FURRION®

Chill™ Low Profile Rooftop Air Conditioner (R32)

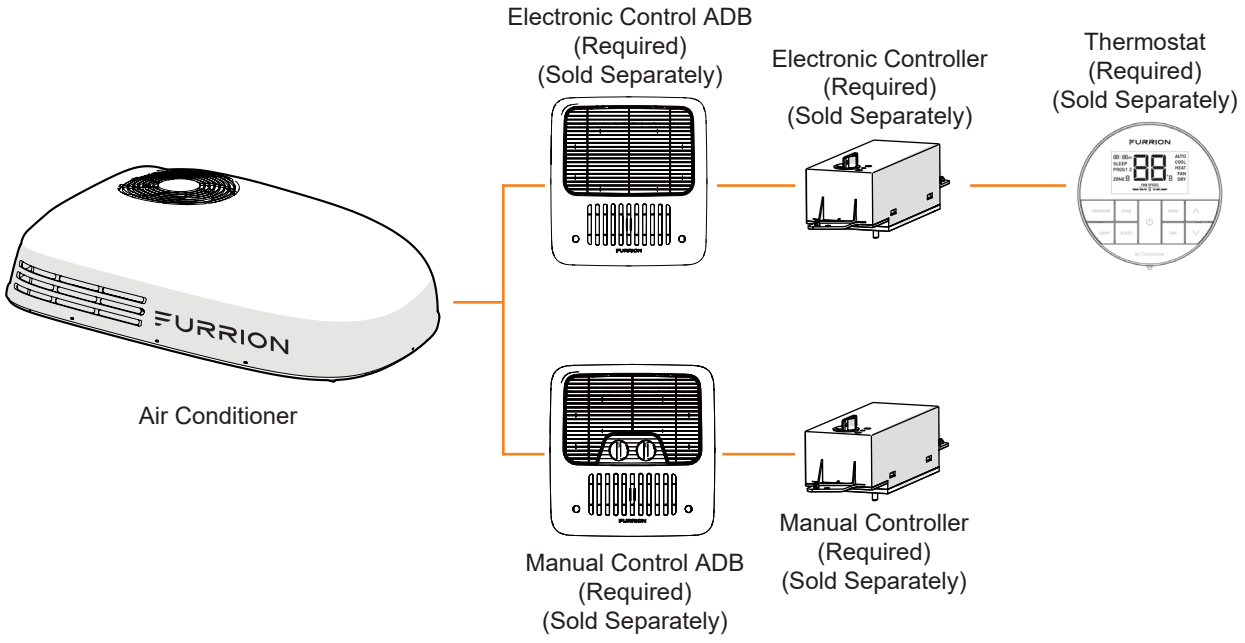
Installation and Owner's Manual

(For Aftermarket Applications)

Model #	Lippert PN	Description
FACR13LPSA2-PS-AM Kit	2024044597	13.5K Low Profile A/C (White)
FACR13LPSA2-BL-AM Kit	2024044598	13.5K Low Profile A/C (Black)
FACR15LPSA2-PS-AM Kit	2024044599	15K Low Profile A/C (White)
FACR15LPSA2-BL-AM Kit	2024044600	15K Low Profile A/C (Black)

System Options

Choose a Path (Electronic Control or Manual Control):



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Introduction

The Furrion Chill Air Conditioner system is a modular Air Conditioning system comprised of an Air Conditioner, Air Distribution Box (ADB), Controller, and other optional components based on customer preference/system install requirements. These modular parts are each sold separately.

Please read this manual carefully and understand that not all sections in it pertain to every install/combination of modular components. Pay attention to section headings, and always double check which parts are in hand and their compatibility with other components in the system before proceeding with any actual installation procedures.

Additional information about this product can be obtained from lci1.com/support or by using the LippertNOW app. Replacement kits can be ordered from https://store.lci1.com/ or by using the LippertNOW app.

The LippertNOW app is available for free on Apple App Store® for iPhone® and iPad® and also on Google Play™ for Android™ users.

App Store® and iPad® are registered trademarks of Apple Inc.

Google Play™ and Android™ are trademarks of Google Inc.

Explanation of Symbols

This manual has safety information and instructions to help eliminate or reduce the risk of accidents and injuries. Always respect all safety warnings identified with these symbols. A signal word will identify safety messages and property damage messages, and will indicate the degree or level of hazard seriousness.

⚠ DANGER

INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

⚠ WARNING

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

⚠ CAUTION

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE PERSONAL INJURY, OR PROPERTY DAMAGE.

Safety

Adhere to all safety labels.

This manual has safety information and instructions to help users eliminate or reduce the risk of accidents and injuries. Please read this instruction manual carefully before installation and start-up, and store it in a safe place for future reference. If you pass on the device to another person, hand over this instruction manual along with it.

The manufacturer accepts no liability for damage in the following cases:

- Faulty assembly or connection
- Damage to the product resulting from mechanical influences and excess voltage
- Alterations to the product without express permission from the manufacturer
- Use for purposes other than those described in the operating manual.
- The following basic safety information should be heeded when using electrical devices to protect against:
- Electric shock
- Fire hazards
- Injury

This appliance is intended to be used in a recreational vehicle.

All Furrion product referenced in this manual is to be installed in accordance with local and national codes, including the latest editions of the following standards:

USA:

- NFPA 1192
- NFPA 70

Canada:

- C22.1
- CSA Z240

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Handling the Device

⚠ WARNING

- **INSTALLATION AND REPAIR OF THE ROOFTOP AIR CONDITIONER MUST ONLY BE CARRIED OUT BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE RISKS INVOLVED AND THE RELEVANT REGULATIONS. INADEQUATE REPAIRS MAY CAUSE SERIOUS HAZARDS.**
- **ELECTRICAL DEVICES ARE NOT TOYS. KEEP ELECTRICAL DEVICES OUT OF REACH OF CHILDREN OR ELDERLY PERSONS. DO NOT ALLOW THEM TO USE ELECTRICAL DEVICES WITHOUT SUPERVISION.**
- **PREVENT INEXPERIENCED PEOPLE FROM USING THE DEVICE WITHOUT SUPERVISION.**
- **DO NOT UNDO THE UPPER COVER OF THE ROOFTOP AIR CONDITIONER IN THE EVENT OF A FIRE. USE APPROVED EXTINGUISHING AGENTS INSTEAD. DO NOT USE WATER TO EXTINGUISH FIRES.**

⚠ CAUTION

- **THE ROOFTOP AIR CONDITIONER MUST BE INSTALLED SECURELY SO THAT IT CANNOT FALL DOWN.**
- **ONLY OPERATE THE ROOFTOP AIR CONDITIONER IF YOU ARE CERTAIN THAT THE HOUSING AND THE CABLES ARE NOT DAMAGED.**
- **DO NOT USE THE ROOFTOP AIR CONDITIONER NEAR FLAMMABLE FLUIDS OR IN CLOSED ROOMS.**
- **MAKE SURE NO COMBUSTIBLE OBJECTS ARE STORED OR INSTALLED NEAR THE AIR OUTLET. A DISTANCE OF AT LEAST 20" MUST BE KEPT.**
- **DO NOT REACH INTO AIR OUTLETS OR INSERT ANY FOREIGN OBJECTS INTO THE DEVICE.**

- Only use the device as intended.
- Do not make any alterations or conversions to the device.
- If faults occur in the refrigerant circuit, the system must be checked by a certified service technician and repaired properly. The refrigerant must never be released into the air.

⚠ WARNING

- **RISK OF FIRE: FLAMMABLE REFRIGERANT USED. TO BE REPAIRED ONLY BY TRAINED SERVICE PERSONNEL. DO NOT PUNCTURE REFRIGERANT TUBING.**
- **RISK OF FIRE: DISPOSE OF PROPERLY IN ACCORDANCE WITH FEDERAL OR LOCAL REGULATIONS. FLAMMABLE REFRIGERANT USED (R32)**

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- If a component part is damaged, it must be replaced by the manufacturer, its service agent, or similar qualified persons to avoid a hazard.
- Follow local regulations regarding disposal of your air conditioner due to flammable refrigerant and gas. All air conditioner products contain refrigerants, which under the guidelines of federal law must be removed before disposal. It is the consumer's responsibility to comply with federal and local regulations when disposing of this product.

Handling Electrical Cables

⚠ WARNING

THE ELECTRICAL POWER SUPPLY MUST ONLY BE CONNECTED BY A QUALIFIED ELECTRICIAN.

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⚠ CAUTION

- **REFER TO NEC (NATIONAL ELECTRIC CODE) FOR PROPER SIZING OF WIRE GAUGE (AWG) BASED ON CABLE LENGTH AND OVERCURRENT PROTECTION RATING THAT IS SUPPLING POWER TO THE AIR CONDITIONER.**
- **SEE ROOFTOP UNIT NAMEPLATE FOR PROPER OVERCURRENT PROTECTION SIZING.**
- **ATTACH AND LAY THE CABLES SO THAT THEY CANNOT BE TRIPPED OVER OR DAMAGED.**

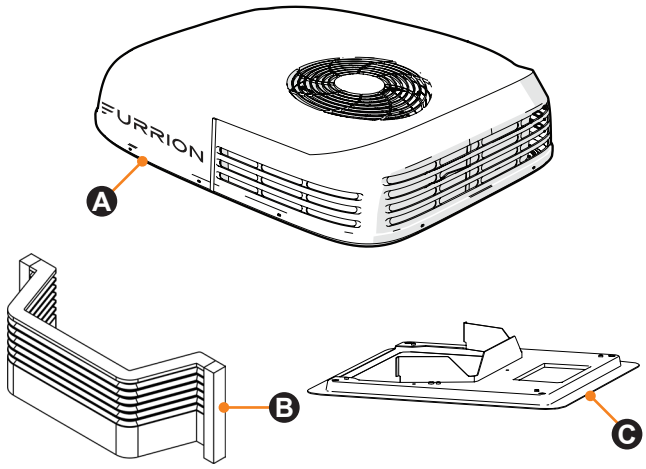
- Only a qualified electrician should connect the rooftop air conditioner to electrical power.
- Do not lay loose or bent cables next to electrically conductive materials.
- Do not pull on the cables.
- Use cable ducts to lay cables through walls with sharp edges.
- Refer to rooftop unit nameplate and NEC for proper power supply rating.
- This air conditioner works with only a certain set of ADBs and controls, which are approved with use of flammable refrigerants. Contact Furrion for further details before purchase or use.

R32 Refrigerant Warning

⚠ WARNING

- **RISK OF FIRE: FLAMMABLE REFRIGERANT USED. PRIOR TO BEGINNING WORK ON AIR CONDITIONER SYSTEMS, SAFETY CHECKS ARE NECESSARY TO ENSURE THAT THE RISK OF IGNITION IS MINIMIZED. THE WORK AREA AROUND THE UNIT IS TO BE SURVEYED TO MAKE SURE THAT THERE ARE NO FLAMMABLE HAZARDS OR IGNITION RISKS, INCLUDING CIGARETTE SMOKING.**
- **RISK OF FIRE. INSTALLATION, STORAGE, AND OPERATION OF THE APPLIANCE IN CONFINED SPACES SHALL BE AVOIDED (FLOOR AREA MUST BE > 11 FT²).**
- **DO NOT INSTALL IN AN UNVENTILATED SPACE IF IT IS SMALLER THAN 11 FT².**

Parts List

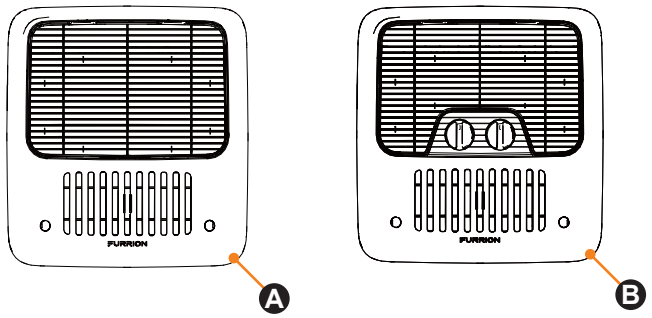


Letter	Description	Qty
A	Air Conditioner (White or Black)	1
B	EPP Duct Divider	1
C	Low Profile ADB Mounting Frame	1

Additional Components Sold Separately

Based on user preference and available options, several additional components may be required to complete installation. These components are sold separately.

Air Distribution Box (ADB): Required for all Installs



Letter	Model	Lippert PN	Description
A	FACT12CA2-PS-AM	2024042647	Electronic Control ADB Kit
B	FACT11CA2-PS-AM	2024042642	Manual Control ADB Kit

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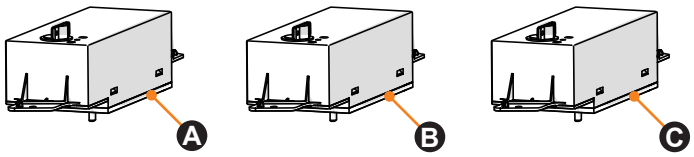
1. All Air Conditioners require an Air Distribution Box (ADB) that is sold separately from the A/C itself.

2. Before installing, select either a Manual Control ABD or an Electronic Control ADB. This will affect how the air conditioner is controlled; either with knobs directly on the ADB (Manual) or with a thermostat installed on the wall of the unit (Electronic.)

3. When installing the air conditioner, follow the steps in the appropriately labeled sections in this manual based on the choice of ADB (i.e. if a Manual Control ADB is selected, follow all steps and sections in this manual with "Manual" in the title, and disregard steps and sections labeled "Electronic". If an Electronic Control is selected, follow all steps and sections in this manual with "Electronic" in the title, and disregard all steps and sections labeled "Manual".

Controller: Required for All Installs



Letter	Model	Lippert PN	Description
A	FACC12ESPA2-BL-AM	2024044601	Single Zone Control Box w/ Heat Pump Functionality
B	FACC12ESHA2-BL-AM	2024042655	Multi Zone Control Box
C	FACC10MESA2-BL-AM	2024046890	Manual Control Box

1. All Air Conditioners require a controller that is sold separately from the A/C itself.

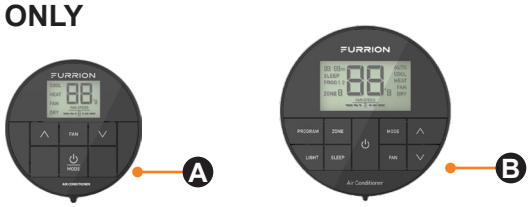
2. Manual ADBs require a Single Zone controller capable of servicing one "zone" (area of cooling), directly below the ADB.

3. Electronic ADBs require one of two controllers. Use of the Single Zone Controller with Heat Pump Functionality is required to use the Heat Pump function of the Low Profile unit. However, if multizone ducted cooling is required, the Multi Zone controller must be selected and installed.

NOTE: Heat Pump function is not operable via Multi Zone controller.

4. Based on the choice of ADB, select the appropriate controller for installation and refer to the associated sections of this manual when installing the controller.

Thermostat: Required for Electronic Control ADBs ONLY



Letter	Model	Lippert PN	Description
A	FACW10ESSA2-BL-AM	2024042659	Single Zone Thermostat
B	FACW12ESZA2-BL-AM	2024042658	Multi Zone Thermostat

1. The control interface for the Electronic ADB is a separate thermostat that should be mounted to the wall of the unit. This thermostat is sold separately, and is required for **Electronic** Control ADBs.

2. Based on the choice of controller and functionality (either single zone with Heat Pump, or Multi Zone for multiple room cooling only (no heat)), choose the appropriate thermostat for installation.

3. Refer to the manual included with the thermostat for installation procedures.

Prior to Installation

Replacing the ADB Mounting Frame

The Low Profile Air conditioner requires that the mounting frame that comes with standard ADBs be replaced with the modified mounting plate made specifically to accommodate the Low Profile unit.

1. Remove the existing mounting plate from the backside of the ADB.

2. Replace the previous mounting plate with the Low Profile Mounting plate in the same orientation.

3. Discard the original ADB mounting plate.

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Choosing Proper Location for the Air Conditioner

NOTE: The roof must be designed to support the weight of the rooftop unit and the weight of 2 installers standing on the roof.

There are two ways of installing the rooftop air conditioner:

1. Using the existing roof vent opening in the vehicle roof.

2. Making a new opening. In this case the opening should be reinforced by an appropriate frame as required.

Existing Roof Vent Opening

The air conditioner is designed to fit over an existing 14" roof vent opening.

New Opening

When no roof vent is available or another location is desired, the following is recommended:

- For one unit installation - the air conditioner should be mounted slightly forward of center (front to back) and centered from side to side.
- For two unit installations, install one air conditioner one third from the front of the RV and the other air conditioner two thirds from the front of the RV, aligned in the center.

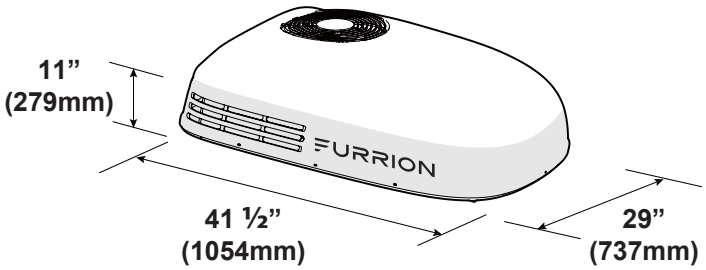
It is preferred that the air conditioner be installed on a relatively flat and horizontal roof section measured when the RV is parked on a level surface.

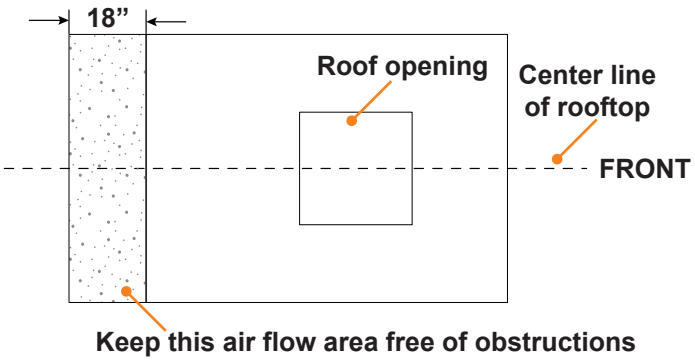
NOTE: A 15° slant to either side or front to back is acceptable for all units. If the roof exceeds 15° please use an exterior leveling shim to make air conditioner level.

After the Location Has Been Selected

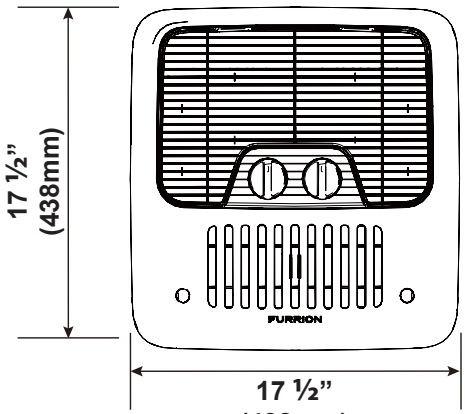
1. Check for obstructions in the area where the air conditioner will be installed.

2. Ensure that the ventilation holes for this air conditioning system are not obstructed or blocked.

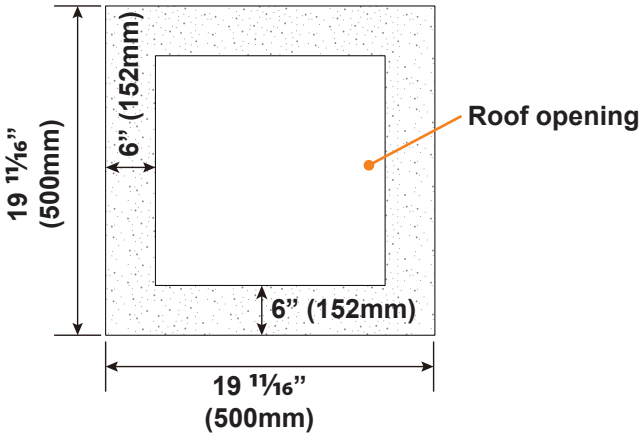




3. Check the inside of the RV for return air kit obstructions. (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.) Allow 6" (152mm) space from the opening to account for any potential return air kit obstructions.



NOTE: Manual Control ADB is depicted to the left as an example. Electronic Control ADB looks slightly different, but has the same overall dimensions.



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Roof Preparation

Opening Requirements - Before preparing the ceiling opening, decide on the type of system options. Read all of the following instructions before beginning the installation.

⚠WARNING

FIRE/ELECTRIC SHOCK HAZARD

- **MAKE SURE THERE ARE NO OBSTACLES INSIDE THE RV ROOF, FLOOR AND WALLS, SUCH AS WIRES AND PIPES.**
- **SHUT OFF THE GAS SUPPLY AND DISCONNECT THE 115VAC POWER FROM THE RV BEFORE DRILLING OR CUTTING INTO THE RV. FAILURE TO OBEY THESE WARNINGS COULD RESULT IN DEATH OR SERIOUS INJURY.**

Roof Thickness

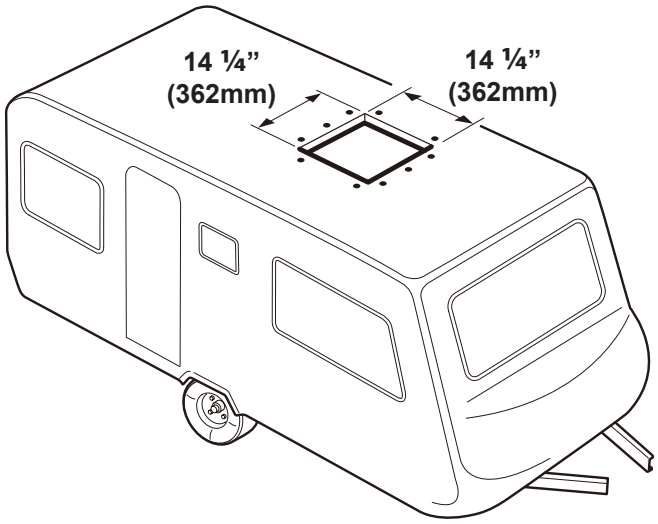
The installation of air conditioner suits for roof thickness from 3 ½" (90mm) to 6" (152mm). For other thickness, please contact Furrion or Furrion authorized service agent.

Installing in an Existing Roof Opening

1. Unscrew and remove the roof vent.

2. Remove all caulking compound around the opening.

3. If the opening exceeds 14 ¼" x 14 ¼" (+½"), it will be necessary to resize the opening to 14¼" x 14¼" (+½"). If the opening is less than 14 ¼" x 14 ¼" (+½"), it must be enlarged.

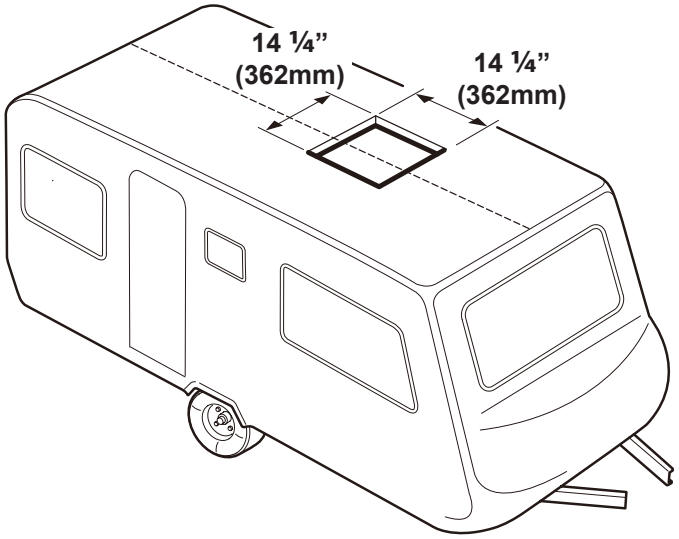


Making a New Roof Opening

If a roof vent opening will not be used, a 14 ¼" x 14 ¼" (+½") (362mm x 362mm) opening must be cut through the roof and ceiling of the RV. This opening must be located between the roof reinforcing members.

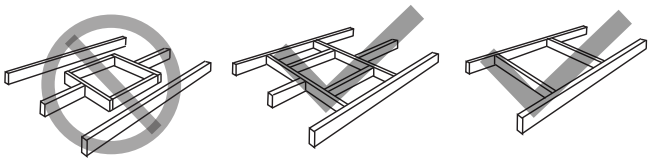
The 14 ¼" x 14 ¼" (+½") opening is part of the return air system of the air conditioner and must be finished in accordance with NFPA Standard 501C Section 2.7.2.

1. Mark a 14 ¼" x 14 ¼" (+½") square on the roof and carefully cut an opening.



2. Using the roof opening as a guide, cut a matching hole in the ceiling.

NOTE: Maintain structural integrity. Otherwise damage to product and/or RV could occur. Always observe the following guidelines while structuring the opening.



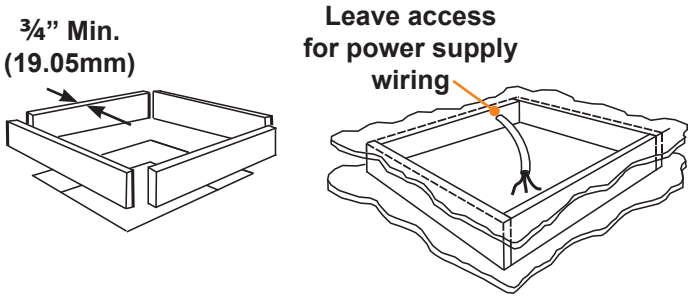
Do not cut roof structure or rafters

Good: rafters supported by cross beams

Good: location between roof rafters

3. The opening created must be framed to provide adequate support and prevent air from being drawn from the roof cavity.

4. Lumber ¾" or more in thickness must be used. Remember to provide an entrance hole for power supplies, wall thermostat and furnace wiring for connections. Leave 15" (381mm) minimum at the front of the opening.



Air Duct Sizing and Design (For Multi Zone Installations)

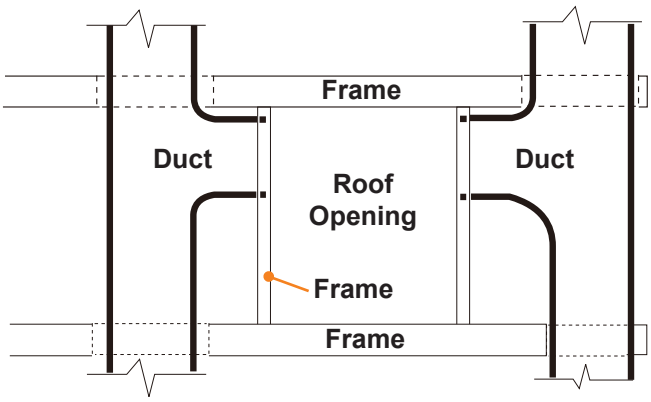
The following requirements must be met for correct ductwork installation and unit operation:

Roof Cavity Depth	3.5"-6" (89mm-152mm)	
Duct Cross Sectional Area	21 Sq. In. Min.	
Duct Size	Depth	1½" Min. - 2½" Max. (38mm Min. - 63.5mm Max.)
	Width	7" Min. - 10" Max. (178mm Min. - 254mm Max.)
	Total Duct Length	15Ft. Min. - 40Ft. Max. (4.5m - 13m)
	Duct Length (short run)	1/3 Total Duct Length
Register Requirements per A/C Unit	Number Required	4 Min. - 8 Max.
	Supply Register Free Air Area	14 Sq. In. (90 sq. cm)
	Return Register Free Air Area	40 Sq. In. (258 sq. cm)
	Distance From Duct End	5" Min. - 8" Max. (127mm Min. - 203mm Max.)
	Distance From Elbow	15" (381mm)
Total System Static Air Pressure	Blower at High Speed, Filter & Grille In Place	0.55 - 1.10 In. W.C.

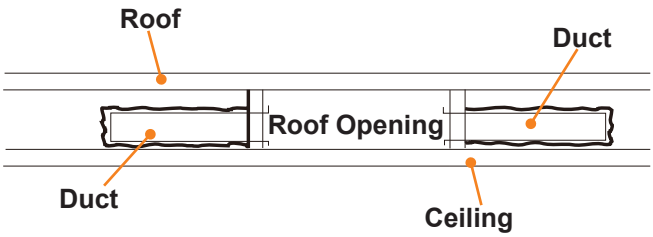
The installer of this system must design the air ducting system for their particular application.

NOTE: Make sure ductwork will NOT bend or collapse during and after installation, and that it is correctly insulated and sealed. Otherwise, damage to roof structure and ceiling could occur.

- Properly insulate and seal all discharge air ducts to prevent condensation from forming on their surfaces or adjacent surfaces during operation of the unit. This insulation must be R-7 minimum.



TOP VIEW (BACK OF RV)



SIDE VIEW (TOWARD BACK OF RV)

- Return air openings must have 80 square inches (516 square centimeters) minimum free area including the filter.
- Return air to the unit must be filtered to prevent dirt accumulation on the unit cooling surface.

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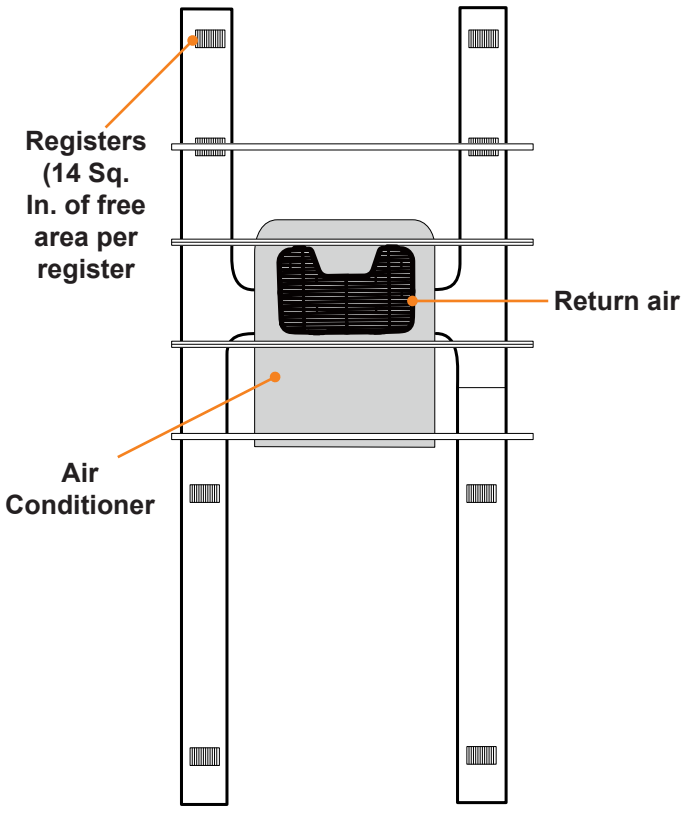
Air Distribution System Installation

It is the responsibility of the installer to review each RV floor plan to determine the following items in conjunction with "Air Duct Sizing and Design (For Multi Zone Installations)" section.

NOTE: Alternate configurations and methods may be used which will allow the unit to operate properly, however, these alternate configurations and methods MUST be approved by Furrion in writing.

- Duct size
- Duct layout
- Register size
- Register location
- Thermostat location
- Indoor temperature sensor location (if applicable)



Preparing Wire Connections

Each Rooftop Air conditioner opening must be prepared with proper wiring to connect the ceiling controller of the air conditioner to the 115VAC supply Voltage.

NOTE: The wire connections need to be positioned in the forward facing section of the opening.

⚠ DANGER

ELECTRICAL SHOCK HAZARD

- **DISCONNECT POWER BEFORE SERVICING. FAILURE TO OBEY THIS WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.**
- **PROVIDE GROUNDING IN COMPLIANCE WITH ALL APPLICABLE ELECTRICAL CODES. FAILURE TO OBEY THIS WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.**

115VAC Supply

Refer to the applicable electric code guidelines for sizing the appropriate wire gauge, length and type.

1. Route a 115VAC dedicated supply wire with ground, from the time delay fuse to circuit breaker box to each roof opening.

NOTE: Refer to rooftop unit nameplate, applicable code, and specification chapter for proper installation.

2. Use approved method to protect the wire where it passes through the opening.

3. Terminate with at least 15" of supply wire extending out of the roof opening. This ensures an easy connection at the control box.

12VDC Supply (Electronic Control ADB ONLY)

1. Prepare a 15 amp max protected circuit to supply power to all air conditioner units.

NOTE: The branch circuit can be dedicated or shared with other utilization equipment.

2. Extend circuit with a 14AWG 2-wire, (12V+, 12V-) to each roof opening.

3. Protect the wire where it passes through any rough surfaces or openings.

4. Terminate with at least 15" (381mm) of supply wire extending out of the roof opening. This ensures an easy connection at the control box.

Wall Thermostat Connection (Electronic Control ADB ONLY)

1. Prepare 4 wires to connect between the ceiling controller (roof opening) and wall controller/thermostat (wall opening).

NOTE: 18AWG max should be used, Furrion recommends using a standard thermostat wire with at least 4-wires.

2. Terminate with at least 15" (381mm) of wire end for easy connection.

3. For Multizone installations, prepare additional wiring of the same type to connect between each roof opening.

Furnace Switch (Electronic Control ADB ONLY)

1. If required to operate the furnace using the air conditioner wall controller/ thermostat, prepare 2-wires in the roof opening to connect the desired ceiling control zone with the furnace's thermostat circuit.

NOTE: This serves as a 12V+ line, that becomes hot only when the ceiling controller closes the furnace switch to turn the furnace on.

2. Terminate with at least 15" (381mm) of wire at each end for easy connection.

Repairs and Maintenance

Only a qualified personnel or a certified service technician is permitted to carry out any repairs of the air conditioner.

- Before any maintenance disconnect the power source (e.g. by turning off the battery main disconnect switch or by removing the corresponding fuse in the fuse box) from your air conditioner before carrying out user maintenance on it.
- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with.

Initial safety checks shall include:

- That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- That no live electrical components and wiring are exposed while charging, recovering or purging the system;
- That there is continuity of earth bonding.

Repair of components:

- Sealed electrical components shall be replaced.
- Intrinsically safe components must be replaced.

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used. If a leak is suspected, all naked flames shall be removed/ extinguished.

FURRION

Chill™ Low Profile Rooftop Air Conditioner (R32)

Installation and Owner's Manual

(For Aftermarket Applications)

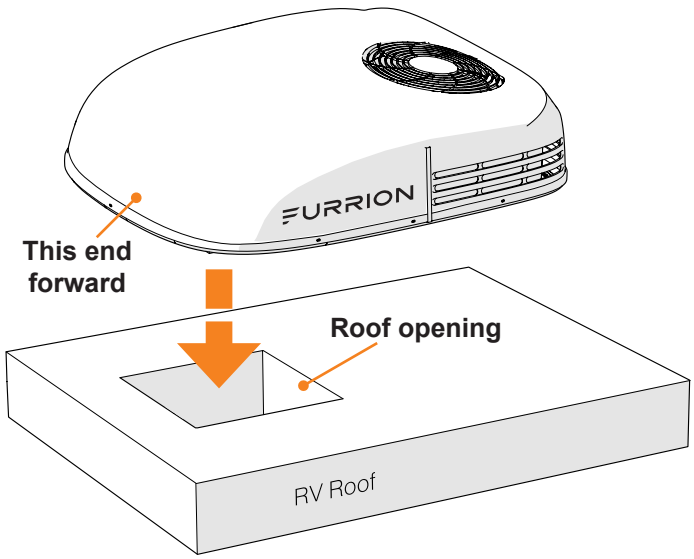
Installing the Air Conditioner

⚠ CAUTION

- **THE ROOFTOP UNIT WEIGHS APPROXIMATELY 100 POUNDS (45 KG). TO PREVENT BACK INJURY, USE A MECHANICAL HOIST WHEN LIFTING OR MOVING THE UNIT. FAILURE TO OBEY THIS WARNING COULD RESULT IN INJURY.**
- **DO NOT SLIDE UNIT. IT MAY DAMAGE THE GASKET AT THE BOTTOM OF THE ROOFTOP UNIT AND CAUSE LEAKAGE.**
- **DO NOT GRASP THE VENTILATION SLOTS TO LIFT THE ROOFTOP UNIT UP.**

NOTE: Installation of the Rooftop Air Conditioner Unit is universal, and not dependent on other choices made for modular components of the system (such as ADBs.)

1. Hold the bottom of the unit, lift and position the rooftop unit into the prepared opening using the gasket.



2. This completes the outside installation of the rooftop unit. Minor adjustments can be done from inside of the RV if required.

Installing the Air Distribution Box (ADB)

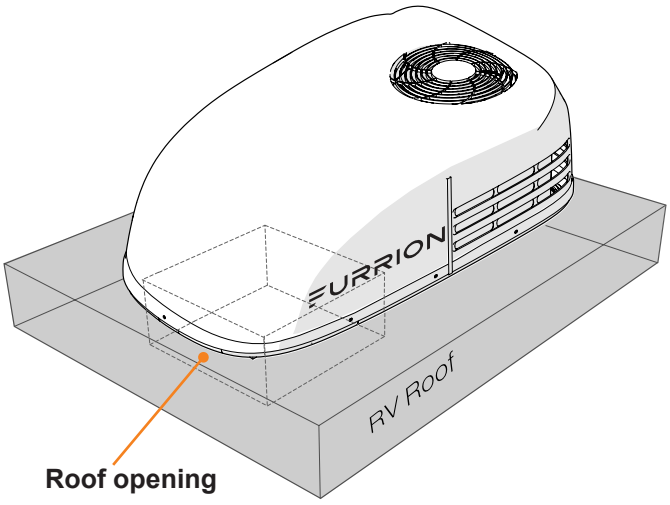
NOTE: For the following section of this manual, pay attention to section headings, and remember which ADB (Electronic Control/Manual Control) was chosen to operate the system. ONLY FOLLOW THE INSTRUCTIONS WITH HEADINGS THAT MATCH YOUR CHOSEN ADB. Other headings in this section may be disregarded, as they do not pertain to your install.

NOTE: The installation of the air distribution box is same for both ducted and non-ducted structures.

The rooftop unit is fixed on the RV roof using 4 long bolts through the mounting frame from the interior of the RV ceiling. This is the same for both **ELECTRONIC CONTROL ADBs** and **MANUAL CONTROL ADBs**. The difference between the two systems lies in how each are wired to other components within their respective modular systems.

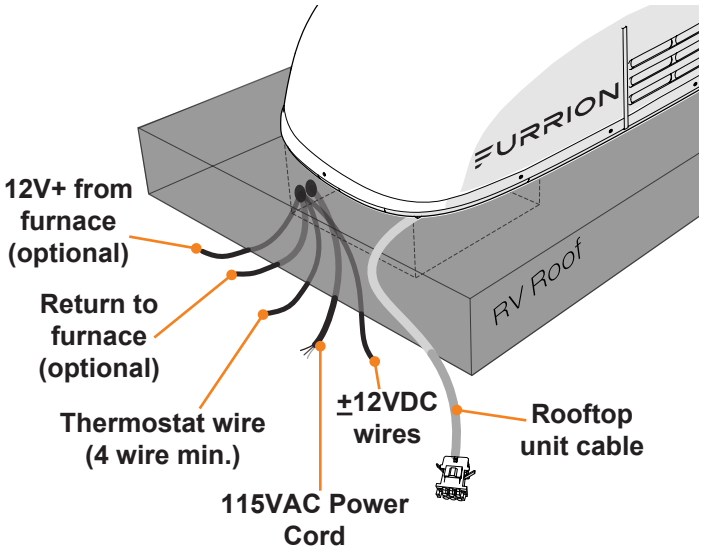
Check for Proper Alignment (Electronic Control ADB and Manual Control ADB)

1. Check the gasket alignment of the rooftop unit inside the RV over the roof opening and adjust as necessary by lifting and moving slightly.



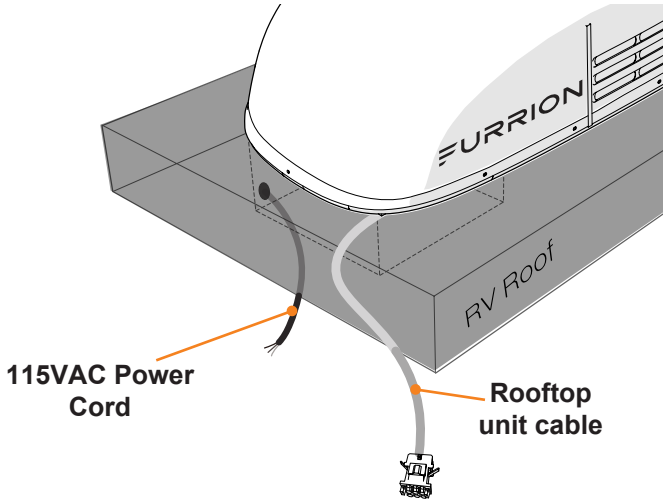
Pulling Wires (Electronic Control ADB)

1. Reach up into the return air opening and pull down the rooftop unit electric cord. Ensure all terminated wire ends specified in "Preparing Wire Connections" section are accessible.



Pulling Wires (Manual Control ADB)

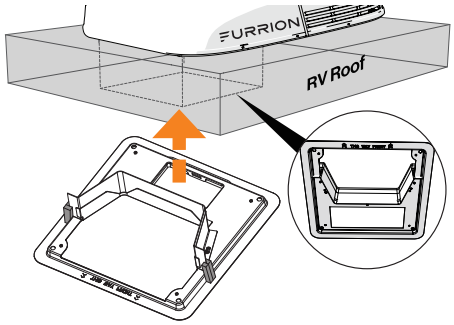
1. Reach up into the return air opening and pull the rooftop unit electric cord and 115VAC power cord down from the cutout area for later connection.



Affixing the ADB to the Rooftop Unit (Electronic Control ADB and Manual Control ADB)

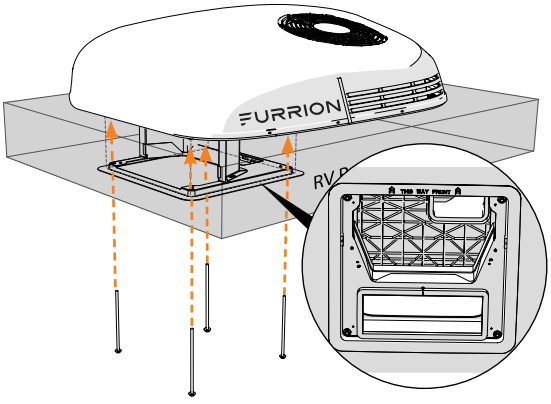
NOTE: Before installing the mounting frame, make sure you have discarded the original mounting plate included with the ADB and replaced it with the one included with the Low Profile Air Conditioner unit. For more information, see the "Prior to Installation" section of this manual.

1. Install the assembled mounting frame and duct divider into the rooftop opening. Make sure the "THIS WAY FRONT" mark is facing front (the direction of the vehicle) while installing. Trim Duct Divider as needed to provide a tight seal. Roof thickness under 6" requires the divider to be trimmed.

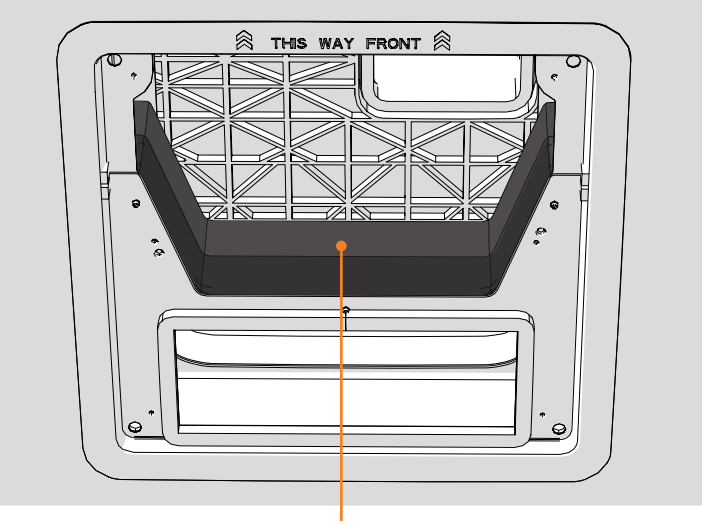


2. Fix the assembled mounting frame and duct divider into the rooftop unit using 4 bolts provided. Evenly tighten the four bolts to a torque of 40 to 50 inch pounds. This will compress the roof gasket to approximately ½".

NOTE: If bolts are left loose there may not be an adequate roof seal or if over tightened, damage may occur to the rooftop base or mounting frame.



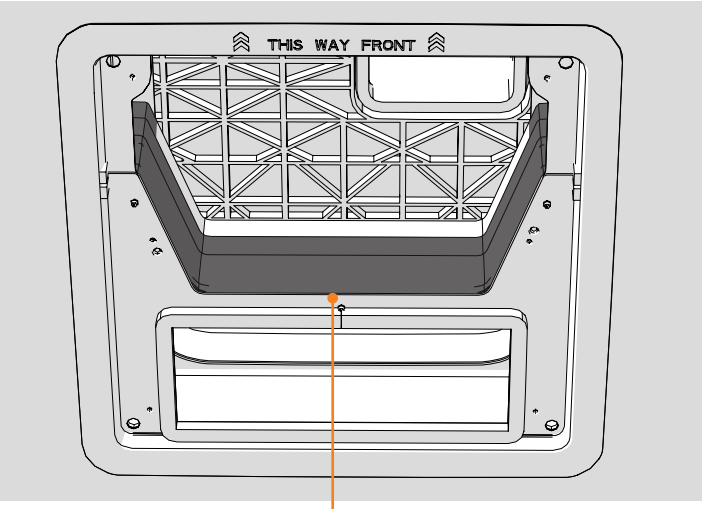
3. Make sure the duct divider is compressing the top foam on the base of the air conditioner unit, and compress tightly to to ensure a positive retention.



Duct divider

4. Use self adhesive foil tape to seal any potential gaps around the duct divider to roof opening that may allow cold air to leak back into the warm intake side.

NOTE: Clean metal surfaces to remove any oils to ensure good adhesion of the foil tape.



Foil tape

Making the 115VAC Wiring Connection (Electronic Control ADB and Manual Control ADB)

⚠ DANGER

ELECTRICAL SHOCK HAZARD

- **DISCONNECT POWER BEFORE SERVICING.**
- **PROVIDE GROUNDING IN COMPLIANCE WITH ALL APPLICABLE ELECTRICAL CODES.**

FAILURE TO OBEY THIS WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.

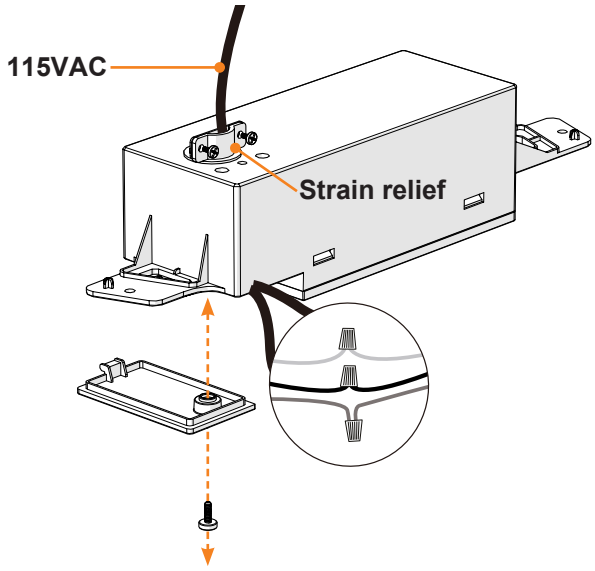
1. Locate the chosen control box for your modular system.

2. Remove the set screw and cable compartment cover.

3. Loosen the strain relief and compartment cover of the control box and pass the 115VAC power cord through the strain relief hole and re-tighten the cable clamp until properly restrained. Do not over tighten.

4. Make wire connections following the below color codes.

- Black - Hot
- White - Neutral
- Green/yellow - Ground



5. Fit all cables into the cable compartment and tuck any excess wires up out of the way. Return the compartment cover to it's proper place, and secure with the set screw.

Wiring Additional Modular Components to the System (Electronic Control ADB ONLY)

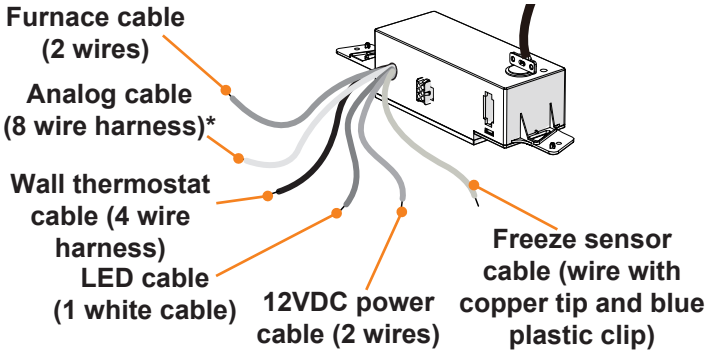
⚠ DANGER

ELECTRICAL SHOCK HAZARD
- **DISCONNECT POWER BEFORE SERVICING.**

FAILURE TO OBEY THIS WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.

1. Familiarize yourself with the ceiling controller and wire harnesses.

NOTE: When connecting to a Furrion wall controller/ thermostat, the analog harness bundle is not used and can be tucked away. The ends do not need to be capped or taped.

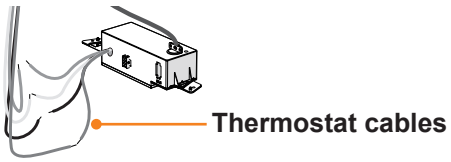


Analog cable only used when connecting Lippert One Control. Otherwise, cable is not to be used.

2. Locate the four thermostat cables of the control box (red, green, blue and purple), which are tied together and tagged with "To wall thermostat", and connect them to a thermostat wire that extends to the wall.

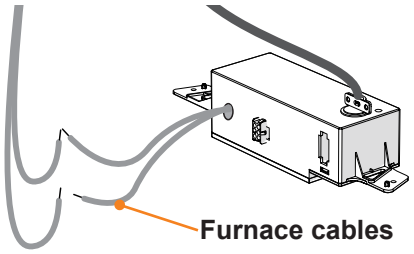
NOTE: Examine the function marked on the wire end and carefully trace and mark its function at the end of the wire extension so that proper connection can be made at the wall controller / thermostat.

NOTE: Crossing the wires could prevent the control from operating properly, or even cause damage. If uncertain, perform a continuity test through each extension to confirm.

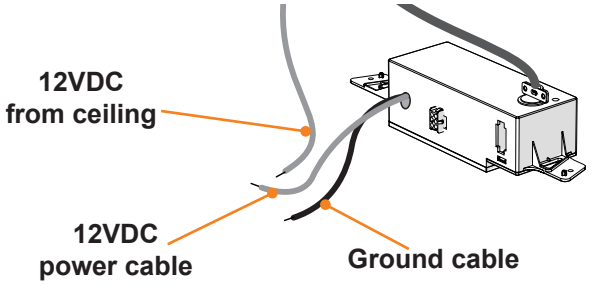


3. If applicable, locate the furnace wires from the ceiling controller, which are two separate brown wires tagged with "FURN". Connect them with the 12V+ wire from the furnace, and the return wire to the furnace.

NOTE: Polarity does not matter, connection can be freely made to either wire. Do not connect the two brown "FURN" wires together.



4. Locate the 12 VDC power cable (red, tagged with "+12 VDC") and ground cable (black, tagged with "Ground (12 VDC)") of the control box. And connect them with the corresponding 12 VDC wire prepared in the ceiling.



Setting DIP Switches (Electronic Control ADB ONLY)

The DIP switches enable/disable different communications between the ceiling controller and wall thermostat for functions such as, zone selection, furnace operation, and additional accessories.

The controls are preset with the following active DIP switch settings:

Multi Zone: Zone 1; Furnace on

⚠ DANGER

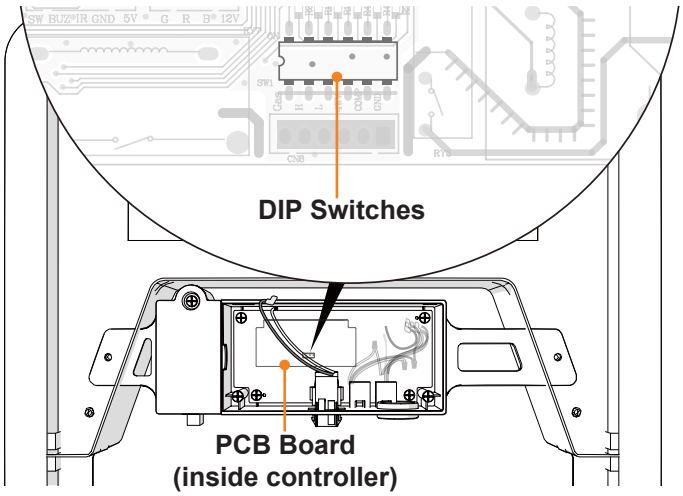
ELECTRICAL SHOCK HAZARD
- **DISCONNECT POWER BEFORE SERVICING.**

FAILURE TO OBEY THIS WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.

1. Locate the DIP Switches. The DIP switches are located on the PCB board of the control box. Each time you want to set the DIP, you should open the control box and find the DIP switches.

2. Remove the cover of the control box, and find the PCB board.

3. Locate the position of the DIP switches on the PCB board.



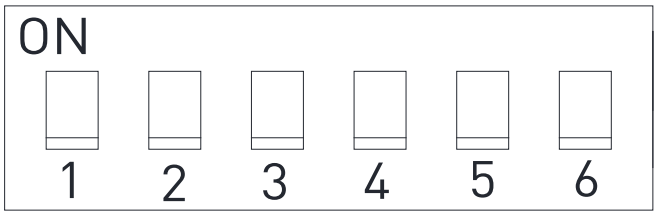
4. Ensure power from the battery is disconnected.

5. Use a small tool, slide the dip switch to either ON/OFF.

NOTE: If 12V+ is present when making a setting change, It will be is necessary to cycle power to reset the control to make the setting active.

6. For Multi Zone DIP Switches, each zone requires an independent ceiling control box, but will share one wall thermostat control.

7. It is important that each independent zone is set to a unique zone value (1-4) by setting the DIP 1 and DIP 2 to avoid repetition and communication conflicts with the wall thermostat control.



		DIP 1	DIP 2	ZONE Setting
Zone Selection*		OFF	OFF	ZONE1
		OFF	ON	ZONE2
		ON	OFF	ZONE3
		ON	ON	ZONE4
Heat Pump (selected models)	DIP 3	Reserved		
Furnace	DIP 4	OFF		Furnace Off
		ON		Furnace On
Electric Heat (selected models)	DIP 5	OFF		Electric Heat Off
		ON		Electric Heat On
Analog / Digital	DIP 6	OFF		Analog
		ON		Digital

Multi Zone Wiring Connection (Electronic Control ADB ONLY)

1. Determine zone identification for each ceiling controller, and set DIP switches appropriately per the "Setting the DIP Switches (ELECTRONIC CONTROL ADB ONLY)" section in this manual.

2. Choose the appropriate zone to operate the furnace, for all other ceiling controllers set the Furnace DIP switch to "off" to prevent mis-communication.

3. Repeat the wiring steps covered in "Wiring Additional Modular Components to the System (ELECTRONIC CONTROL ADB ONLY)" for each independent wall controller.

4. Combine all the "To wall thermostat" wires together so that all zones are connected, and each wire function matches. Only one connection point should be made directly to the wall controller / thermostat. Ensure no wire function is crossed throughout the connections.

Analog Connection (Electronic Control ADB ONLY)

The analog connection is only intended for use with OneControl provided by Lippert Control Systems. It allows connection directly to the HVAC control module without use of a separate gateway box.

1. Activate the analog harness by turning the DIP switch on as indicated in the DIP switch selection section. This will deactivate the digital "wall thermostat" harness.

2. Connect the harness function according to the OneControl instructions.

Connecting the System Wires (Manual Control ADB ONLY)

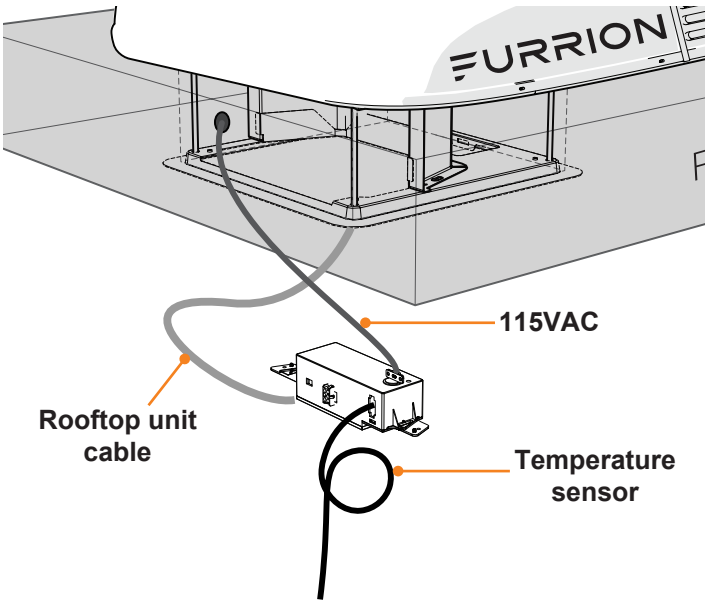
⚠ DANGER

ELECTRICAL SHOCK HAZARD

- **DISCONNECT POWER BEFORE SERVICING.**

FAILURE TO OBEY THIS WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.

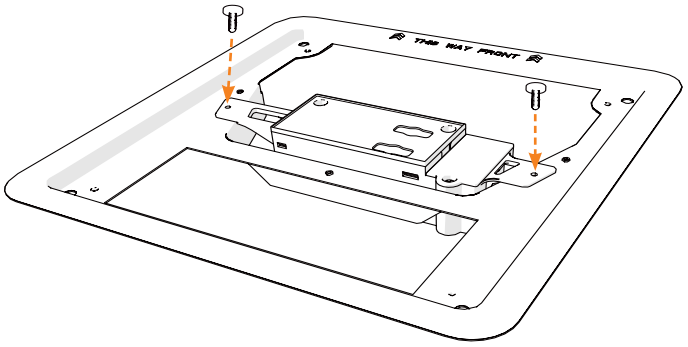
1. Connect the wires of the rooftop unit cable to the control box. 115VAC power cord connects to 115VAC power source.



Final Installation (Electronic Control ADB and Manual Control ADB)

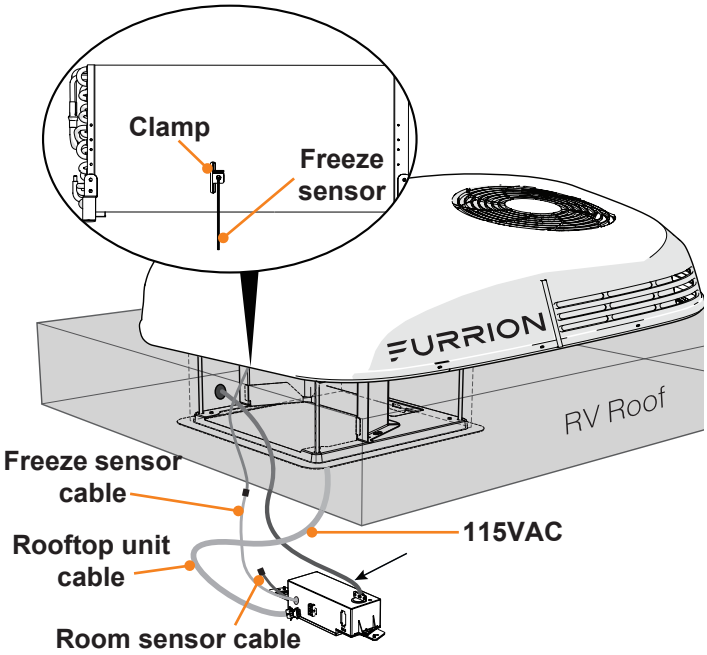
NOTE: In the following illustrations, an Electronic Control ADB is depicted as an example. Manual Control ADBs are installed using the same process with the exception of a single, final step which is notated within that final step.

1. Install the control box onto the mounting frame and fix with 2 provided "short" screws (one each side).



2. Insert the freeze sensor into the pre-installed clamp in the evaporator between the fins.

3. Extend the Room Temperature Sensor into the middle of the return air stream. Be careful to not let the sensor touch the metal frame or plastic grill.



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Chill™ Low Profile Rooftop Air Conditioner (R32)

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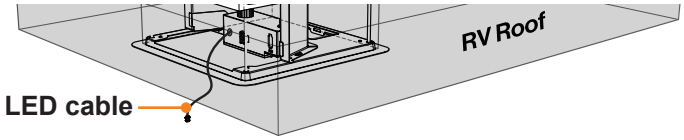
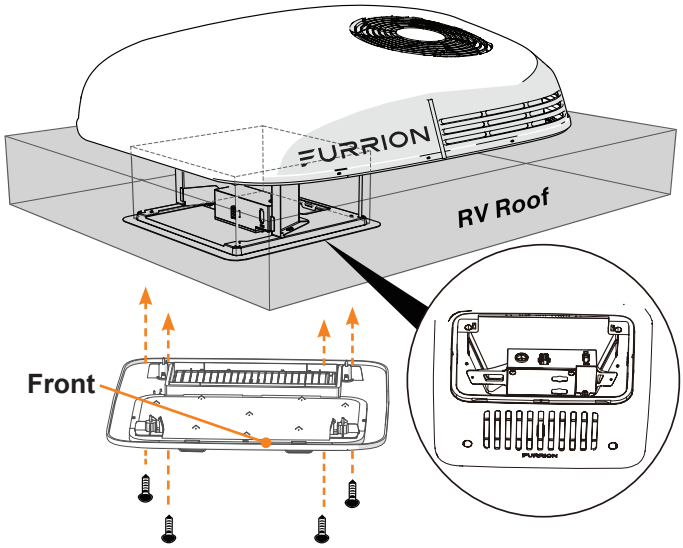
4. Tuck/secure LED cable (white strip, tagged with "LED") out of the way. This wire is reserved for lighting options.

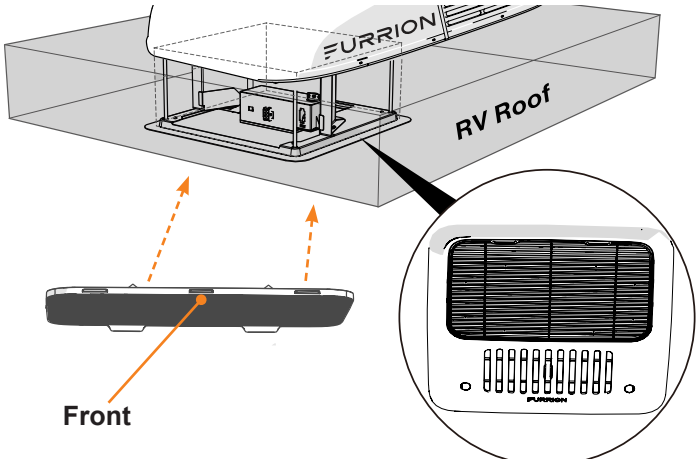


5. Install the Air Distribution Box (ADB) shroud over the mounting frame and fix with the 4 provided long screws, or #8 x1.5" (max) pan head RV screws can also be used.

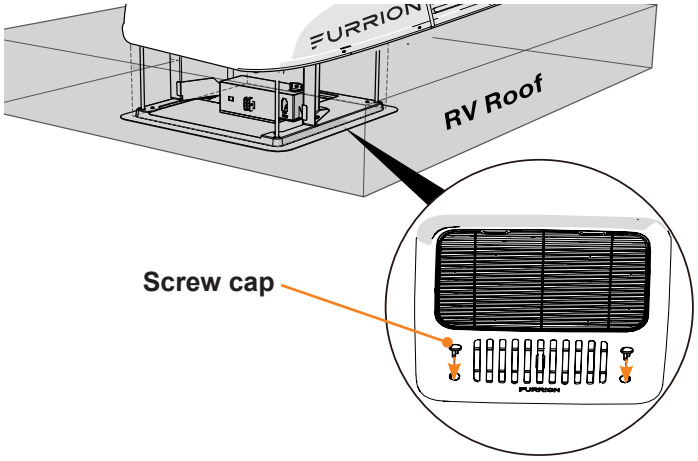
NOTE: Make sure the "THIS WAY FRONT" mark is facing front (the direction of the vehicle) while installing.



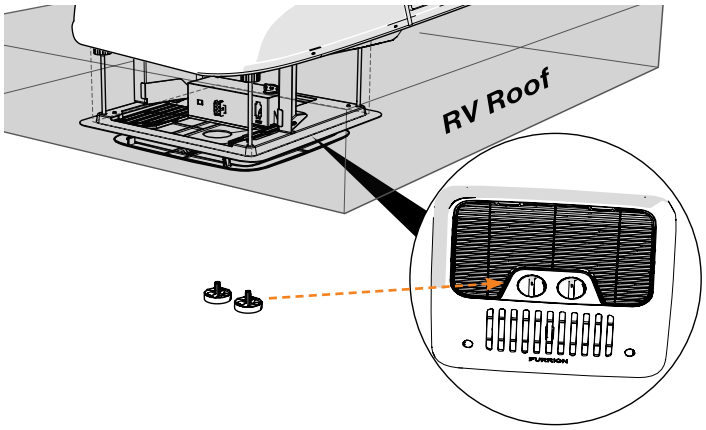
6. Align the filter tabs with mating notches and push to snap the filter into the ADB shroud.



7. Install the screw caps to cover the screw holes.



8. MANUAL CONTROL ADB ONLY: Install the two control knobs through holes on the decoration plate and push to lock into place.



Installing the Wall Thermostat (Electronic Control ADB ONLY)

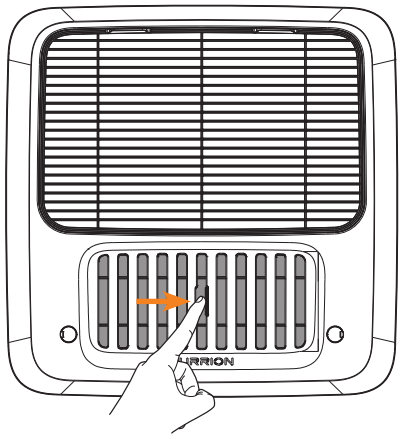
1. For instructions covering the installation of a wall thermostat used to control a system with an Electronic Control ADB please refer to the separate instruction manual included with the Thermostat. All manuals can also be found by following the QR code below:

Operation (Electronic Control ADBs)

Ducted Systems

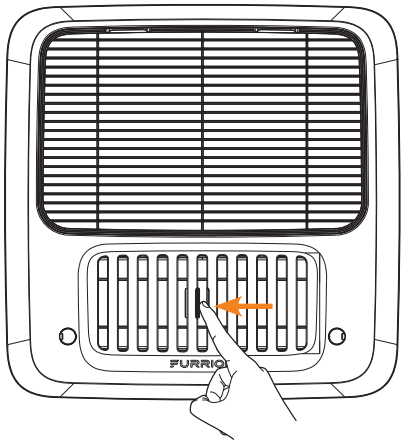
Normal Ducted Use:

1. To distribute air through a ducted system, close the air shutter by pushing the tab right to pressurize the duct work.



Max Cool:

2. To remove significant heat, open the air shutter to "dump" cool air directly below the AC. This will eliminate air and heat loss in the ducted system, and maximize cooling performance. Once comfortable, close shutter to distribute evenly with the ducted system. Open and close the shutter by pushing the tab left and right.



Non-Ducted System

1. Open shutter to release air.

Thermostat Use

2. For instructions covering the Operation of the Air Conditioning system via the thermostat please refer to the separate instruction manual included with the thermostat. All manuals can also be found by following the QR code below:

⚠ DANGER

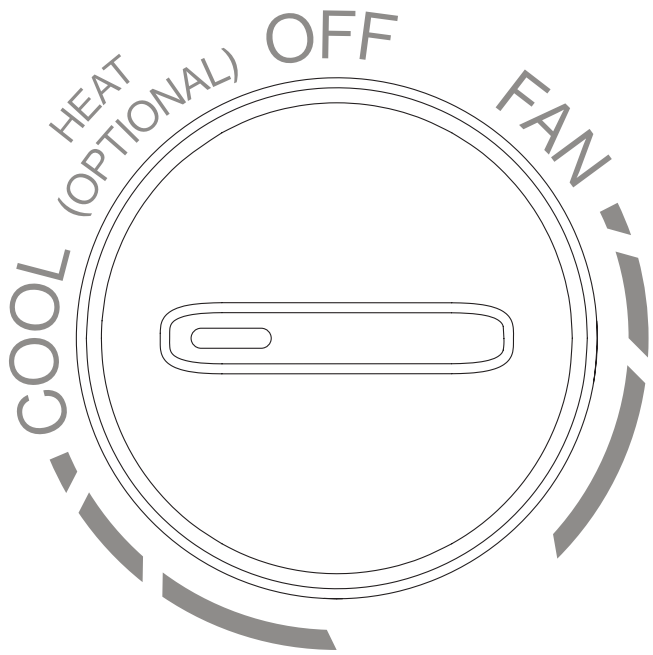
FIRE/ELECTRIC SHOCK HAZARD
DO NOT USE MEANS TO ACCELERATE THE DEFROSTING PROCESS OR TO CLEAN, OTHER THAN THOSE RECOMMENDED BY THE MANUFACTURER IN THIS MANUAL. THE APPLIANCE SHALL BE STORED IN A ROOM WITHOUT CONTINUOUSLY OPERATING IGNITION SOURCES (FOR EXAMPLE: OPEN FLAMES, AN OPERATING GAS APPLIANCE OR AN OPERATING ELECTRIC HEATER. DO NOT PIERCE OR BURN. BE AWARE THAT REFRIGERANTS MAY NOT CONTAIN AN ODOR.

Operation (Manual Control ADBs)

The Manual Control ADB is designed with 2 control knobs which allow you to set the temperature set-point and change the operating mode of the air conditioner.

Change the Operating Mode

Rotate the operating control mode knob to select the desired operating mode. There are 3 available operating modes for you to select.



1. FAN MODE:

A. Rotate the operating mode control knob to the FAN position.

2. COOL MODE:

A. Rotate the operating mode control knob to the COOL position.

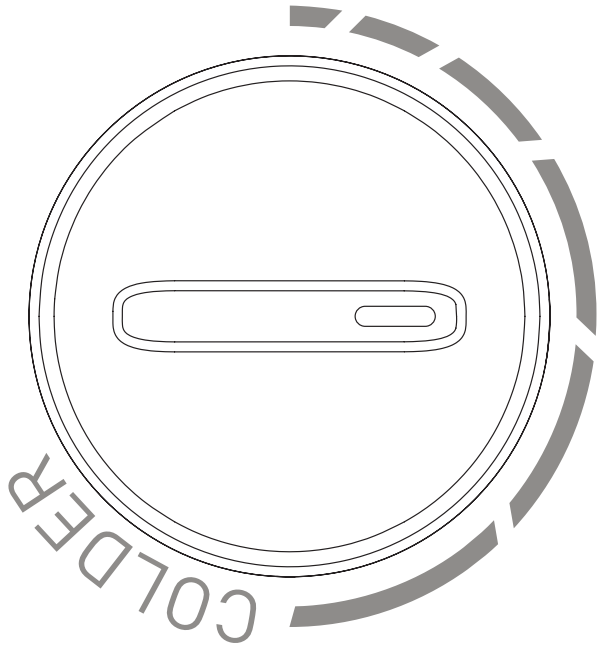
3. OFF MODE:

A. Rotate the operating mode control knob to the OFF position.

Set the Temperature

Set the temperature to your comfort level by rotating the temperature control knob. The fan will run continuously to circulate the air and maintain an even temperature.

NOTE: The temperature setting mode is only available while cooling mode is selected.



1. Rotate the operating mode control knob to the cool position.

2. Rotate the temperature control knob to your desired level.

Defrosting & Anti-Freezing Instructions

⚠ DANGER

FIRE/ELECTRIC SHOCK HAZARD
DO NOT USE MEANS TO ACCELERATE THE DEFROSTING PROCESS OR TO CLEAN, OTHER THAN THOSE RECOMMENDED BY THE MANUFACTURER IN THIS MANUAL. THE APPLIANCE SHALL BE STORED IN A ROOM WITHOUT CONTINUOUSLY OPERATING IGNITION SOURCES (FOR EXAMPLE: OPEN FLAMES, AN OPERATING GAS APPLIANCE OR AN OPERATING ELECTRIC HEATER. DO NOT PIERCE OR BURN. BE AWARE THAT REFRIGERANTS MAY NOT CONTAIN AN ODOR.

Frost or even ice formed on part of or the entire evaporator coil is not unusual under certain conditions or below combined conditions:

1. The air conditioner is operating with very cold temperature setting;

2. The air conditioner is operating at very low Fan speed;

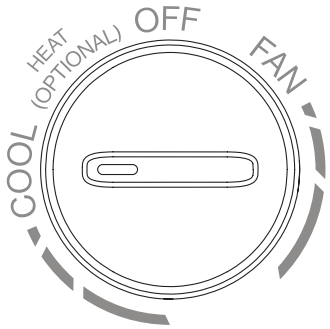
3. The air outlet of the air conditioner is obstructed, for example, the shutter of the cool air outlet or the ducts vents are closed, or the filters are obstructed;

4. The ambient temperature is relatively low, e.g. ≤78°F (25.5°C).

If the frosting or icing should occur, please follow the instructions in the next section to clean up the frost or ice.

Cleaning Frost and/or Ice

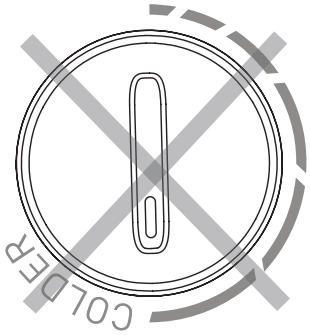
1. Rotate the operating mode control knob to the "HIGH FAN" mode position and keep the air conditioner running for half an hour. Then the frost and ice will be melted and drop down of the evaporator coil, and the air conditioner will be resumed.



⚠ WARNING

DURING THE DEFROSTING OR ANTI-FREEZING PROCESS, THE FROST OR ICE WILL BE MELTED INTO WATER AND MIGHT DROP DOWN FROM THE TRIM KIT TO THE FLOOR OR FURNITURE. MAKE SURE YOU HAVE PREPARED PROTECTIONS FOR YOUR FLOOR OR FURNITURE IN ADVANCE, OR YOU CAN USE A BUCKET TO COLLECT WATER.

Preventing Frost/Ice Buildup



1. Do not rotate the temperature control knob to the "MAX COOL" position (as shown above) at night to prevent frost/ice buildup.

2. When the operating control mode knob is in "COOL" mode position, always keep at least 2 duct vents open to prevent being frozen up.

⚠ WARNING

THE AIR CONDITIONER COULD BE FROZEN UP WHEN THE AMBIENT TEMPERATURE IS RELATIVELY LOW, E.G. ≤78ºF (25.5ºC).

Cleaning and Maintenance

A blocked filter will impair the cooling and heating performance of the unit significantly.

The filter must be cleaned periodically to ensure that it does not become clogged with dust and other particles. The state of the filter can be ascertained from its appearance. If it appears dirty or clogged then it should be cleaned.

⚠ WARNING

AIRBORNE PARTICLES CAN POSE A HEALTH RISK, PARTICULARLY TO YOUNG CHILDREN AND THE ELDERLY. ENSURE THAT FILTER IS CLEANED IN A SAFE AND WELL VENTILATED AREA.

To Clean the Filter

The filter should be cleaned every four weeks or more when in use. Prolonged use, higher concentrations of airborne particles and various other factors may result in the filter needing to be cleaned more often.

1. Remove the filter by pushing the tabs to release.

2. The filter can be washed with warm soapy water. Care must be taken to avoid ripping the fabric.

3. Replace the filter and decoration plate by reversing the above process.

NOTE: The filter must be completely dry before re-installation.

Refrigerant Decommissioning

Any repairs in the refrigerant system including decommissioning must be carried out by a certified service technician. Flammable refrigerant used.

To Replace the Filter

Filter changes should be carried out depending on the amount of use. It is recommended to change the filter at least every 12 months. Never operate the air conditioning system without a filter, since this can decrease performance and indoor air quality.

Replacement return air filters can be ordered directly from Furrion.

Troubleshooting

What is happening?	Why?	What should be done?
Rooftop air conditioner constantly switches itself off	Freeze sensor has tripped	Outer temperature is too low or all air nozzles are closed
Not cooling well	The rooftop air conditioner is not set to cooling	Set the rooftop air conditioner to cooling
	The set temperature is too high	Select a lower temperature
	The evaporator fan is damaged	Contact an authorized service agent or Furrion (see the detail contact info at the back page of this manual)
	The condenser fan is damaged	Contact an authorized service agent or Furrion (see the detail contact info at the back page of this manual)
	The air intake grilles are blocked or obstructed	Remove any leaves and other dirt from the ventilation grilles of the rooftop air conditioner
	The blower is defective	Contact an authorized service agent or Furrion (see the detail contact info at the back page of this manual)
Water enters the vehicle	The condensation water drainage openings are clogged up	Clean the drainage openings for condensation water
	The seals are damaged	Contact an authorized service agent or Furrion (see the detail contact info at the back page of this manual)
Rooftop air conditioner does not switch on	No supply voltage connected	Check the power supply
	The voltage is too low	Contact an authorized service agent or Furrion (see the detail contact info at the back page of this manual)
	Fuse blown or circuit protector tripped	Check the electrical fuse of the power supply

FURRION®

Chill™ Low Profile Rooftop Air Conditioner (R32)

Installation and Owner's Manual

(For Aftermarket Applications)

Specifications

	FACR13LPSA2-**	FACR15LPSA2-**
Nominal Cooling/Heating Capacity (Btu/h)	13,500/13,500	15,000/15,000
Dehumidification (pint/h)	2.4	2.9
Refrigerant	R32	R32
Charge (Oz)	19.75	21.2
Roof top Unit Dimensions (W x H x D) (inch)	29" x 11" x 41½"	29" x 11" x 41½"
ELECTRICAL		
Volts/Frequency	115V/60Hz/1Ph	115V/60Hz/1Ph
Power Watts (Cooling/Heating)	1,350/1,500	1,525/1,800
Amps (Cooling/Heating)	12.3/13.6	13.9/16.4
Power Cord Gauge Min. (mm²)	AWG12	AWG12
** Product color.		

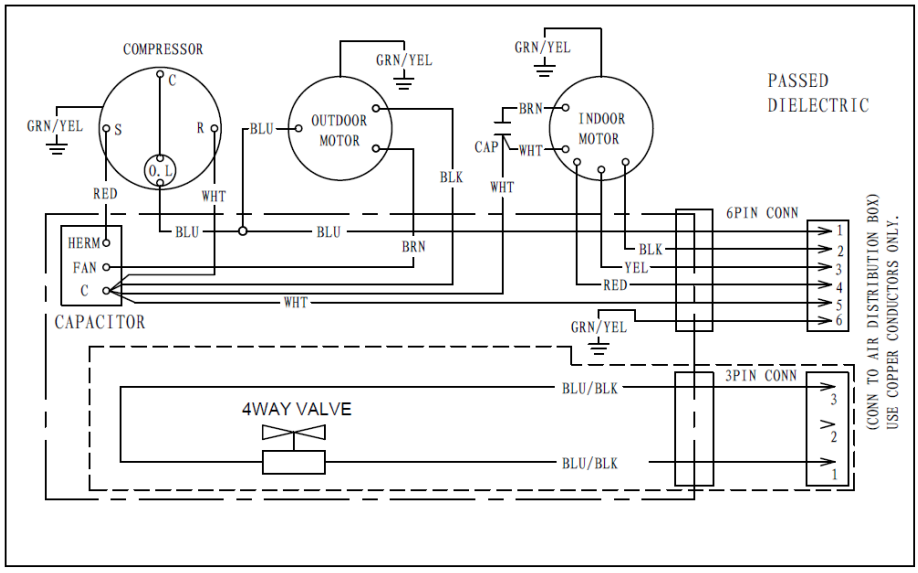
Wiring Diagram

⚠ DANGER

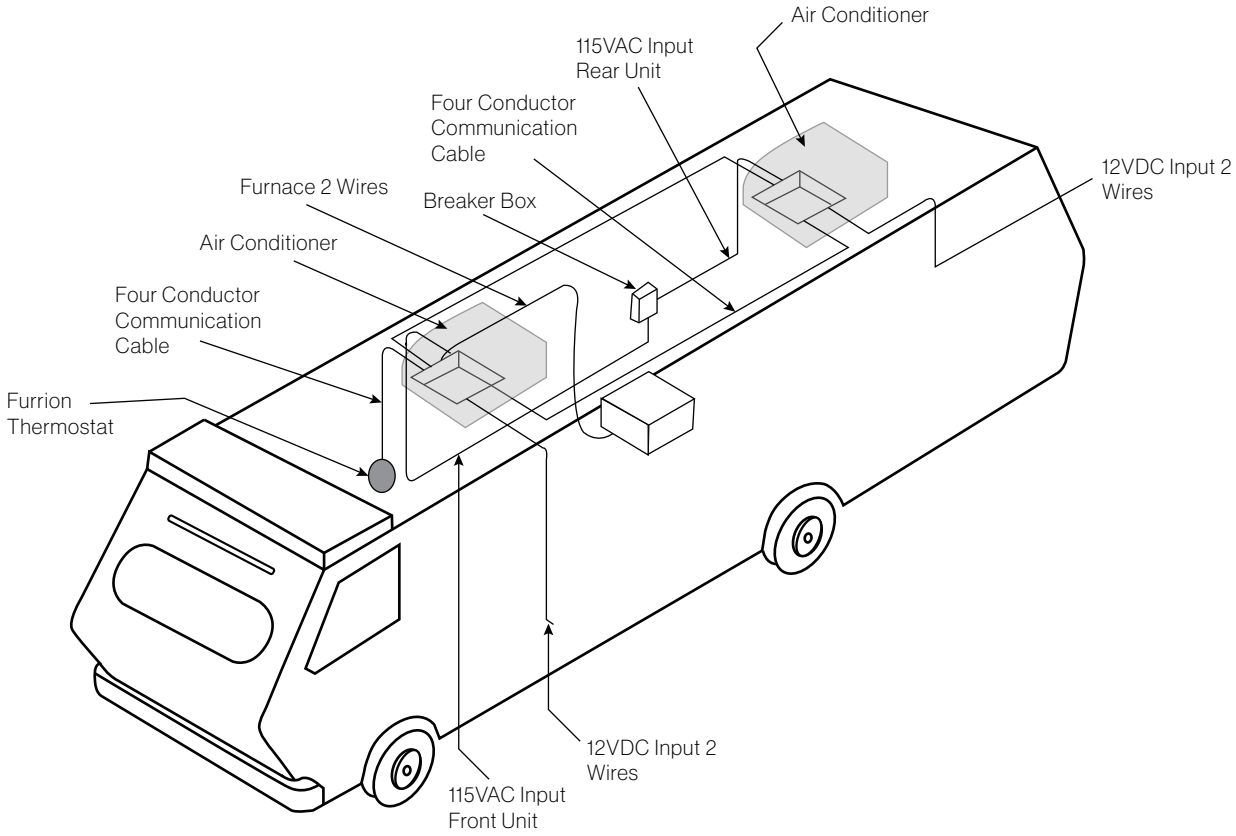
ELECTRICAL SHOCK HAZARD

- **DISCONNECT POWER BEFORE SERVICING.**
- **PROVIDE GROUNDING IN COMPLIANCE WITH ALL APPLICABLE ELECTRICAL CODES.**

FAILURE TO OBEY THIS WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.



Multi Zone Wiring Diagram (Electronic Control ADB Only)



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