



Instruction Manual (Original Instruction)

Models:

RTWH70-U

FTWH70-U



1001551_A

Table of Contents

INTENDED USE2

SAFETY INFORMATION3

LOCATION6

SHELF AND GN RAILS8

GENERAL DESCRIPTION9

REFRIGERANT / GWP VALUE10

CLIMATE / TEMPERATURE CLASS10

ELECTRICAL CONNECTION11

GENERAL USE12

STARTING UP14

TEMPERATURE SETTING14

DEFROST15

INDICATOR LIGHTS16

SHUT DOWN16

ERROR CODES16

SERVICE OF APPLIANCE18

DOOR GASKET19

LONG TERM STORAGE19

BEFORE CALLING SERVICE AGENT19

DEFROST WATER19

EVAPORATOR SENSOR LOCATION20

REVERSING THE DOOR21

SHELF TO GN PAN CONVERSION22

DISPOSAL23

WIRING DIAGRAM/EI- DIAGRAM/ RTWH70LS4-U24

WIRING DIAGRAM/EI- DIAGRAM/ FTWH70LS4-U25

PIPING DIAGRAM26

ENGLISH

Thank you for choosing this product from HOSHIZAKI.

This manual will advise you how to install, use and maintain your new product.

Before our products leave the factory, they undergo a full functional and quality test.

Should you nevertheless experience problems with the product, then contact your local dealer. HOSHIZAKI representatives and dealers placed all over the world are ready to help you.

Please refer to your dealer for information about the warranty coverage of your new product.

Any warranty is subject to correct use according to specifications in this user manual, where e.g., common maintenance and eventual repairs are carried out by authorized technicians with proper knowledge of the product and only using original spare parts.

Changes in installation and other use of the product other than specified in this manual, might affect the operation and durability of the product.

This manual is written according to our current technical knowledge. We constantly work on updating this information, and we reserve the right to make technical changes.

Intended Use

The product is intended for the storage of foodstuffs in non-household environments but not for the display to or access by customers.

The product is designed for storage at a constant temperature and is not to be used for chilling down or freezing hot/fresh foodstuffs.

The product is only to be used for the purpose for which it has been expressly designed. Any other use could cause that the foodstuff stored in the product is not maintained at the correct temperature or even cause damage to the product.

The product is not suited for storing blood plasma, laboratory samples, pharmaceuticals, or similar substances.

The manufacturer will not be liable or responsible for any damage caused by improper, incorrect, or unreasonable use of the product.

Safety Information

Important

Description of symbol used in this manual



Warning

Lacking observation to these instructions might result in accidents with personal injury.



Important

If these instructions are not observed, the product might be damaged or destroyed.

Be aware that HOSHIZAKI has taken precautions to ensure that the safety of the product is in order.

Please read carefully the following information regarding safety.



It is important, that everyone who are to use or install the product, to have access to this manual.



This appliance can be used by children aged from 8 years 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 use of the appliance in a safe way and understand the hazards involved.



Children should be supervised to ensure that they do not play with the appliance.



The appliance might contain parts with sharp edges in the compressor compartment, and in the inside compartment.



The appliance is not to be transported on a sack truck, there is a danger of losing the balance, causing danger to persons.



Cleaning and user maintenance shall not be made by children without supervision



Do not pull the power cord to disconnect the appliance, or when moving the appliance.



WARNING: RISK OF FIRE / FLAMMABLE MATERIALS

IMPORTANT NOTICE

THESE APPLIANCES CONTAINS SMALL QUANTITY OF FLAMMABLE REFRIGERANT. ALL MACHINES ARE TO BE SERVICED ONLY BY TRAINED TECHNICIANS FOR HANDLING OF HYDROCARBON REFRIGERANT. ALL ELECTRIC COMPONENTS IN THIS COOLER ARE SPARK FREE, WHILE REPLACING PLEASE ENSURE THESE ARE REPLACED WITH GENUINE AUTHENTICATED COMPONENTS.

IMPORTANT REFRIGERANT AWARENESS

WARNING

Refrigeration system charged with flammable refrigerant.



WARNING: RISK OF FIRE / FLAMMABLE MATERIALS

R-290

R-290 (refrigerant grade propane only)

Ensure all operatives are aware of the cabinet being charged with highly flammable refrigerant.

R-290 REFRIGERANT WARNING

- These appliances contains small quantity of flammable refrigerant.
- All machines are to be serviced only by trained technicians for handling of hydrocarbon refrigerant.
- This refrigerator/freezer is designed to operate at 230V AC, 50Hz only



WARNING: Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building in.



WARNING: Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

- Do not allow any sharp objects to come in contact with the refrigeration system to avoid damage to the refrigerant circuit.



WARNING: Do not damage the refrigeration circuit.

- Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.
- Do not place electrical items or cooking equipment nearby. Keep away from substances which could cause ignition and ensure good ventilation is always available.
- Ensure careful installation, handling, and disposal to avoid safety hazards. If accidental damage occurs, keep the appliance away from open fires or devices that produce sparks, unplug the appliance, and call an authorized service agent. Thoroughly ventilate the room in which the appliance is situated for several minutes.



WARNING: Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer.

Location

When receiving the cabinet, check the packaging material for damage.

If any damage occurs at the packaging material, it should be considered if the cabinet might have been damaged too. If the damage is substantial, please contact your dealer.

How to remove transport pallet:

- Cut the shipping strip and remove the carton (see Fig 1)
- The set-up place must be level and horizontal.
- Take out the accessory legs/castors
- Remove the two M20 bolts from the bottom of the unit (see Fig 2)
- The cabinet can be lifted off the pallet to remove wooden pallet (see Fig 3)
- Screw the castors (see Fig 4)
- Do not tilt the unit more than 45° when mounting the legs/castors
- Carry the unit by holding bottom
- The locking devices of the two front castors must be activated, when the product is in place (see Fig.5)

 This task required at least 2 persons

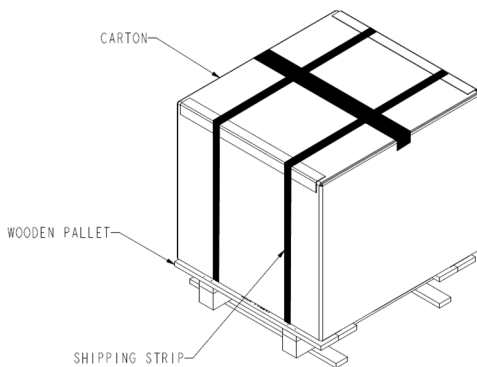


Fig.1

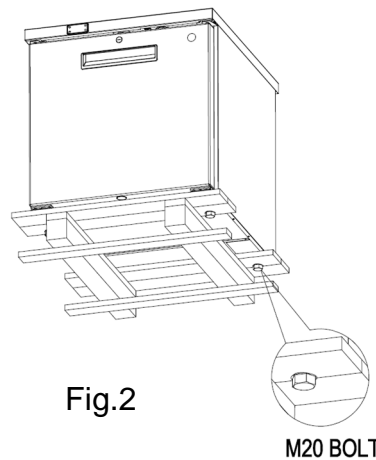


Fig.2

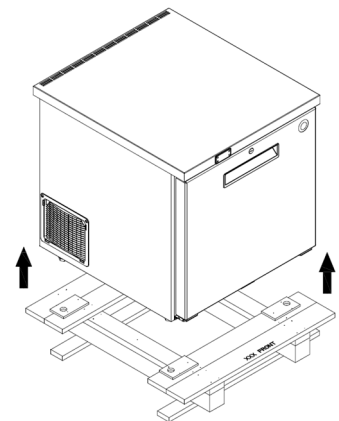


Fig.3

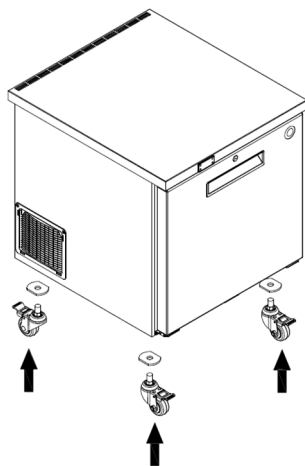


Fig.4

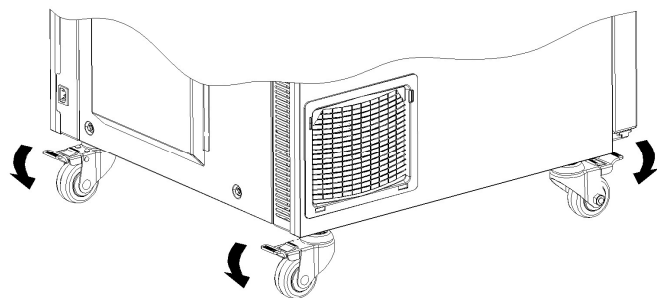


Fig.5



Do not transport / handle movement in horizontal position. If the cabinet has been transported recently, it must stand upright at least 2 hours before it is started to allow the oil from the compressor to run back.



Because of the heavy weight of the product, the floor might be damaged or scratched when moving the product.



Correct set up gives the most effective operation.
The product should be located in a dry and adequately ventilated room.



To ensure efficient operation, it may not be placed in direct sunlight or against heat-emitting surfaces. The product is designed to operate in an ambient temperature between +16°C and +43°C.



Avoid placement of the product in a chlorine/acid-containing environment (swimming bath etc.) due to risk of corrosion.



Parts of the product are equipped with a protecting film, which should be removed before use.



Clean the product with a mild soap solution before use.

To ensure good ventilation, its top must be open

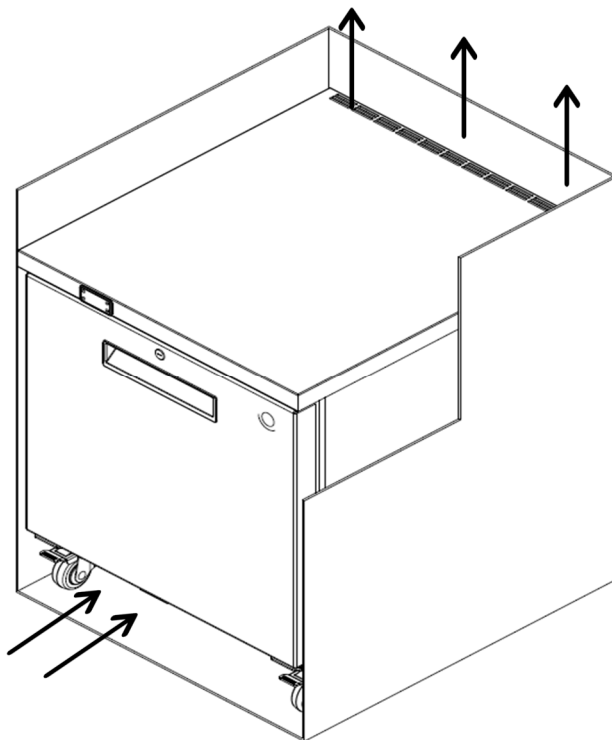


Fig.6

When moving to another place

- During secondary transportation or moving equipment to other places, make sure door is secured to its place.
- This will avoid sagging and door alignment issues after installation.
- Make sure there is no product inside.
- Secure door with packing tapes to avoid rotation of door.

Shelf and GN Rails

- The shelf is adjustable in 25,4 mm increments.
- Adjust the shelf rails according to the height of stored items.
- To attach the shelf rail, first insert in rear rack slot then in front rack

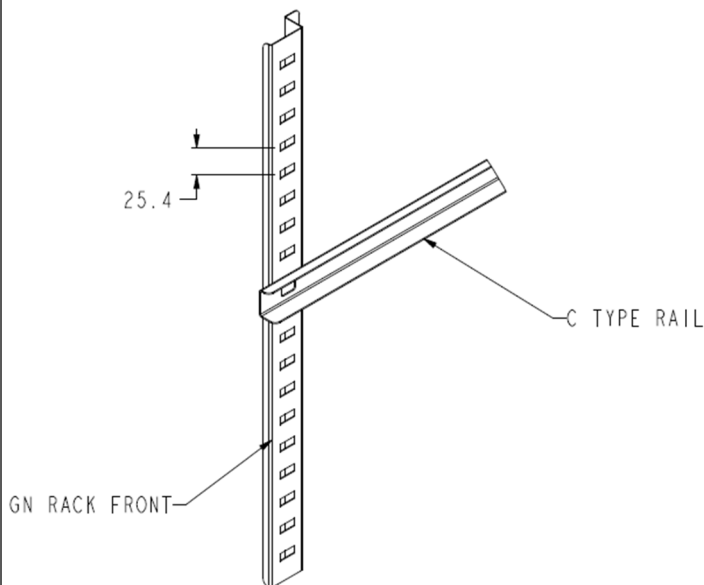


Fig.7

Optimizing the Energy Consumption

- Correct set up gives the most effective operation.
- The product should be located in a dry and adequately ventilated room.
- To ensure efficient operation, it may not be placed in direct sunlight or against heat emitting surfaces. The product is designed to operate in an ambient temperature between +16° and +43°C.
- Do not keep the door open for too long.
- Do not set the temperature at lower setting.

General Description

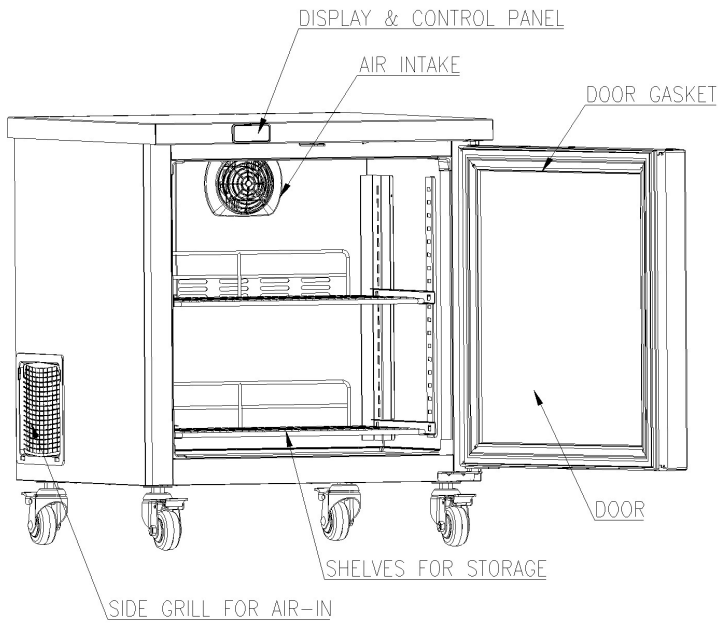


Fig.8

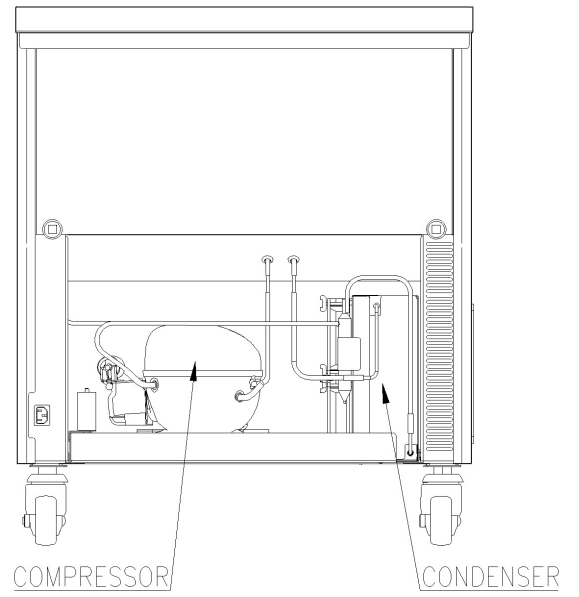


Fig.9

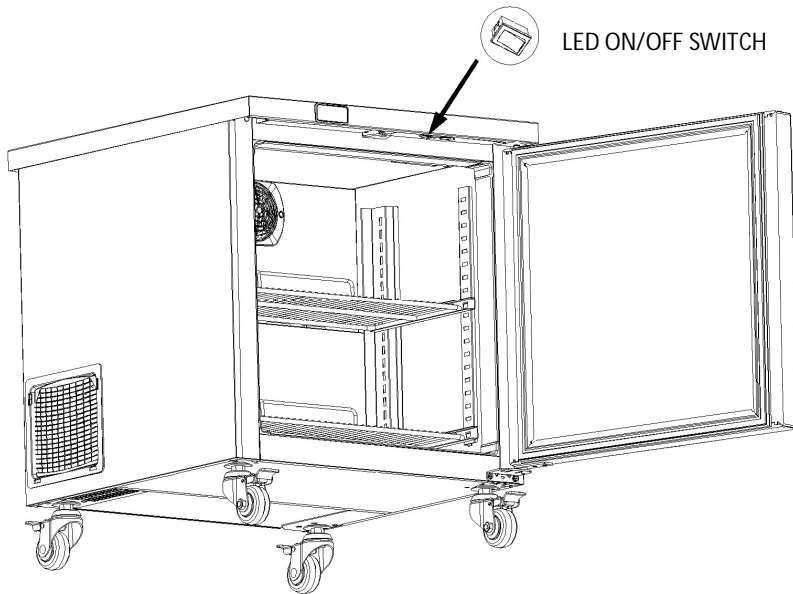


Fig.10

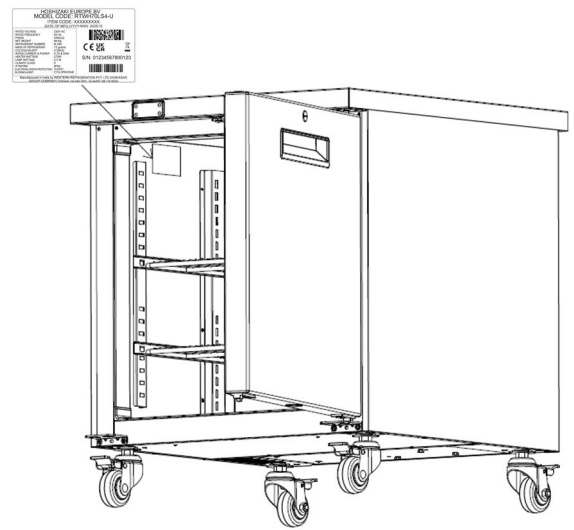


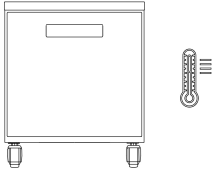
Fig.11

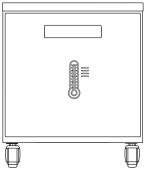
Refrigerant / GWP Value

Refrigerator / Freezer	Refrigerant	Charge (kg)	GWP	CO2 equivalent
RTWH70LS4-U / RTWH70LS4-E	R-290	0,072	3	0,00022
FTWH70LS4-U / FTWH70LS4-E	R-290	0,055	3	0,00017

Climate / Temperature Class

Products are tested according to the following climate and temperature classes. Information about the product's climate and temperature class can be found on the name plate

Climate class		Models Name
5	40°C, 40% RH	RTWH70LS4-U
5	40°C, 40% RH	FTWH70LS4-U

Temperature class		Models Name
M1	+5°C	RTWH70LS4-U
L1	-18°C	RTWH70LS4-U

Electrical Connection

Read the text below thoroughly before electrical connection. Connect the power cord found at the back of the cabinet to main supply inlet.



The product is intended for connection to alternating current. The connection voltage (V) and frequency (Hz) are shown on the name plate in the cabinet (see Fig.11). Only the supplied cord is to be used.



Never use an extension cord for this appliance! If a wall socket is placed in a longer distance than a length of the supplied power cord, contact an electrician to establish a wall socket within the range of the supplied power cord.



If the product is defective, it must be examined by a properly skilled technician with proper knowledge of the product during the warranty period.



Outside the warranty period, it is advisable to use the service advised by your dealer. If this is not a case, assistance is required from a properly skilled technician with proper knowledge of the product.



It is recommended to install protective device externally at installation site: MCB6A

Always disconnect the power if interruptions in power supply occur, and when electrical parts are removed/put on, and before cleaning and maintenance of the product.

Repairing of electrical/technical parts may only be performed by properly skilled technicians with proper knowledge of the product.

If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent

Do not use the product before all coverings are installed, so that live or rotating machine parts cannot be touched.

The product is not to be used outdoor.

All earthing requirements stipulated by the local electricity authorities must be observed. The plug and wall socket should then give correct earthing. If necessary, contact an electrician.



Make sure the product is switched off at the socket before service is performed on electrical parts. It is not sufficient to switch off the product by the START/STOP key as there will still be voltage to some electrical parts of the product.

General Use



Do not damage the refrigeration system parts.



During normal operation, some parts of the refrigeration system in the compressor compartment might reach high temperature and could therefore cause burns if touching these components.



Do not use electrical devices inside the product.



To ensure correct and efficient air flow in the cabinet, the shaded areas must be kept free of items (see Fig.17 & 18).



All items to be stored, that are not wrapped or packed, must be covered in order to avoid unnecessary corrosion of the inner parts of the cabinet.



If any controller parameters are changed from default, this could cause that the product to not function normally, and harmful temperature could damage items that are kept inside the product.



If the product is turned off, wait minimum 3 minutes before turning it on again.
Maximum loading of wire shelf: 30 kg



Do not store explosive substances such as aerosol cans with flammable propellant in this appliance

Do not overpack the product with foods. Allow some space between them to ensure a good airflow.

Moist or fresh foods and those with a strong smell should be wrapped up in a plastic film or packed in a container. Otherwise, the food may dry out or give their smell to other foods.

Foods containing acetic acid or yeast should be wrapped up in a plastic film. Otherwise, they may accelerate corrosion of the evaporator and metal parts, resulting in failure.

The A-weighted emission sound pressure level is below 70 dB(A) when measured in standard condition.

DO NOT PLACE PRODUCTS
BELOW THE BOTTOM
SHELF SUPPORT

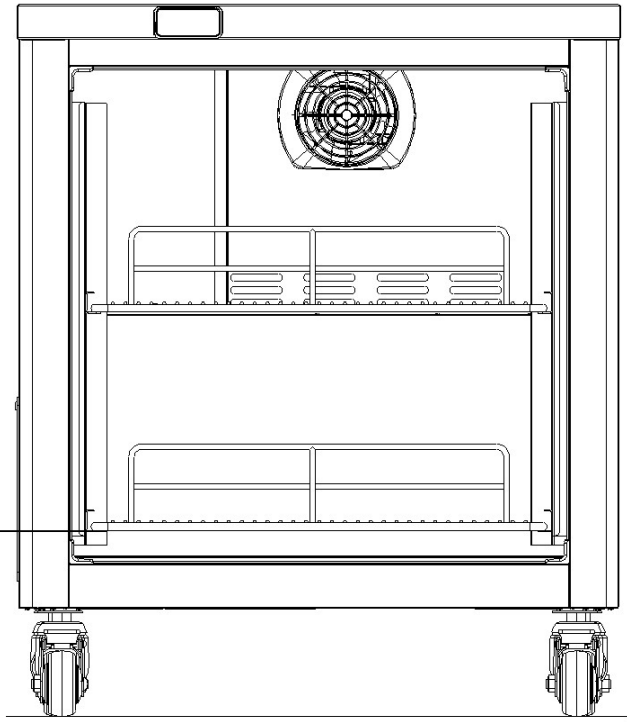
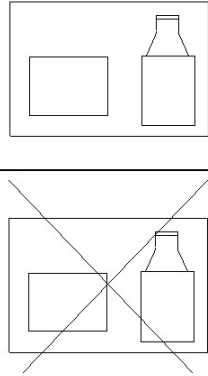


Fig.12

LOAD LIMIT LINE

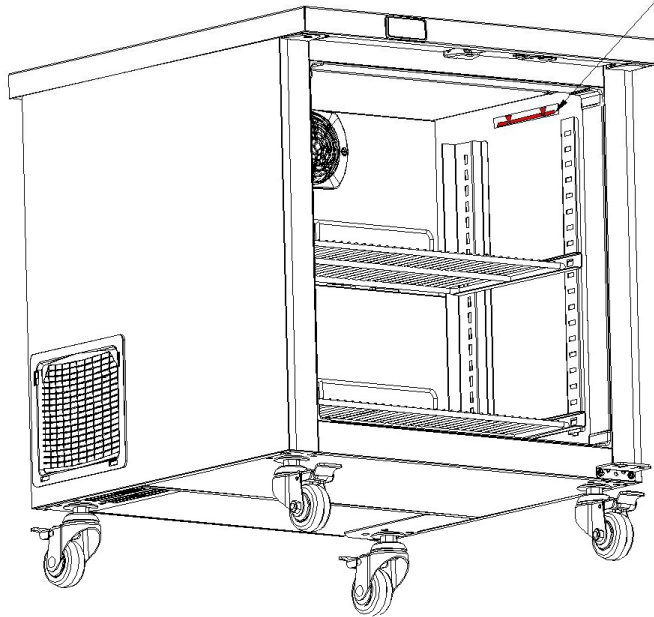
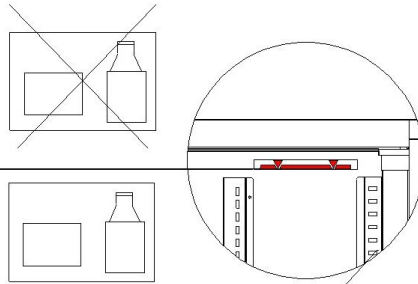


Fig.13

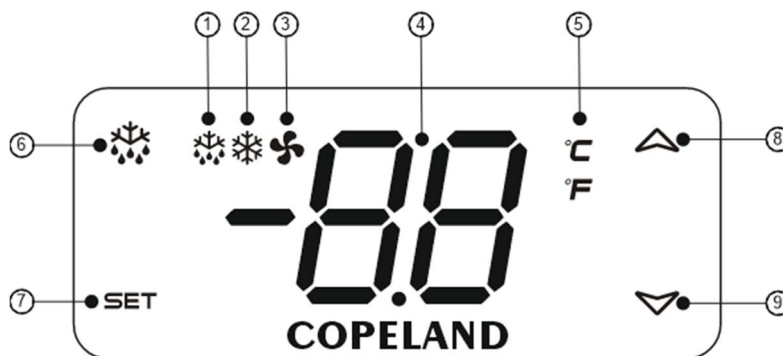
Starting Up

- Plug in the unit.
- The compressor and condenser fan motor will start in 3 minutes.

Temperature Setting

- The temperature range given below is only the adjustable range. The actual cabinet temperature depends on the ambient temperature and other conditions.
- The cabinet temperature is factory-adjusted to 2°C for the Refrigerator and -20°C for the Freezer. If necessary, readjust the temperature as follows.

Display:



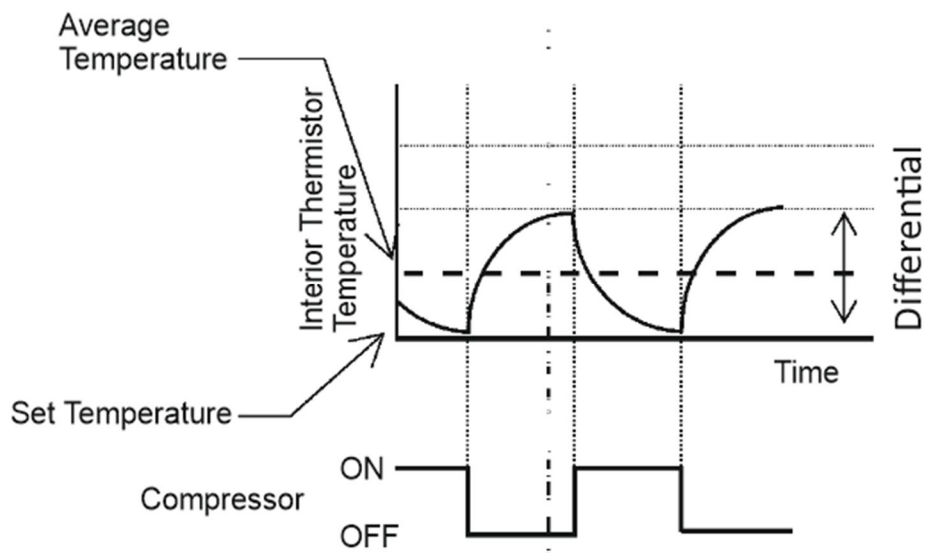
1. Defrost Indicator
2. Compressor Indicator
3. Fan Indicator
4. Screen
5. Measurement Unit Display
6. Defrost Key
7. Set Key
8. Up Key
9. Down Key

1. Push the SET key for more than 2 seconds to change the Set point value;
2. The value of the set point will be displayed and the “°C” LED starts blinking;
3. To change the Set value, push the up or down arrows within 10s.
4. To memorise the new set point value, push the SET key again or wait 10s.

Function	Set range	Default	Unit
Temperature Setting RTWH	-2 to +12	2	°C
Temperature Setting FTWH	-7 to -23	-20	°C

The displayed cabinet temperature is adjusted to be almost equal to the temperature at the center of the cabinet without foods. but it can be different from the actual temperature depending on arrangement of stored foods, frequency of door opening or measuring points.

The compressor stops when the cabinet temperature reaches down to the set temperature or minimum compressor ON time whichever comes later, and starts when the cabinet temperature rises to the set temperature + differential or minimum compressor OFF time whichever comes later. The average cabinet temperature will be around the set temperature



Defrost

Automatic defrost cycle

Freezer/ Refrigerator:

The automatically defrost the evaporator after 5 hours from previous defrost or from refrigeration start or based on auto defrost start temperature. the defrost indication will turn on and display the message "dF"

Manual defrost cycle





Freezer/ Refrigerator:

To start the manual defrost cycle, press the defrost key for 2 seconds. The defrost indicator will turn on and display the message "dF".

Note: Manual defrost will be activate only encase all the defrost related conditions are fulfilled.

Indicator Lights

Refrigerator / Freezer

Indicator	Symbol	Status	Function
Compressor		On	Compressor on
		Off	Compressor off
		Flashing	Compressor start delay
Evaporator Fan		On	Evaporator fan running
		Off	Evaporator fan off
		Flashing	Compressor is in time delay and about to start
Defrost		On	Defrosting
		Off	Measurement unit
Temperature		Flashing	Programming mode

Shut Down

- Before shutting down the unit, move the stored foods into another unit.
- Switch off & unplug the unit.
- When preparing the unit for long storage, clean the cabinet interior and door gaskets, dry them thoroughly and store the unit in a dry place.

Error codes

Troubles without error indication

Refrigerator

Code	Possible Cause	Operation and Remedy
P1	Cabinet sensor error	Compressor will follow cycle of 10min on and 10min off. Press any key to stop beep. When troubleshooting is over, system recalculates compressor delay time. Immediately contact to an authorized HOSHIZAKI service company.
P2	Defrost sensor error	Press any key to stop beep. Immediately contact to an authorized HOSHIZAKI service company.

Freezer

Code	Possible Cause	Operation and Remedy
P1	Cabinet sensor error	Compressor will follow cycle of 20min on and 10min off. Press any key to stop beep. When troubleshooting is over, system recalculates compressor delay time. Immediately contact to an authorized HOSHIZAKI service company.
P2	Defrost sensor error	Press any key to stop beep. Immediately contact to an authorized HOSHIZAKI service company.

The code "dF" is not an error code but indicates the unit is in defrost cycle.

Troubles without error code indication

1. Unit fails to operate:
 1. Unplugged.
 2. Power failure.
 3. Main power supply disconnected.
 4. Switch off from controller.

2. Poor cooling performance:
 1. Ambient temperature too high (above 43°C).
 2. Door(s) opened too often.
 3. Cabinet temperature setting too high.
 4. Too packed with foods.
 5. Air circulation path blocked.
 6. Door(s) left open.

3. Condensation around door(s):
 1. Ambient humidity too high.
 2. Door(s) not closed properly.

4. Noise:
 1. Normal operating sounds of compressor or condenser fan.

5. Frosting inside compartment:
 1. Ambient humidity too high.
 2. Door(s) opened too often.
 3. Door(s) not closed properly.
 4. Too packed with foods beyond load line.

Service of Appliance

- Disconnect the Appliance from power source during servicing & when replacing parts.
- For good performance of cabinet, clean the condenser once in a month.
- Clean the dust from condenser by means of soft wire brush, blower or vacuum cleaner.
Note: Do not use water for cleaning condenser.
- Do not touch or wet the machine compartment parts. This could result in failure or breakdown.
- To prevent possible damage, do not clean the plastic parts with water above 40°C
- The refrigerating system and the hermetically sealed compressor require no maintenance - they merely must be kept clean.
- If refrigeration fails, first investigate whether the unit has been unintentionally disconnected or switched off at the socket, or whether a fuse has blown.
- If it is not possible to find the cause of the refrigeration failure, please contact your dealer.
- When reporting a malfunction please state the type and serial number (S/N) of the cabinet. This information is found on the name plate, see Fig. 11.

Interior, Exterior, Shelf

- Disconnect the appliance from power source before cleaning.
- Clean the interior and exterior at least once a week for sanitation.
- Clean off the interior and exterior with a soft cloth soaked in cold or warm water containing the proper amount of neutral cleaner and wrung dry. Do not use a water jet to clean the machine compartment.
- Chemical agents other than neutral cleaner might cause damage to the interior and exterior surfaces.
- Any remaining detergent will damage metal or plastic surfaces. Use a soft cloth dampened with warm water to wipe it off.
- Do not use the following items. They could damage painted or plastic surfaces:
Polishing powder, alcohol, thinner, benzine, acidic or alkaline detergent, hot water, petroleum, soap powder, metal scourer or brush, etc. Especially detergent to clean grease on ventilator or microwave.

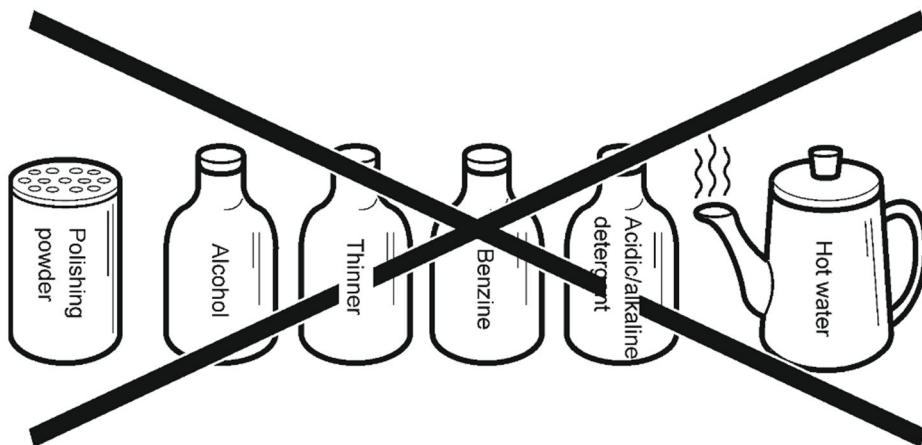


Fig.14

Note: Some solutions other than the above may also damage painted or plastic surfaces. Immediately stop using such solutions if they cause any problems.

- The door gasket and its contact surface get soiled easily. Clean every surface of these parts thoroughly. Remnants of food will accelerate aging.
- Use a cloth to wipe off any water staying inside the cabinet.

Door Gasket

- This chapter deals with the importance of a well-functioning door gasket.
- The door gasket is an important part of refrigerator/freezer. A door gasket with reduced functionality, reduces the tightness of cabinet. This might cause increased internal humidity resulting in an iced-up evaporator (leading to reduced refrigeration capacity), and in worst case reduced lifecycle of the cabinet.
- Therefore, it is important to be aware of the condition of the gasket. Regular inspection is recommended.
- The gasket should be cleaned regularly with a mild soap solution.
- If a gasket needs replacement, contact your dealer.

Long Term Storage

- If the product is taken out of operation, and need to be prepared for long-term storage, clean the inside compartment, the door and door gasket thoroughly with a hot soapy damp cloth.
- Eventual remnants of food do create mold.
- It is advisable to leave the cabinet open during long term storage, in order to minimize the risk of bad smell and the building of mold inside the cabinet.

Before calling service agent

- If the screen on the operation panel indicates an error code or something seems wrong with the unit, check for possible causes according to the following instructions. If the problem still exists, immediately contact an authorized HOSHIZAKI service company.
- When contacting a service company, let them know the model name, serial number, date of installation (see warranty card) and state of the trouble.

Do not attempt to repair the unit yourself

Defrost Water

The cabinet produces water during defrosting, which is led into a tray in the compressor compartment. a re-evaporation pipe from the refrigeration system, placed in the tray, re-evaporates the water

It is recommended to clean the tray and water trap when necessary - at least once a year. Remember to disconnect the cabinet before cleaning.

Be careful not to damage the re-evaporation pipe during cleaning.

Evaporator sensor location

Freezer

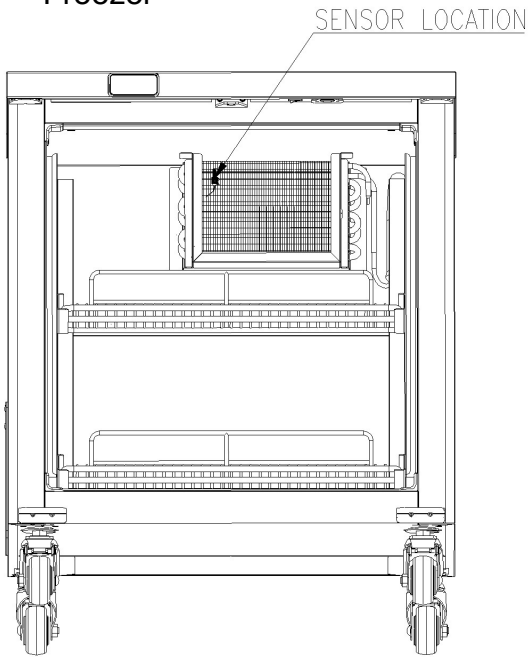


Fig.15

Refrigerator

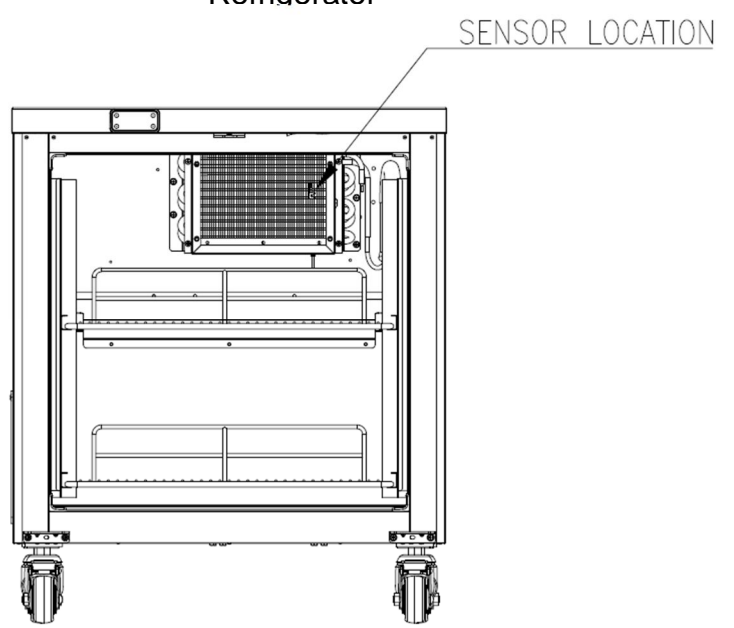


Fig.16

Internal Airflow pattern

Freezer

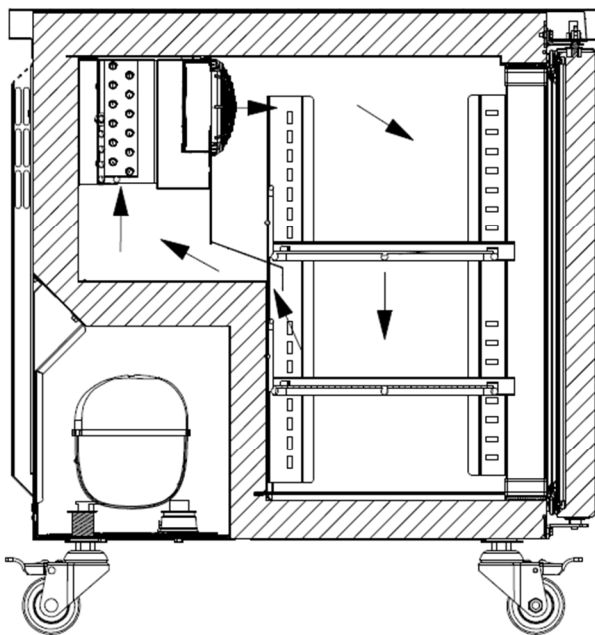


Fig.17

Refrigerator

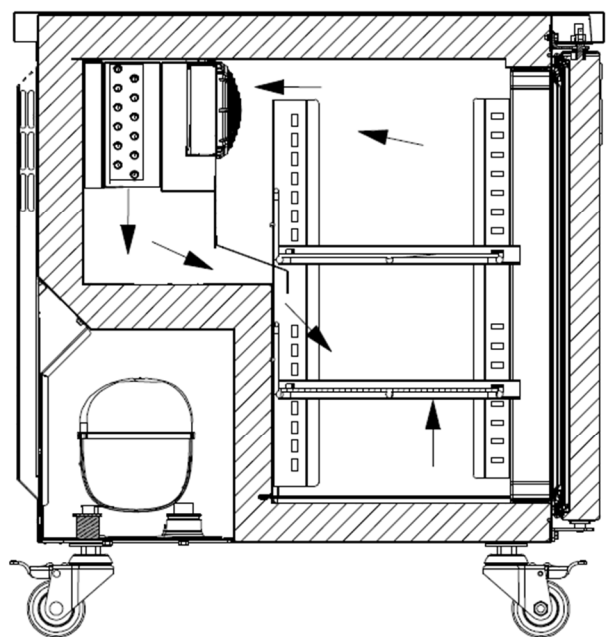


Fig.18

Reversing the Door

The door can be changed from righthand-hinged to lefthand-hinged, or vice versa. To do so, proceed as follows:

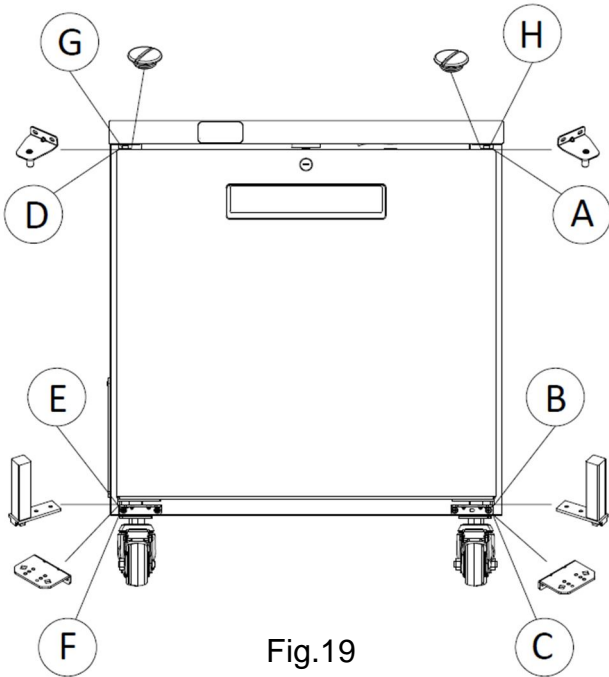


Fig.19

1. Switch off the power at the mains socket.
2. Remove the top cover back side screws and pull top cover a little forward, and then lift it upward.
3. Remove the top hinge from position A.
4. Dismantle the bottom hinge & concealed hinge from position B & C mount it at position F & E.
5. Remove bush from position G and fix it at position H.
6. Mount the top hinge at position D
7. Fasten the top cover same as before.
8. Apply power to the cabinet again.
9. In case of gasket gap in cabinet, use hinge spacer. You can find these spacers in plastic bag where manual and keys are kept.

The door should only be reversed by a service electrician from HOSHIZAKI or an authorised refrigeration company with knowledge of HOSHIZAKI's products

Component	Component's view
Top Hinge	
Bottom hinge	
Concealed hinge	
Spacer	
Bush	

Shelf to GN pan conversion

The shelves can be changed from Shelves to GN pan

Shelves

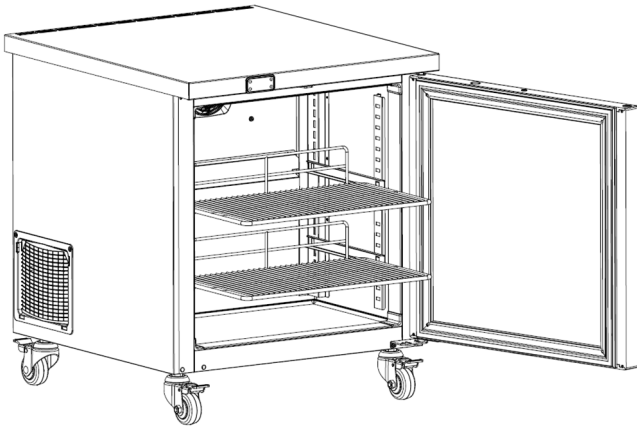


Fig.20

GN pan

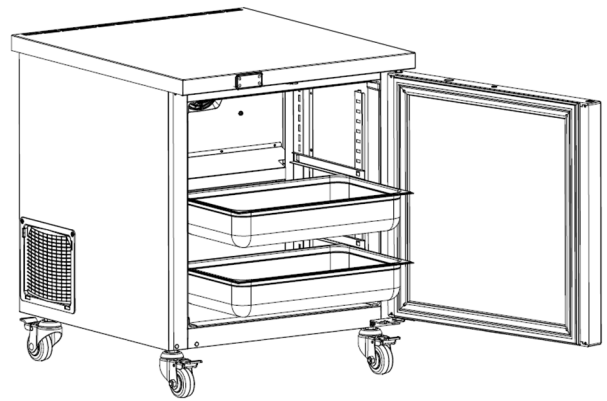


Fig.21

Disposal

Electrical and electronic equipment (EEE) contains materials, components and substances that can be dangerous and harmful to human health and the environment if the waste (WEEE) is not disposed of properly.

Products that are labelled with a "crossed-out wheelie bin" are considered electric and electronic equipment. The crossed-out wheelie bin symbolizes that waste of this type cannot be disposed of with unsorted municipal waste but must be collected separately.

Contact your local dealer when the product needs to be disposed of.

Please be aware of not damaging the refrigeration system and piping when a product is taken out of use. This will prevent the uncontrolled escape of the refrigerant from the refrigeration system.

The below only concerns the United Kingdom.

Disposal of an old cabinet is only available when we are delivering a new one at the same time. Cabinets must be fully defrosted and emptied prior to collection.

We recognise that our products for the catering market are considered as WEEE when they become obsolete.

B2B Compliance will on our behalf deal with all areas of our responsibilities when collecting and disposing of equipment which falls under the UK WEEE regulations.

B2B Compliance can be contacted on telephone number **0117 301 8829**.

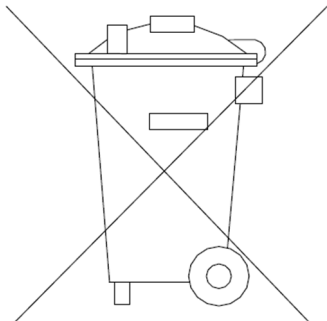
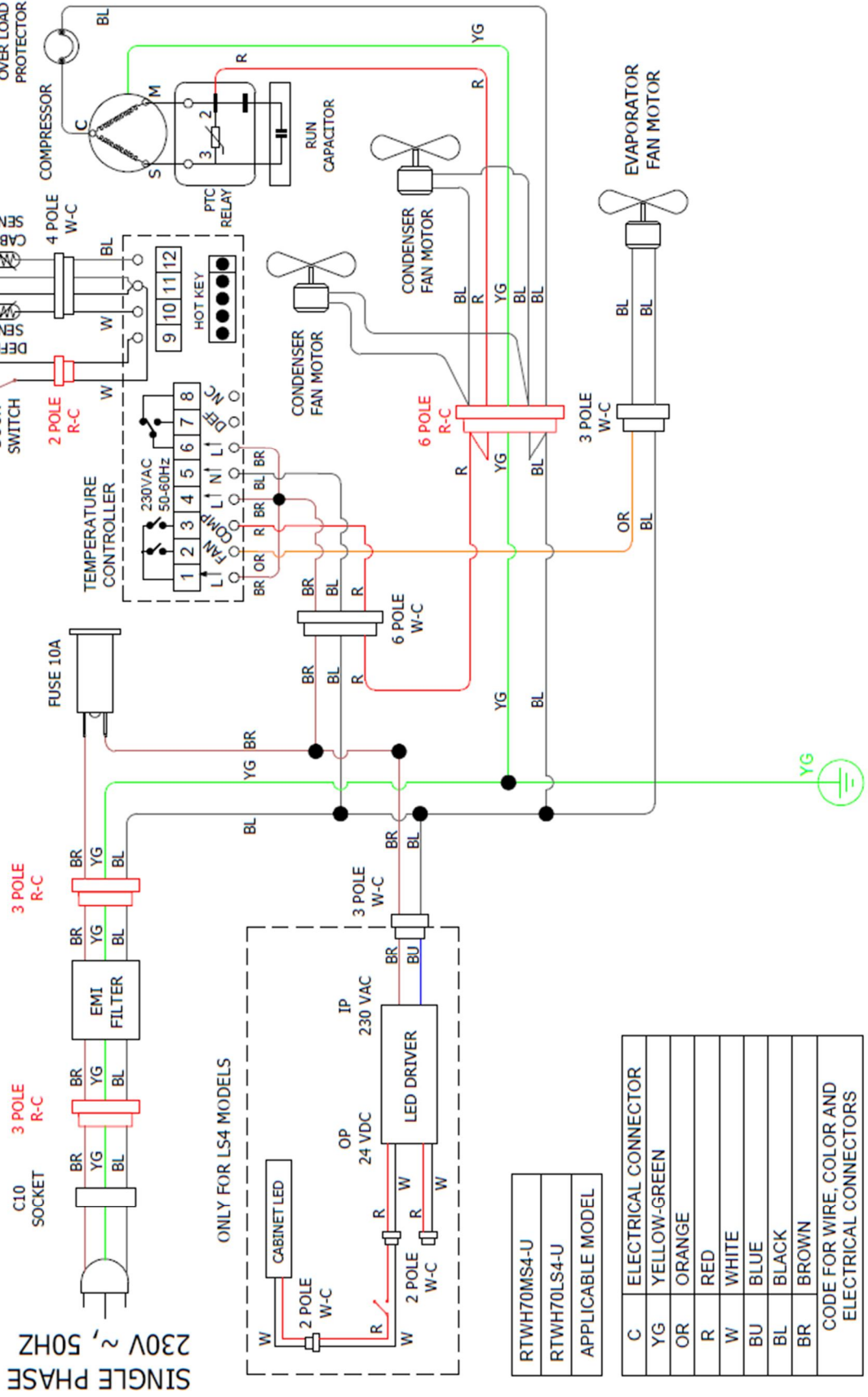


Fig.22

A0600088_A

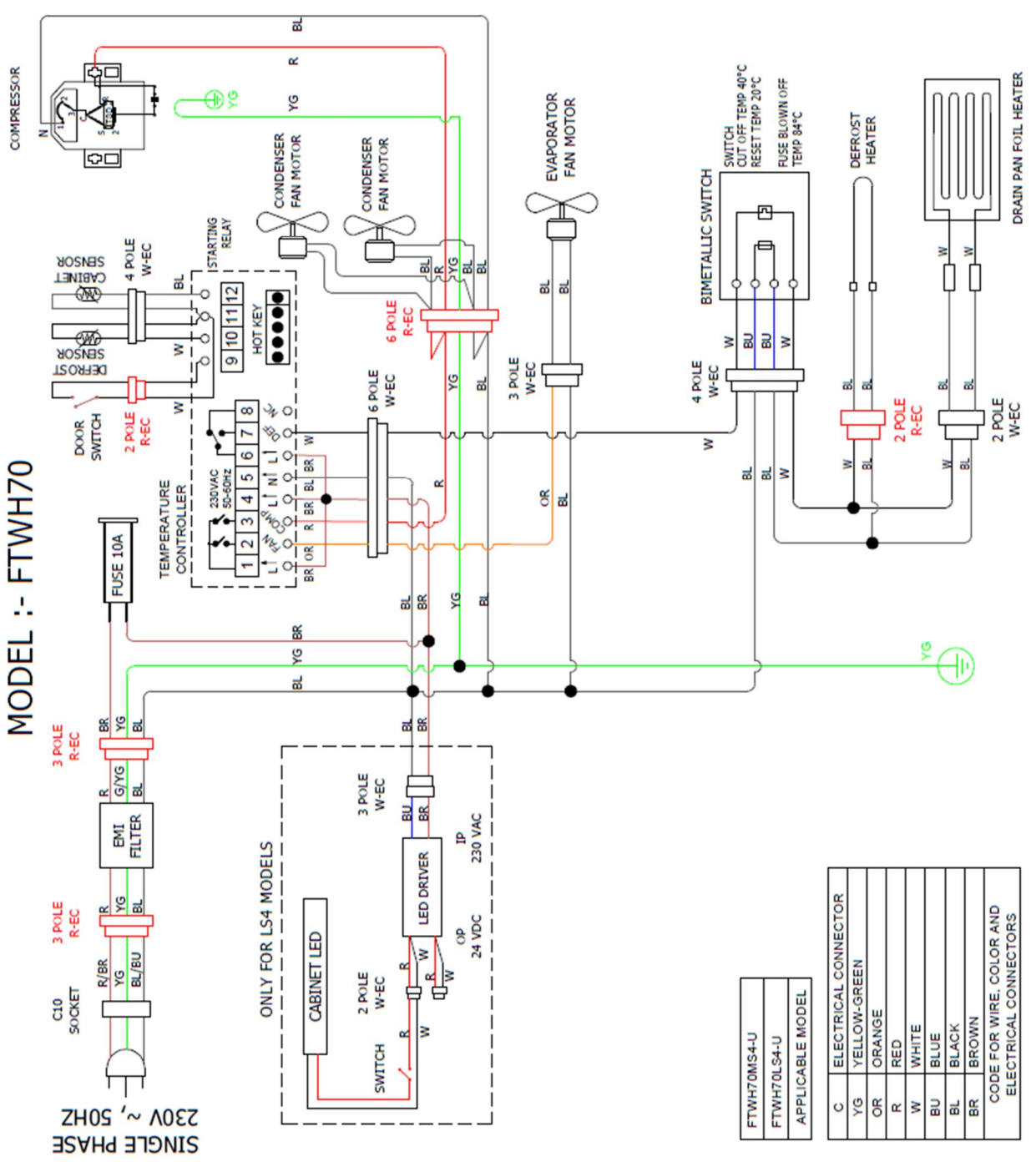
HOSHIZAKI COMMERCIAL REFRIGERATOR MODEL : RTWH70-U



Wiring diagram/EI- Diagram/ FTWH70LS4-U

HOSHIZAKI COMMERCIAL REFRIGERATOR MODEL :- FTWH70

A0600089_B

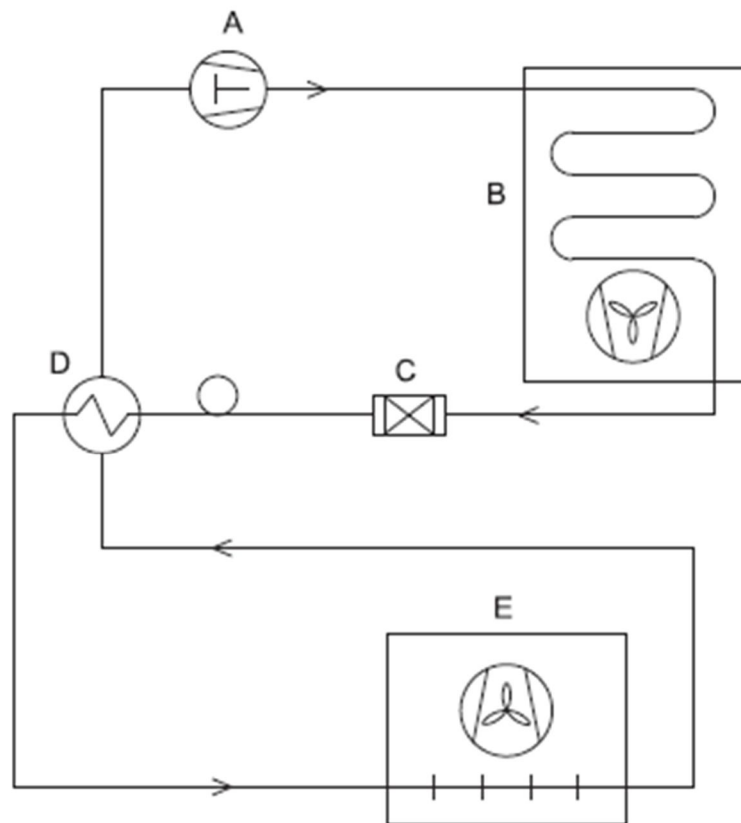


FTWH70MS4-U
FTWH70LS4-U
APPLICABLE MODEL

C	ELECTRICAL CONNECTOR
YG	YELLOW-GREEN
OR	ORANGE
R	RED
W	WHITE
BU	BLUE
BL	BLACK
BR	BROWN

CODE FOR WIRE, COLOR AND ELECTRICAL CONNECTORS

Piping Diagram



	GB
A	Compressor
B	Condenser
C	Filter drier
D	Heat exchanger
E	Evaporator