SERVICE MANUAL

Food preservation

0° FS CB ICE DISPENSER
ELECTRONIC ON DOOR

EN

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FOR INTERNAL AND PARTNERS USE ONLY

Consumer Service - EMEA
Quality & Continuous Improvement - Technical Support

CONTENTS

1 PURPOSE OF THIS MANUAL

The purpose of this Service Manual is to provide Service Engineers who are already familiar with the repair procedures with information regarding: **Appliances** fitted with **NIUX** electronic control systems. The manual deals with the following topics:

- General characteristics
- Control panel
- Guide to diagnostics
- Technical and functional characteristics
- Access

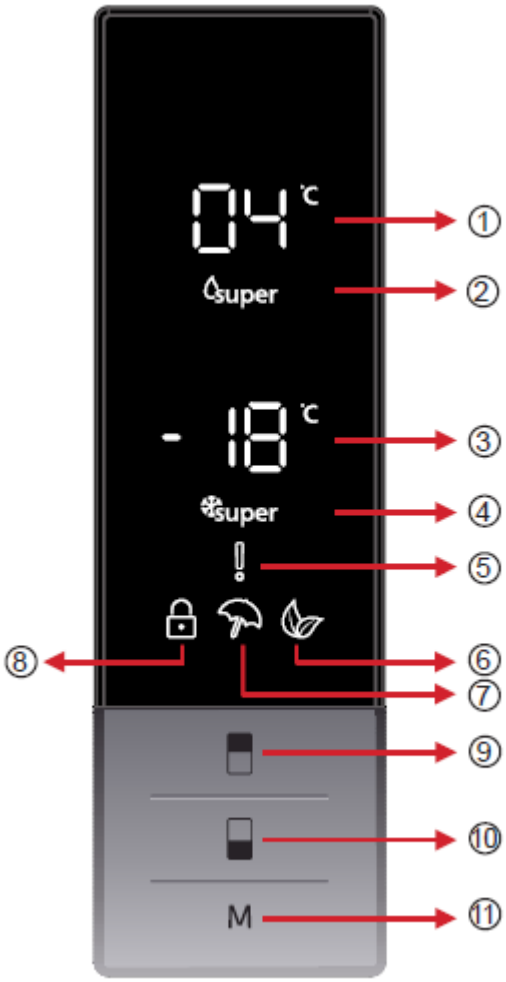
Document Revisions

Rev.	Date	Description	Author
00	05/2019	Document creation	Anna Grimlund

2 SAFETY

- All the work to be performed inside the appliance requires specific skills and knowledge and may only be carried out by qualified and authorised Service Engineers
- Before you access internal components, take the plug out of the socket to disconnect the power supply.
- Some of the components in the mechanical part could cause injuries, so wear suitable protection and proceed with caution.

3 DISPLAY AND CONTROL PANEL



1) Fridge set
2) Super cooling indicator.
3) Freezer set
4) Super freeze indicator.
5) Alarm symbol.
6) Economy mode symbol.
7) Holiday mode symbol.
8) Child-lock symbol.
9) Fridge settings and activate super cool mode.
   Fridge may be set to 8, 6, 5, 4, 2 °C super cool.
10) Freezer settings and activate super freeze mode.
    Freezer may be set to -16, -18, -20, -22, -24°C super freeze.
11) Active modes (economy, holiday…).

4 CONTROL PANEL SETTINGS

	Super freeze • Adjust temperature of fridge and super cool mode, super freeze mode continues. • Economy and Holiday mode cannot be selected. Note: Super Freeze mode is automatically cancelled after 24 hours or when the freezer temperature is lower than -25 C.
	Super cool • Adjust temperature of freezer and super freeze, super cool mode continues. • Economy and Holiday mode cannot be selected.
	Eco Press "mode button" until eco symbol appears. During this mode: • Freezer and fridge can be adjusted. • Super cool and super freeze modes can be selected. Economy mode is then automatically cancelled and the selected mode is activated. • Holiday mode can be selected after cancelling the economy mode. Press "mode button" to exit.
	Holiday Press "mode button" until holiday symbol appears During this mode: • Freezer and fridge can be adjusted. • Super cool and super freeze modes can be selected. Holiday mode is then automatically cancelled and the selected mode is activated. • Economy mode can be selected after cancelling the holiday mode. Press "mode button" to exit

	Drink cool Press freezer button for 5 seconds. Press fridge button to adjust the time (05 - 10 - 15 - 20 - 25 - 30 minutes). Remaining time will blink on the screen. To cancel this mode press freezer set button for 3 seconds.
	Screen saver Press mode button for 5 seconds. To exit screen saver mode, press mode button for 5 seconds. When screen saver mode is active, you can also activate child lock.
	Child lock Press Freezer and Fridge buttons simultaneously for 5 seconds. Press Freezer and Fridge buttons simultaneously for 5 seconds to exit.
	Door alarm goes off if the fridge or freezer door is opened more than two minutes.
	Demo mode Press mode and freezer button at the same time within 1 minute of power on. All functions can be adjusted. To show the alarm symbol , press mode button 3 times, SR alarm symbol and the “SR word” on the 7-segment will be active. Cancelling Demo mode: Press mode & freezer button at the same time. Demo mode is not cancelled by a power break.

5 TEMPERATURE SETTINGS

The appliance is designed to operate in the ambient temperature intervals stated in the standards, according to the climate class stated in the information label.

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)

Note: If the temperature of the environment is higher than 38°C, the freezer temperature cannot be adjusted to -22°C and -24°C. It can only be adjusted to the values of -16°C, -18°C, -20°C.

The temperature value selected before a mode is set (Holiday Mode, Super Freeze Mode, Super Cool Mode or Economy Mode) remains the same when the mode is over or cancelled. The appliance continues to operate with this temperature value.

5.1 Freezer temp settings

- Initial temperature value for freezer is -18°C.
- When you first press freezer set button, the last set value blinks on the screen.
- Each press sets a lower temperature (-16°C, -18°C, -20°C, -22°C, -24°C super freeze).
- Long press to set super freeze
- Continue to press to restart at -16°C.

5.2 Fridge temperature settings

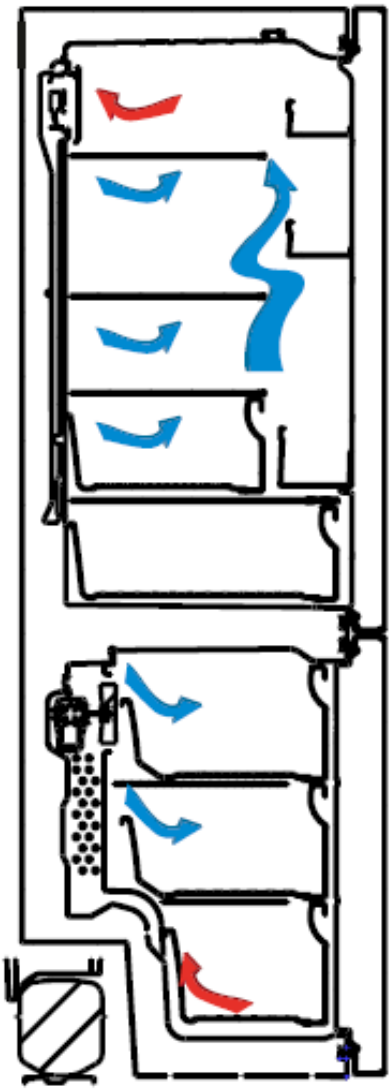
- Initial temperature value for fridge is +4 °C.
- When you first press fridge set button, the last value blinks on the screen.
- Each press sets a lower temperature (+8°C, +6°C,+5°C, +4°C, +2°C, supercool)
- Long press to set super cool
- Continue to press to restart at +8°C.

6 AIR FLOW

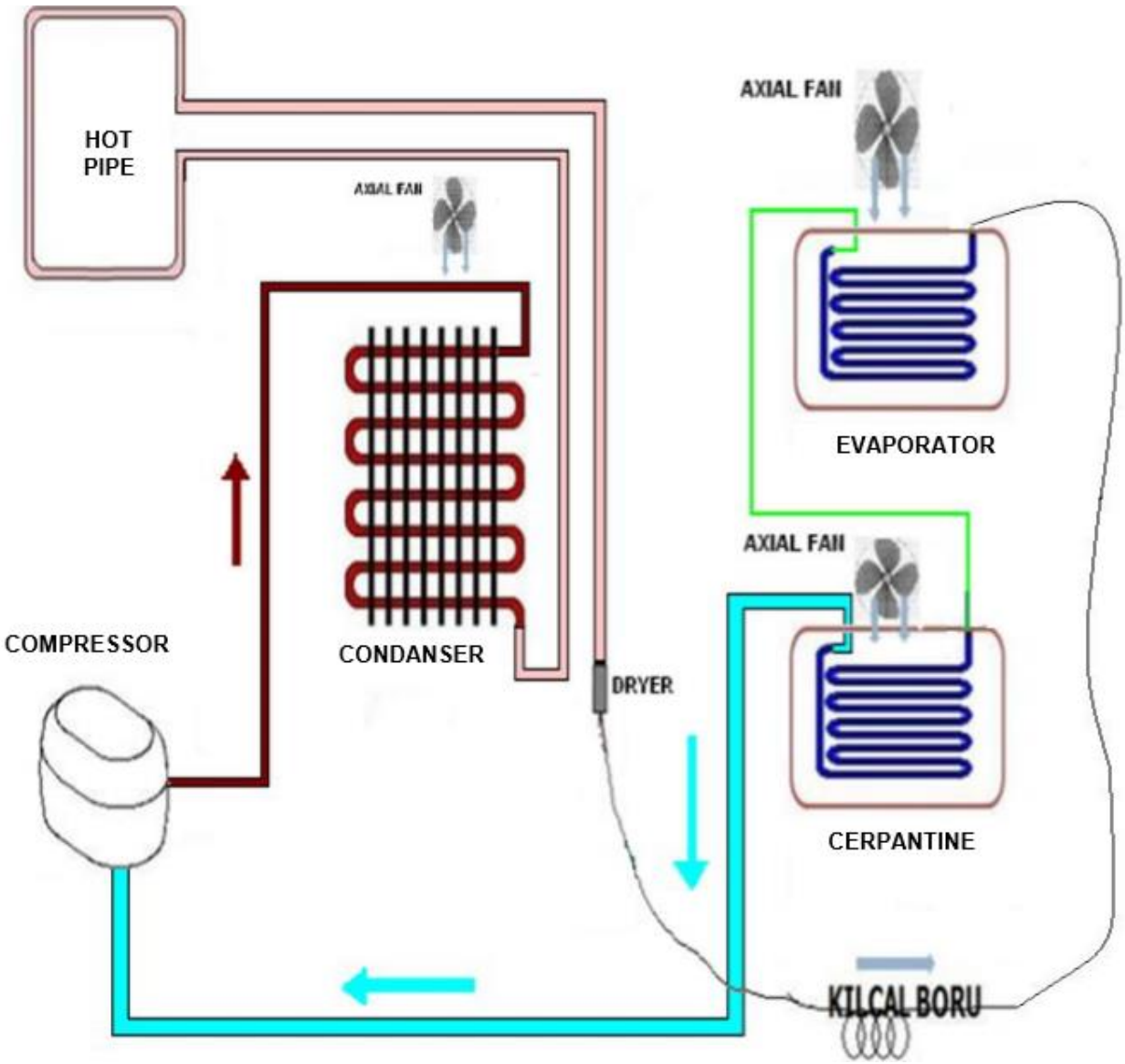
Cutaway view: Air Flow Direction

COLD AIR

RETURNING WARM AIR



7 REFRIGERANT CYCLE DIAGRAM



8 RESISTANCE VALUES

Resistance values according to the temperature sensor (°C/ohm rates) (for the freezer defrost and the fridge ambient sensor)

45 °C/1kΩ	-1 °C/6.2kΩ
35 °C/1.5kΩ	-3 °C/6.8kΩ
30 °C/1.8kΩ	-5 °C/7.5kΩ
25 °C/2.2kΩ	-7 °C/8.2kΩ
19 °C/2.7kΩ	-12 °C/10kΩ
14 °C/3.3kΩ	-15 °C/12kΩ
10 °C/3.9kΩ	-20 °C/15kΩ
5.5 °C/4.7kΩ	-24 °C/18kΩ
1.5 °C/5.6kΩ	-31.5 °C/27kΩ
0 °C/6kΩ	-35.5 °C/33kΩ

Sensor resistance values according to the temperature (°c/ohm rates) (for the fridge defrost sensor)

45 °C/2.15kΩ	-1 °C/17.1kΩ
35 °C/3.26kΩ	-3 °C/19kΩ
30 °C/4.02k12	-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

9 FEATURES

9.1 Appliance start up the first time

If the fridge and freezer defrost sensor are warmer than -5°C, the test system starts automatically. Components are tested automatically every 5 seconds:

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

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

9.2 Freezer Defrost Program

Defrost is activated after the minimum compressor running time; 8 hours or the max total time; 55 hours, or in conditions of usage such as:

- Consisted ice amount
- Door open-close
- Sudden usage variance
- Fridge sudden temperature rise

9.3 Fridge Defrost Program

The fridge and freezer defrost are operated in parallel.

If the fridge is not 5°C three times during a particular period of time, defrost will be activated after the refrigerator works for max 9 hours, after the compressor works for a minimum of 5 hours, or in conditions of usage such as:

- Consisted ice amount,
- Door open-close,
- Sudden usage variance
- Fridge sudden temperature rise

9.4 Freezer Defrosting Time

Defrost stops at 8ºC. If defrost time passes 37 minutes, defrost completing temperature will rise to 15ºC.

9.5 Fridge Defrosting Time

The fridge and freezer defrost are operated in parallel. The fridge defrost will not work if the freezer defrost stops.

The defrost process stops at 7ºC. At low ambient temperature or when the compressor stops; defrost stops at 15ºC. 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 then the compressor is activated.

9.6 In Case of Power Cut

All regulated parameters and functions are kept in memory during a power cut. When the electricity comes back and the temperature is lower than -5 ºC the compressor works 5 minutes later if it is higher than -5 ºC.

9.7 Other Features

Door Direction: It is possible to reverse the door.

Gasket: It is possible to change the gasket.

10 TROUBLESHOOTING

Insufficient cooling	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.
	Is the ambient temperature high?	Raise the thermostat value.
	Are hot food placed 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 fridge are freezing.	Are foods placed close to cooling air outlet?	Do not block air outlets
	Is the fridge thermostat value high? Any hot foods close to the fridge sensor?	Decrease the fridge thermostat value and do not put hot things close to the sensor.
Are there any sweating or icing?	Liquids	Put liquid foods into closed containers.
	Hot food	Wait until cold
	Refrigerator door open?	Do not leave the refrigerator door open and do not open and close unnecessarily.
Abnormal Noise	Is the appliance on a flat surface?	The floor should be straight, balance the refrigerator with adjustable feet.
	Is the compressor feet loose	Fix it.
	Is the condenser or fan stationary normal?	Fix it.
	Do the capillary tube or other tubes touch anything?	Fix it.

11 SERVICE MODE

Press freezer temperature button continuously and open and close the fridge door at least 3 times.

- An error code is displayed if there is a fault.
- Buzzer beeps for 0.1 sec. each 5 sec. during service mode.
- Child lock icon blinks
- Service function could be activated by pressing “Mode” button

Press mode button one time.	STARTING MODE
	Eco icon blinks
	The number of components which is controlled is shown
	Eco ıcon goes off when the test finishes and then the display returns to initial service mode.
Press mode button two times.	MANUAL DEFROST
	Holıday icon blinks
	Defrost might be finished manually or automatically.
	Defrost might be finished manually by using the cooling set button. Holiday icon goes off and display returns to initial service mode.
	Automatic defrost operates according to the standard defrost time.
	Holiday icon goes off when manual defrost ends and the display returns to initial service mode.
Press mode button three times.	DAMPER MOTOR CONTROL MODE (function for models with damper)
	SC icons blink.
	No function if no damper in component.
	Function finishes after 5 minutes if no button is pressed.
	SC icons goes off and display returns to initial service mode.
Press mode button four times.	CURRENT TEMPERATURE VALUES INDICATOR
	Sf icons blink.
	Current temp. value of freezer sensor is shown on fridge segment. Freezer segment shows "1"
	After touching freezer set icon once the current temp. value of fridge sensor is shown on fridge segment. Freezer segment shows «2"
	After touching freezer set icon one more time, current temp. value of defrost sensor is shown on fridge segment. Freezer segment shows «3"
	After touching freezer set icon one more time, constant value is shown on fridge segment due to not being an ambient sensor in the appliance .Freezer segment shows «4" (this is a general function for other models which have ambient sensor)
	After touching freezer set icon one more time, current temp. value of fridge serpentine sensor is shown on fridge segment. Freezer segment shows «5"
	Unless touch freezer set icon for 5 minutes, function will be finished automatically.
	Touching fridge set icon, function will be finished manually.
	Sf icon goes off and display returns to initial service mode.
Press mode button five times.	DOOR SWITCH CONTROL
	No icons at display
	Fridge segment gıves ınformatıon about fridge door
	Mode could be deactıvated by fridge set button.

12 ERROR MESSAGES

Error codes can appear in normal use and will be on the screen for 10 seconds. SR (Symbol blinks. No alarm sounds).

SENSOR	TEMPERATURE	USER MODE REACTION	SERVICE MODE REACTION
(1) Freezer	> +50 ^{0}C or <-50 ^{0}C (sensor is short or open)	Display SR (blinks) in Freezer number segment & SR Symbol blinks & Buzzer 'beep'	Display FE 01
(2) Refrigerator			Display FE 02
(3) Defrost			Display FE 03
(5) Serpentine sensor			Display FE 05
Breakdown of (1) and (2)			Display FF 12
Breakdown of (1) and (3)			Display FF 13
Breakdown of (1) and (5)			Display FF 15
Breakdown of (2) and (3)			Display FF 23
Breakdown of (2) and (5)			Display FF 25
Breakdown of (3) and (5)			Display FF 35
Breakdown of (2) and (3) and (5)			Display FH 08
Breakdown of (1) and (3) and (5)			Display FH 06
Breakdown of (1) and (2) and (5)			Display FH 05
Breakdown of (1) and (2) and (3)			Display FH 04
Breakdown of all sensors			Display FU 05

12.1 Component defect on display

DEFECT TYPE	DETAILS	USER MODE REACTION	SERVICE MODE REACTION
Compressor Defect	Defrost sensor temp > -10^{0}C (D sensor temp. unchanges for 10 min. continuous compressor run)	Display SR (blinks) in Freezer number segment & SR Symbol blinks & Buzzer 'beep'	Display FO 05
Defrost Heater Defect	Defrost sensor < 0^{0}C		Display FO 06

12.2 Low voltage error on display

DEFECT TYPE	DETAILS	USER MODE REACTION	SERVICE MODE REACTION
Low voltage	Power supply < 170	Freezer and refrigerator number segment shows '_' and '!' & Buzzer 'beep'	Freezer and refrigerator number segment shows '_' and '!'

12.3 Cooling error on display

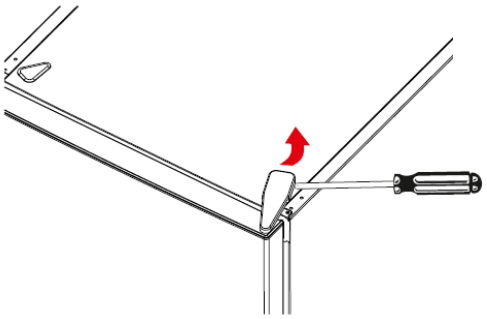
Note: To prevent the wrong alarms, this alarm status is disabled on following conditions:

- 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.

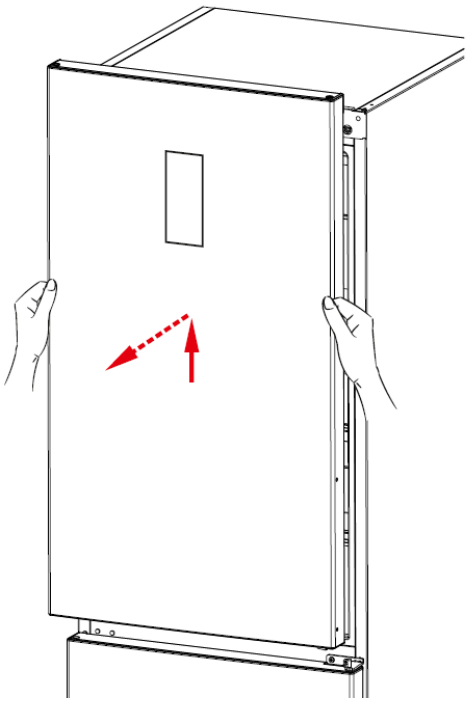
DEFECT TYPE	DETAILS	USER MODE REACTION	SERVICE MODE REACTION
Freezer sensor > -5^0C	Freezer is not cool enough	Freezer number segment and alarm icon blink	Display CO 01
Ref. sensor > $+20^0$C and if Holiday mode is not active	Refrigerator is warm	Refrigerator number segment and alarm icon blink	Display CO 02
Ref. sensor < -10^0C	Refrigerator is to cool	Refrigerator number segment and alarm icon blink	Display CO 03
F sensor > -5°C and R sensor >20°C and if Holiday mode is not active	Freezer and Refrigerator are not cool enough	Freezer and Refrigerator number segment and alarm icon blink	Display CO 04

13 REVERSING THE DOOR

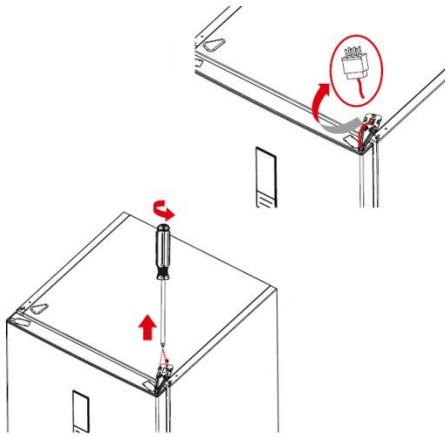
1. Remove the top hinge cover



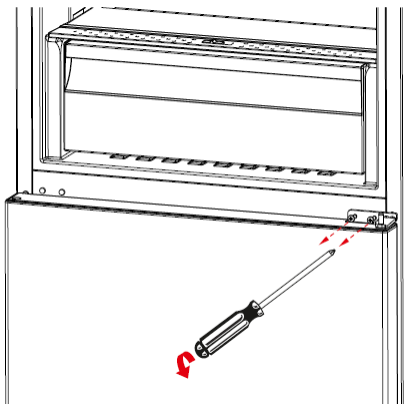
2.Remove the top door



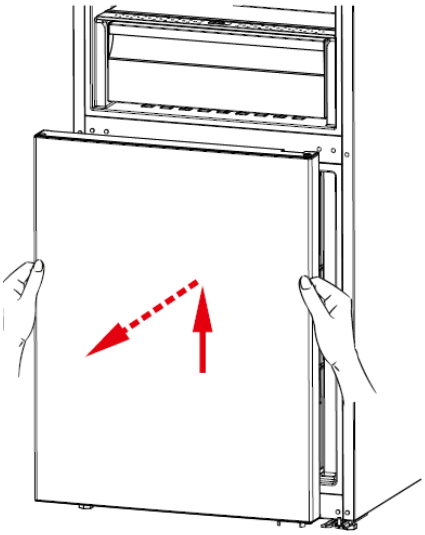
3. Disconnect the display connector. Unscrew the screws fixing the top hinge and remove it. (Pic-2)



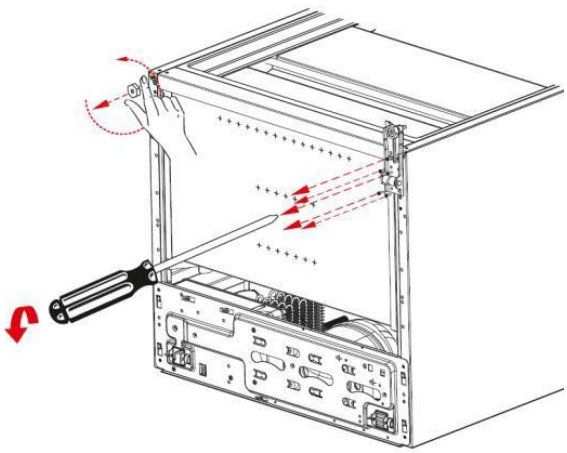
4. Unfasten the two screws fixing the middle hinge and remove it.



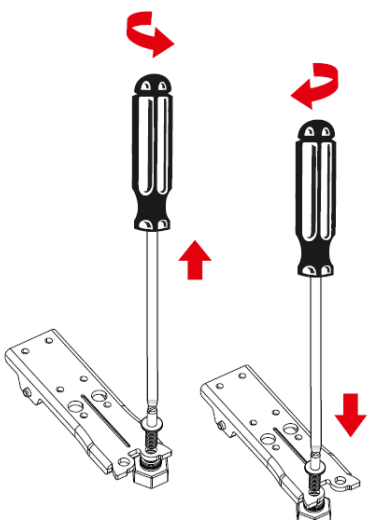
5. Remove the bottom door.



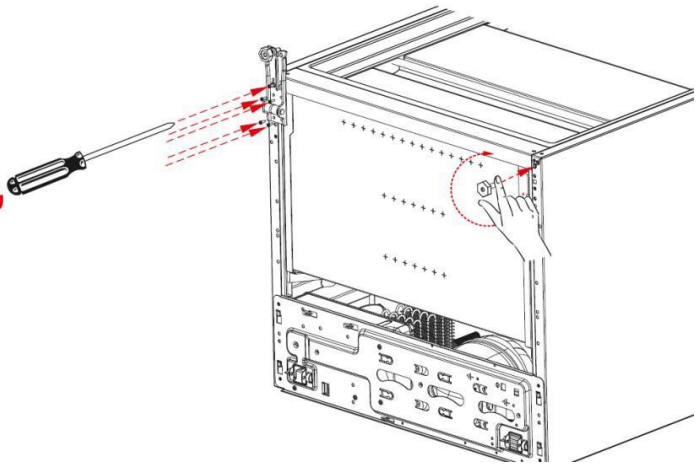
6. Unscrew the adjustable foot and unscrew the bottom hinge screw



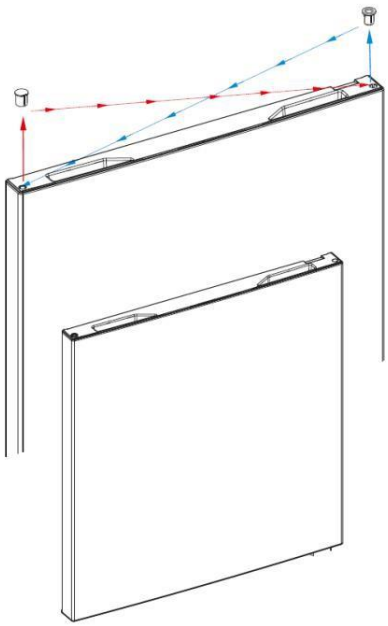
7. Unscrew the bottom hinge pin and screw it to other hole.



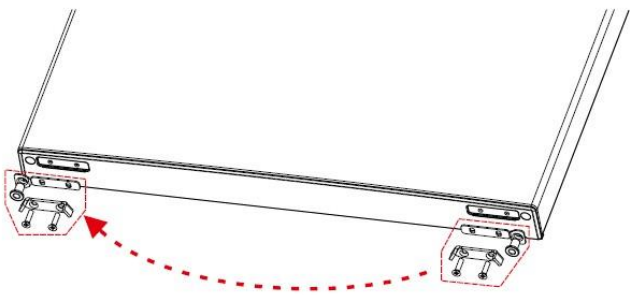
8. Screw the bottom hinge to the left bottom side of refrigerator, fasten the adjustable foot there



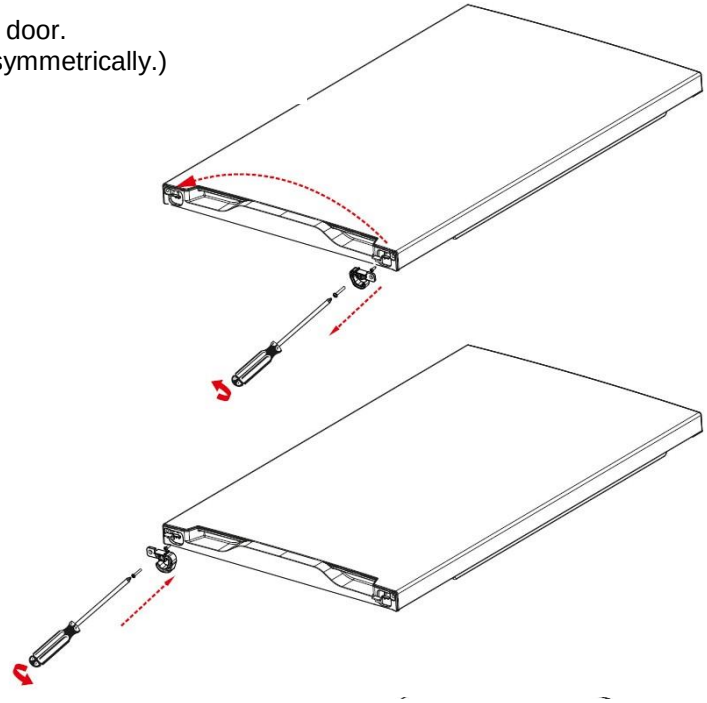
9. Replace the top bushing and the top bushing cap at the bottom door.



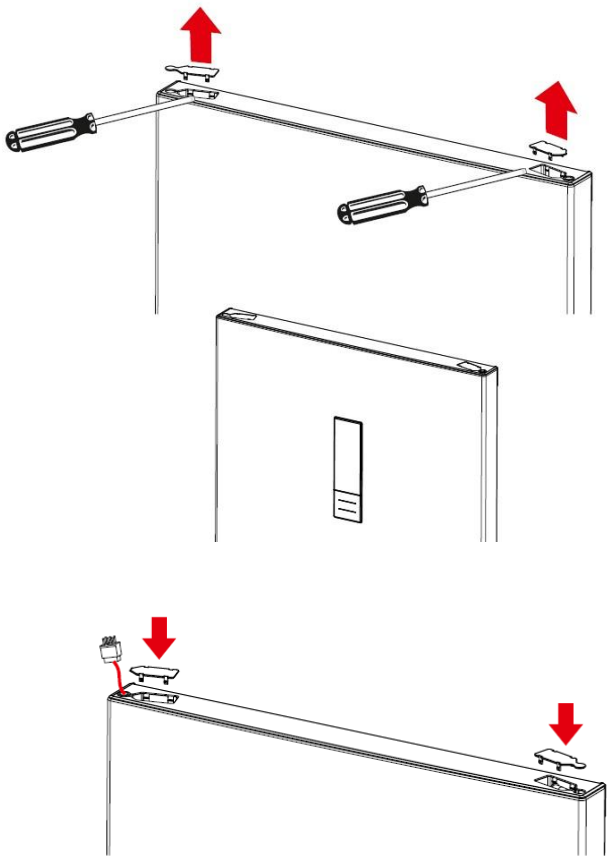
10. Unfasten the two screws fixing stopper and stopper support plate under the bottom door. After that, screw the other side.

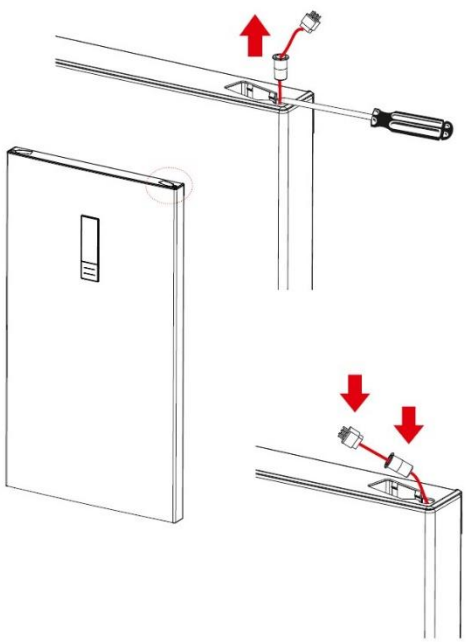


11. Remove the support plastic under the upper door.
Then refasten these parts to the other side symmetrically.)

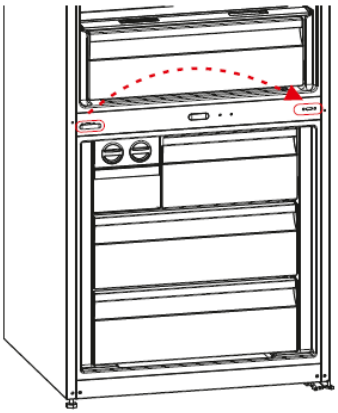


12. Remove the socket cover-right of the top door.
Remove the display socket.
Please use the socket cover to hidden other housing

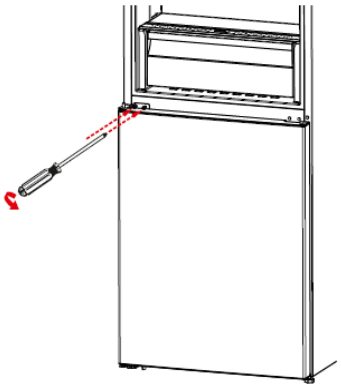




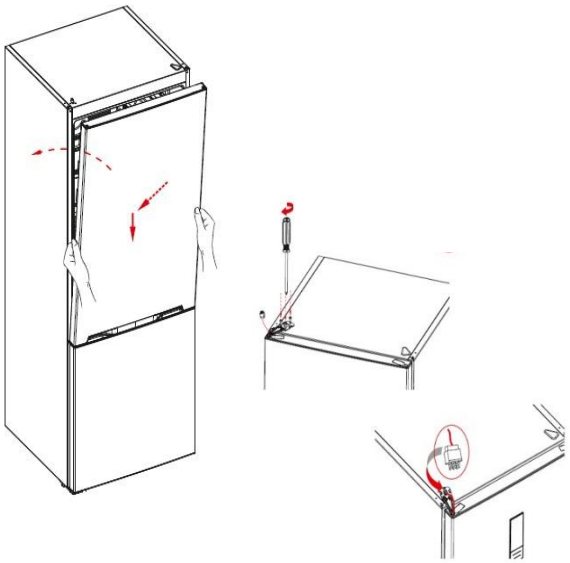
13. Remove the middle hinge cover and then screw the screw on the side panel and assemble to the right side panel

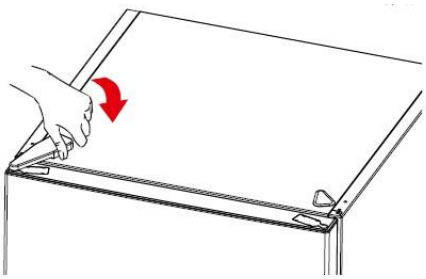


14. Place the bottom door and rotate the middle hinge by 180º. After that, screw to the right side on the middle sheet.



15. 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.





14 REPLACING THE DISPLAY

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

1. Remove the display with the disassembly tool. Do not use any sharp objects to remove the display.
2. Disassembly tool code **42152193**

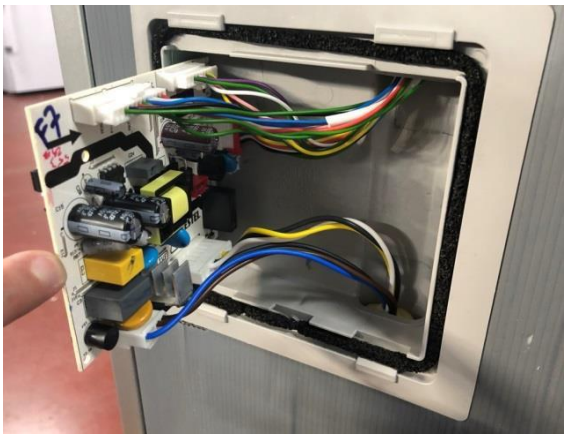
3. Place and fix the disassembly tool on to display and pull to take out the display.
4. Take out the display cable socket.

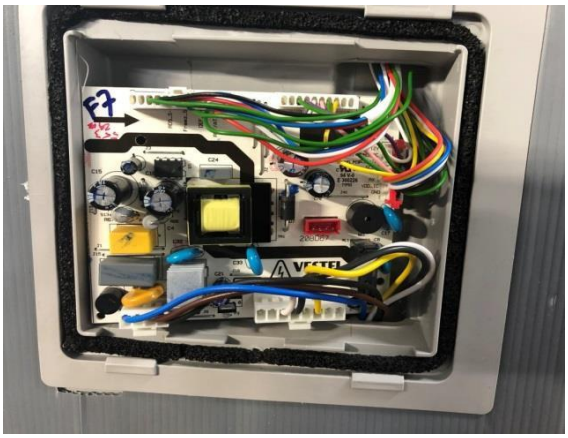
15 REPLACING THE MAIN BOARD

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

1. Unscrew the screws which are fixing the main board cover.

2. Pull the mainboard slightly forward and disconnect all the connectors, replace the mainboard, fasten the cover.





16 REPLACING THE FRIDGE MULTI FLOW

1. Remove the fridge shelves and the chiller shelf

2. Remove refrigerator multi-flow caps and unscrew the screws.

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

17 REMOVING THE FRIDGE 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.

2. Place the rubbers to the fan motor. Place the bottom two details of the fan motor and place the top two details by pressing and flexing.

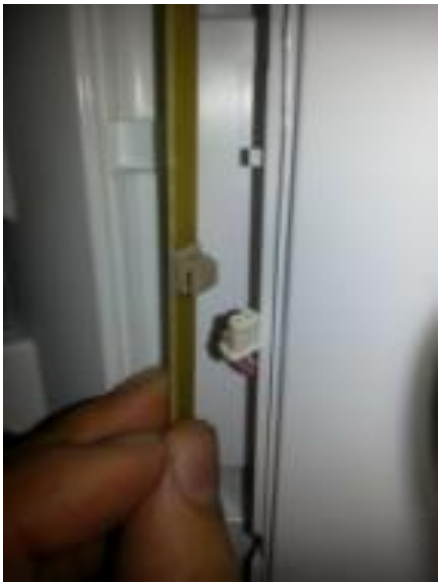
Note: The fan motor cable outlet should be at the top-left corner of it.

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

18 REPLACING THE LED

1. Use tape to protect the plastic. Insert a flat screwdriver into the gap and remove the cover.

2. Remove the led strip light from its housing.



3. Disconnect the connector and change the LED light strip.

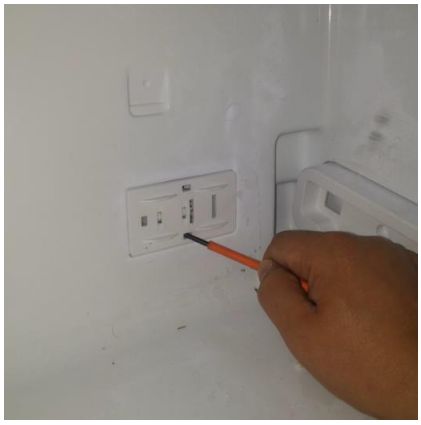
4. First, place the bottom point of the LED light strip and then place towards other side.

5. Reassemble the LED cover

19 CHANGING THE FRIDGE SENSOR

Refrigerator Sensor

Freezer Sensor



CAUTION: PAY ATTENTION NOT TO DAMAGE TO THE SENSOR COVER

20 REMOVING THE FREEZER MULTIFLOW COVER

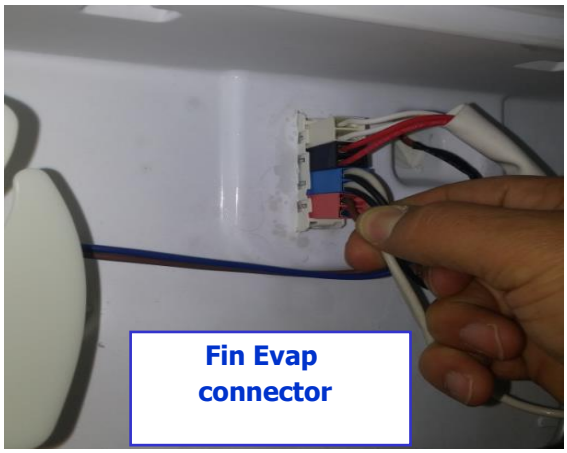
1. Remove the interiors.

2. Unfasten the screw fixing the multiflow.

3. Remove the freezer bottom cover.

21 REMOVING FIN EVAPORATOR GROUP

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

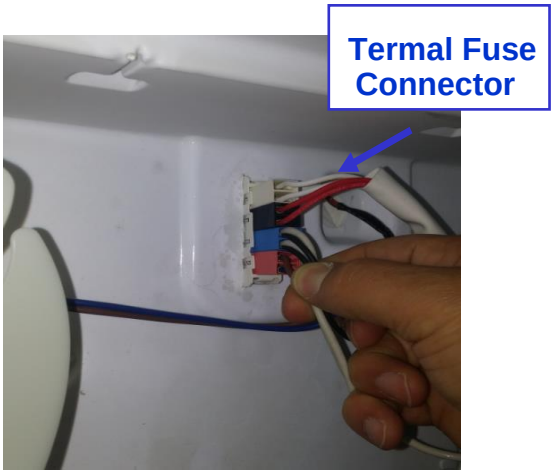


2. Remove the evaporator by pulling forward in a horizontal direction.

CAUTION: The fin evaporator should not be pulled upward-downward, the fixing plastic might break

22 REMOVING THE THERMAL FUSE

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



2. Thermal fuse has two details. These details hold on to the pipe.

23 REMOVING THE EVAPORATOR TRAY AND BOTTOM CAB FAN MOTOR

1. Unscrew the bottom tray screws and displace it from the compressor basement.

2. Remove the fan motor connector.

3. Unscrew the screws fixing the evaporating tray.

4. Remove the evaporating tray to displace the fan motor.

5. Unscrew the fan motor screws.

6. Remove the propeller.

24 REMOVING THE REED SWITCH

Take the reed switch out of its place, disconnect the connectors and remove it.

NOTE: Reed Switch is a sensitive miniature electronic card, be careful not to damage it.

After assembly, check the reed switch by providing energy and opening and closing the door.