



# Electrolux

## SERVICE MANUAL

### Refrigeration

#### Document Revisions

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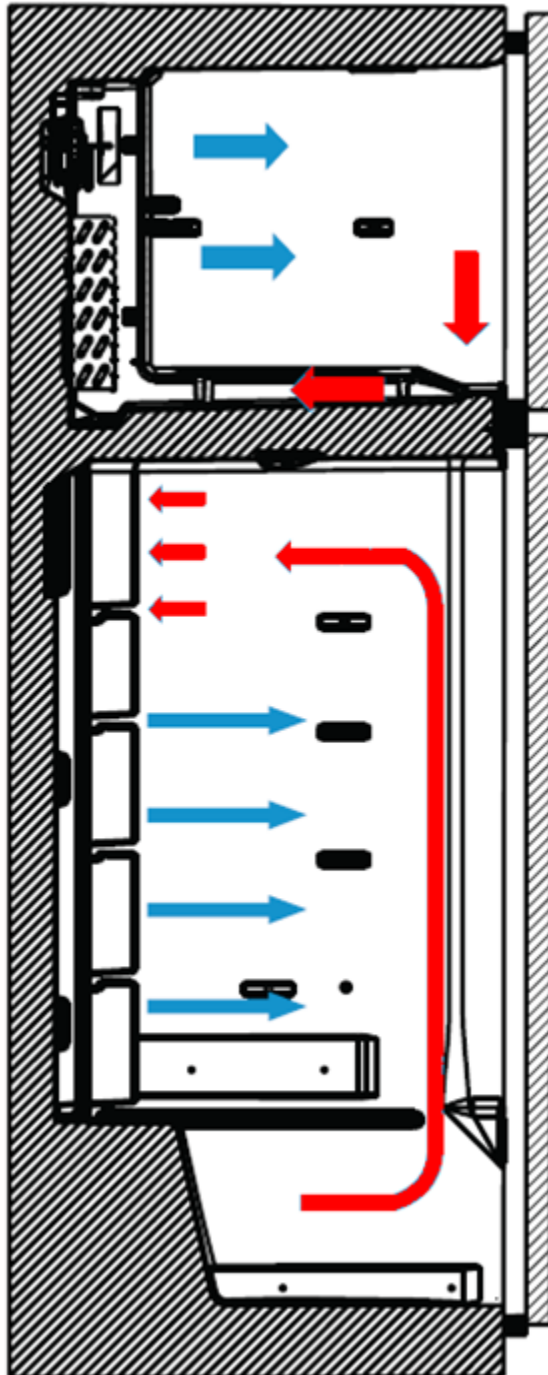
Freestanding  
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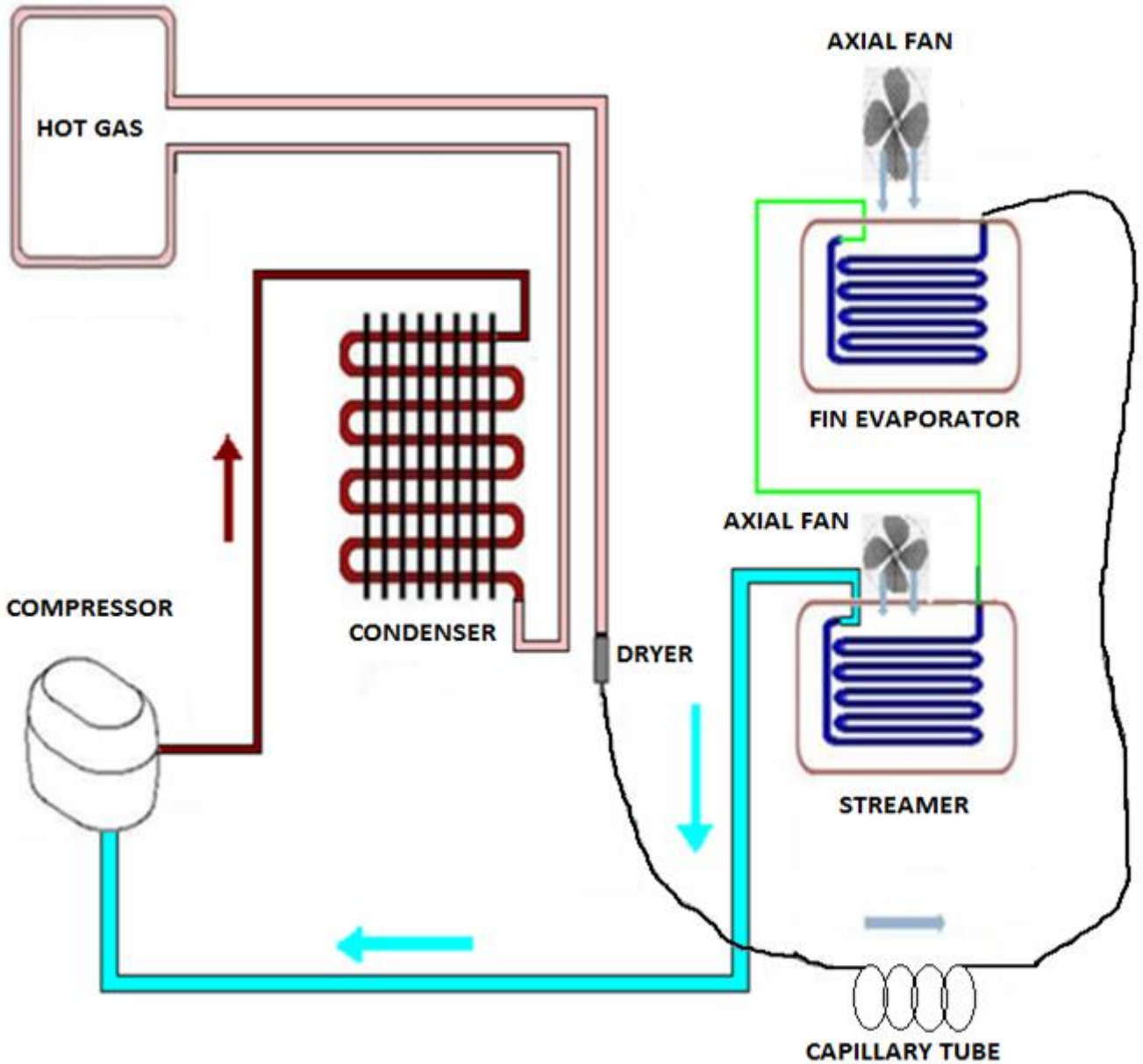
	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Air Flow Diagram</b>	



**Cutaway view: Air Flow Direction**

 **Blown : Cold Air**  
 **Returned: Hot Air**

	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Air Flow Diagram</b>	



The freezer fan motor and the condenser fan motor work parallel time with the compressor. The freezer fan motor works when the freezer compartment door is opened. It is normal.

The cooler fan motor works parallel time with the compressor. However it could work while the compressor is stopped or the cooler is defrosting.

	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Used Component</b>	

- |                               |  |
|-------------------------------|--|
| • Fin Evaporator Resistance   | 230V/150W  |
| • Evaporating Tray Resistance | 230V/32W (Drain Heater)                                      |
| • Thermal Fuse                | 72 °C  |
| • Cooler Defrost Resistance   | 230V/10W   |
| • Cooler Fan Motor            | DC 12V   |
| • Evaporator Fan Motor        | AC 230 V 50 Hz   |
| • Mainboard (Power Card)      | VESTEL ELECTRONIC(on the right top of rear panel )           |
| • Thermostat Card             | VESTEL ELECTRONIC(on right side panel of cooler compartment) |
| • Freezer Defrost Sensor      | EPCOS - VISHAY   |
| • Cooler Defrost Sensor       | EPCOS (it is not possible to change in the body )            |
| • Cooler Sensor               | EPCOS - VISHAY   |
| • LED Illumination            | 3.9W   |
| • Transformer                 | On the mainboard   |

**Resistance Values According To The Temperature Sensor (°C/Ohm Rates)**  
 ( For The Freezer Defrost and The Cooler 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 Cooler Defrost Sensor)

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

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	<b>Special Programs</b>	

### **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 $\Omega$  in the -35.5  $^{\circ}\text{C}$  goes down to 1k $\Omega$  in the 45  $^{\circ}\text{C}$  and therefore the ambient temperature should be considered while the sensor is being checked. If the ambient temperature is 25  $^{\circ}\text{C}$ , the measuring device shows about 2.2k $\Omega$  (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 $^{\circ}\text{C}$ , the test system works automatically. These below components are tested automatically every 5 seconds.

(If the automatic control process doesn't start initially and started after ten minutes this means one of the sensors are open or short circuit, please check sensors.)

Automatic control steps:

- ❖The compressor starts and stops after 5 seconds.
- ❖The defrost resistance starts 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 $^{\circ}\text{C}$  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,

	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Special Programs</b>	

### **Freezer Defrosting Time**

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

### **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.
- In case compressor stops due to any reason, it waits to protect itself for 5 minutes .
- When the electricity comes; if the defrost sensor temperature is colder than -5 °C, starting test is not activated. If it is hotter than -5 °C, starting test is activated.

### **Other Features**

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

Door Direction : It is possible to reverse the door. (optional)

Gasket : It is possible to change the gasket.

# FROST FREE - 343 MECHANIC

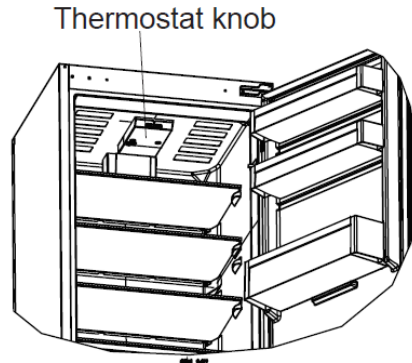
## Control Panel

### Thermostat Setting

It ensures that the temperature settings in the cooling and freezing compartments of your refrigerator are performed automatically. It may be set to any value ranging from 1 to 5. As you turn the thermostat setting knob from 1 to 5, the temperature decreases. To save energy in winter months, operate your refrigerator in a lower position.

#### Fridge compartment thermostat knob;

- 4 - 5 : For further cooling.
- 2 - 3 : For normal use.
- 1 : For less cooling.



### Warnings about Temperature Adjustments

- It is not recommended that you operate your fridge in environments colder than 10°C in terms of its efficiency.
- Temperature adjustments should be made according to the frequency of doors openings and the quantity of food kept inside the fridge-freezer.
- Your fridge-freezer should be operated up to 24 hours according to the ambient temperature without interruption after being plugged in to be completely cooled. Do not open doors of your fridge-freezer frequently and do not place much food inside it in this period.
- During power cut, to prevent any compressor problem you should unplug the fridge-freezer. You should delay plugging in 5 – 10 minutes after your power supply returns. If you plug out the fridge-freezer for a reason you should wait at least 5 min to replug. It is important for avoiding damage to fridge-freezer's components.
- Your fridge-freezer is designed to operate in the ambient temperature intervals according to the climate class stated on the information label. In terms of cooling effectiveness, we do not recommend operating your fridge-freezer outside of the stated temperature values.
- This equipment is designed for use at an ambient temperature within the 10°C - 43°C range.

Climate class	Ambient temperature °C
T	Between 16 - 43 °C
ST	Between 16 - 38 °C
N	Between 16 - 32 °C
SN	Between 10 - 32 °C

## FROST FREE - 343 MECHANIC

### Probable Faults

<b>Unsufficient cooling</b>	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.
	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.
<b>The foods in the cooler compartment are freezing.</b>	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.
<b>Are there any sweating or icing?</b>	Were the liquid foods in the closed containers?	Put the liquid foods into the closed containers.
	Were the hot foods put into the refrigerator?	Put it into after getting cold.
	Was the refrigerator door opened?	Do not leave the refrigerator door open and do not often open or close.
<b>Abnormal Noise</b>	Is the appliance on the flat surface?	The floor should be straight and balance the refrigerator with the help of the adjustable feet.
	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.



	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Removing The Cooler Multi Flow</b>	

1. Remove the cooler glass shelves and the chiller. (Pic-1/ Pic-2/Pic-3)



Picture-1



Picture-2



Picture-3

2. Stick one tape to each air duct to avoid scratching. Remove the screw caps by using a flat screwdriver and screw the screws. (Pic-4)



Picture-4

3. Flex the multi flow by holding the fan cover and remove it. Disconnect the connector after removing the multi flow. (Pic-5)



Picture-5

	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Removing The Cooler Multi Flow Fan Motor</b>	

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**

	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Removing The Freezer Multi Flow Group</b>	

1. Displace the glass shelf or the ice box group if there is. (Pic-1)
2. Insert a flat screwdriver into the gap and then support the lateral surface of the multi flow with the help of a hand and remove the freezer multi flow group. (Pic-2)
3. Removing the freezer bottom cover by flexing back side of it. (Pic-3)



**Picture-1**



**Picture-2**



**Picture-3**

### **Assembling The Freezer Multi Flow Group**

1. Recline the bottom cover against one side and place the freezer multi flow cover details. (Pic-4)
2. Hold the back side of the bottom cover and flex it. After that, reassemble the other side details. Finish the assembly by pulling the cover. (Pic-5 / Pic-6)
3. First, place the freezer multi flow details to the backside of the bottom cover (Pic-7/Pic-8) and reassemble the freezer multi flow cover by pushing back. (Pic-9)

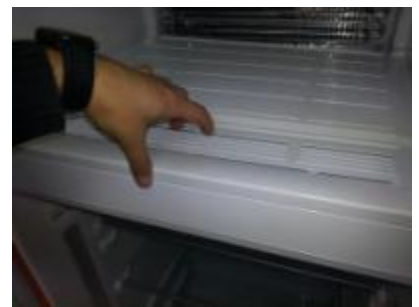
**Note: The freezer multi flow should be removed before the freezer bottom cover.**



**Picture-4**



**Picture-5**



**Picture-6**



**Picture-7**



**Picture-8**



**Picture-9**

	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Removing Fin Evaporator Group</b>	

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



Picture-1

2. Displace the fin evaporator balanced by holding on both sides. (Pic-2)



Picture-2

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

### Removing The Thermal Fuse

1. Remove the thermal fuse connector. (Pic-1) (black connector)

2. Cut the thermal fuse cable tie at right side of the fin evaporator group and take the thermal fuse out. (Pic-2)



Picture-1



Picture-2

	<b>FROST FREE - 343 MECHANIC</b>	
	<b>ASSEMBLE &amp; DISASSEMBLE</b>	

## Replacement of Refrigerator LEDs and LED's Covers

***The plug must be pulled out before the led lamp is removed.***

1. Press the snap fit cover with finger (Fic-1) and remove the box cover (Fic-2). After that operations, you can change the LED bulb.



**Figure-1**



**Figure-2**

2. For assembling, reverse the above operations..

	<b>FROST FREE - 343 MECHANIC</b>	
	<b>Removing/Assembling The Door Switch</b>	

1. Stick a tape to protect the body plastic. Flex it with the help of a tool like a slotted screwdriver. (Pic-1)



**Picture-1**

2. Also flex the top-side of the switch and then displace by pulling. (Pic-2)



**Picture-2**

3. Put the switch connector cable in the housing. First place the top-side of the switch and then push the bottom side.(Pic-3.1/Pic-3.2)



**Picture-3.1**



**Picture-3.2**

4. After the switch is placed, complete the assembly by pushing. (Pic-4)



**Picture-4.1**



**Picture-.43.2**

**CAUTION: The bottom-top details of the switch are different from each other to avoid assembling wrong!**