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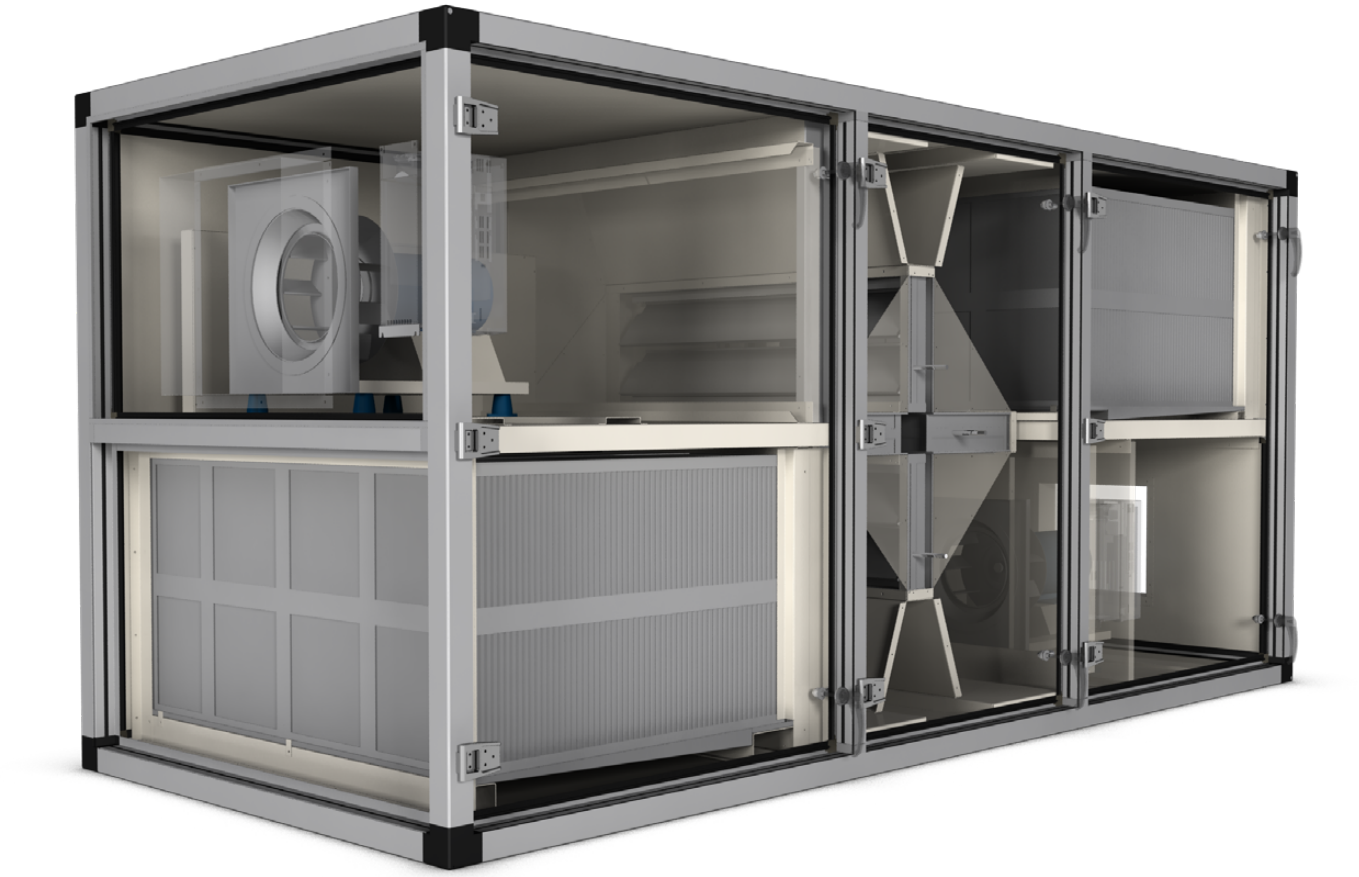

PRC

RegenCore Series

MANUAL – INSTALLATION

v001 – Issue Date: 06/11/21

PRC

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WARNING

Fire or Explosion Hazard

Failure to follow safety warning exactly could result in serious injury, death or property damage.

Be sure to read and understand the installation, operation and service instructions in this manual.

Improper installation, adjustment alteration, service or maintenance can cause serious injury, death or property damage.

NOTE: This document is customer property and must be retained by the unit's owner for use by maintenance personnel.

MANUFACTURED BY

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PRC

Product Overview

Description

RegenCore (PRC) is a high effectiveness energy recovery unit which recovers energy in the heating and cooling seasons. These units are precisely sized and built to match each unique installation.

General Safety Information

This manual provides information on installation, start-up and maintenance for the PRC. Improper installation can lead to unsatisfactory operation or dangerous situations. This unit should only be installed and maintained by qualified personnel.

Installers and service personnel should have a clear understanding of the contents of this manual and the submittal documents prior to installation. Improper installation may lead to electric shock, possible injury from contact with moving parts and/or possible burns from contact with heating components. Additional safety concerns can arise from unit location such as a roof or inclement weather (outdoor installations). Additional safety precautions may be required.

Installers shall follow all codes and regulation of authorities having jurisdiction, including if applicable, but not limited to: The Local Building code; the National Electrical Code (NEC); the Canadian Electrical Code (CEC) the National Fire Protection Association (NFPA); and, OSHA.

The appliance must be electrically grounded in accordance with local codes or, in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, and/or the Canadian Electrical Code, CSA C22.1, if an external electrical source is utilized. The appliance installation shall conform to local building codes.

WARNING ▼

The manufacturer's warranty does not cover any damage or defect caused by modifications to the unit including unauthorized attachments of other components. Such activity may lead to unsatisfactory performance and may endanger life and property.

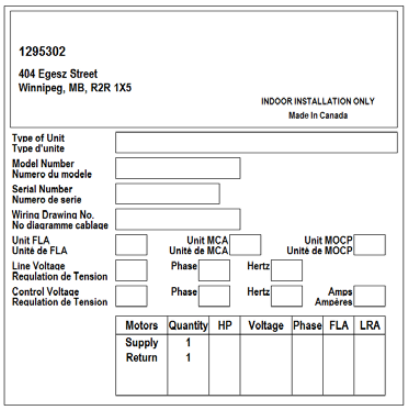
Submittal Documents

Detailed submittals are available for this and all related units. These submittals contain pertinent information required to properly install the equipment. Please review them thoroughly before commencing the installation.

Unit Nameplate

Figure 1 shows a typical nameplate which can be found on a PRC unit. The nameplate is generally located in the electrical and damper linkage service panel. The nameplate includes model number, serial number, electrical characteristics and other pertinent data.

FIGURE 1 – TYPICAL NAMEPLATE ▼



Unit inspection

This unit has been inspected and test-run prior to shipment to make sure the unit is free from defects from the manufacturer. It is possible that damage may occur during shipping, rigging and installation.

Upon receiving the unit, check that all items have been delivered by comparing the Bill of Lading to the equipment received. If anything is missing or damaged, notify the carrier immediately. The carrier should note this on the packing slip or other form of documentation and provide a copy.

NOTE: Photograph of any possible damage for record purposes.

Check the unit model number, heater size and electrical characteristics to make sure they are correct. If there are any issues, do not proceed with the installation. Contact your sales representative.

Storage

If the unit is to be stored, take precautions to prevent condensate from forming inside the unit's electrical compartments. Make sure the equipment is protected from weather and dust from site conditions by temporarily sealing all openings to the air tunnel for outdoor units and completely covering indoor units. SolutionAir will not assume any responsibility for equipment damage resulting from condensate accumulation on the unit's electrical and/or mechanical components.

Mechanical Installation

Location

PRC units are specifically designed to suit each installation, please refer to the submittal documents and nameplate for installation location information.

The unit must be located in an area that is accessible and free from both outdoor and building pollution sources. Careful attention should be made to avoid placing units near chimneys, exhaust stacks, plumbing vents or appliance vents. In addition, care should be taken to avoid mounting the unit near building elements that would cause an excessive accumulation of snow on and around the unit.

The unit is suitable for use in aircraft hangars, parking structures and repair garages when marked and installed, as applicable, in accordance with:

Standard for Airport Hangars, ANSI/NFPA 409 Standard for Parking Structures, ANSI/NFPA 88A Standard for Repair Garages, ANSI/NFPA 88B.

Clearances

The PRC unit is designed to be field-serviceable, which includes the energy recovery cores, coils, filters, fan/motor, damper linkages, and electronics. Refer to the submittal engineering drawings for the locations of access panels and safety/service areas, and ensure there is sufficient clearance for safety, inspection, and service.

Particular care should be made to ensure the core intakes/exhaust have sufficient space to ensure a smooth uninterrupted airflow (refer to the submittal drawings for details).

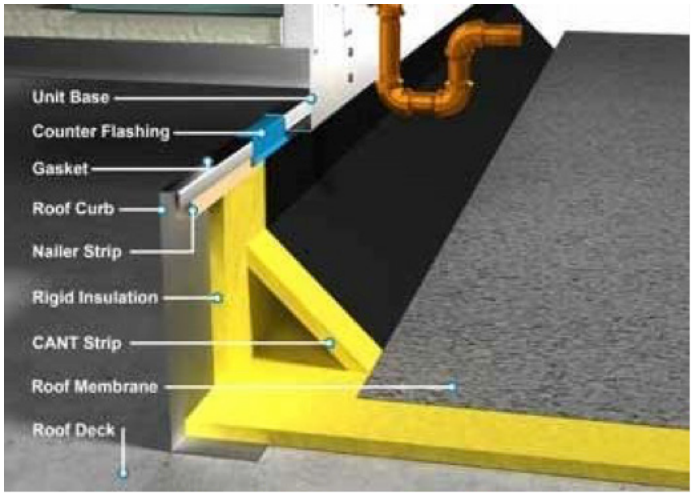
Roof Curb or Base

PRC units can be installed on a concrete housekeeping pad, sleeper, or a roof curb. The entire perimeter base and frame structure must be supported with either field-supplied sleeper or structural steel. Make sure that the support structure has the correct dimensions and that it is square and level.

NOTE Continuous Structural Support Requirement: The unit is designed to have continuous structural support around its entire perimeter. Failure to provide continuous structural support will damage the unit and void the warranty.

The support curb and any required ductwork (connecting to the base of the unit) should be installed prior to installing the unit. Once the curb is correctly dimensioned, level, and square, roofing can be completed in accordance with accepted roofing practices. Refer to Figure 2 for curb installation detail.

FIGURE 2 – CURB INSTALLATION DETAIL ▼



NOTE: To minimize sound transmission, only cut openings in roof deck for ductwork penetrations. Do not cut out the entire roof deck within in the curb perimeter.

Gasketing or other forms of sealant must be used around the curb perimeter and at the duct connections. When the curb is supplied by SolutionAir, a neoprene gasket is included. Prior to the installation of the unit, secure the gasket to the mating surface of the curb by peeling the backing off the gasket material and applying adhesive-side down.

If the unit is elevated, a field constructed cat walk around the unit is strongly recommended to provide access for service

Rigging

WARNING ▼

Heavy Components

Use properly-sized cables, chains, or slings only as shown. Each cable, chain, or sling must be capable of supporting the weight of the entire unit or component. Adjust cable, chain, or sling length for an even lift. Other lifting arrangements may damage unit or component. Failure to properly lift unit or component may result in death or serious injury.

NOTE: All PRC units are designed to be lifted from the base. Each section of the unit is provided with lifting points at each corner and sometimes at intermediate points.

Installation

If the PRC unit comes shipped in sections, each section is to be lifted separately unless otherwise noted. **DO NOT lift any section with cores installed.** All sections are to be lifted in their vertical orientation.

PRC units can be shipped with or without a structural steel base frame. If the PRC unit comes mounted on a base frame, lift using all available lifting points. If the PRC unit does not come mounted on a base frame, lift using soft straps slung under the lower frame.

The following rigging method should be used when the PRC comes **mounted on a base frame:**

1. Before lifting, check the unit weight to ensure that hoisting equipment is adequate size. Locate the lifting lugs as marked or shown on the unit drawing, and as illustrated in Figure 3.
2. Spreader bars must be used when lifting the equipment. Care must be taken to ensure that the lifting cables do not damage the unit casing during the lifting operation.
3. If the unit is to be lifted by forklift or other lifting devices, make sure that lifting forces are exerted on the perimeter base frame NOT the floor of the unit. Lift all components to the installation site separately to avoid damage.
4. Equipment must be lifted simultaneously by all lifting points to distribute the load properly. When multiple lifting points are furnished, they are to share the weight evenly via spreader bar(s), as illustrated in Figure 4.
5. Test lift the unit to make sure it is properly rigged and balanced. Make any necessary adjustments to rigging prior to performing the full lift.
6. Never lift unit in windy conditions.

The following rigging method should be used when the PRC **DOES NOT come mounted on a base frame**:

1. Before lifting, check the unit weight to ensure that hoisting equipment is adequate size.
2. Lift using soft straps slung under the lower frame. The straps must be secured from sliding. Care must be taken to ensure that the lifting cables and/or straps do not damage the unit during the lifting operation.
3. If the unit is to be lifted by forklift or other lifting devices, make sure that lifting forces are exerted on the perimeter base frame NOT the floor of the unit. Lift all components to the installation site separately to avoid damage.
4. Test lift the unit to make sure it is properly rigged and balanced. Make any necessary adjustments to rigging prior to performing the full lift.

FIGURE 3 – TYPICAL LIFTING POINTS ON A STRUCTURAL BASE FRAME ▼

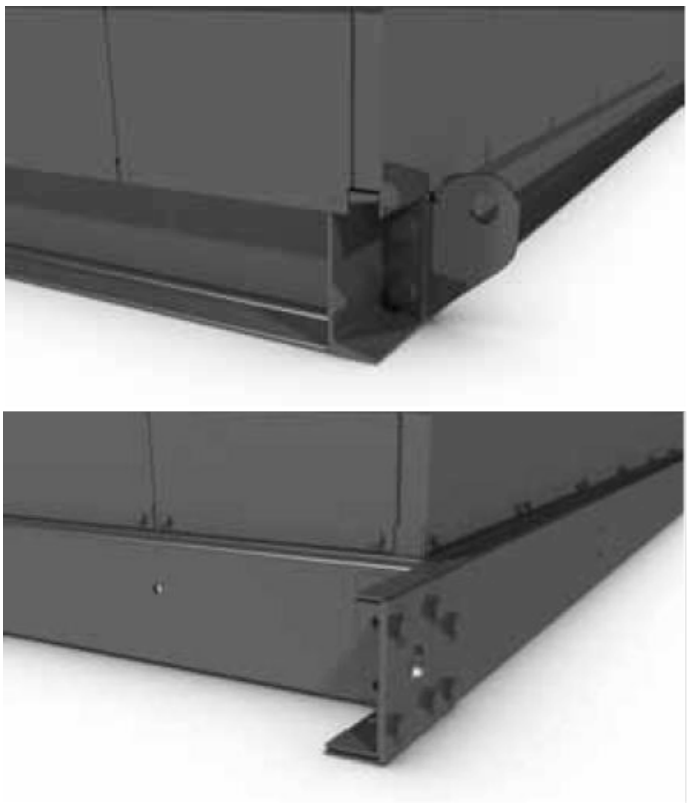
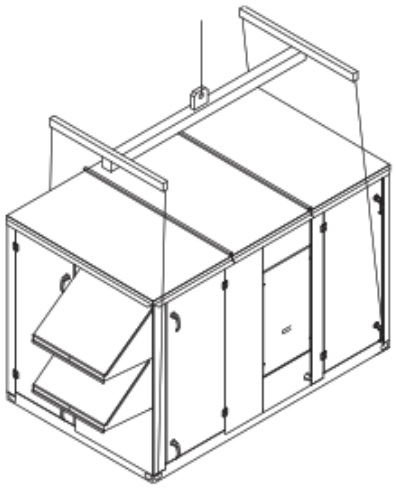


FIGURE 4 – TYPICAL SPREADER BAR ARRANGEMENT ▼



Installation

Assembly
PRC units may be shipped as a single unit or in sections for field assembly by the installing contractor. Refer to the submittal drawings for section details. This can be done using threaded rod or other means.

Refer to Appendix A for assembly of split units. Prior to joining sections, apply gasketing (supplied with unit) to one of the mating surfaces. Cinch the sections together and bolt through the provided flange-holes. Apply additional caulking on the roof flange and install a rain cap over the joint (Figure 5). Caulk the ends on the rain cap to ensure the unit is water tight.

FIGURE 5 – TYPICAL FLANGE JOINTS ▼

Core Installation
After the unit sections have been assembled, leveled, and installed in the final location (such as on a housekeeping pad, sleeper, or roof-curb). the aluminum heat-recovery cores can be installed by hand.

WARNING ▼

Follow workplace safety procedures when handling and installing the energy recovery cores. Ensure the cores, drain-pan, and support-frames are aligned as noted below. Do not use excessive force when placing the cores in to their stacked arrangement, as it may cause the stack to shift unexpectedly. Failure to follow safe-work procedures and the guidelines listed below may result in serious injury or death.

Approximate maximum core weight: 95 lbs each. To ensure proper core performance, care must be taken not to drop or use excessive force when installing the cores. It is strongly recommended that if the cores are distorted, their dimensions are corrected before they are installed.

Cores must be installed through the service/inspection door on the side of the unit.

The PRC units may require cores of various sizes (cores are shipped separately from the PRC cabinet). **Refer to the stacking diagrams** located on the core service/inspection doors for the proper stacking arrangement.

PLEASE REFER TO THE ATTACHED DOCUMENT FOR CORE-STACKING PROCEDURE

The following general instructions can be followed for core installation:

1. Remove louvers to permit handling access to core section.
2. Remove core stop frames.
3. Install the cores by sliding one or two stacked cores along the drain pan or along the previous row of cores. The provided sheet should be used to help make sliding the cores over the previous row easier.
4. Ensure the cores are contacting the core stop frames on the far side of the unit.
5. Core-ends must be aligned to ensure proper airflow and structural loading of the core frames.
6. The smallest cores should be installed on the top row and/or next to the service/inspection door, refer to the stacking diagram for details.
7. Reinstall the core stops.
8. Reinstall the louver with supplied self-taping fasteners.

Duct Connections
Adequate building relief shall be provided so as not to over pressurize the building. This can be accomplished by: taking into account, through standard engineering methods, the structure's designed/calculated infiltration/exfiltration rate; by properly sized relief openings; or, by interlocking powered exhaust system.

On outdoor units with ducting passing down through the curb, the ducting will be installed prior to the unit being attached to the curb. For all other duct connections, the ductwork will be connected to the unit casing using fasteners by the installing contractor. Unless indicated on the submittal drawings, the weight of the ducting should not be placed directly on the unit. The installing contractor should provide an external means to carry the duct weight.

On outdoor installed units, attached external ductwork should be properly waterproof sealed to prevent the ingress of water from the environment.

Access panels in the ducting near the unit are recommended. Where no access to the unit inlet or discharge section is provided as part of the unit (for example an access door in the unit), access panels are strongly recommended for inspection and service.

Blower or Fan
PRC units may have blowers or plenum fans, and can be direct- or belt-driven. The motor, fan, frame, and mounts should be visually inspected before initial start-up and at every fan service.

The blower/fan and motor are aligned before shipping from the factory, shipping and or mounting may result in misalignment, proper motor fan alignment should be checked and adjustments should be made, if required, prior to unit start up.

PRC units can come equipped with variable frequency drives for speed adjustment. The unit controller allows a broad range of blower speeds to accommodate necessary field balancing, see the controller manual for directions on adjustment.

If the blower can not be properly balanced using the controller settings, please contact SolutionAir for further instructions.

Variable Frequency Drive (VFD)
Variable frequency drives are used to control the speed of the motor and fan. Fan speed is controlled either with a set point, or with a controlling signal. Refer to the submittal for control and wiring specifics. For specifics regarding the VFD supplied with this unit, refer to the attached documentation.

Final Assembly
Before proceeding with the electrical installation, remove all shipping braces, packing, etc. (Figure 6).

FIGURE 6 – TYPICAL FAN BASE SHIPPING BRACKET ▼

Electrical Installation

NOTE: Use Copper Conductors Only: Unit terminals are designed for copper conductors only. Failure to use copper conductors may result in unit damage.

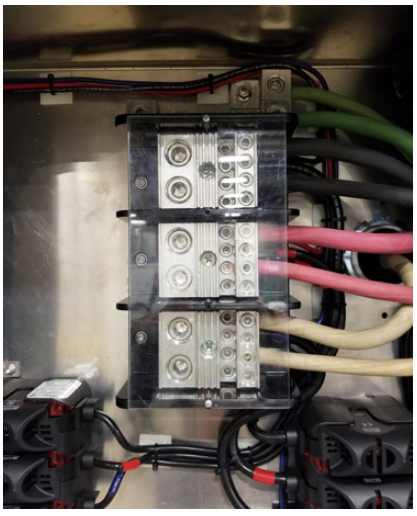
Main Power Connection

All connections to the unit and the main disconnect switch must conform to the applicable Electrical Codes.

1. Before proceeding, ensure that the electrical connections on the unit and supply match. The proper voltage for connection is listed on the rating plate attached to the unit.
2. Unit must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, and/or the Canadian Electrical Code, CSA C22.1, if an external electrical source is utilized.
3. Refer to the unit submittal drawing to determine the suggested location of the field wired power supply. Where a disconnect is supplied as part of the unit, the main power connection will be the line side of the disconnect.
4. If the unit is not supplied with a factory mounted disconnect (as shown in Figure 7), a field supplied disconnect must be installed in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, and / or the Canadian Electrical Code, CSA C22.1. Where a disconnect is supplied by others, the main power connection to the unit will be the line side of the main splitter block. Refer to unit electrical wiring diagrams for details.
5. Ensure that the routing of the power supply wiring does not interfere with removal of any unit access door, or in any way hinder servicing of the unit.
6. Refer to the submittals for electrical service routing. Unless indicated on the submittals, DO NOT penetrate the floor of the unit to route electrical conduits to the unit control panel. Provide a pitch pocket in accordance with standard roofing practice.
7. For units that are shipped in multiple sections, some electrical connections may have to be made by the installer in the field. Field wiring to be done by the installer appears as a dotted line on the wiring diagram. Wiring to connect two sections of a unit will be marked by the factory and a terminal block will be provided for such connections (as shown in Figure 8).
8. Fuses are furnished and installed by the factory in accordance with the National Electrical Code, ANSI/NFPA 70, and/or the Canadian Electrical Code, CSA C22.1. If replacement of any fusing is necessary, the replacement MUST be of the same amperage as the original. Failure to use equivalent replacement fuses may result in damage to components within the electrical system of the unit and/or the building. If any of the original wires need to be replaced, they must be replaced with type TEW 105° or equivalent except where noted.
9. On units with three-phase power supplies, make sure that motor rotation is correct as connected.

FIGURE 7 – TYPICAL FACTORY-SUPPLIED POWER DISCONNECT ▼

FIGURE 8 – TYPICAL SPLITTER/TERMINAL BLOCK ▼



Auxiliary Power Connections

A separate 120/1/60 power supply may be required on units with convenience outlets and lights. Refer to unit wiring diagrams for wiring sizing details and connection points.

Control Installation
All field wiring must be in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, and/or the Canadian Electrical Code, CSA C22.1.

Control wiring will depend on the controls provided with the unit. A controller is provided with the PRC unit unless otherwise specified in the submittal documents. A controller or thermostat must be provided by the installing contractor. Refer to unit electrical wiring diagrams for details.

Control Connections
Units supplied with controllers may require field-wiring to a remote sensor or control panel. Refer to unit electrical wiring diagrams for details.

An optional space thermostat or sensor may be shipped loose for field installation. The sensor may be duct mounted and/or wall mounted.

1. Locate space sensors or thermostats where they will provide a representative reading of the space condition.
2. Avoid areas with cold drafts or in the warm supply-air stream of the unit.
3. On indoor units, do not mount the thermostat or sensor on the unit casing, as it may be affected by heat radiating off the unit.
4. Do not place near other sources of warmth, such as lamps, appliances, etc.
5. Refer to unit electrical wiring diagrams for details on how to wire the sensor to the control panel.
6. Ensure that all remote wiring is equivalent to factory installed wiring and that voltage drop does not exceed 10 percent.

An optional duct mounted discharge air temperature sensor may be shipped loose for field installation.

1. The sensor strip must be parallel to the flow of air.
2. The sensor must be mounted as close to the center of the duct as possible.
3. The sensor must be located in a straight section of the duct and must be 8-10 feet (2.4 to 3m) downstream from the supply air connection.
4. Do not install temperature sensors near any elbows or transitions.
5. Refer to unit electrical wiring diagrams for details on how to wire the sensor to the control panel.
6. Ensure that all remote wiring is equivalent to factory installed wiring and that voltage drop does not exceed 10 percent.

An optional remote control panel may be shipped loose for field installation.

1. Locate the indoor panel where operation and maintenance personnel have ready access.
2. Refer to unit electrical wiring diagrams for details on how to wire the sensor to the control panel.
3. Ensure that all remote wiring is equivalent to factory installed wiring and that voltage drop does not exceed 10 percent.

Where possible, the low limit temperature sensor is factory mounted. Some unit configurations require the sensor to be field mounted in the supply air ductwork. In this situation, the sensor and field wiring will be coiled up in the weather housing. The installing contractor shall install the sensor approximately 10 ft. (3 m) down the supply air duct.

Hot and Chilled Water Coils

WARNING

Improper Piping May Lead to Unit and Building Damage
Improper piping on hot water and chilled water coils may lead to leaks that can damage the unit and the building. Follow these instructions carefully.

WARNING

Improper Freeze Protection Can Lead to Unit and Building Damage
In climates where freezing conditions occur, some form of freeze protection must be followed to avoid coil damage and subsequent leaks that can damage the unit and the building. Damage from improper freeze protection will void the warranty.

Installation

Some units may include hot water and/or chilled water coils. Multiple coils may be stacked in the same rack. Indoor units will have the piping connections stubbed out through a removable coil access cover. Depending on the unit configuration, outdoor units will have either a vestibule or access section with a pipe chase to allow the piping to be routed into the building. Refer to the submittal drawings for piping arrangements.

1. All piping connections should flow counter to the air flow, with water entering at the bottom and leaving at the top of the coil. Confirm that the coil can be piped properly. If not, do not continue piping. Contact your sales representative.
2. Hot and chilled water coils are generally not supplied with any piping or control valves. The installing contractor is responsible for all field piping and leakage tests.
3. Stacked coils need to be piped in parallel with reverse return piping.
4. Route properly-sized piping through the vestibule or pipe chase to the coils. Include control and isolation valves as required.
5. Use a backup wrench whenever attaching fittings to the coils. Failure to do so will damage the coils and void the warranty.
6. Leak test the unit prior to filling the system. Repair all leaks and re-test prior to filling the system.
7. Bypass coils during system flush. Failure to do so may cause debris to be caught in control valves and or the coil.

Condensate Traps

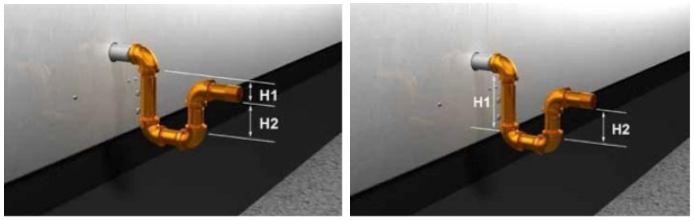
WARNING

Improper Trapping May Flood Unit

Improper condensate traps may flood the unit leading to damage of both the unit and the building below. Follow the following instructions carefully.

The PRC unit may have an optional DX, chilled-water cooling coil or other condensate producing device in either a draw-through (upstream of the supply fan) or blow-through configuration (downstream of the supply fan). Both of these configurations should include a condensate pan which requires a field-installed trap. The height and configuration of the trap will depend on the relative location and total static pressure of the supply fan. Refer to the calculations below to properly size draw- and blow-through trap sizing (refer to Figure 9).

FIGURE 9 – CONDENSATE TRAP SIZING



Draw Through Trap Sizing

H1 = Supply Fan TSP + 1 inch (2.5cm)

H2 = 0.5 x H1

Example: Size a condensate trap for a unit with TSP of 5 in (12.5 cm) w.c.

H1 = 5 + 1 = 6 inches (15 cm)

H2 = 0.5 x 6 = 3 inches (7.5 cm)

Blow Through Trap Sizing

H1 = supply fan TSP + 1 inch (2.5 cm) H2 = H1 - ½ inch (1.3 cm)

Example: Size a condensate trap for a unit with TSP of 5 in (12.5 cm) w.c.

H1 = 5 + 1 = 6 inches (15 cm)

H2 = 6 – 1/2 = 5 1/2 inches (14 cm)

Wash Down Drains

Some PRC units may be supplied with wash-down drains. These allow water to drain while washing the inside of the unit. It is not recommended to trap these drain connections. While it will not damage the unit, the traps would need to be constantly primed to provide a seal. Acceptable alternatives:

1. Provide caps for each wash-down drain. These can be removed during the wash-down process and a hose can be attached to direct flow to a suitable floor drain (indoor applications).
2. Pipe all the wash-down drains to a suitable floor drain (indoor applications) and include a shut-off valve. The valve can be opened during the wash-down process.

Installation Checklist

The following checklist is a summary of all the steps necessary for a successful start-up. This is not intended to replace the detailed information in the applicable sections of this manual.

General Installation	Date Completed	Signed
Inspect unit for freight damage or missing items on the Bill of Lading.		
Confirm the installation location meets the necessary clearances.		
Assemble, square, and level the roof curb if required.		
Install ductwork and attach to curb (for units with bottom supply/return).		
Install pitch pocket for electrical supply if required.		
Set unit on curb, sleeper, or housekeeping pad.		
Ensure unit is level.		
Seal, bolt, and cap all split joints as required.		
Install RegenCores heat recovery cores as required		
Remove shipping hold downs, shipping braces etc. from unit.		
Check all fan isolators for proper adjustment and operation.		
Install filters as required.		
Electrical Connections		
Confirm that main electrical supply matches the name plate requirements.		
Inspect control cabinets and tighten any loose connections.		
Provide a disconnect if one is not factory supplied.		
Connect power to factory or field-supplied disconnect.		
Properly ground the unit.		
Interlock unit to exhaust system.		
Control Wiring Connections		
Complete wiring of the controllers as per wiring diagrams.		
Hot Water And Chilled Water Coil Connections		
Confirm coils can be piped correctly.		
Route properly sized piping through either the vestibule or pipe chase.		
Test for pipe leaks.		
Install cooling device condensate drains if required.		
In cold weather climates, make sure there is some form of freeze protection.		

Maintenance

WARNING

Hazardous Service Procedures
During installation, testing, servicing and troubleshooting of this product it may be necessary to work with live electrical components and moving mechanical components. Have a qualified technician who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical and mechanical components could result in death or serious injury.

Regular maintenance is the best way to avoid untimely and expensive repairs, and it extends the useful life of the equipment. Maintenance should only be performed by qualified service personnel familiar with air-handling equipment and the local codes and requirements.

Filters

It is important to replace filters with the same efficiency filters as used when the air balance is done. Filters with different efficiencies may cause a change in airflow.

A regular filter maintenance schedule should be set-up and followed. The controller (if equipped with this option) allows the user to set the run hours between filter changes and the controller will notify the user when the desired interval has been reached.

The filters are located close to the fans; therefore, it is recommended that the unit be shut down while the filters are being changed.

When replacing the filters, inspect the louvers and cores, clean if necessary.

Fan and Motor Assembly

The fan/motor access panel should only be opened if the power has been shut off and locked off for the unit.

Review the blower service label on the blower for the recommended service frequency. The controller (if equipped with this option) allows the user to set up blower service notifications when a desired interval has been reached.

Blower service includes:

1. Greasing the bearings on the fan as well as the on the blower motor, as required.
2. Inspect the belt casing and tension (if present) for cracks frays or other signs of wear.

The controller (if equipped with this option) allows the user to set the run hours for belt replacement and the controller will notify the user when the desired interval has been reached.

Coil Winterization

In climates where freezing conditions may occur, some form of freeze protection for water coils is required. Coils can be drained and blown out with compressed air to ensure no water remains. Alternatively, some form of antifreeze rated for the expected ambient temperatures can be used. Antifreeze reduces the coil performance. If the coil was not designed for antifreeze, some amount of coil performance loss can be expected.

Service and Warranty Procedure

Replacement Parts

Replacement parts can be obtained from SolutionAir at mech-parts@solutionairgroup.com or 1-866-797-0760. When contacting SolutionAir for replacement parts, refer to the model number and serial number on the name plate.

Warranty Parts

See limited warranty below for what is covered. Contact SolutionAir at mech-parts@solutionairgroup.com or 1-866-797-0760 for warranty parts instructions. Please have the unit model and serial numbers available. The warranty part may need to be returned to SolutionAir to obtain a new warranty part. SolutionAir reserves the right to repair or replace a part under warranty.

Maintenance Checklist

General Maintenance	Quarterly	Annually
Inspect inside of unit for water leaks, foreign material etc.	X	
Clean or replace filters with equivalent to those supplied by manufacturer.	X	
Check cooling device drain pans and traps for cleanliness and blockage.	X	
Check all dampers, linkages and damper actuators and adjust and tighten as required.	X	
Check cooling or heating coils for cleanliness and clean as necessary.		X
Coil Winterization (Autumn)		X
Blower/Fan Maintenance		
Check all belts. Tighten or replace as necessary.	X	
Check sheave alignment. Adjust as necessary.	X	
Check all bearings and lubricate as necessary.	X	
Inspect fan wheel and housing. Clean as necessary.		X
Electrical Maintenance		
Check for loose wire connections in control panel.	X	
Check motor amp draw against name plate.	X	
Inspect all contactors to ensure they are clean and making good contact.	X	
Check all safeties.	X	

Troubleshooting

Symptom	Possible Cause	Corrective Action
Blower/Fan fails to turn	Blown fuse or tripped circuit breaker.	Reset breaker or replace fuse. Check current draw.
	Electrical circuit problem.	Check supply voltage. Check VFD status. Check control wiring.
	Motor overloaded.	Reset VFD and check current draw.
	Problem with motor or capacitor.	Repair or replace.
High motor current draw	Supply and/or return static pressure is higher than design.	Reduce pressure-drops within ductwork. Increase fan size.
	Motor voltage not matched to electrical supply voltage.	Check nameplates. Correct as nescessary.
	Electrical short within motor.	Repair or replace.
	Loose electrical connection.	Repair connection.

Symptom	Possible Cause	Corrective Action
Low airflow	Dirty filters.	Replace filters.
	Supply and/or return static pressure is higher than design	Reduce pressure-drops within ductwork. Increase fan size.
	Blower/Fan speed too low.	Verify motor speed and pressure drop on fan curve. Check that motor is below maximum RPM. Increase size of fan/ motor.
	Blower/Fan is rotating backwards.	If all blowers/fans are rotating backwards swap any two power leads on load side of main disconnect after turning off disconnect. If only one fan/blower is rotating backwards swap 2 leads on motor side on VFD after power has been dissipated from VFD.
	Ductwork losses too high.	Ensure proper ducting practices are followed. Remove elbows and/or restrictions near the blower/fan.
	Leaks in ductwork.	Repair as required.
High airflow	Blower/Fan speed is too high.	Decrease maximum fan speed on VFD if nescessary.
	Filters are not installed.	Install filters in all filter-holder locations. Refer to submittal for types/locations.
	Ductwork losses are lower than expected.	Reduce fan speed.
Excessive noise/vibration	Fan/Wheel rubbing.	Align/adjust inlet cone. Check bearing/shaft alignment. Tighten shaft collars.
	Bearings.	Lubricate bearings. Replace worn bearings.
	Motor-frame dampers loose/innefective.	Tighten mounting bolts. Check springs/dampers, replace as required.
	Dampers loose.	Check damper blades, if moving in airstream, tighten linkages as required.
Dampers do not move	Dampers out of sync.	Follow instructions on controller
	Blown fuse or tripped circuit breaker.	Reset breaker or replace fuse. Check current draw.
	Electrical circuit problem.	Check supply voltage. Check control wiring.
	Motor overloaded.	Check gearmotor current draw. Check dampers ope/close freely.
	Faulty relays.	Repair or replace.
	Problem with motor or capacitor.	Repair or replace.
Dampers are not syncronized	Problem with digital controller.	Contact SolutionAir.
	Problem with limit sensors.	Contact SolutionAir.
Damper timing out of sync	Problem with digital controller.	Contact SolutionAir.
Damper linkage noise/ vibration	Loose/Faulty linkages	Tighten linkages where required. Be sure to check for excessive wear. Contact SolutionAir.
Controller fault/error	Problem with controller/software.	Contact SolutionAir. Describe error number.

Start-up Instructions

WARNING

Electric Shock Hazard

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

WARNING

Hazardous Service Procedures

During installation, testing, servicing and troubleshooting of this product it may be necessary to work with live electrical components and moving mechanical components. Have a qualified technician who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical and mechanical components could result in death or serious injury.

Pre-Start-Up

Prior to starting up the PRC unit, make sure the following work is complete:

Pre-Start-up Checklist	
Task	**Complete**
General	
All steps in installation check list are complete.	
Fan Inspection	
Shipping bolts (under fan isolators) and materials have been removed from the unit. Manually rotate fans and confirm they move freely.	
All bearing, drive, and blower set-screws have been checked for tightness.	
Drive alignments and belt tension are correct.	
Electrical	
Electrical power is acceptable (see below).	

Prior to powering the unit, it is crucial to check the incoming electrical power:

1. Check that the electrical power matches what is stated on the nameplate.
2. Check that the voltage on each leg is within the stated voltage range and/or does not deviate in excess of10% of name plate value.
3. Check that the voltage difference on all three phases is within 2%.

If any of these conditions are not met, do not continue commissioning the unit. Arrange to have the power issue resolved.

Fan Start-up

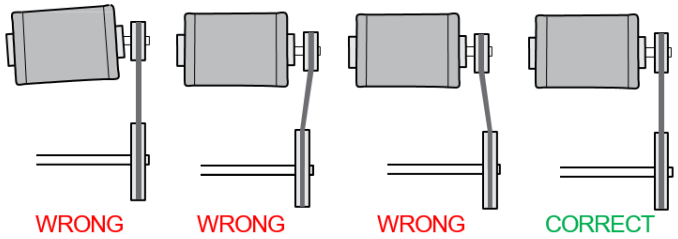
WARNING

Hazardous Rotating Equipment
Contact with the rotating fan, belts or motor can lead to death or severe injury. Follow proper lockout/tag-out procedures to ensure the power cannot be inadvertently energized.

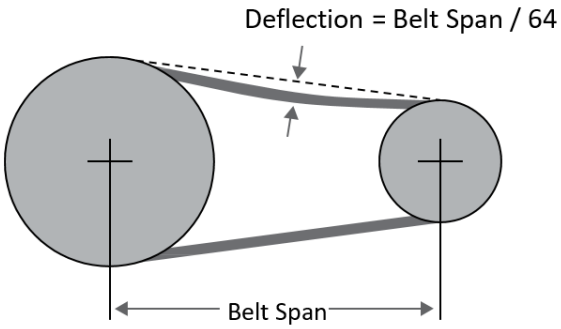
Once the power has been checked, proper fan rotation must be confirmed:

1. Turn on the disconnect.
2. Select "off" for the system switch.
3. Depress the supply fan contactor manually for a moment to "bump" the fan. Check the fan rotation. There is typically an arrow on the fan housing to indicate rotation direction. If there is no contractor, enable fan through VFD.
4. If the fan rotation is not correct, shut down the unit and turn off the power. Switch any two of the power leads at the load side of the disconnect.
5. Check the fan motor amp draw and compare it to the name pate rating. If amp draw is too high, correct the air flow and/or duct static pressure drop to reduce amp draw. If the fan speed is adjusted, make sure not to exceed the maximum fan speed rating.
6. The fan thermal overloads must be set to the appropriate motor performance after all adjustments have been made.

FIGURE 10 - PROPER SHEAVE ALIGNMENT AND BELT TENSION



Proper fan belt tension:



Sheave Alignment and Belt Tension

1. Confirm that the fan and motor shafts are parallel. If not, make adjustments, see Figure 10.
2. Confirm that the fan and motor sheave grooves are coincident. If not, make adjustments.
3. Confirm all setscrews are tight.

Belt Tensioning

On units with belt drive fans:

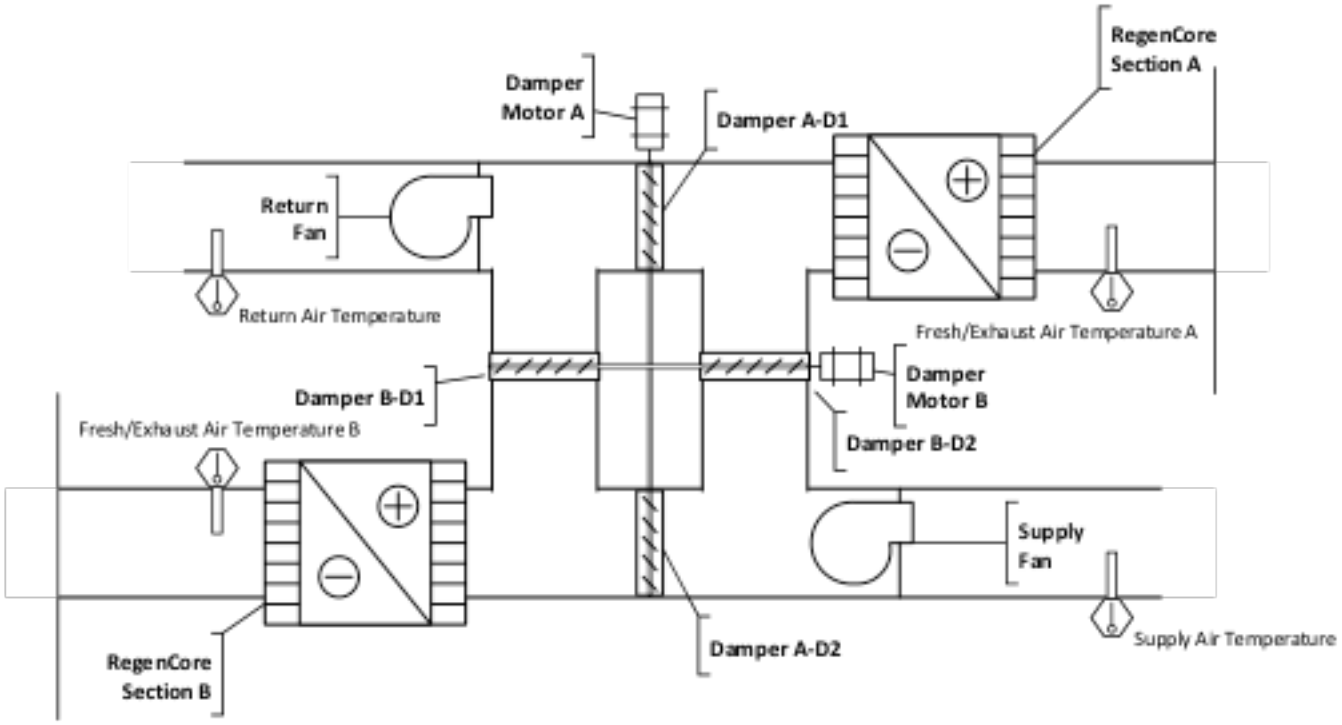
1. Check belt tension. The correct tension is the lowest possible without slippage.
2. Check belt tension frequently during the first two days after start-up.
3. Avoid foreign materials such as oil on the belts.

Typical Unit Operation

RegenCore (PRC) is a fixed-bed regenerator type of energy recovery unit. The PRC recovers sensible and latent energy during heating season, and sensible energy in cooling seasons.

The PRC utilizes the thermal mass of a heat exchanger core manufactured from 1100 alloy aluminum to capture and dissipate heat to or from a building (refer to the diagram in Figure 11). The new regenerating core product sets itself apart from other types of recovery devices because of its capability to reach and maintain industry leading thermal effectiveness of up to 90% and has no pre-heat or frost prevention requirement down to outdoor temperatures of -40°C/F.

FIGURE 11: GENERAL SYSTEM AIRFLOW DIAGRAM ▼



Typical Unit Sequence of Operation

1. Blowers: With an "On" signal the controller checks fire and fault status, if the fire signal is clear and there are no unit faults.
   a) The operation dampers are moved from their standby positions to the appropriate operational position.
   b) After the dampers have moved to their respective operating positions the supply and exhaust blowers are started.
   c) The supply and return fans start and run continuously.
2. Operation Mode: Operation modes are heat recovery or bypass. Operation mode is established by the unit controller based on user adjustable set points.
   a) Heat recovery: The control dampers work in unison, with alternate groups opening and closing. The movement of the dampers alternates the operational state of the regenerative l cores from charging to discharging. Figure 11: General System Airflow Diagram.
      i) Phase I: Dampers B-D1 & B-D2 are closed and A-D1 & A-D2 are open. Core B is capturing heat from or releasing heat to the return air stream, and Core A is conditioning the supply air from the heat stored or dissipated by the previous cycle phase.
      ii) Phase II: Dampers B-D1 & B-D2 are open and A-D1 & A-D2 are closed. The above described thermal roles of core A and B are then reversed.
   b) Free cooling: The control dampers work in the same manner as heat recovery, the damper change over period is increased to 180 minutes, adjustable; this change over period effectively eliminates heat transfer while still allowing the cores to be purged of foreign material.
   c) Recirculation (optional): All dampers are open allowing air to bypass the regenerative core and recirculate through the system.
3. Shut Down: On the termination of the "On" signal the unit:
   a) First shuts off the blowers;
   b) After the required timer delay the dampers are moved to their standby position.
4. Removing Power from the unit: If the unit is going to be disconnected from power for a significant period, it should be shut off and allowed to complete the movement to damper standby before the power is disconnected.
5. External Dampers (Optional): Redundant normally closed dampers can be installed on the outdoor air paths to ensure no air movement when the unit is not operational.

BMS Points List

BACnet		Modbus			Variable	Units	Read / Write	Description
Instance	Type	Instance	Size	Type				
AI 1	Analog Input	0	2	InputRegister	FreshAirTemp	°F	Read Only	Measured temperature of outside/fresh air
AI101		100	2		FreshAirTemp_C	°C		
AI 2	Analog Input	2	2	InputRegister	SupplyAirTemp	°F	Read Only	Measured Discharge/Supply air temperature
AI 102		102	2		SupplyAirTemp_C	°C		
AI 3	Analog Input	4	2	InputRegister	ReturnAirTemp	°F	Read Only	Measured return air temperature
AI 103		104	2		ReturnAirTemp_C	°C		
AI 4	Analog Input	6	2	InputRegister	MixedAirTemperature	°F	Read Only	Measured temperature after mixing fresh & return air
AI 104		106			MixedAirTemperature_C	°C		
AI 5	Analog Input	8	2	InputRegister	EvaporatorLeavingAirTemp	°F	Read Only	(Reheated systems only) dewpoint of supply air
AI 105		108			EvaporatorLeavingAirTemp_C	°C		
AI 6	Analog Input	10	2	InputRegister	ExhaustAirTemp	°F	Read Only	(Dual air path only) exhausted return air leaving temp
AI 106		110			ExhaustAirTemp_C	°C		
AI 7	Analog Input	12	2	InputRegister	SpaceTemp	°F	Read Only	Measured Room / Space temperature
AI 107		112			SpaceTemp_C	°C		
AI 10	Analog Input	18	2	InputRegister	SpaceCO2	PPM	Read Only	Measured Room / Space CO2 level in PPM
AI 11	Analog Input	20	2	InputRegister	SupplyCO	PPM	Read Only	Actual Discharge/Supply air carbon monoxide in PPM
AI 12	Analog Input	22	2	InputRegister	SupplyCO2	PPM	Read Only	Measured Supply / Discharge CO2 level in PPM
AI 20	Analog Input	38	2	InputRegister	FreshAirHumidity	%RH	Read Only	Measured RH of outside air
AI 21	Analog Input	40	2	InputRegister	SupplyAirHumidity	%RH	Read Only	Measured RH of supply/ discharge air
AI 22	Analog Input	42	2	InputRegister	ReturnAirHumidity	%RH	Read Only	Measured RH of return air (room sample)
AI 23	Analog Input	44	2	InputRegister	MixedAirHumidity	%RH	Read Only	Measured RH of air after mixing fresh and supply air
AI 24	Analog Input	46	2	InputRegister	SpaceHumidity	%RH	Read Only	Measured RH of room/space air
AI 30	Analog Input	58	2	InputRegister	FreshAirAirflow	CFM	Read Only	Measured CFM of fresh air path
AI 31	Analog Input	60	2	InputRegister	SupplyAirAirflow	CFM	Read Only	Measured CFM of supply / unit discharge
AI 32	Analog Input	62	2	InputRegister	ReturnAirAirflow	CFM	Read Only	Measured CFM of return air path
AI 33	Analog Input	64	2	InputRegister	SupplyDuctStaticPress	"WC	Read Only	Measured DSP of the supply duct
AI 34	Analog Input	66	2	InputRegister	ReturnDuctStaticPress	"WC	Read Only	Measured DSP of the return duct
AV 1	Analog Value	0	2	HoldingRegister	SP_SupplyAirTemp	°F	Commandable	Discharge/Supply Air Temperature setpoint in °F (or °C)
AV 101		100	2		SP_SupplyAirTemp_C	°C		
AV 2	Analog Value	2	2	HoldingRegister	SP_SpaceTemp	°F	Commandable	Room/Space temperature setpoint (for reset)
AV 102		102	2		SP_SpaceTemp_C	°C		
AV 3	Analog Value	4	2	HoldingRegister	SP_SpaceDewpoint	°F	Commandable	Room/Space dewpoint setpoint (max. target)
AV 103		104	2		SP_SpaceDewpoint_C	°C		
AV 4	Analog Value	6	2	HoldingRegister	SP_MaxFreshAirPcnt	%	Commandable	Maximum fresh air setpoint in %
AV 5	Analog Value	8	2	HoldingRegister	SP_MinFreshAirPcnt	%	Commandable	Minimum fresh air setpoint in %
AV 6	Analog Value	10	2	HoldingRegister	SP_SupplyFanSpeedPcnt	%	Commandable	Supply Fan Speed

BACnet		Modbus			Variable	Units	Read / Write	Description
Instance	Type	Instance	Size	Type				
AV 7	Analog Value	12	2	HoldingRegister	SP_ReturnFanSpeedPcnt	%	Commandable	Return Fan Speed
AV 8	Analog Value	14	2	HoldingRegister	SP_SupplyDuctStaticPress	"WC	Commandable	Target supply duct static pressure
AV 9	Analog Value	16	2	HoldingRegister	SP_ReturnDuctStaticPress	"WC	Commandable	Target return duct static pressure
AV 10	Analog Value	18	2	HoldingRegister	BMSRoomAirTemp	°C	Commandable	Space Temperature, if sensor by BMS
AV 11	Analog Value	20	2	HoldingRegister	BMSFreshAirTemp	°C	Commandable	Fresh Air Temperature, if sensor by BMS
AV 12	Analog Value	22	2	HoldingRegister	BMSRoomAirDewpoint	°C	Commandable	Room Air Dewpoint Temperature, if sensor by BMS
AV 13	Analog Value	24	2	HoldingRegister	SP_MixboxAirTemp	°F	Commandable	Mixbox Air Temperature setpoint in °F (or °C)
AV 113		124	2		SP_MixboxAirTemp_C	°C		
AV 14	Analog Value	26	2	HoldingRegister	SP_MaxReturnAirPcnt	%	Commandable	Maximum Return air setpoint in %
AV 15	Analog Value	28	2	HoldingRegister	SP_MinReturnAirPcnt	%	Commandable	Minimum Return air setpoint in %
AV 16	Analog Value	30	2	HoldingRegister	SP_CO2_Threshold	PPM	Commandable	Threshold for CO2 Logic to become active
AV 17	Analog Value	32	2	HoldingRegister	SP_CO2_FADemand	%	Commandable	Fresh Air Demand for CO2 logic
AV 18	Analog Value	34	2	HoldingRegister	SP_SupplyAirflowCFM	CFM	Commandable	Target supply airflow
AV 19	Analog Value	36	2	HoldingRegister	SP_ReturnAirflowCFM	CFM	Commandable	Target return airflow
AV 40	Analog Value	78	2	InputRegister	FreshAirPcnt	%	Read Only	Current Fresh air damper position
AV 41	Analog Value	80	2	InputRegister	ReturnAirPcnt	%	Read Only	Current Return air damper position
AV 42	Analog Value	82	2	InputRegister	HeatingDemand	%	Read Only	Current Heating Demand from Heating PID
AV 43	Analog Value	84	2	InputRegister	CoolingDemand	%	Read Only	Current Cooling Demand from Cooling PID
AV 44	Analog Value	86	2	InputRegister	HeatWheelDemand	%	Read Only	Current Commanded Heatwheel Speed
AV 45	Analog Value	88	2	InputRegister	CubeBypassDamperDemand	%	Read Only	Current Cube Bypass Damper position
AV 56	Analog Value	56	2	HoldingRegister	RegenCore. HeatRecoveryCycleTime	seconds	Commandable	Time in Second for one complete cycle (2 damper changes) in ER mode
IV 54	Integer Value	54	2	HoldingRegister	RegenCore. FreeCoolingCycleTime	minutes	Commandable	Time in Minute for one complete cycle (2 damper changes) in FC mode
IV 31	Integer Value	90	2	InputRegister	Num_Alarms		Read Only	Number of active alarms
IV 32	Integer Value	92	2	InputRegister	Num_Warnings		Read Only	Number of active warnings

BACnet		Modbus			Variable	Inactive Text	Active Text	Read / Write	Description
Instance	Type	Instance	Size	Type					
BV 1	Binary Value	0	1	Coil	Unit_Run	OFF	ON	Commandable	Unit Run Command
BV 2	Binary Value	1	1	Coil	AlrmResByBMS	-	Reset	Commandable	Toggle Point to Reset Active Alarms
BV 10	Binary Value	9	1	DiscreteInput	Unit_InAlarm	OK	InAlarm	Read Only	When true, unit has alarm but may still be operational
BV 11	Binary Value	10	1	DiscreteInput	Unit_SeriousAlarm	OK	InAlarm	Read Only	When true, unit has shutdown due to a serious alarm
BV 12	Binary Value	11	1	DiscreteInput	Dirty_FreshAir_Filter_Alm	Clean	Dirty	Read Only	Pressure drop on Fresh Air filter high
BV 13	Binary Value	12	1	DiscreteInput	Dirty_FreshAir_Prefilter_Alm	Clean	Dirty	Read Only	Pressure drop on Fresh Air prefilter high
BV 14	Binary Value	13	1	DiscreteInput	Dirty_ReturnAir_Filter_Alm	Clean	Dirty	Read Only	Pressure drop on Return Air filter high
BV 15	Binary Value	14	1	DiscreteInput	Dirty_ReturnAir_Prefilter_Alm	Clean	Dirty	Read Only	Pressure drop on Return Air prefilter high
BV 21	Binary Value	20	1	DiscreteInput	Cooling_CircA_Fault	OK	FAULT	Read Only	Cooling Circuit A has a fault
BV 22	Binary Value	21	1	DiscreteInput	Cooling_CircB_Fault	OK	FAULT	Read Only	Cooling Circuit B has a fault
BV 23	Binary Value	22	1	DiscreteInput	Cooling_CircC_Fault	OK	FAULT	Read Only	Cooling Circuit C has a fault
BV 24	Binary Value	23	1	DiscreteInput	Cooling_CircD_Fault	OK	FAULT	Read Only	Cooling Circuit D has a fault
BV 30	Binary Value	30	1	DiscreteInput	Compressor_A1_Running	OFF	ON	Read Only	Compressor 1 of circuit A is running
BV 31	Binary Value	31	1	DiscreteInput	Compressor_A2_Running	OFF	ON	Read Only	Compressor 2 of circuit A is running
BV 32	Binary Value	32	1	DiscreteInput	Compressor_B1_Running	OFF	ON	Read Only	Compressor 1 of circuit B is running
BV 33	Binary Value	33	1	DiscreteInput	Compressor_B1_Running	OFF	ON	Read Only	Compressor 2 of circuit B is running
BV 34	Binary Value	34	1	DiscreteInput	Compressor_C1_Running	OFF	ON	Read Only	Compressor 1 of circuit C is running
BV 35	Binary Value	35	1	DiscreteInput	Compressor_C2_Running	OFF	ON	Read Only	Compressor 2 of circuit C is running
BV 36	Binary Value	36	1	DiscreteInput	Compressor_D1_Running	OFF	ON	Read Only	Compressor 1 of circuit D is running
BV 37	Binary Value	37	1	DiscreteInput	Compressor_D2_Running	OFF	ON	Read Only	Compressor 2 of circuit D is running
BV 50	Binary Value	50	1	DiscreteInput	Heat1_Running	OFF	ON	Read Only	Stage 1 Heat Running
BV 51	Binary Value	51	1	DiscreteInput	Heat2_Running	OFF	ON	Read Only	Stage 2 Heat Running
BV 52	Binary Value	52	1	DiscreteInput	Heat3_Running	OFF	ON	Read Only	Stage 3 Heat Running
BV 53	Binary Value	53	1	DiscreteInput	Heat4_Running	OFF	ON	Read Only	Stage 4 Heat Running
BV 54	Binary Value	54	1	DiscreteInput	SupplyFanCSR	OFF	ON	Read Only	Status of Supply Fan Current Sense Relay
BV 55	Binary Value	55	1	DiscreteInput	ReturnFanCSR	OFF	ON	Read Only	Status of Return Fan Current Sense Relay

BACnet		Modbus			Variable	Read / Write	Description
Instance	**Type**	**Instance**	**Size**	**Type**			
MSV 1	Multistate Value	1000	1	HoldingRegister	Unit_Mode_ Override *Unit_Mode_Override_ Default*	Commandable *RelinquishDefault*	Set to force unit into the following modes: 1=Auto (Normal) 2=ForceDehum 3=ForceEcono 4=ForceHeating 5=ForceCooling 6..9=Reserved 10=ForceOff
MSV 2	Multistate Value	1000	1	InputRegister	Unit_Status	Read Only	Unit Status: 1=Unit On 2=Off due to alarm 3=Off due to BMS 4=Off due to Schedule 5=Off due to System Switch 6=Off due to Keypad Enable 7=Off due to Interlock 8=Manual Mode 9=Unit in Startup Sequence
MSV 3	Multistate Value	1001	1	InputRegister	Unit_SystemStatus	Read Only	Unit mode enumeration: 1=Unit Off 2=Dehum 3=Econo 4=Heating 5=Cooling 6=Burner Warmup 7=Burner Cooldown 8=Damper Opening 9=Smoke Purge Sequence
MSV 11	Multistate Value	1010	1	HoldingRegister	PRC_ DamperMode_ Overide_BMS	Commandable	Set to force unit into the following modes: 1=Auto (Normal) 2=ForceEnergyRecovery 3=ForceFreeCooling 4=ForceRecirculation 5+=ForceOff Dampers Only (Fans ON, TEST ONLY)
MSV 13	Multistate Value	1010	1	InputRegister	PRC_ DamperMode_ Status	Read Only	RegenCore Damper Status: 1=Off 2=EnergyRecovery 3=FreeCooling 4=Recirculation 5=SmokePurge

Limited Warranty

(a) SolutionAir warrants and guarantees for a period limited to twelve (12) months from date of installation / commissioning or eighteen (18) from date of shipment - whichever comes first, that the Products are manufactured in accordance with SolutionAir's quotation and submittal drawing specifications and of specified material unless otherwise expressly stated.

(b) SolutionAir will manufacture the goods to be supplied in accordance with the product specifications supplied by Purchaser. SolutionAir shall not be liable for any loss or damages of any kind resulting from errors, omissions or untimely notification of changes to the specifications that have been provided. In the event that changes to the product specifications arise, SolutionAir must be notified immediately and in writing. The Purchaser will assume liability for the cost of all material and resources, work-in-progress and finished goods that have become obsolete or that can no longer be used due to any such changes in the specifications supplied.

(c) In the event the Products supplied do not comply with quotation and submittal drawing specifications and/or material quality standards within the warranty period, SolutionAir will either repair the Products supplied or provide replacement of such Products that conform to the quotation and submittal drawing specifications. This decision is made at the sole discretion of SolutionAir. In either case, SolutionAir will not be responsible for labor and freight charges incurred in replacing Products except as agreed to by SolutionAir in writing, nor will SolutionAir be responsible for incidental, consequential or punitive damages. In the event SolutionAir elects to repair the Products supplied, Purchaser will assist by providing SolutionAir with all details of the problem and a written quotation for the costs of such work to be carried out. If the repair is authorized by SolutionAir, then Purchaser will assist by coordinating and supervising the repair work. In the event SolutionAir elects to replace the Products, SolutionAir may either (i) direct the Purchaser to return such Products to SolutionAir or (ii) provide replacement Products to the Purchaser without the return of the original Products, in which case Purchaser will be responsible for the disposal of such original Products. Such election is at the sole discretion of SolutionAir, and all returns of Products to SolutionAir must be approved in advance by SolutionAir. In the event SolutionAir directs Purchaser to return the Products to SolutionAir for repair or replacement, Purchaser agrees to return such Products to SolutionAir in a manner consistent with the original packaging in order to prevent damage. All freight back to SolutionAir's factory and return freight to Purchaser must be agreed upon prior to return of the Products.

(d) SolutionAir makes no warranty whatsoever with respect to components or items supplied which may be warranted separately by their manufacturer. SolutionAir does not warrant factory mounted controls and components of Products supplied and owned by a third party for mounting by SolutionAir. Back charges to SolutionAir for Products under warranty by others will only be accepted if prior written approval is given by SolutionAir.

(e) THE WARRANTIES AND LIABILITIES SET FORTH IN THE PRIOR PARAGRAPHS ARE THE ONLY WARRANTIES OR LIABILITIES OF SOLUTIONAIR. ALL OTHER GUARANTEES, WARRANTEES, CONDITIONS AND REPRESENTATIONS, EITHER EXPRESS OR IMPLIED, WHETHER ARISING UNDER ANY STATUTE, LAW, COMMERCIAL USAGE OR OTHERWISE, INCLUDING IMPLIED WARRANTIES FOR FITNESS OF MERCHANTIBILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED.

(f) The foregoing warranty shall not take effect unless Purchaser shall inform SolutionAir in writing of any flaw, defect or deficiency in the Products promptly after such flaw, defect or deficiency becomes apparent and, in any case, not later than one (1) year from date of shipment. The warranty provided for under these terms shall be void upon the following: (i) the unauthorized repair or modification by any person other than SolutionAir of Products claimed to be defective; or (ii) the improper installation, maintenance or operation of the Products other than in strict accordance with standard industry practices and compliance with the specific recommendations of SolutionAir respecting the Products; or (iii) the misuse, negligence, or operation of the Products other than for their intended purpose.

The SolutionAir warranty is void if:

1. **The unit is not installed and serviced in accordance with manufacturer's recommendations.**
2. **Operation, maintenance, start-up and shut down are not in accordance with manufacturer's instructions.**
3. **Unit is operated in conditions not specified by the manufacturer.**
4. **The unit is operated while the building is under construction.**
5. **Unit is used for application which it was not intended**

PRICE REGENCORE (PRC) STARTUP REPORT

To enable the Limited Warranty, this form must be submitted to ***mechsupport@solutionairgroup.com***

General

Job Name _____ Order Number _____

Installation Address _____ City _____ State/Prov. _____

Name of Person performing Start-up _____ Start-up Date _____

Service Company Name _____ Service Company Phone Number _____

Unit Information

Unit Model Number _____ Serial Number _____ Nameplate Rating (volt/phase/frequency) _____

INSTRUCTIONS: Check off boxes (Yes, No, N/A). Not all units contain each option listed in this form. Check off N/A if the statement/question is not relevant to this product. Fill in blank spaces with required information, when applicable. If the statement/question is not relevant to this unit, mark N/A in the blank space.

Please make note of any issues that you encounter in the inside the "Comments" section.

CAUTION: High voltage may be present.
Disconnect all power supplies prior to performing initial inspection.

PRICE REGENCORE (PRC) STARTUP REPORT

To enable the Limited Warranty, this form must be submitted to ***mechsupport@solutionairgroup.com***

Initial Inspection

Any visible damage?	Yes	No	N/A
Are shipping brackets removed?	Yes	No	N/A
Nameplate electrical (Volt/Phase/Frequency)	_____		
Are disconnect and fusing properly sized?	_____		
Are remote sensors and controls installed?	Yes	No	N/A
Is cooling device condensate trapped?	Yes	No	N/A
Are the cores stacked correctly?	Yes	No	N/A
Is there greater than 1/8" between the cores and/or supplied alignment rails?	Yes	No	N/A

Fan Start-Up

Do fans rotate freely?	Yes	No	N/A
Are fan pulleys aligned and belts properly tensioned?	Yes	No	N/A
Is fan rotation correct?	Yes	No	N/A

Supply fan voltage 1-2 _____ V 2-3 _____ V 3-1 _____ V

Supply fan current L1 _____ A L2 _____ A L3 _____ A

Supply fan MMP setting _____ A

Supply fan RPM _____ rpm

Return/Exh fan voltage 1-2 _____ V 2-3 _____ V 3-1 _____ V

Return/Exh fan current L1 _____ A L2 _____ A L3 _____ A

Return/Exh fan MMP setting _____ A

Return/Exh fan RPM _____ rpm

Unit Supply Static Pressure _____ in. w. c.

PRICE REGENCORE (PRC) STARTUP REPORT

To enable the Limited Warranty, this form must be submitted to ***mechsupport@solutionairgroup.com***

Controls Start-Up

Are the sensors installed correctly?	Yes	No	N/A
Is there BACet connection?	Yes	No	N/A
Is there BAS connection?	Yes	No	N/A

Damper interval set-point _____

Comments

_____

_____

_____

_____

_____ _____

Signature Date

Assembly of Split Units

Purpose

To provide an overview and basic understanding of the process for on-site assembly of split air handling units.

Installer Supplied Tools and Material

- Exterior-grade caulking
- Rigging equipment sufficiently rated for the weights being hoisted
- Sufficiently long threaded rod, nuts and bolts to pull sections together
- Soapy water to lubricate between the roof curb and unit base (if required)
- Come-alongs (only to be used on the base frame as needed)

Factory Supplied Material

- Neoprene gasket
- Roof caps
- Fasteners

Instructions

These instructions apply to both vertically and horizontally split units. All joining hardware is provided by SolutionAir and is shipped with the unit unless noted otherwise.

1. Ensure the bottom of the first section's base is clean and free from debris and place it on the roof curb, aligning all edges. Connect and tighten the fasteners holding the section to the roof curb if applicable.
2. Sections with 6-point lifts may have removable center lugs (Figure 1). They can be removed once the section is seated on the roof curb.

FIGURE 1: REMOVABLE CENTER LUG SHOWN ON BASE FRAME ▼

3. Apply the supplied ¼" thick gasket material to one side of the open face, ensuring it is placed as shown in Figure 2 and that it is well adhered.
4. It is recommended to spray soapy-water on the entire roof curb prior to placing the subsequent sections. This will help with pulling the sections together.
5. Move the second section into place on the roof curb as close as possible but no more than 2" from the already anchored section (Figure 3). Once the second section is on the curb, the center lug can be removed.

FIGURE 2: GASKET APPLIED TO THE PERIMETER OF THE OPENING ▼

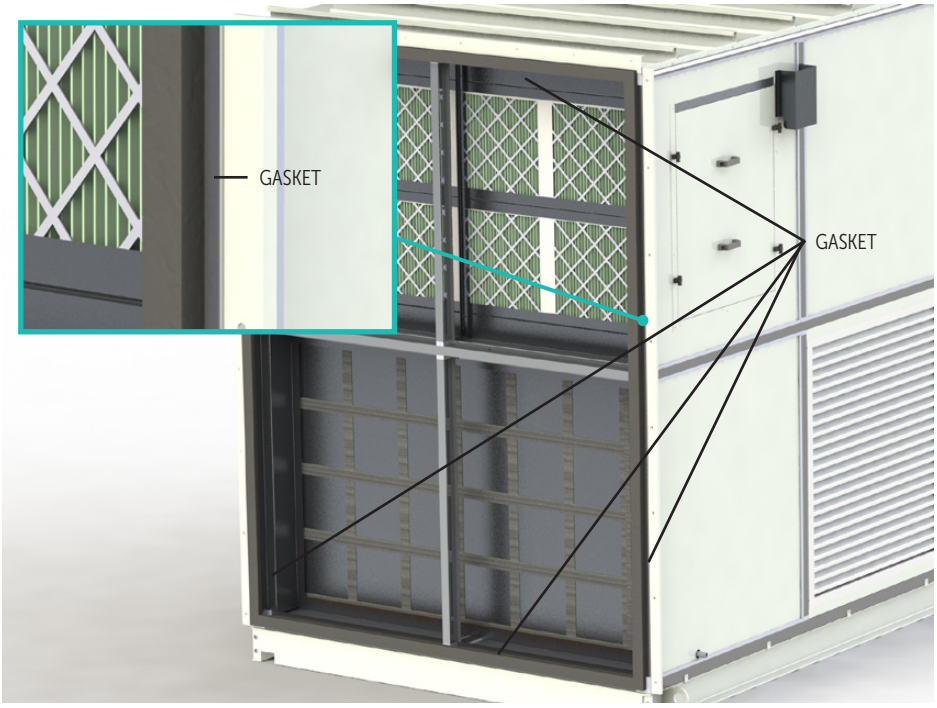
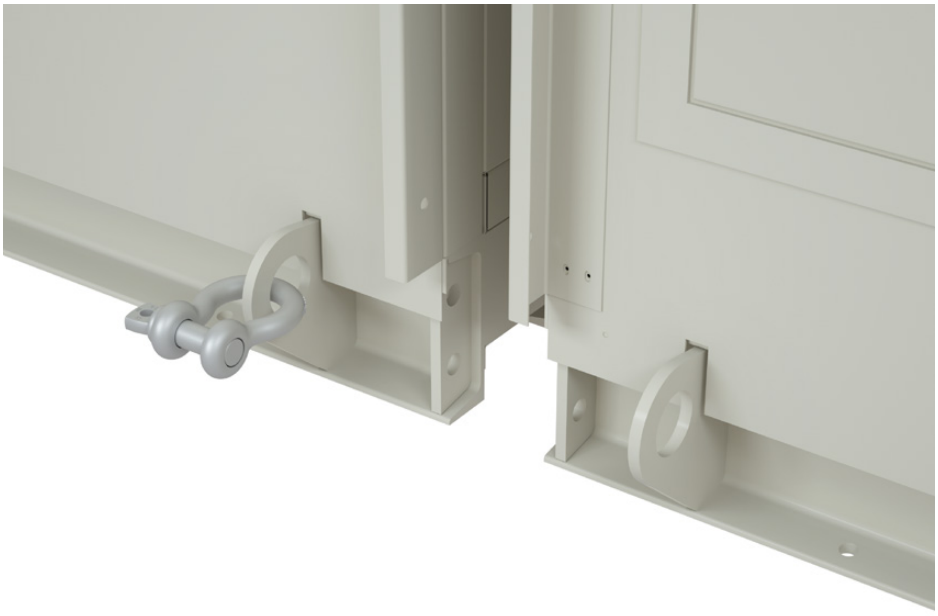


FIGURE 3: SECOND SECTION PLACED WITHIN 2" OF THE ANCHORED SECTION ▼



6. Use threaded rod, washers and nuts to slowly, and evenly pull Section 2 towards Section 1 from the base (Figure 4). Once the base is tight, verify that the gasket around the walls and roof splits is still in place and has not been damaged during the pull-in procedure.
7. The bases then need to be secured to one another (Figure 5), and then to the roof curb.
8. Once the bases are bolted together, the connecting flanges must be secured to one another using the supplied fasteners.

FIGURE 4: THREADED ROD, WASHERS AND NUTS FOR PULLING SECTIONS TOGETHER ▼

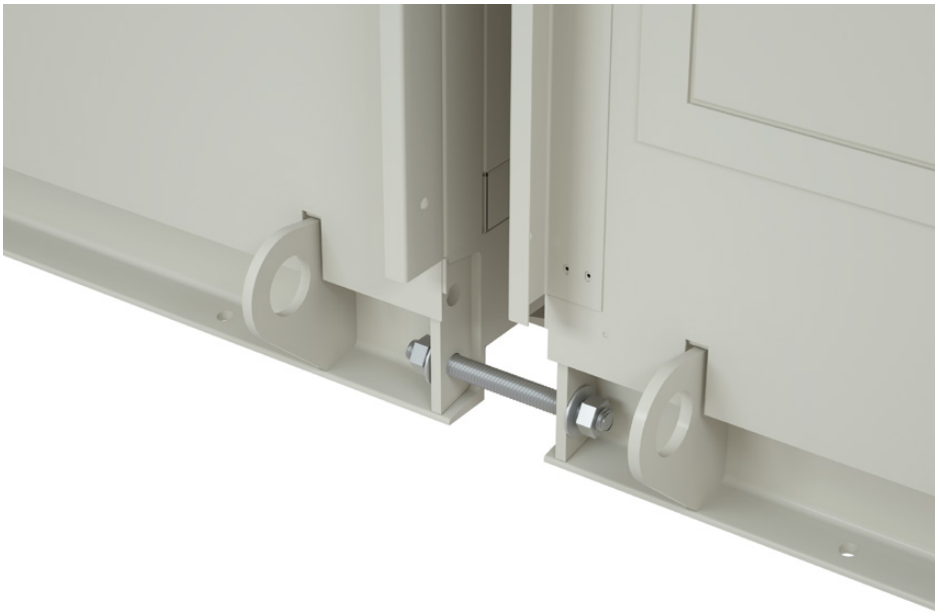
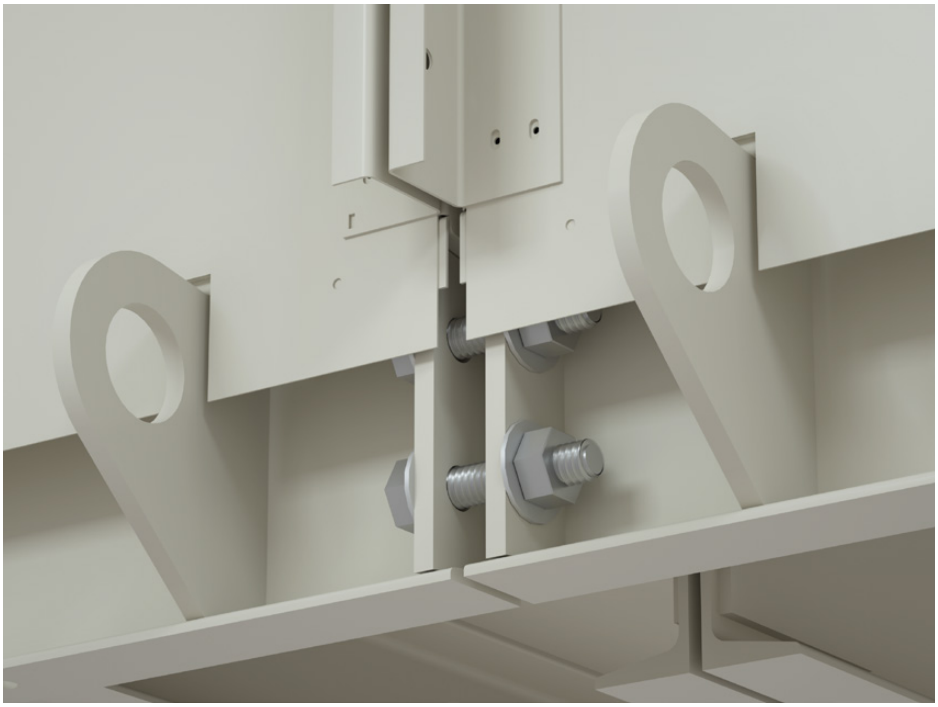


FIGURE 5: BOLTS, WASHERS AND NUTS USED TO FASTEN THE BASE TOGETHER ▼



9. A bead of silicone caulking must then be run across the top of the bolting flange and down the side. If the roof is split, use the supplied roof cap to cover the joint shown in Figure 6.
10. Repeat steps 1 through 9 for all sections of the split air handler unit until all sections are joined.
11. Install all loose exterior features, which may include hood assemblies, exhaust flues and field sensors. Field sensors should be wired according to the supplied electrical diagram.

FIGURE 6: ROOF CAP INSTALLED TO COVER JOINTS AT SPLIT ▼

12. All high voltage wiring (such as fans, motors, blowers, compressors, etc.) is spooled by the factory and is to be pulled through the air handler unit upon assembly (Figure 7). Wires should be connected to the corresponding labeled terminals.
13. All low voltage control wiring (such as actuators, sensors, etc) is disconnected at the air handler unit splits. Spade connectors or junction boxes containing terminal blocks are installed at the splits. All control wiring and terminals are marked to aid with on-site assembly.
14. The unit is now ready to be connected to the main power source. This operation must be performed by a qualified electrician and done according to local codes and regulations.

FIGURE 7: HIGH VOLTAGE WIRES SPOOLED ▼

Notes

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Notes

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