



Instruction Manual (Original Instruction)

Betjeningsvejledning

Bedienungsanleitung

Mode d'emploi

Gebruiksaanwijzing

Bruksanvisning

Manuale di istruzioni

Manual de instrucciones

Bruksanvisningen

Руководство пользователя

COMPACT SERIES

K220/F220/KG220

K420/F420/KG420

FG220/FG420



0506931_M

Intended use	12
Safety information	13
Location	16
Optimizing the energy consumption	18
General description	19
Refrigerant / GWP value	19
Climate / temperature class	20
Electrical connection	20
General use	21
Starting up	23
Temperature setting	24
Temperature alarm	24
Error codes	25
Defrosting	25
Defrost water	26
Keylock	26
Illumination	26
Controller Connections	27
Evaporator Sensor Location	28
Reversing the door	29
Cleaning	30
Air Duct Removal	30
Door gaskets	31
Long term storage	31
Service	31
Disposal	32
EI-diagram / Wiring diagram / Schaltbild	225
EC-Declaration of conformity	230

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 symbols 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.



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



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



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.



R-600a

WARNING: RISK OF FIRE / FLAMMABLE MATERIAL

R-600a (refrigerant grade propane only)

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

R-600a 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 cooler is designed to operate at 220-240VAC, 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 equipments 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:

The cabinet can be lifted off the pallet to remove wooden pallet and base tray (see Fig 1 and Fig 2)



This task requires at least 2 persons.

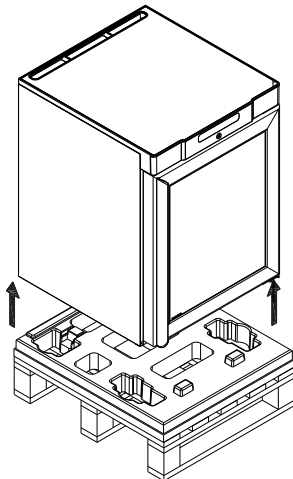


Fig.1

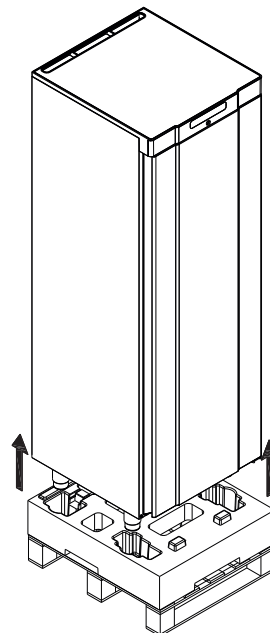


Fig. 2



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 +30°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.

The set-up place must be level and horizontal.

For versions with castors, the locking devices of the two front castors must be activated, when the product is in place, see Fig.3.

The base must be level, and the product may not be placed on frames or the like.
For efficient closing of glass door on KG/FG models, cabinet must be leveled such that door will always get close automatically (may required some uplift from on front adjustable

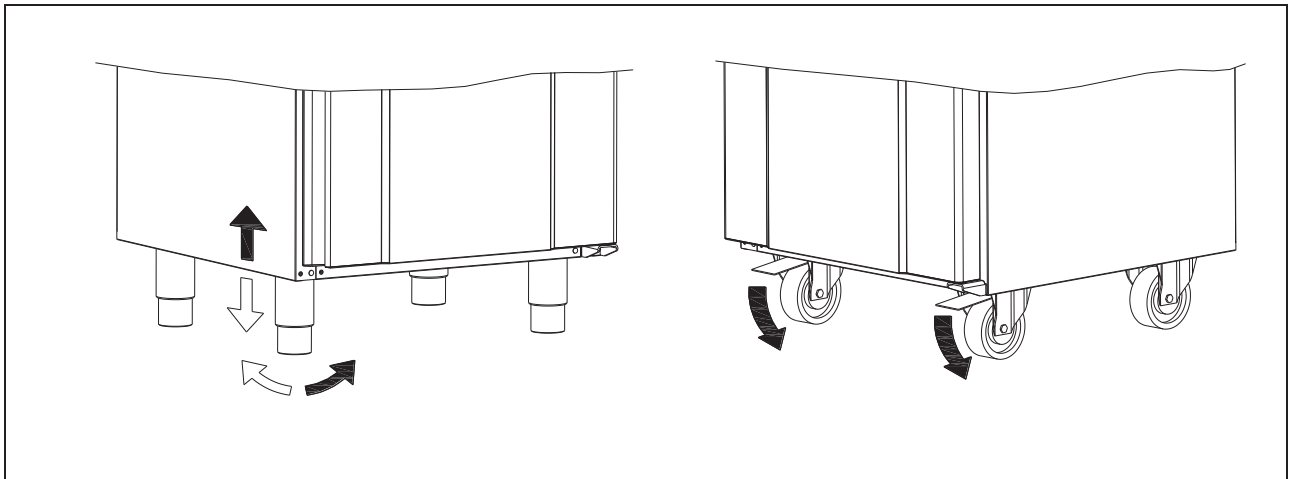


Fig. 3

Cabinets equipped with a glass door, must be fastened to a stable surface to ensure the cabinet does not tilt, when the door is open. Brackets for fastening are supplied with the cabinet (fasteners not supplied, use fasteners according to wall material/type).

See how to mount brackets in Fig.4

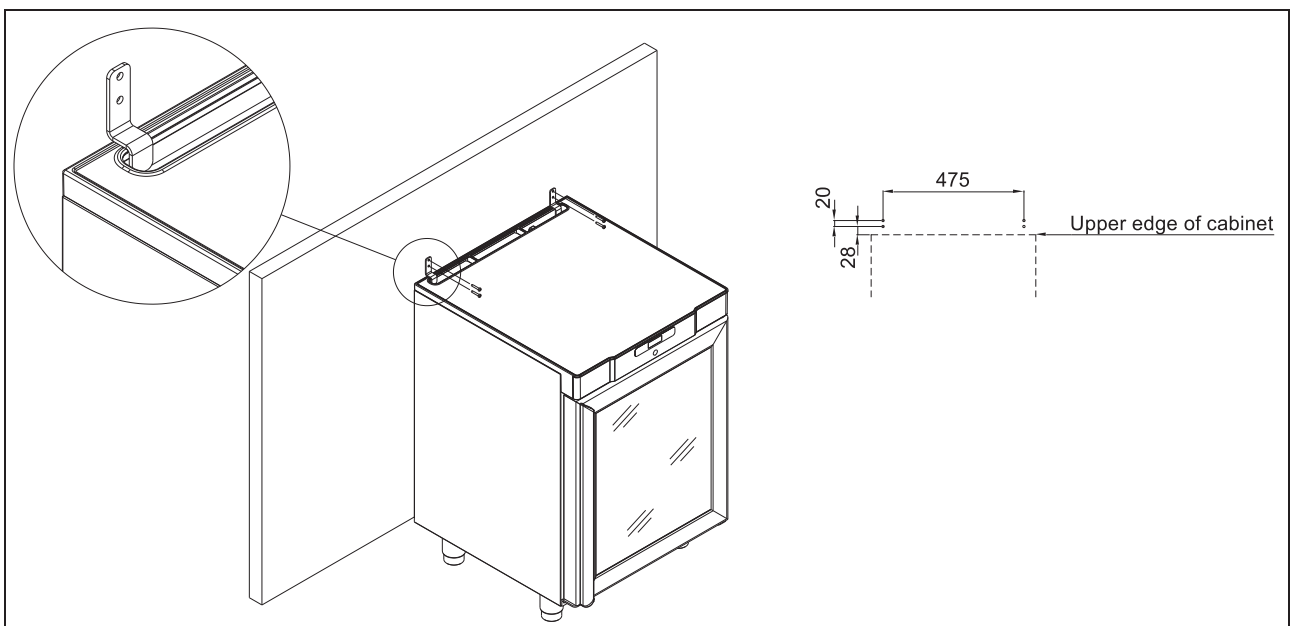


Fig. 4



To ensure that user, surroundings and stored items are not injured/damaged if the cabinet tilts, these brackets must be mounted.

The cabinet can be installed freestanding, against a wall or COMPACT 220 can be built under a worktop.

The cabinet must have sufficient ventilation and free air circulation beneath, above and behind the cabinet. There must be a minimum clearance of 30 mm above the cabinet, and 20 mm at the sides.

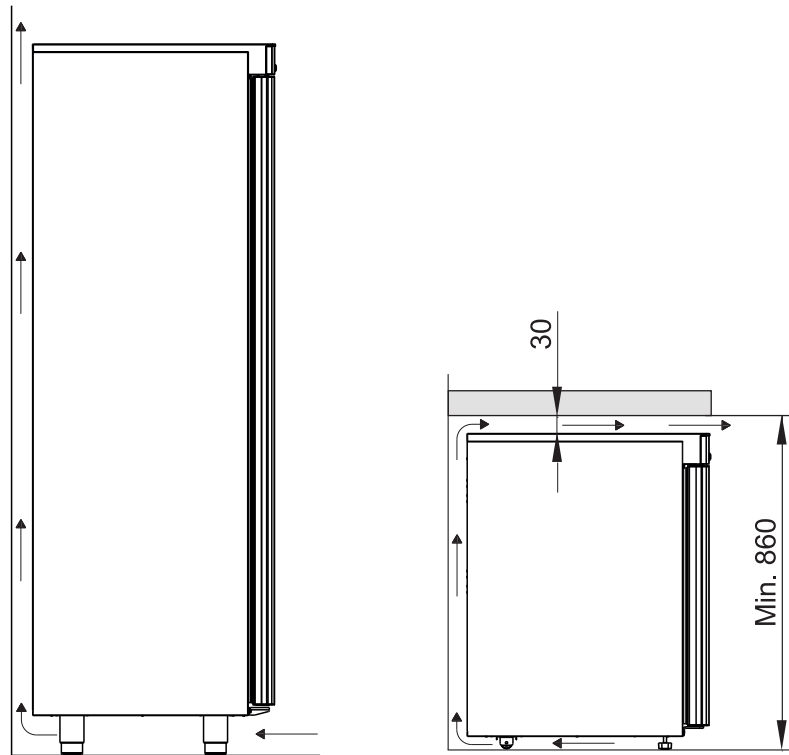


Fig. 5

When Moving to other 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.

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 +30°C.
- Do not keep the door open for too long.
- Do not set the temperature too low.
- The product should be placed as close as possible up against the wall.

General Description

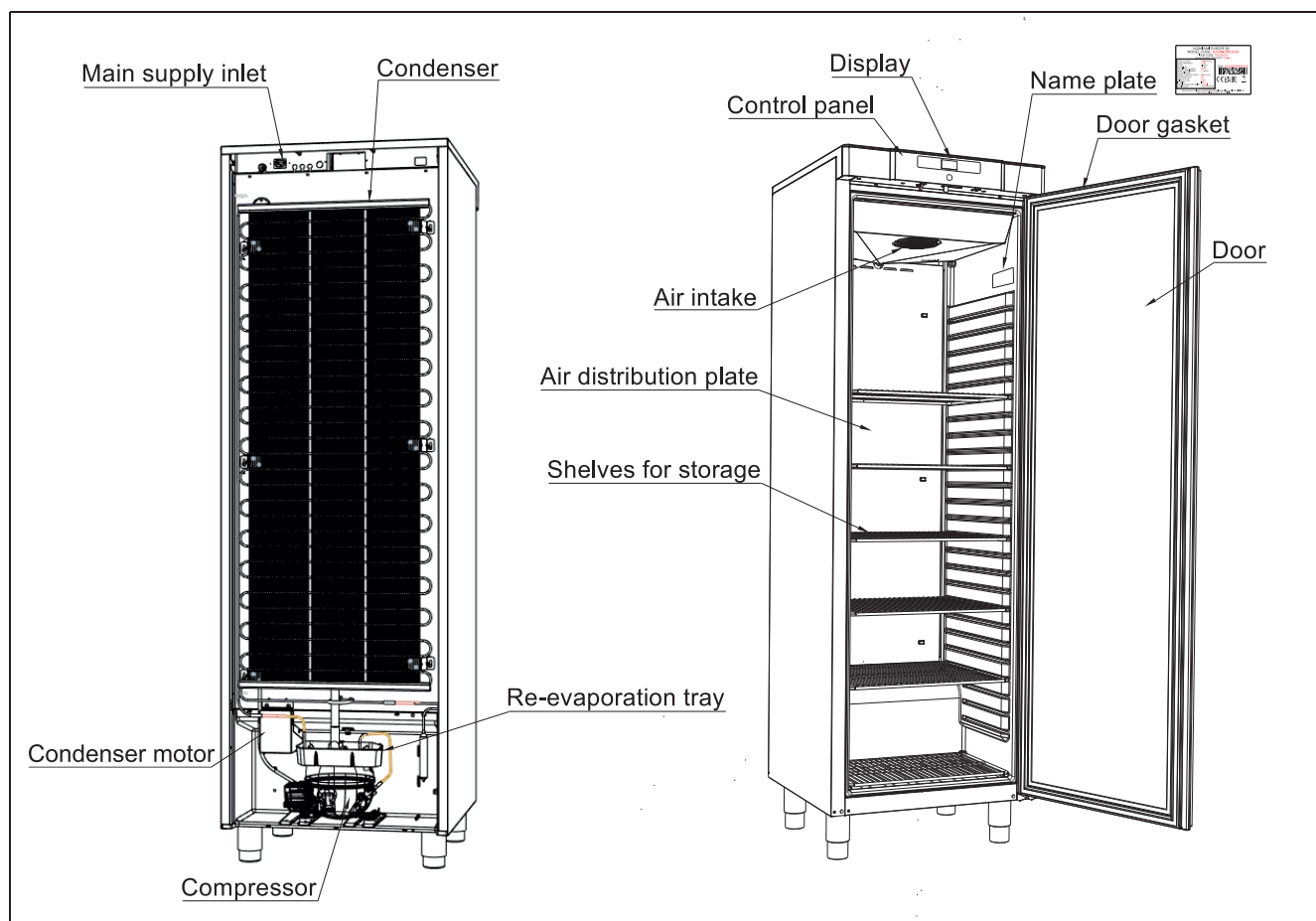


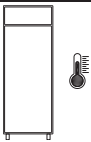
Fig. 6

Refrigerant / GWP Value

Refrigerators	Refrigerant	Charge kg	GWP	CO ₂ equivalent
COMPACT K 220	R600a	0,036	3	0,11
COMPACT KG 220	R600a	0,029	3	0,09
COMPACT K 420	R600a	0,048	3	0,14
COMPACT KG 420	R600a	0,048	3	0,14
Freezers				
COMPACT F 220	R600a	0,034	3	0,10
COMPACT F 420	R600a	0,047	3	0,14
COMPACT FG 220	R600a	0,034	3	0,10
COMPACT FG 420	R600a	0,047	3	0,14

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 (see fig.6)

Climate class		Models Name
3	25°C / 60 % RH	FG220/FG420
4	30°C / 55 % RH	K220/F220/KG220/K420/F420/KG420

Temperature class		Models Name
L1	-18°C	F220/F420
L3	-15°C	FG220/FG420
M1	+5°C	K220/KG220/K420/KG420

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 (see fig.6).



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.6). 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.7).



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: 40 kg



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

Be aware, if bottles are stored near the air outlet, they may freeze up and break, causing a risk of injury (only K and KG products).

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.



To ensure correct and efficient air flow in the product, the shaded areas and the areas above the top load line must be kept free of items. (See Fig. 7)

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

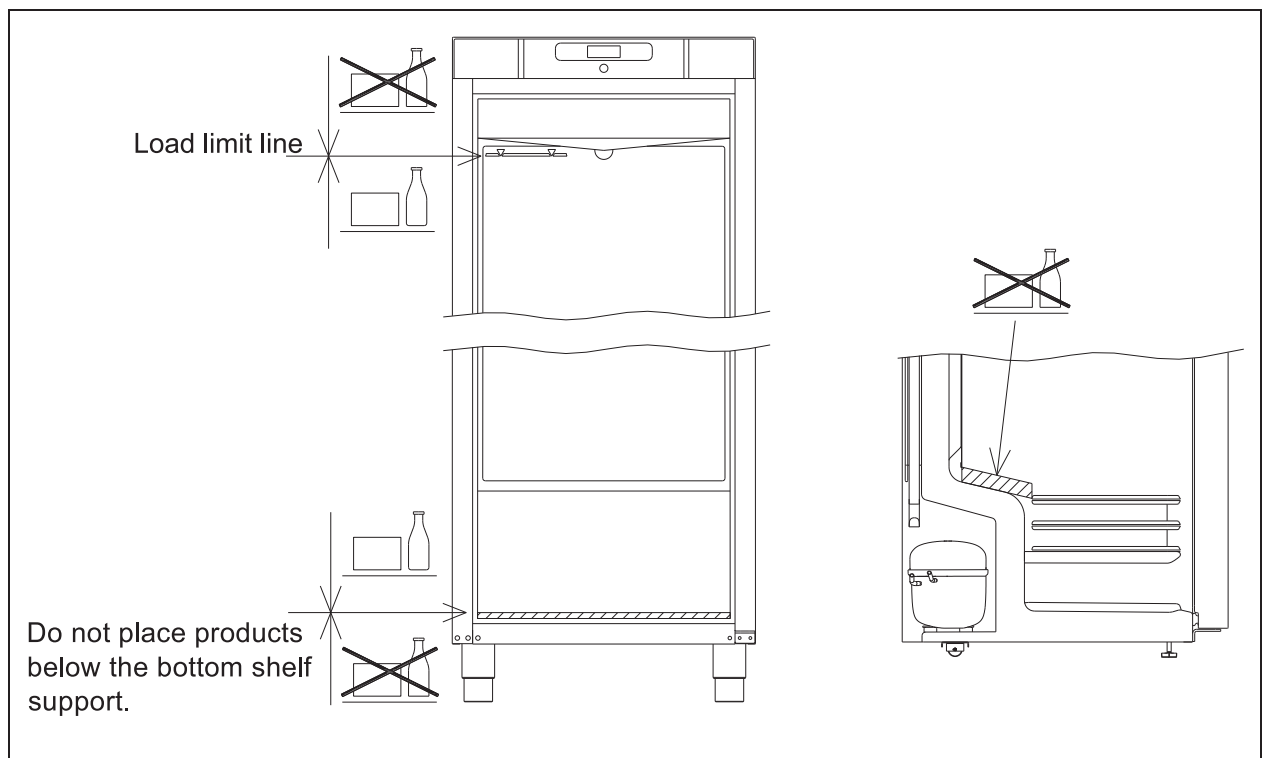
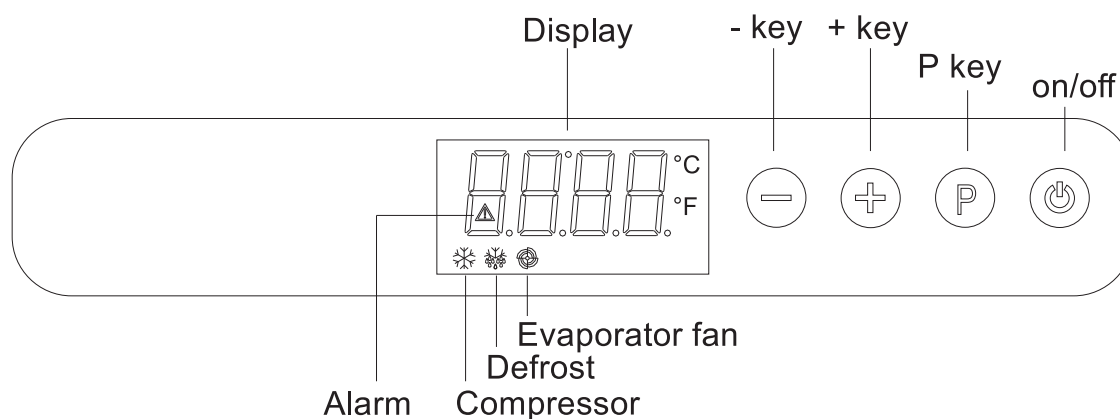


Fig. 7

Starting Up

Display:



Connect the cabinet to main power.

To turn on the cabinet, push  for 2 seconds.

The display shows the actual cabinet temperature, and indicates that power is connected.

The cabinet is turned off likewise, by pushing  for 2 seconds.

Control lights

The following control lights are located at the display:



Compressor. This LED is on while the compressor is running. Flashes during temperature setting.



Defrosting. This LED is turned on during defrosting cycle.



Evaporator fan. This LED is turned on while the evaporator fan is running.



Alarm. This LED is turned on if an alarm occurs. See chapter on temperature alarm and errors.

Temperature Setting

The temperature is set as follows:

Push the  button, the compressor lamp  flashes.

Push  or  to set the temperature.

Push  again to save the set value. The compressor lamp  is turned off, unless the compressor is running.

Alternatively, do not operate any buttons for 15 seconds, the controller switches back to temperature display, and the set value is saved automatically.

If there is a power failure, the controller will remember the settings. When the power returns, the cabinet will start up again.

Temperature Alarm

The controller is equipped with a temperature alarm, which constantly monitors the cabinet temperature. The  lamp lights, if an alarm has occurred.

The following alarms can be displayed:

AL	low temperature alarm
AH	high temperature alarm
Id	open door alarm

Displaying alarm values:

Push the  button, and keep pushed for 1 second. Push  or  until "LS" is displayed. Now, push  and one of the alarm codes above is displayed. Use the  or  button to select the wanted value. Push  again, and the alarm values are displayed.

Example – alarm AH:

8.0 the temperature alarm value is 8.0°C
dur alarm duration
h01 the alarm lasted for 1 hour(continues)
n15 and 15 minutes
AH selected alarm value

Each value is displayed alternately for approx. 1 second.

To exit the alarm menu, push  and the selected alarm is displayed (in this example "AH"). Push  again, and the current cabinet temperature is displayed.

Deleting alarms:

Push , and keep pushed for 1 second. Push  or  until "rLS" is displayed. Now push . Then push  or  within 15 seconds and set "149". Push  again, and the display flashes "- - -" for 4 seconds. The alarms are now deleted, the -LED is turned off, and the controller returns to temperature display.

Error Codes

- Pr1** If error Pr1 is displayed, it means that the temperature sensor is defective. Request service assistance.
In the meantime, the cabinet will aim to maintain the set temperature.
- Pr2** If error Pr2 is displayed, there are problems with the evaporator sensor. The sensor should be replaced as soon as possible. Request service assistance.

Defrosting

K/KG 220/420:

Defrosting is automatically performed 4 times every 24 hours, by circulating the air inside the cabinet during compressor standstill periods. The defrost LED  lights to indicate the defrosting cycle is running.

F/FG 220/420:

Defrosting is automatically performed 4 times every 24 hours, by a heating element mounted at the evaporator.

Manual defrosting:

If the cabinet is operating under severe load (frequent door opening and frequent replenishment), manual defrosting can become necessary.

Manual defrosting is performed as follows:

Push  for 4 seconds, and defrosting is started. The defrost LED  lights to indicate the defrosting cycle is running.



Do not use sharp or pointed objects to accelerate the defrosting process.

Defrost Water

The cabinet produces water during defrosting, which is led into a tray in the compressor compartment (see Fig.6). 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.

Keylock

The keys can be locked and in this way secured against unauthorized use of the appliance.

To lock the keys:

Press  and  at the same time for 1 second, "Loc" is shown to indicate the keys are locked.

To unlock the keys:

Press  and  at the same time for 1 second, "UnL" is shown to indicate the keys are unlocked.

Illumination

Applies only to models with glass door.

The light can be switched on or off by the switch underneath the control panel.

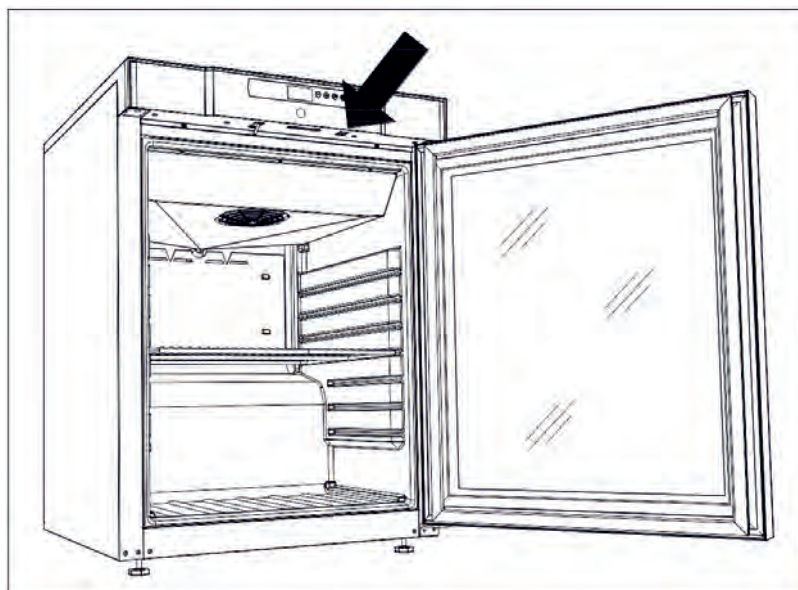
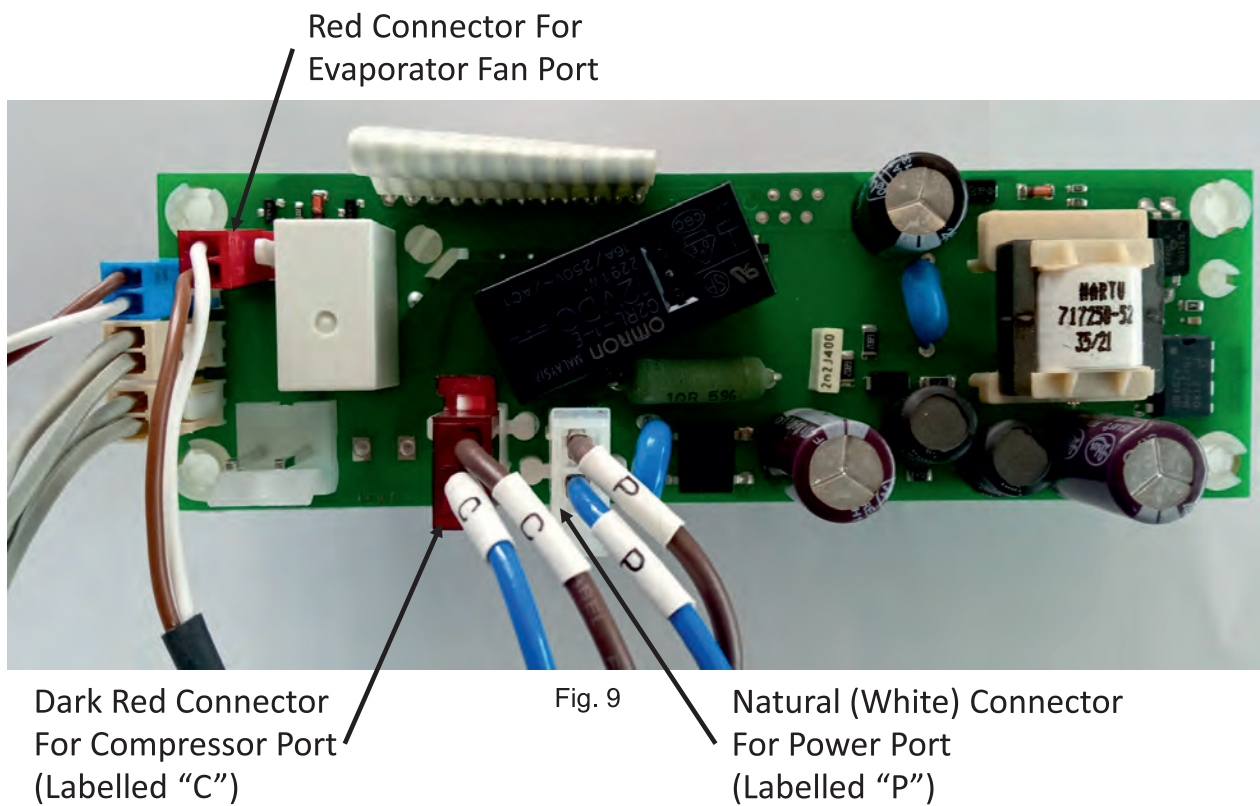


Fig. 8

Controller Connections



Blue Connector For Door Switch Port

Sensor Probe Without Tape Identification For Room/Application Sensor

Sensor Probe With Sticker For Defrost/Evaporator Sensor

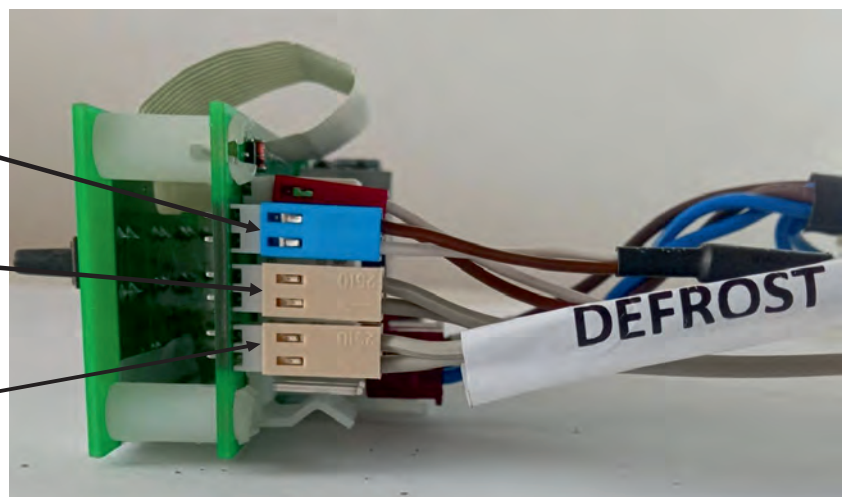
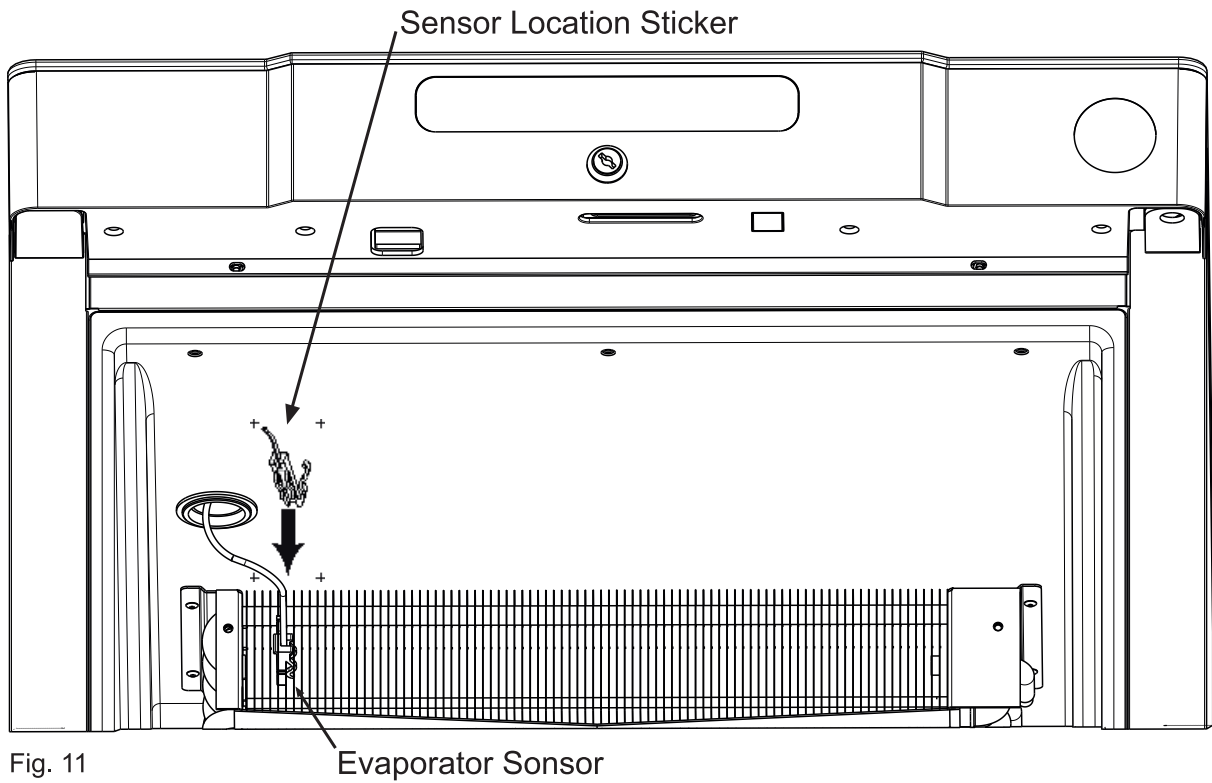


Fig. 10

Evaporator Sensor Location

The evaporator sensor is positioned as indicated by arrow in the below figure.



Reversing the Door

The door can be changed from righthand-hinged to lefthand-hinged, or vice versa.

To do so, proceed as follows:

Models with solid door:

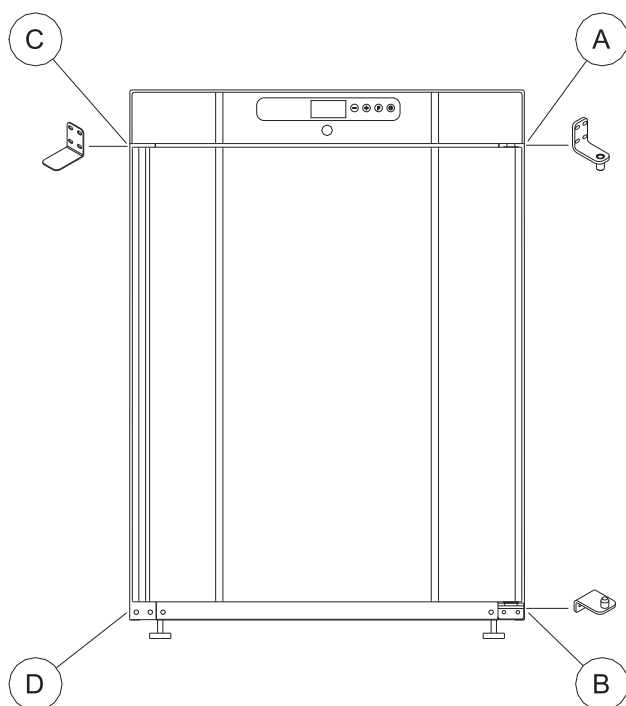


Fig. 12

1. Switch off the power at the mains socket.
2. Remove the screws that keep the control panel in place, two from the front and two from the back. Pull the panel a little forward, and then lift it upward.
3. Remove the hinge from position A and lift off the door.
4. Dismantle the hinge from position B and mount it at position D.
5. Shift the bracket from position C to A.
6. Rotate the door 180°, and then fix it at position D.
7. Mount the hinge that removed from position A to C.
8. Fasten the control panel same as before.
9. Apply power to the cabinet again.
10. In case of gasket gap in cabinet, use hinge spacer. You can find these spacers in plastic bag where manual and keys are kept.

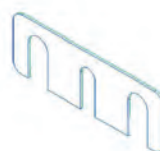
Use of spacer behind hinge to avoid gasket gap



K-F models



KG-FG models



Models with glass door:

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

Cleaning

Insufficient cleaning will cause that the product will not work at optimum performance, or eventually it will be defective.



Before cleaning, the product should always be disconnected.



Do not flush the product with water, do not use water jet or steam hose as this may cause short-circuits in the electrical system.



Cleaning agents containing chlorine or compounds of chlorine as well as other corrosive means, **are not to be used**, as they might cause corrosion to the cabinet and the refrigeration system.



The compressor compartment and in particular the condenser must be kept free from dust and dirt. this is best done with a vacuum cleaner and a brush.



For the external maintenance and cleaning-Use a hot soapy damp cloth. After cleaning rinse off with a moist cloth only containing water. Finalize the cleaning by wiping the cabinet dry, using a dry cloth. Cabinets with stainless steel exterior, should be treated with stainless steel polish at the end.



The product should be cleaned internally with a mild soap solution at suitable intervals and checked thoroughly before it is put into operation again.



Clean the duct from condenser by means of soft wire brush, blower or vacuum cleaner by every 4 months.

Note: Do not use water for cleaning the condenser.

Air Duct Removal

1. Switch off the power at the mains socket.
2. Remove the shelves.
3. Remove air duct by pressing the air duct mountings.

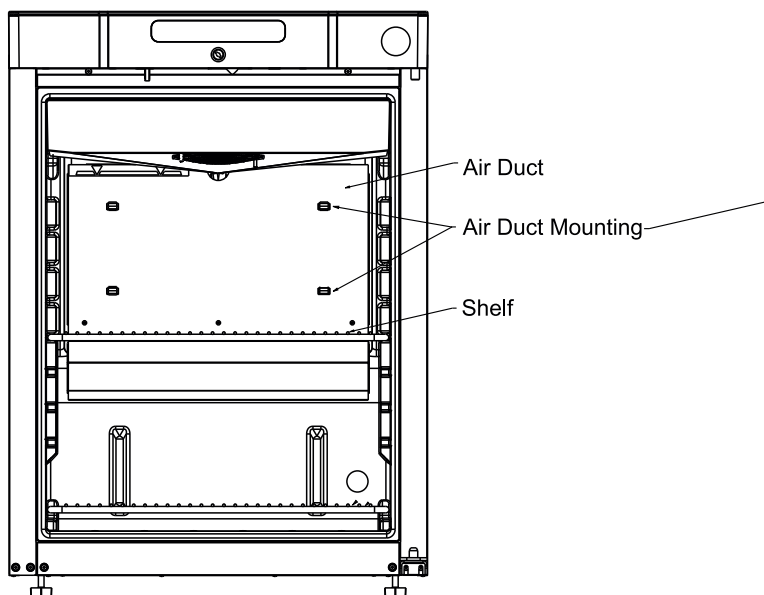


Fig. 13

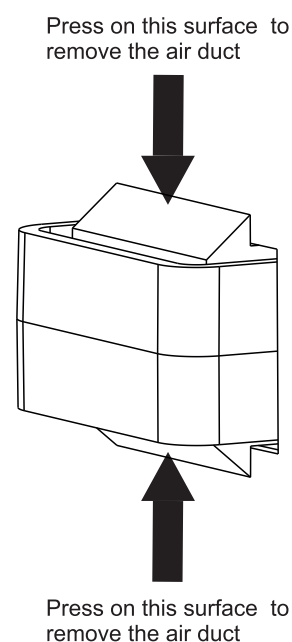


Fig. 14

Door Gaskets

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.

Service

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. 6.

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 labeled 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.

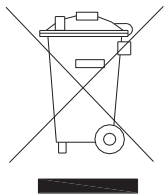
Please be aware of not damaging the refrigeration system and piping when a product is taken out of use. This will prevent the uncontrolled escape of the refrigerant from the refrigeration system.

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.





Instruction Manual (Original Instruction)

Betjeningsvejledning

Bedienungsanleitung

Mode d'emploi

Gebruiksaanwijzing

Bruksanvisning

Manuale di istruzioni

Manual de instrucciones

Bruksanvisningen

Руководство пользователя

COMPACT SERIES

K220/F220/KG220

K420/F420/KG420

FG220/FG420



0506931_M