

DC REFRIGERATOR

CVB3-86Da



Compressor Refrigerator
Installation and Operating Instructions

EN

Material code: 01.05.08640501

Thanks for choosing our refrigerator. Please read these instructions carefully before installation or first use of the refrigerator and store it in a place where all users could find it for easy reference. If the refrigerator is transferred or sold, please hand over the instructions along with it so that the new user is aware of installation methods, usage and safety requirements.





In order to improve the performance and reliability of the refrigerator or component parts, the hardware or software of the refrigerator will be adjusted. If the instruction is inconsistent with the actual refrigerator, please refer to the actual refrigerator, but this will substantially affect your use of the product.

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1.0 Explanation of symbols

Be aware of possible safety hazards when you see the safety alert symbol on the refrigerator and in this manual. A signal word follows the safety alert symbol and identifies the danger of the hazard. Carefully read the descriptions of these signal words to fully know their meanings. They are for your safety.

- | | | |
|---|-----------------|--|
|  | DANGER! | Failure to observe this instruction can cause dangerous personal injury, death, or much property damage. |
|  | WARNING! | Failure to observe this instruction can cause personal injury or much property damage. |
|  | CAUTION! | Failure to observe this instruction can cause material damage and impair the function of the product. |
|  | NOTE | Supplementary information for operating product. |

2.0 Safety instructions

- Only use the refrigerator for purposes described in the instructions.
- The refrigerator must be installed correctly under the guidance of the instructions before using.

DANGER!

- This appliance contains isobutane refrigerant R600a, it is combustible. Risk of Fire and explosion.

Flammable Refrigerant



- When handling, installing, moving and use the appliance, care should be taken to avoid damage to the refrigerant tubing and refrigerant circuit.
- Do not use the area behind the refrigerator to store anything, especially flammable materials (gasoline, cleaning supplies, etc.)
- Never open or damage the refrigerant circuit of the cooling system at the back or the inside of your appliance. The cooling system is pressurized and contains flammable substances.
- Keep ventilation openings in the appliance enclosures or in the built-in structure, clear of obstruction. Have the condenser and cooling fan cleaned by qualified service personnel if you suspect poor performance.
- Do not use mechanical devices or other means, such as candles or heaters to accelerate the defrosting process.
- Do not use electrical appliances inside the food storage compartment of the appliance.
- Do not store any explosive substance, such as aerosol cans with flammable propellant, in this refrigerator.
- Do not store substances which are caustic or contain solvents.

- Never use the refrigerator in an environment where flammable gases are present.
- Do not place the refrigerator near naked flames or other heat sources (heater, direct sunlight and gas over etc.)

WARNING!

- Incorrect installation, adjustment, change to, or maintenance of this refrigerator can cause personal injury, property damage, or both. Have service and maintenance work done by your dealer or by an authorized Service Center.
- The rear and bottom of the refrigerator has sharp edges and corners. To prevent cuts or abrasions when working on the refrigerator, be careful and wear cut resistant gloves.
- A circuit overload can result in an electrical fire if the wires and/or fuses are not the correct size.
- Inadequate repairs may cause more serious hazards.
- Do not operate the device if it is visibly damaged.
- Disconnect the DC power source before doing any maintenance work on the refrigerator, such as cleaning or repairing.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- Operating, cleaning and user maintenance must not be carried out by children without supervision.
- Danger of crushing! Do not put your fingers into the hinge.

CAUTION!

- If the power cable of the device is damaged, it must be repaired and replaced by qualified technician immediately. Any cable, plug or connecting point with a crack or any abrasions, must not be used as to avoid any potential safety hazards.
- **The temperature of the space where the refrigerator is placed should not exceed the range specified on rating-label of the refrigerator, otherwise it will lead to refrigerator failure and food deterioration.**
 - * **The temperature is around the refrigerator, it is not the ambient temperature of the vehicle.**
- Do not bypass or change the refrigerator's electrical components or features.
- Do not use a modified plug or self-prolonged cable.
- Do not spray liquids near electrical outlets, connections, or the refrigerator components.
- Disconnect the DC power supply if you do not intend to use the refrigerator for an extended period of time when it is installed in caravans, motorhomes and on boats.

3.0 Intended use

This refrigerator is made for use within a recreational vehicle. As such, it is suitable for installation in caravans, motorhomes, boats, but do not expose the refrigerator to rain.

This refrigerator is made to store fresh and frozen foods and for making ice.

CAUTION!

- If the refrigerator is only suitable for installation in a fitted cavity. Once it is installed, only the front of the device is accessible.
- The device is designed to be operated with 12V DC supply.

NOTE

- The upper section is the freezer compartment, the lower section is the fresh compartment.
- The refrigerator is only suitable for refrigerating, freezing and storing food, but not for medicine or medical storage.
- Please check if the refrigeration capacity of the refrigerator is suitable for storing the food you wish to cool.
- All materials used in the refrigerator are compatible for use with foodstuffs. The refrigerant circuit is hermetically sealed and CFC-free.
- The refrigerator can withstand a short term inclination of 10°, for example on boats
- The temperature of refrigerator compartment can be adjusted by control panel.

4.0 Dispose

When the refrigerator has reached its end of life, flammable refrigerant and insulation material used require special disposal procedures, dispose the product according to the local Government stipulations.

- Do not dispose the refrigerator with normal household waste.
- Take off the doors. Leave the shelves in place before you throw away your old appliance, so that children may not easily climb inside.



Environmental Protection

Discarded electrical appliances are recyclable and should not be discarded in the domestic waste! Please actively support us in conserving resources and protecting the environment by returning this appliance to the collection centre's (if available).

5.0 Warranty

The warranty period is one year from the date of purchase.

This warranty does not cover glassware, electric light bulbs or replaceable fuses, and does not apply to refrigerators or component parts that have been subjected to misuse, improper installation, abnormal service, transit damage, recharging of cooling unit system, accident, fire, improper repair, tampering or abuse.

The responsibility under this or any warranty is limited to the repair or replacement of defined defective refrigerator or component part. In no event and under no circumstances shall be responsible for any other charge whatsoever, including but not limited to charges or claims for labor, lost business, lost time, lost profits, loss of use, or any kind of incidental or consequential damages, however denominated or described.

To activate your one year limited warranty, complete and mail the warranty registration supplied.

Your certified dealer or sales agency should be your preferred contact during the warranty period because of the product's technical features.

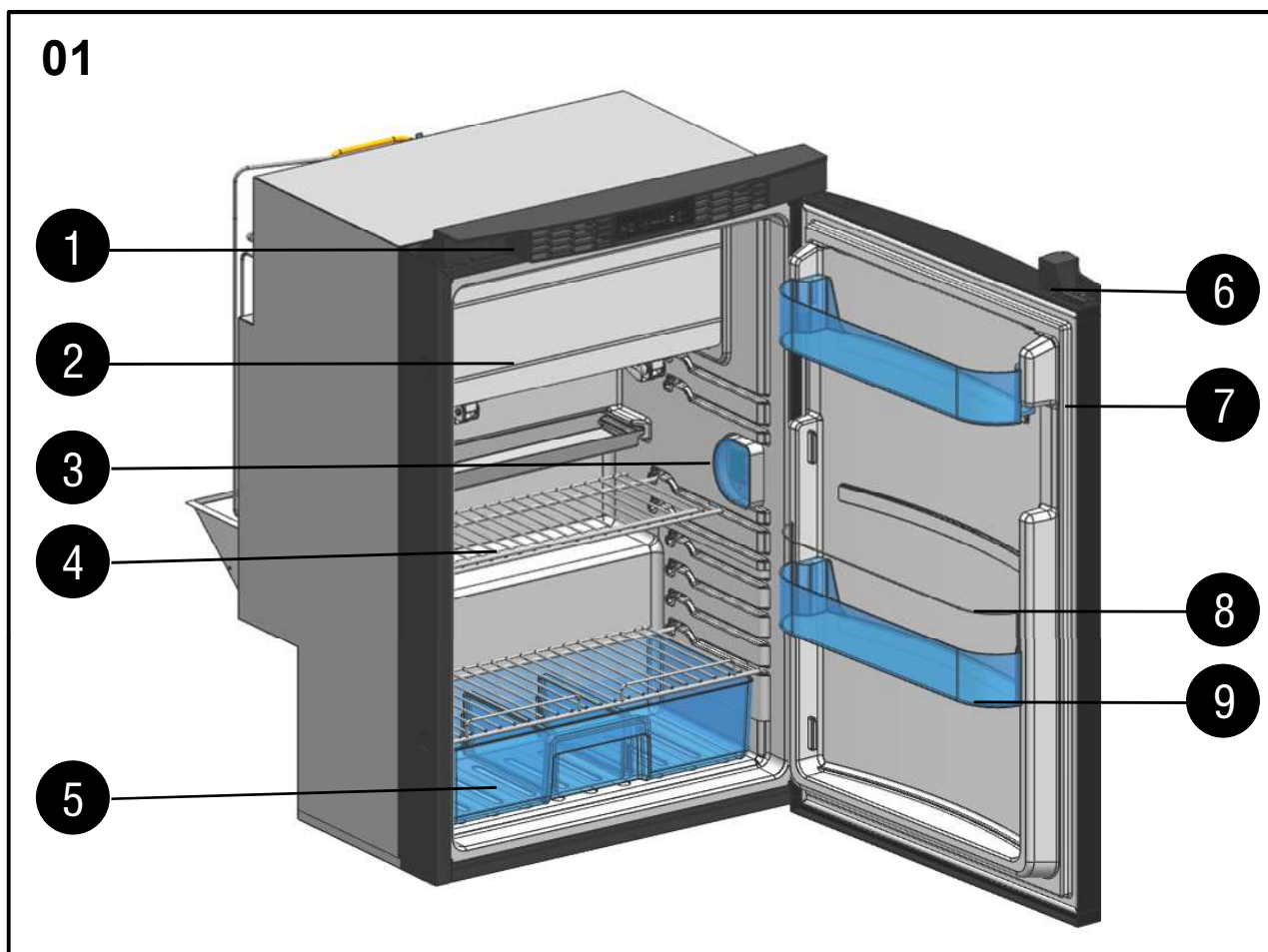
We accept no liability for damage in the following cases:

- Natural disasters, wars, pandemics and force majeure etc..
- Defects caused by mechanical influences and overvoltage.
- Defects caused by improper installation, maintenance, or adjustment.
- Defects caused by the improper use of parts or parts not manufactured or supplied by the supplier for repairs or replacements to the refrigerator.
- Alterations to the product without expressing permission from the supplier.
- Use for purposes other than those described in the instructions.
- Travel expenses for bringing the refrigerator to an authorized Service Center for warranty coverage and additional costs caused by the inability to bring the refrigerator to an authorized Service Center.
- We will not be liable for any incidental or consequential loss or damage, due directly or indirectly to the use of this product.
- If the warranty is valid, you can get free service and replacement of defective parts, at no charge, at all authorized Service Centers, which has the option of replacing the defective parts or the entire refrigerator.

6.0 Product components

All figures in this manual are schematic; some features and devices may not be consistent fully with your refrigerator and the specific structure and configuration shall be subject to the actual product.

The appearance and specifications of the actual product may differ depending on the model.



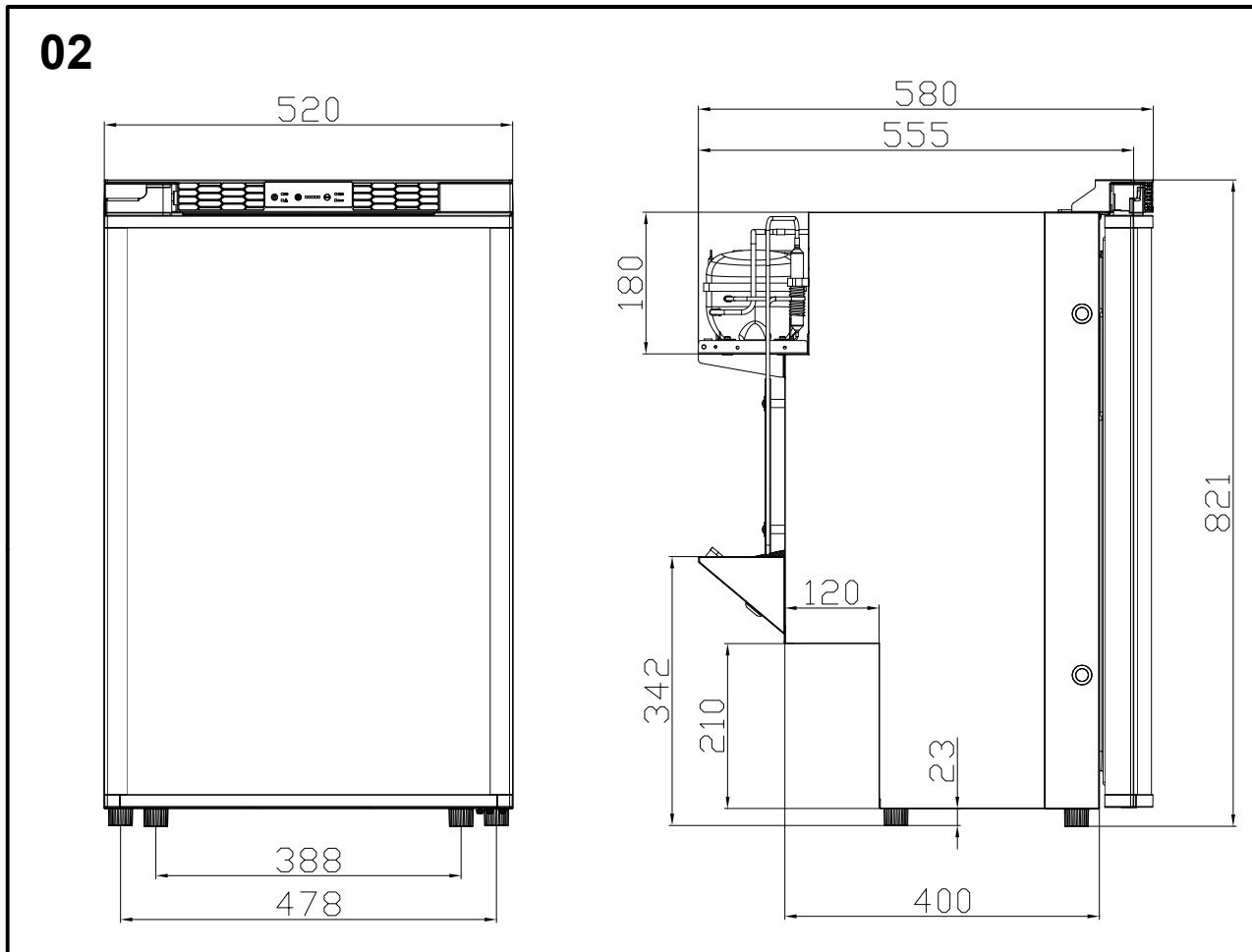
1	Ventilation grille-Top	6	Door handle
2	Door-Freezer	7	Door-Fresh
3	Built-in light	8	Bottle bar
4	Fresh shelf	9	Door bin
5	Fruit and vegetable section		

7.0 Installation and connection

7.1 Overall dimensions

i NOTE

The figure is schematic, not representing the actual product. The specific dimension shall be subject to the product that you have bought.

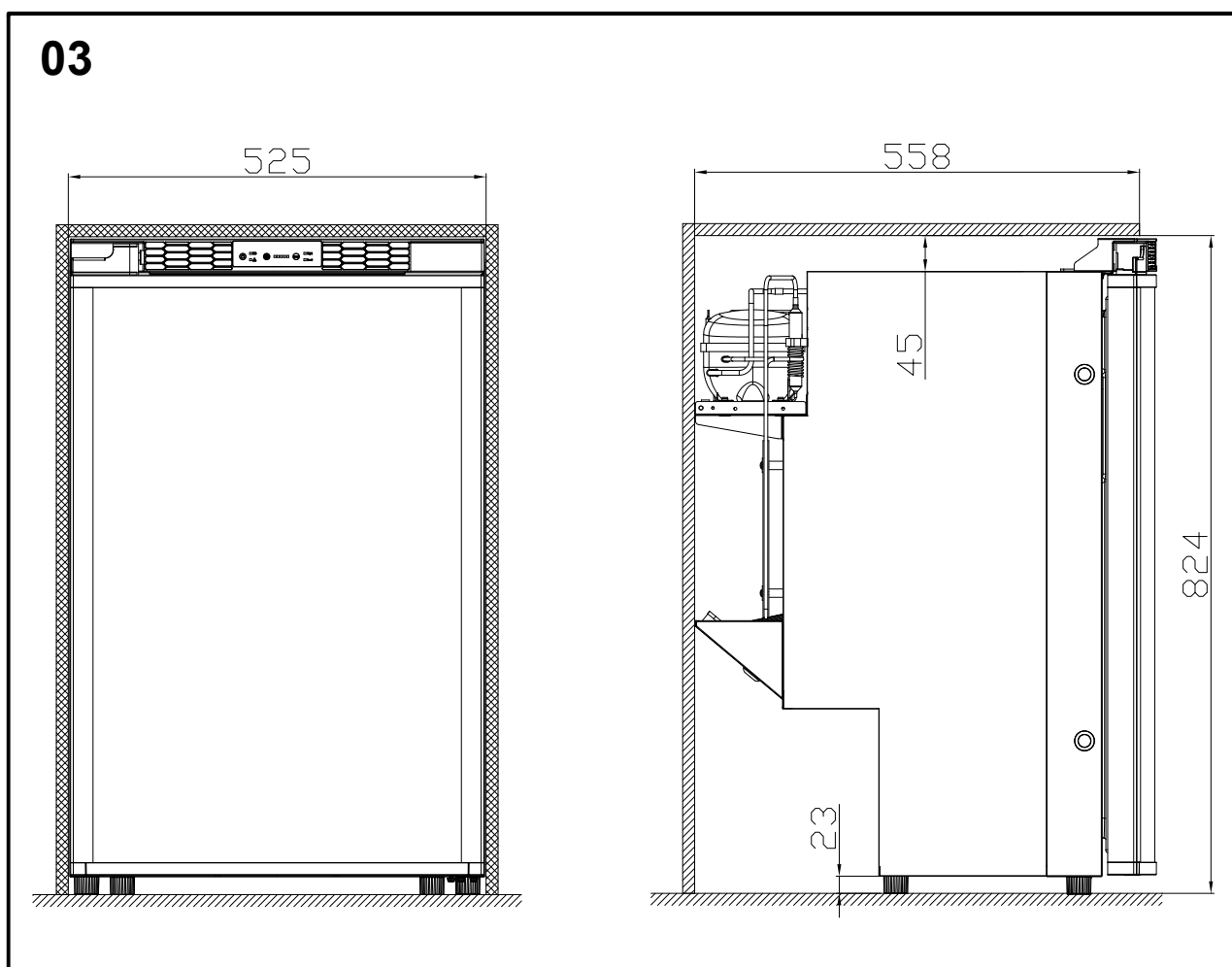


7.2 Recess dimensions

Select a good location to place your appliance where it is flat and easy to use. Avoid placing the unit near heat sources, direct sunlight or moisture .

CAUTION!

- To ensure proper air circulation around the refrigerator, please maintain sufficient space. If install the top panel or closet, please maintain sufficient space to move when necessary.
- The refrigerator must be placed on a hard, flat ground; if cushioning is needed, stable, hard, nonflammable cushion blocks shall be used, rather than the foam backing of refrigerator.
- The refrigerator shall be kept away from damp locations where water is easy to splash; water or dirt shall be removed with soft cloth timely to prevent rusting which may have an effect on the electrical characteristics.
- Place the refrigerator in a well-ventilated place, reserve a certain space around and behind the refrigerator, and do not cover or block the air grille on the rear cover plate of compressor at the back of refrigerator; Keep the refrigerator away from heat source or direct sunlight.
- The Minimum hole size of the recess is W525mmxD558mmx824mm



7.3 Connecting the refrigerator to DC power supply

Remove all packages, including the foam backing at the bottom of refrigerator and the tapes fixing accessories in the box.

Remove the film: There is a layer of transparent film on the panel of our product, which can protect products from being scratched in the process of production and transportation, and you can choose to reserve or remove the film as needed.

The refrigerator can be operated with a 12V DC voltage supply, please see the attached circuit wiring diagram, see FIG.13.

Due to product upgrade and optimization, the circuit wiring diagram may not be consistent fully with your refrigerator and the specific circuit wiring diagram shall be subject to the actual product.

CAUTION!

- Check the voltage specification on the data plate to make sure it is the same as the power supply.
- To avoid voltage drops and loss of performance, keep the connection cable as short as possible and directly connected from the power source to the DC wire connection of the unit. Therefore avoid additional switches, plugs or power strips.
- When connecting to DC power supply, the circuit shall be protected by fuses with maximum of 15 Amps, the red cable of the DC power supply connects to the positive pole of the battery and the white cable connects to the negative pole of the battery.
- Disconnect the cooling device and all power source connections from the battery before you connect the battery to a quick charging device. Overvoltage can damage the electronics of the device.
- It is recommended that the cable length (see below table).

Recommended Cable Length		
The cable cross section	Maximum length/12V	Maximum length/24V
2mm ²	2m	4m
2.5mm ²	2.5m	5m
4mm ²	4m	8m
6mm ²	6m	12m
10mm ²	10m	20m

To protect the battery, the refrigerator switches off automatically if the voltage is insufficient (see below table).

Recommended Rated Voltage		
Rated Voltage	12V	24V
Cut-in voltage	10.9V	22.7V
Cut-off voltage	9.6V	21.3V
Max working voltage	16V	28V

7.4 Installing or Replacing the door panel

- Installing the door panel is preliminary before the refrigerator installation.
- The thickness of door panel must be less than or equal to 4mm .
- Dimension of the door panel:W482mmxH742mm.

WARNING!

- The door panel has sharp edges and corners. To prevent cuts or abrasions when working on the refrigerator, be careful and wear cut resistant gloves.

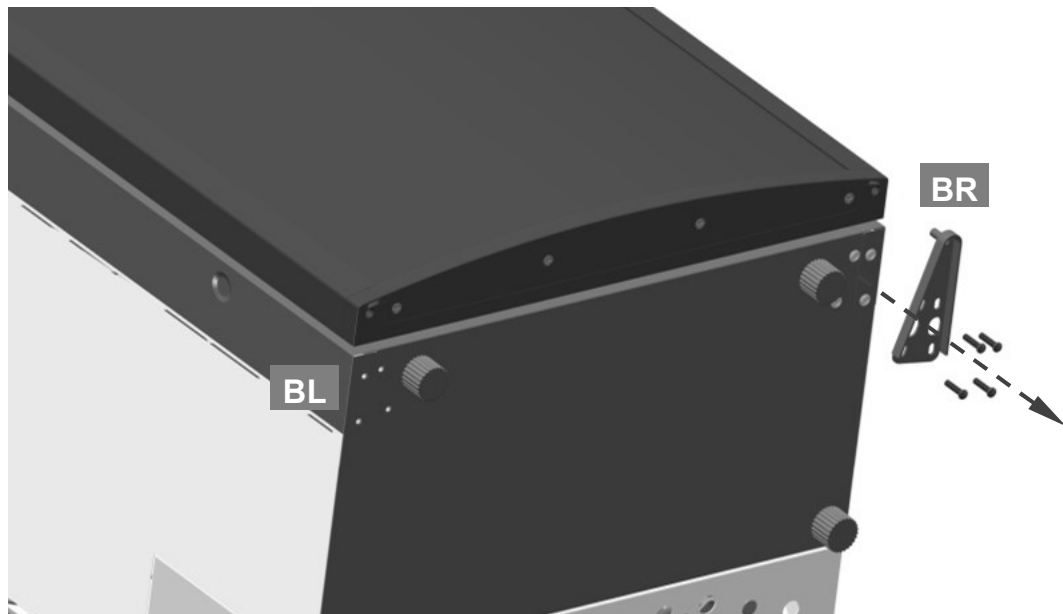
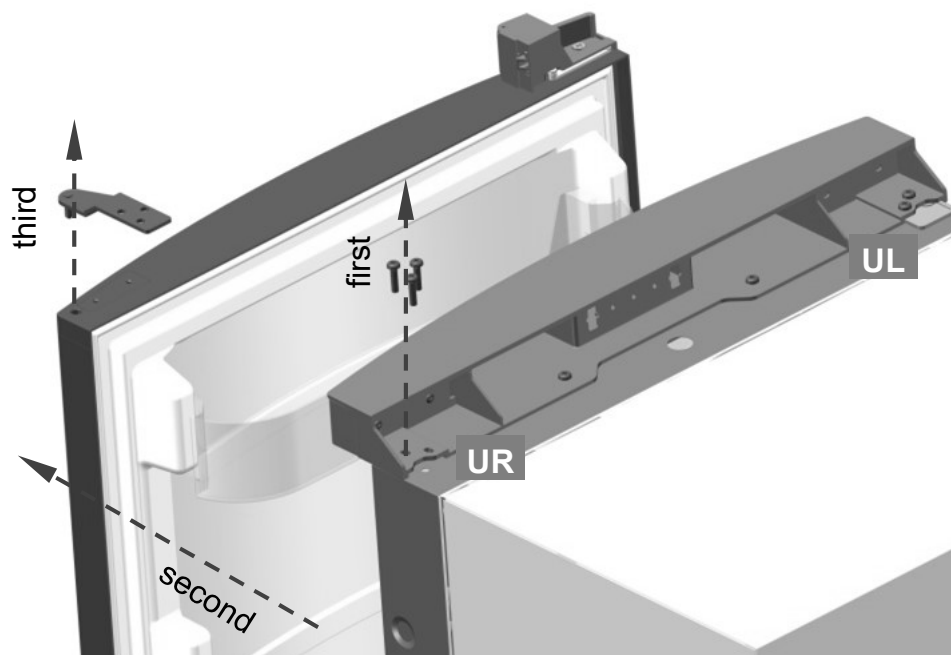
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7.5 Reversing the door

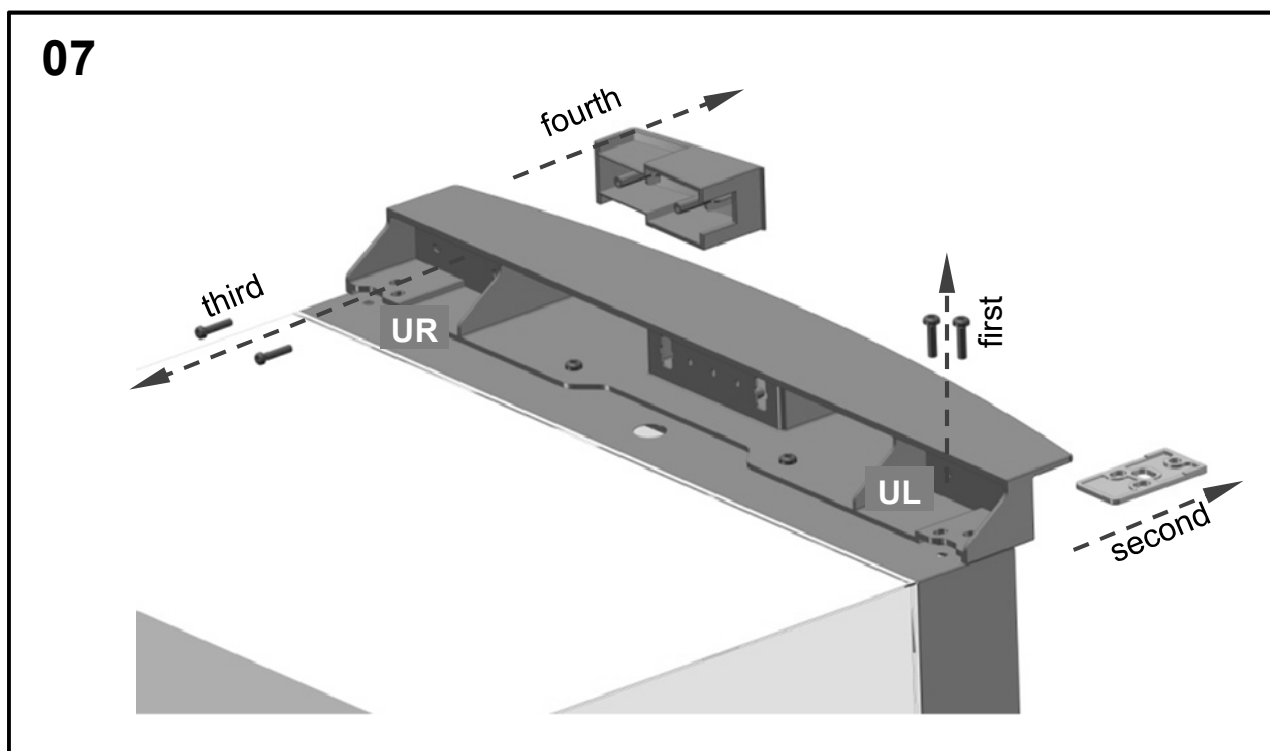
7.5.1 Remove and reinstall the Door

- Remove the Lower hinge from position **BR**, see FIG.05, and reinstall it to position **BL** after FIG.08.
- Remove the Right_up hinge from position **UR**, remove the door and the Right_up hinge, see FIG.06, and reinstall the door with the Left_up hinge to position **UL** after FIG.08.

05**06**

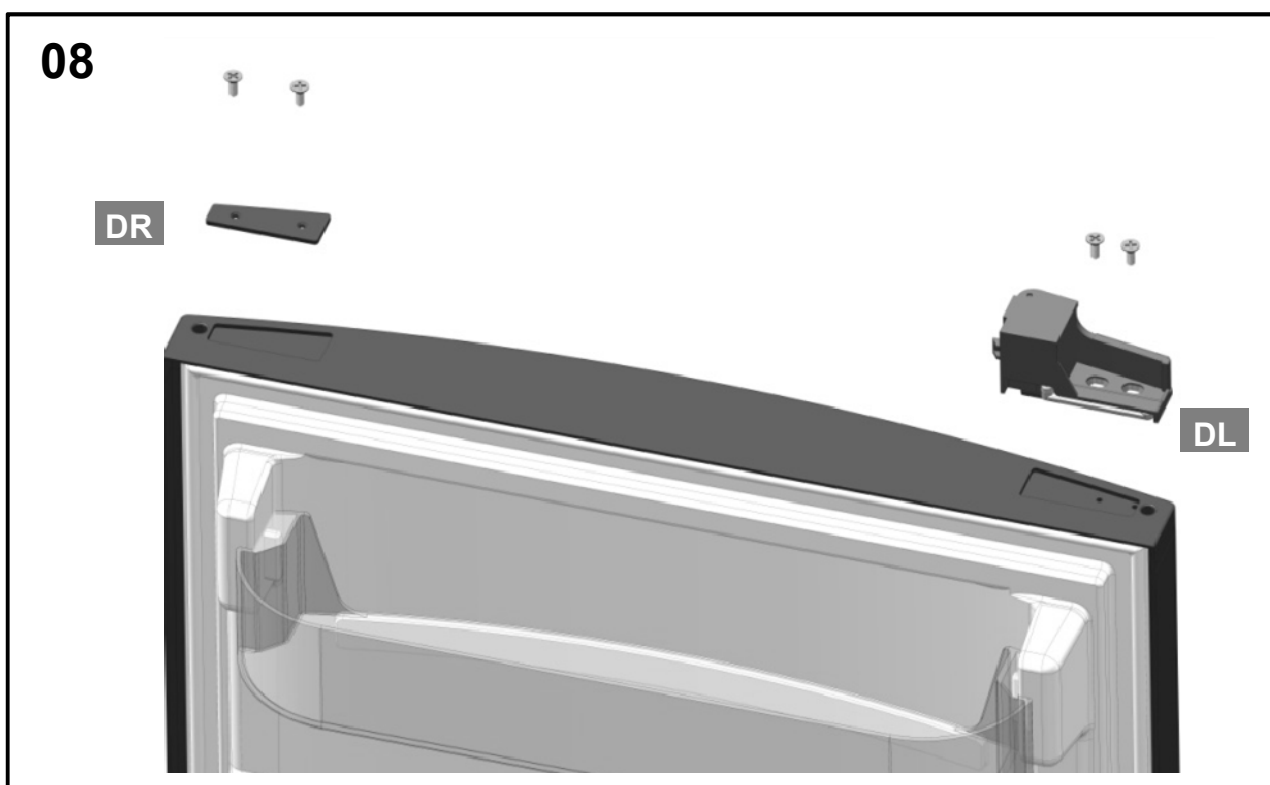
7.5.2 Remove and reinstall the Decorative strip and Decorative box

- Remove the Decorative strip from position **UL** and reinstall it to position **UR**. Remove the Decorative box position **UR** and install it to position **UL**. See FIG.07.



7.5.3 Remove & Reinstall the Handle assembly and Trim panel

- Remove the Left handle assembly from position **DL** and install the Right handle assembly to position **DR**. Remove the Right trim panel from position **DR** and install the Left trim panel to position **DL**. See FIG.08.



7.6 Fixing the refrigerator

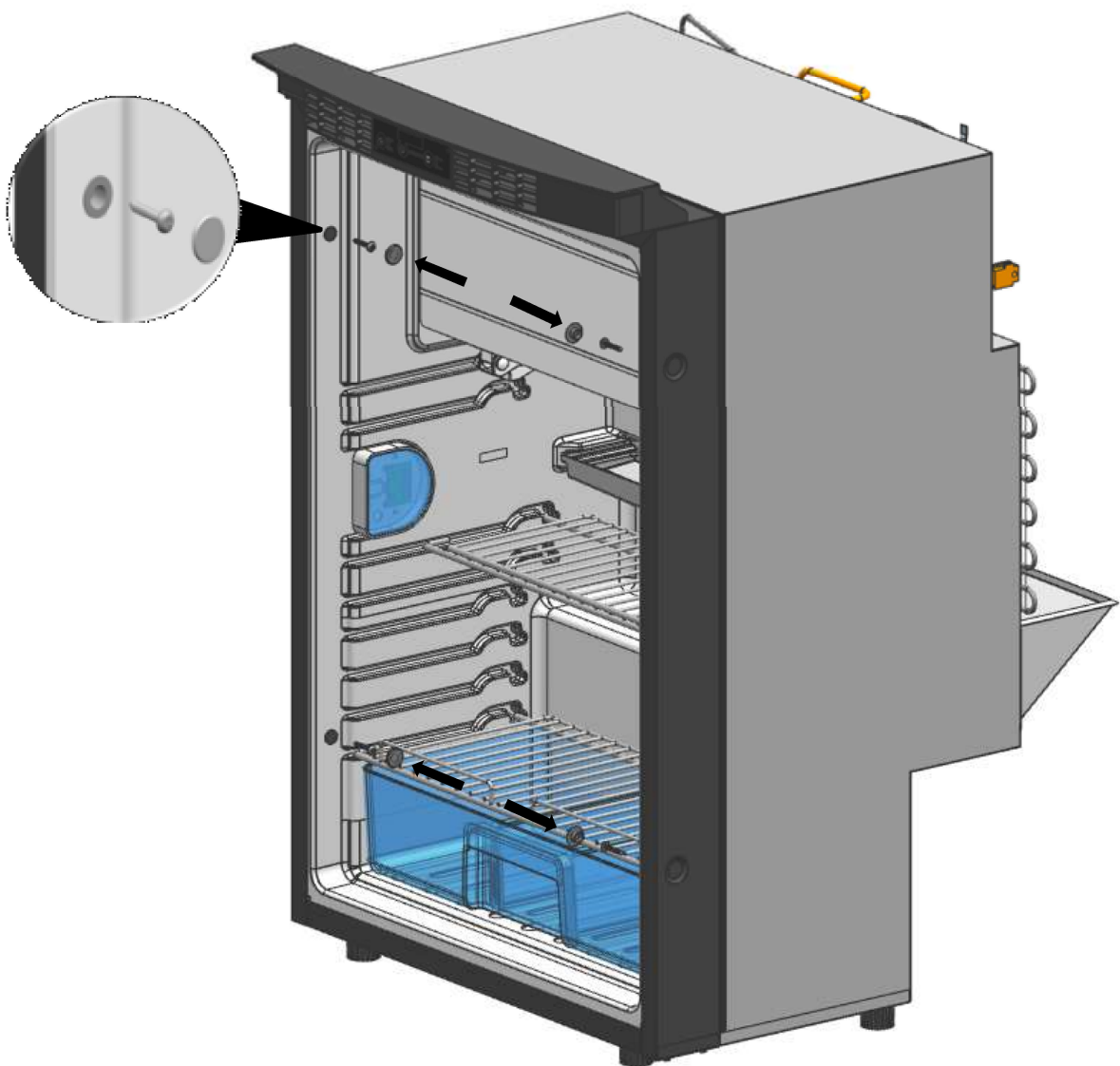
Connect the refrigerator drain pipe reliably.

Push the refrigerator into the recess.

Open the refrigerator door.

Fix the refrigerator in place using suitable screws and press the blanking plugs into the openings.

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8.0 Using the refrigerator

DANGER!

Do not touch exposed cables with your bare hands when the refrigerator is in operation.

WARNING!

- Before starting the refrigerator, make sure the power line and the plug are dry.
- Ensure the ventilation grille on the top of the refrigerator is not blocked or covered.
- Protect the device and cables against heat and moisture.

CAUTION!

- Make sure the vehicle is level and clean it before you operate the refrigerator.
- Let all hot foods cool before putting them in the refrigerator.
- The freezer compartment is made to keep pre-frozen food frozen and not to quick freeze food.
- Ensure foodstuffs do not touch the rear wall of the cooling area.
- Foodstuff may only be stored in its original packaging or in suitable containers.
- The maximum weight per shelf is 5kg. The maximum weight per door-bin is 2kg. The maximum weight for the entire door is 4kg.

NOTE

- Let the refrigerator stand for above 2 ~ 6 hours, and then power on to ensure that the refrigerator can operate normally.
- Let the refrigerator cool for 4 hours before loading with food. If the refrigerator does not start to cool down after about 2 hours, contact your dealer or an authorized TBD. Service Center.

8.1 Operating controller



Power switch



Temperature setting





Operation mode setting





Compressor error light






8.1.1 Power on/off the refrigerator

- Power on the refrigerator by touching the power button  for 1 second, all indicator lamps will be on and the buzzer rings.
- All indicator lamps will be off after 10 seconds except the DC indicator lamp.
- Please wait for a moment as the compressor will start up with some delay.
- Power off the refrigerator by touching the power button  for 10 seconds, the buzzer rings and all indicator lamps will be off.

8.1.2 Temperature setting (Factory default setting is Gear3)

Set the temperature by touching the temperature setting button .

- In order to prevent the misoperation of touch button, pressing and holding the temperature setting button  6 seconds for unlock.
- Press the temperature setting button  to set the temperature from "cold"(only one gear lamp is on) to "very cold"(all five gear lamp are on), refer to the following:

Gear Lamp					
Fresh	6~10°C	4~8°C	2~6°C	0~4°C	-2~2°C
Freezer	-17~-10°C	-19~-12°C	-20~-14°C	-21~-15°C	-22~-16°C

- After finishing the temperature setting, the indicator lamp will be off.

NOTE

The cooling performance and power consumption can be affected by:

- The ambient temperature.
- Ventilation.
- The amount of food to be conserved.
- Number and duration of the door opening.
- Battery low voltage protection.

WARNING!

Do not operate the refrigerator when the ambient temperature is above 60°C. Operation above recommended ambient temperatures can cause permanent damage to the compressor. Operation when the ambient temperature is higher than 43°C can result in poor cooling performance.

8.1.3 Operation mode setting (Factory default setting is Boost mode)

Setting the operation mode by touching the mode button .

- **Night:** The fan operates at low speed and the compressor speed is limited, to reduce noise.
- **Boost:** The compressor operates in preset high speed and the refrigerator gets rapid cooling.

8.2 Fault alarm

8.2.1 Refrigerator fault alarm

- If a fault occurs, the gear lamps flashes according to certain rules to indicate the error type. The alarm will continue until the fault is resolved or any button is touched.
- The gear lamps flash 5 times and the buzzer rings 1 times every 5 seconds, If multiple errors occur at the same time, it will display in a loop every 5 seconds.
- The specific Error Code and corresponding Error type are shown on the below table.

Gear Lamp	Error type	Remedy
◎○○◎○	Fresh temperature sensor failure	Change the sensor
○◎○○◎○	Ambient temperature* sensor failure	Change the sensor
◎◎○○◎○	Ambient temperature* over 131°F (55°C)	Keep ventilation or reduce the ambient temperature
○○◎◎○○	Abnormal door opening(Optional)	Close the door or change part 11 or 12 or part 20

8.2.2 Compressor fault alarm

Below the power supply lamps, there is an error lamp  .

- If a fault occurs, the error lamp flashes according to certain rules to indicate the error type. The error lamp will continue to flash until the fault is resolved.
- The number of flashes in every 3 seconds will represent different error type. For example, if the error lamp flashes twice every 3 seconds, you can refer to the Error Code 2 in below table.
- The specific Error Code and corresponding Error type are shown on the below table.

Error Code	Error type	Possible cause	Remedy
1	Voltage failure	The input voltage is outside the set range	See section 7.3 on page 8
2	1A Fan current fault	Fan current output current is greater than 1A	Check or change the Fans
3	Starting fault	Compressor motor is blocked or the system pressure is too high	Power off the refrigerator for 10 minutes
4	Minimum speed failure	Compressor load is too large or the motor speed is too small	Check or change the compressor
5	Temperature controller failure	Controller shell temperature over 185°F (85°C)	Keep ventilation or reduce the ambient temperature
6	Controller hardware failure	The controller detects abnormal parameters	Change the driver of compressor

8.3 Defrosting

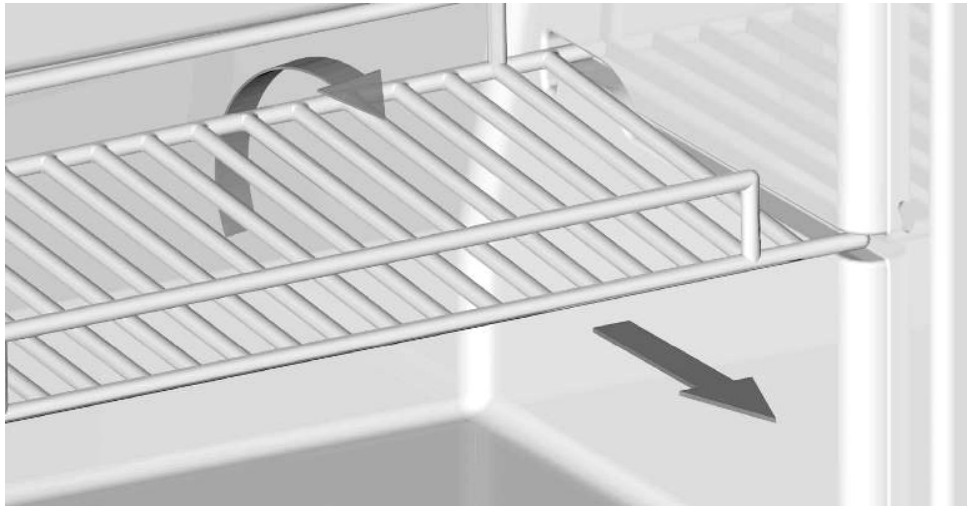
When the frost thickness of the fresh-compartment's back wall reaches 1mm or the frost thickness of the freezer-compartment's inner wall reaches 3mm, please power off the refrigerator until all the frost is dissolved and clean.

8.4 Removing the shelves

Remove the shelves as per the following steps when needed

- Open the doors to 90° or more.
- Tilt the back of the shelf up, then draw out the shelf, see FIG.10.
- Remove the shelf by pulling it forward.

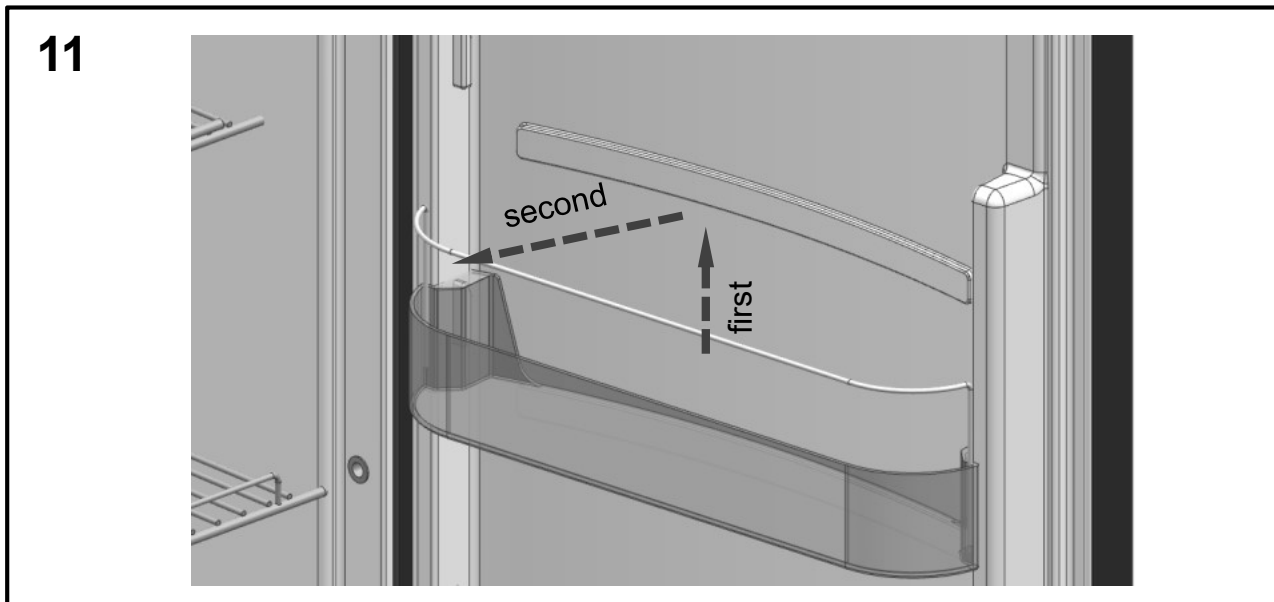
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8.5 Removing the Door-bin

Remove the Door bin as per the following steps when needed

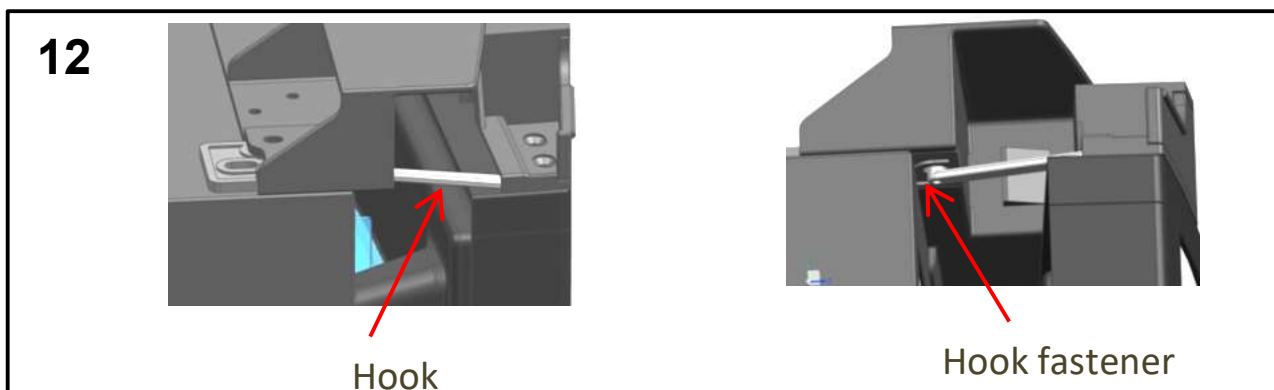
- Open the doors to 90° or more.
- Empty the door-bin.
- Lift the door-bin up 2"(50mm), then remove the door-bin by pulling it forward, see FIG.11.



8.6 Storage

If the refrigerator do not use for longer period, it is very important to power off the refrigerator and disconnect the DC power source. Keep the refrigerator doors at ventilation state during storage.

- Empty the refrigerator, and defrost the freezer compartment.
- Clean the complete refrigerator thoroughly.
- Open the refrigerator door and hold it to the airing lock as the following steps:
 - a. Pull out the hook below the handle base.
 - b. Insert the hook to the hole of the hook fastener (below the Ventilation grille).
 - c. Latch the door slightly opened to prevent mould from forming. See FIG.12.



9.0 Cleaning and maintenance

DANGER!

- Always disconnect the DC power source before you clean and service it.



CAUTION!

- Do not use harsh chemicals, ammonia, chlorine bleach, concentrated detergent, solvents, abrasives or metal scouring pads to clean your refrigerator inside or out. They can damage and/or discolor the refrigerator finish.
- Do not use warm water to clean glass shelves while they are still cold. Glass may break when exposed to sudden temperature changes or impact.
- Do not use hard or sharp tools to remove ice or free objects frozen in the device.

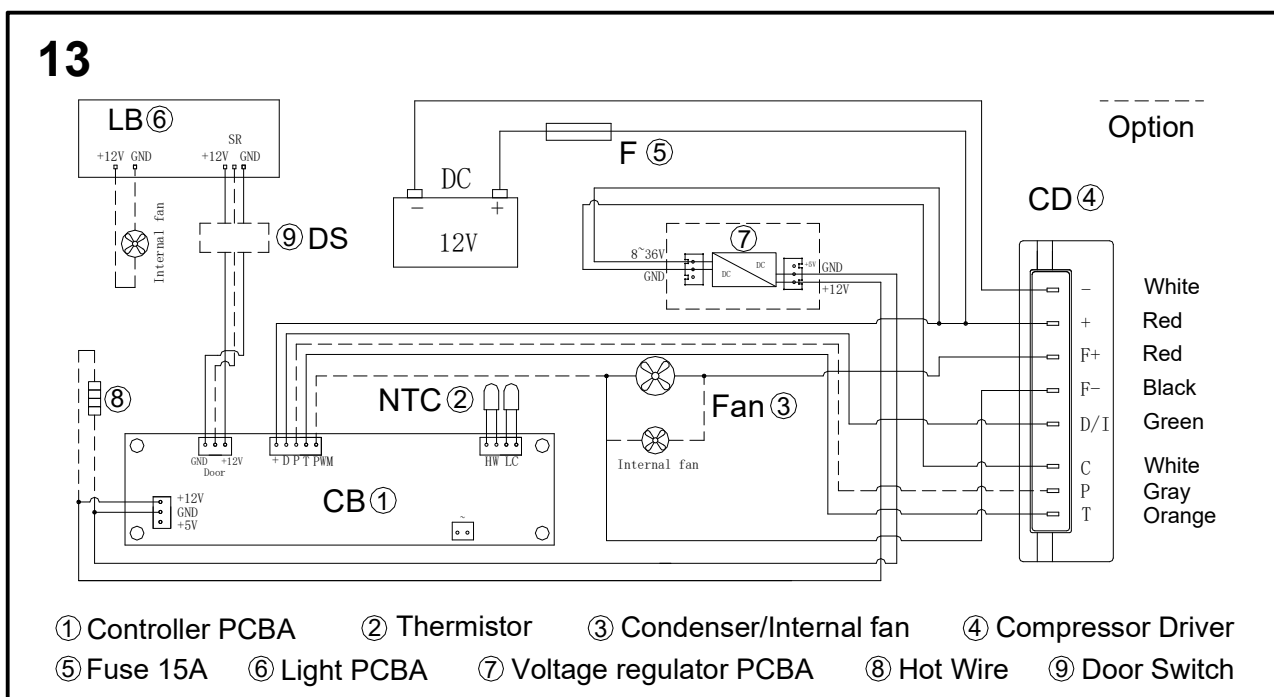
A good time to clean the refrigerator is just after you defrost it. Clean the inside of the refrigerator as often as necessary to avoid food odors:

- Remove all food from the refrigerator.
- Clean the interior. Hand wash, rinse, and dry removable parts and interior surfaces thoroughly. Use a clean sponge or soft cloth and a mild detergent in warm water.
- Clean the door and drawer seals (gaskets). A dirty or sticky seal may adhere to the cabinet and tear when you open the door. Using a soft cloth and a solution of mild detergent and warm water, hand wash the door seals. Rinse with clear water and dry thoroughly.
- Clean the exterior surfaces. Wash exterior surfaces with a clean, soft cloth or sponge and a mild detergent in warm water. Rinse surfaces with clean, warm water and dry immediately to avoid water spots.
- Wipe the refrigerator dry with a cloth after cleaning.

10.0 Technical data

Total volume(L)	84/82.5
Freezer volume(L)	10
Connection voltage	DC 12V
Rated current(12V)	6A
Rated Power Day/Night(W)	55/35@25°C
Energy consumption kW.h/24h@25°C	Boost 0.36 Night 0.32
Storage temperature @gear 3	Freezer -20~-14°C Fresh 2~6°C
Climate class	T/ST
Refrigerant (Quantity)	R600a (24g)
DimensionWxDxH(mm)	520x580x821
Net weight(kg)	23.5
Foaming agent	C5H10
Inspection/Certification	CE / ETL /  / 

11.0 Wiring diagram



To continuously improve our products, we reserve the rights to change some specifications in technical data&wiring diagram without further notice, please check the refrigerator rating plate.

12.0 Troubleshooting

(1) The compressor is not running.

Fault	Possible cause	Remedy
Device does not function and has no power	Connection supply line interrupted	Establish a connection
	Main switch faulty (if installed)	Replace the main switch
Voltage is being applied, but the compressor does not operate	Ambient temperature too high	-
	Insufficient ventilation	Clean existing ventilation or install sufficient ventilation
	Condenser is dirty	Clean the condenser
Electric circuit between the pins in the compressor interrupted	Defective compressor	Replace compressor

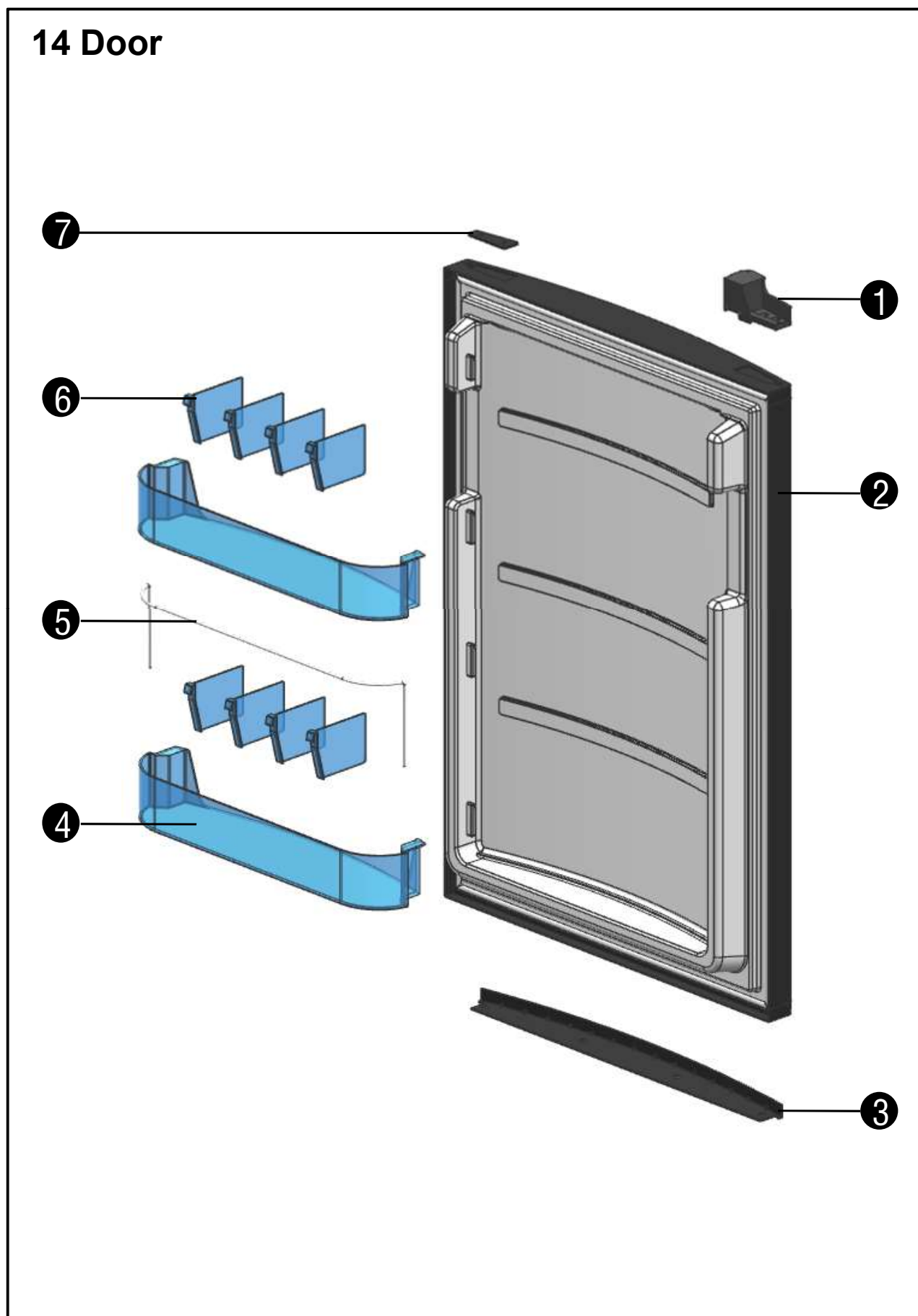
(2) Poor cooling, increase in interior temperature.

Fault	Possible cause	Remedy
Compressor runs for a long time/ continuously	Ambient temperature too high	-
	Insufficient ventilation	Upgrade to satisfy requirements in installation guideline.
	Fan defective	Replace the fan
Compressor does not run often	Battery capacity exhausted	Change the battery

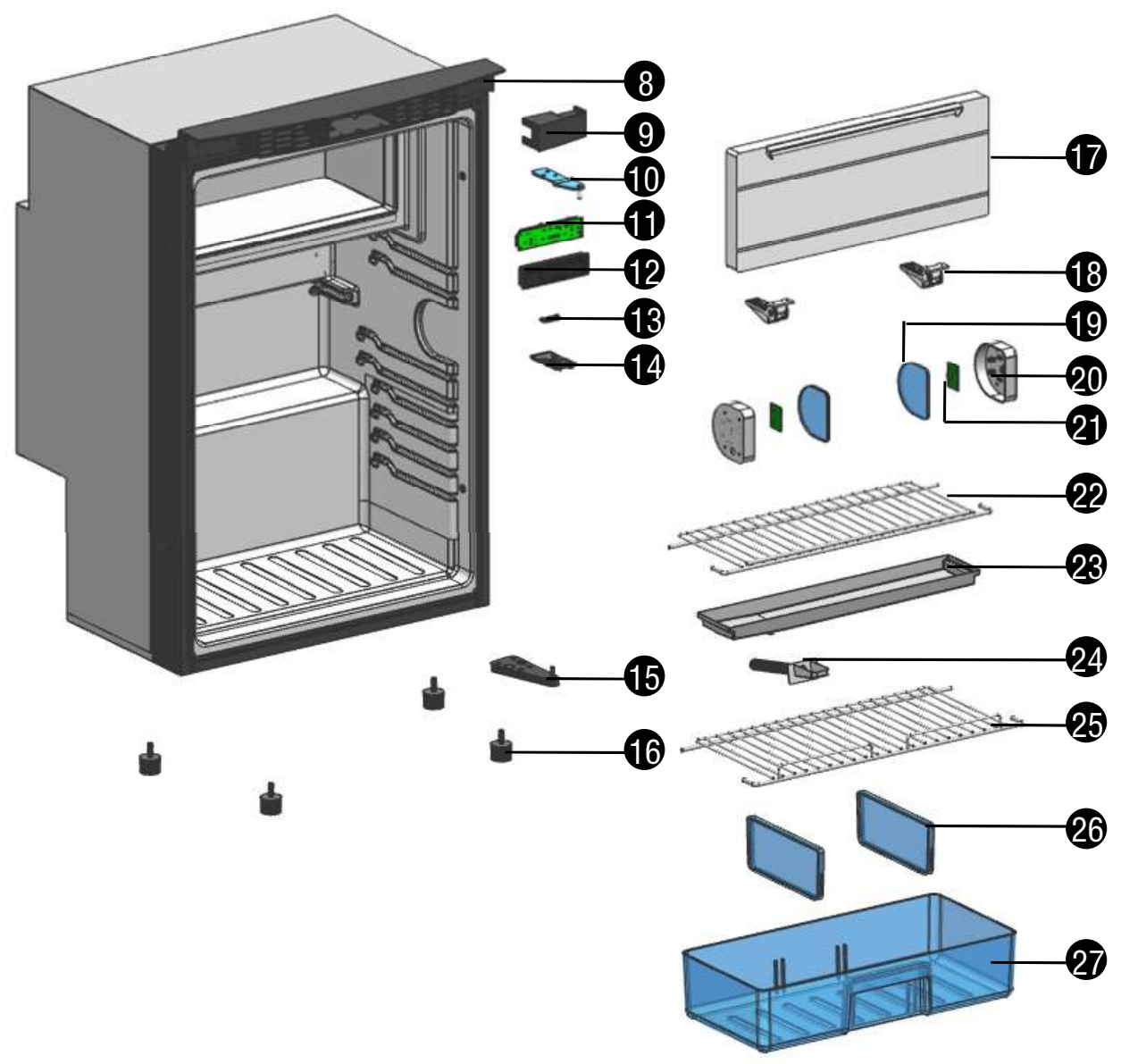
(3) Unusual noises.

Fault	Possible cause	Remedy
Loud humming	A component of the refrigerant circuit cannot be moved freely (touching the wall)	Bend the component carefully away from the obstruction
	Some foreign objects stuck between the refrigerant circuit and the wall	Remove the foreign object
	Fan noise	Replace the fan

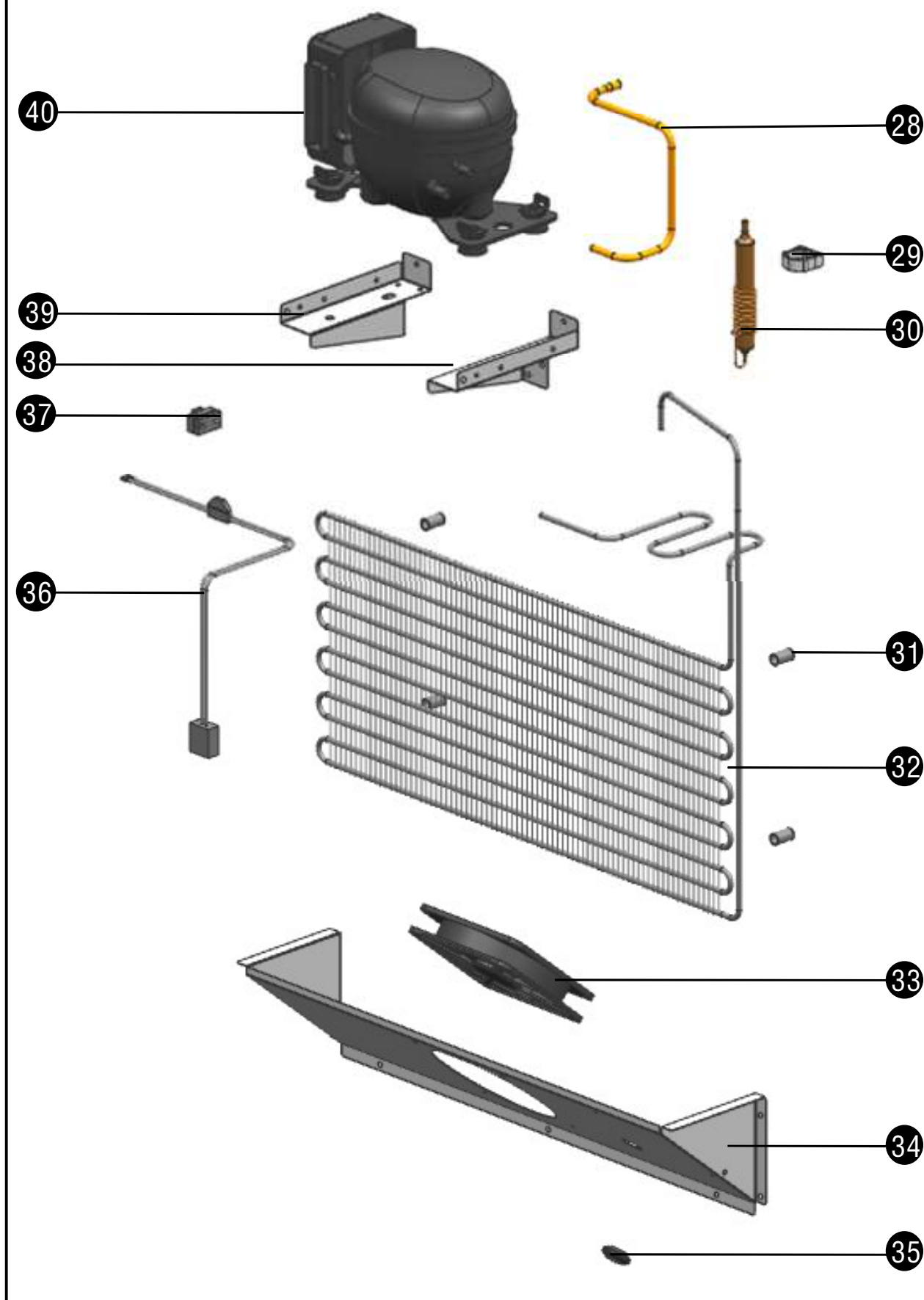
13.0 Spare part list



15 Cabinet



16 Compressor for TOP



No.	Part code	Description	QTY
1	02.02.08500003	Left handle assembly	1
2	02.02.08500002	Door assembly	1
3	01.03.08502385	Bottom trim panel	1
4	01.03.08502007	Door bin	2
5	01.01.10001662	Bottle bar	1
6	01.03.08502163	Door bin clapboard	8
7	01.03.08502101	Right trim panel	1
8	01.03.08640301	Ventilation grille	1
9	01.03.08502051	Decorative box	1
10	01.01.08502289	Right_up hinge	1
11	01.02.09241259	Controller PCBA	1
12	02.04.14540002	Control panel front cover_asm	1
13	02.04.14540010	Door switch asm	1
14	01.03.08502146	Decorative strip	1
15	01.01.04001271	Lower hinge	1
16	01.03.02501219	Foot	4
17	02.02.10000003	Freezer door assembly	1
18	02.02.08500001	Freeze door hinge assembly	2
19	01.03.08502160	Light cover	2
20	01.03.08502211	Light box	2
21	01.02.08502154	Light PCBA	2
22	01.01.09001113	Ref_upper shelf	1
23	01.03.10001005	Drain pan	1
24	02.04.08640002	Drain pipe assembly	1
25	01.01.09001114	Ref_lower shelf	1

No.	Part code	Description	QTY
26	01.03.08502140	Fruit box clapboard	2
27	01.03.08502049	Fruit and vegetable box	1
28	01.04.08640403	Suction tube	1
29	01.03.04040006	Filter drier bracket	1
30	01.04.04040006	Filter drier	1
31	01.06.00003152	Support column	4
32	01.04.05041401	Condenser	1
33	01.02.14540213	Condenser fan	1
34	02.04.08640122	Fan bracket	1
35	01.06.00009049	Sheathing	1
36	01.02.09040068	DC 12V supply cord	1
37	01.03.04006533	Supply cord clamp	1
38	02.04.08640121	Compressor right bracket	1
39	02.04.08640120	Compressor left bracket	1
40	01.02.00040218	Compressor(DK52C)	1

