ENGEL

REFRIGERATOR OWNER'S MANUAL

MODEL

SR70F-G4-GL
ST90F-G4-B
SR48F-G4-WH
STR100F-G4-B
STF100F-G4-B

SAWAFUJI SAWAFUJI ELECTRIC CO.,LTD.

Thank you for purchasing an ENGEL refrigerator. Read this manual carefully before starting to use it. Keep this manual in a safe place for future reference. If the product is resold, this operating manual must accompany it.

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1. Explanation of symbols

The following symbols are used in this OWNER'S MANUAL or on the refrigerator.

⚠ **WARNING**	Failure to observe this instruction can cause fatal or serious injury.
⚠ **CAUTION**	Failure to observe this instruction can lead to injury.
ⓘ **NOTICE**	Failure to observe this instruction can cause material damage and impair the function of the product.
⚠ **WARNING**	Risk of fire insulation blowing gas.(CYCLOPENTANE)

2. Safety instructions

Read this manual carefully before starting to use the refrigerator. These instructions are safety measures for preventing accidents.

⚠ WARNING

- This refrigerator can be used by children age 8 and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the refrigerator in a safe way and understand the hazards involved.
- Children shall not play with the refrigerator. Always keep and use the refrigerator out of the reach of children.

- Cleaning and user maintenance shall not be made by children without supervision.
- Do not store explosive substances such as aerosol cans with a flammable propellant in this refrigerator.
- Never expose the refrigerator to rain.
- The refrigerator is suitable for camping use.
- Do not put a water-filled container. Water if spilled will degrade the insulation of electric components and may lead to a fire from electric leak.
- If the cable is damaged, it must be replaced to prevent the possibility of electric shock. It must be replaced with a new cord (ENGEL genuine products).
- Do not touch the inside and other metal parts of the cabinet with wet hands, as this may cause frostbit.
- Do not contact metal part with positive terminal of battery.
- Cyclopentane is used as in the insulation. The gases in insulation material require a special disposal procedure with the applicable disposal regulations.
- Never disassemble the refrigerator by yourself. Inadequate repairs may lead to considerable hazards.
- To avoid burnout of wiring from battery to the refrigerator when a short circuit, install 10A fuse in the wiring circuit, nearby the battery.
- This refrigerator runs on both AC i.e. from wall outlet and DC such as battery. Do not attempt to run it on any voltage above the specified voltage, nor use it with any power source not specified here. Failing to comply will result in product failure or lead to a fire.

• When operating on AC, do not plug in to an extension cable or put too many plugs into one socket. Failure to comply will result in electric shock or a fire.

• When operating on AC, be sure to plug in securely. Poor connection will result in electric shock or a fire.

• Clean the AC cord plug to remove dust from the terminals and their base. Dust on the plug will lead to a fire or electric shock from degraded insulation.

• Be sure that no part of the refrigerator body is pushing its power cable to bend it hard. The cable, when bent hard, may get damaged and lead to overheat and a fire.

•When positioning the appliance, ensure the supply cord is not trapped or damaged.

•Do not locate multiple portable socket-outlets or portable power supplies at the rear of the appliance.

• Avoid using flammable sprays near the refrigerator. The electric contacts may catch a fire.

• Do not store objects that require precise temperature control such as medicine and scientific specimens. This refrigerator is not suited to store such types of objects.

• When there is a leak of utility gas around you, do not touch the refrigerator or its cable plug. Open the windows and maintain good ventilation. Failing to do so may lead to a fire and/or a burn from explosion.

• When operating on a floor, securely fix the refrigerator so that it would not fall and cause injuries when encountering vibration such as earth quake.

• While the refrigerator is in operation, do not use a quick charger to charge the battery that is supplying power to the

refrigerator. The high voltages generated from the charger may damage the refrigerator and lead to a fire.

- Do not damage or modify or bend hard or pull or twist or bundle the power cable. Do not have the power cable caught under or pinched with heavy objects. Doing so may damage the cable and possibly lead to a fire or electric shock.
- Do not use the refrigerator if its power cable is damaged or the catch of its plug is loose. Failing to comply may lead to an electric shock or short or fire.
- Do not use the refrigerator near a heated object or gas equipment. Doing so not only reduces cooling performance but would cause a fire when leakage of the utility gas.

⚠ CAUTION

- Disconnect the refrigerator from the AC before cleaning and servicing it as well as after each use.
- Do not put living things such as pets in the refrigerator.
- Do not attempt to open or close the refrigerator door while driving a car. It may lead to an accident due to distracted driving.
- This refrigerator is suitable for cooling food. If you wish to cool medicines, check if the cooling capacity of the refrigerator is enough.
- Never use a battery charger or transformer or rectifier or battery eliminator or AC/DC converter to power the refrigerator. Doing so may damage the refrigerator.
- Never connect the refrigerator directly to an engine generator set regardless of whether its output is AC or DC.

Doing so will lead to poor cooling and may also damage the refrigerator due to the high voltages and surge pulse from the generator set. Utilize an automatic voltage regulator for the refrigerator. Contact your ENGEL dealer if there is any question regarding the use of engine generator set to power the refrigerator.

- Do not put a bagged cold pack whose inner material is leaking. Some of off-the-shelf bagged ice packs contain a type of chemical that corrodes the metal parts of the refrigerator. If such chemical is spilled in the refrigerator interior, wipe it off with a wet, soft cloth and wipe off again with a dry cloth.
- It is recommended to turn off the refrigerator when the vehicle engine is shut off so as to keep the battery from running out.
- Take extra caution when transporting the refrigerator.

ⓘ NOTICE

- Check if the voltage noted on the type plate on the refrigerator matches the one applied by an external power source.
- If the voltage at the DC input terminals of the refrigerator falls below 11V, cooling performance will immediately decrease. Always keep the battery in good condition to ensure it is fully charged.
- If used onboard a vehicle, fix the refrigerator firmly to the interior of the vehicle. Failing to do so may lead to injuries from a falling or moving fridge during abrupt acceleration and breaking.
- Never use this refrigerator inside a refrigerated compartment

of a refrigeration truck, where condensation easily occurs and water would drip onto the refrigerator and damage it.

- Careful putting glass bottles in the refrigerator.This may result in breakage of bottles due to external shock or vibration.
- Do not set the temperature setting knob at “5” except when storing frozen products such as frozen food, ice cream and ice. Doing so may result not only in beverages being undrinkable but explosion of cans and possible injuries.
- Do not use a knife, a driver or any sharp object to remove frost from the refrigerator.
- Do not pour water in the refrigerator. Doing so will result in failure from water ingress into the insulation material or mechanical and electrical components. If water collects in the cabinet, wipe it off with a soft cloth.
- The refrigerator needs an adequate ventilation for optimized cooling performance. Insufficient space between the refrigerator and adjacent walls may reduce the cooling performance.
- Food shall be kept in its original package or put in other suitable container when stored in the refrigerator.
- Overstuffing the refrigerator will result in insufficient cooling from poor circulation of cool air and may spoil the stored foods. Keep some spaces between the foods.
- Hot or warm food such as boiled product shall be stored after it gets cool enough.
- It is recommended to pack watery food or products with excessive fragrance when putting in the refrigerator.
- Pre-cool the food and drinks before putting into the

refrigerator. This refrigerator is not capable of cooling food and drink in a short time. It is also recommended to pre-cool inside the refrigerator cabinet before putting in any food.

• When the refrigerator is in operation, do not touch food or its containers, especially those made of metal, stored there with a wet hand. Doing so may lead to frostbite or other injury.

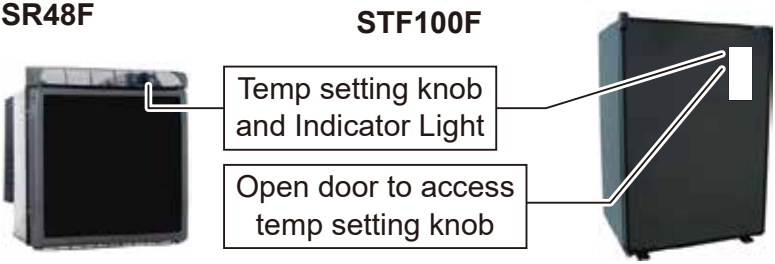
3. Intended use

The refrigerator is suitable for use in cars, boats, caravans or RVs and is designed to operate an angle of less than 30°off level.

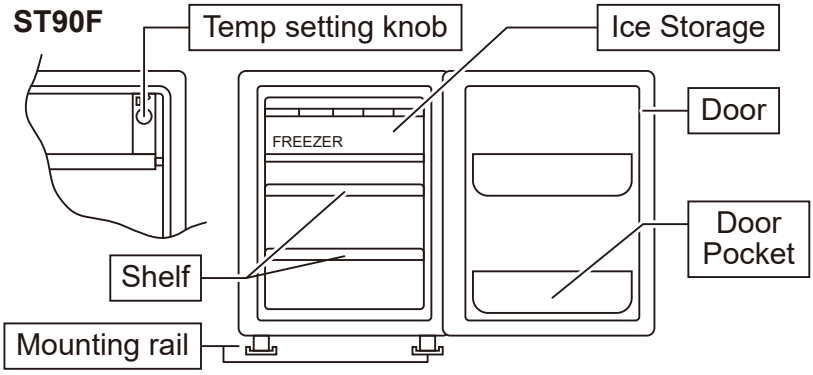
4. Controller and display

■ **SR70F, SR48F**

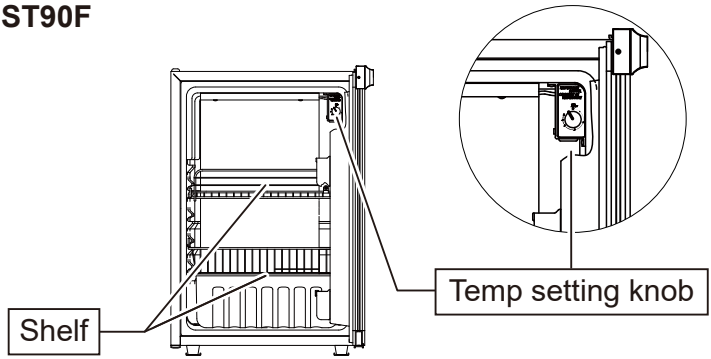
■ **ST90F, STR100F, STF100F**



■ **ST90F**

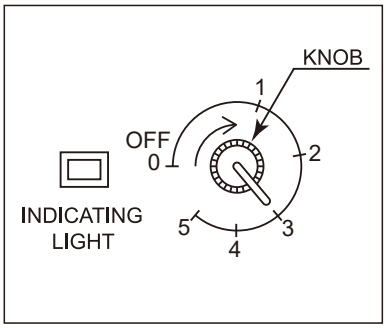


■ **ST90F**



■ **Temperature setting**

Turn the temperature setting knob to change the air temperature inside the refrigerator.



Temp setting position	Inside temperature*	
	SR48F,SR70F ST90F,STR100F	STF100F
0	OFF (Stop)	
1	ON	
3	Approx. 0℃	Approx. -5℃
5	Approx. -6℃	Approx. -15℃

*at an ambient temperature of 30℃ with the refrigerator door closed

5. Installation – general precaution

The refrigerator shall be used in a dry area where there is no chance of being exposed to water splash or other types of liquids or direct sunlight or heat conducted from hot pipes, warm air outlets, cookers, etc.

The refrigerator should be positioned and secured on a solid surface in the vehicle.

Keep the refrigerator away from direct sunlight or a gas stove or heater or heat-generating refrigerator.
Avoid installing your refrigerator close to hot water lines or warm air ducts.
Adequate ventilation for the rear-mounted condenser and suitable distance from each wall specified at section 5.1 is necessary to enable optimized cooling performance and minimized power consumption.

5.1 Ventilation

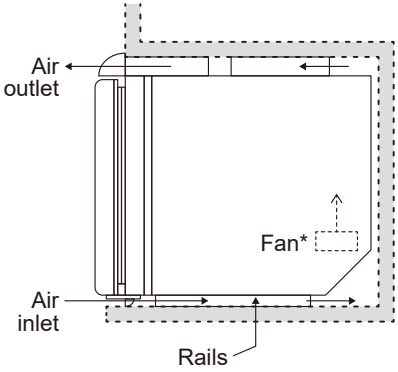
ⓘ NOTICE

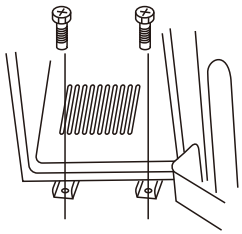
The cooling fan in the rear will be turned on only when the ambient temperature is approximately 95°F or above.

⚠ CAUTION

Do not remove the bottom rails from the refrigerator cabinet. They intend to provide enough space under the cabinet for sufficient ventilation. Failing to keep enough ventilation for cooling will result in reduced product life, poor cooling performance, and excessive current draw from the battery and will also invalidate the warranty.
Refer to the picture below to find the correct ventilation for each corresponding model.

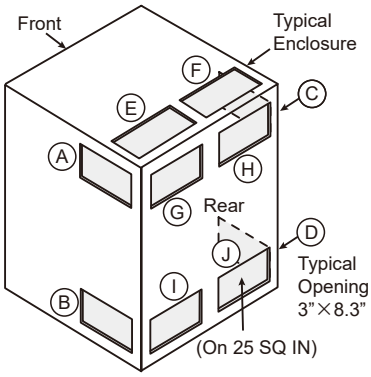
■ SR70F, SR48F

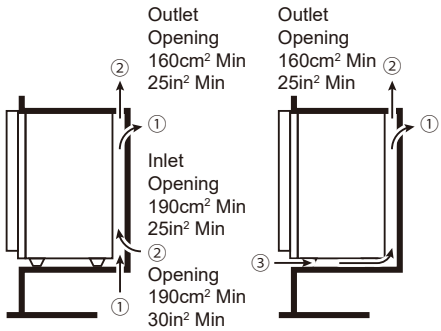




Screw securely to the floor

■ ST90F, STR100F, STF100F





Either of the following pair of ventilation openings shall be made: A-D, A-I, A-J, B-C, B-F, B-H, C-D, C-I, C-J, D-F, D-H, F-I, F-J, G-I, G-J, H-I, H-J. Maintain the airflow volume specified for each opening shown above.

6. Operation

Connect only to either of the following power sources:

- 220-240V AC from wall outlet (the mains)
- 12V or 24V DC battery.

AC and DC voltages may be connected simultaneously, when AC will be automatically selected if both voltages are applied.

ⓘ NOTICE

Before starting to use your new refrigerator, its interior as well as exterior shall be thoroughly cleaned with a wet cloth to avoid hygienic issue.

6.1. Connection to 220V-240V AC

This refrigerator can be connected to a standard domestic power source by using the three-core lead accompanying the refrigerator. First, set the temperature setting knob to "0" (OFF). Then, set it anywhere between 1 and 5 and the green LED will go on. Turn the temperature setting knob to a required setting.

6.2 Connection to 12V or 24V DC battery

This refrigerator can operate on both 12V and 24V DC. Make sure the battery voltage matches with the voltage stated on the refrigerator label. If the battery voltage is too high it will damage the refrigerator.

⚠CAUTION

The switches of other electric appliances or their power cables shall not be connected to the power cables that connect the refrigerator with the battery or other power source. Those external devices may damage the power supply unit of the refrigerator due to the high voltage pulses generated from them. Do not use an extension cord.
The longer the power cable to the refrigerator becomes, the wider the cable's cross section is required. Insufficient cross section will result in voltage drop and lead to poor cooling performance. Refer to the following chart for the

recommended cross section or wire gauge and the fuse amperage.

Distance to Fridge	Wire Gauge	
	Wire Gauge	Fuse Amperage (A)
Less than 12 feet	16 AWG	10
12 to 20 feet	14 AWG	10
Above 20 feet	12 AWG	10

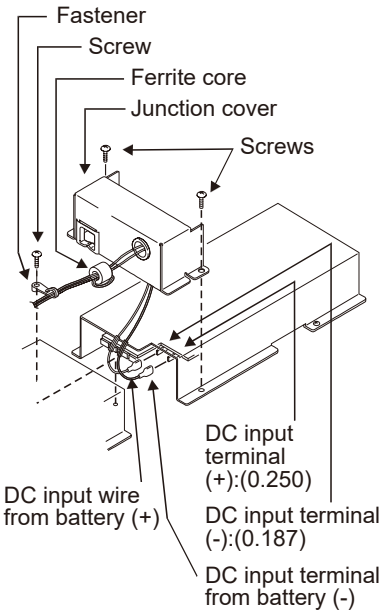
■ Connection inside power supply unit

Follow the procedures below to connect the cables from the power source to the power supply unit of the refrigerator.

-Unscrew the two screws from the Junction cover and open it. Refer to the picture on the right.

-Put the DC input wires through the ferrite core included in the refrigerator. Make two-turn loop through the ferrite core.

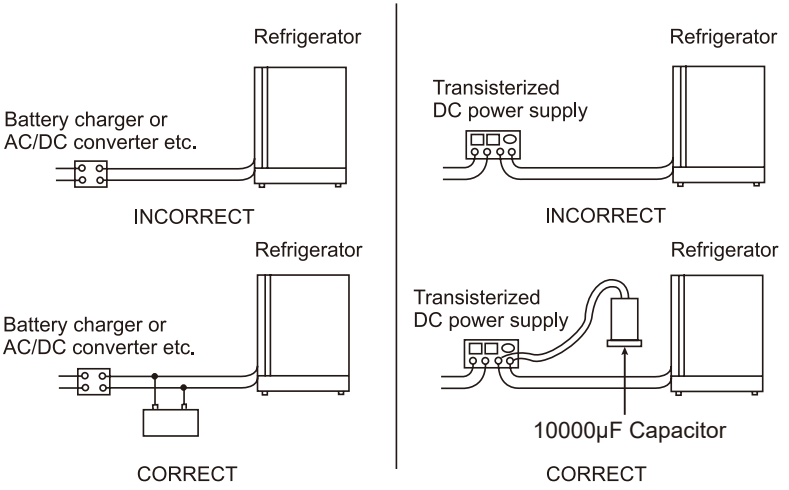
-Then, put the DC input wires through the bushing of the Junction cover and insert their terminals into the DC input terminals of the power supply unit. Make sure the polarity of each terminal matches the other.



-Screw the junction cover to close it.

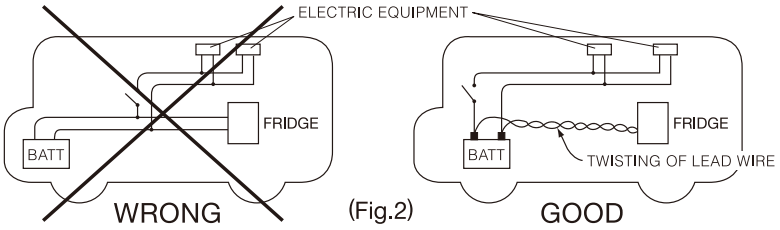
-Put the Fastener over the cables and screw it to the refrigerator cabinet.

If you choose to connect the refrigerator to a battery together with a battery charger, they shall be connected in parallel as shown in the picture below. Do not connect a battery charger alone with the refrigerator. If you choose to connect a DC converter with the refrigerator, a 10000μF capacitor shall be connected in parallel with the converter as shown below. Failing to comply with these will result in damage to the power supply unit of the refrigerator.



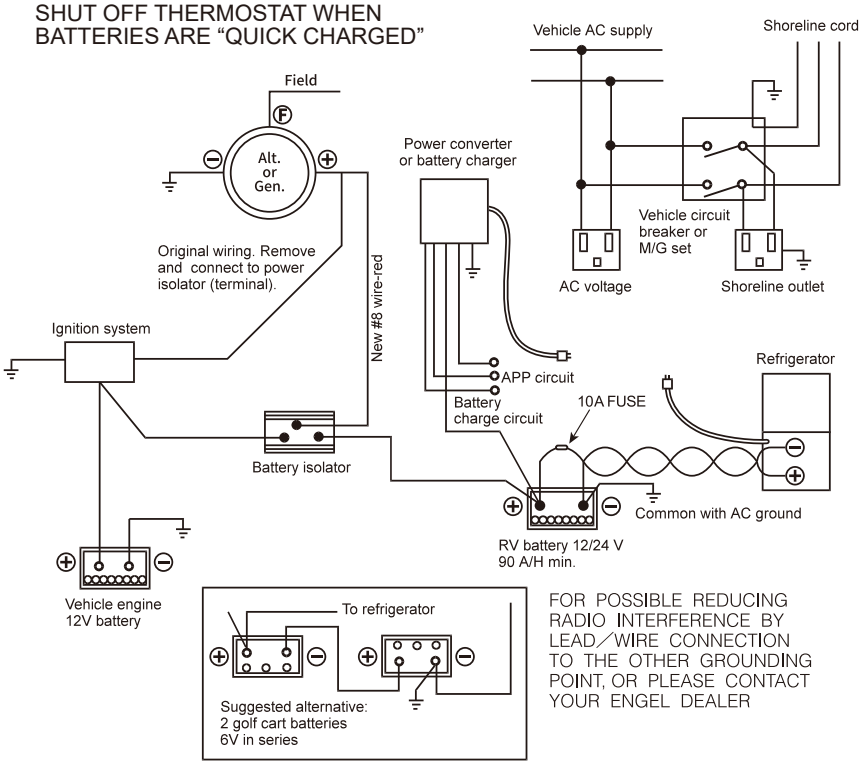
■ Twisting lead wire

To further reduce the radio interference during DC operation, twist the negative and positive cables (use separate cables) together into a spiral form between the battery and the DC power source as shown below.



6.3 Wiring diagram of dual battery hookup

wiring diagram shown below is recommended for dual battery hookup. (See Fig 4)



(Fig.4)

⚠ CAUTION

To avoid damage to the refrigerator in the event of reverse polarity or short circuit, install a 10A fuse in the wiring circuit nearer to the battery.

7. Maintenance of refrigerator

7.1 Cleaning interior and door

Always disconnect the refrigerator from the power source before you clean or service it.

- Clean the interior with a cloth moistened with warm water and wipe again with a dry cloth.
- Clean the door of the refrigerator with a wet cloth.
- Clean the interior condenser to remove dirt (dust etc.) at regular intervals.

ⓘ NOTICE

Never use a brush, powder soap, cleanser, acid, benzene, gasoline, or mineral thinners to clean the refrigerator, as these tend to leave scratches on the plastic coating and painting.

7.2 Defrosting

Due to the humidity within the cabinet, frost will form on the evaporator surface after it has been used for a while.
Frost with as thick as 6mm or more (1/4in) will reduce cooling efficiency. To avoid this, the evaporator needs to be defrosted regularly.
To defrost, turn off and unplug the refrigerator to allow for complete removal of frost from the evaporator.

8. Trouble shooting

Fault	Possible cause	Action
Compressor not working	No power supplied	Check if power is supplied to electronic unit.
	Battery in poor condition.	Check fuse.
	Faulty electronic unit. Electronic unit failure	Check polarity of connectors and cables.
Interior not cold	Ambient temperature too high.	Keep refrigerator sufficiently ventilated.
	Insufficient ventilation Frost on evaporator	Defrost evaporator. (see 7.2 Defrosting)
	Condenser clogged	Clean condenser.

If the problem still persists after going through the chart above, consult an ENGEL service agent or dealer near you.
Never disassemble the refrigerator by yourself. Inadequate repairs can lead to considerable hazards.

9. Disposal

⚠ WARNING

- To prevent the risk of child entrapment inside the refrigerator, do the following before discarding it:

- Remove the door from the refrigerator.

- This refrigerator should not be mixed with household waste when being disposed of.

If you wish to dispose of this refrigerator, contact your local authorities and ask for the correct method of disposal, or specialist dealer for details about how to do this in accordance with the applicable disposal regulations.

Cyclopentane is used in the insulation, which requires a special disposal procedure. Contact your local authorities to find the environmentally safe disposal of the refrigerator.

10. Warranty

The statutory warranty period applies.
If the refrigerator is found to be defective, contact either of the agents whose contact information is found on the last page of this manual or the ENGEL dealer near your location.
For repair and warranty processing, have the following documents accompany the refrigerator.
- A copy of the receipt with purchasing date
- Reason for the claim and/or description of the failure

11. Before initial use

11.1 Reversing door-swing direction – SR70F, SR48F

1. Remove the door from the refrigerator by removing the two bolts each from the bottom hinge and the upper hinge.
2. Remove the bolts from the door latch plate.
3. Install the upper hinge and the latch plate to the opposite side
4. Switch the latch position by following the procedures below.

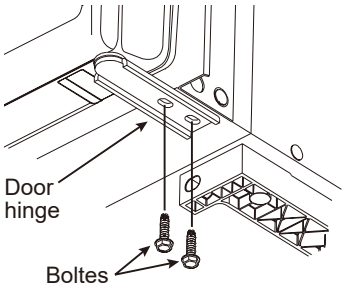
   -Unscrew the screw from the Hinge insert.

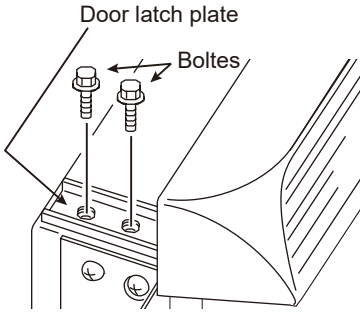
   -Remove the Hinge insert, Latch handle, Latch pin and Coli spring from the door.

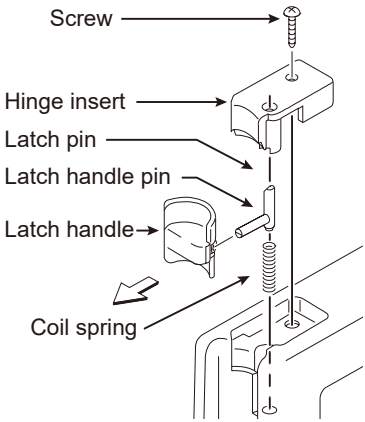
   -Unscrew the Latch handle pin and screw it into the opposite hole of the Latch pin.

   -Turn the Latch handle upside down and put it over the Latch handle pin.

   -Install the Coil spring , Latch handle, and Hinge insert onto the opposite side of the door. Make sure the angled face of the Latch pin faces the cabinet.

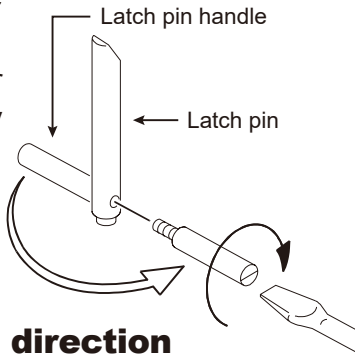






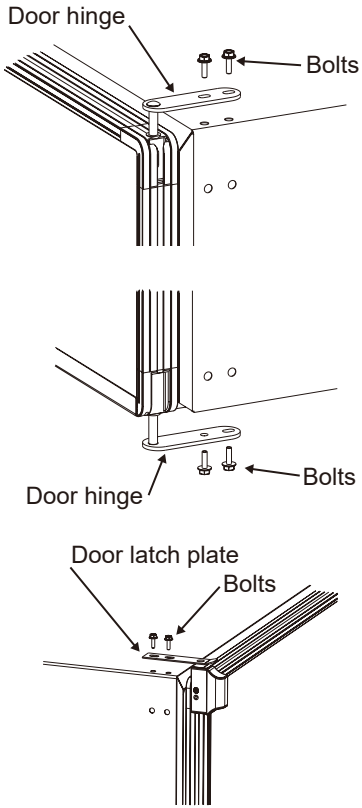
- Tighten the screw to the Hinge insert.

5. Put the door back to the refrigerator and reinstall the bottom hinge by tightening the two screws.



11.2 Reversing door-swing direction – ST90F, STR100F, STF100F

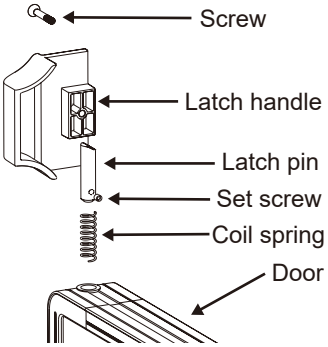
1. Remove the door from the refrigerator by removing the two bolts each from the bottom Door hinge and the upper Door hinge.
2. Remove the bolts from the Door latch plate.
3. Install the upper hinge and the latch plate to the opposite side
4. Switch the latch position by following the procedures below.
   - Unscrew the screw from the Latch handle to take apart the Latch pin and Coil spring.
   - Unscrew the Set screw and screw it on the opposite side of the Latch pin.
   - Insert the Coil spring and Latch pin to the opposite side of the door while making sure the angled face of the Latch pin



faces the cabinet.

- Tighten the Screw to install the Latch handle.

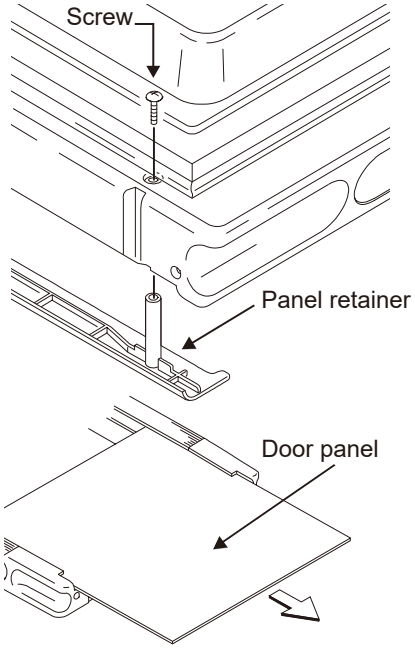
5. Put the door back to the refrigerator and reinstall the bottom hinge by tightening the two screws. Make sure the door gasket touches the cabinet flat and tight when the door is closed.



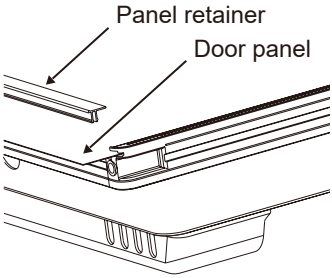
11.3 Changing door panel

1. Remove the door from the refrigerator by removing the two bolts each from the bottom Door hinge and the upper Door hinge. Refer to 11 for the hinge locations.
2. See the pictures below for changing the door panel.

■ **SR70F,SR48F**



■ **ST90F, STR100F,STF100F**



12. Technical data

Model	SR70F-G4-GL	SR48F-G4-WH	ST90F-G4-B
Input voltage:	12/24V ⎓ and 220-240V～ 50/60Hz		
Rated current:	12V ⎓ : 2.5A 24V ⎓ : 1.2A 220-240V～: 0.37A		12V ⎓ : 2.6A 24V ⎓ : 1.3A 220-240V～: 0.37A
Cooling capacity:	+5℃ to -2℃		+5℃ to 0℃
Energy consumption:	141 kWh/annum		145 kWh/annum
Gross volume:	59L	40L	85L
Storage volume:	57L	40L	85L
Climate class:	T(+16°C～+43°C)		
Refrigerant:	HFC-134a		
Insulation blowing gas:	Cyclopentane		
Sound level:	36dB (A)		
Dimensions W x D x H (mm)	506 x 568 x 530	423 x 510.5 x 530	528 x 578 x 781
Weight:	20kg	19kg	28kg

Model	STR100F-G4-B	STF100F-G4-B
Input voltage:	12/24V ⎓ and 220-240V~ 50/60Hz	
Rated current:	12V ⎓ : 3.3A 24V ⎓ : 1.6A 220-240V~: 0.40A	12V ⎓ : 4.2A 24V ⎓ : 2.1A 220-240V~: 0.74A
Cooling capacity:	+5℃ to -6℃	+5℃ to -15℃
Energy consumption:	264 kWh/annum	492 kWh/annum
Gross volume:	95L	95L
Storage volume:	95L	95L
Climate class:	T(+16°C~+43°C)	
Refrigerant:	HFC-134a	
Insulation blowing gas:	Cyclopentane	
Sound level:	36dB (A)	39dB (A)
Dimensions W x D x H (mm)	528 x 578 x 781	528 x 578 x 781
Weight:	31kg	35kg

ⓘ NOTICE

The ambient temperature condition of this technical data is +32°C.The internal temperature of the refrigerator variesdepending on the ambient temperature.Refrigerant HFC-134a contained in the coolant.

M E M O

<AGENT in AUSTRALIA and NEW ZEALAND>

ENGEL DISTRIBUTION PTY LTD.

P.O. Box155 25 SILICA ST CAROLE PARK QLD 4300, Australia

Tel : 1300 302 653

E-mail : admin@engelaustralia.com.au

SAWAFUJI ELECTRIC CO.,LTD.

3, NITTAHAYAKAWA-CHO, OTA-CITY,
GUNMA 370-0344, JAPAN
TEL: +81(0)276-56-7139
FAX: +81(0)276-56-6075

(Cat. No. 5490 349 2100)

Did you know?

That you can go online to register the purchase of your Engel product.

So that you are secure in the knowledge that your purchase is covered by Engel's Australia wide service network simply go to
www.engelaustralia.com.au
and follow the links to the Online Registration and complete the form.
Please note that you will also need to provide a copy of your receipt.

ENGEL
portable fridge-freezers
A LEGEND IN RELIABILITY

< CUT >

THIS ENGEL REFRIGERATOR WAS TESTED BEFORE DELIVERY.

"Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure."
ENGEL AUSTRALIA (Warrantor) warrant that they will repair free of cost or replace at their Capital City premises any part of the appliance which in their opinion is defective due to faulty materials or workmanship.

*Calculated from the proven date of purchase the warranty period is:

3 year : Cooling unit complete (Swing Motor, Condensor, Evaporator), Power Supply, Temperature Control Assembly, Thermistor, Fan Motor/s
1 year : Power Lead/s, Door Pocket/s, Wire Shelves/Basket, Drip Tray, Door Latch Assembly, Cabinet Assembly

■ Specifically precluded from warranty is:
1. Damage caused as a result of connection to incorrect or fluctuating voltage supply.
2. Labour charge involved where sole cause of multifunction is a blown fuse.
3. Damage which in the opinion of the Warrantor is caused by faulty installation, normal wear and tear,misuse, dirt, neglet, accident or other similar causes.

■ The Warrantor does not accept any responsibility for:
1. Liability in respect of loss or expenses arising from the malfunction of this appliance.
2. Freight cost to our Capital City Service Centers.
3. The damage which may be incurred during transit to and from our Capital City Service Centers.
4. Repair to appliance on which modification or repairs have been carried out by persons not specifically nominated by the Warrantor as being authorized service personnel.

"Your attention is drawn to the fact that this warranty is authorized by ENGEL DISTRIBUTION PTY. LTD and cannot be varied by others.

Please staple your purchase receipt to this card. For your nearest service agent. Please call our Engel Customer Service Center Hotline on 1300 302 653

Address:	Engel Distribution Pty Ltd P.O. Box155 25 SILICA ST CAROLE PARK QLD 4300
Email Address:	**admin@engelaustralia.com.au**

Note: So that all relevant information is at hand in case of warranty repair, we suggest that this card is kept within easy reach (ie. glove box of vehicle or pocket of transit bag).

Appliance Model No. _____

Serial No. _____ **Date Of Purchase.** _____