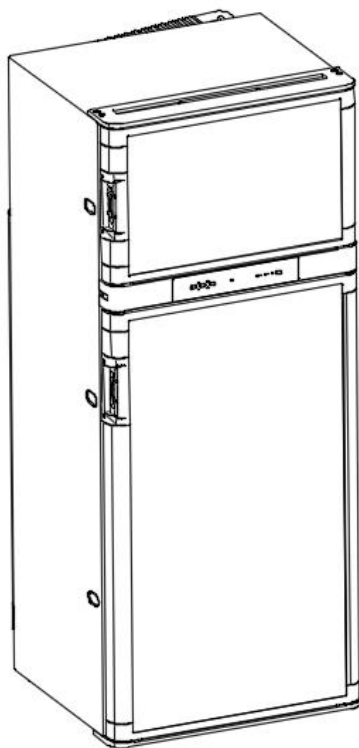


Installation and Operation Manual



RAE160L

3-way RV refrigerator

2022 V0.1



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1、Brief introduction

The installation of this refrigerator can only be done by an experienced person, who works strictly in accordance with local laws and regulations. Be aware of all announcements following the warning symbols. To ensure safe and correct operations, the refrigerator and vents must be installed as per related instructions in this manual with no variations. This instruction and illustrations will be changed together with product upgrade.

2、Symbols



WARNINGS!: Failure to comply with this can result in fatal or serious injury.



NOTICE!: Failure to observe this instruction can damage the refrigerator, its parts, or impair its cooling performance.



NOTE! : Supplementary information of operation.

3、 Safety instructions



WARNINGS

1. Never open the cooling unit, there is high pressure inside, which can cause injury.
2. There are multiple wiring harnesses inside insulation, never modify the refrigerator.
3. Only qualified persons can install power and gas piping per local regulations.
4. Nonstandard installation can cause safety issues or damage refrigerator control unit.
5. The gap between the refrigerator and the cabinet must be sealed with fire-proof material to ensure that no gas for burning can enter the living space of the vehicle.
6. Inlet and outlet vents must be installed to provide sufficient air for gas burning.
7. Gas supplying pipes cannot be under strain.
8. With multiple energies, all powers and gas supply must be shut off before maintenance.
9. Naked flame is prohibited during maintenance to avoid fire hazard.
10. Only propane and butane can be used, natural gas or coal gas are not applicable.
11. Be aware of carbon monoxide caused by improper usage, which can impair health.
12. disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.



NOTICE!

1. Make sure the refrigerator door is locked firmly before a journey.
2. Do not touch the working cooling unit because of high temperature zones inside.
3. Bottles or cans can only be stored in the door shelf or in the bottom crispers.

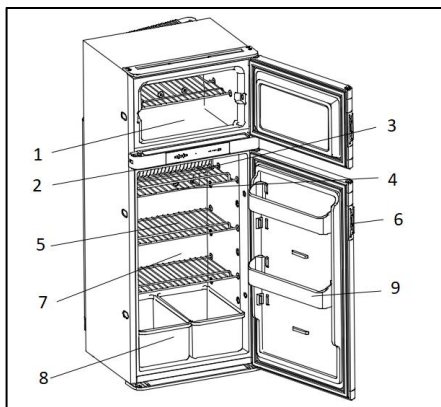


NOTE!

1. Inside of the refrigerator and its panel cannot be heated by any appliances.
2. Enough ventilation is a must for heat dissipation and supplying sufficient comburent oxygen.
3. Cables for the refrigerator must be protected from humidity.
4. Children aged from 3 to 8 years are prohibited from loading and unloading refrigerating appliances.

4、Main parts

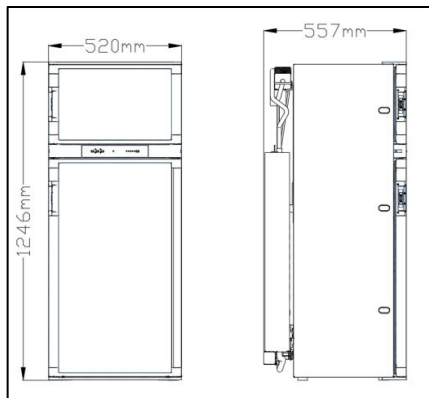
1. Freezer compartment
2. Operation panel
3. Evaporating aluminum
4. Water receiver
5. Storage shelf
6. Door lock
7. Refrigerator compartment
8. Crisper
9. Door shelf



5、Installation

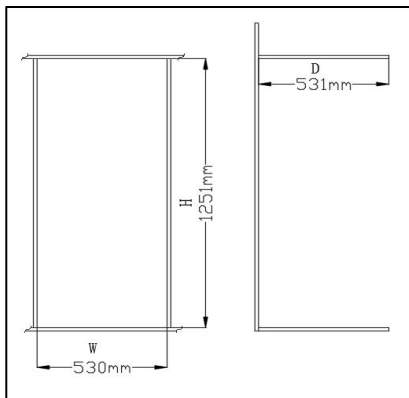
Outline dimensions of the refrigerator

H1246*W520*D557mm



Sizes for inner surface of the cabinet

H1251*W530*D531mm

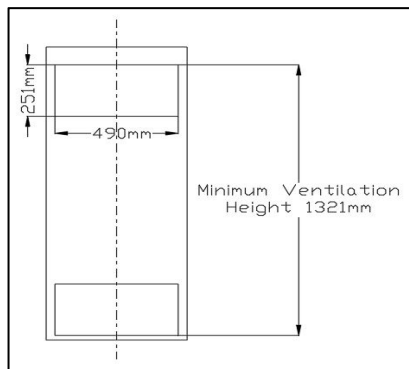


Vent cut-out sizes

H156*W451mm

Distance between vents

Minimum: 1321mm



5.1 Sealing (to prevent burning gas flowing into living space)

5.1.1 Sealing strips with thickness of 15mm must be stuck to the floor of the cabinet that will contact the refrigerator bottom.

5.1.2 Sealing strips with thickness of 10mm must be stuck to the sides and top of the refrigerator.

5.2 Fixing of the refrigerator

5.2.1 Put the refrigerator into the cabinet, during which the sealing strips on the floor cannot be damaged.

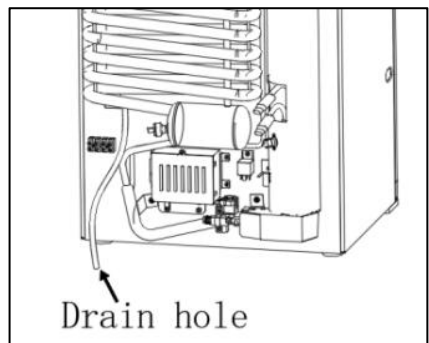
5.2.2 The refrigerator door should be kept outside of the cabinet to facilitate the usage of the locker.

5.2.3 Fix the refrigerator with 6 screws and then cover them with white plastic caps.

5.3 Installation for draining pipe (2 alternatives)

5.3.1 Drill a hole on the vehicle floor, insert the draining pipe through to the outside, then seal the extra space of the hole.

5.3.2 Insert the draining pipe through the bottom grid of the vent and fix it.



5.4 Power connection

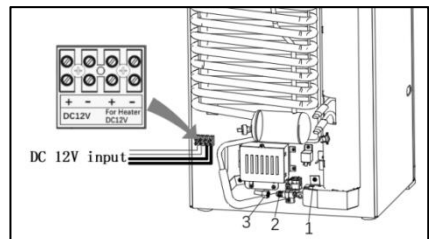
5.4.1 Gas connection: There must be a reducing valve to keep the inlet gas pressure to the refrigerator being no more than 30mbar, the connection size for the solenoid valve (illustrated as 2 in the picture) is M14*1.5

5.4.2 DC12V connection

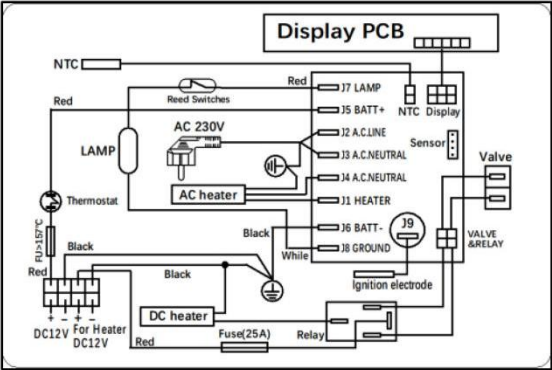
There are 4 connectors, the left “+” and “-” are for power supplied to circuit board, using 18AWG copper wire; the right “+” and “-” are for power supplied to DC heater, using 4 mm² copper wire with the whole length of ≤ 10 meters. (the heater’s power is 205W)。

5.4.3 AC connection

Insert the EU standard AC plug into a socket, do not cut or remove its earthing pin.

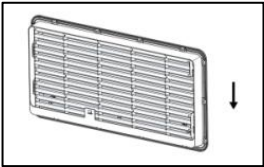


5.4.4 Circuit diagram

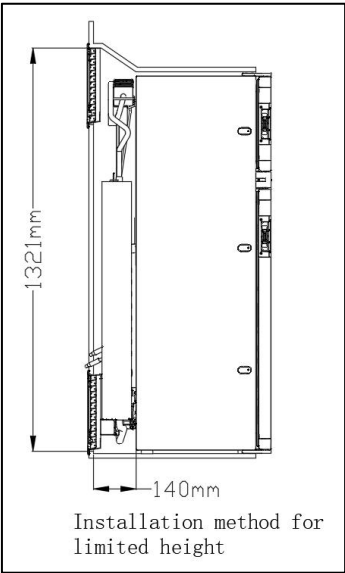


5.5 Vent installation (3J-FV2000 , 3J-FV3000)

5.5.1 Install the vent as illustrated in the picture on the right and fix it with 10 screws.(3J-FV3000 is only used as upper ventilation)



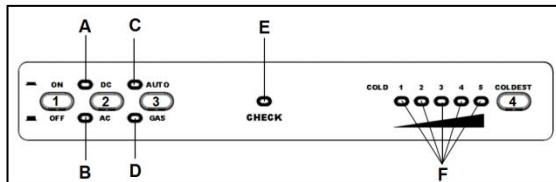
5.5.2 There are 1 alternatives as shown in below picture.



6、Operation

6.1 Introduction to the panel

- A: DC mode indicator
- B: AC mode indicator
- C: Auto mode indicator
- D: GAS mode indicator
- E: Check indicator
- F: Temperature indicator



6.2 On&Off and mode switch

6.2.1 Press ON/OFF button, the product will first execute check process. Then lamps illuminated show energy and working status.

6.2.2 When DC or AC lamps on, if other energy mode is preferred, first press DC/AC button and then press AUTO/GAS button until corresponding lamp is illuminated.

6.2.3 AUTO mode can only automatically select AC or GAS input. To transfer into another energy, press corresponding button until corresponding lamp is on.

6.2.4 When RV is moving, only DC can be used. When in GAS mode, it may take at most 45 seconds to ignite the burner.

6.2.5 To shut off the refrigerator, press the main power ON/OFF button (OFF position).



Note:

1. The refrigerator can start only when DC Voltage is $\geq 10V$.
2. Under GAS mode, if it is not ignited in 45 seconds, gas valve will be shut off to stop ignition and reignite after 120 seconds. When ignition is still unsuccessful after 3 Re-ignitions, CHECK indicator will light and GAS mode is suspended.
3. When LPG is used, the burner shall be cleaned periodically of twice or 3 times per year. When travelling over 1000 meters of altitude, ignition will be an issue, please switch to other power modes.
4. GAS mode cannot be used during driving.

6.3 Cooling performance adjustment

Press COLDEST button until temperature needed is selected.

Temperature indicator shows conditions accordingly.

One light on - minimum cooling capacity

Three lights on - Medium cooling capacity

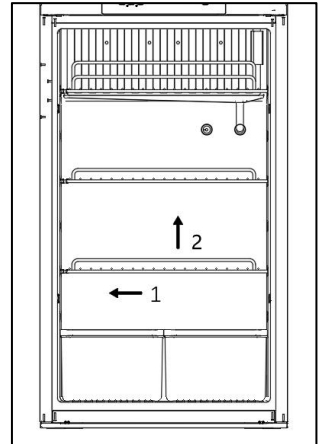
Five lights on - Maximum cooling capacity

Select medium cooling capacity when the ambient is +15°C to +25°C.

6.4 Shelf relocation

6.4.1 Taking out: As the picture on the right, pull the shelf to the left (direction 1) with both hands until the right side of the shelf leaving the blind plugs, then elevate the shelf upward (direction 2) and move to the right until it leaves the through-hole plugs.

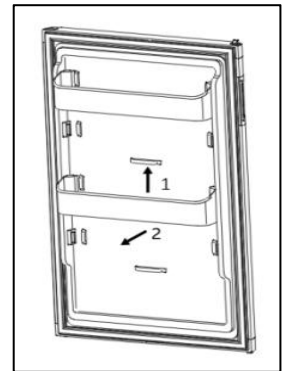
6.4.2 Relocation: Put the through-hole plugs into the left groove, sleeve 2 springs over the round rods on the left of the shelf, tilt the shelf and insert its high left side into the through-hole plugs. Put the blind plugs into the right groove, move the shelf leftward then upward until its right side aligns with the blind plugs. Loosen your grip and the springs will push the shelf into the blind plugs.



6.5 Door shelf relocation

6.5.1 Removing: Pull the door shelf upward (direction 1) and then direction 2 to take it out.

6.5.2 Relocation: Put the bottom of the door shelf above the intended slot position and stick to the inner wall, then push downward to the end.

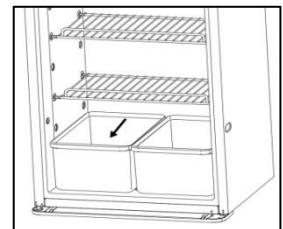


6.6 Crisper usage

Grip the crisper on its external rim and pull outward, but do not pull it all out.

 **Note:** Winter applications

Please use the vent cover when ambient is lower than 10°C to prevent cooling performance from being affected.



7、 Notes on storing food

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

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.
- 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.
- Opening the door for long periods can cause a significant increase of the temperature in the compartments of the appliance.
- Clean regularly surfaces that can come in contact with food and accessible drainage systems.
- Store raw meat and fish in suitable containers in the refrigerator, so that it is not in contact with or drip onto other food.
- If the refrigerating appliance is left empty for long periods, switch off, defrost, clean, dry, and leave the door open to prevent mould developing within the appliance.
- Suitable for camping use.
- The appliance may be connected to more than one source of energy.
- The appliance shall not be exposed to rain.

8、Defrosting 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.

9、Fault messages

Fault indication		Fault Description
CHECK Light	COLDEST Light	
○	◎●●●●	Solenoid valve drive circuit break, Solenoid valve monitoring circuit failure, Solenoid valve short circuit.
	●◎●●●	Solenoid valve drive circuit short, Solenoid valve monitoring circuit failure.
	●●◎●●	Main-board auxiliary power supply/relay failure, Or its monitoring circuit failure
	●●●◎●	The flame detection circuit has failed. The flame signal has been detected before the solenoid valve is opened
	●●●●◎	Thrice 45-second ignition failed to ignite
◎	◎●●●●	The temperature sensor open or short circuit
	●◎●●●	AC relay is open, or its drive circuit is short, or its monitoring circuit fails
	●●◎●●	AC relay short circuit, or its drive circuit open, or its monitoring circuit failure
	●●●◎●	DC relay is open, or its drive circuit is short, or its monitoring circuit fails
	●●●●◎	DC relay short circuit, or its drive circuit open, or its monitoring circuit failure



Note! : ○ indicator on ◎ indicator flash ● indicator off

COLDEST indicator will show fault status when keep pressing COLDEST button.

Contact customer service if you cannot repair by yourself.

10、Trouble shootings

Fault	Possible cause	Suggested remedy
With AC operation: the refrigerator does not work.	The fuse in the AC mains is defective.	Replace the fuse. (fuse 1A , fuse 5A)
	The vehicle is not connected to the AC mains.	Connect the vehicle to the AC mains.
	The AC heating element is defective.	Contact the authorized customer service.
With DC operation: the refrigerator does not work.	The fuse in the DC supply is defective.	Change the 25A fuse as illustrated in the circuit diagram
	The DC heating element is defective.	Contact the authorized customer service.
With gas operation: the refrigerator does not work	The gas cylinder is empty.	Replace the gas cylinder.
	Under-pressure or over-pressure	Adjust the reducing valve.
	Air is in the supply line.	Switch the refrigerator off and on again. Repeat the procedure three or four times if necessary. Switch on the stove and repeat the same process if available.
In automatic mode: The refrigerator operates with gas though it is connected to the AC mains	The mains voltage is too low.	The refrigerator changes to AC power supply automatically as soon as the mains voltage is sufficient again.
The refrigerator is not adequately cooling	The ventilation around the cooling unit is not sufficient.	Check that the vents are not obstructed.
	The temperature is set too high.	Set a lower temperature.
	The ambient temperature is set too high.	Remove the vents for a while so that warm air can escape quicker.
	Too much food were placed into the refrigerator.	Remove some items
	Too much warm food were placed in the refrigerator.	Remove the warm food and leave them to cool down before putting back again.
	The refrigerator has not been operating for enough long.	Check the temperature again after four or five hours.

11、 Cleaning and maintenance

- 11.1 Do not use abrasive or hard objects to avoid damage to the refrigerator.
- 11.2 Never use sharp tools to remove ice or objects frozen on the refrigerator.
- 11.3 Do not use any tools to accelerate the defrosting process.
- 11.4 Do not clean parts such as crisper and shelf with dishwashers.
- 11.5 Ask a qualified technician to check when you have not used it for a long time.
- 11.6 Clean it with a wet cloth, no water shall be dripped into sealing parts.
- 11.7 Wipe the refrigerator dry after cleaning.
- 11.8 Check the condensate drain periodically to keep it unblocked.
- 11.9 Make sure all vents on the wall and the roof are not blocked by dirties to keep good heat dissipation.

12、 Cleaning the gas burner

- 12.1 Because of bad ignition or burning, the gas burner may accumulate much dusts, at least one thorough cleaning per year is recommended on this part.
- 12.2 When LPG is used, the cleaning period shall be shortened to once per half a year or once per quarter.
- 12.3 Shut off power supplies.
- 12.4 Close gas valves.
- 12.5 Remove the vent.
- 12.6 Remove the screws on the burner cover, pull the cover out from the bottom.
- 12.7 Clean the coarse impurities inside the pipe with appropriate soft brush.
- 12.8 Blow the burner pipe with compressed air through slots in the pipe.
- 12.9 Clip the burner cover back into the assembly first, push inward until there is an audible click, then screw on firmly.
- 12.10 Install the vent.

13、 Disposal

Some materials on the refrigerator can be recycled, its coolant is R717 and insulation is done with environment friendly substances.

Dispose an old refrigerator in accordance with local regulations. Do not discard it together with other household wastes.

14、Warranty

When statutory warranty period applies, please contact our branch in your country or your retailer if there is a defect on the product.

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

14.1 A copy of the receipt with purchasing date

14.2 Claim reasons or fault descriptions

15、Name plate

Inside the refrigerator a nameplate as below can be observed. Its model No. and serial No. are both needed when you contact after-services or purchase spare parts.

Absorption Refrigerator		Jiangsu Sanjo Intelligent Technology co.,Ltd No.8 Jinguazi Road, Nandu Town, Liyang city, Jiangsu, P.R. China	
Model No.: RAE160		 FREUCAMP	
Gross Volume: 144L	Freezer Volume: 28L	~ AC 230V/250W	
Fresh Volume: 116L	Climate Class: N or T	== DC 12V / 205W	
Insulation Blowing Gas: C ₅ H ₁₀	Type of refrigerant: R717	Normianl Heat Input : 0.5kW (G30/G31: 36g/h)	
Quantity of refrigerant: 249g		I ₃ + (28- 30 /37) G30 Butane at 28-30mbar and G31 Propane at 37mbar	
BE,CH,CY,CZ,ES,FR,GB,GR,IE,IT,LT,LU,LV,PT,SK,SI		I _{3B/P(30)} G30 Butane and G31 Propane at 30mbar	
BE,CY,DK,EE,FI,FR,HU,IT,LT,NL,NO,SE,SI,SK,RO,HR,TR,BG,IS,LU,MT.			
		Serial No.: XXXXXXXX	
Made in China		www.jssqzn.com	
Warnings: Read manufacturer's instructions before use & this appliance shall be installed according to the rules in force This appliance shall be installed according to the manufacturer's instructions. To be used only in a well-ventilated area, above ground and protected from rain.			



Jiangsu Sanjo Intelligent Technology Co.,Ltd

Address : No.8 Jinguazi Road, Nandu Town, Liyang City, Jiangsu
Province, China

Tel : 0086-400-839-8111

E-Mail : sanjo@jssqzn.com

URL : www.jssqzn.com