FREUCAMP

INSTALLATION INSTRUCTIONS

RAE90 RAE142 RAE160 RAE180

⚠ WARNING

FIRE OR EXPLOSION HAZARD

If you smell gas:

1.Open windows
2.DO not attempt to light appliance and make sure the appliance is the off position.
3.Extinguish any open flame.
4.Do not touch electrical switches.
5.Do not use electronic devices such as cell phones or landline phones.
6.Evacuate the building or recreational vehicle.
7.Shut off fuel supply at LP tank.
8.Call emergency services.

Failure to follow these instructions could result in fire or explosion, which could cause property damage, personal injury or death.

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage.
Refer to this manual. For assistance or additional information consult a qualified installer, service agency or the gas supplier.

FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

⚠ WARNING

CARBON MONOXIDE POISONING MAY CAUSE DEATH OR INJURY

When used without adequate combustion and ventilation air, the refrigerator may give off excess CARBON MONOXIDE, and odorless poisonous gas.
Installer: Please affix the manual adjacent to the appliance .
Consumer: Please retain the manual for future reference.
Adequate combustion and ventilation air must be provided.

NOTES

CONTENTS

SYMBOLS

The following symbols are used throughout this manual:

This is the safety alert symbol. It is used to alert you to personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ WARNING — WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION — CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE — NOTICE is used to address practices not related to personal injury.

Information

Step-by-step instructions

INTRODUCTION

The installation should be performed by qualified personnel only and must conform to all relevant local authorities. Be aware of possible safety hazards when seeing alert symbols on the refrigerator as well as in this manual. To ensure safe and efficient operation, the refrigerator and optional vents must be installed as identified in this manual without modification. The installer must affix the refrigerator model's user manual to the refrigerator.

Appearance of your product may vary from illustrations shown in this document.

Not all procedures in this document will apply to your product. Read and follow the information pertaining to the specific model number of your product before starting the installation.

⚠WARNING

Any modifications or deviations:

- Can lead to carbon monoxide leaking into the living area.
- Can reduce cooling performance and/or result in damage to the refrigerator.
- Will void agency certifications.
- Will void refrigerator warranty.

NOTICE

Any deviation from the prescribed installation instructions in this manual must have prior written approval and safety certification verification from the manufacturer

CERTIFICATION AND CODE REQUIREMENTS

This appliance is certified under the latest edition of CSA/ANSI Z21.19 • CSA 1.4 Refrigerators using gas fuel.

The installation must conform with local codes, or in absence of local codes, the following standards as applicable.

The installation shall conform with the following, as applicable:

* Local codes or, in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/ NFPA 54;
* The Natural Gas and Propane Installation Code, CSA B149.1, and any Provincial amendments;
* Recreational Vehicles Code, ANSI A119.2, and Recreational Vehicles CSA Z240 RV Series;

A manufactured home (mobile home) installation shall conform with the Manufactured

* Home Construction and Safety Standard, Title 24 CFR, Part 3280.[formerly the Federal Standard for Mobile Home Construction and Safety, Title 24 (Part 280)]
* The Gas-equipped Recreational Vehicles and Mobile Housing, CSA Z240.4

The appliance and its individual shut-off valve shall be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5 kPa).

The appliance shall be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5 kPa);

If an external electrical source is utilized, the appliance, when installed, shall be electrically grounded in accordance with local codes or, in the absence of local codes, the National Electrical Code, NFPA 70 or the Canadian Electrical Code, CSA C22.1, Parts I and II;

C US

SAFETY INSTRUCTIONS

Safety instructions

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

· Faulty assembly or connection.
· Damage to the product resulting from mechanical influences and incorrect connection voltage.
· Alterations to the product without express permission from the manufacturer.
· Use for purposes other than those described in the operating manual.
· The minimum environmental temperature for safe storage and operation of the appliance:-22-176℉(-30-80℃)

General safety

⚠WARNING

Never open the absorber unit. It is under high pressure and can cause injury if it is open

· Do not operate the device if it is visibly damaged. If the connection cable for this refrigerator cable is damaged, it must be replaced by the manufacturer, customer service or a similarly qualified person in order to prevent safety hazards.
· This refrigerator may only be repaired by qualified personnel.
· Improper repairs can result in considerable danger or damage to the refrigerator.
· This refrigerator can be used by children aged 8 years or over, as well as by persons with diminished physical, sensory or mental capacities or a lack of experience and knowledge, providing they are supervised or have been instructed how to use the refrigerator safely and are aware of the resulting risks.
· Cleaning and user maintenance may not be carried out by unsupervised children .
· Children must be supervised to ensure that they do not play with the refrigerator.
· Do not store any explosive substances, such as spray cans with propellants, in the refrigerator.

⚠ CAUTION

Danger of crushing! Do not place your hand on the hinge. Food may only be stored in its original packaging or in suitable containers.

· Do not open the refrigerant circuit under any circumstances.
· The refrigerant in the refrigerant circuit is highly flammable. In the event of any damage to the refrigerant circuit(smell of ammonia):
- Switch off the refrigerator.
- Avoid naked flames and sparks.
- Air the room well.
· Check that the voltage specification on the type plate is the same as that of the energy supply.
· The refrigerator is not suitable for storing substances which are caustic or contain solvents.
· Keep the condensation opening clean at all times.
· Do not use a high-pressure cleaner near the ventilation grill when cleaning the vehicle.
· Never pull the plug out of the socket by the connection cable.
· The refrigerator lighting may only be replaced by customer service.
· The refrigerator may not be exposed to rain.

Safe operation

· Close the refrigerator door before beginning a journey.
· The refrigerator unit at the back of the refrigerator becomes very hot during operation. Protect yourself from coming into contact with hot parts when removing ventilation grills.
· Only store heavy objects such as bottles or cans in the refrigerator door, in the vegetable compartment or on the bottom shelf.
· Do not use electrical devices inside the refrigerator unless they are recommended by the manufacturer for that purpose.
· Danger of overheating!
· Always ensure sufficient ventilation so that the heat generated during operation can dissipate. Make sure that the device is sufficiently far away from walls and other objects so that the air can circulate.
· Ensure that the ventilation opening are not covered.
· Do not fill the inner container with ice or liquids.
· Protect the refrigerator and the cables from heat and moisture.
· Make sure that foodstuffs do not touch the walls of the cooling refrigerator compartment.

Safety when operating with DC power

· Only select operation with DC power supply (battery mode) if the vehicle engine is running and providing sufficient voltage to the light system, or if you are using a battery monitor.
· The DC cable must be required from RV to fridge.

Safety when operating with AC power

⚠WARNING

Check that the voltage specification on the type plate is the same as that of the energy supply.
Only use the supplied connection cable to connect the refrigerator to the AC mains.
Never pull the plug out of the socket by the connection cable.

SAFETY INSTRUCTIONS

Safety when operating with gas

⚠ WARNING

Only operate the refrigerator at the pressure shown on the type plate. Only use pressure controllers with a fixed setting which comply with the national regulations.
Never store liquid gas cylinders in unventilated areas or below ground level(funnel shaped holes in the ground).

· keep liquefied petroleum gas cylinders away from direct sunlight. the temperature may not exceed 50℃.
· Never operate the refrigerator with gas
- at petrol station
- while driving
- while transporting the camper van or mobile home with a transport vehicle or tow truck
· Never use a naked flame to check the refrigerator for leaks.
· In case of gas odor:
- Close the gas supply cock and the valve on the cylinder.
- Open all windows and leave the room.
- Do not press an electric switch.
- Put out any naked flames.
- Have the gas system checked by a specialist.

NOTICE

Only use LP(Propane) Gas

Safety when operating ventilation grille

· Attach the winter covers of the ventilation grille when the vehicle is cleaned from the outside or not used for a prolonged period of time.

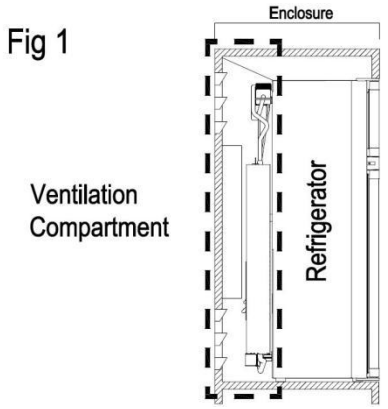
INSTALLATION PREPARATION

ASSEMBLINGTHE REFRIGERATOR ENCLOSURE

NOTICE

The ventilation compartment is part of the product safety certification and must not be used for any other purpose than securing air for combustion and ventilation of flue gases and warm air.

Fig 1



Read and follow these points:

- The refrigerator must be level and installed in a substantial enclosure, see “APPENDIX A”.
- The floor must be solid and level and able to support the weight of the refrigerator and its contents.
- Ensure that any adjacent heat sources, (e.g. furnace exhaust vent) do not affect the ventilation of the refrigerator.
- All joints in the enclosure must be sealed to prevent gas leakage into the living area.
- The enclosure must be free of exposed materials that may potentially damage the refrigerator, e.g. screw tips, staples, etc.
- A wood strip must be in place across the upper opening of the enclosure. The top frame of the refrigerator will be anchored to the wood strip with screws, see FIG 2.
- The refrigerator must not be installed directly on carpeting:

- Carpeting must be removed or protected by a metal or wood panel beneath the appliance, which extends at least full width and depth of the appliance.
- If the refrigerator is sitting on a wood floor, the exposed portion behind the refrigerator will need to be painted with an anti-wicking paint to protect against water or moisture that comes in through the side

⚠ WARNING

Failure to adhere to the above installation criteria could create a combustion hazard.

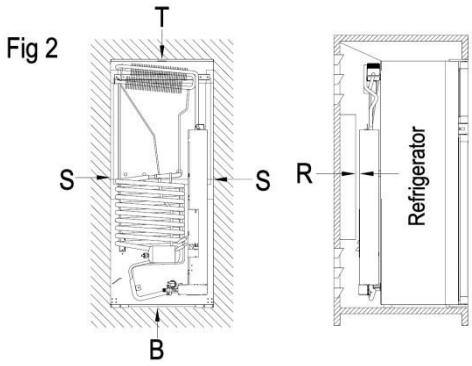
CLEARANCES

CSA International certification allows the refrigerator to have zero (0) inch minimum clearance at the sides, rear, top, and bottom. While there are no maximum clearances specified for certification, the maximum clearances specified are necessary for correct refrigerator performance.

CLEARANCES (FIG 2)	
Top (T)	0” Min to 1/4” Max
Side (S)	0” Min to 1/4” Max
Bottom (B)	0” Min to 0” Max
Rear (R[1])	0” Min to 1” Max

[1]The distance between the refrigerator cooling unit and the wall or baffle behind it

Fig 2



INSTALLATION PREPARATION

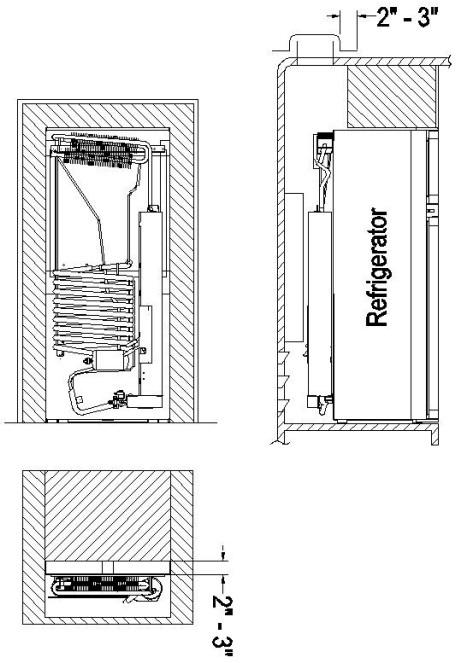
TOP AND SIDES

See "APPENDIX A" for rough in dimensions. Dimensions will vary by model. If there is more than 1/4" between either side or the top of the refrigerator and the inside of the refrigerator box, then fill the space with insulation, baffles, or non-flam-mable fabricated seals to avoid trapping heat and sacrificing the performance of the unit. See Insulation note below for additional details.

INSULATION NOTE!

- Any insulation used must be securely attached to the enclosure walls and ceiling in order to prevent it from shifting when the refrigerator is installed in enclosure.
- If there is a void space above the refrigerator, insulation should be secured with spray adhesive to the top of the refrigerator to fill the space.
- Trim insulation. Cut it 2-3" shorter than the depth of the refrigerator box, see FIG 3 below.
- Insulation must not come in contact with the cooling unit! Loose insulation can obstruct air flow creating cooling issues and possible damage to the refrigerator.

FIG 3 Insulation



Place insulation fill in the space between refrigerator compartment and sides and top of refrigerator

VENTILATION REQUIREMENTS

Ventilation is one of the requirements for proper cooling unit operation. Clearances and the use of vents ensure a natural draft which is necessary for good refrigeration.

Make sure to read and follow these points:

a) that the refrigerator shall be installed using the air intake (FIG 4) supplied with the appliance;

b) the proper manner of installing the combustion vents;

c) that the combustion vents shall not be modified;

d) that all areas at the front (sides, bottom, and top) and within the recess in which the refrigerator is installed shall be sealed so the resultant installation will isolate the appliance combustion system from the vehicle interior;

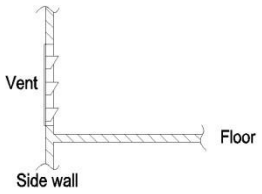
e) the methods and type(s) of materials recommended for sealing the refrigerator from the vehicle structure;

f) that an opening communicating with the outside atmosphere shall be provided at floor level of the refrigerator for ventilation of heavier than air gases. The size and location(s) of the opening shall also be specified.

⚠WARNING

The vent/air intake system shall not be modified

FIG 4 Low vent



⚠WARNING

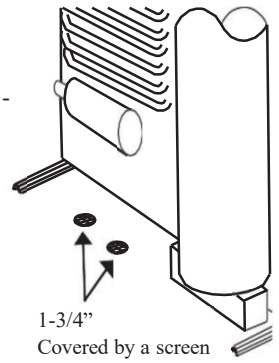
COMBUSTION HAZARD. Unburned "Raw" LP gas is heavier-than-air and can collect at floor level creating a combustion hazard.

- For vents installed above floor level, additional holes are required to vent these gases to the out-of-doors. Use Fig5 for details.

FIG 5- VENT ABOVE FLOOR LEVEL

When lower vent frame is positioned higher than the refrigerator compartment floor, the following is required:

- 2 holes with a diameter of 1-3/4" 1 in^2 / hole free area.)
- Cover holes with a screen (min. 14 x 14 per inch)
- Holes must be clear of any obstruction.



- The flow of combustion and ventilating air must not be obstructed, e.g. by an open RV door.
- Do not install an awning too close to the upper

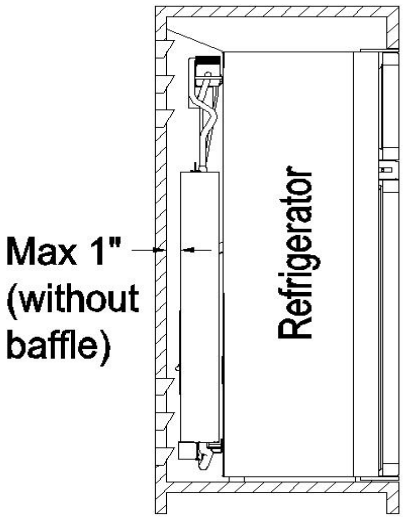
side vent. Allow a distance of approx. 6-12".

- The minimum vent height requirements, listed in "APPENDIX B", are part of the safety certification and must be complied with.

RECESS DEPTH

Spaces of more than 1", see FIG 8, from rear wall to the refrigerator may create performance problems. Fresh air will not pass through the cooling unit which will reduce the efficiency. It is important to check the recess depth and add baffle(s) to increase the movement of air across the coil.

FIG 6 Recess depth

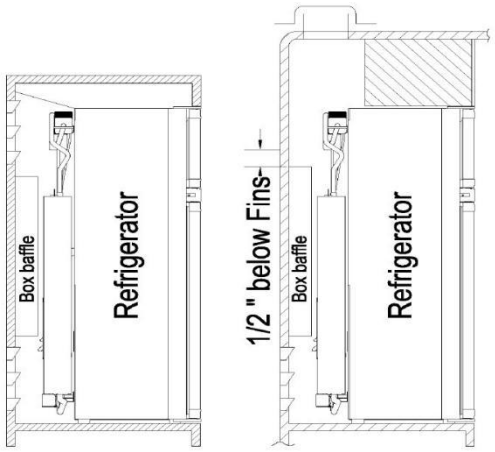


If there is more than 1" between the inside of the ventilation compartment and cooling unit, it is required to add box baffle(s) starting above the lower access vent and running perpendicular to the side wall.

The baffle should extend up to the ceiling (in board roof vent applications) or up to within 1/2" lower than the condenser fins (roof vent applications). For upper and lower side wall vent applications the baffle should come within 1/2" lower than the condenser fins.

This will ensure more efficient operation in warm temperatures. Make sure the baffle is of the same width as the ventilation compartment, see FIG 7.

FIG 7 Box baffle



OFFSET VENTS

If vents must be offset due to interference of building materials the vent must always be offset towards the flue side of the cooling unit.

The vent should be centered over the cooling unit so that the air can flow up and out of the compartment creating a chimney effect.

For offset vent applications, prior written approval and safety certification must be obtained from the manufacturer

FIG 8 Offset vent
Upper and lower side vent

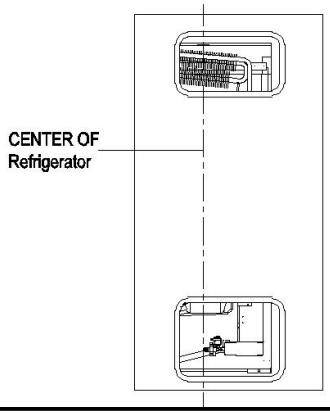
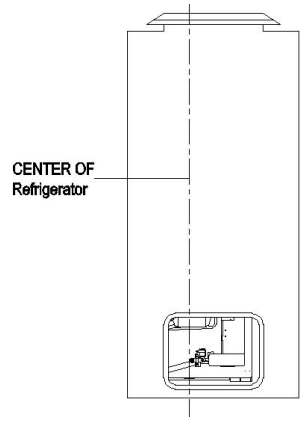


FIG 9 Offset vent
Side and roof vent



INSTALLATION PREPARATION

NOTICE

Deviations from the inlet and outlet variations shown here must be approved by the manufacturer .
At high ambient temperatures, the refrigerator can only provide its maximum cooling capacity if the optimum ventilation has been provided.

Making air inlet and outlet vents

☞ Make an air inlet vent and an air outlet vent in the outer wall with the size of Appendix C, When doing so, observe the information, see chapter "Preparing the installation" on page 5.

If the ventilation grill of the air inlet vent cannot be installed flush with the floor of the niche, install an inlet vent in the floor. Any leaking gas can thus flow downwards.

☞ Make an air inlet vent in the floor see fig 10 behind the refrigerator near the gas burner fig 10

- Shield the end of the opening with a deflector to prevent sludge or dirt from getting inside while driving see fig 10

If you have to use a roof vent instead of the air outlet vent:

☞ Cut out a section in the roof. Refer to the roof vent instruction manual for the required dimensions.

- When doing so, observe the information chapter "Preparing the installation ” on page 7.

If the ventilation grill of the air inlet vent cannot be installed flush with the floor of the niche, install an inlet vent in the floor. Any leaking gas can thus flow downwards.

☞ Make an air inlet vent in the floor see fig 11 behind the refrigerator near the gas burner.

- Shield the end of the opening with a deflector to prevent sludge or dirt from getting inside while driving see fig 11

If you have to use a roof vent instead of the air outlet vent：

- Cut out a section in the roof. Refer to the roof vent instruction manual for the required dimensions. When doing so, observe the information in chapter "Preparing the installation ” on page 8 FIG3.

FIG 10 Make air vent

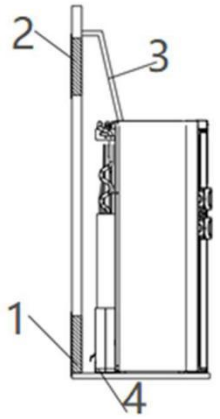
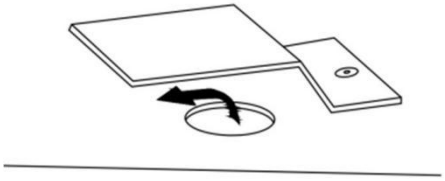


FIG 11 Floor air vent



VENT APPLICATION TYPE

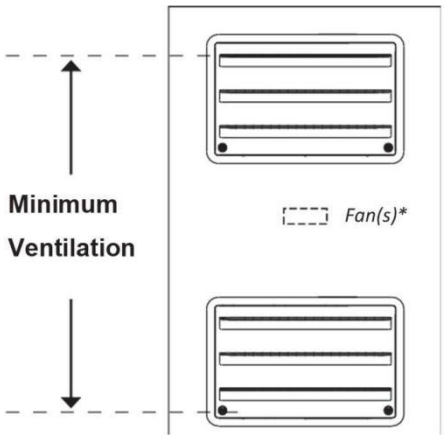
APPLICATION TYPES FOR OPTIONAL VENTS

UPPER AND LOWER SIDE VENT APPLICATION

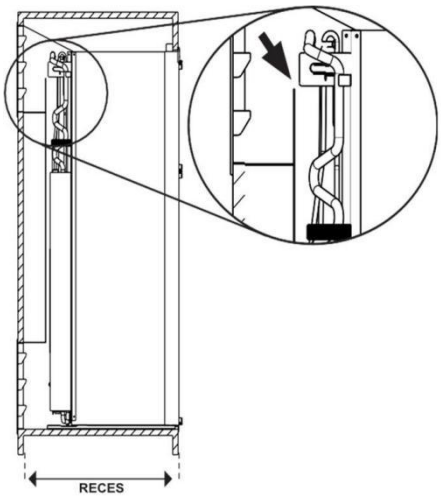
INSTALL UPPER AND LOWER SIDE VENTS

Step Action

1. CHECK VENTILATION HEIGHT. See "APPENDIX B".



2. CHECK RECESS DEPTH.
   See "INSTALLATION PREPARATION >RECESS DEPTH".
   If required, install a box baffle above the lower access vent extending within 1/2" lower than the condenser fins as shown in the picture below.



3. INSTALL LOWER SIDE VENT.
   See "APPENDIX D".
4. INSTALL UPPER SIDE VENT.
   See "APPENDIX D".

INSTALLATION PROCEDURE

INSTALLING THE REFRIGERATOR

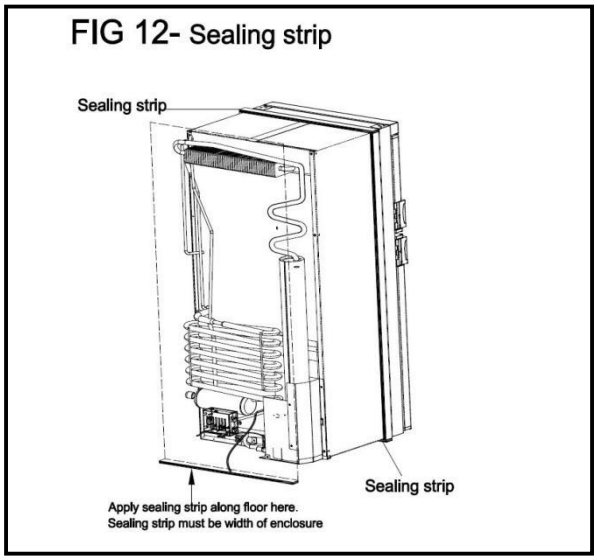
For a proper installation, follow these instructions:

- Carefully place the refrigerator in the enclosure.
- Verify that there is a complete seal between the front frame of the refrigerator and the top, sides and bottom of the enclosure. A length of sealing strip is applied to the rear surface of the front frame for this purpose. The sealing strip should provide a complete isolation of the appliance's combustion system from the vehicle interior.

RAE90,RAE142, RAE160 and RAE180: Apply a sealing strip to the foremost floor of the enclosure, see FIG 12.

Be careful not to damage the sealing strip when the refrigerator is put in place!

FIG 12- Sealing strip



General view. Features may vary by model.

SECURING THE REFRIGERATOR

It is important to follow the sequence in securing refrigerator in enclosure since failure in doing so can cause leakage be- tween the frame and cabinet.

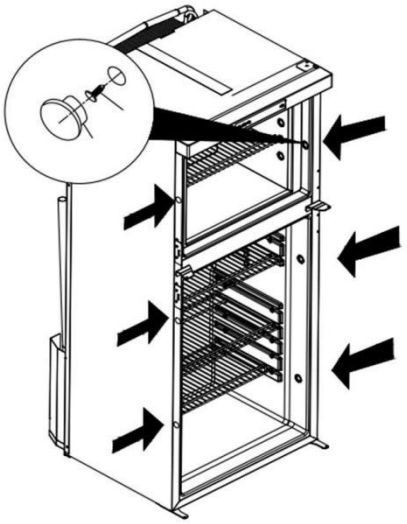
After the refrigerator is put in place (ensuring a combustion seal at the front frame), the refrigerator is to be secured in the enclosure with screws (not included).

RAE90, RAE142, RAE160 and RAE180

Install the six screws in the following order:

Six screws installed through the body side frame. (To cover the screw heads, use the plugs in the parts bag.)

FIG 13 Fix refrigerator



INSTALLATION PROCEDURE

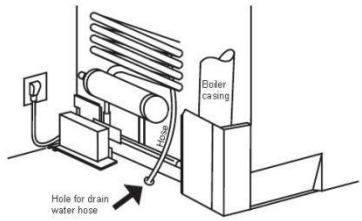
DRAIN WATER HOSE

Hose must not contact the boiler casing.
Hose must not be kinked.
Hose must not be routed uphill at any point.
Perforated plug must be present at end of hose.

OPTION 1 - THROUGH FLOOR

Drill hole through flooring, see FIG 14. Seal around hole. Check to make sure the supplied hose is long enough – if not, installer will have to supply extra length of hose

FIG 14- Drain water hose



General view. Features may vary by model.

OPTION 2 - THROUGH VENT FRAME (PLASTIC VENTS ONLY)

Pull end of hose through louvers in vent door. Cut hose to length. Reinstall perforated plug.

OPTION 3 - THROUGH VENT DOOR (SIDE-BY SIDE PLASTIC VENT ONLY)

Drill a 5/8" hole in vent frame directly above floor line. Route drain hose through hole and cut to length. Reinstall perforated plug on the outside of the vent frame. Apply sealant around plug to ensure water does not seep into enclosure.

CONNECTIONS

⚠ CAUTION

All connections should be routed to avoid direct contact with boiler casing, burner cover, or any other components of refrigerator.

GAS CONNECTION

Hook up to the gas supply line is accomplished at the manual gas valve, which is furnished with a 3/8" SAE (UNF 5/8" -18) male flare connection. ALWAYS use a back-up wrench when loosening and tightening gas connections. All completed connections should be examined for leaks using an approved leak detection solution.

⚠ WARNING

EXPLOSION HAZARD. Never use an open flame to check for gas leaks. Failure to obey this warning could cause an explosion resulting in death or severe personal injury.

The gas supply system must incorporate a pressure regulator
to maintain a supply pressure of not more than 11 inches water column. When testing the gas supply system at test pressures:
> 1/2 psi - the refrigerator and its individual shutoff valve must be disconnected from the gas supply piping system.
≤ 1/2 psi - the appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve.

If detailed instructions on the installation and connection to the gas supply are required, please contact your dealer or distributor.

INSTALLATION PROCEDURE

ELECTRICAL CONNECTION

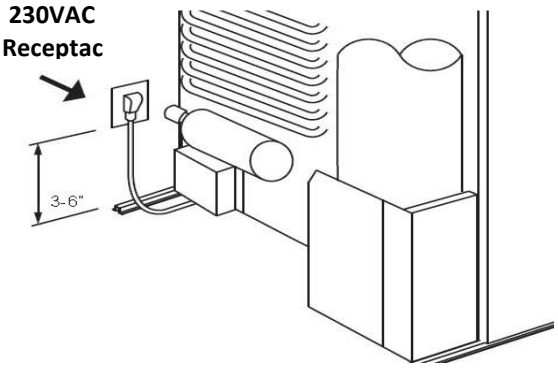
230 VAC CONNECTION

The refrigerator is equipped with a grounded three-prong plug for protection against shock hazards. It should be plugged directly into a properly grounded three-prong receptacle.

Do not cut or remove the grounding prong from this plug!

The free length of the cord is 2 feet. To allow easy access through the vent door, it is recommended to install the receptacle on the opposite side of the burner assembly and approx.
3-6” above the refrigerator mounting floor.

Fig 15- 230 VAC Connection



General view. Features may vary by model.

⚠ WARNING

Electrical Grounding Instructions

This appliance is equipped with a three prong (grounding) plug for your protection against shock hazards and should be plugged directly into a properly grounded three prong receptacle.

Do not cut or remove the grounding prong from this plug.

The intent of this statement shall also be included in the manufacturer's installation instructions accompanying the appliance.

12 VDC CONNECTION

The connection is made to the positive (+) and negative (-) terminals of the terminal block on back of the refrigerator.

Correct polarity must be observed when connecting to the DC supply. Do not use the chassis or vehicle frame as one of the conductors. Connect two wires at the refrigerator and route to the DC supply. Ensure the connections are clean, tight and free from corrosion.

For 3-way models, the voltage drop affects the wattage output of the 12 V cartridge heater and the refrigerator performance. The 12 VDC heater is fused with a 30 amp. in-line blade fuse.

Ensure that the wires from the battery to the refrigerator are able to handle the load. Recommended wire sizes are displayed in the table below.

MAXIMUM WIRE LENGTH		
WIRE / MODEL	Size AWG	Length ft
RAE 90	14	17
RAE 142	12	27
RAE 160		
RAE 180	10	27

Example: If the distance between the refrigerator and the 12 VDC supply is 20 ft., the total wire length is 40 ft. and a wire size of 10 AWG should be used.

INSTALLATION PROCEDURE

DOOR PANEL INSTALLATION CONT'D

MOUNTING INSTRUCTIONS

RAE90,RAE142,RAE160, RAE180

To install the panel(s), follow these steps:

1. Open the door 90 degrees or loosen the door.
2. Locate decoration strips. Loosen screws and remove strips. (FIG 16)
3. Remove the original door panel.
4. Insert the new panel into the grooves of the door frame. Push the panel downwards so that the lower horizontal edge of the panel is fitted into the bot- tom grove (FIG 17).
5. Fasten the decoration strips:

   -Snap-in: Snap in the decoration trips (FIG 18)

   -Screws: Secure decoration strip with screws

Fig 16

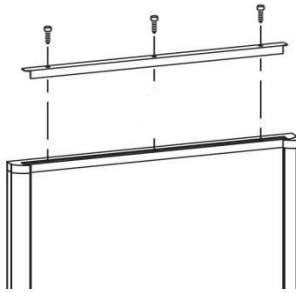


Fig 17

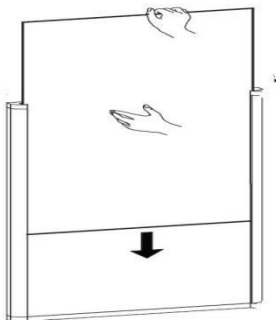
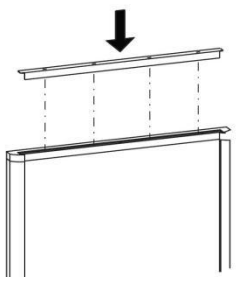


Fig 18



Refrigerator removal and installation should be performed by a qualified service technician.

Before removing the refrigerator:

1. Verify that the 230 VAC power cord is disconnected at the rear of the refrigerator.
2. Verify that the 12 VDC leads are disconnected and capped at the rear of the refrigerator.
3. Shut off the gas supply.
4. Disconnect and cap the LP gas line at rear of refrigerator.

NOTICE

Always use a backup wrench when loosing and tightening LP gas connections.

To remove the refrigerator:

1. Remove the screws anchoring the refrigerator to the enclosure.
2. Slide the refrigerator out of the compartment.

To replace the refrigerator:

1. Make sure the sealing strips (isolating the appliance combustion system from the vehicle interior) are properly positioned for a complete seal.
2. Slide the refrigerator back into the compartment.
3. Replace the screws anchoring the refrigerator to the enclosure.
4. Reconnect the LP gas supply line at the rear of the refrigerator.

NOTICE

Always use a backup wrench when loosing and tightening LP gas connections.

5. Check all connections for LP gas leaks.
6. Reconnect the 12 VDC leads at rear of refrigerator.
7. Reconnect the 230 VAC power cord at rear of refrigerator.

OPERATING INSTRUCTIONS

OPERATING REFRIGERATOR

⚠ CAUTION

Make sure that you only put items in the refrigerator which may be chilled at the selected temperature.
Food may only be stored in its original packaging or in suitable containers.

Before starting your new refrigerator for the first time, you should clean it inside and outside with a damp cloth for hygienic reasons.

· The cooling performance can be affected by
  - The ambient temperature(e.g. when the vehicle is exposed to direct sunlight)
  - The amount of food to be refrigerated
  - How often you open the door
· When using the refrigerator for the first time, there may be a mild odor which will disappear after a few hours. Air the living space well.
· Park the vehicle so that it is level, especially when starting up and filling the refrigerator before setting off on a journey.
· The refrigerator unit operates silently.
· Approximately one hour after switching on, the freezer compartment of the refrigerator should be cold. The refrigerator reaches its operating temperature after a few hours.
· When using the refrigerator in a camper: If the towing vehicle is equipped with an energy management system, the operation of the refrigerator with DC may not always be ensured. Further information can be obtained from the manufacturer of your towing vehicle

Tips for using the refrigerator optimally

When the temperature in the interior of the refrigerator exceeds +4 °C, the shelf life of goods that spoil quickly cannot be guaranteed. To attain an optimal cooling capacity in the interior of the refrigerator, observe the following information:

· Do not store goods in the refrigerator for the first 12 hours of operation.
· Protect the interior of the vehicle from warming up excessively (e.g. sunshades in the windows, air conditioner).
· Protect the refrigerator from direct sunlight (e.g. sunshades in the windows).
· Voltage fluctuations can have a negative effective on the cooling capacity. Check the temperature in the interior of the refrigerator regularly.
- when using DC current during the journey
- when using AC current at the site of use

Energy saving tips

· Choose a well ventilated position which is protected from direct sunlight.
· Allow warm food to cool down first before keeping it cool in the refrigerator.
· Do not open the refrigerator more often than necessary.
· Do not leave the doors open for longer than necessary.
· Defrost your refrigerator as soon as a layer of ice forms.
· Avoid unnecessarily low temperature settings.
· Arrange the food in the refrigerator so that air can circulate inside.
· Leave a distance of about 10 mm between the contents and secondary evaporator.

Operating in low outdoor temperatures

Cold air can restrict the performance of the unit. Attach the winter covers if you experience a reduced cooling capacity at low ambient temperatures. This protects the unit from excessively cold air that might otherwise restrict its performance.

- Mount the winter covers (accessory) for the ventilation grille.
- Check regularly whether the ventilation grille is free of leaves, snow or similar objects.

Winter cover in AC operation, DC operation

If a roof vent is installed, only the lower winter cover must be installed.

Winter cover in automatic mode, gas operation

⚠ WARNING

Do not install the winter cover during gas operation.

This prevents heat from building up and the fumes from the refrigerator can be extracted properly.

Switching on the refrigerator

When using gas operation: Make sure that the gas supply is ensured.

Switching on the RAE90,RAE142,RAE160,RAE180

Press the ON/OFF button. The refrigerator starts with the last selected type of power and settings.

Switching off the refrigerator

- Close the gas valve in the vehicle and the gas supply at the gas cylinder.
- If you do not use the refrigerator for a long time, remove the battery from the battery compartment.
- If you are not going to use the refrigerator for a longer period, set up the winter setting.

OPERATING INSTRUCTIONS

Switching off
the RAE90, RAE142, RAE160,RAE180

- Press the ON/OFF button.
- The indicator light off and the refrigerator switches off.
-

Selecting the operating mode

⚠ CAUTION

Observe the safety instructions in chapter "Safe operation" on page 5.

- Select the operating mode menu.
- Activate the desired operating mode.

Operating with AC power supply

Observe the safety instructions in chapter "Safety when operating with AC power" on page 5.

When the energy supply is connected to AC mains, it is preferable to use this energy source.

- Activate AC indicating light

Operating with DC power supply

Observe the safety instructions in chapter "Safety when operating with DC power" on page 5.

· The cooling capacity of the refrigerator in DC operation is slightly reduced. Operate the refrigerator with AC power supply or gas until the desired cooling temperature is reached; only then switch to operation with DC power supply.
· For safety reasons, the refrigerator is equipped with an electronic system to prevent the polarity being reversed. This protects the refrigerator against reversed polarity when connecting to a battery and against short circuiting.

To protect the battery, the refrigerator switches off automatically if the voltage is insufficient

- Cut-in voltage: DC 9.8V
- Cut-off voltage: DC 9.5V

- Activate DC indicating light

Operating with Gas

⚠ WARNING

Observe the safety instructions in chapter "Safety when operating with gas" on page 6.

NOTICE

Do not attach the top winter cover (not in scope of delivery) while operating with gas. This prevents heat from building up and the fumes from the refrigerator can be extracted properly.

When operating with LPG, the burner must be cleaned frequently (two or three times a year). Ignition problems may occur at altitudes above 1,000 m. If possible, switch to a different energy source.

- Activate Gas indicating light

Setting the cooling capacity

For ambient temperatures of+15 °C to +25 °C, select the average cooling capacity.
The refrigerator operates in the optimum power range.
The display shows the selected temperature:
- one light = lowest cooling capacity
- three light = medium cooling capacity
- five light = highest cooling capacity

Setting the RAE90, RAN142, RAE160, RAE180 cooling capacity

A Repeatedly press coldest until the desired temperature is set.

Using refrigerator door/freezer door

⚠ CAUTION

Ensure that the refrigerator door is closed and locked before starting to drive.

· Open the doors of the refrigerator carefully as items may have moved and can fall out as a result.
· Do not lean on the open fridge door.

Closing the refrigerator door/freezer door

When closing the door, make sure it locks properly.
· Press the door shut until you hear it clearly click.
· The door is now closed and locked.

Notes on storing food

· The maximum weight per shelf is 6 kg, The maximum weight for the entire door is 7.5 kg.
· Store heavy objects such as bottles or cans only in the refrigerator door, in the lower storage compartment or on the bottom shelf.

The refrigerator compartments are recommended for the following types of food:

Frozen food
Cooked foods
Dairy products, prepared food, thawing goods
Meat, fish
Salad, vegetables, fruit
Drinks in bottles or cartons
Dressing, ketchup, jam
Eggs, butter

Please observe the following instructions for storing items:

· Do not keep carbonated drinks in the ice compartment.
· The ice compartment is suitable for making ice cubes and for keeping frozen food short-term. It is not suitable for long-term food storage.
· If the refrigerator is exposed to a room temperature of below +10 °C for a prolonged period of time, an even temperature of the ice compartment cannot be guaranteed. This can lead to a potential increase in the freezer compartment temperature and stored goods will defrost.

· Pack raw and cooked items separately.
· Observe the expiry date on the packaging.
· Do not leave refrigerated items outside the refrigerator for too long.
· Clean the inside of the refrigerator at regular intervals.

Positioning the shelves

⚠WARNING Children beware!
All shelves are fixed in place to prevent children from climbing inside the refrigerator.

· Only remove the shelves for cleaning purposes.
· Afterwards, refit the shelves in the same position and lock them in place.

Defrosting the refrigerator

NOTICE
Do not use mechanical tools or a hair dryer to remove ice or loosen frozen items.

Over time, frost builds up on the cooling fins inside the refrigerator, If this
layer of frost is about 3 mm thick , you should defrost the refrigerator.
· Switch off the refrigerator.
· Disconnect the energy supply.
· Empty the refrigerator.
· Put a cloth in the ice compartment and the refrigerator to absorb any excess water.
· Leave the door open.
· The condensation of the main cooling compartment is removed via a hose out of the ventilation grille of the vehicle.
· Wipe both compartments dry with a cloth.

Cleaning and maintenance

⚠WARNING
Always disconnect the refrigerator from the energy supply before you clean and service it. Working on gas and electrical installations may only be performed by qualified technicians.

· Do not use abrasive cleaning agents or hard objects during cleaning, as these can damage the refrigerator.
· Never use hard or sharp tools to remove ice or to free objects frozen onto the device.
· Do not use any mechanical tools or any other tools to speed up the defrosting process.
· The internal parts of the refrigerator (vegetable compartment and shelves)are not suitable for dishwashers. They can be damaged if they are cleaned in a dishwasher.
· Have the refrigerator checked by a specialist if you have not used the vehicle for a long time.
· As soon as the refrigerator gets dirty, clean it with a damp cloth.
· Make sure that no water drips into the seals. this can damage the electronics.
· Wipe the refrigerator dry with a cloth after cleaning.
· Check the condensate drain regularly.
· Clean the condensate drain when necessary. If it is blocked, the condensate collects the bottom of the refrigerator.
· Make sure that the ventilation grills in the outer wall of the RV or caravan and the refrigerator roof ventilators are free from dust and pollutants. This ensures that the heat generated during operation can be dispersed, the refrigerator is not damaged and the cooling capacity is not reduced.

Cleaning the gas burner

⚠WARNING
Close the gas valve to the refrigerator before cleaning the gas burner.
Allow the burner to cool down before cleaning it.
Do not modify the gas equipment. the gas burner can be cleaned without removing the gas equipment.

· Dirt in the gas burner becomes noticeable by poor ignition or deflagration.
· The manufacturer recommends cleaning the burner at least once a year.
· When using liquefied petroleum gas, the cleaning interval, depending on the degree of pollution, is reduced to half yearly or quarterly.
· Disconnect the refrigerator from the energy supply.
· Close the gas valve to the refrigerator.
· Remove the ventilation grille
· Pull on the catch below the burner cover inwards, and pull off the burner cover
· Clean the burner pipe of coarse impurities using a suitable cleaning brush with soft bristle.
· Blow out the burner pipe with compressed air through the slots in the burner pipe.
Attach the burner cover.
· The burner cover is fixed in place when it audibly clicks into place.
· Attach the ventilation grill.

Maintenance

⚠WARNING
Working on gas and electrical installations may only be performed by qualified technicians.

The manufacturer also recommends cleaning the burner after not being used for a longer period and at least once a year (see chapter “Cleaning the gas burner”). If you need further assistance, contact customer service.
· Have the gas system and connected flues inspected before initial operation and then every two years by an authorized professional to ensure they comply with safety requirements
· Keep a record of any maintenance performed.

WARRANTY

Warranty

The statutory warranty period applies. if the product is defective, please contact the manufacturer's branch in your country or your retailer.

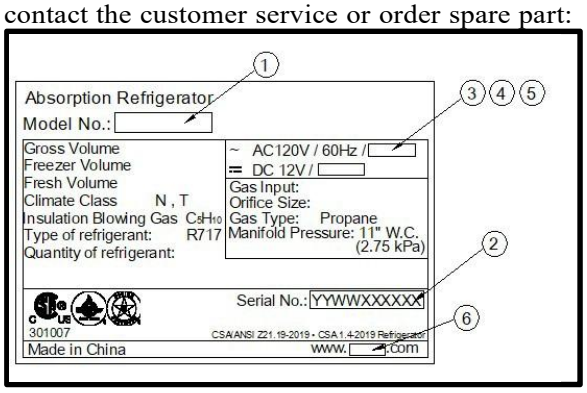
For repair and guarantee processing, please include the following documents when you send in the device:

· A copy of the receipt with purchasing date

· A reason for the claim or description of the fault

Type inside rating label

Inside the refrigerator you can see the rating label of the refrigerator. there you can see the model name, product number and serial number. you will need this information whenever you contact the customer service or order spare part:



Description

1 Model number

2 Serial number

3 Power name

4 Power input

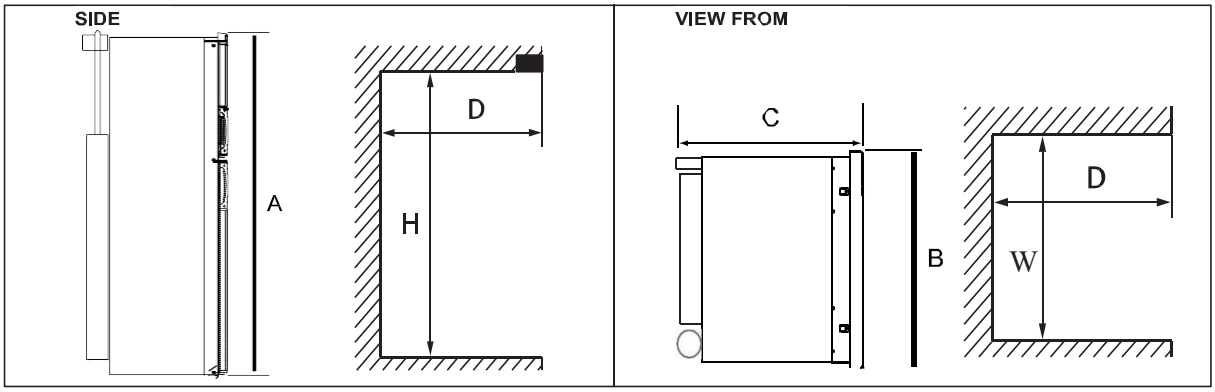
5 Power rating

6 Manufacturer or your retailer.

APPENDIX A -
overall & rough in dimensions for enclosure

	OVERALL DIMENSIONS			ENCLOSURE DIMENSIONS		
MODEL	Height (A)	Width (B)	Depth (C)	Height (H)	Width (W)	Depth (D)*
RAE90	29-3/4	20-3/32	23-1/4	30-1/4	20-7/8	23-1/4
RAE142	59	16-7/16	22-1/16	59-1/2	16-7/8	22-1/16
RAE160	49-1/4	20-15/32	22-1/16	49-3/4	20-7/8	22-1/16
RAE180	53-3/8	23-7/16	24-7/32	53-7/8	23-7/8	24-7/32

*The depth (D) is flush with door panel and the side of cabinet

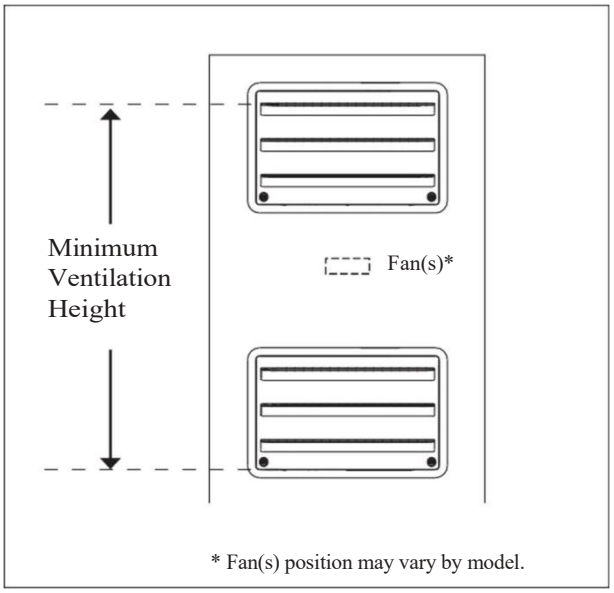


APPENDIX B – MINIMUM VENTILATION HEIGHTS

MINIMUM VENTILATION HEIGHTS B1 = UPPER & LOWER SIDE VENT		
RAE90	B1	32
RAE142	B1	61-1/2
RAE160	B1	52
RAE180	B1	56-1/2

NOTE! Ventilation height should be measured from the seam between the frame and door of the lower side wall vent to the top of the uppermost row of louvers on the upper side wall vent (B1).

B1: UPPER & LOWER SIDE VENT



APPENDIX C - APPROVED VENTS

Approved optional vents

①

UPPER & LOWER PLASTIC SIDE VENT

3J-FV1000

Cutout: 17-3/4” X 6-1/8”

②

UPPER & LOWER PLASTIC SIDE VENT

3J-FV2000

Cutout: 17-5/16” X 9-7/8”

③

UPPER PLASTIC SIDE VENT

3J-FV3000

Cutout: 17-5/16” X 9-7/8”

APPENDIX D – VENT INSTALLATION PROCEDURES

Installation procedure for optional vent

- Reference “APPENDIX C” for Approved Vents.
- APPLY DRY SEALANT AROUND SURFACE MOUNTING FACE OF ALL VENT FRAMES OR VENT BASES PRIOR TO INSTALLATION.
- APPLY WET SEALANT AROUND PERIMETER OF ALL VENT FRAMES OR VENT BASES AFTER INSTALLATION. ENSURE THAT SEALANT DOES NOT BLOCK THE MOLDED WEEP TRACKS IN THE VENT FRAME.

① UPPER & LOWER SIDE VENT-3J-FV1000：

a) Place vent over 17-3/4” X 6-1/8” cutout.
b) Secure frame using ten screws.
Alternate use of rivets is acceptable.

②UPPER & LOWER SIDE VENT-3J-FV2000：

a) Place vent over 17-5/16” X 9-7/8” cutout.
b) Secure frame using ten screws.
Alternate use of rivets is acceptable.

③UPPER SIDE VENT-3J-FV3000：

a) Place vent over 17-5/16” X 9-7/8” cutout.
b) Secure frame using ten screws.
Alternate use of rivets is acceptable.
c) Connection 12V DC.

APPEDIX E – WIRING DIAGRAMS

RAE series wiring diagrams