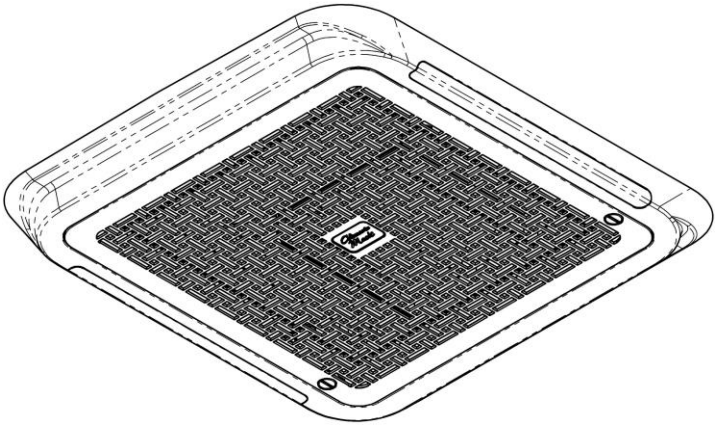
Coleman-Mach®

An *AIRXCEL* Brand

INSTALLATION INSTRUCTIONS FOR 8430-5501, 8430-5511 (NON LIGHTED) 8430-5601, 8430-5611 (LIGHTED) DUCTED PLENUM & MOUNTING KIT



8330-752 CONTROL BOX (12 VDC COOL ONLY)
9330C755 CONTROL BOX (12 VDC HEAT READY)
8530-750 CONTROL BOX (24 VAC COOL ONLY)
9530A751 CONTROL BOX KIT (12 VDC HEAT PUMP)

9430A751 ZONE CONTROL KIT (12 VDC COOL ONLY)
9430A755 ZONE CONTROL KIT (12 VDC HEAT READY)
9630A751 ZONE CONTROL KIT 12 VDC HEAT PUMP)

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1980-103 (08-02-21)

I. WARNINGS

IMPORTANT NOTICE

These instructions are for the use of qualified individuals specially trained and experienced in installation of this type equipment and related system components.

Installation and service personnel are required by some states to be licensed. PERSONS NOT QUALIFIED SHALL NOT INSTALL NOR SERVICE THIS EQUIPMENT.

WARNING! – SHOCK HAZARD To prevent the possibility of severe personal injury or equipment damage due to electrical shock, always be sure the electrical power source to the appliance is disconnected.

CAREFULLY FOLLOW ALL INSTRUCTIONS AND WARNINGS IN THIS BOOKLET TO AVOID DAMAGE TO THE EQUIPMENT, PERSONAL INJURY OR FIRE.

WARNING! Improper installation may damage equipment, can create a hazard and will void the warranty.

The use of components not tested in accordance with these units will void the warranty, may make the equipment in violation of state codes, may create a hazard and may ruin the equipment.

NOTE: The words "Shall" or "Must" indicate a requirement which is essential to satisfactory and safe product performance. The words "Should" or "May" indicate a recommendation or advice which is not essential and not required but which may be useful or helpful.

II. PACKAGE CONTENTS

1) Plenum Assembly Consisting of:
   Shroud Assembly
   Chute/Ceiling Plate
   Grille
1) Mount Frame
1) Foam Gasket
1) Small Parts Package Consisting of:
   Mounting Bolts x4
   Screws – 3/8" Length x8

III. REQUIRED ADDITIONAL COMPONENTS

1) Duct Divider, part number 8430-3062
1) Return Air Filter – available part numbers;
   8430-3111, Standard Washable Filter
   8430-3822, Merv9 Disposable Filter

IV. GENERAL INFORMATION

The ducted ceiling plenum is designed for application in systems that utilize field fabricated (OEM supplied) cold air ducting. The ducting must be routed through the ceiling cavity (between the interior ceiling and roof). Ducting specifications are given in the section labeled "Supply Ducting and Registers".

This system utilizes a single, non-ducted centrally located return air opening. The return air opening is contained within the ceiling plenum. The ceiling plenum must be located directly below the roof opening used for mounting the rooftop unit.

FOR 12VDC SYSTEMS

All manual controls have been removed from the ceiling plenum. They have been replaced with control relays. The relays are mounted in the electrical box of the ceiling plenum. The relays contain 12 VDC coils (which may be energized by a wall mounted thermostat), with contacts that control the 115 VAC used to power the roof top units. A low voltage controller controls all air conditioning functions. The low voltage controller controls a 12 VDC electrical circuit, which is used to energize the relays in the ceiling plenum. The low voltage controller that Airxcel, Inc. provides for the system may be a combination (heat/Cool).
These low voltage controllers can operate both the roof top air conditioner and any furnace with a 12 VDC control circuit of 1 amp or less (continuous current).

FOR 24 VAC SYSTEMS

All manual controls have been removed from the ceiling plenum. They have been replaced with control relays. The relays are mounted in the electrical box of the ceiling plenum. The relays contain 24 VAC coils (which are energized by a wall mounted thermostat), with contacts that control the 115 VAC used to power the roof top unit. All air conditioning functions are controlled by the low voltage wall mounted thermostat. The thermostat controls a 24 VAC electrical circuit which is used to energize the relays in the ceiling plenum. The thermostats that Airxcel, Inc. provides for the system are combination (Heat/Cool) thermostats. These thermostats can operate both rooftop units and any furnace with a 24 VAC control circuit of 1 amp or less (continuous current).

All air conditioning equipment is subject to freeze up when evaporator air flow is sufficiently reduced. Ducting of any length creates potential for reduced evaporator air flow and system freeze up. To protect both the installer and Airxcel, Inc. from conditions that promote reduced air flow and system freeze up, Airxcel, Inc. has equipped the ceiling plenum compressor circuit with a low temperature probe. The low temperature probe monitors the temperature of the air conditioner evaporator coil. When the temperature of the evaporator coil drops below 28 degrees F, the switch will open, stopping the compressor operation. Compressor operation will resume once the evaporator warms to 55 degrees F.

IMPORTANT

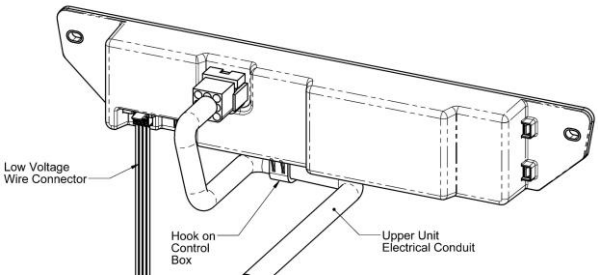
The low temperature sensor is part of the control kit electrical circuit. The probe must be inserted into the evaporator coil of the roof top unit by the installer when bolting the ceiling plenum to the rooftop unit.

V. CEILING PLENUM INSTALLATION REQUIREMENTS

1. The ceiling plenum must be installed under the square roof opening, measuring 14-15 inches. The ceiling plenum bolts to the roof top unit. Compression of the framed ceiling cavity between the roof top unit and the ceiling plenum secures both components in place.
2. Ceiling cavity depth (the measurement from the ceiling to the roof – maximum 5-1/2").
3. Purchased separate from the ceiling plenum, a duct divider is used to separate the conditioned air from the return air supply.
4. The 115 VAC service for the roof top unit must be routed into the ceiling cavity. To prevent wire pinching and to promote ease of installation, allowances must be made for routing the 115 VAC supply wiring into the front of the roof opening.
5. The control box has a 9-pin receptacle extending from the front. This mates with the roof top unit 115 volt electrical conduit. When making this connection,

ensure that the plugs are properly aligned and have snapped together securely.

6. The control box for the heat ready units will have a 2-pin receptacle which mates with the umbilical plug from the heater assembly.
7. LOW VOLTAGE CONTROL WIRING (WALL THERMOSTAT)
   A. The low voltage control wiring must be run from the wall thermostat mounting location to the control box low voltage terminals. To prevent wire pinching and to promote ease of installation, allowances must be made for routing the low voltage wiring into the front of the opening.
   B. A low voltage terminal strip on the front of the box connects to the low voltage wires. The wires attach by 1/4" quick connects.
   C. **For the new cool only control boxes**, a low voltage wire connector is supplied in the small parts package of the cool only control box kit. Using wire nuts, connect the thermostat wires to the wires on the wire connector. Assemble the wire connector to the terminals on the control box. Route the upper unit electrical conduit behind the hook in the control box to prevent wires from contacting the indoor coil fins. (Cool only Control Box Wiring Figure on page 6).
   Route the upper unit electrical conduit behind the hook in the control box to prevent wires from contacting the indoor coil fins.



STANDARD CONTROL BOX

Control Box		PLENUM TERMINAL DESIGNATION	THERMOSTAT WIRE CONNECTION	FUNCTION OF LOW VOLTAGE TERMINAL EXTENDING FROM CEILING PLENUM
Cool Only	Heat/Cool			
Yes	Yes	B	Blue	Completes -12 VDC circuit for all relays
Yes	Yes	Y	Yellow	Energizes coil on Compressor Relay
Yes	Yes	GH	Green	Energizes coil on High Fan Relay
Yes	Yes	GL	Gray	Energizes coil on Low Fan Relay
Yes	Yes	FREEZE		Evaporator Freeze Sensor Connections
Yes	Yes	FREEZE		
No	Yes	W	White	Energizes coil on Heat Relay

24V CONTROL BOX

PLENUM TERMINAL DESIGNATION	THERMOSTAT WIRE CONNECTION	FUNCTION OF LOW VOLTAGE TERMINAL EXTENDING FROM CEILING PLENUM
R	RED	Provides 24V to Thermostat
Y	YELLOW	Energizes Coil on Compressor Relay
G	GREEN	Energizes Coil on High Fan Relay
FREEZE		Evaporator Freeze Sensor Connections
FREEZE		

ZONE CONTROL BOX

PLENUM TERMINAL DESIGNATION	THERMOSTAT WIRE CONNECTION	FUNCTION OF LOW VOLTAGE TERMINAL EXTENDING FROM CEILING PLENUM
R+	Red	Provides +12 VDC to upper unit control box
Cool Shed (2 Terminals)		Removing jumper wire will allow system to be connected to N.C. contacts of a load shed system
Heat Shed (2 Terminals)		Removing jumper wire will allow system to be connected to N.C. contacts of a load shed system
Room (2 Terminals)		Remote Room Temperature Sensor Connections*
Freeze (2 Terminals)		Evaporator Freeze Sensor Connections
Gen		Allows system to connect to an automatic start generator system
B-	Blue	Provides -12 VDC to upper unit control box
Sig 1	Purple	Communication line between upper unit control box and thermostat
Sig 2	Black	Communication line between upper unit control box and thermostat

**ZONE 1 has the option of using the thermostat as the room sensor.*

VI. CONTROL BOX KITS

1. **8330-752: 12 VDC Controlled, Cool Only**
   This kit consists of a control box assembly with the evaporator freeze sensor packaged separately in an envelope. The evaporator freeze sensor installs by quick connects to terminal strip "FREEZE".

   Newer versions of this control utilize a low voltage wire connector which is attached to the thermostat wires with wire nuts and assembled to the control box PC Board.
2. **9330C755: 12 VDC Controlled, Heat Ready**
   This kit consists of a control box assembly with the evaporator freeze sensor packaged separately in an envelope. The evaporator freeze sensor installs by quick connects to terminal strip "FREEZE".

   Optional backup electric heat is available. See model numbers listed.
3. **8530-750: 24 VAC Controlled, Cool Only**
   This kit is like the 833-752 except for a transformer that is attached to the control box assembly.
4. **9530A751: 12 VDC Controlled, Heat Pump**
   This kit is like the 9330*755 but is wired for the heat pump function.
   Optional backup electric heat is available. See model numbers listed.

VII. CONTROL BOX KITS (ZONE)

1. **9430A751: 12 VDC Zone Controlled, Cool Only**
   This kit consists of a control box assembly with the evaporator freeze sensor packaged separately in an envelope. The evaporator freeze sensor installs by quick connects to terminal strip "FREEZE".
2. **9430A755: 12 VDC Controlled, Heat Ready**
   This kit consists of a control box assembly with the evaporator freeze sensor packaged separately in an envelope. The evaporator freeze sensor installs by quick connects to terminal strip "FREEZE".

   Optional backup electric heat is available. See model numbers listed.
3. **9630A751: 12 VDC Zone Controlled, Heat Pump**
   This kit consists of a control box assembly with the evaporator freeze sensor packaged separately in an envelope. The evaporator freeze sensor installs by quick connects to terminal strip "FREEZE".
   Optional backup electric heat is available. See model numbers listed.

Optional Heater Assembly Kits:

47000 Series units:
Heater Assembly 47233-4551.
45000 and 48000 Series units:
Heater Assembly 9233-4551.

VIII. WALL THERMOSTATS

1. Position and install the thermostat per instructions found with the thermostat.
2. For 12 VDC thermostats, it is required that the thermostat 12 volt negative connection be routed **directly** from the converter or battery. It is highly desirable to provide 12 volt control power from the battery side of the converter These precautions should prevent control problems.
3. For the 24 VAC thermostat, keep in mind that if the application will involve operation while in motion or subject to vibration, an electromechanical thermostat **must not** be used as electromechanical contacts will "chatter" the compressor relay if used in high vibration applications. For applications subject to vibration, an electronic wall thermostat must be used.
   Airxcel, Inc. part numbers are 8330A3441 or 7330B3441.

IX. SUPPLY DUCTING AND REGISTERS

A. Ducting

1. The field fabricated supply ducting must open into both sides of the ceiling cavity. Two ducts are required, exiting each side of ceiling cavity on the supply side of the duct divider (See Figure 1).
2. Each duct must have a minimum height of 1 1/2", maximum height cannot exceed 4 inches.
   Total free area inside each duct must be no less than 10 square inches which is the minimum requirement. Larger ducting will improve air flow and system performance.

NOTE: To decrease restriction and increase air flow, the ducting should make as few bends and turns as

possible. When corners or turns are required, we recommend that you radius the corners to keep air flow at a maximum.

3. Where ducting enters to the ceiling cavity, maximum width is 8-1/2 inches.
4. All field fabricated cold air supply ducting must be insulated and must have a vapor barrier.

IMPORTANT
Insulation reduces cooling loss and helps prevent water staining of the vehicle ceiling due to moisture condensation.

B. Registers

Supply (cold air) registers should have a minimum discharge area of 48 square inches per system, or 24 square inches per duct. A minimum of 6 is recommended.

X. ROUTING THERMOSTAT WIRING (12 VDC)

1. Following the instructions packed with the thermostat, determine a location for the thermostat mounting.
2. Following Airxcel, Inc. low voltage wiring specifications and all local and national electrical codes:
   A. Route the thermostat 12 VDC supply wiring from the power source to the thermostat mounting location.
   Two wires are required:
   - One supply lead must be +12 VDC and red in color.
   - The second supply lead must be -12 VDC and blue in color.

   B. To protect the wall mount thermostat from overcurrent damage, a 2 amp fuse has been provided with the thermostat.
   C. Route the thermostat control wiring from the thermostat mounting location into the front of the ceiling plenum opening.
   - Four (4) wires are required (5 wires for heat/cool boxes). These wires are as follows:
     1) Blue wire for -12 VDC circuit
     1) Yellow wire for compressor circuit
     1) Green wire for high fan circuit
     1) Gray wire for low fan circuit
     1) White wire for heat circuit
3. Airxcel, Inc. low voltage wiring specifications:
   A. All low voltage wiring should be 18 gauge minimum.

B. Low voltage wiring must be routed into the front side of the ceiling plenum opening.

XI. ROUTING THERMOSTAT WIRING (ZONE)

1. Following the instructions packed with the thermostat, determine a location for the thermostat mounting.
2. Following Airxcel, Inc. low voltage wiring specifications and all local and national electrical codes:
   A. Route the thermostat control wiring from the thermostat mounting location into the front of the ceiling plenum opening.
   Wires are as follows:
   1) Red wire to +12 VDC circuit (R+)
   1) Blue wire to -12 VDC circuit (B-)
   1) Purple wire to communication signal (Sig 1)
   1) Black wire to communication (Sig 2)
   1) Any color for auto generator start (optional) (Gen)
   2) Any color for temperature sensor (Zone 1 optional, required for other zones)
   1) For each heating appliance (up to 4)
   2) Any color for cool load shed (optional)
   2) Any color for heat load shed (optional)

   B. See illustration on page 13 for wiring requirements for multiple zones.
3. Airxcel, Inc. low voltage wiring specifications:
   A. All low voltage wiring should be no smaller than 18 gauge.
   B. Low voltage wiring must be routed into the front side of the ceiling plenum opening.
   C. Low voltage wiring should not be routed with high voltage wiring.
   D. If low voltage and high voltage wires must cross, they should do so at right angles from one another.

XII. ROUTING THERMOSTAT WIRING (24 VAC)

1. Following the instructions packed with the thermostat, determine a location for the thermostat mounting.
2. Following Airxcel, Inc. low voltage wiring specifications and all local and national electrical codes:
   A. Route the thermostat control wiring from the thermostat mounting location into the front of the ceiling plenum opening.
   Three wires are required:
   1) Red wire feeds 24v to the thermostat
   1) Yellow wire for the compressor circuit
   1) Green wire for the high fan circuit
3. Airxcel, Inc. low voltage wiring specifications:
   I. All low voltage wiring should be no smaller than 18 gauge.
   II. Low voltage wiring must be routed into the front side of the ceiling plenum.

XIII. OPTIONAL LED LIGHTING

Some ceiling plenum models include LED lighting that require 12 VDC power. Installer must route +/- 12 VDC conductors into ceiling cavity and provide switching means for on/off operation.

XIV. ROUTING 115 VAC WIRING

Following Airxcel, Inc. high voltage wiring specifications and all local and national electrical codes, route the roof top unit 115 VAC supply wiring from its power source to the control box.

High voltage wiring specifications based on Minimum Overcurrent Protection Device Amperage - (see upper unit nameplate)

1. U.L. requires copper conductors with minimum #12 AWG when using the minimum recommended overcurrent protection device. Higher rated devices or longer wiring runs will require #10 AWG or greater copper conductors.
2. To prevent voltage drops greater than 10% during starting loads, adhere to the following guideline: For lengths greater than 50', use #10 AWG or larger copper conductors. Match to the overcurrent protection device provided. Circuit Protection – Refer to upper unit nameplate.

High Voltage Wiring Specifications based on Overcurrent Protection Device rated higher than the minimum required (see upper unit nameplate).

Follow all local and NEC (National Electrical Code) for proper sizing of wire AWG based on Overcurrent Protection Device selected and the length of the wiring run to the air conditioner.

XV. ROOF TOP UNIT MOUNTING

1. Adhere foam gasket to bottom of unit base pan, between the supply and return air openings.
2. Place the roof top unit over the roof opening, centering the gasket over the roof opening.
3. Position the mount frame into the ceiling opening (See Figure 1).
4. Using the four bolts provided, secure the mount frame to the roof top unit. The four mounting bolts are to be inserted through the bottom of the mount frame and into the bottom of the roof top unit (See Figure 1). Tighten each bolt until the indicator tabs of the gasket are at roof level.
5. Route the unit conduit into the return opening.

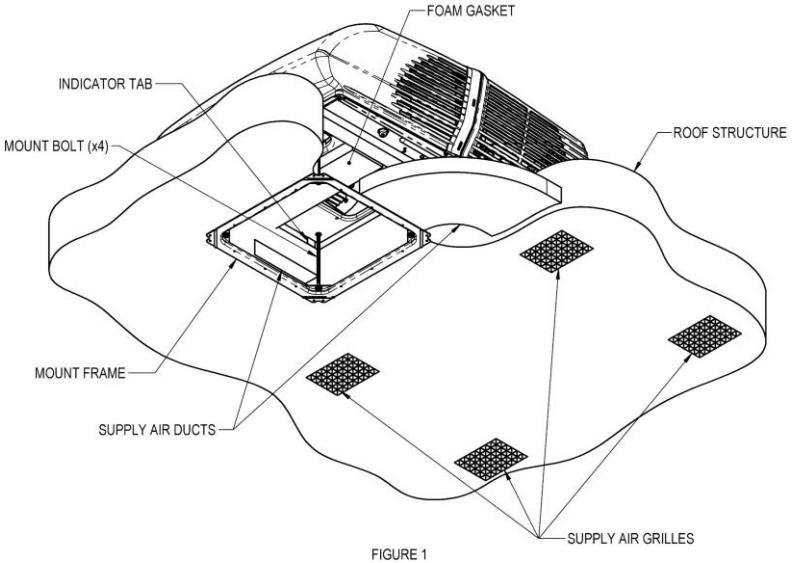
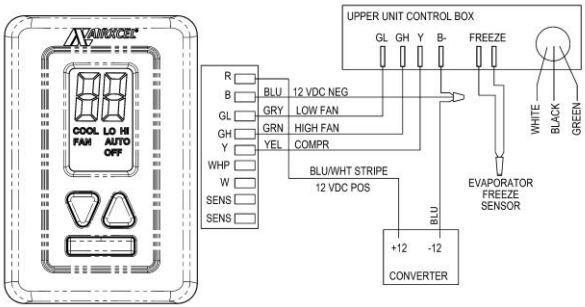


FIGURE 1

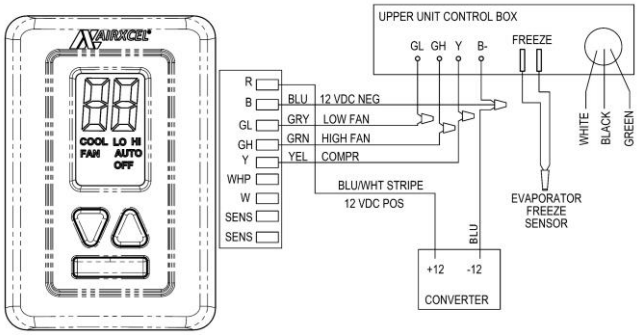
XVI. INSTALLING THE CONTROL BOX (12 VDC & 24 VAC)

1. Remove the control box assembly cover. Feed the field lead wires and ground through the strain relief provided with the control box kit.
2. Attach black supply conductor to the black “pigtail” lead, white to white “pigtail” lead and ground to green “pigtail” with wire nuts provided in the control box kit.
3. Ensure that no bare wires can come into contact with live electrical parts and that wires cannot be pinched between the control box sides and lid. Insert the strain relief into the control box entry hole to secure the field wiring.
4. Reinstall the control box lid.
5. Attach the thermostat wires to the control box per the following illustrations:

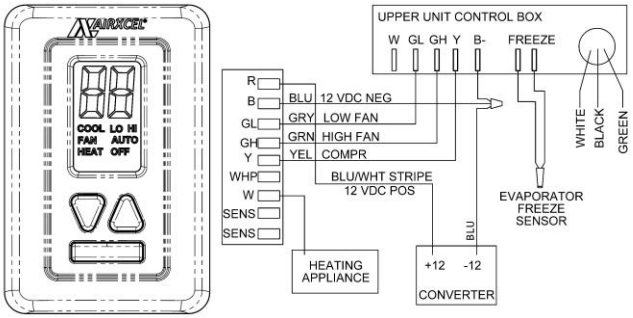
Control Box 8330-752 (Cool Only)



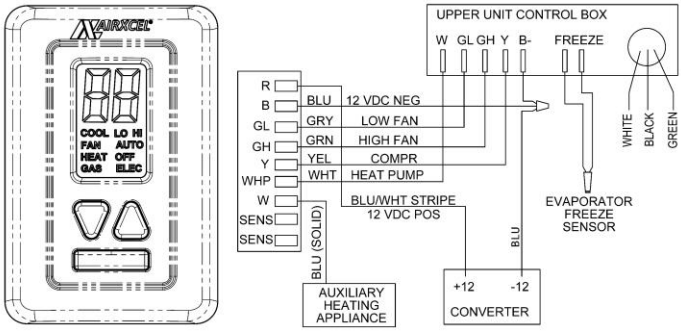
Control Box 8330-752 (NEW Cool Only)



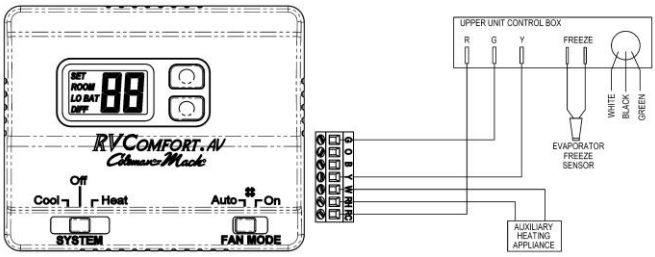
Control Box 9330C755 (Heat Ready)



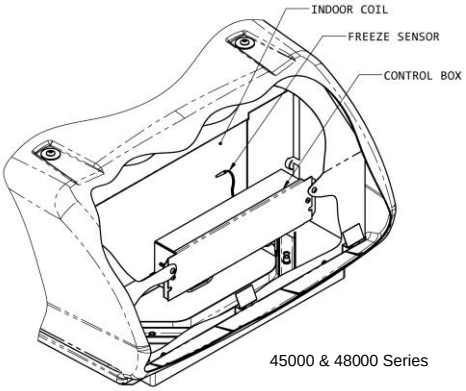
Control Box 9530A751 (Heat Pump)



Control Box 8530-750 (24 VAC



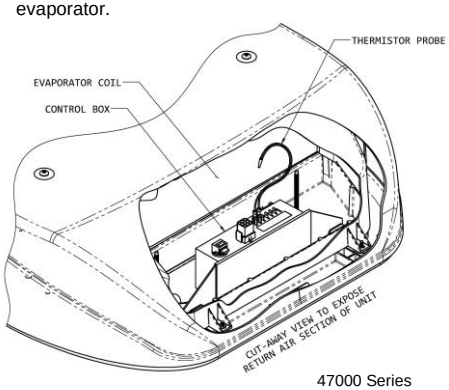
6. Connect the roof unit 115 volt electrical conduit to the control box 9 pin receptacle and verify that the plugs are properly aligned and have snapped together securely.
7. Locate the two machine screws inside the evaporator cover of the upper unit. Align the control box over the screws and use the spring clips supplied with the control box to secure it to the upper unit enclosure.
   For the 47000 series units, see Figure below.



45000 & 48000 Series

XVII. INSTALLING THE CONTROL BOX (ZONE)

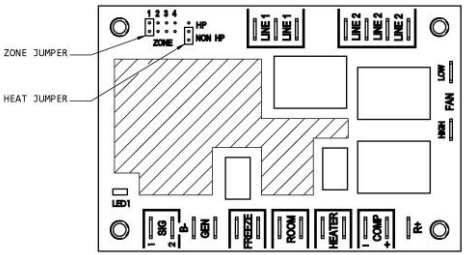
1. Remove the control box assembly's cover which is held by two sheet metal screws.
2. Set the "zone" jumper to the proper zone position for the particular position the air conditioner or heat pump will be in the coach (Refer to Zone PC Board Figure on page 9 – Zone 1 is shown). Zones should be numbered from the front to the back of the coach with Zone 1 in front.
3. Set the "HP"/NP HP" jumper to "HP" if the unit is a heat pump or to "NON HP" if the unit is not a heat pump (Refer to Zone PC Board Figure on page 9 – Non HP is shown).
4. Feed the field lead wires and ground through the strain relief found with the control, then through the 7/8" hole in the side of the box.
5. Wire nut the black field power conductor to the stripped black 12-gauge wire in the control box.
6. Wire nut the white field power conductor to the stripped white 12-gauge wire in the control box.
7. Wire nut the ground field power conductor to the stripped green ground wire in the control box.
8. Ensure that no bare wires can come into contact with live electrical parts and that wires cannot be pinched between the control box sides and lid. Insert the strain relief into the control box entry hole to secure the field wiring.
9. Reinstall the control box lid.
10. Attach the thermostat wires to Zone 1 control box per Zone Terminal Board Figure on page 9:
    - Zone 2 is wired in by jumpering from Sig 1, Sig 2, B- and R+ on Zone 1 box to Zone 2 box.
    - Zone 3 is wired in by jumpering from Sig 1, Sig 2, B- and R+ on Zone 2 box to Zone 3 box.
    - Zone 4 is wired in by jumpering from Sig 1, Sig 2, B- and R+ on Zone 3 box to Zone 4 box. (See Zone Control Wiring Figure on page 10).
8. Insert the evaporator freeze sensor between evaporator fins near the bottom center of the evaporator and between the bottom two tubes. Insert straight in until contacting the staggered tube directly in back of the insertion point. When contact has been made, elevate the exposed end of the sensor approximately 45 degrees, then continue insertion at a 45 degree angle until the sensor is completely embedded into the evaporator.

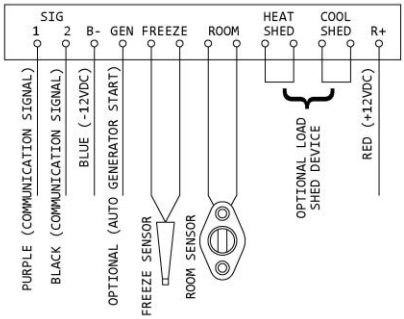


47000 Series

11. Connect the roof unit 115 volt electrical conduit to the control box 9 pin receptacle. Verify that the plugs are properly aligned and have snapped together securely.
12. Two machine screws are in the upper unit for mounting the control box. The control box will be mounted by positioning over the screws and using the spring clips to secure the control box to the upper unit. For 45000, 48000 or 49000 series upper units see Figure above.
    Installation in a 47000 series unit will require mounting the control box with the wires exiting upwards See Figure above.
13. Insert the evaporator freeze sensor between evaporator fins near the bottom center of the evaporator and between the bottom two tubes. Insert straight in until contacting the staggered tube directly in back of the insertion point. When contact has been made, elevate the exposed end of the sensor approximately 45 degrees, then continue insertion at a 45 degree angle until the sensor is completely embedded into the evaporator.
    For 45000 and 48000 series upper units see Figure above.
    For 47000 series upper units see Figure above.
14. Complying with the following warning, connect the 115 VAC supply wiring to its power source. Be sure all power remains off until beginning checkout procedure.

DANGER
TO PREVENT THE POSSIBILITY OF SHOCK INJURY FROM APPLIANCE OPERATION: THE WHITE WIRE MUST BE CONNECTED TO NEUTRAL IN THE SERVICE BOX ENTRANCE AND THE MECHANICAL GROUND MUST BE CONNECTED TO A GROUNDING LUG IN THE SERVICE BOX OR THE MOTOR GENERATOR COMPARTMENT.





XVIII. INSTALLING THE HEATER ASSEMBLY

If adding the electric heater, the assembly can now be installed.

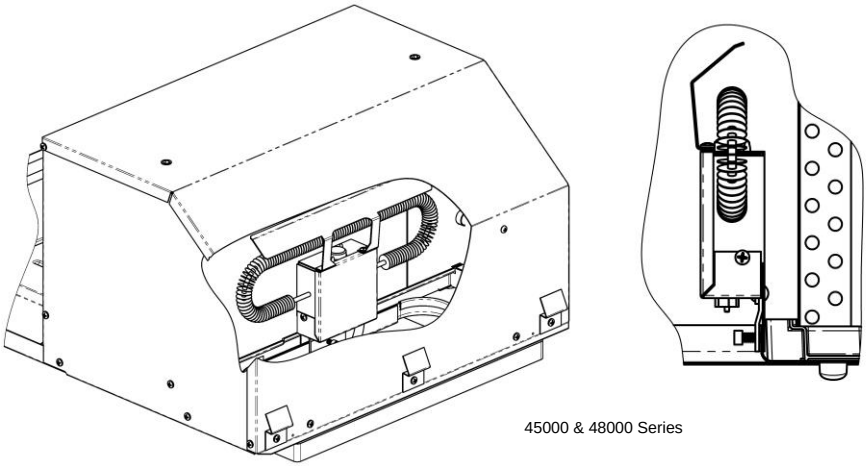
Refer to Unit Heater Figures below for installing heater assemblies.

For installation on 45000 and 48000 series units: position the heater assembly into the return air opening as shown in Figure. Ensure that the set screw is retracted sufficiently to allow installation over the basepan extrusion. The heater bracket must be installed between the basepan and the plastic drain pan. Tighten set screw to prevent movement.

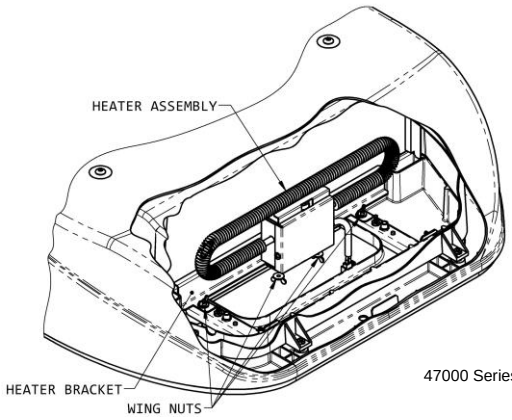
For the 47000 series installation: the heater bracket assembles to weld studs on the bracket and is secured in place with wing nuts.

Insert the two-pin connector of the heater umbilical into the receptacle on the control box. Ensure that the connector snap locks into position.

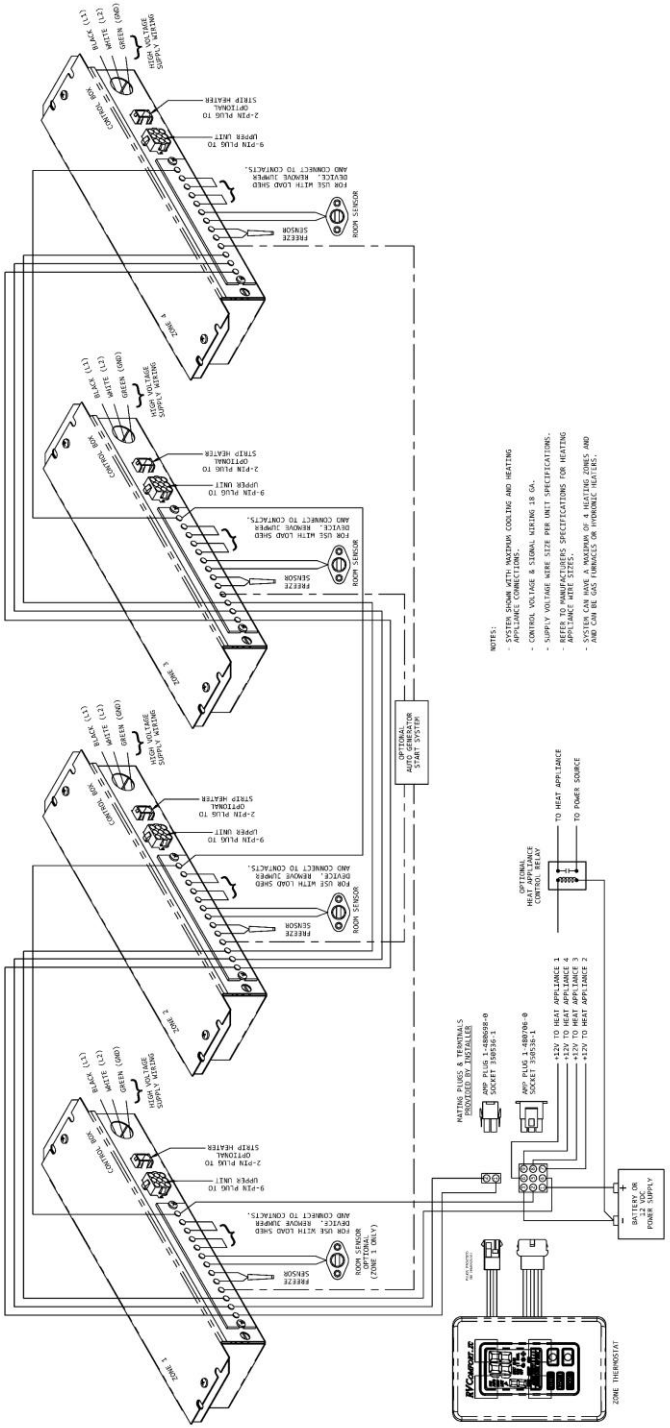
TIE ALL WIRING TO ENSURE NO CONTACT WITH THE HEATER OR ANY SHARP EDGES. KEEP IN MIND THAT HIGH VELOCITY AIR WILL BE ENCOUNTERED IN THIS AREA.



45000 & 48000 Series

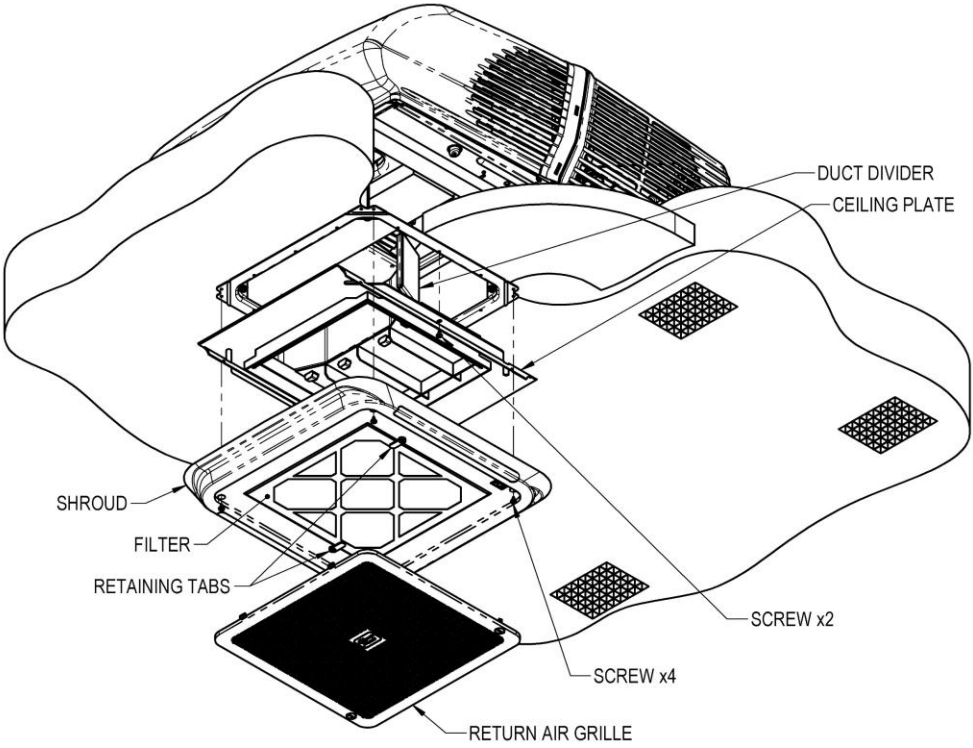


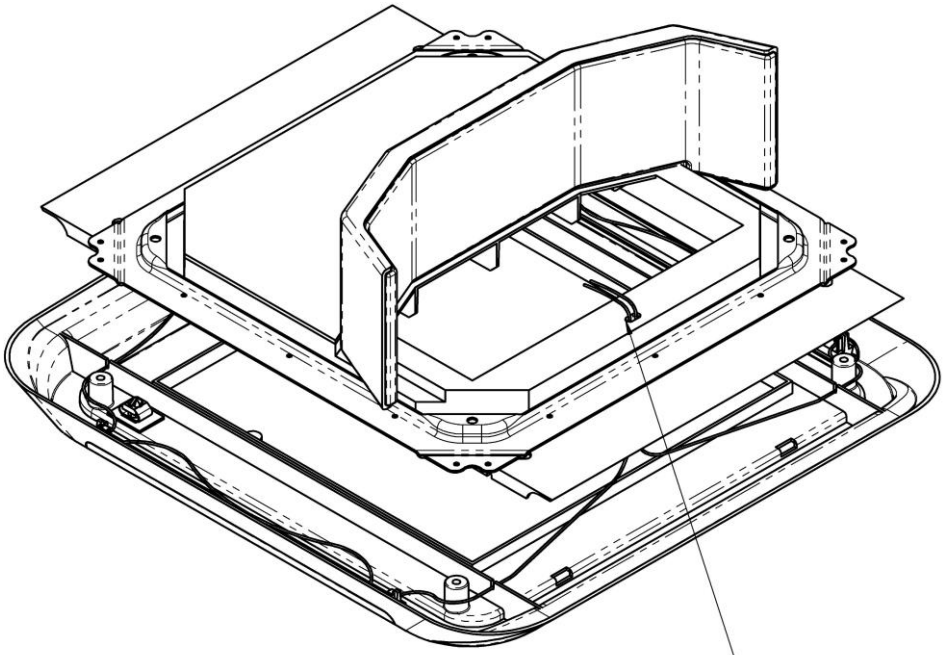
47000 Series


ZONE 1
ZONE 2
ZONE 3
ZONE 4
ROOM SENSOR
FREEZE SENSOR
FOR USE WITH LOAD SHED DEVICE. REMOVE JUMPER AND CONNECT TO CONTACTS.
9-PIN PLUG TO UPPER UNIT
2-PIN PLUG TO OPTIONAL STRIP HEATER
CONTROL BOX
BLACK (1)
WHITE (2)
GREEN (GND)
SUPPLY VOLTAGE
OPTIONAL AUTO GENERATOR START SYSTEM
MATING PLUGS & TERMINALS (NOT INCLUDED)
AMP PLUG 1-480698-0
SOCKET 350536-1
OPTIONAL HEAT APPLIANCE CONTROL RELAY
TO HEAT APPLIANCE
TO POWER SOURCE
+12V TO HEAT APPLIANCE 1
+12V TO HEAT APPLIANCE 4
+12V TO HEAT APPLIANCE 3
+12V TO HEAT APPLIANCE 2
BATTERY OR 12 VDC POWER SUPPLY
ZONE THERMOSTAT
NOTES:
- SYSTEM SHOWN WITH MAXIMUM COOLING AND HEATING APPLIANCE CONNECTIONS.
- CONTROL VOLTAGE & SIGNAL WIRING 18 GA.
- SUPPLY VOLTAGE WIRE SIZE PER UNIT SPECIFICATIONS.
- REFER TO MANUFACTURERS SPECIFICATIONS FOR HEATING APPLIANCE WIRE SIZES.
- SYSTEM CAN HAVE A MAXIMUM OF 4 HEATING ZONES AND ONE AIR HANDLER OR HYDRONIC HEATER.

XIX. INSTALL AIR GRILLE ASSEMBLY

1. The duct divider, by default, will accommodate a roof thickness of 5.0 to 5.5 inches. For thinner roofs, subtract the roof thickness from 5.0 and cut off the top edge (opposite the mounting ears) of the duct divider by the resulting amount.
2. Snap the duct divider on to the ceiling plate.
3. While pressing inward on the side flanges of the duct divider, slide the divider through the mount frame until the ceiling plate is flush against the frame. Secure the ceiling plate to the mount frame with 2 screws provided in the parts package.
4. By rotating the 1/4-turn fasteners, remove the return air grille from the shroud assembly.
5. Raise the shroud so that it properly nests with the ceiling plate. If shroud includes LED lighting, route wires up through the slot in the ceiling plate (see Figure, next page). Attach the shroud to the mount frame with the 4 provided screws.
6. Connect 12 VDC supply conductors for LED lighting with crimp type wire splices.
7. Turn filter retaining tabs outward on shroud, insert choice of filter and turn tabs inward to secure.
8. Re-install the return air grille.





ROUTE OPTIONAL LED WIRES THROUGH SLOT IN CEILING PLATE WHEN INSTALLING CEILING SHROUD.