ICE AIR®
World Class Comfort®

Installation Manual

FCHR

Hi-Rise Fan Coil Unit

Fan Coil Unit (FCU) for
Furred Wall Installation

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Contents

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. Thank you for purchasing and installing the ICE-AIR High Rise FCU (Fan Coil Unit). ICE-AIR is a leading supplier of FCUs, offering replacement air conditioners and heat pumps that are interchangeable with units no longer available from the original manufacturer. Our units are engineered to fit perfectly within the existing wall sleeve, thereby reducing installation time and expense.

Overview

Installing the ICE AIR Hi-Rise FCU 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

1. Assess the ICE AIR unit to ensure all components are intact upon delivery. Access Panel is typically supplied by ICE AIR.
2. Risers MUST be installed prior to installing the unit otherwise access to the pipes will be difficult.
3. Concealed wall must have a minimum of 1-1/2" clearance on both left and right in addition to the backside. This clearance does not include the space taken by the riser.
4. Floor should be level in both horizontal directions. Installer must set the unit at zero tolerance or the unit's airflow will be misaligned.
5. Ensure the Access Panel is properly aligned with the unit otherwise it will result in a loss of air intake efficiency.

6. Adequate and continuous water flow must be maintained for proper and safe unit operation. Confirm adequate drainage is also available.
7. 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.

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FCHR Nomenclature

Model Selection	**8**	**FCHR**	**08**	**-**	**E**	**C**	**X**	**X**	**6**	**2**	**B**	**S**	**X**	**-**	**22**	**A**	**G**	**A**	**A**	**1**	**P**	**P**	**M**	**F**	**F**
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										

Item1	**8**	Voltage	**5**- 115V - 1Ph - 60Hz **8**- 208V - 1Ph - 60Hz **7**- 277V - 1Ph - 60Hz
Item 2	**FCHR**	Unit	**FCHR**- Hi-Rise
Item 3	**08**	CFM	**02**- 200 **03**- 300 **04**- 400 **06**- 600 **08**- 800 **10**- 1000 **12**- 1200
Item 4	**E**	Motors	**P**- PSC **S**- PSC Hi Static **E**- ECM
Item 5	**C**	Piping	**A**- RH 2 Pipe Heat and Cool MCO **B**- RH 2 Pipe Heat and Cool w/Aux Electric Heat MCO **C**- RH 2 Pipe Heat and Cool w/Aux Electric Heat ACO **D**- RH 2 Pipe Cool w/Total Elec Heat MCO **E**- RH 2 Pipe Cool w/Total Elec Heat ACO **F**- RH 2 Pipe Heat Only **G**- LH 2 Pipe Heat and Cool MCO **H**- LH 2 Pipe Heat and Cool w/Aux Electric Heat MCO **I**- LH 2 Pipe Heat and Cool w/Aux Electric Heat ACO **J**- LH 2 Pipe Cool w/Total Elec Heat MCO **K**- LH 2 Pipe Cool w/Total Elec Heat ACO **L**- LH 2 Pipe Heat Only **M**- RH 4 Pipe Heat and Cool MCO **N**- RH 4 Pipe Heat and Cool ACO **O**- LH 4 Pipe Heat and Cool MCO **P**- LH 4 Pipe Heat and Cool ACO
Item 6	**X**	Enclosure	**X**- Not applicable
Item 7	**X**	Plenums	**B**- Bottom Return **R**- Rear Return **F**- Front Return **X**- No Plenum
Item 8	**6**	Controls	**1**- Unit Mounted Fan Mode Switch **2**- Wall Mounted Fan Mode Switch **3**- Unit Mounted Fan Mode Switch and Manual (Knob) Thermostat **4**- Touchpad non programmable thermostat **5**- LCD Non programmable thermostat **6**- LCD programmable thermostat **7**- Wired for ELA11599 Non Programmable Thermostat **8**- Wired for ELA11599 Programmable Thermostat **9**- 24V Terminal for external controls by others
Item 9	**2**	Coil Rows	**2**- 2 **3**- 3 **4**- 4
Item 10	**B**	Coil Orientation	**B**- 1 Cool, 1 Heat
Item 11	**S**	Drain Pan	**G**- Galvanized Powder Coated (Black) **S**- Stainless Steel
Item 12	**X**	Disconnect Switch	**F**- Fused **N**- Non Fused **X**- None

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FCHR Valve Package Nomenclature

Model Selection	8	FCHR	08	-	E	C	X	X	6	2	B	S	X	-	22	A	G	A	A	1	P	P	M	F	F
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	**22**	Motorized Valve Package	**21**- Wired for 24V MV* control - MV* by others **22**- Line Voltage 2 Way MV* Heat NO, Cool NO **23**- Line Voltage 2 Way MV* Heat NC, Cool NO **24**- Line Voltage 2 Way MV* Heat NO, Cool NC **25**- Line Voltage 2 Way MV* Heat NC, Cool NC **26**- Line Voltage 3 Way MV* #1 NO Diverting, #2 NO Diverting **27**- Line Voltage 3 Way MV* #1 NC Diverting, #2 NO Diverting **28**- Line Voltage 3 Way MV* #1 NC Diverting, #2 NC Diverting	**29**- 24V 2 Way MV* Heat NO, Cool NO **30**-24V 2 Way MV* Heat NC, Cool NO **31**- 24V 2 Way MV* Heat NO, Cool NC **32**- 24V 2 Way MV* Heat NC, Cool NC **33**- 24V 3 Way MV* #1 NO Diverting, #2 NO Diverting **34**- 24V 3 Way MV* #1 NC Diverting, #2 NO Diverting **35**- 24V 3 Way MV* #1 NC Diverting, #2 NC Diverting **X**- None
Item 14	**A**	Electric Heat	**A**- 1 **B**- 1.5 **C**- 2 **D**- 3 **E**- 3.5 **F**- 4.3 **G**- 5 **H**- 6 **I**- 7.5 **J**- 10 **X**- No Electric Heat	
Item 15	**G**	Secondary Drain Pan	**G**- Galvanized Powder Coated (Custom Color) **S**- Stainless Steel **X**- None	
Item 16	**A**	Flow Regulation Cooling Coil	**A**- Balancing Valve **D**- Autoflow Valve 1.0 GPM **G**- Autoflow Valve 2.0 GPM **J**- Autoflow Valve 3.0 GPM **M**- Autoflow Valve 4.0 GPM **P**- Autoflow Valve 5.5 GPM **S**- Autoflow Valve 7.0 GPM **V**- Autoflow Valve 8.5 GPM	**B**- Circuit Setter **E**- Autoflow Valve 1.3 GPM **H**- Autoflow Valve 2.5 GPM **K**- Autoflow Valve 3.3 GPM **N**- Autoflow Valve 4.5 GPM **Q**- Autoflow Valve 6.0 GPM **T**- Autoflow Valve 7.5 GPM **W**- Autoflow Valve 9.0 GPM	**C**- Autoflow Valve 0.5 GPM **F**- Autoflow Valve 1.5 GPM **I**- Autoflow Valve 2.8 GPM **JL**- Autoflow Valve 3.5 GPM **O**- Autoflow Valve 5.0 GPM **R**- Autoflow Valve 6.5 GPM **U**- Autoflow Valve 8.0 GPM **X**- None
Item 17	**A**	Flow Regulation Heating Coil	**A**- Balancing Valve **D**- Autoflow Valve 1.0 GPM **G**- Autoflow Valve 2.0 GPM **J**- Autoflow Valve 3.0 GPM **M**- Autoflow Valve 4.0 GPM **P**- Autoflow Valve 5.5 GPM **S**- Autoflow Valve 7.0 GPM **V**- Autoflow Valve 8.5 GPM	**B**- Circuit Setter **E**- Autoflow Valve 1.3 GPM **H**- Autoflow Valve 2.5 GPM **K**- Autoflow Valve 3.3 GPM **N**- Autoflow Valve 4.5 GPM **Q**- Autoflow Valve 6.0 GPM **T**- Autoflow Valve 7.5 GPM **W**- Autoflow Valve 9.0 GPM	**C**- Autoflow Valve 0.5 GPM **F**- Autoflow Valve 1.5 GPM **I**- Autoflow Valve 2.8 GPM **L**- Autoflow Valve 3.5 GPM **O**- Autoflow Valve 5.0 GPM **R**- Autoflow Valve 6.5 GPM **U**- Autoflow Valve 8.0 GPM **X**- None
Item 18	**1**	Y-Strainer	**1**- Y-Strainer **2**- Y-Strainer Blow Down **X**- None	
Item 19	**P**	Purge Valve	**P**- Yes **X**-No	
Item 20	**P**	PT Ports	**P**- Yes **X**-No	
Item 21	**M**	Air Vents	**M**- Manual **A**- Automatic **X**- None	
Item 22	**F**	Condensate Overflow Switch	**F**- Float **E**- Electronic **X**- None	
Item 23	**S**	Pipe Connections	**S**- Sweat **M**- Male NPT **F**- Female NPT **U**- Unions	

* MV = Motorized Valve

Before You Begin

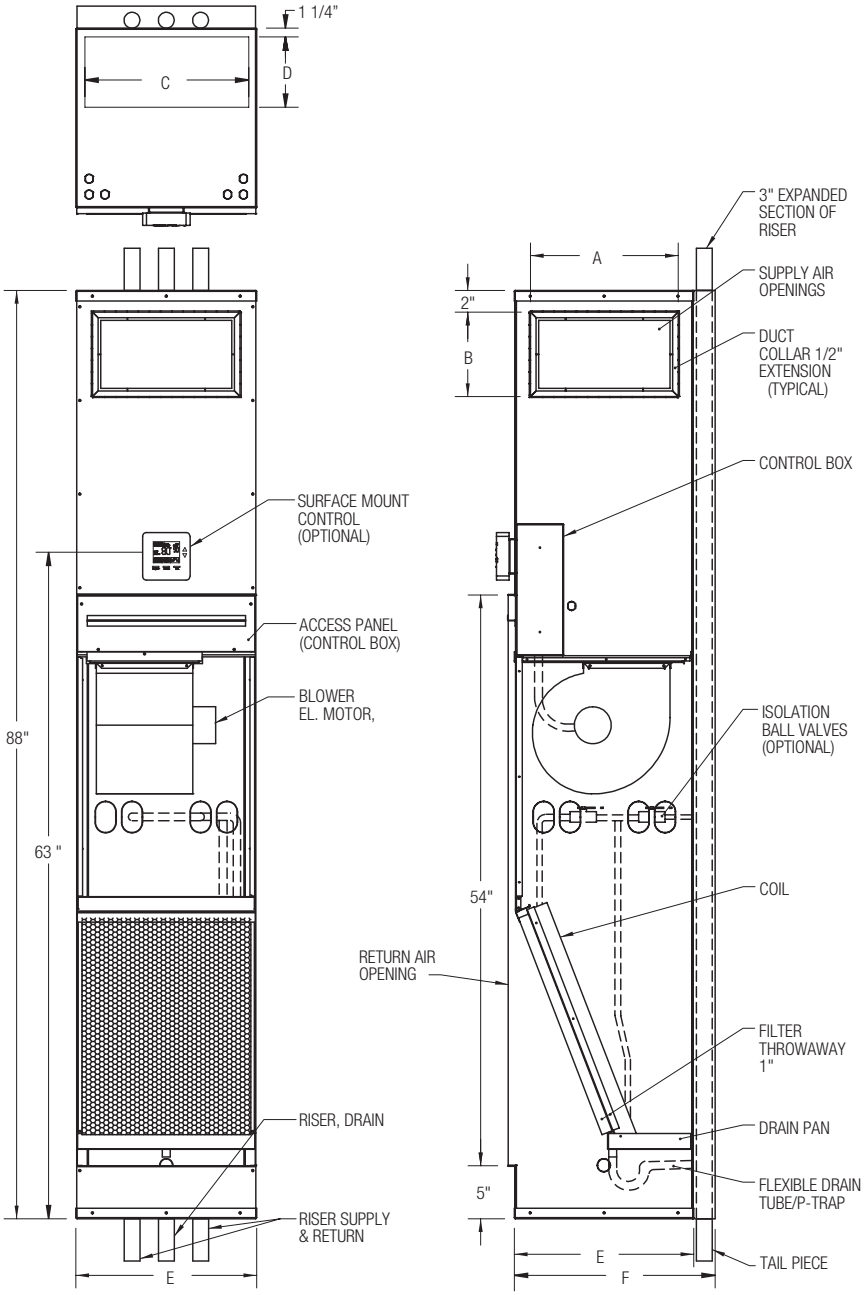
1. Locate the unit where it can evenly distribute air throughout the room without obstructions. Units should be installed no closer than 12” apart when two units are side by side. A vertical clearance of 60” should be maintained between units.
2. Ensure the wall is structurally sound to support the weight 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.



Unit Size	Single Supply		Double Supply		Top Supply		Dimensions	
	A	B	A	B	C	D	E	F
FCHR 03	14	8	14	6	14	10	17	22 3/8”
FCHR 04	14	12	14	6	14	10	17	22 3/8”
FCHR 06	18	10	18	6	16	12	20	25 3/8”
FCHR 08	18	12	18	6	16	12	20	25 3/8”
FCHR 10	–	–	22	8	18	16	24	29 3/8”
FCHR 12	–	–	22	8	18	16	24	29 3/8”

Installation Overview

1. Ensure all preparations are met within the “Prerequisite Section”
2. Concealed wall must be prefabricated for the entire length of the unit. Additional wall features must be fitted after the unit installation is complete
3. Position the unit so the access panel’s slot receiver sits on the edge of where the outer wall is planned
4. Bolt the unit to the ground. The brackets are supplied by the installer and should provide enough support to remove all vibrational effects
5. Ensure piping and electrical installations are followed thoroughly in the “Piping Installation” and “Electrical Installation” sections respectively
6. The walls are now ready to be installed
7. Place the access panel on slot receiver and turn the dials on the upper portion to lock the door in place
8. Run the unit

Filter Installation

Each unit is delivered with a filter for the filter rack, which can be found at the bottom of the unit, pictured at right. 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 Dispensable Filter. Dispensable Filters should be replaced twice every year, before the start of every heating or cooling season. Please contact your local sales representative for replacements.

Piping Installation

Fan Coils come in either 2 pipe or 4 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.

Piping for the Hi-Rise Fan Coil unit should occur during the installation process.

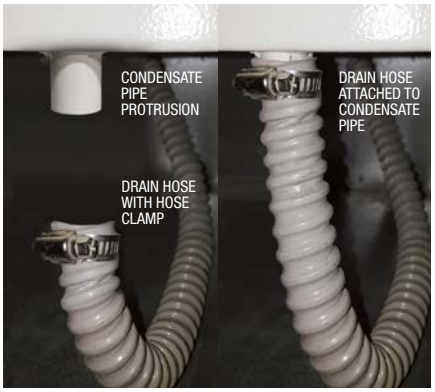
The unit should be positioned so the openings on the left or right side (opposite from the internal pipes within the unit) faces the risers.

Connect the condensate riser to a protrusion in the back of the unit.

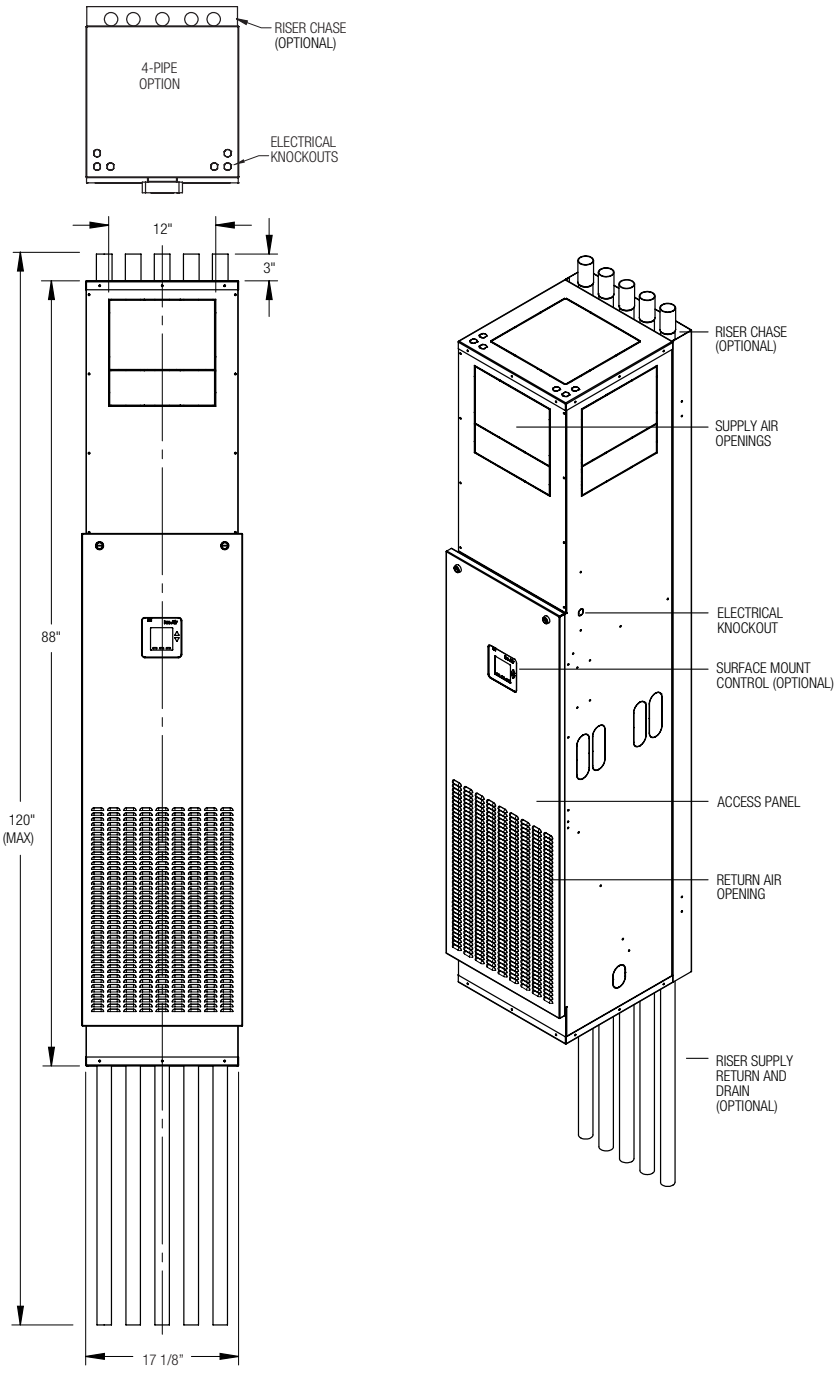
The ICE AIR unit’s pipes should be connected to the risers with a braided steel hose (shown at right). Ensure the risers are attached to the correctly labeled pipes (see above).

Below the coil, a pipe protrudes from beneath (see image below). Attach a drain hose to this pipe and in the back, behind the coil to another protrusion which connects to the condensate riser. Secure the drain hose with hose clamps

Assess all pipes are properly connected and ensure there is no leakage.



Components and Parts View



Installing the Riser

Riser Installation Configurations

Riser system design is the responsibility of the building mechanical designer and/or the installing contractor. Because it affects individual unit performance and efficiency, it is important that the system be properly designed, installed and balanced prior to operation of the equipment.

IMPORTANT: Please do not attempt to install risers without the help of a certified plumber.

Regardless of the system being utilized, optimum performance can only be achieved through adjustment to the recommended water flow at each individual unit. Refer to unit requirements in the following table:

Riser Sizing and Insulation

Riser sizing is generally based on the water flow requirements of each unit and will vary depending on unit location within the building (units on higher and lower floors that tie into the same riser column may require different size risers, depending on the piping system chosen). The riser material, diameter, length and insulation thickness must be determined for each unit based on its positioning within the building and the overall system requirements.

IMPORTANT: Please consult an engineer before proceeding with riser installation.

Riser Expansion

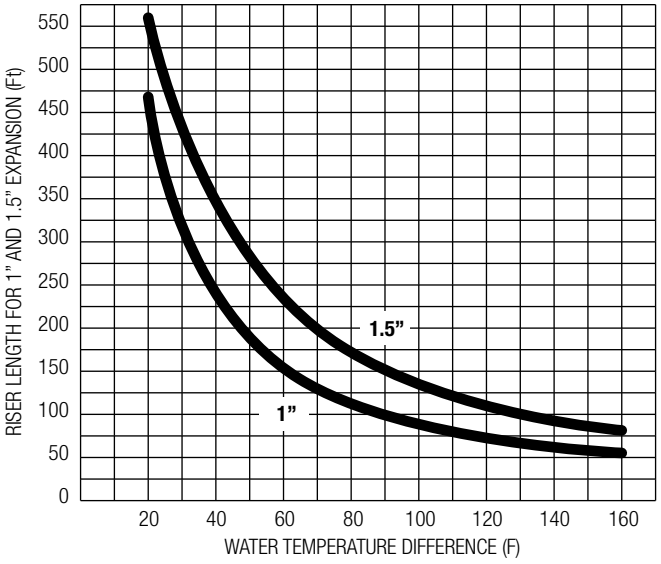
Generally, in medium to high-rise buildings, allowances must be made for pipe expansion. In applications supplemented with factory- or field-supplied between floor riser extensions, assemble and install extensions before installing the unit cabinet.

NOTES: Riser assemblies are designed to accommodate a maximum of 1-1/8" expansion and contraction up to a total movement of 2-1/4". If the total calculated rise expansion exceeds 2-1/4", expansion devices must be used (field provided).

All riser modification necessitated by variations in floor-to-floor dimensions, including cutting off or extending risers, or providing extensions, are the sole responsibility of the installing contractor.

In cases where piping movement is expected to exceed the factory allowances, additional expansion compensation must be made to the riser system in the field. The graph below displays the expansion characteristics of risers compared to water temperature differential.

Assuming a minimum water temperature of 20°F and a maximum water temperature of 120°F, the temperature difference of 100°F indicates 90 feet of riser will expand or contract 1". To eliminate stress, a riser system must be anchored at least once to the building structure. Technical information on pipe expansion, contraction and anchoring can be found in the *ASHRAE HVAC Systems and Equipment Handbook*. Riser expansion and the anchoring of both the riser system and each unit is the responsibility of the design engineer and installing contractor.

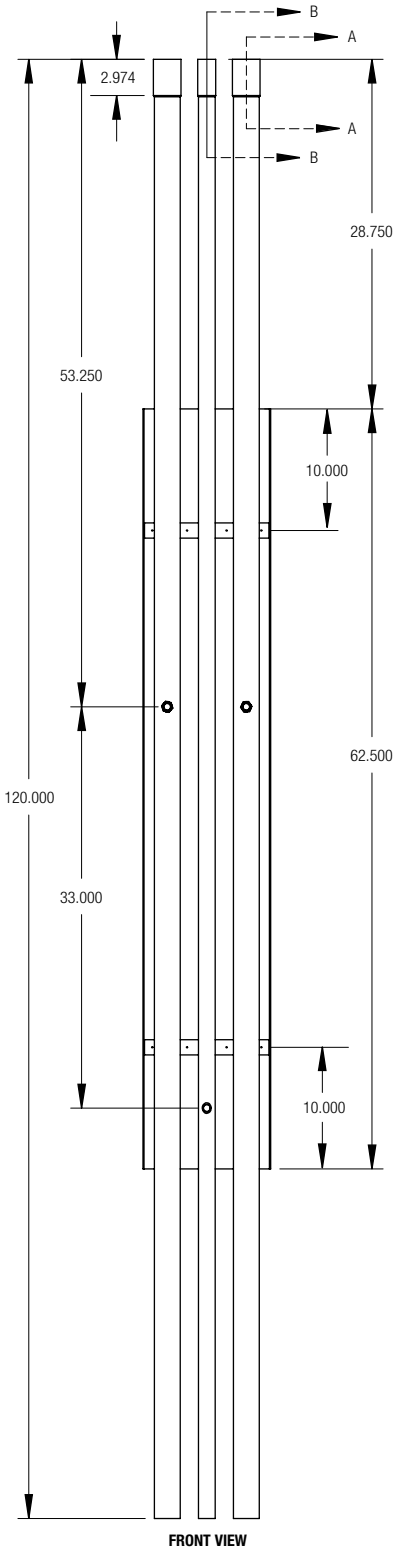


Installing Modular Risers

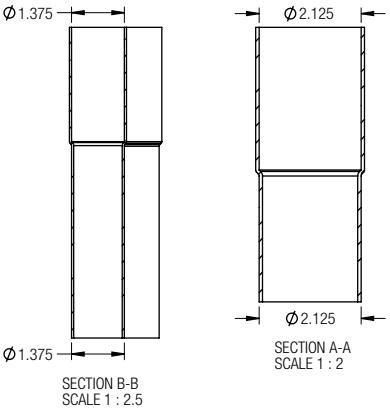
ICE AIR Modular Riser System is a unique riser system designed to increase efficiency for the contractor and building mechanical designer. Each riser set is encased and palletized separately prior to shipping, allowing minimal installation efforts.

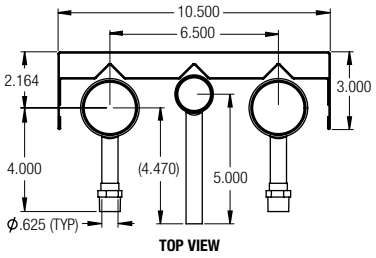
In order to install the Modular Riser System, carefully review the mechanical plans and place the risers in the designated location. Once the system is in place, the exposed joints allow for easy pressure testing. To attach the unit, align the unit's cabinet to each riser set and ensure the riser stubs correspond to the unit's piping diagram.

2 Pipe System

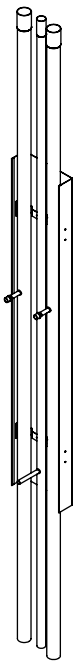


FRONT VIEW





TOP VIEW

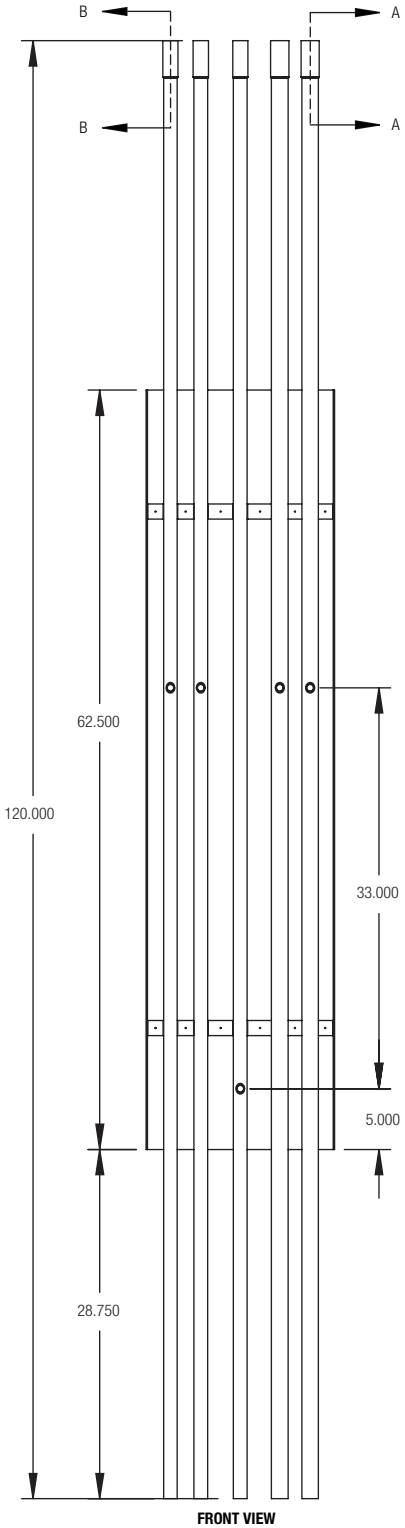


ISOMETRIC VIEW

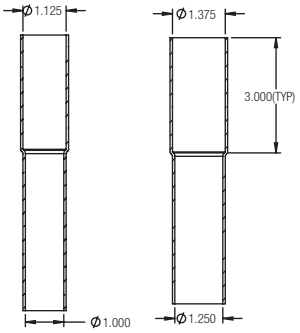
Precautions and preparations listed are for general knowledge and to define basic guidelines. Local codes and existing practices should be observed and preformed by a professional.
Due to ICE AIRs ongoing product development programs, the information in this document is subject to change without notice.

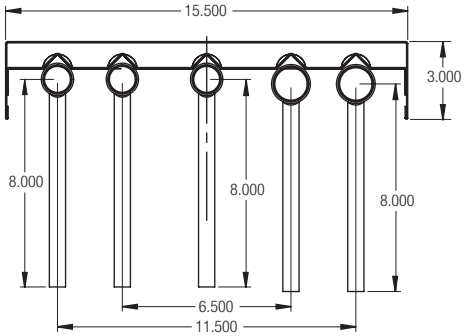
4 Pipe System

Fan Coils are available in 4 pipe design for increased versatility for the building manager and end user. Similar to the 2 pipe system, the ICE AIR 4 pipe fan coil utilizes a braided hose and is connected to the risers. The motorized valves should be attached to both supply channels, however, neither return pipes shall have one. Line up the correct pipes to the corresponding riser as labeled on the coil and ensure it is properly securely fastened.

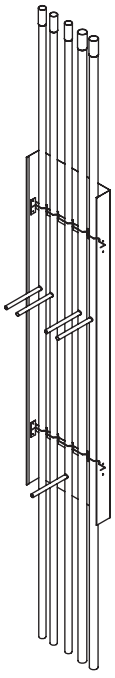


FRONT VIEW





TOP VIEW



ISOMETRIC VIEW

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.

Flushing the Risers

1. Close shut-off valves at each unit on the riser except the shut-off valve on the top floor.
2. Flush solution through supply riser. NOTE: The solution passes through the top floor connection and down the return riser.
3. When the building has more than 10 floors, connect the supply and return run-outs on the top two floors to divide the water flow and reduce pressure drop at the pump.
4. Repeat flushing procedure for each set of risers in the building.
5. Refill the system and add in a proportion of trisodium phosphate approximately one pound per 150 gallons (0.4kg per 500 liters) of water.
6. Reset the boiler to raise the loop temperature to about 100°F (37.8°C).
7. Circulate the solution for between 8 to 24 hours. At the end of this period, turn OFF the circulating pump and drain the solution. Repeat system cleaning as needed.
8. Open the supply and return riser service valves at each unit. Refill the system and bleed off all air.
9. Test the system pH with litmus paper. The system water should have a pH of 6 to 8.5. Add chemicals as appropriate to maintain pH levels.
10. When the cleaning process is complete, remove the short-circuited hoses. Reconnect the hoses to the proper supply, and return the connections to each of the units. Refill the system and bleed off all air.

NOTE: DO NOT use “Stop Leak” or similar chemical agent in this system. Addition of chemicals of this type to the loop water will corrode the heat exchanger and inhibit unit performance.

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

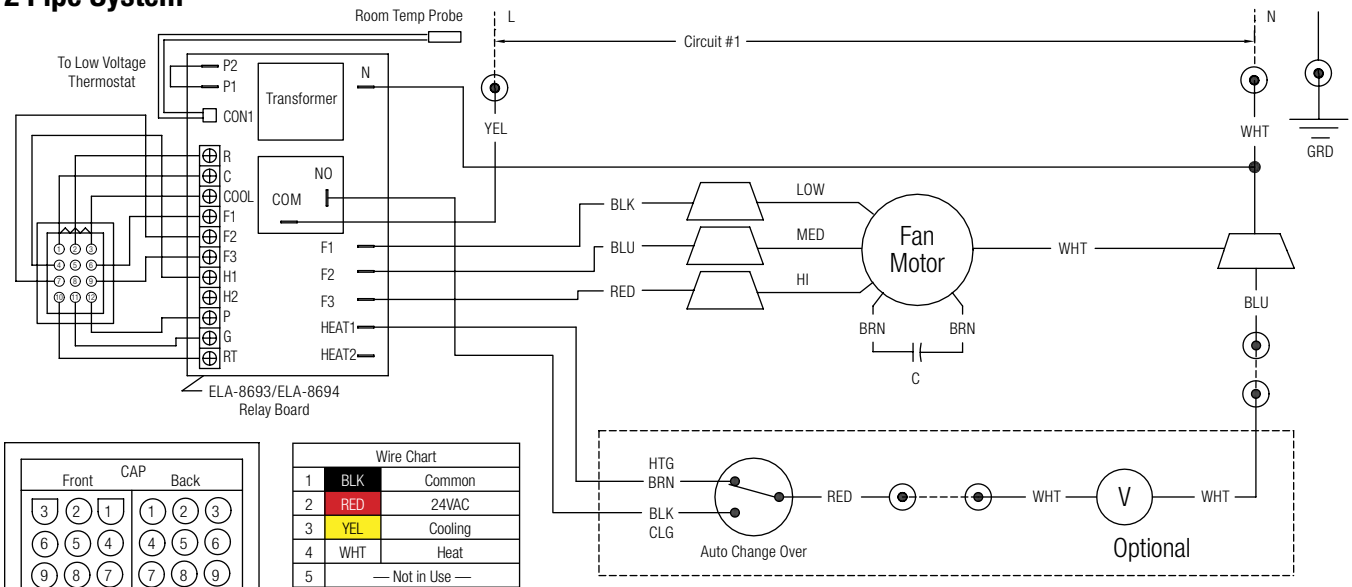
Be sure the available power is the same voltage and phase shown on the unit serial number plate. Line and low voltage wiring must be done in accordance with local codes or the National Electric Code, whichever is applicable.

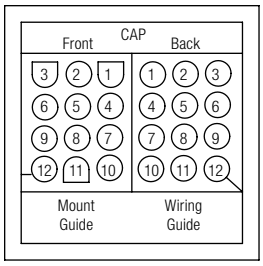
Power Connection

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.

2 Pipe System





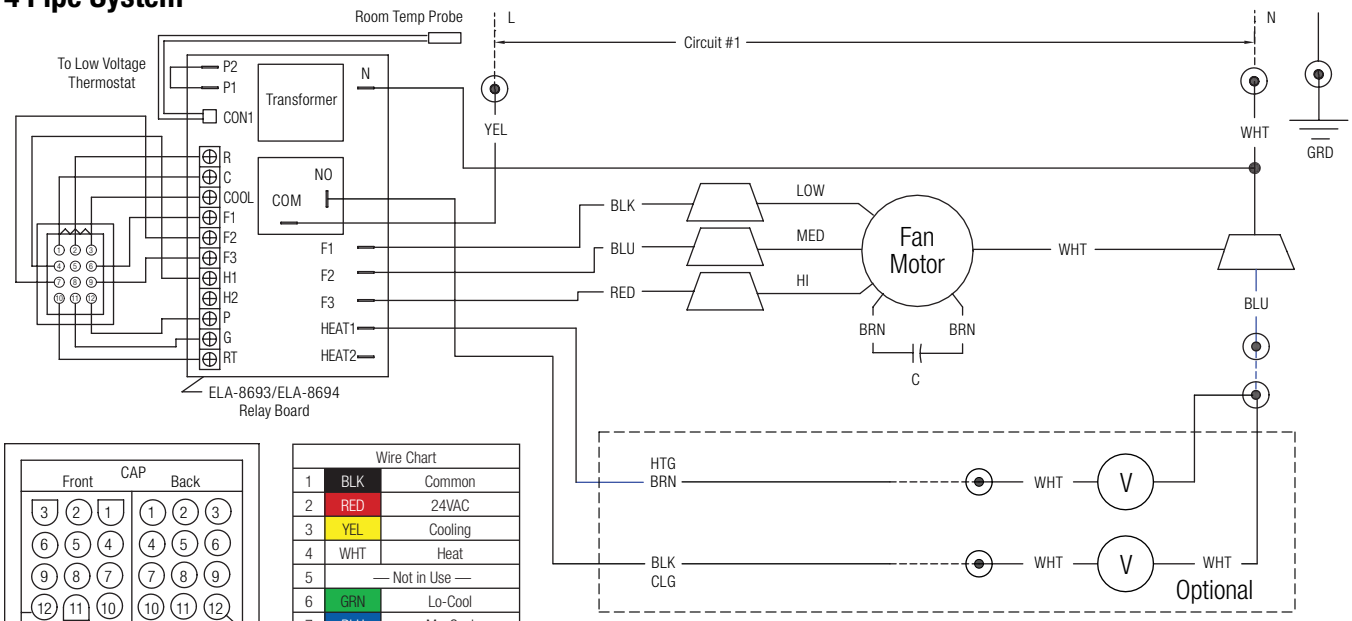
Wire Chart		
1	BLK	Common
2	RED	24VAC
3	YEL	Cooling
4	WHT	Heat
5	— Not in Use —	
6	GRN	Lo-Cool
7	BLU	Me-Cool
8	— Not in Use —	
9	ORN	Hi-Cool
10	GRY	Room Temp
11	PUR	G
12	BRN	Pipe Sensor

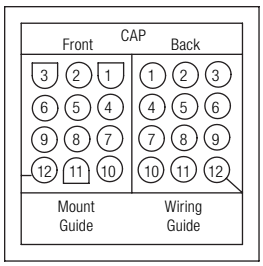
Legend:

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

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

4 Pipe System





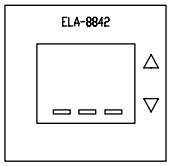
Wire Chart		
1	BLK	Common
2	RED	24VAC
3	YEL	Cooling
4	WHT	Heat
5	— Not in Use —	
6	GRN	Lo-Cool
7	BLU	Me-Cool
8	— Not in Use —	
9	ORN	Hi-Cool
10	GRY	Room Temp
11	PUR	G
12	BRN	Pipe Sensor

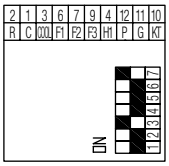
Legend:

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

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

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





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)		

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.

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