

SERVICE MANUAL REFRIGERATION

Document Revisions

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Consumer Service - EMEA

Quality & Continuous Improvement - Technical Support

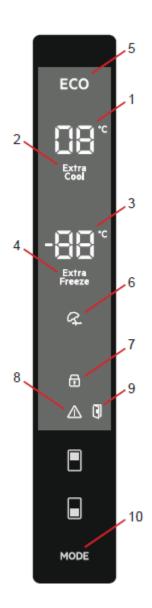
FREESTANDING COMBI-BOTTOM TWIN-TECH NO-FROST MULTIFLOW DISPLAY ON DOOR

FS COMBI-BOTTOM MULTIFLOW DISPLAY ON DOOR



ΕN

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Using the Control Panel

- 1. It is cooler set value screen.
- 2. It is super cooling indicator.
- 3. It is freezer set value screen.
- 4. It is super freeze indicator.
- 5. It is economy mode symbol.
- 6. It is holiday mode symbol.
- 7. It is child-lock symbol.
- 8. It is alarm symbol.
- 9. Door open alarm symbol.
- 10. It enables the modes (economy, holiday...) to be activated if desired.

Super freeze mode



Purpose

- To freeze a large quantity of food that cannot fit on the fast freeze shelf.
- To freeze prepared foods.
- To freeze fresh food quickly to retain freshness.

How Would It Be Used?

Press freezer set button until Super freeze symbol will be seen on the screen. Buzzer will sound beep beep. Mode will be set.

During This Mode:

- Temperature of cooler and super cool mode may be adjusted. In this case super freeze mode continues.
- Economy and Holiday mode can not be selected.
- Super freeze mode can be cancelled by the same operation of selecting.

Notes:

- The maximum amount of fresh food (in kilograms) that can be frozen within 24 hours is shown on the appliance label.
- For optimal appliance performance in maximum freezer capacity, activate Super Freeze mode 3 hours before you put fresh food into the freezer.
- At the end of this period, the fridge will sound an audible alarm notifying that it is readv.

Super freeze mode will automatically cancel after 24 hours or when the freezer sensor temperature drops below -32 °C.

Super cool mode



Purpose

- To cool and store a large quantity of food in the fridge compartment.
- To quickly cool drinks.

How Would It Be Used?

Press cooler set button until super cool symbol will be seen on the screen. Buzzer will sound beep beep. Mode will be set.

During This Mode:

- Temperature of freezer and super freeze mode may be adjusted. In this case super cool mode continues.
- Economy and holiday mode can not be selected.
- Super cool mode can be cancelled by the same operation of selecting.



Economy Mode



Purpose

Energy savings. During periods of less frequent use (door opening) or absence from home, such as a holiday, Eco program can provide optimum temperature whilst saving power.

How Would It Be Used?

- Push "MODE" button until eco symbol appears.
- If no button is pressed for 1 second. Mode will be set. Eco symbol will blink 3 times. When mode is set, buzzer will sound beep beep.
- Freezer and refrigerator temperature segments will show "E".
- Economy symbol and E will light till mode finishes.

During This Mode:

- Freezer may be adjusted. When economy mode will be cancelled, the selected setting values will proceed.
- Cooler may be adjusted. When economy mode will be cancelled, the selected setting values will proceed.
- Super cool and super freeze modes can be selected. Economy mode is automatically cancelled and the selected mode is activated.
- Holiday mode can be selected after cancelling the economy mode. Then the selected mode is activated.
- To cancel, you will just need to press on mode button.

Holiday Mode



How Would It Be Used?

- Push "MODE" button until holiday symbol appears
- If no button is pressed for 1 second. Mode will be set. Holiday symbol will blink 3 times. When mode is set, buzzer will sound beep beep.
- Cooler temperature segment will show "--".
- Holiday symbol and "--" will light till mode finishes.

During This Mode:

- Freezer may be adjusted. When holiday mode will be cancelled, the selected setting values will proceed.
- Cooler may be adjusted. When holiday mode will be cancelled, the selected setting values will proceed.
- Super cool and super freeze modes can be selected. Holiday mode is automatically cancelled and the selected mode is activated.
- Economy mode can be selected after cancelling the holiday mode. Then the selected mode is activated.
- To cancel, you will just need to press on mode button.

Drink Cool Mode

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Purpose

This mode is used to cool drinks within an adjustable time frame.

How Would It Be Used?

- Press freezer button for 3 seconds.
- Special animation will start on freezer set value screen and 05 will blink on cooler set value screen.
- Press cooler button to adjust the time (05 10 15 20 25 30 minutes).
- When you select the time the numbers will blink 3 times on screen and sound beep beep.
- If no button is pressed within 2 seconds the time will be set.
- The countdown starts from the adjusted time minute by minute.
- Remaining time will blink on the screen.
- To cancel this mode press freezer set button for 3 seconds.

Screen Saver Mode

Purpose

This mode saves energy by switching off all control panel lighting when the panel is left inactive.

How To Use?

- This mode will be activated when you press on "MODE" button for 3 seconds.
- If no button is pressed within 30 seconds when he mode is active, lights of the control panel will go off.
- If you press any button when lights of control panel are off, the current settings will appear on the screen, and then you can maket he adjustment as you want. If you neither cancel screen saver mode nor press on any button in 30 seconds, the control panel will go off again.
- To cancel screen saver mode press on "MODE" button for 3 seconds again.
- When screen saver mode is active you can also activate child lock.
- If no button is pressed within 30 seconds after child lock is activated, the lights of the control panel will turn off. You can see latest status of settings or modes after you pres any button. While control panel 's light is on, you can cancel child lock as described in the instruction of this mode.

Child Lock



Purpose

Child lock can be activated to prevent any accidental or unintentional changes being made to the appliance settings.

Activating Child Lock

Press on freezer and cooler buttons simultaneously for 5 seconds.

Deactivating Child Lock

Press on freezer and cooler buttons simultaneously for 5 seconds.

Child lock will also be deactivated if electricity is interrupted or the fridge is unplugged.

Open Door Alarm Function



If cooler door is opened more than 2 minutes, appliance sounds 'beep beep' and door open icon will be light.

Demo Mode

This mode will be use for only sales points by salesman to show functions & modes to customer without operating components as a compressor, fan, motor.. Etc.

Entering Demo mode:

Firstly the power is on, secondly within 1 minute user will push Mode and Freezer Set Button 5 seconds at the same time, Then appliance will go on "demo function". «**dE**» will light on cooler set value screen for 1 second, and «**On**» will light on freezer set value screen for 1 second and off.

Every 10 seconds this operations will occur.

All functions can be adjusted to show how they are adjusted to the customer.

Canceling Demo mode:

For cancelling; Same operation will be used. If user will push Mode and Freezer Set Button at the same time, demo function will be cancelled.

When appliance is Demo mode; if plug is removed or there is an electricity breakdown; demo mode will continue with current settings after user plug into or electricity breakdown finish.

Freezer temperature settings

- 04° - 18°
- The initial temperature value for the freezer setting indicator is -18°C.
- Press the set freezer button once.
- When you first push this button, the last set value will blink on the screen.
- Whenever you press this button, temperature will decrease respectively.
- When you push the set freezer button until the super freeze symbol appears, and if you do not push any other button within 1 second, super freeze will flash.
- If you continue to press it, it will restart from -16 °C.
- The temperature value selected before holiday mode, super freeze mode, super cool mode or economy mode is activated and will remain the same when the mode is over or cancelled. The appliance continues to operate with this temperature value.

Cooler temperature settings



- Initial temperature value for the cooler setting indicator is +4 °C.
- Press the cooler button once.
- When you first push this button, the last value will appear on the cooler setting indicator.
- Whenever you press this button, temperature will decrease respectively.
- When you push the cooler set button until the super cool symbol appears, and if you do not push any button within 1 second, super cool will flash.
- If you continue to press the button, it will restart from +8 °C.
- The temperature value selected before holiday mode, super freeze mode, super cool mode or economy mode is activated and will remain the same when the mode is over or cancelled. The appliance continues to operate with this temperature value.



Warnings about Temperature Adjustments

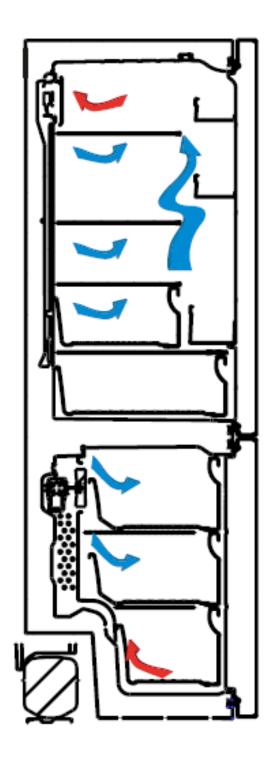
It is not recommended that you operate your fridge in environments colder than 10°C in terms of its efficiency.

- Do not start another adjustment while you are already making an adjustment.
- Temperature adjustments should be made according to the frequency of door openings, the quantity of food kept inside the fridge and the ambient temperature in the location of your fridge.
- In order to allow your fridge to reach the operating temperature after being connected to mains, do not open the doors frequently or place large quantities of food in the fridge. Please note that, depending on the ambient temperature, it may take 24 hours for your fridge to reach the operating temperature.
- A 5 minute delay function is applied to prevent damage to the compressor of your fridge when connecting or disconnecting to mains, or when an energy breakdown occurs. Your fridge will begin to operate normally after 5 minutes.
- Your appliance is designed to operate in the ambient temperature (T/SN = 10°C 43°C) intervals stated in the standards, according to the climate class displayed on the information label. We do not recommend operating your appliance out of the stated temperature limits in terms of cooling effectiveness.

Climate Class	Ambient Temperature °C
T Between 16 and 43 (°C	
ST	Between 16 and 38 (°C)
N	Between 16 and 32 (°C)
SN	Between 10 and 32 (°C)

Important installation instructions

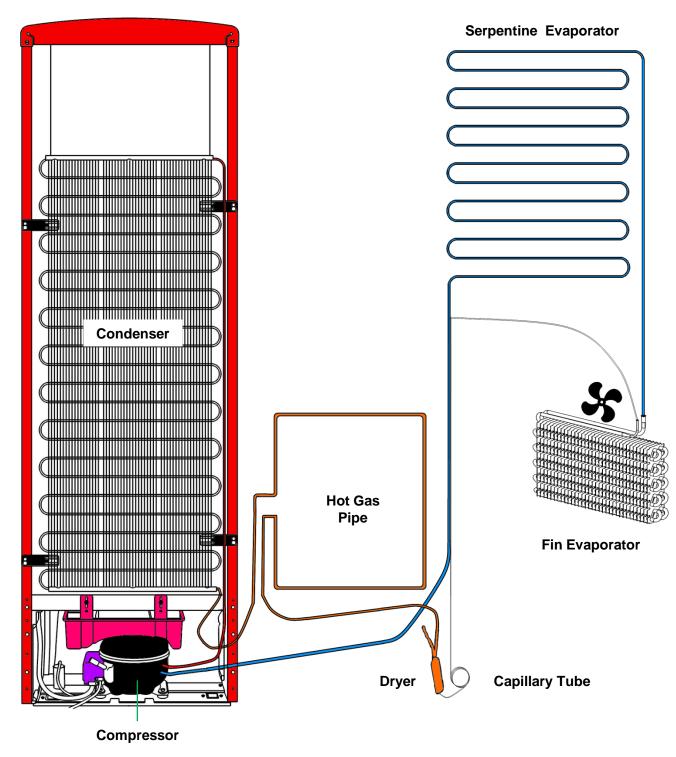
This appliance is designed to work in difficult climate conditions (up to 43 degrees C or 110 degrees F) and is powered with 'Freezer Shield' technology which ensures that the frozen food in the freezer will not defrost even if the ambient temperature falls as low as -15 °C. So you may then install your appliance in an unheated room without having to worry about frozen food in the freezer being spoilt. When the ambient temperature returns to normal, you may continue using the appliance as usual.



Cutaway view: Air Flow Direction

Blown : Cold Air Returned: Hot Air

Refrigerant Cycle



This model is double controlled product without any valves.

When both cooler & freezer sections are set by end user, mainboard controls both the cooler sensor & freezer sensor. When cooler part reach requested value, if the freezer section haven't reach the requested level; compressor continues to run. While freezer continue to cool down, by the help of the RDH (Ref. Defrost Heater), cooler section would stay at constant value. When the freezer reach the requested value both compressor & RDH would be stopped.

Used Component

Resistance Values According To The Temperature Sensor (°C/Ohm Rates)

(For The Freezer Defrost and The Cooler Ambient Sensor)

4	5 °C/1kΩ	-1	°C/6.2kΩ
3	5 °C/1.5kΩ	-3	°C/6.8kΩ
30) °C/1.8kΩ	-5	°C/7.5kΩ
25	5 °C/2.2kΩ	-7	°C/8.2kΩ
19	9 °C/2.7kΩ	-12	°C/10kΩ
14	1 °C/3.3kΩ	-15	°C/12kΩ
10) °C/3.9kΩ	-20	°C/15kΩ
5.5	5 °C/4.7kΩ	-24	°C/18kΩ
1.5	5 °C/5.6kΩ	-31.5	°C/27kΩ
() °C/6kΩ	-35.5	°C/33kΩ

Sensor Resistance Values According To The Temperature (°C/Ohm Rates)

(For The Cooler Defrost Sensor)

45 °C/2.15kΩ	-1 °C/17.1kΩ
35 °C/3.26kΩ	-3 °C/19kΩ
30 °C/4.02k11Ω	
5 °C/21.1kΩ	
25 °C/5kΩ	-7 °C/23.5kΩ
19 °C/6.53kΩ	-12 °C/30.8kΩ
14 °C/8.23kΩ	-15 °C/36.5kΩ
10 °C/9.95kΩ	-20 °C/48.6kΩ
5.5 °C/12.3kΩ	-24 °C/61.5kΩ
1.5 °C/15kΩ	-31.5 °C/98kΩ
0 °C/16.3kΩ	-35.5 °C/12.6kΩ

Special Programs

NTC Sensor

There are three types of sensors. They are cooler, freezer defrost, cooler defrost sensors. Cooler and freezer defrost sensors have the same features but their cable length is different. The resistance values of all sensors decrease when the temperature values of the sensors increase. For example, the resistance value that is 33 k Ω in the -35.5 °C goes down to 1k Ω in the 45 °C and therefore the ambient temperature should be considered while the sensor is being checked. If the ambient temperature is 25 °C, the measuring device shows about 2.2k Ω (if ntc sensor is steady).

When the refrigerator works on first time;

If the cooler compartment defrost sensor and the freezer compartment defrost sensor are hotter than -5°C, the test system works automatically. These below components are tested automatically every 5 seconds.

- ❖The compressor and freezer fan motor starts and stops after 5 seconds.
- ❖The defrost resistance stars and stops after 5 seconds.
- ❖The cooler defrost resistance starts and stops after 5 seconds.
- ❖The DC Radial Fan starts and stops after 5 seconds.

After these steps, the system waits 5 minutes and then it will switch normal mod.

Freezer Defrost Program

- •According to the conditions of usage, the defrost might be activated after the min compressor running time; 8 hours or max total time; 55 hours. Below matters are also effected;
- Consisted ice amount,
- Door open-close,
- Sudden usage variance,
- Cooler sudden temperature rise,

Cooler Defrost Program

The cooler defrost and the freezer defrost are operated parallel except those below. If the cooler defrost sensor does not feel 5°C three times during a particular period of time.

- Defrost will be activated after the refrigerator works max 9 hours. According to the conditions of usage, the defrost might be activated (due to mentioned those below) after the compressor works min 5 hours.
- Consisted ice amount.
- Door open-close,
- Sudden usage variance,
- Cooler sudden temperature rise,

Special Programs

Freezer Defrosting Time

The Defrost is disabled when the defrost sensor temperature feels 8ºC.If defrost time passes 37 minutes, defrost completing temperature will be rise to 15ºC.

Cooler Defrosting Time

The cooler defrost and the freezer defrost are operated parallel except those below. The cooler defrost will not work if the freezer defrost stops.

The defrost process stops when the defrost sensor temperature feels 7°C. At the low ambient temperature or when the compressor stops; to balance, defrost stops when the defrost sensor temperature feels 15°C. But if the defrost time or the compressor stopping time goes over 6 hours, the resistance will be stopped.

Compressor delay: First, the defrost process ends, the system waits 5 minutes, just after that the compressor is active.

In Case of Power Cut

- All regulated parameters and functions are kept in memory when the power cut.
- When the electricity comes, if the defrost sensor temperature is lower than -5 °C the compressor works 5 minutes later. If it is higher than -5 °C.

Other Features

Warnings: The door open warning is active 2 minutes later and it alarms.

Door Direction : It is possible to reverse the door.

Gasket : It is possible to change the gasket.

Probable Faults

	Is the appliance too close to wall or heat sources (stove, central heating, oven, cooker etc.)?	It should be placed min 50cm distance from heat sources and min 5 cm from electrical ovens.
Unsufficient cooling	Is the ambient temperature high?	Raise the thermostat value.
	Check whether putting the hot foods in the refrigerator?	Put the foods after get cold.
	Is there any gas leakage in refrigerant system?	Check all welding points in the system.
The foods in the cooler compartment are freezing.	Were the foods placed close to cooling air outlet?	Please do not block air outlets
	Is the cooler thermostat value high? Is there any hot foods close to the cooler sensor?	Decrease the cooler thermostat value and do not put hot things close to the sensor.
	Were the liquid foods in the closed containers?	Put the liquid foods into the closed containers.
Are there any	Were the hot foods put into the refrigerator?	Put it into after getting cold.
sweating or icing?	Was the refrigerator door opened?	Do not leave the refrigerator door open and do not often open or close.
	Is the appliance on the flat surface?	The floor should be straight and balance the refrigerator with the help of the adjustable feet.
Abnormal Noise	Is the compressor feet loose	Fix it.
	Is the condenser or fan stationary normal?	Fix it.
	Do the capillary tube or all other tubes touch any where?	Fix it.

Service Mode

Entering service mode:

Push screen selector button continuously. During this time, open and close the cooler door for least 3 times. The appliance will enter service mode 3 sec. late.

- If there is a faulty situation, error code will be observed on screen. Otherwise nothing will be on the screen.
- Buzzer will sound beep for 0.1 sec. each 5 sec. during service mode.
- Child lock icon will blink
- Service function could be activated by pushing «Mode» button

SERVICE FUNCTION0			
	While display is on service mode, it could be changed among service functions by touching mode icon		
TOUCHING M	STARTING MODE		
(MODE)	Eco icon blinks		
	The number of components which is controlled is shown at freezer segments of display		
	Eco icon goes off when the starting test finishes and then display returns to initial service mode.		
	MANUAL DEFROST		
	Holiday icon blinks		
TOUCHING M	Defrost might be finished manually or automatically.		
(MODE) BUTTON TWO TIMES.	Defrost might be finished manually by using the screen select button. Holiday icon goes off and display returns to initial service mode.		
THVIES.	Automatic defrost operates according to the standard defrost time.		
	Holiday icon goes off when he when the manual defrost ends and display returns to initial service mode.		
	DAMPER MOTOR CONTROL MODE (this is a general function for other models which have damper)		
TOUCHING M	SC icons blink.		
(MODE) BUTTON THREE	There is no function due to not having damper component in the product		
TIMES.	Unless touch anything on the screen for 5 minutes , this function will be finished.		
	SC icons goes off and display returns to initial service mode.		
	CURRENT TEMPERATURE VALUES INDICATOR		
	SF icons blink.		
	Current temp. Value of freezer set sensor is shown on cooler set segment. Freezer set segment shows "1"		
	After touching child lock button one time, current temp. Value of cooler sensor is shown on cooler set segment. Freezer set segment shows «2"		
TOUCHING M (MODE)	After touching freezer set icon one more time, current temp. Value of defrost sensor is shown on cooler set segment. Freezer set segment shows «3"		
BUTTON FOUR	After touching child lock button one more time, Constant value is shown on cooler set segment due to not being an		
TİMES.	ambient sensor in the appliance . Freezer set segment shows «4" (this is a general function for other models which have ambient sensor)		
	After touching child lock button one more time, current temp. Value of cooler serpentine sensor is shown on cooler set		
	segment. Freezer set segment shows «5"		
	Unless touch child lock button for 5 minutes , function will be finished automatically.		
	Touching screen select button, function will be finished manually.		
	Sf icon goes off and display returns to initial service mode.		
TOUCHING M	DOOR SWITCH CONTROL		
(MODE) BUTTON FİVE	No icons at display		
TIMES.	Cooler set segment gives information about cooler door		
	Mode just could be deactivated by cooler set button.		

Service Mode

To cancel Service Mode: You can use same method as entering the Service Mode.

SENSOR	FREEZER SET VALUE	COOLER SET VALUE
(1) Freezer (Short-Open)	E	01
(2) Refrigerator (Short-Open)	E	02
(3) Defrost (Short-Open)	Е	03
(4) AT sensor	E	04
(5) RDH Sensor	E	05

Component defect on display

DEFECT TYPE	FREEZER SET VALUE	COOLER SET VALUE
Compressor Defect	E	06
Defrost Heater Defect	E	07

Low voltage error on display

DEFECT TYPE	FREEZER SET VALUE	COOLER SET VALUE
Low voltage	E	08

User and Service Mode Error Message

Cooling error on display

To prevent the wrong alarms, this alarm status is disabled on following conditions:

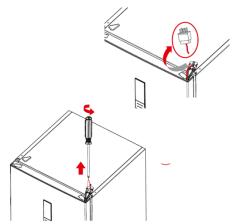
- •During the first 6 hours after the product was firstly connected.
- •During the defrost period
- •During the first two hours after a defrost
- •During the first 2 hours that one of the doors was open.

DEFECT TYPE	FREEZER SET VALUE	COOLER SET VALUE
LF	E	09
LC	Е	10
НС	E	11

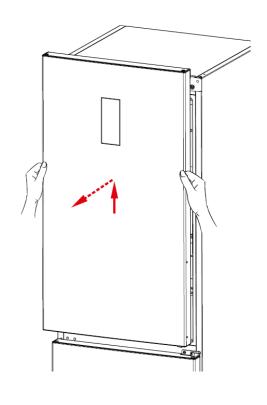
Hold the top hinge cover and remove it toward that direction



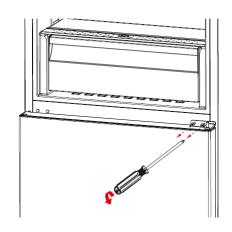
Disconnect the display connector.
Unscrew the screws fixing the top hinge and remove it.



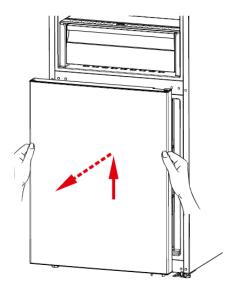
Displace the top door



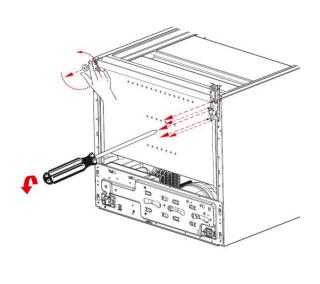
Unscrew the two screws fixing the middle hinge and remove it.



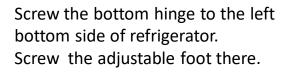
Displace the bottom door.

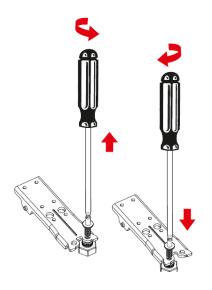


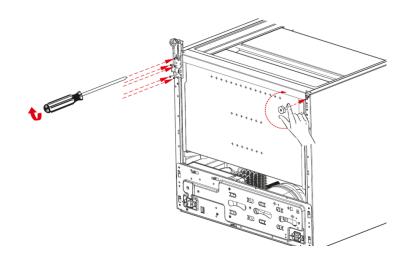
Unscrew the bottom hinge pin and screw it to other hole.



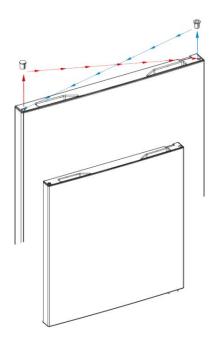
Unscrew the adjustable foot and unscrew the bottom hinge screws



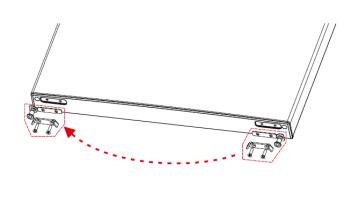




Replace the top bushing and the top bushing cap at the bottom door.



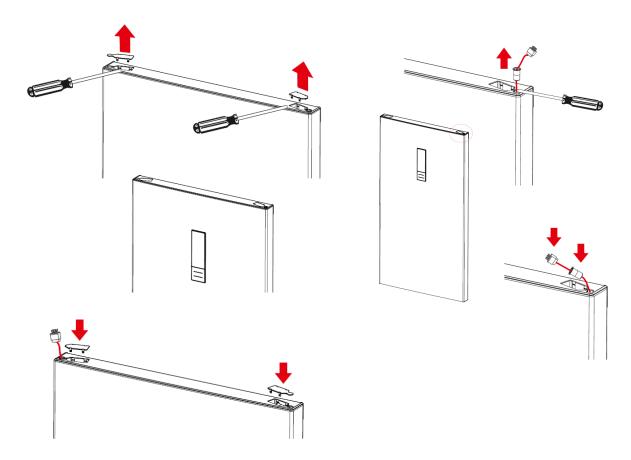
Unscrew the two screws fixing stopper and stopper support plate under the bottom door. After that screw the other side.



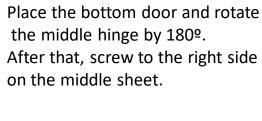
Remove the support plastic under the upper door. Then re screw these parts to the other side symmetrically.

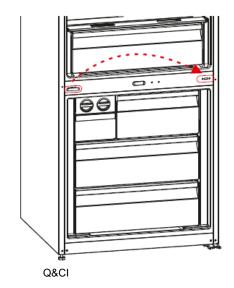


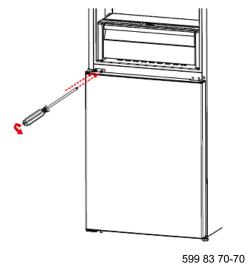
Remove the socket cover-right of the top door. Remove the display socket. Please use the socket cover to hidden other housing.



Remove the middle hinge cover and then screw the screw on the side panel and assemble to the right side panel.

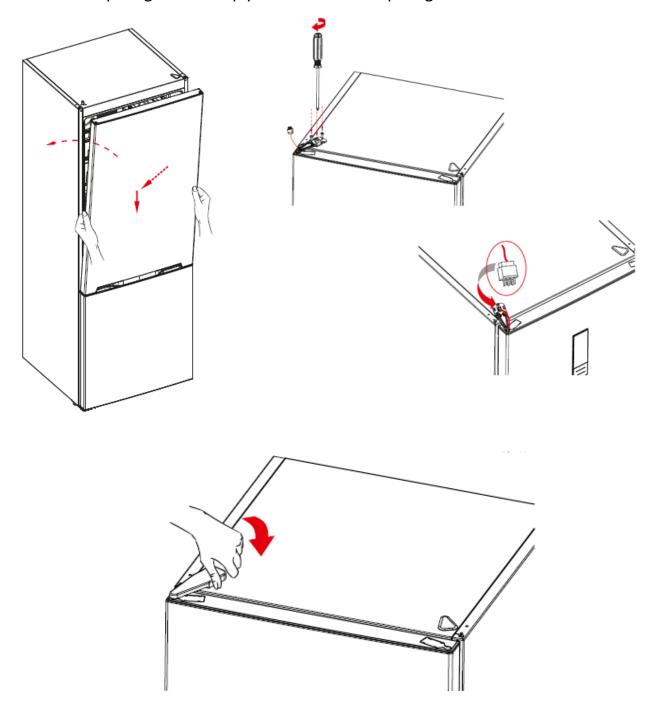






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Place the top door to the middle hinge and then connect the display connector and screw the top hinge to the top panel. Place the top hinge cover.



Removing and Chancing The Mainboard

Unscrew the screws which are fixing the main board cover.





CAUTION: The plug must be pulled out before the mainboard group is removed.

Pull the mainboard slightly forward and disconnect all the connectors and then replace it. Finally, place the mainboard cover and screw it.



Removing- Assembling LEDs and LED's Covers

Side Led Version

1. Stick a tape to protect plastic. Insert a flat screwdriver into the gap and remove the cover. (Pic-1)



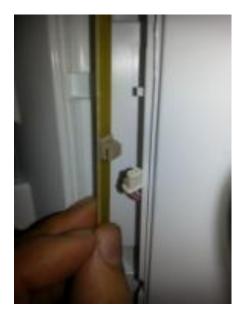
Picture-1

2. Remove the led strip light from its housing. (Pic-2)



Picture-2

3. Disconnect the connector and change the led light strip. (Pic-3)



Picture-3

Removing- Assembling LEDs and LED's Covers

4. First, place the bottom point of the led light strip and then place towards other side.(Pic-4)



Picture-4



Picture-5

5. Reassemble the led cover. (Pic-5)

Removing- Assembling LEDs and LED's Covers

Top Led Version

Remove the led cover by pulling forward and disconnect the connector.







Removing The Cooler Multi Flow

Remove the cooler glass shelves and the chiller.



Remove the screw caps by using a flat screwdriver and screw the screws.





Flex the multi flow by holding the fan cover and remove it. Disconnect the connector after removing the multi flow.





Removing The Cooler Multi Flow Fan Motor

1.Remove the fan cover by flexing the fan cover detail and then remove the fan motor by flexing the fan motor rubbers. (Pic-1/ Pic-2/Pic-3)







Picture-1 Picture-2 Picture-3

2. Place the rubbers to the fan motor. After that, first place the bottom two details of the fan motor and place the top two details by pressing-flexing it. (Pic-4/ Pic-5/Pic-6)

Note: The fan motor cable outlet should be at the top-left corner of it.

3. After the connector is connected, place it by flexing it and then reassemble the multi flow by screwing.







Picture-4 Picture-5 Picture-6

Chancing The Cooler Sensor

Remove the sensor cover with the help of a screwdriver and then disconnect the sensor connector.









Pay attention not to damage to the sensor cover details!

Removing The Freezer Multi Flow Group

- 1. Displace the glass shelfs and baskets if there is. (Pic-1/Pic-2)
- 2. Unscrew the screw fixing the multiflow group. (Pic-3)
- 3. Removing the freezer bottom cover by flexing back side of it. (Pic-4)









Removing The Freezer Fan Motor

Remove the fan motor connector. (pink)
Unscrew the fan motor fixing screws and displace the fan motor.

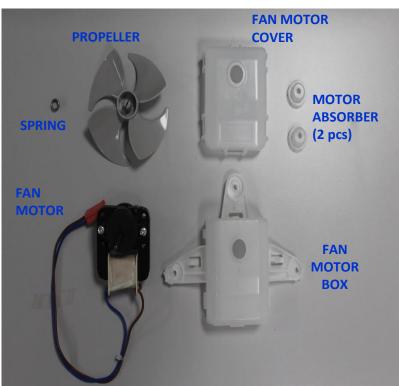




Remove the propeller.







Fan Motor Components

Removing Fin Evaporator Group

Remove the fin evaporator resistance connectors from the sockets. (blue connector)



Displace the fin evaporator balanced by holding on both sides.





The fin evaporator should not be pulled upward-downward. Otherwise, the fin evaporator fixing plastics might be broken.

Removing The Thermal Fuse

Remove the thermal fuse connector. (black-white connector)

Thermal fuse has two details. These details hold on to the pipe. It could be removed easily.





Removing Freezer Sensor

Remove the sensor cover with the help of a screwdriver and then disconnect the sensor connector.









Pay attention not to damage to the sensor cover details!

Removing/Assembling The Reed Switch

Stick a tape to protect plastic. Insert a flat screwdriver into the gap and remove the reed switch.





<u>NOTE:</u> Reed Switch is a very sensitive miniature electronic card. So during the assembly and disassembly be carefull not to damage it.

During the disassembly of the reed switch, there is a step on the edge of the plastic part which provides easier disassembly and by that tool it can be taken out from the same place every time.

It must be assembled as this step should be in the invisible (inside of the refrigerator) part. Otherwise The distance which the lamp turn on/off may change.

After the assembly or replacement the service should check if the reed switch is damaged by giving energy and opening and closing the door.

Removing/Assembling Display



CAUTION: The plug must be pulled out before the display is removed.

Display can be removed with the disassembly tool. Do not use any sharp objects to remove the display.

Place and fix the disassembly tool on to display and pull to take out the display.

Take out the display cable socket.



