cool NO <b>31-</b> 24V 2 Way MV* Heat NO, Cool NC <b>32-</b> 24V 2 Way MV* Heat NC, Cool NC <b>33-</b> 24V 3 Way MV* #1 NO Diverting, #2 NO Diverting <b>34-</b> 24V 3 Way MV* #1 NC Diverting, #2 NO Diverting <b>35-</b> 24V 3 Way MV* #1 NC Diverting, #2 NC Diverting <b>X-</b> None	
Item 14	<b>A</b>	Electric Heat	<b>A-</b> 1 <b>B-</b> 1.5 <b>C-</b> 2 <b>D-</b> 3 <b>E-</b> 3.5 <b>F-</b> 4.3 <b>G-</b> 5 <b>H-</b> 6 <b>I-</b> 7.5 <b>J-</b> 10 <b>X-</b> No Electric Heat		
Item 15	<b>G</b>	Secondary Drain Pan	<b>G-</b> Galvanized Powder Coated (Custom Color)	<b>S-</b> Stainless Steel <b>X-</b> None	
Item 16	<b>A</b>	Flow Regulation Cooling Coil	<b>A-</b> Balancing Valve <b>D-</b> Autoflow Valve 1.0 GPM <b>G-</b> Autoflow Valve 2.0 GPM <b>J-</b> Autoflow Valve 3.0 GPM <b>M-</b> Autoflow Valve 4.0 GPM <b>P-</b> Autoflow Valve 5.5 GPM <b>S-</b> Autoflow Valve 7.0 GPM <b>V-</b> Autoflow Valve 8.5 GPM	<b>B-</b> Circuit Setter <b>E-</b> Autoflow Valve 1.3 GPM <b>H-</b> Autoflow Valve 2.5 GPM <b>K-</b> Autoflow Valve 3.3 GPM <b>N-</b> Autoflow Valve 4.5 GPM <b>Q-</b> Autoflow Valve 6.0 GPM <b>T-</b> Autoflow Valve 7.5 GPM <b>W-</b> Autoflow Valve 9.0 GPM	<b>C-</b> Autoflow Valve 0.5 GPM <b>F-</b> Autoflow Valve 1.5 GPM <b>I-</b> Autoflow Valve 2.8 GPM <b>L-</b> Autoflow Valve 3.5 GPM <b>O-</b> Autoflow Valve 5.0 GPM <b>R-</b> Autoflow Valve 6.5 GPM <b>U-</b> Autoflow Valve 8.0 GPM <b>X-</b> None
Item 17	<b>1</b>	Flow Regulation Heating Coil	<b>A-</b> Balancing Valve <b>D-</b> Autoflow Valve 1.0 GPM <b>G-</b> Autoflow Valve 2.0 GPM <b>J-</b> Autoflow Valve 3.0 GPM <b>M-</b> Autoflow Valve 4.0 GPM <b>P-</b> Autoflow Valve 5.5 GPM <b>S-</b> Autoflow Valve 7.0 GPM <b>V-</b> Autoflow Valve 8.5 GPM	<b>B-</b> Circuit Setter <b>E-</b> Autoflow Valve 1.3 GPM <b>H-</b> Autoflow Valve 2.5 GPM <b>K-</b> Autoflow Valve 3.3 GPM <b>N-</b> Autoflow Valve 4.5 GPM <b>Q-</b> Autoflow Valve 6.0 GPM <b>T-</b> Autoflow Valve 7.5 GPM <b>W-</b> Autoflow Valve 9.0 GPM	<b>C-</b> Autoflow Valve 0.5 GPM <b>F-</b> Autoflow Valve 1.5 GPM <b>I-</b> Autoflow Valve 2.8 GPM <b>L-</b> Autoflow Valve 3.5 GPM <b>O-</b> Autoflow Valve 5.0 GPM <b>R-</b> Autoflow Valve 6.5 GPM <b>U-</b> Autoflow Valve 8.0 GPM <b>X-</b> None
Item 18	<b>1</b>	Y-Strainer	<b>1-</b> Y-Strainer <b>2-</b> Y-Strainer Blow Down	<b>X-</b> None	
Item 19	<b>P</b>	Purge Valve	<b>P-</b> Yes <b>X-</b> No		
Item 20	<b>P</b>	PT Ports	<b>P-</b> Yes <b>X-</b> No		
Item 21	<b>M</b>	Air Vents	<b>M-</b> Manual <b>A-</b> Automatic	<b>X-</b> None	
Item 22	<b>F</b>	Condensate Overflow Switch	<b>F-</b> Float <b>E-</b> Electronic	<b>X-</b> None	
Item 23	<b>S</b>	Pipe Connections	<b>S-</b> Sweat <b>M-</b> Male NPT <b>F-</b> Female NPT	<b>U-</b> Unions	

\* MV = Motorized Valve

## Before You Begin

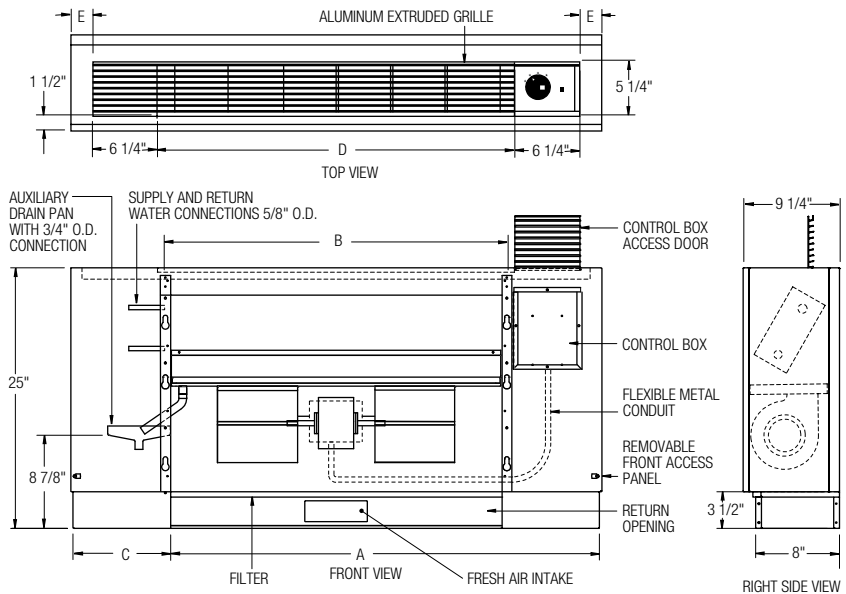
1. Locate the unit where it can evenly distribute air throughout the room without obstructions. Units should be installed no closer than 12" apart when two units are side by side. A vertical clearance of 60" should be maintained between units.
2. Ensure the wall is structurally sound to support the weight of the unit.
3. Ensure adequate drainage is available.
4. Follow all applicable codes for installation.
5. Verify the amperage of the dedicated electrical service to the unit is correct and the unit can reach the power supply.
6. Position the unit so the air filter can be removed easily and required maintenance can be performed without interference.
7. A minimum obstructed distance of 36" should be kept around the unit.

**IMPORTANT:** To avoid permanent damage to the unit, DO NOT operate during construction in an open space or as a supplemental heating and cooling source during construction.

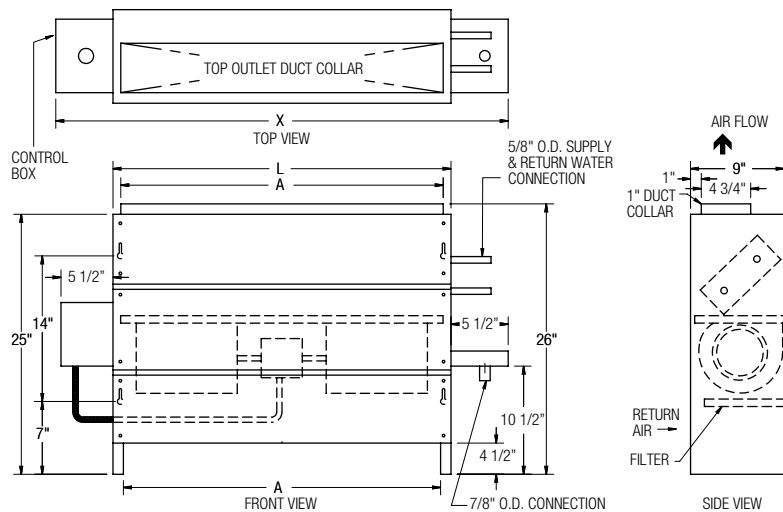
## Inspection

1. Upon receipt of the equipment, carefully check the shipment again on the Bill of Lading.
2. Make sure all units have been received.
3. Inspect the packaging for any damage.
4. Ensure that any damage is noted on the delivering carriers Bill of Lading.

NOTE: It is the responsibility of the purchaser to file all necessary claims with the delivering carrier in a timely fashion. Many carriers have a 15 day notice period from receipt of delivery to file any and all claims.



Model	FCVE02	FCVE03	FCVE04	FCVE06	FCVE08	FCVE10	FCVE12	
Dimensions	A	41	45	51	61	63	77	85
	B	22	25	33	42	44	58	66
	C	10	10-1/2	9-1/2	10	10	10	10
	D	23-1/4	26-1/4	34-1/4	43-1/4	45-1/4	59-1/4	67-1/4
	E	2-1/2	3	2	2-1/2	2-1/2	2-1/2	2-1/2



Model	FCVC02	FCVC03	FCVC04	FCVC06	FCVC08	FCVC10	FCVC12	
Dimensions	L	22	25	33	42	44	58	66
	A	20-3/4	23-3/4	31-3/4	40-3/4	42-3/4	56-3/4	64-3/4

FCVC Notes: Coil connections are always on the side opposite the control box.  
 All duct collar dimensions are to the outside of the collar  
 Coil connections are 5/8" O.D. sweat.  
 RH shown, LH opposite



## Installation

### Vertical Concealed

1. Ensure all preparations are met within the "Prerequisite Section."
2. Within the concealed wall, mark the position of the holes where the unit will attach to. Refer to the submittal for specific dimensions.
3. Embed threaded rods into the indicated holes on the wall.
4. Align the unit's hanger slots with the threaded rods allowing the unit to lock into position.
5. (TOP DISCHARGE) Ensure the discharge vent is coordinated with the opening above the unit. All leakage MUST be sealed.
6. Attach all necessary pipes and wiring connections. Additional ductwork should only be installed if instructed.
7. Install the Access Panel and ensure it is flush with the wall. (FRONT DISCHARGE) Ensure the discharge vent is coordinated with the opening on the Access Panel. All leakage MUST be sealed.
8. Run the Unit.

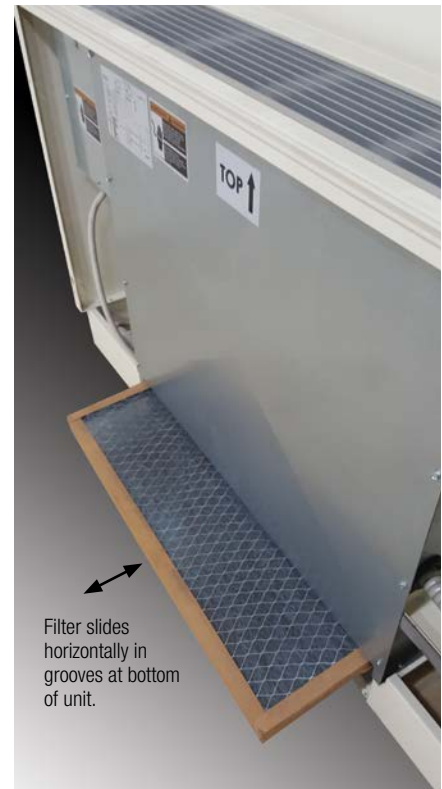
### Vertical Exposed

1. Ensure all preparations are met within the "Pre-Requisite Section."
2. Within the concealed wall, mark the position of the holes where the unit will attach to. Refer to the submittal for specific dimensions.
3. Embed threaded rods into the indicated holes on the wall.
4. Unit should arrive pre-fabricated with an enclosure. Align the unit's hanger slots with the threaded rods allowing the unit to lock into position.

5. Attach all necessary pipes and wiring connections. Additional ductwork should only be installed if instructed.
6. Install the Access Panel and ensure it is flush with the wall.
7. Run the unit.

### Piping

Fan Coils come in either Two Pipe (shown below) or Four Pipe configurations that are connected to the system through the use of a flexible hose or rigid pipe. The piping system should be flushed to remove dirt, pipe shavings, chips and other foreign material prior to operation (refer to System Cleaning and Flushing section). The flow rate is generally set between 2 and 3 GPM per ton of cooling for most applications of water loop fan coils. To ensure proper maintenance and servicing, P/T ports are imperative for temperature and flow verification, as well as performance checks.



### Filter Installation

Each unit is delivered with a filter for the filter rack, which can be found at the bottom of the unit, pictured above. In order to install the filter, slide the piece vertically into the filter slot. Then push the filter back and secure into the lower slot.

### Filter Replacement

The ICE AIR unit is delivered with a Disposable Filter. Disposable Filters should be replaced twice every year, before the start of every heating or cooling season. Please contact your local sales representative for replacements.

## General Electric

### Line Voltage

Wiring, including the electrical ground, must comply with the National Electrical Code as well as all applicable local codes. Refer to the Electrical Data table for fuse sizes. Consult the wiring diagram below for field connections on the right of the electrical diagram located on the back of the unit electrical compartment front panel. All electrical connections must be made by the installing (or electrical) contractor. All final electrical connections must be made with a length of flexible conduit to minimize vibration and sound transmission to the building.

**⚠ WARNING:** Electrical shock can cause personal injury or death while installing or servicing the system. Always turn OFF the main power to system. There may be more than one disconnect switch.

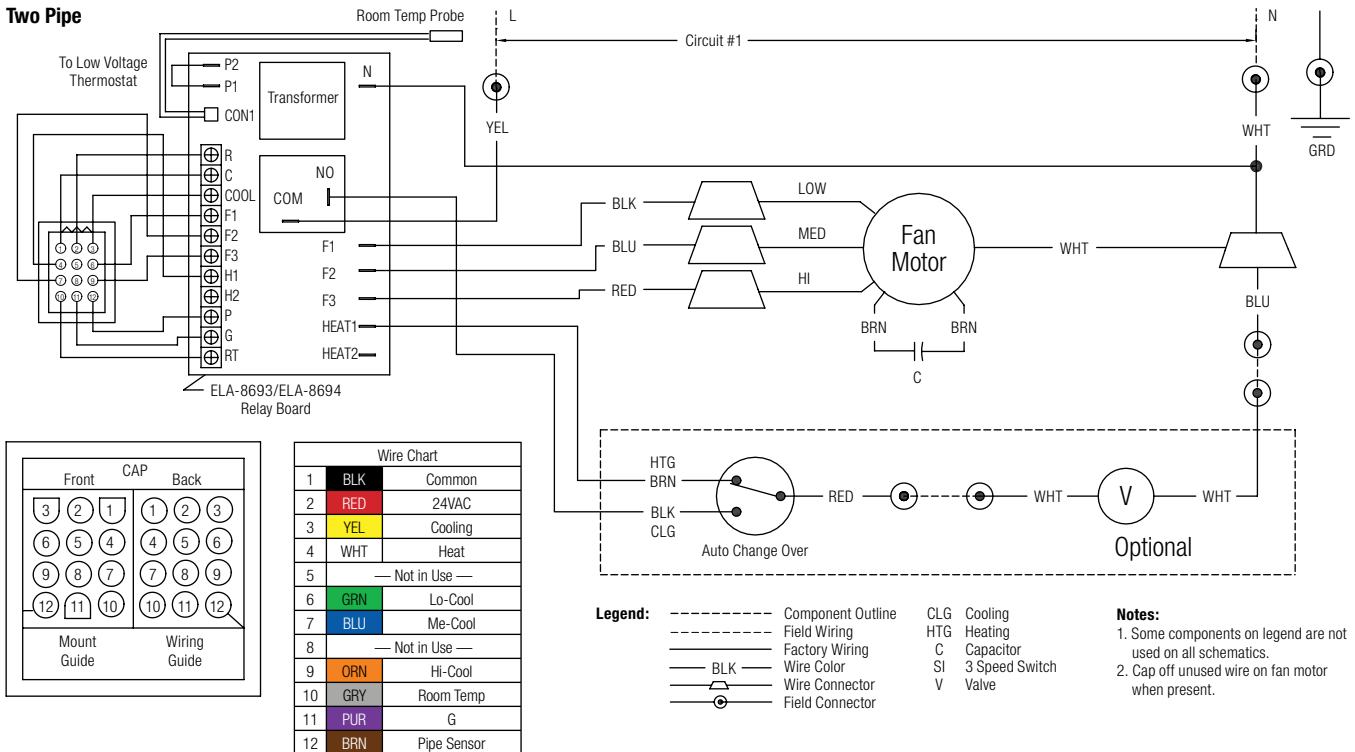
### General Line Voltage Wiring

Be sure the available power is the same voltage and phase shown on the unit serial number plate. Line and low voltage wiring must be done in accordance with local codes or the National Electric Code, whichever is applicable.

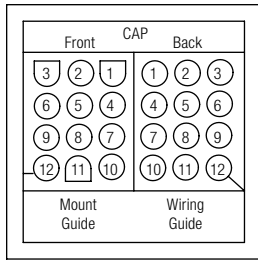
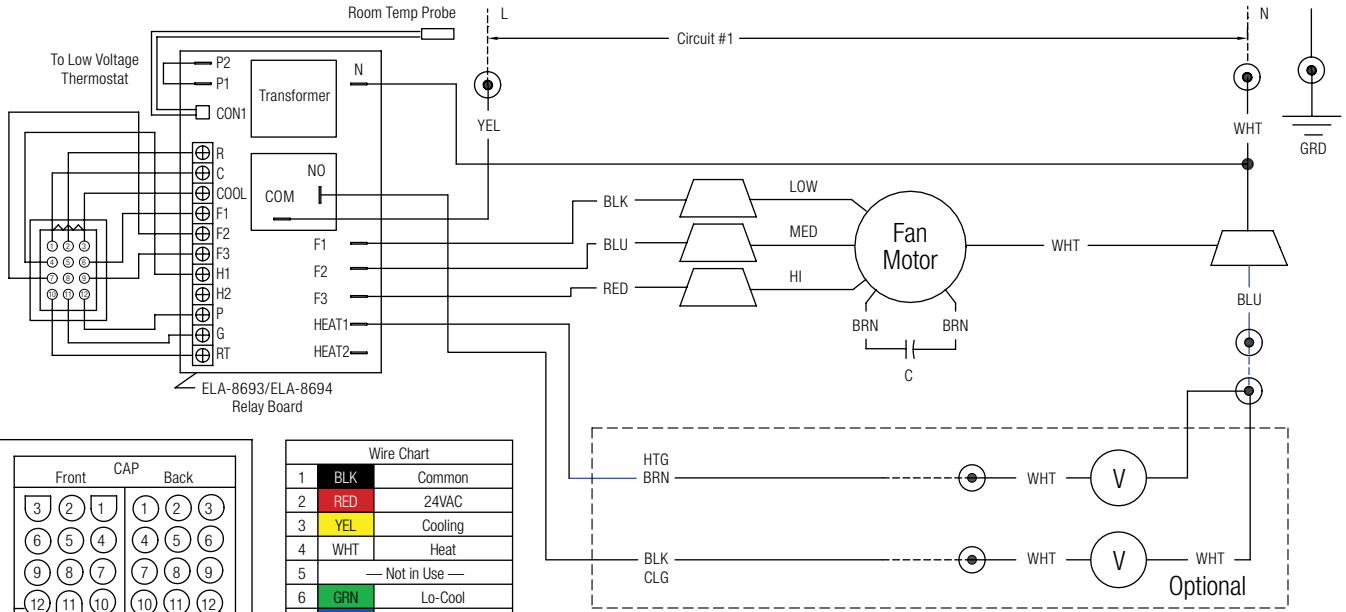
### Power Connection

**Units equipped with disconnect:** Connect incoming line voltage to the disconnect switch and connect ground wire to the ground lug provided inside the electrical compartment.

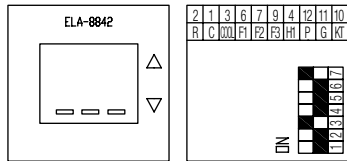
**Units without disconnect:** Line voltage connection is made by connecting the incoming line voltage wires to the terminal block.



### Four Pipe



Wire Chart		
1	BLK	Common
2	RED	24VAC
3	YEL	Cooling
4	WHT	Heat
5		— Not in Use —
6	GRN	Lo-Cool
7	BLU	Me-Cool
8		— Not in Use —
9	ORN	Hi-Cool
10	GRY	Room Temp
11	PUR	G
12	BRN	Pipe Sensor



- Legend:**
- Component Outline
  - Field Wiring
  - Factory Wiring
  - Wire Color
  - Wire Connector
  - Field Connector
  - CLG Cooling
  - HTG Heating
  - C Capacitor
  - SI 3 Speed Switch
  - V Valve

- Notes:**
- Some components on legend are not used on all schematics.
  - Cap off unused wire on fan motor when present.

Evaporator speeds configuration  
 Cooling – HI or MED  
 Heating – MED or LOW

## System Cleaning and Flushing

Cleaning and flushing the unit is the most important step to ensure proper start-up and continued efficient operation of the system. Follow the instructions below to properly clean and flush the system:

1. Verify that electrical power to the unit is OFF.
2. Verify that supply and return riser service valves are closed at each unit.
3. Fill the system with water, leaving the air vents open. Bleed all air from the system, but do not allow the system to over flow. Check the system for leaks and make any required repairs.
4. Adjust the water and air level in the expansion tank.
5. With strainers in place, start the pumps. Systematically check each vent to ensure that all of the air is bled from the system.
6. Verify that make-up water is available and adjusted to properly replace any space remaining when all air is purged. Check the system for leaks and make any additional repairs if needed.
7. Set the boiler to raise the loop temperature to approximately 85°F (29.4°C). Open the drain at the lowest point in the system. Verify that make-up water replacement rate equals rate of bleed. Continue to bleed the system until the water appears clean or for at least three hours, whichever is longer.
8. Completely drain the system.

## Troubleshooting

**IMPORTANT: It is not the intent of this maintenance manual to resolve any problems with the operation of your ICE AIR unit. Please contact a trained servicer or building maintenance staff immediately if your unit fails to perform properly.**

1. Contact a trained service technician to conduct full unit diagnostics and repair to equipment.
2. Record any unit that does not operate noting the unit serial number on your report.

**⚠️ RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION.**

**⚠️ WARNING:** ICE AIR will not be responsible for any injury or property damage arising from improper service or service procedures. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heating and air conditioning equipment.

**⚠️ WARNING HIGH VOLTAGE:** Disconnect all power before servicing or installing unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

**If unit is not operating, conduct the following checks:**

1. Check the electrical connections.
2. Check the voltage and current against the electrical specifications on the unit nameplate.
3. Look for wiring errors. Check for loose screw connections in both line and low voltage terminals.
4. Check the water supply piping for proper water connection.
5. Check for dirty filters.
6. Check indoor fan for proper operation.
7. Check that unit did not cycle off due to improper thermostat settings.
8. Check for fault codes on the control board – consult the Board Troubleshooting Table.



## System Check List

Installer: Complete unit and system checkout and follow unit start-up procedures provided with the unit. Use this form to record information, temperatures and pressures during start-up. Keep this form for future reference.

### Location Information.

Owner: \_\_\_\_\_

Address: \_\_\_\_\_

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Unit Location in Building: \_\_\_\_\_

Date: \_\_\_\_\_

Sales Order No: \_\_\_\_\_

In order to minimize troubleshooting and costly system failures, complete the following checks and data entries before the system is put into full operation.

Temperatures: (Circle) F or C

Antifreeze: \_\_\_\_\_ Type: \_\_\_\_\_ %

Pressures: (Circle) PSIG or kPa

Allow unit to run 15 minutes in each mode before taking data.

Do not connect service manifold gauges during start up unless instructed by ICE AIR service tech.

	Cooling Mode	Heating Mode
Return-Air Temperature DB (°F)		
Supply-Air Temperature DB (°F)		
Temperature Differential		
Entering Fluid Temperature (°F)		
Leaving Fluid Temperature (°F)		
Temperature Differential		
Water Pressure IN		
Water Pressure OUT (PSI)		
Pressure Differential (PSI)		
Flow Rate (GPM)		
Supply Voltage at Contactor (V)		
Transformer Low Side Volts (V)		
Compressor Amps (A)		
Motor Amps (A)		





## Notes or Technical Comments

Precautions and preparations listed are for general knowledge and to define basic guidelines. Local codes and existing practices should be observed and performed by a professional.  
Due to ICE AIRs ongoing product development programs, the information in this document is subject to change without notice.



## Limited Warranty

Twelve (12) Month Warranty of ICE AIR units – ICE AIR, LLC, herein referred to as “ICE AIR,” warrants to the original owner that the entire unit is free from defects in material and workmanship for a period of twelve (12) months from the date of delivery. Any part of portion thereof which becomes defective under normal use during the period of this warranty will be repaired or replaced provided ICE AIRs examination shall prove to its satisfaction that the part was or became defective under normal use. ICE AIRs obligations under this warranty are limited to: (a) Repairing the defective part or (b) furnishing a replacement part provided the defective part is returned to the factory, without shipping damage, transporting charges prepaid. No reimbursement will be made for expenses incurred in making field adjustments or replacements unless specifically authorized in writing by the Company.

The Company is not obligated under this warranty for field labor such as service for inspection, removing, packing and/or reinstalling water source unit, nor for the return transportation charges.

### OPTIONAL Extended Refrigeration Circuit Warranty

The Optional Extended Refrigeration Circuit Warranty MUST be purchased from ICE AIR within thirty (30) days from date of delivery to be valid. The hermetically sealed refrigeration circuit (consisting of the motor, compressor assembly, evaporator coil, coaxial/condenser coil and interconnecting tubing) is warranted to the original owner for four additional years from date of the expiration of the Twelve Month Warranty. Components under this warranty will be supplied at ICE AIRs expense provided the failed component is returned to the factory. This optional warranty does not include any other parts of the equipment such as fans, fan motors, controls, cabinet parts, electrical relays, capacitors, protective devices, or wiring. ICE AIR is not obligated under this warranty for field labor such as service for inspection, removing, packing, and/or reinstalling the refrigeration circuit, nor for return transportation charges. ICE AIR reserves the right to make a handling and inspection charge in the case of parts or equipment improperly returned as defective and/or as being in warranty.

To obtain assistance under the parts warranty or to purchase the optional extended warranty, simply contact ICE AIR Customer Service at 80 Hartford Avenue, Mount Vernon, New York 10553. Telephone **914-668-4700**.

The Twelve Month and the OPTIONAL Extended Refrigeration Circuit Warranty (which must be purchased separately) constitute the buyer’s sole remedy. They are given in lieu of all other warranties. There is no implied warranty of merchant-ability or fitness for a particular purpose. In no event and under no circumstance shall ICE AIR be liable for incidental or consequential damages, whether the theory is breach of this or any warranty, negligence, or strict tort.

No person (including any agent, salesman, dealer or distributor) has authority to expand ICE AIRs obligation beyond the terms of these express warranties, or to state that the performance of the product is other than that published by ICE AIR.

### General Conditions

The above warranties are void if ICE AIRs equipment has been damaged, misused, subjected to abnormal use or service or its serial number has been altered, defaced, or removed, or payment for the equipment is in default. ICE AIR is not responsible for service to correct conditions due to misapplication, improper installation, inadequate wiring, incorrect voltage conditions or unauthorized opening of the refrigeration circuit, nor for consequential damages. In case ICE AIRs equipment is installed in conjunction with cabinets, grills, louvers, controls or other parts manufactured by others, these warranties shall apply only to ICE AIRs manufactured portion of the equipment. The conditions of the standard warranty plan are effective for 18 months from TCO. ICE AIR reserves the right to make a handling and inspection charge in the case of parts or equipment improperly returned as defective and/or as being warranty.

### Important

The following are the responsibility of the user. They are not manufacturing defects, and are therefore not included in the warranty plan.

- 1) Failure of unit to operate satisfactorily due to improper amount of air on evaporator coil or air supply to air cooled condensers.
- 2) Damage to unit or unsatisfactorily operation due to improper cleaning of evaporator coil or use of unit in corrosive atmosphere locations such as chemical plants, refineries, or salt spray areas.
- 3) Damage to unit from unsatisfactory operation due to blown fuses, inadequate or interrupted electrical service, use of improper electrical protective devices or operation of unit on power supply other than covered by nameplate rating of unit.
- 4) Damage due to failure to properly maintain unit.

- 5) Damage due to transportation or handling prior to and during installation.
- 6) Damage due to accident or from alteration, improper installation, tampering.
- 7) Filter cleaning or replacement.
- 8) Misapplication.

### Check, Test and Start

Check, Test and Start of the air conditioners by an experienced person is the responsibility of the installing contractor. This consists of physically confronting each unit operating in both heating and cooling modes and correcting any minor deficiencies noted. After the equipment leaves the factory, it may become damaged or maladjusted during transportation or on the job. Sometimes wires are disconnected accidentally, or fan motors move on their bases due to rough handling, causing fans to strike; a component(s) may be inoperable. The correction of such conditions is part of the Check, Test and Start. Note that unless otherwise specifically agreed to in writing, ICE AIR includes no field labor, Check, Test, and Start (or the like) in the price of its equipment.

### Installation

ICE AIR is not responsible for the design, execution and performance of the installation method or any of the accessory items used during installation such as seals, caulking, weatherproofing, supporting structures, attachment means, louvers and frames supplied by others.



80 Hartford Avenue, Mount Vernon, NY 10553  
Tel: 877-ICE-AIR-1 (877-423-2471)  
Fax: 914-668-5643  
email: [service@ice-air.com](mailto:service@ice-air.com)

**[www.ice-air.com](http://www.ice-air.com)**

© 2018 by ICE AIR, LLC

ICE6082.1 08/18

AHRI Certified® is a registered trademark of the Air-Conditioning, Heating, and Refrigeration Institute.

Precautions and preparations listed are for general knowledge and to define basic guidelines. Local codes and existing practices should be observed and preformed by a professional.

Due to ICE AIRs ongoing product development programs, the information in this document is subject to change without notice.