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Combined fridge-freezer NoFrost

LIEBHERR

CN 3513



CNes 4003



Home

Functions

Design

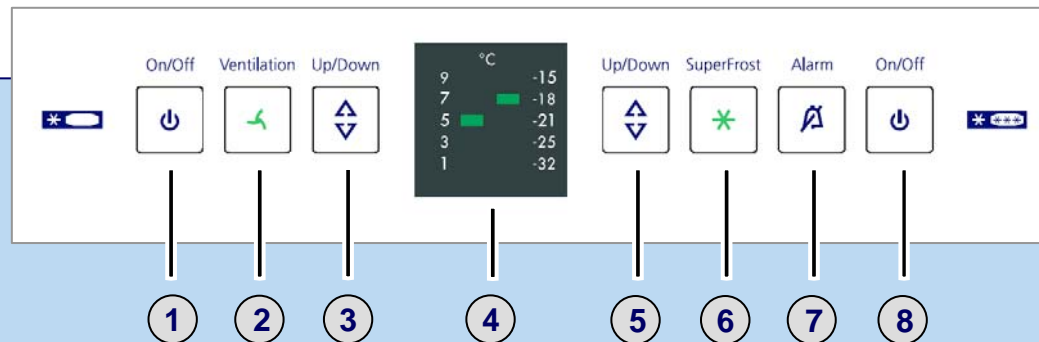
Control

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Functions



Control elements refrigerator compartment

- 1 : **ON/OFF button** refrigerator compartment
- 2 : **Fan function**,
button lit = function activated
- 3 : Setting button temperature **higher**
Setting button temperature **lower**

Control Elements General

- 4 : Temperature display
- 7 : **Alarm OFF button**

Control elements freezer compartment

- 5 : Setting button temperature **higher**
Setting button temperature **lower**
- 6 : **SuperFrost function**,
button lit = function activated
- 8 : **ON/OFF button** appliance

- **Temperature control:** electronic
- **Adjustable temperature range:** Refrigerator compartment: +1°C to +9°C
Freezer compartment: -15°C to -32°C
- **Temperature display:** set value
- **Temperature alarm:** Refrigerator compartment: no
Freezer compartment: visual and audible
- **Door alarm:** Refrigerator compartment: audible
Freezer compartment: audible
- **Fan:** Refrigerator compartment: yes
Freezer compartment: yes

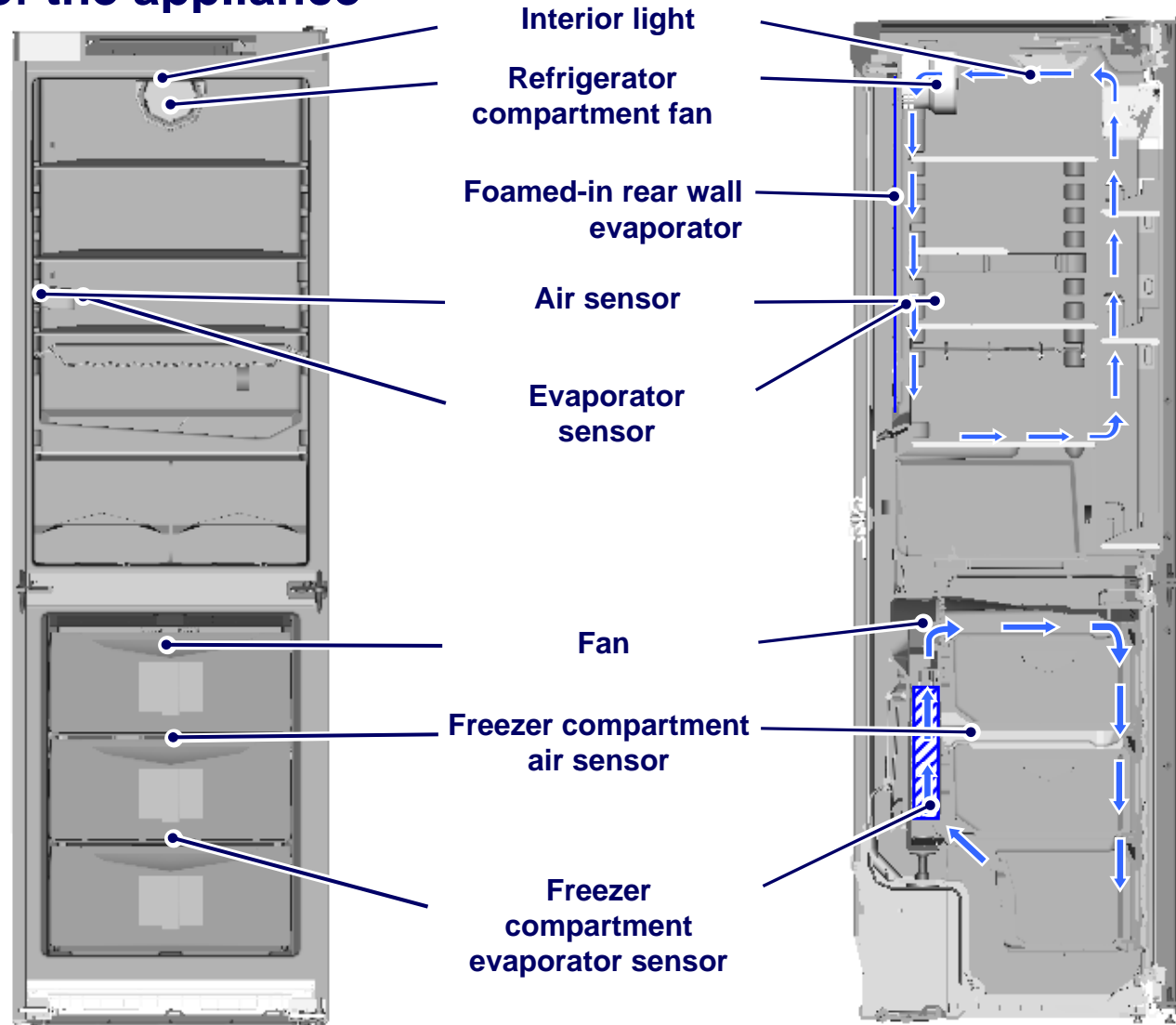
- **Defrosting:**
 - Refrigerator compartment:* automatic
 - Freezer compartment:* automatic
- **Interior light:**
 - Refrigerator compartment:* yes
 - Freezer compartment:* no
- **SuperFrost:** automatic, time-controlled, 65 hours

Design

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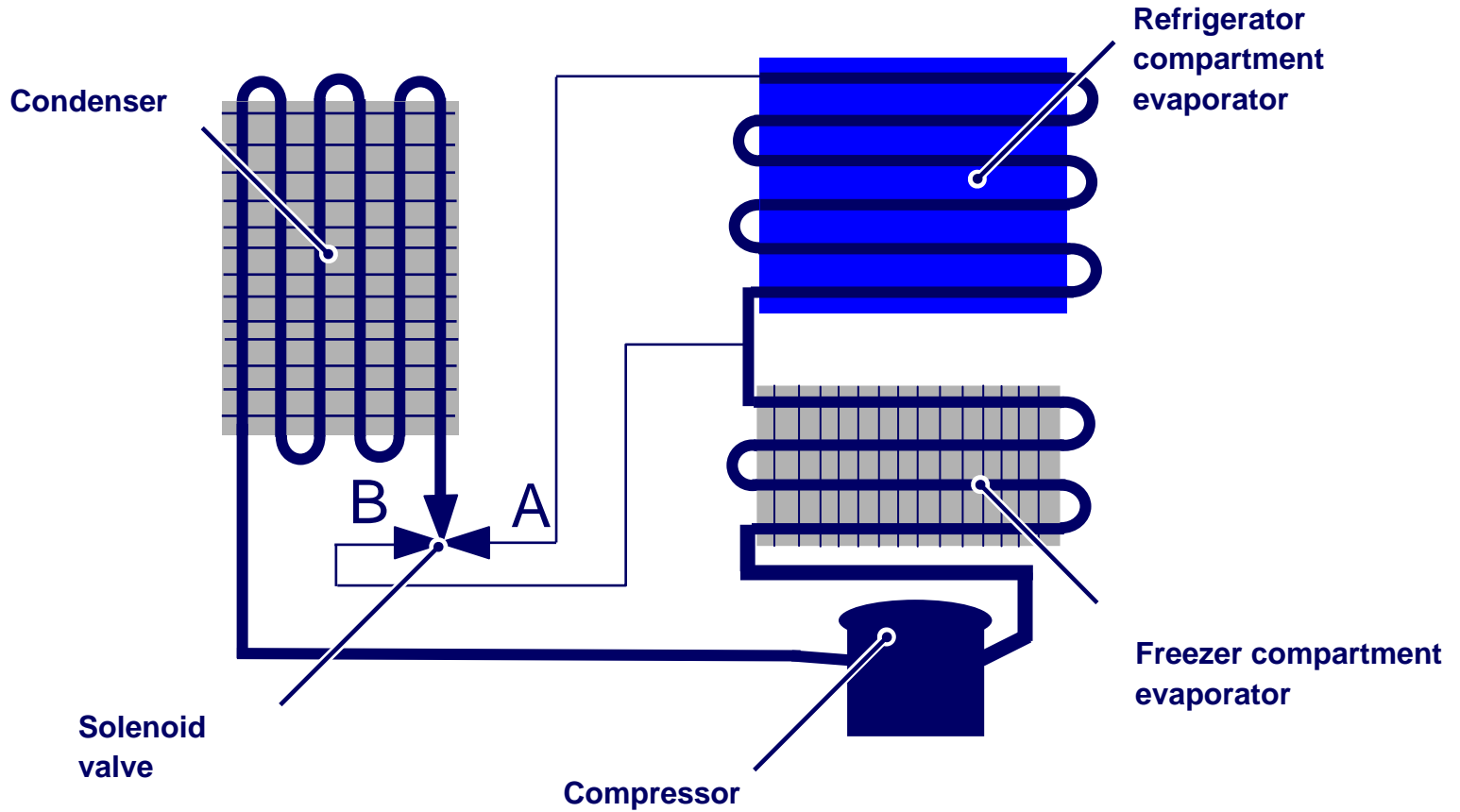
Schematic representation of the appliance

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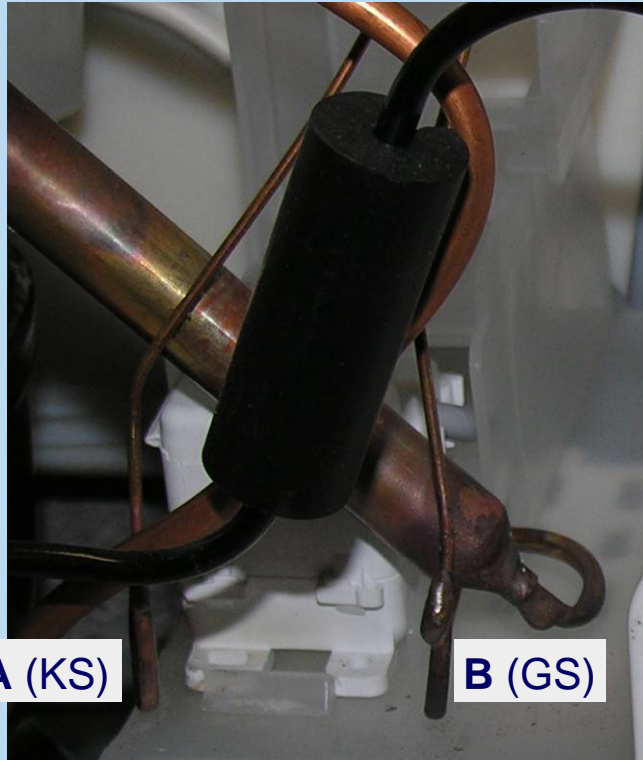
Schematic diagram refrigeration circuit



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Solenoid valve

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A (KS)

B (GS)

A Refrigerator compartment (KS)

B Freezer compartment (GS)

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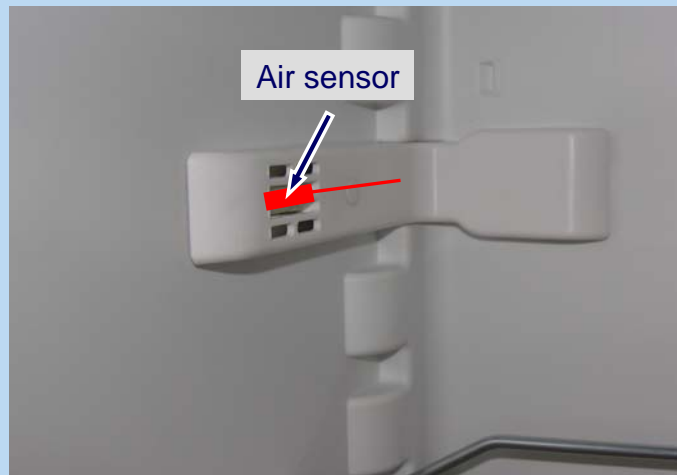
Control

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Refrigerator compartment

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air sensor



Position:

Middle of refrigerator compartment, left.

Depending on this sensor

- **and** the freezer compartment air sensor, the compressor is switched OFF.
- the solenoid valve is switched in B direction (freezer only).

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Refrigerator compartment evaporator sensor

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Position:

Foamed-in on a level with the air sensor cover.

Depending on this sensor

- **or** the freezer compartment air sensor, the compressor is switched ON.
- the solenoid valve is switched in A direction (refrigerator + freezer).
- the defrosting phase is ended.

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Refrigerator compartment

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fan



Position:

Beneath the ceiling of the appliance.

Fan ON when,

- upon startup, the temperature is $+8^{\circ}\text{C}$ at the evaporator sensor **and**
- fan function is ON **and**
- compressor ON **and**
- refrigerator compartment door is closed.

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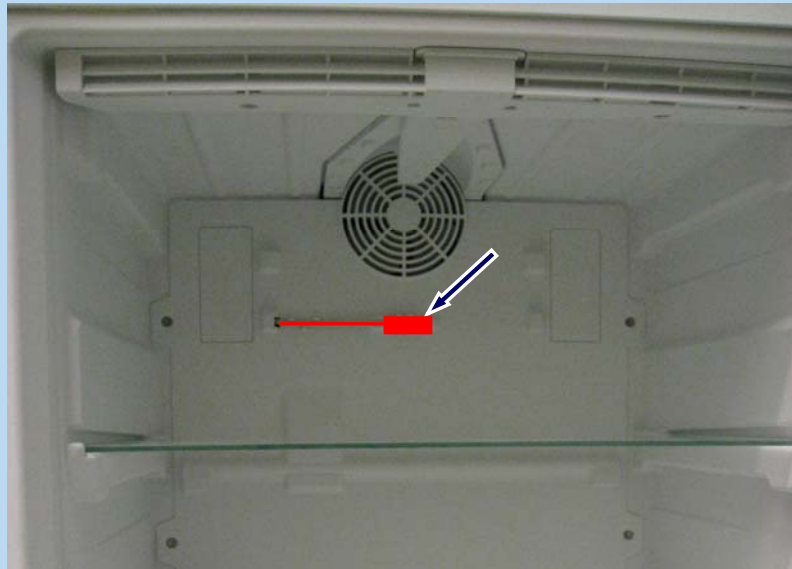
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Freezer compartment

air sensor

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Position:

Clipped into sensor holder on air duct panel.

Depending on this sensor

- and the refrigerator compartment air sensor, the compressor is switched OFF.
- **or** on the refrigerator compartment evaporator sensor, the compressor is switched ON.

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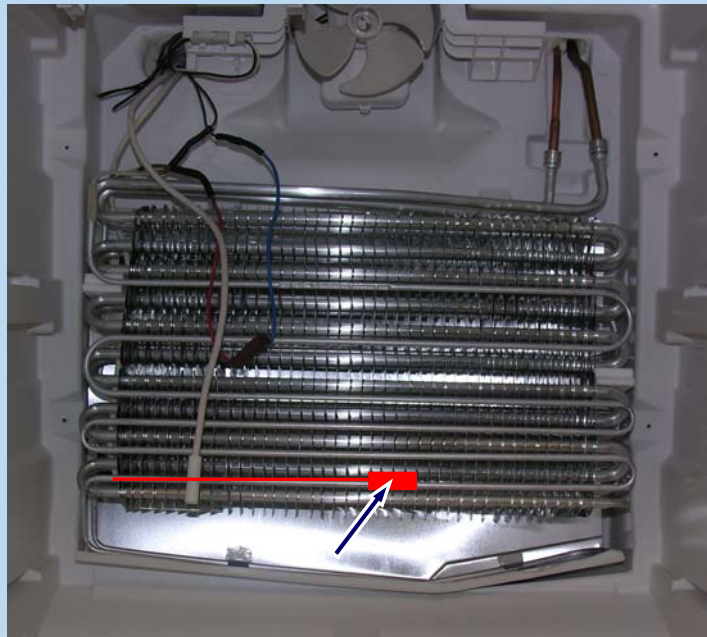
Hidden functions

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Freezer compartment evaporator sensor

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Position:

Slipped into lamellar evaporator.

Depending on this sensor

- **and** on the freezer compartment air sensor, the freezer compartment fan switches ON.
- the defrosting phase is ended.

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Freezer compartment

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defrost heater, defrosting phase



Position:

Clipped into lamellar evaporator and laid in defrost water drain tray.

Defrosting phase is initiated

- in case of startup after 6 hours cumulative compressor runtime.
- in case of normal mode after 6-60 hours cumulative compressor runtime, depending on number and duration of door openings.

Defrosting phase is ended

- when freezer compartment evaporator sensor has reached +5°C
- when max. defrosting time of 50 minutes has been reached.

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Freezer compartment

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fan



Position:

Attached behind air duct panel in fan module.

Fan runs, when:

- freezer compartment door is closed
- compressor ON
- freezer compartment evaporator sensor switch-on value (startup from -25°C)

and

and

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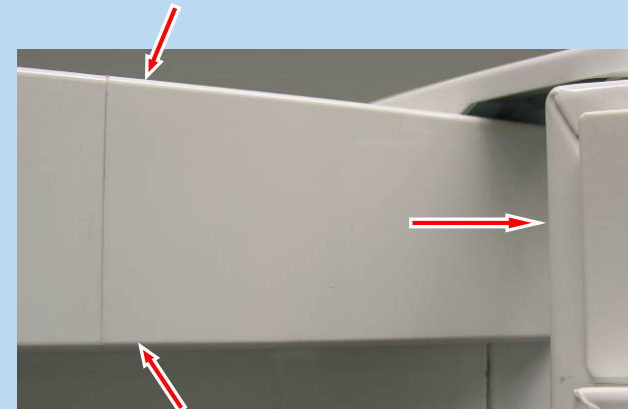
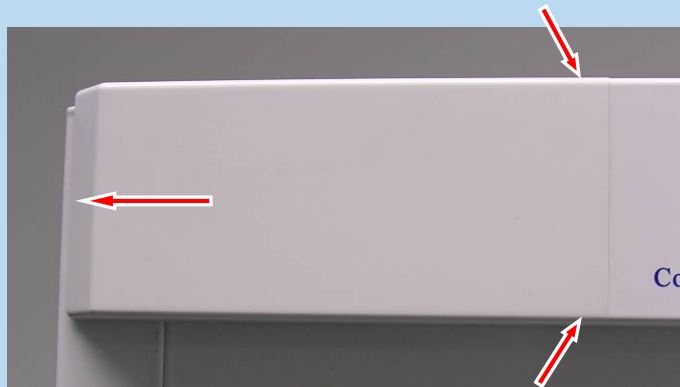
**Replacement
of parts**

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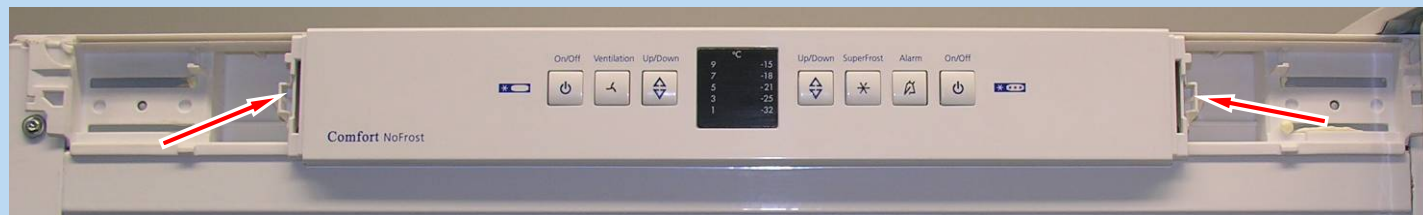
Control panel electronic unit

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Remove covers



Unlock front casing



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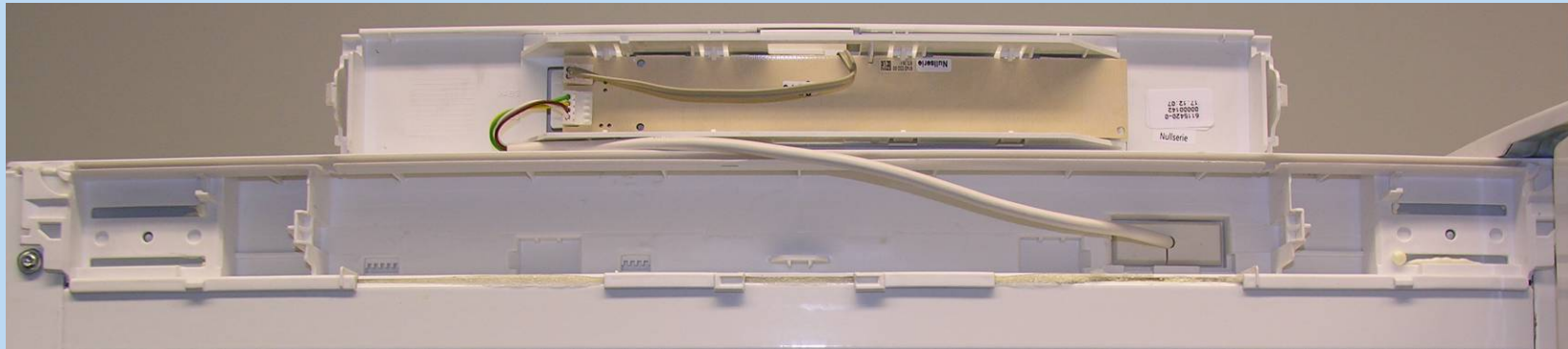
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Control panel electronic unit

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- Draw front panel forwards.
- Disconnect and detach bus connector.
- Disconnect PCB carrier from front housing.
- Disconnect electronic unit of the control panel from the PCB carrier.



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Refrigerator compartment air sensor

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Procedure

- Remove stopper
- Undo screw
- Draw air sensor out of the cover.

Info on repair kit!

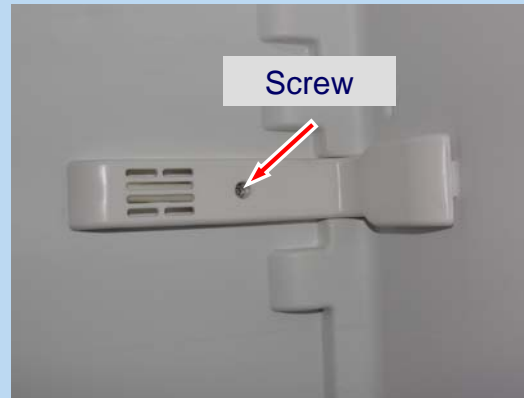
Sensor is cut off and repaired using repair kit (with repair instructions).



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Refrigerator compartment evaporator sensor

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Procedure

- Remove stopper
- Undo screw
- Disengage air sensor
- Foamed-in evaporator sensor is completely replaced with repair kit
- Replace cover
- Clip air and evaporator sensor into place

Info on repair kit!

Sensor is repaired using repair kit (with repair instructions).

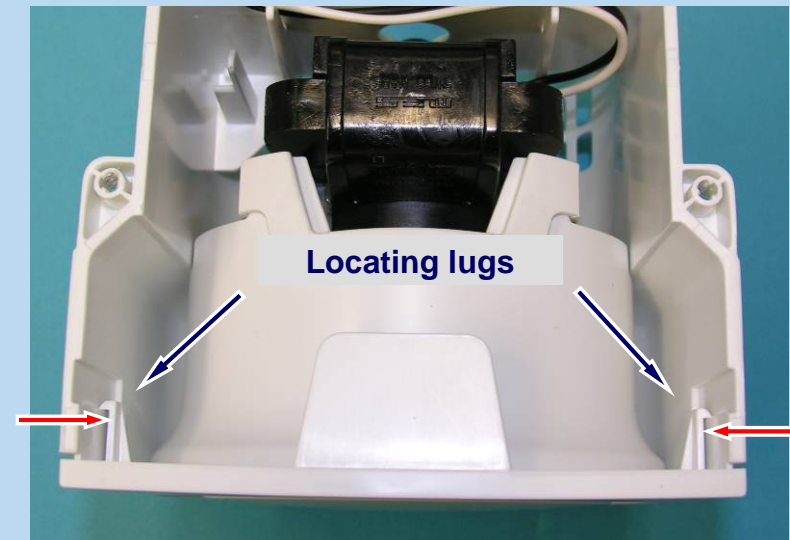


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Refrigerator compartment

fan

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Procedure

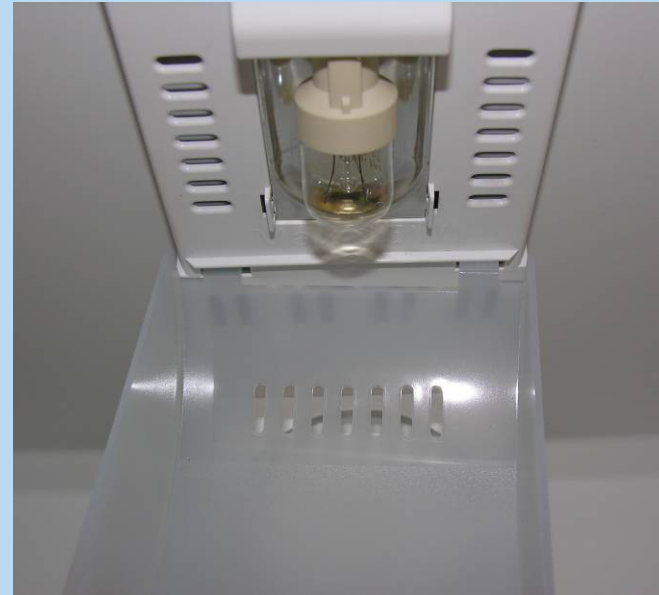
- Remove marked screws.
- Release fan casing from light housing.
- Disconnect fan.
- Disengage the locating lugs of the fan cover and pull the cover forwards.

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Refrigerator compartment

interior light

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Procedure

- Pull down the light cover.
- Light cover is only clipped on.

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Refrigerator compartment

door magnet

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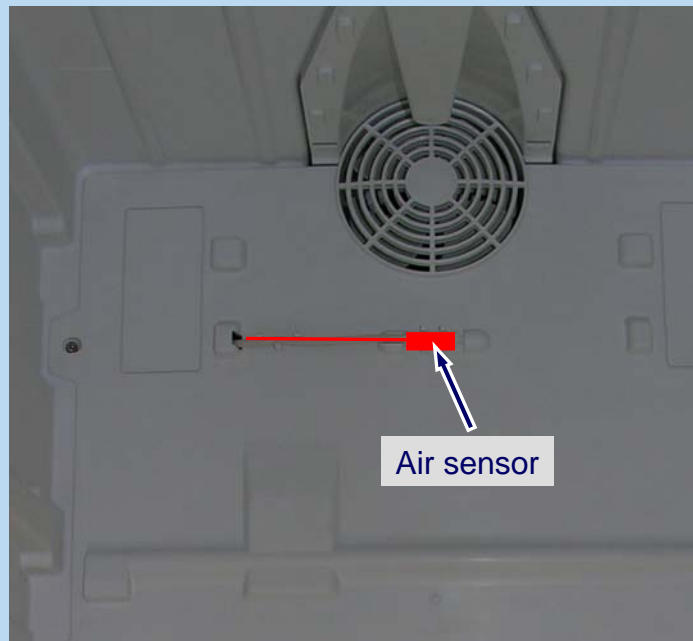
Procedure

- Door magnet is clipped into the faceplate above the door seal.
- Press the locating lug in a little and lever out the door magnet.

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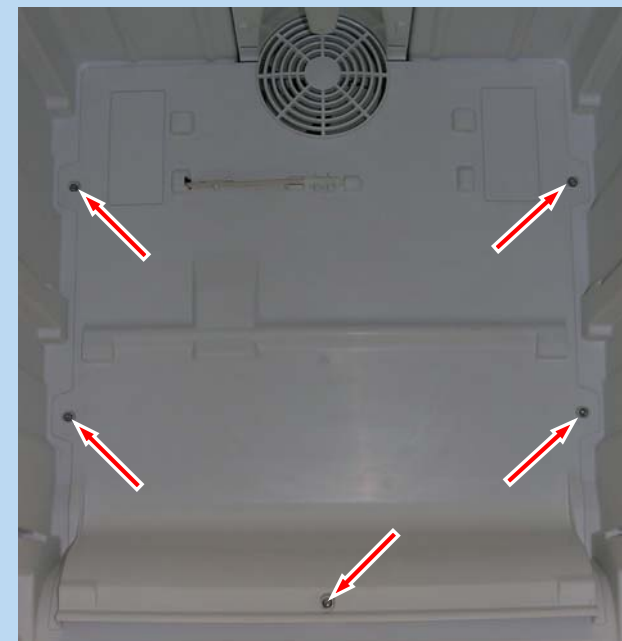
Freezer compartment air sensor

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Procedure

- Disengage air sensor
- Undo marked screws
- Pull out air sensor through housing feedthrough



Info on repair kit!

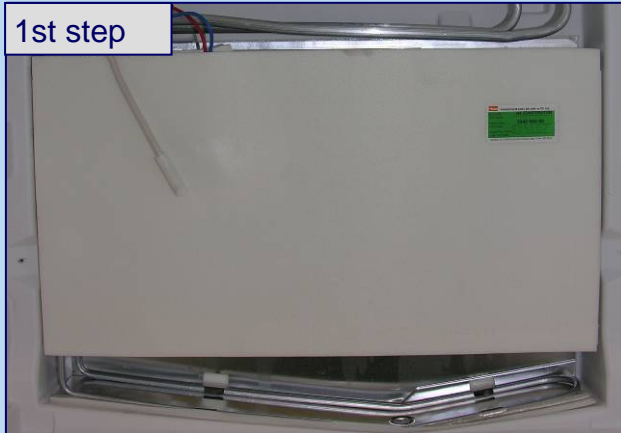
Sensor is cut off and repaired using repair kit (with repair instructions).

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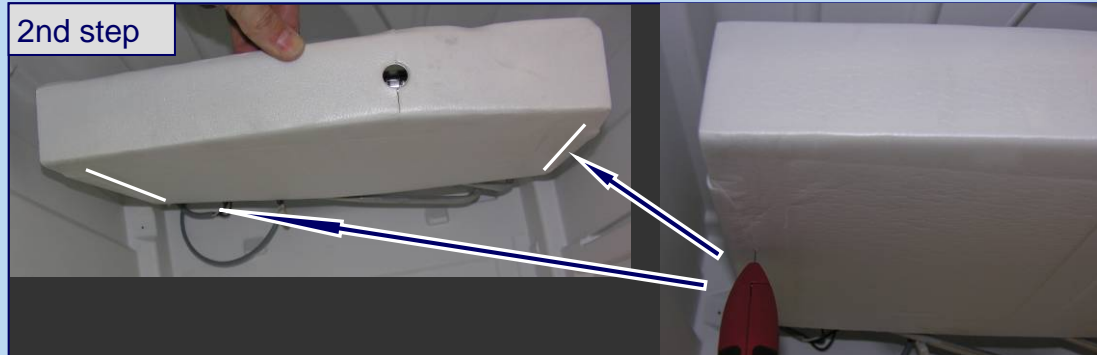
Freezer compartment evaporator sensor

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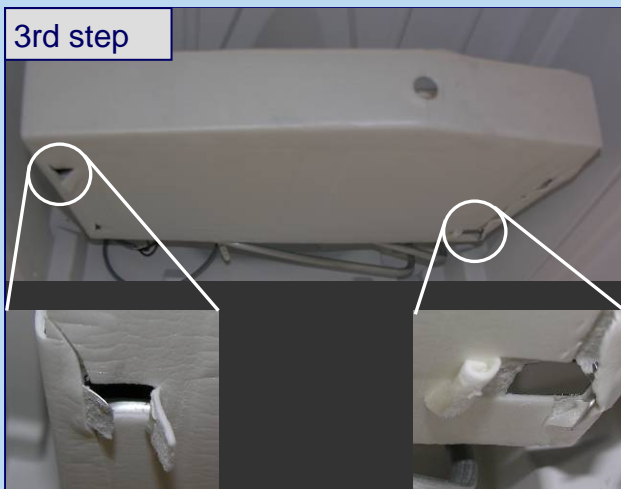
1st step



2nd step



3rd step



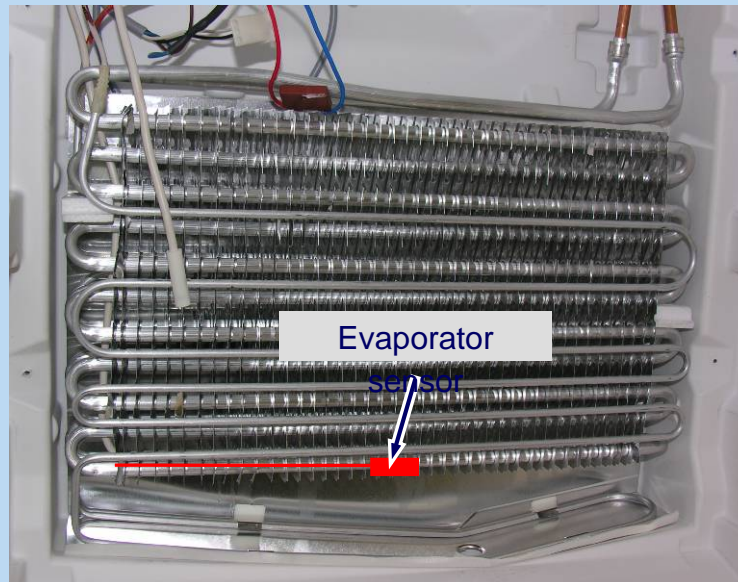
Procedure

- 1st step: Raise evaporator module and swing it out in a forward direction.
- 2nd step: Make 2 incisions in the plastic at the marked places.
- 3rd step: Make incisions in the plastic at the marked places (can be felt by a slight depression), bend up the holders of the cover plate and remove the cover plate

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Freezer compartment evaporator sensor

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Procedure

- Pull evaporator sensor out of the lamellas
- Pull out evaporator sensor through housing feedthrough

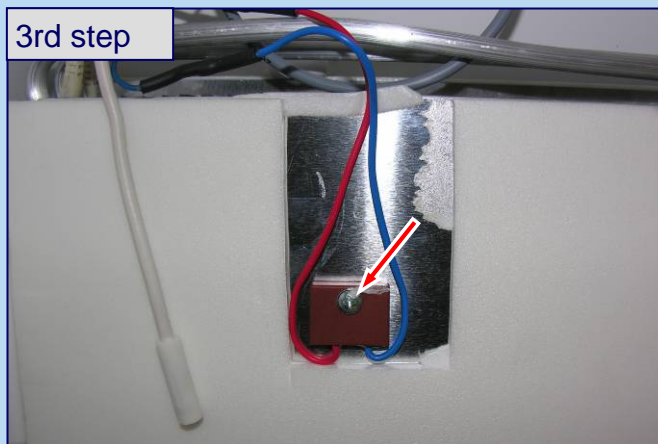
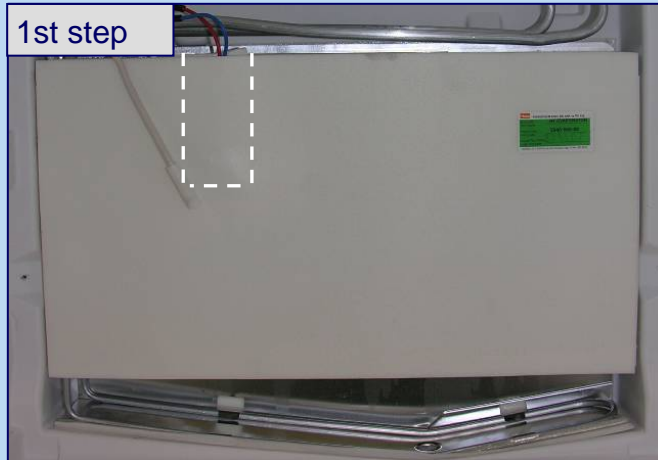
Info on repair kit!

Sensor is cut off and repaired using repair kit (with repair instructions).

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Freezer compartment temperature fuse

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Procedure

- 1st step: Feel for position of temperature fuse.
- 2nd step: Make an incision in the plastic.
- 3rd step: Undo screw

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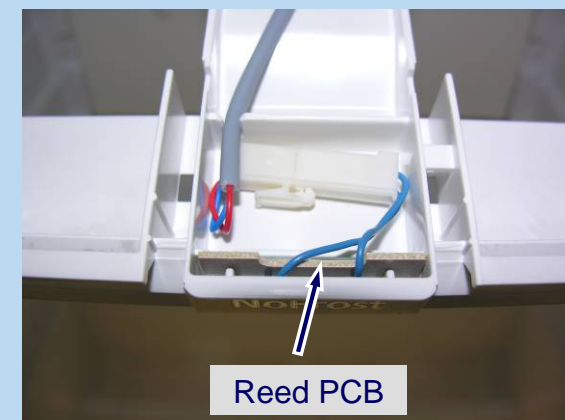
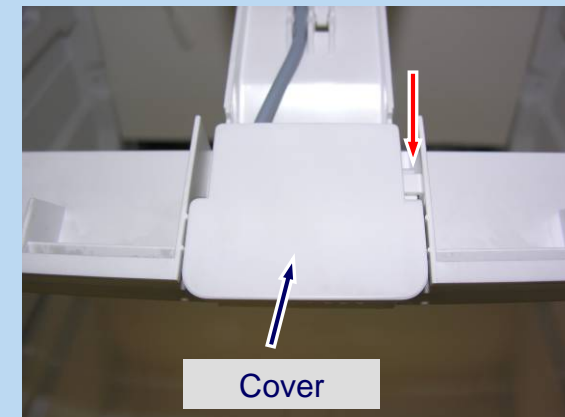
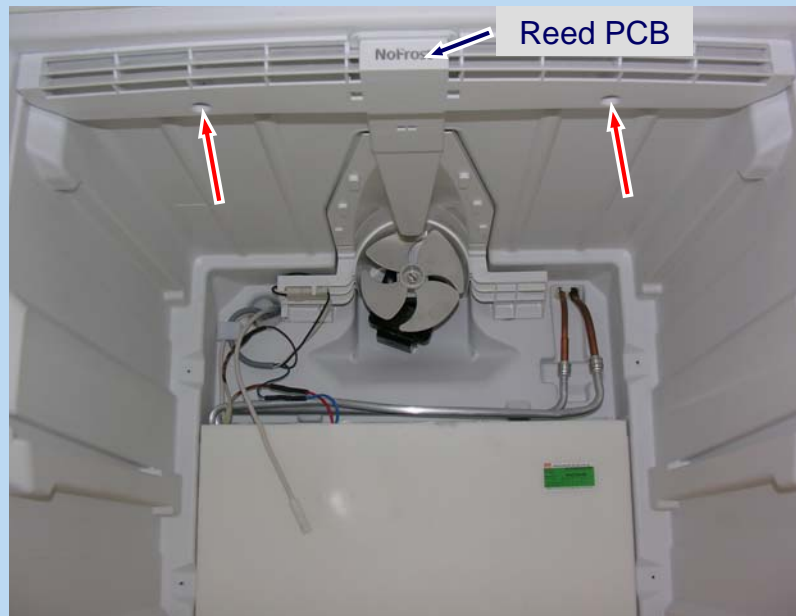
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Freezer compartment

reed PCB

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Procedure

- Undo marked screws on fan module
- Disengage cover

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Freezer compartment

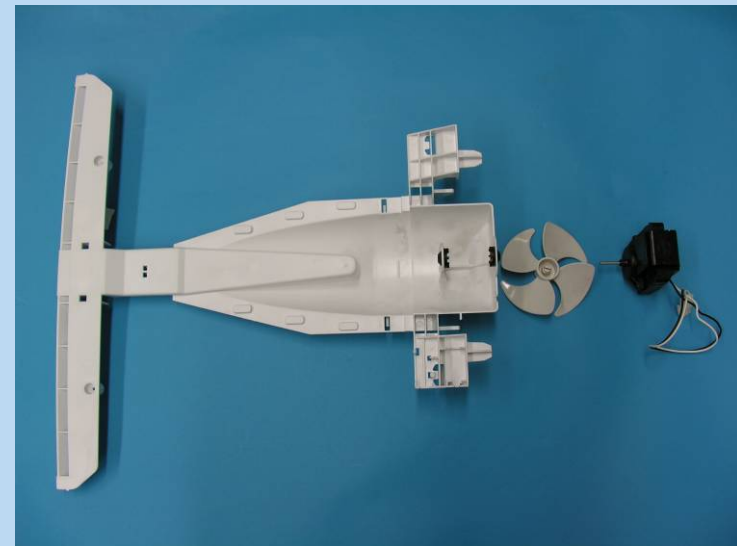
fan

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Procedure

- Extract cable from fan module.
- Open holding clips for cable.
- Disconnect fan cable.



Procedure

- Disconnect fan module.
- Remove blades.
- Pull fan from holder.

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Top door hinge

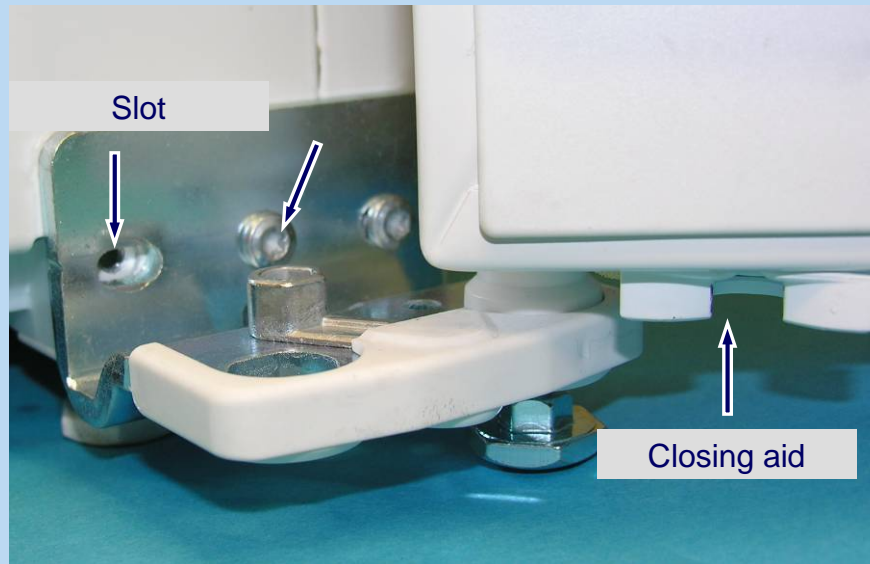
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Bottom door hinge

LIEBHERR



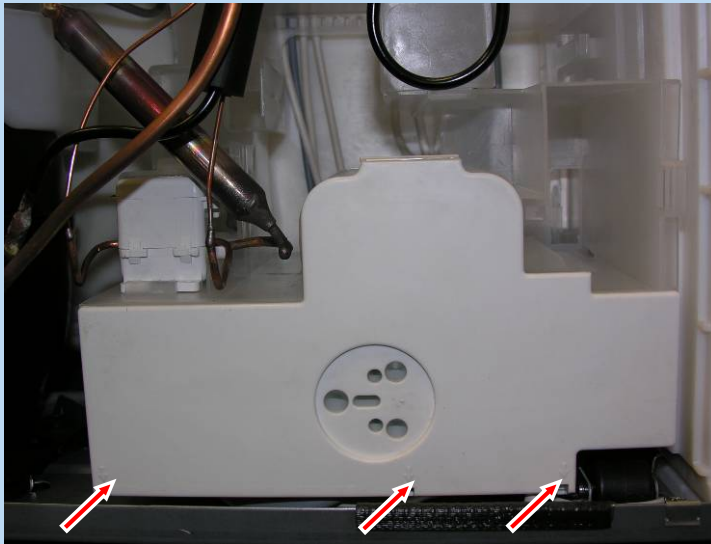
Slot for door adjustment

Marked screw can be transferred to the slot for door adjustment.

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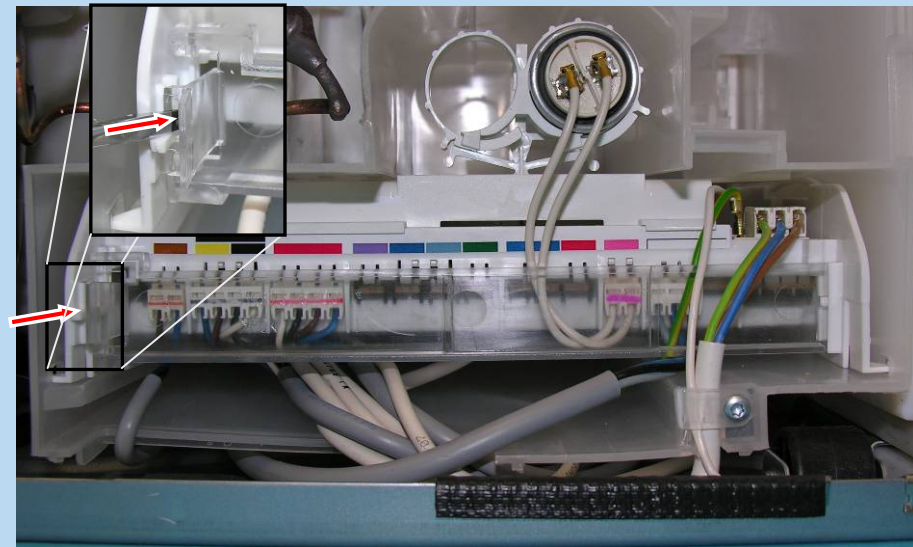
Power PCB

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Remove cover

- Disengage marked retaining clips.
- First draw the cover out in a downward direction and then lift it for removal.



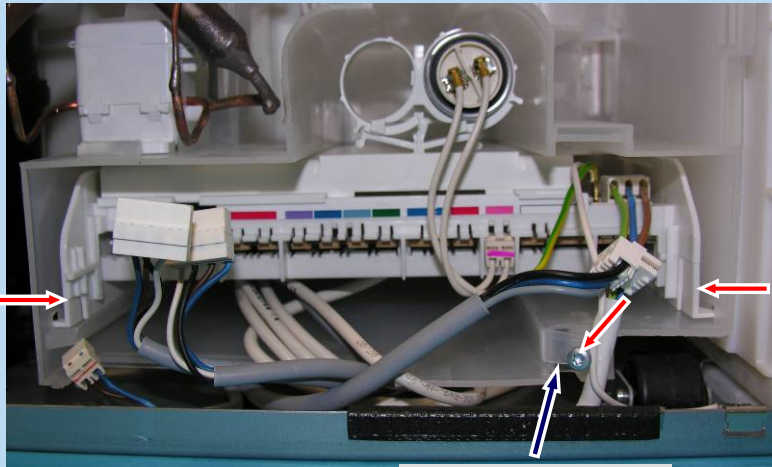
Cable clips

- Disengage the cable clip at the marked location.

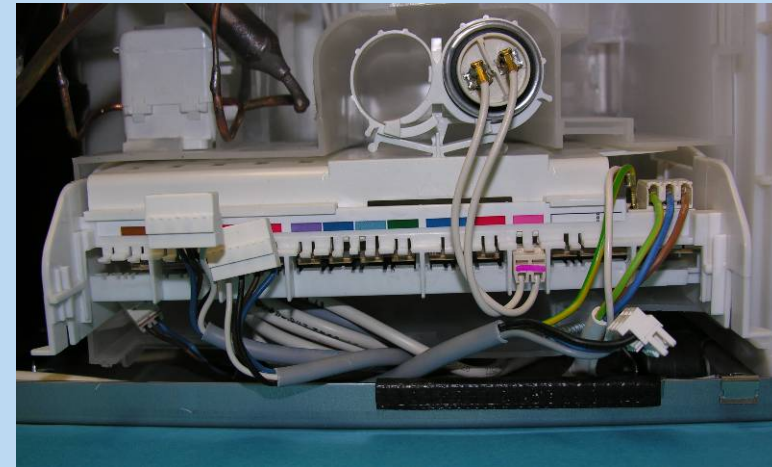
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Power PCB

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Strain relief



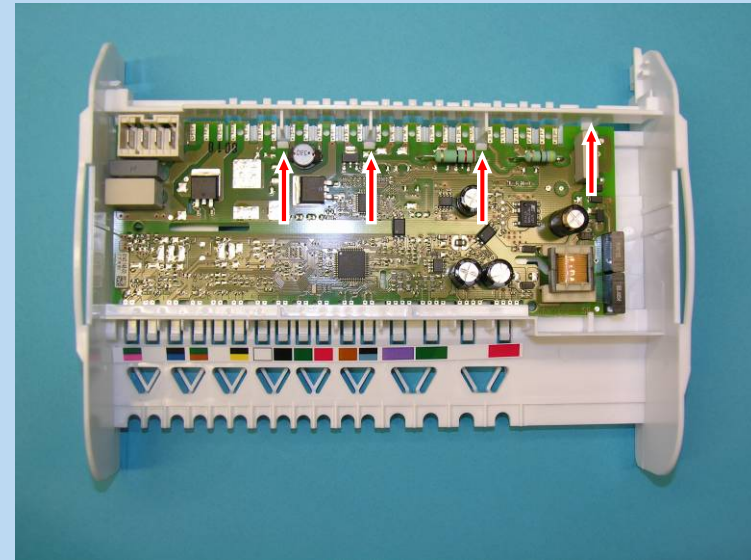
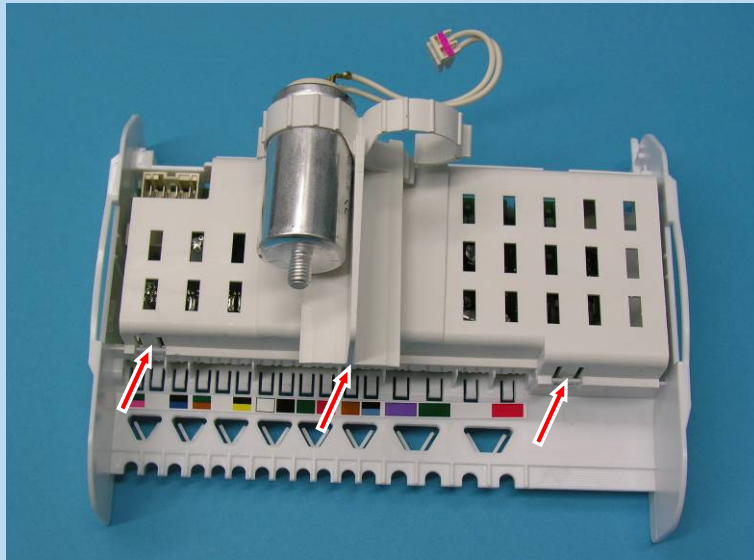
To pull out slide-in unit

- Pull off front PCB connector.
- Release strain relief (screw) of the supply cable.
- Disengage the slide-in unit at the marked locations and pull it forwards for removal.
- Pull off rear PCB connector.

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Power PCB

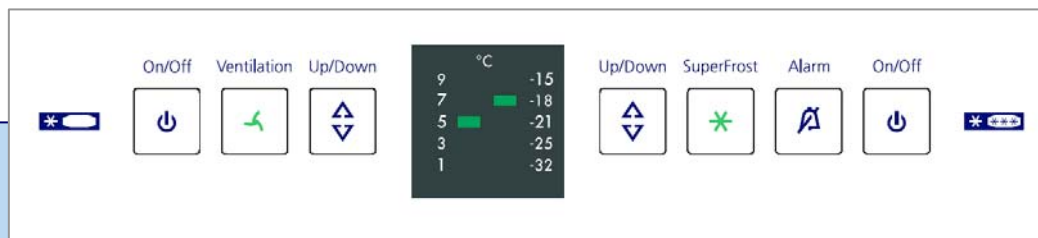
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PCB

- Disengage the upper part of the slide-in unit at the marked retaining lugs and remove.
- Disengage PCB at the marked locations.

**Hidden
functions**



The service menu comprises functions and testing options for the service technicians as well as activation/deactivation of a demo mode.

Start of service menu:

Appliance has to be switched ON. Can be called only with **freezer compartment buttons**.
 Press "**Up/Down**" + "**ON/OFF**" together for about 5 seconds.

Display, active service menu:

SuperFrost flashes

Sequence of functions:

9°C LED:	Manual defrosting	: Freezer compartment defrost heater is activated
3°C LED:	Demo mode	: Appliance is switched ON, without refrigeration
7°C LED:	Panel test	: Test of display and control elements
5°C LED:	Service mode	: Test electric loads
1°C LED:	<i>No function</i>	

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Service menu overview

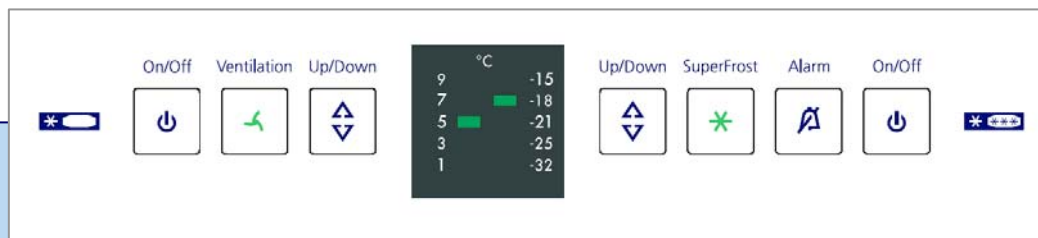


Service menu	Menu	Operation	Selection Function elements
Manual defrosting	9°C LED	Press SuperFrost button	Defrosting ON, -15°C LED and -32°C LED flash alternately with SuperFrost LED
Demo mode	3°C LED static	Press SuperFrost button	Demo mode activated
	3°C LED flashes fast		Demo mode deactivated
Panel test	7°C LED	Press SuperFrost button	Press buttons, door closed/open
Service mode	5°C LED	Press SuperFrost button	LEDs OFF: All OFF
			<p>9°C LED: - Compressor ON - Solenoid valve position B</p> <p>7°C LED: - Compressor ON - Solenoid valve position A</p> <p>9°C LED, 7°C LED: Freezer compartment fan ON</p> <p>5°C LED: Freezer compartment defrost heater ON</p> <p>9°C LED, 5°C LED: Light ON</p> <p>9°C LED, 7°C LED, 5°C LED: Refrigerator compartment fan ON</p>

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Manual defrosting

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Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				
1	Set values	Press " Up/Down " and " ON/OFF " together for 5 seconds	9°C LED static ¹⁾ , SuperFrost LED flashes	Activation service menu/ manual defrosting selected
Manual defrosting -- activation of defrost heater --				
2	9°C LED static ¹⁾ , SuperFrost LED flashes	Press SuperFrost button	-15°C and -32°C LED flash alternately with SuperFrost LED	Manual defrosting activated
End	- Switch appliance OFF/ON - Automatic when defrost parameters reached. Info: During manual defrosting, the -15°C LED and -32°C LED always flash alternately with the SuperFrost LED. The refrigerator compartment set value can be adjusted and is displayed, then return to the display of the manual defrosting.			

¹⁾ When the demo mode is activated, the 3°C LED is displayed with fast flash instead of 9°C LED static.

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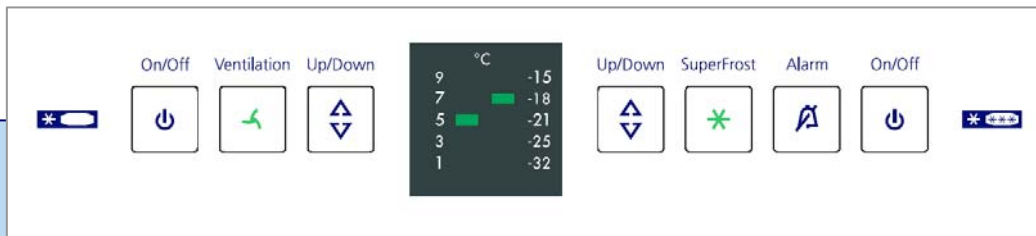
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Demo mode

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Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				
1	Set values	Press " Up/Down " and " ON/OFF " together for 5 seconds	9°C LED static ¹⁾ , SuperFrost LED flashes	Service menu activation
Demo mode ON				
2	9°C LED static ¹⁾ , SuperFrost LED flashes	Press Up/Down button	3°C LED static, SuperFrost LED flashes	Demo mode selected
3	3°C LED static, SuperFrost LED flashes	Press SuperFrost button	Set values	Demo mode ON
Demo mode OFF				
2	3°C LED flashes fast, SuperFrost LED flashes	Press SuperFrost button	Appliance in normal mode	Demo mode OFF
INFO	If the switch is made from logic OFF to logic ON when the demo mode is activated, all the refrigerator compartment temperature LEDs are lit for 3 seconds as indication of the activated demo mode.			

¹⁾ When the demo mode is activated, the 3°C LED is displayed with fast flash instead of 9°C LED static.

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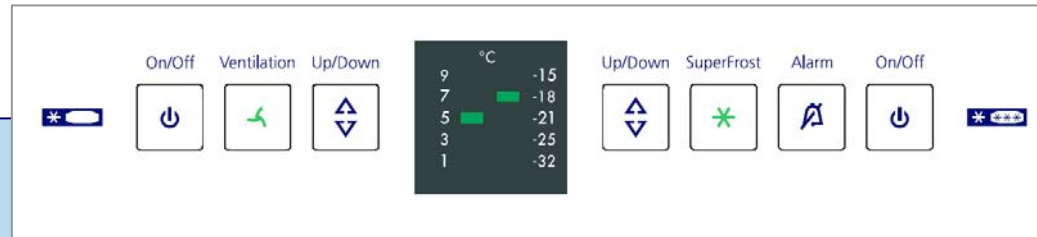
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Panel test

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Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				
1	Set values	Press " Up/Down " and " ON/OFF " together for 5 seconds	9°C LED static ¹⁾ , SuperFrost LED flashes	Service menu activation
Panel test -- test display LED, door contact, buttons --				
2	9°C LED static ¹⁾ , SuperFrost LED flashes	Press Up/Down button twice	7°C LED static, SuperFrost LED flashes	Control panel test selected
3	7°C LED static, SuperFrost LED flashes	Press SuperFrost button	All temperature LEDs ON, all button LEDs ON	Control panel test activated
4	All temperature LEDs ON, all button LEDs ON	Press all buttons, door open and closed (each button is confirmed by a beep)	- Beep for 1sec. - appliance switches OFF	After the last button has been pressed a beep sounds for 1 second, only if the test has been successful.
Panel test cannot be ended in step 2, for example; it has to be performed in full. Should a button/reed contact be defective , no beep sounds for confirmation and the appliance does not switch OFF . The appliance then has to be unplugged and plugged back in again.				

¹⁾ When the demo mode is activated, the 3°C LED is displayed with fast flash instead of 9°C LED static.

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Service mode

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Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				
1	Set values	Press " Up/Down " and " ON/OFF " together for 5 seconds	9°C LED static ¹⁾ , SuperFrost LED flashes	Service menu activation
Service mode -- testing electric loads--				
2	9°C LED static ¹⁾ , SuperFrost LED flashes	Press Up/Down button 3 times	5°C LED static, SuperFrost LED flashes	Service mode selected
3	5°C LED static, SuperFrost LED flashes	Press SuperFrost button	All temperature LEDs OFF, SuperFrost LED flashes fast	Customer service mode activated / All OFF
9 → 4	All temperature LEDs OFF, SuperFrost LED flashes fast	Press Up/Down button	9°C LED and SuperFrost LED flash fast	- Compressor ON - Solenoid valve position B
5	9°C LED and SuperFrost LED flash fast	Press Up/Down button	7°C LED and SuperFrost LED flash fast	- Compressor ON - Solenoid valve position A
6	7°C LED and SuperFrost LED flash fast	Press Up/Down button	9°C LED , 7°C LED and SuperFrost LED flash fast	Freezer compartment fan ON

¹⁾ When the demo mode is activated, the 3°C LED is displayed with fast flash instead of 9°C LED static.

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Service mode

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Step	Display	Operation	Display following operation	Testing option / Info
7	9°C LED, 7°C LED and SuperFrost LED flash fast	Press Up/Down button	5°C LED and SuperFrost LED flash fast	Freezer compartment defrost heater ON
8	5°C LED and SuperFrost LED flash fast	Press Up/Down button	9°C LED, 5°C LED and SuperFrost LED flash fast	Light ON
4 ← 9	9°C LED, 5°C LED and SuperFrost LED flash fast	Press Up/Down button	9°C LED, 7°C LED, 5°C LED and SuperFrost LED flash fast	Refrigerator compartment fan ON
End	Press "ON/OFF" twice: Return to normal/control mode.			

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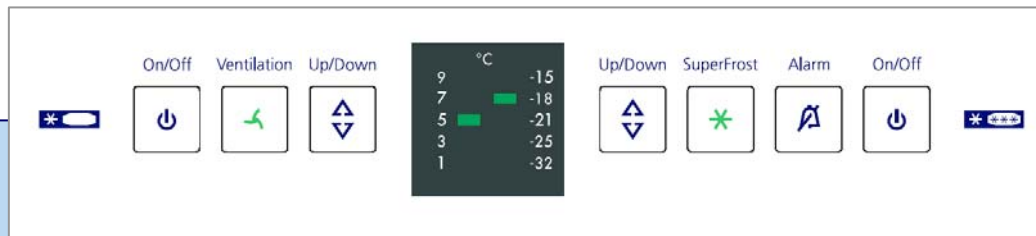
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Error code

LIEBHERR



Error code	Defective component	Emergency mode
9°C + 7°C LED flash in synchronism with SF LED	Refrigerator compartment air sensor	Compressor 10min. ON, 40min. OFF
9°C + 5°C LED flash in synchronism with SF LED	Refrigerator compartment evaporator sensor	Compressor 10min. ON, 40min. OFF
9°C + 7°C + 5°C LED flash in synchronism with SF LED	Freezer compartment air sensor	Compressor continuous operation
9°C + 3°C LED flash in synchronism with SF LED	Freezer compartment evaporator sensor	Compressor continuous operation

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