

Appliance Documentation

CN(P _{sl})	3503	from Index 20	Comfort
CN(es,esf)	4003	from Index 20	Comfort
CN(P)	3513	from Index 20	Comfort
CN(P)	3913	from Index 20	Comfort
CN(P) _(es)	4013	from Index 20	Comfort

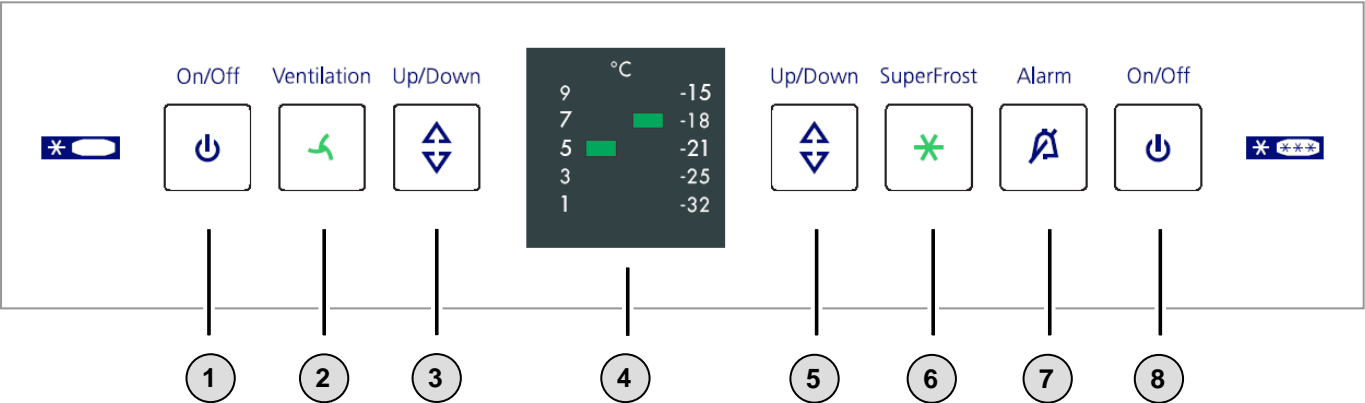
Refrigerator with NoFrost freezer compartment



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1.0 Operating and control elements



Refrigerator compartment		Freezer compartment	
1 : ON/OFF	ON/OFF button refrigerator compartment	5 Up/Down	Setting button temperature higher/ Setting button temperature lower
2 : Ventilation function,	Button lit = function switched on	6 : SuperFrost function,	button lit = function switched on.
3 : Up/Down	Setting button temperatur higher / Setting button temperature lower	8 : ON/OFF	ON/OFF button appliance
General			
4 : Temperature display			
7 : Alarm OFF button	for audible alarm		

2.0 Functions at a glance

Control:	Electronic	
Temperature display:	Refrigerator compartment: Freezer compartment:	Set value Set value
Temperature range:	Refrigerator compartment: Freezer compartment:	+1°C to +9°C -15°C to -32°C
Temperature alarm:	Refrigerator compartment: Freezer compartment:	Not present Visual, audible
Door alarm:	Refrigerator compartment: Freezer compartment:	Audible Audible
Fan:	Refrigerator compartment: Freezer compartment:	Present Present
Defrosting:	Refrigerator compartment: Freezer compartment:	Automatic Automatic
Interior light:	Refrigerator compartment: Freezer compartment:	Present Not present
Service menu:	Present	
Compressor:	CN: Standard CNP: VCC, frequency-controlled	
Solenoid valve refrigeration circuit:	Present	

3.0 Description of the appliance

The **CN(P) ..03, ..13** is a combined refrigerator-freezer with NoFrost freezer compartment.

The appliance has a compressor. The refrigerator compartment evaporator and freezer compartment evaporator are controlled using a bistable solenoid valve. Both evaporators are connected in series (**see diagram 4.2.4**). Therefore the refrigerator compartment can be operated only in conjunction with the freezer compartment. However, it is possible to operate the freezer compartment on its own.

In the refrigerator compartment the temperature is regulated by way of a foamed-in rear wall evaporator, a foamed-in evaporator sensor and an air sensor.

The freezer compartment has a lamellar evaporator with fan and integrated defrost heater. Two sensors, an air sensor and an evaporator sensor, see to the control and automatic defrosting. A safety temperature limiter protects the appliance against excessively high temperatures during the defrosting phase.

3.1 Sensor positions, schematic diagrams

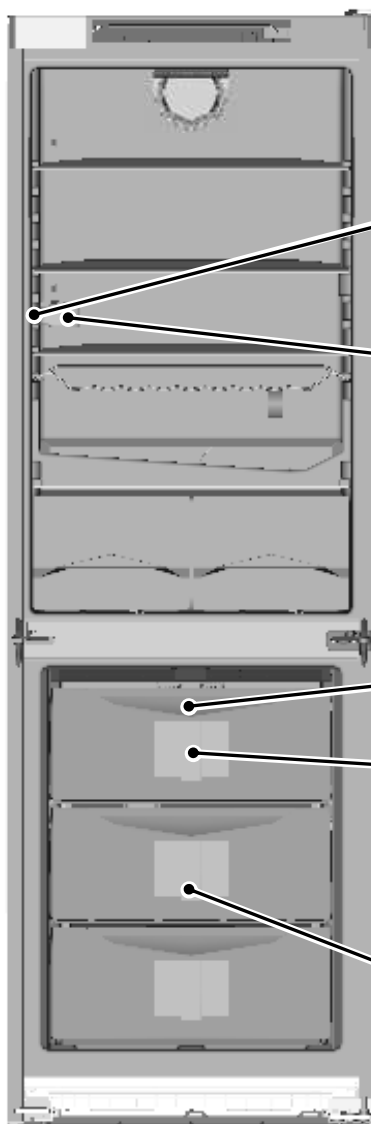


Fig. 3.1 / 1

Foamed-in rear wall evaporator

Air sensor

Evaporator sensor

Fan

Air sensor

Lamellar evaporator

Evaporator sensor

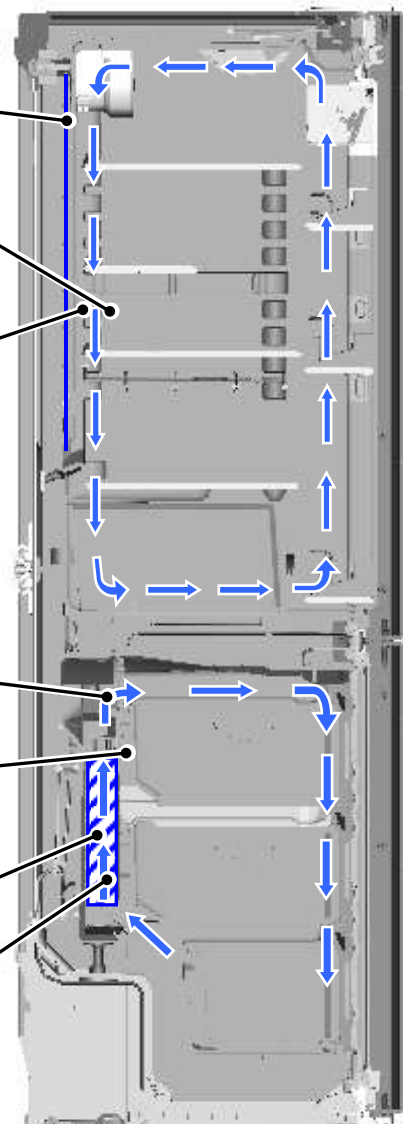


Fig. 3.1 / 2

4.0 Main components and their functions

4.1 Electrical components and functions

4.1.1 General

Electronic control system		
Type:	Series 3 electronic control system	
Components:	Control panel and power PCB	
Compressor		
Type:	CN:	Standard
	CNP:	VCC, frequency-controlled
Function:	<p>ON: Refrigerator compartment evaporator sensor switch-on value or Freezer compartment air sensor switch-on value Note: On-delay time (8 minutes) must have elapsed.</p> <p>OFF: Refrigerator compartment air sensor switch-off value and Freezer compartment air sensor switch-off value</p> <ul style="list-style-type: none">• Compressor with various speed settings.• The compressor is triggered via an inverter, the inverter electronics are mounted directly on the compressor.• The speed settings and switching-off of the compressor are controlled by the inverter via an appropriate frequency signal (pulse-width modulated square wave voltage on a separate signal line). Note: In the event of the frequency signal being interrupted, the compressor continues to run at a pre-specified speed!• Runtime longer than 70 minutes: Speed increase by one step during compressor operation.• Runtime shorter than 40 minutes: Speed reduction on next start-up. <p><u>For function check see chapter 7.6:</u> Service mode</p> <p><u>For troubleshooting see chapter 8.2:</u> Troubleshooting VCC compressor / inverter</p>	

Solenoid valve refrigeration circuit	
Type:	Bistable
Function:	Switchover between REFRIGERATOR COMPARTMENT + FREEZER COMPARTMENT, to FREEZER COMPARTMENT only

4.1.2 Refrigerator compartment

Electronic control system		
Setting range:	+1°C to +9°C	
Display range:	1°C / 3°C / 5°C / 7°C / 9°C (set value display)	
Functions		
Ventilation:	ON:	Fan runs in parallel with refrigerator compartment cooling (i.e. compressor ON and solenoid valve direction A).
	OFF:	Fan is OFF.
	During start-up the fan is activated only from an evaporator sensor temperature of +8°C and colder.	
Defrosting:	- Automatic when solenoid valve is at the B setting "freezer compartment only". - Automatic during compressor standstill phase.	
Door alarm:	When:	If door is open, after 60 seconds.
	Audible:	3 beeps.
Sensors		
Refrigerator compartment air sensor:	Position:	Middle of refrigerator compartment, on the left behind the sensor cover.
	Function:	- Refrigerator compartment air sensor and freezer compartment air sensor switch the compressor OFF. - Switches the solenoid valve to B setting (freezer only)
Evaporator sensor:	Position:	Foamed-in at the level of the sensor cover.
	Function:	- Refrigerator compartment evaporator sensor or freezer compartment air sensor switches the compressor ON. - Switches the solenoid valve to A setting (refrigerator + freezer) - Ends the defrosting phase.
Switch		
Door switch:	Position:	Behind front panel at the top.
	Type:	Reed PCB
	Contact type:	Make contact
	Function:	Activation via: Magnet behind door panel at the top, magnet is replaceable.
<u>Switching signal when:</u>		
door closed:	fan ¹⁾	ON
	interior lighting	OFF
door open:	fan ¹⁾	OFF
	interior lighting	ON
	door alarm	ON after 60 seconds
¹⁾ When "ventilation" function is activated.		

Loads

Fan:

Position: In the centre beneath the compartment liner ceiling.

Function:

Ventilation	Refrigeration refrigerator compartment	Door	Fan
ON	ON	CLOSED	ON
ON	OFF	CLOSED	OFF
OFF	ON	CLOSED	OFF
OFF	ON	CLOSED / OPEN	OFF
ON/OFF	ON/OFF	OPEN	OFF

e.g. If the ventilation is ON **and** the refrigerator compartment cooling is ON **and** the door is closed, **then** the fan runs.

Refrigeration refrigerator compartment ON: Compressor ON and solenoid valve setting A.

Refrigeration refrigerator compartment OFF: - Compressor OFF *or*
- Compressor ON and solenoid valve setting B.

During start-up the fan is activated only from an evaporator sensor temperature of +8°C and colder.

Refrigerator compartment interior light:

Position: Ceiling.

Function: - Shines as soon as the door is opened.
- Is switched OFF after door has been open for 15 minutes.

4.1.3 Freezer compartment

Electronic control system

Setting range: -15°C to -32°C

Display range: -15°C / -18°C / -21°C / -25°C / -32°C

Functions

Temperature alarm:

Alarm value: 4K warmer than set value.

SuperFrost alarm value: -14°C.

Delay: 20 minutes

Visual: Flashing temperature display.

Audible: 4 beeps.

During start-up: The temperature display flashes until the switch-off value is reached, the audible alarm is switched OFF.

(e.g. at a set value of -18°C, a temperature of -14°C has to be present for at least 20 minutes, then a temperature alarm is raised.)

When the defrosting phase begins, the temperature alarm is suppressed for 1.5 hrs.

Defrosting:

ON:

- During start-up after 6 hours cumulative compressor running time.
- After a cumulative compressor running time of 6 to 60 hours maximum, depending on the number/duration of the door openings.

When the defrosting phase begins, the compressor and the fan are switched OFF and the defrost heater is switched ON.

Duration: The defrost heater remains switched ON until

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

Info: After the end of the heating phase the compressor is switched ON with a 10-minute delay.

If the SuperFrost function is activated during the defrosting phase, this will not interrupt defrosting.

Door alarm:

When: If door is open, after 60 seconds.

Audible: 3 beeps.

SuperFrost:

ON: The freezer compartment sets itself to -38°C (time-controlled: 65 hours).

OFF: The freezer compartment sets itself to the set value.

Note: If SuperFrost is actuated during a defrosting phase, the SuperFrost function is not performed before the defrosting phase has run.

Sensors

Air sensor:

Position: Clipped into the sensor holder in the air duct panel.

Function:

- Freezer compartment air sensor and refrigerator compartment air sensor switch the compressor OFF.
- Freezer compartment air sensor or refrigerator compartment evaporator sensor, switches the compressor ON.

Evaporator sensor:

Position: Slipped into lamellar evaporator.

Function:

- Freezer compartment evaporator sensor and freezer compartment air sensor, switch the freezer compartment fan ON.
- Ends the defrosting phase.

4.2 Refrigeration components and functions

4.2.1 General

Compressor	
Compressor:	CN: Standard CNP: VCC, frequency-controlled
Solenoid valve	
Solenoid valve:	Bistable

4.2.2 Refrigerator compartment

Evaporator	
Type:	Rear wall evaporator
Type of installation:	Foamed-in
Injection point:	At the top left
Flow sequence:	Top to bottom

4.2.3 Freezer compartment

Evaporator	
Type:	Lamellar evaporator
Type of installation:	Freestanding between air duct panel and compartment liner.
Injection point:	Top left on lamellar evaporator.
Flow sequence:	From the top down and then up again.

4.2.4 Principle of operation of the refrigerating system

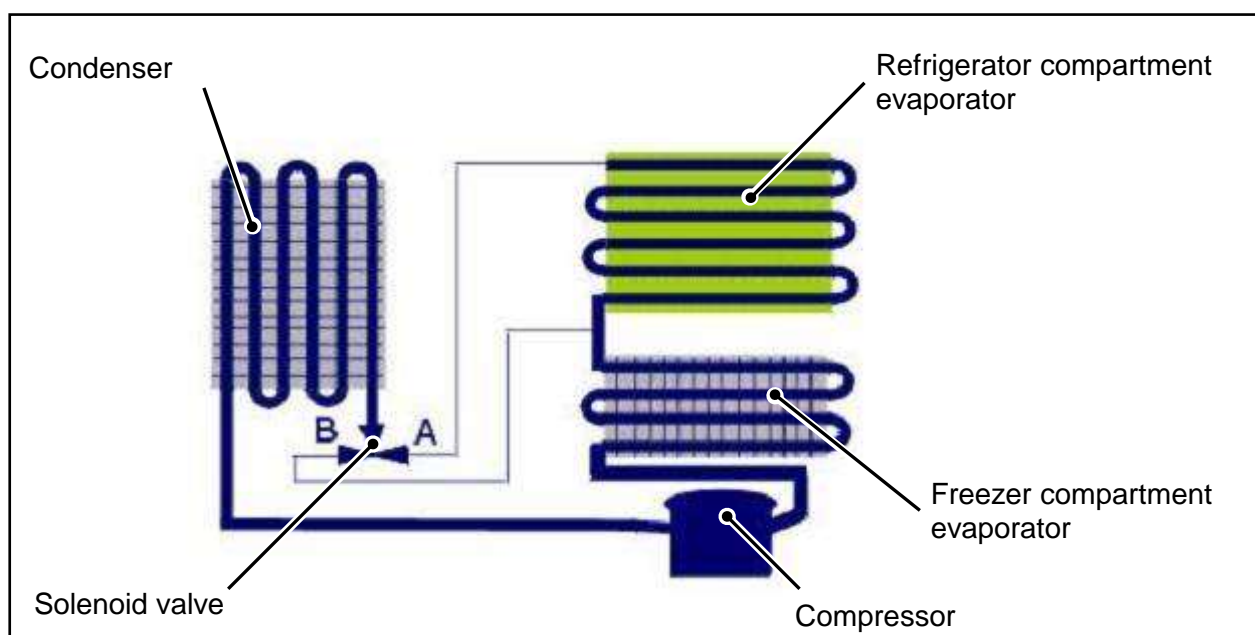


Fig. 4.2.4

5.0 Assembly instructions / replacement of parts

5.1 General

5.1.1 Electronic control panel

Covers: Disengage covers at the marked points.

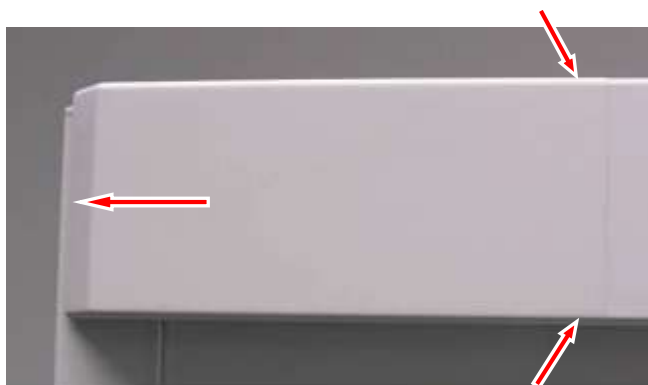


Fig. 5.1.1 / 1

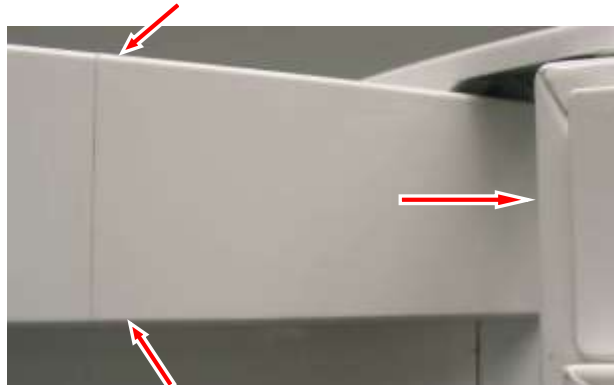


Fig. 5.1.1 / 2

PCB carrier: Disengage front housing. Draw front housing forwards. Disengage and remove bus connector. Disconnect PCB carrier from front housing. Detach electronic unit from the PCB carrier.



Fig. 5.1.1 / 3



Fig. 5.1.1 / 4



Fig. 5.1.1 / 5

5.1.2 Electronic power module

Note: Pull out the mains plug!

Electronic power module cover:

- Disengage marked retaining clips.
- Swing out the cover at the bottom and lift for removal.

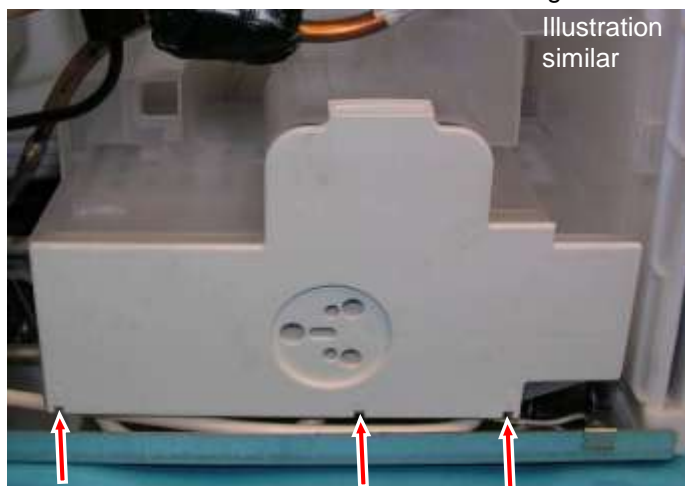


Fig. 5.1.2 / 1

Cable clip:

- Disengage the cable clip (transparent plastic clip) at the marked location.

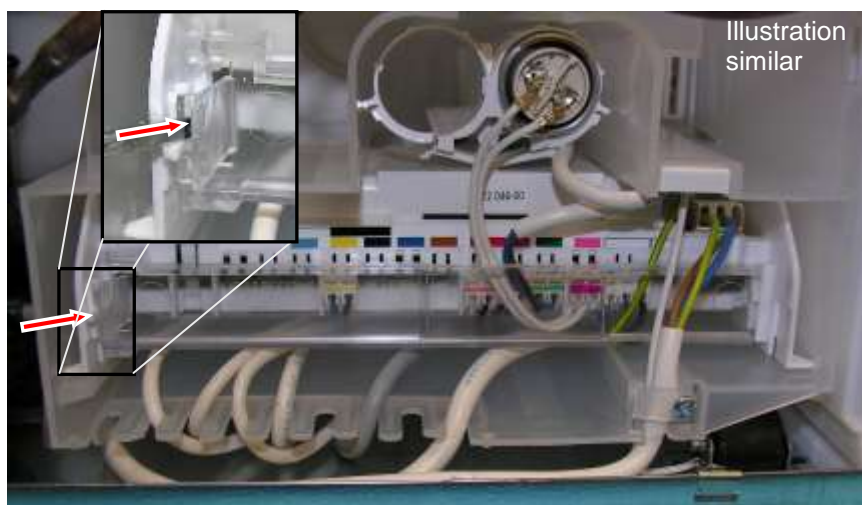


Fig. 5.1.2 / 2

- Detach front PCB edge connector
- Release strain relief of supply cable.
- Disengage plug-in module at the right and left clip and draw it forwards for removal.

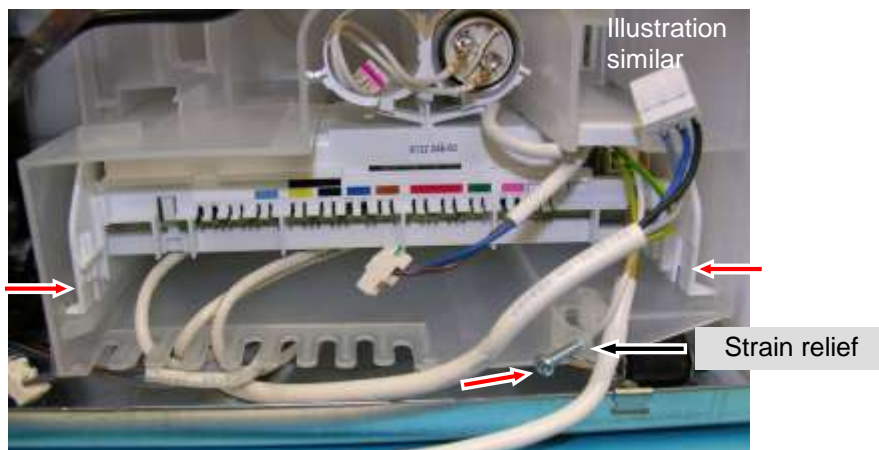
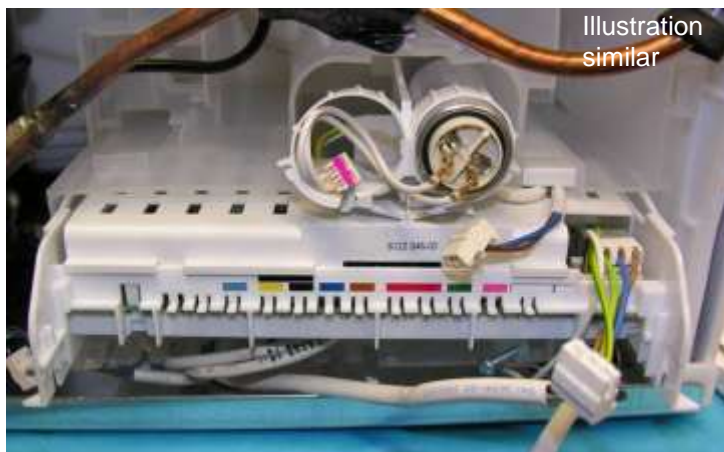


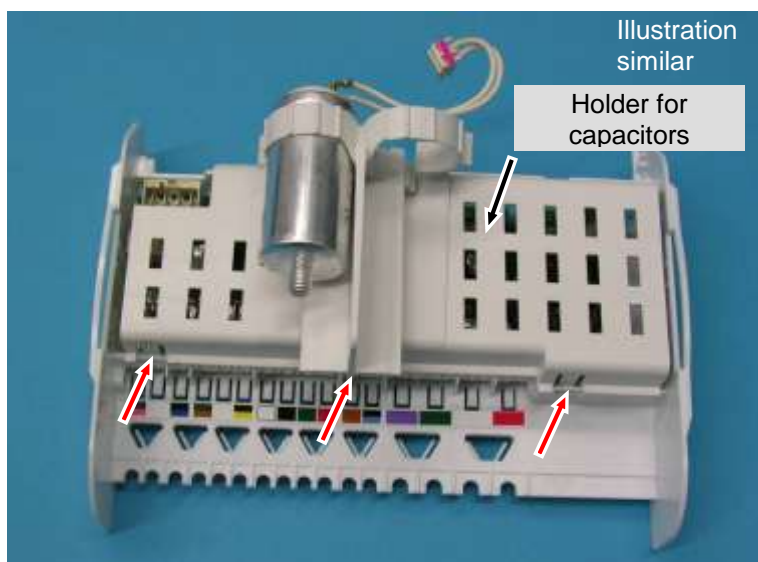
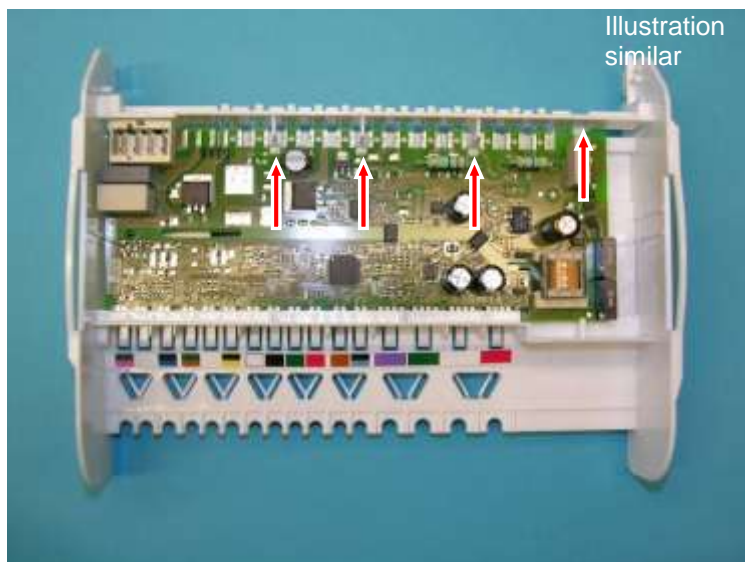
Fig. 5.1.2 / 3

Plug-in module:

- Detach rear PCB edge connectors.

**Fig. 5.1.2 / 4****Electronic power module:**

- Disengage the locking hooks at the "holder for capacitors".
- Disengage electronic power module at the marked locations (**Fig. 5.1.2/ 6**).

**Fig. 5.1.2 / 5****Fig. 5.1.2 / 6**

5.1.3 Top door hinge

Turn hinge cover: Disengage the cover in the marked direction and raise it for removal (**Fig. 5.1.3/ 1**).

Turn hinge: Undo the marked screws and remove the turn hinge **Fig. 5.1.3/ 2**).



Fig. 5.1.3 / 1



Fig. 5.1.3 / 2

Changing the door hinges: Remove the cover on the opposite side (**Fig. 5.1.3/ 3**) and insert and screw down the turn hinge.



Fig. 5.1.3 / 3



Fig. 5.1.3 / 4

5.1.4 Bottom door hinge

Turn hinge cover: Disengage the cover in the marked direction and draw it forwards for removal (**Fig. 5.1.4/ 1**).

Bearing pin: Retract the adjustable foot and press the bearing pin downwards. Then swing out the door at the bottom and draw it out of the upper bearing pin (**Fig. 5.1.4/ 2**). Notch has to point forwards for re-assembly.

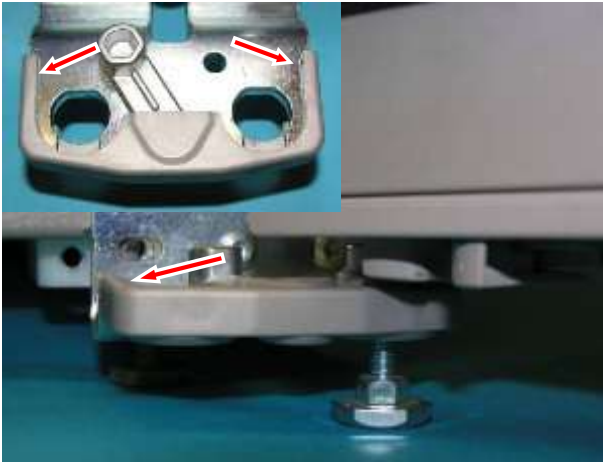


Fig. 5.1.4/ 1 Turn hinge cover

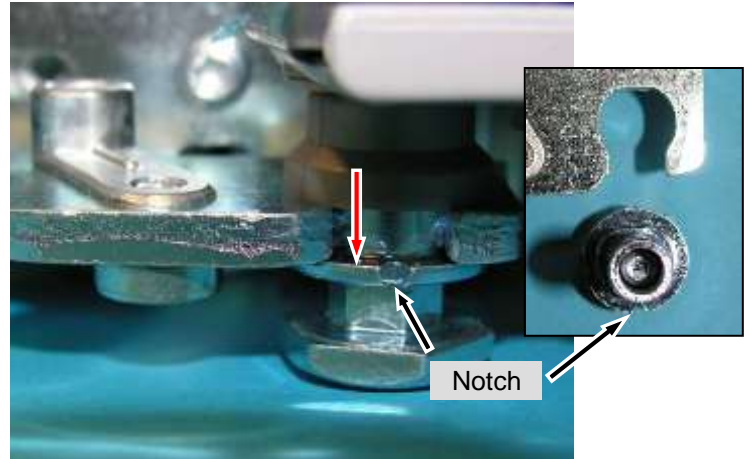


Fig. 5.1.4/ 2 Bearing pin

Changing the door hinges: Depress the holding clip and remove the spring clip. Has to be transferred to the opposite side if the door hinges are changed (**Fig. 5.1.4/ 3**). Bottom bearing part has to be transferred if the door hinges are changed (**Fig. 5.1.4/ 4**).

Slot: Screw can be transferred to slot for better door adjustment (**Fig. 5.1.4/ 4**).

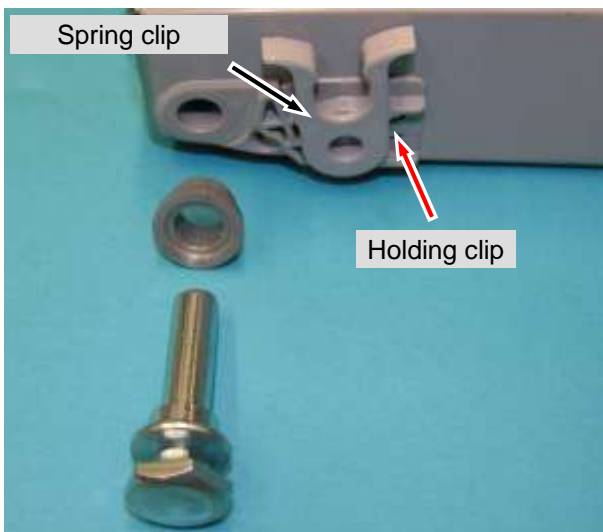


Abb. 5.1.4/ 3 Spring clip

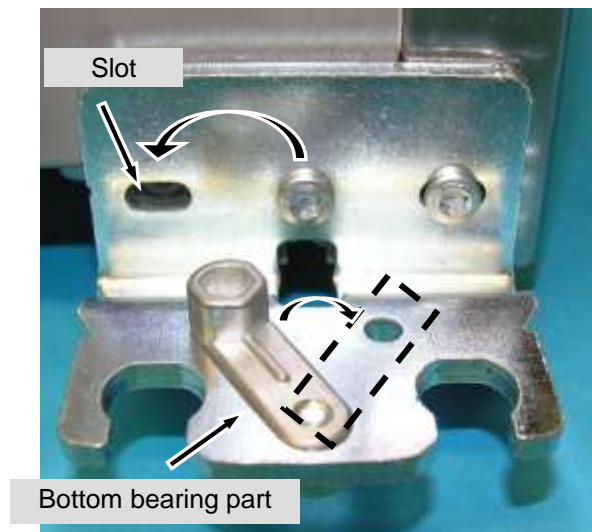


Fig. 5.1.4 / 4

5.1.5 Solenoid valve refrigeration circuit

Solenoid valve

- When detaching the capillaries, pay attention that they are properly re-connected.

Marking on solenoid valve cover:

KS : Refrigerator compartment capillary

GS : Capillary freezer compartment (marked with blue adhesive tape)

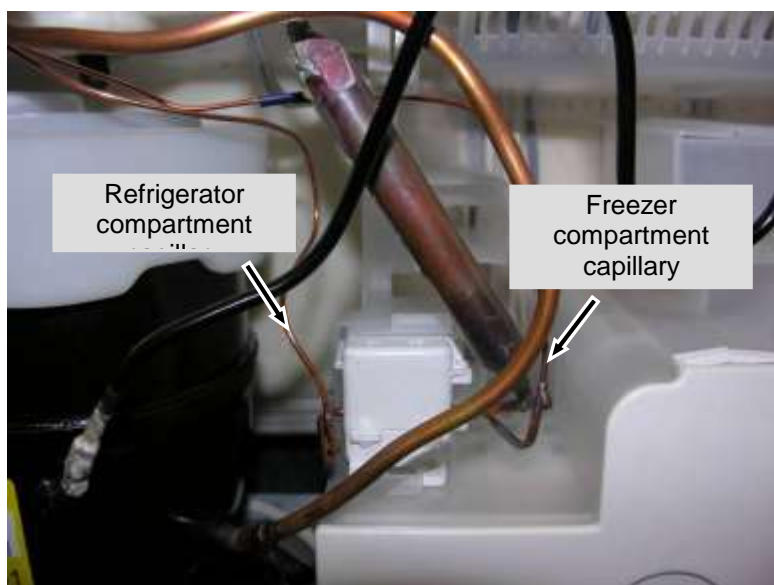


Fig. 5.1.5

5.2 Refrigerator compartment

5.2.1 Air sensor

Air sensor:

- Remove stopper (see **Fig. 5.2.1/ 1**).
- Undo screw (see **Fig. 5.2.1/ 2**).
- Pull the air sensor out rearwardly through the housing feedthrough and replace it by the repair kit. The repair instructions accompany the repair kit.



Fig. 5.2.1 / 1

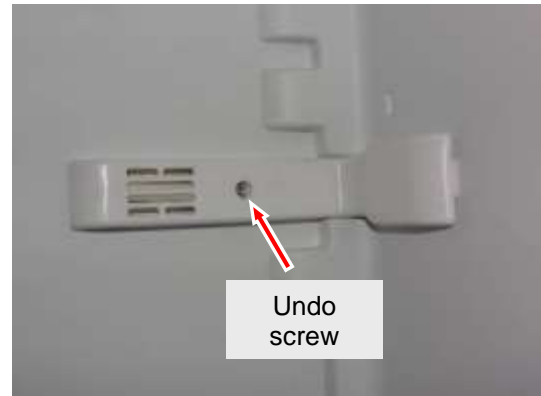


Fig. 5.2.1 / 2



Fig. 5.2.1 / 3

5.2.2 Evaporator sensor

Evaporator sensor:

- Remove stopper (see **Fig. 5.2.1/ 1**).
- Undo screw (see **Fig. 5.2.1/ 2**).
- The sensor cover fitted as standard is no longer needed.
- The evaporator sensor is foamed-in as standard. If defective, it has to be fitted anew by means of the repair kit. The repair instructions accompany the repair kit.

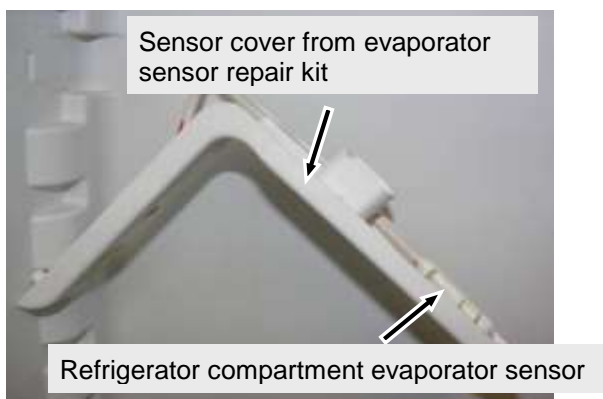


Fig. 5.2.2 / 1 Evaporator sensor

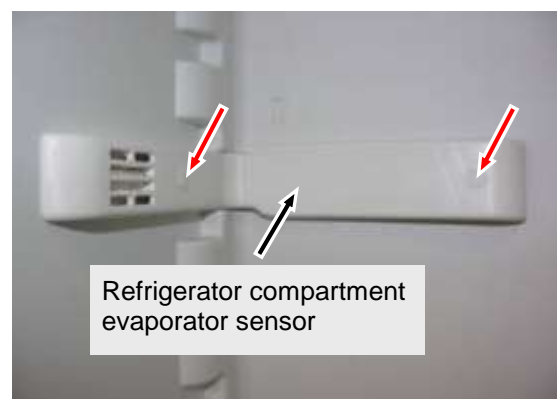


Fig. 5.2.2/ 2 Sensor cover

5.2.3 Fan

Fan:

- Pull down the light cover (see **Fig. 5.2.3/ 1**).
- Remove the marked screws (see **Fig. 5.2.3/ 2**).
- Disengage the fan housing from the light housing (see **Fig. 5.2.3/ 3**).
- Disconnect the fan.
- Disengage the locating lugs of the fan cover and draw off the cover in a forward direction.



Fig. 5.2.3 / 1



Fig. 5.2.3 / 2

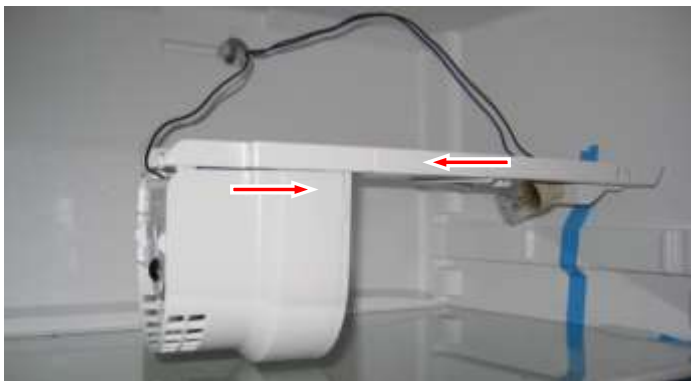


Fig. 5.2.3 / 3

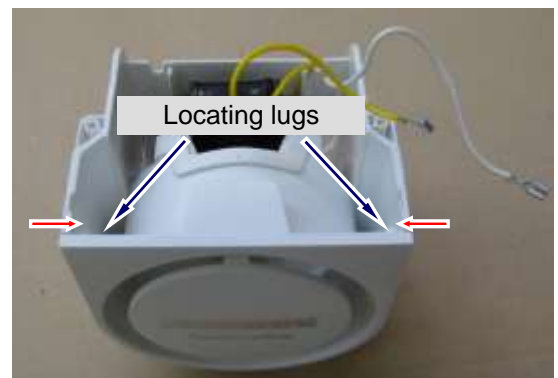


Fig. 5.2.3 / 4

5.2.4 Interior light

Interior light: - Draw down the light cover at the marked locations.



Fig. 5.2.4 / 1



Fig. 5.2.4 / 2

5.2.5 Door magnet

Magnet holder:

- Door magnet is clipped into the panel above the door seal.
- Depress the marked locating lug and lever out the magnet holder in a forward direction.

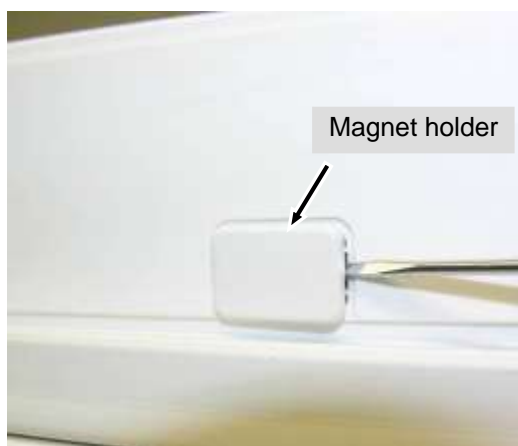


Fig. 5.2.5 / 1



Fig. 5.2.5 / 2

5.3 Freezer compartment

5.3.1 Air sensor, evaporator module and fan module

Air sensor: Engaged in sensor holder on air duct panel.

Evaporator module:

- Clear the drawers and glass shelves in the freezer compartment.
- Disengage the air sensor.
- Undo the screws marked in **Fig. 5.3.1/ 1** and remove the air duct panel.
- Raise and swing out the evaporator module in a forward direction.

Fan module: Undo the marked screws and expose the cable (see **Fig. 5.3.1/ 3**).

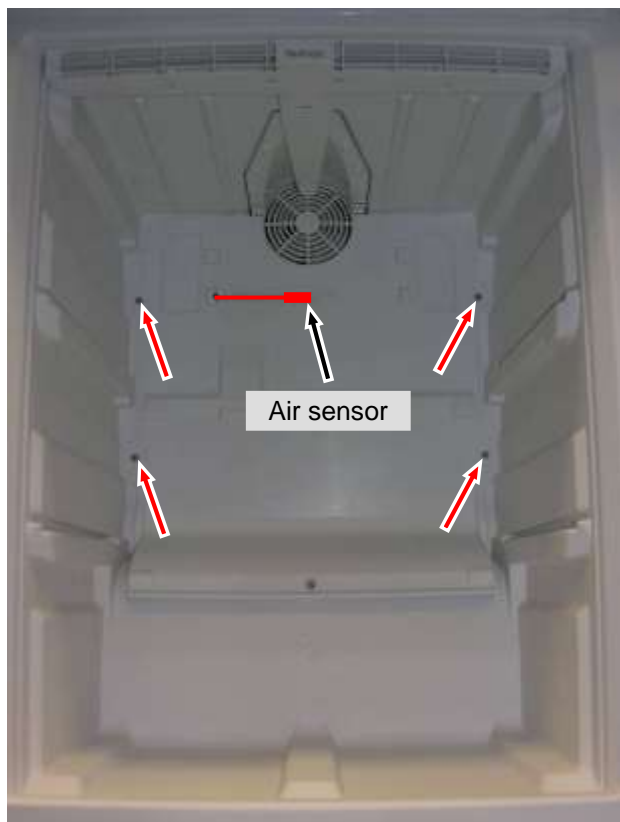


Fig. 5.3.1/ 1 Freezer compartment with air duct



Fig. 5.3.1/ 2 Swinging out the evaporator module

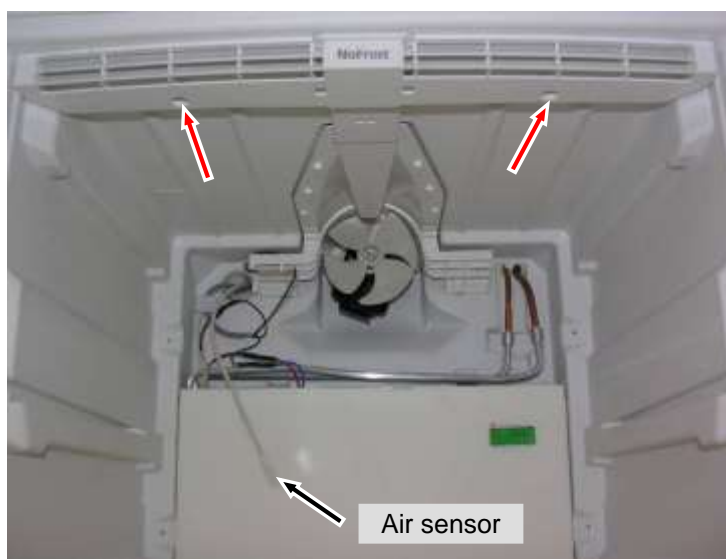


Fig. 5.3.1 / 3 Fan module

5.3.2 Temperature fuse, evaporator sensor and defrost heater

- Temperature fuse:**
- Feel for the position of the temperature fuse (see 1st step, **Fig. 5.3.2/ 1**)
 - Make an incision in the sheeting (see **Fig. 5.3.2/ 2**).
 - Undo screw (see **Fig. 5.3.2/ 3**).

The temperature fuse has to be replaced separately using a conversion kit.

- The conversion kit comprises:
- 1 temperature fuse
 - 2 compression connectors
 - 2 shrink hoses

Note:

Always fit the compression connector to the red and blue lead of the temperature fuse.
The defrost heater is destroyed as soon as the white lead of the defrost heater is cut.

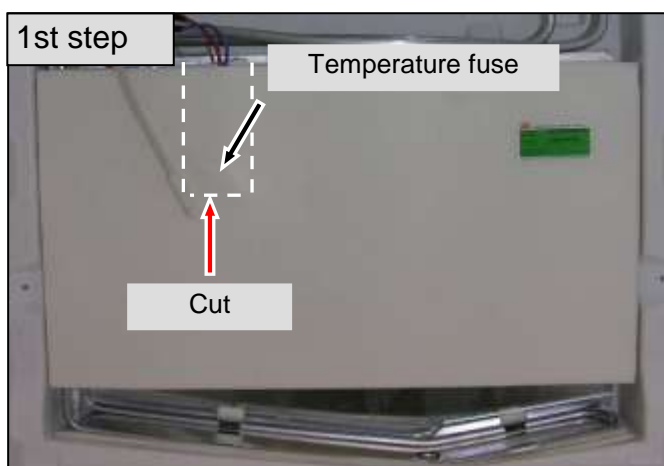


Fig. 5.3.2/ 1 Evaporator module

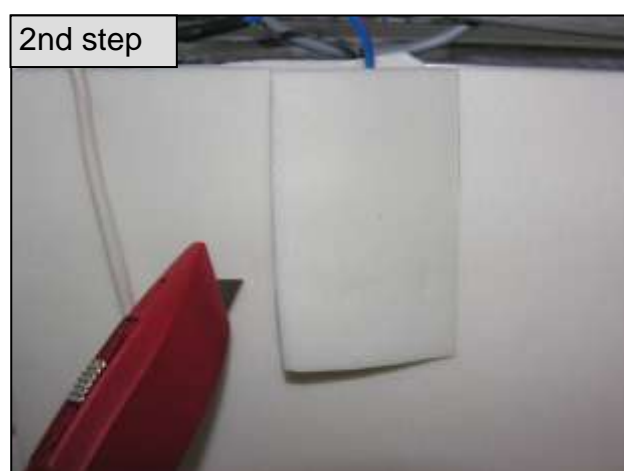


Fig. 5.3.2/ 2 Making an incision in the

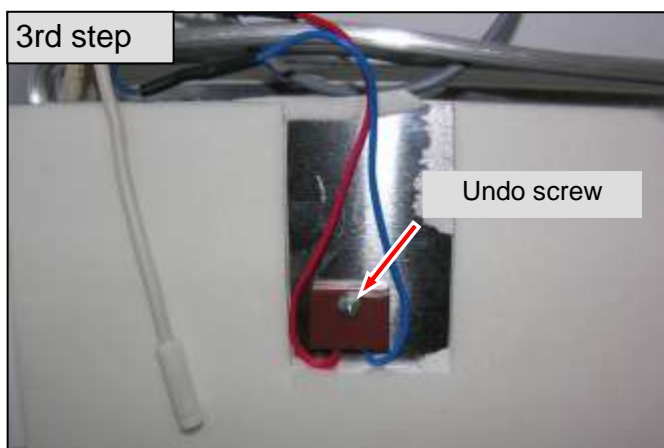


Fig. 5.3.2/ 3 Temperature fuse

- Evaporator sensor:** Raise evaporator module and swing it out in a forward direction .
- Make incisions in the sheeting at the marked locations (1st and 2nd step, see **Fig. 5.3.2/ 4** and **Fig. 5.3.2/ 5**).
 - Bend open the retaining lugs of the cover plate and remove it.
 - Draw the evaporator sensor to the left, out of the lamellar evaporator.

Defrost heater: Is clipped into the evaporator fins. Can be replaced if defective.

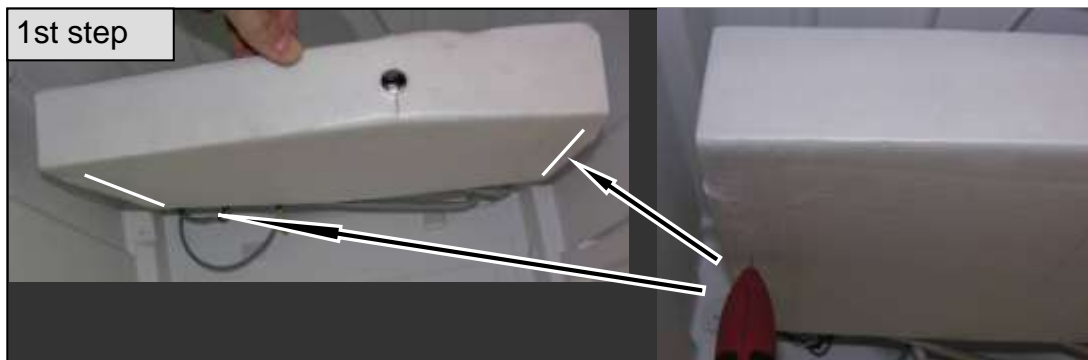


Fig. 5.3.2/ 4 Making an incision in the

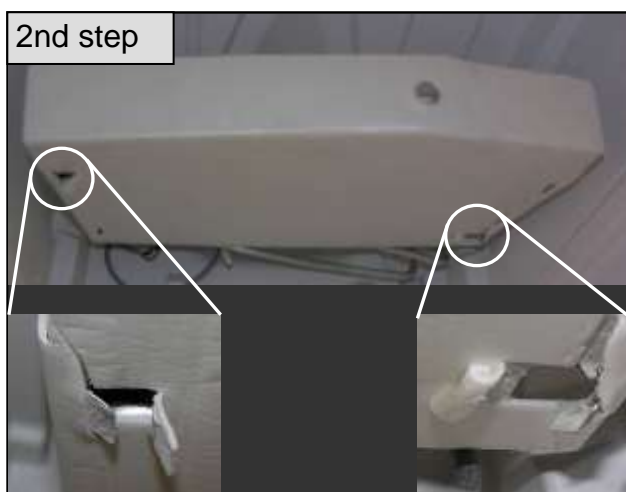


Fig. 5.3.2/ 5 Cutting open the evaporator cover

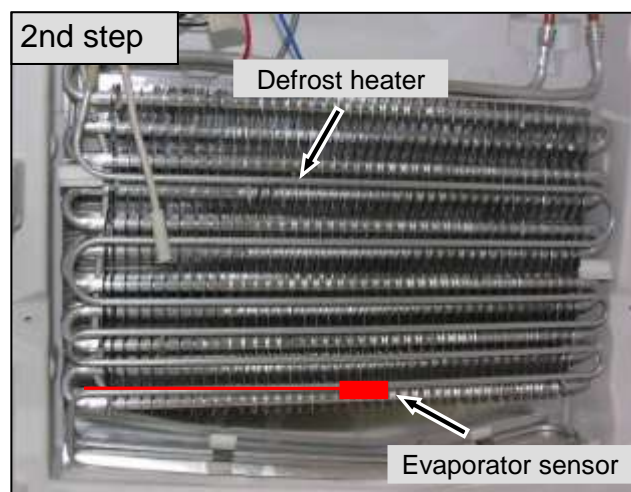


Fig. 5.3.2/ 6 Lamellar evaporator

5.3.3 Fan and reed PCB

Reed PCB:

- Unfasten the fan module (see **Fig. 5.3.1/ 3**)
 - Disengage the cover of the reed PCB (see **Fig. 5.3.3/ 2**).
 - Disconnect reed PCB.
- Note the mounting direction of the reed PCB. Reed relay points forwards.

Fan:

- Disconnect reed PCB.
- Extract cable from the fan module.
- Disconnect fan cable.
- Remove fan module.
- Detach fan blades.
- Remove fan from holder.

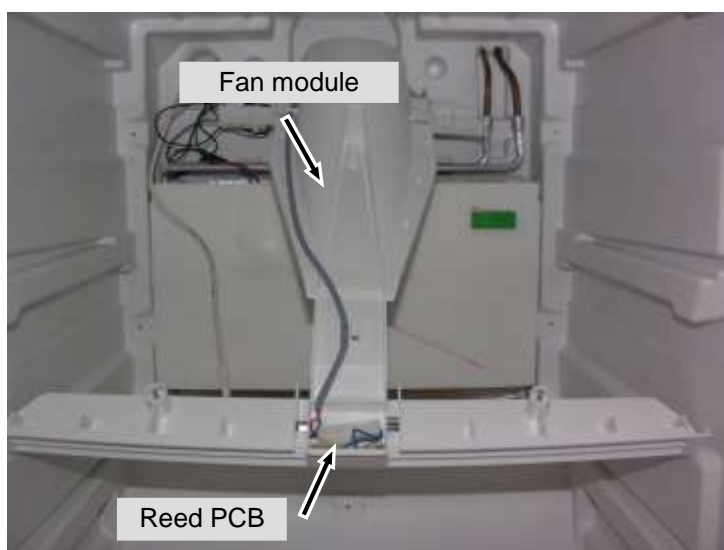


Fig. 5.3.3/ 1 Fan module with reed PCB

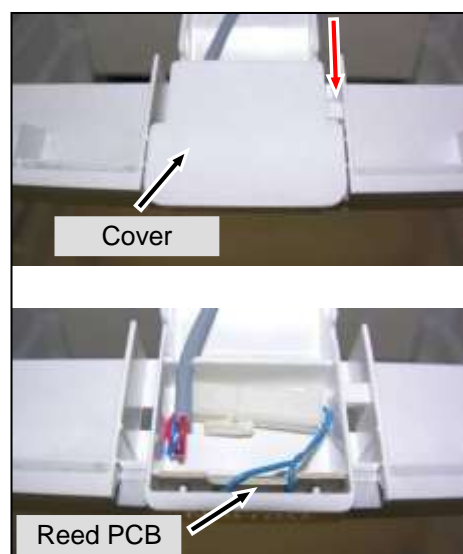


Fig. 5.3.3/ 2 Reed PCB

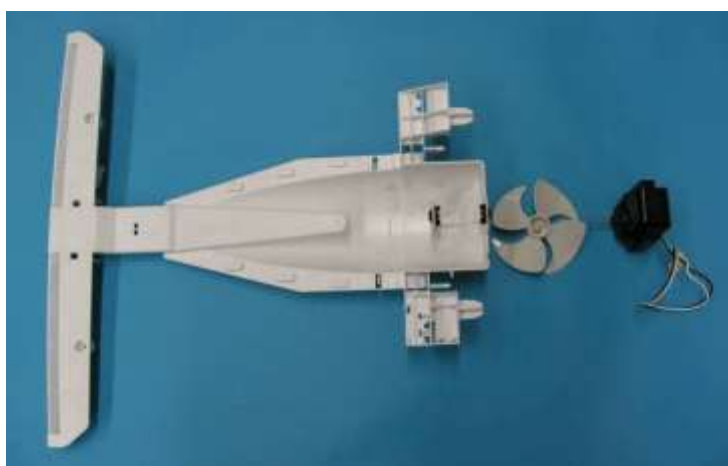


Fig. 5.3.3 / 3 Fan

6.0 Technical data

6.1 General

Sensor values: Refrigerator compartment: Air and evaporator sensors
Freezer compartment: Air and evaporator sensors

Temperature °C	Resistance value kOhm
+35	3.1
+30	3.8
+25	4.7
+20	5.9
+15	7.3
+10	9.3
+5	11.9
0	15.3
-5	19.8
-10	25.9
-15	34.1
-20	45.3
-25	60.8
-30	82.3
-35	112.8

Solenoid valve refrigeration circuit: Voltage: 230 volts/AC (50Hz)
Resistance: 2.8 kOhm

6.2 Refrigerator compartment

Interior light: Wattage: 25 watts
Voltage: 230 volts
Base: E14

Fan: Wattage: 7.5 watts
Voltage: 230 volts/AC (50/60Hz)
Speed: 1650 rpm
Direction of rotation: left (viewed from the front onto the fitted fan)

6.3 Freezer compartment

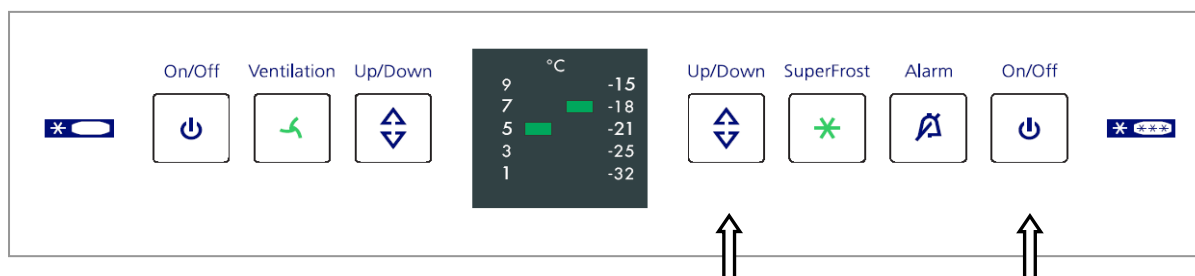
Fan: Wattage: 4.5 watts
Voltage: 230 volts
Speed: 2100 rpm

Defrost heater: Wattage:
CN 3503/3513,
CN(es) 4003/4013: 163 watts
CN 3913: 186 watts
Voltage: 230 volts

Temperature fuse: Tripping temperature: 93°C (Is faulty after tripping and has to be replaced)

7.0 Service menu

The service menu may be used by service technicians only.



Activation of service menu: Appliance has to be switched ON. Can be called only with freezer compartment buttons. Press "Up/Down" + "ON/OFF" simultaneously for about 5 seconds

Once the **service menu is activated**, the "SuperFrost LED" flashes.

Service menu:	9°C LED: Manual defrosting	activation of the defrost heater
	7°C LED: Panel test	Test of controls and displays
	5°C LED: Service mode	Addressing electric loads
	3°C LED: Demo mode	Appliance is switched ON, without refrigeration
	1°C LED: No function	

7.1 Brief survey of service menu

Service menu	Menu selection		Operation	Function selection	
Manual defrosting	↑ Up/Down button ↓	9°C LED	1x SF	Defrosting activated -15°C LED and -32°C LED flash alternately with SuperFrost LED	
Demo mode		3°C LED static	1x SF	Demo mode activated	
		3°C LED flashes fast		Demo mode deactivated	
Panel test		7°C LED	1x SF	Press sensor buttons, door sensor	
Service mode		5°C LED	1x SF	↑ Up/Down button ↓	LEDs OFF : All OFF
	9°C LED : - Compressor ON, low speed - Solenoid valve position B				
	7°C LED : - Compressor ON, high speed Solenoid valve position A				
	9°C LED, 7°C LED : Freezer compartment fan ON				
	5°C LED : Freezer compartment defrost heater ON				
	9°C LED, 5°C LED : Light ON				
	9°C LED, 7°C LED, 5°C LED : Refrigerator compartment fan ON				

7.2 Manual defrosting (9°C LED)

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Set value	Press "Up/Down" and "ON/OFF" simultaneously for 5 seconds	9°C LED static ¹⁾ SuperFrost LED flashes	Service menu active Manual defrosting selected
Manual defrosting -- activation of the defrost heater --				
2	9°C LED static SuperFrost LED flashes	Press "SF"	-15°C-LED and -32°C-LED flash alternately with SuperFrost LED	Manual defrosting activated
End	Appliance switch OFF or automatic when defrost parameters reached. 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.

7.3 Demo mode (3°C LED)

Step	Display	Operation	Display following operation	Testing option / Info
Start service				SF = SuperFrost
1	Set value	Press "Up/Down" and "ON/OFF" simultaneously for 5 seconds	9°C LED static ¹⁾ SuperFrost LED flashes	Service menu active
Demo mode ON				
2	9°C LED static SuperFrost LED flashes	Press "Up/Down" once	3°C LED static SuperFrost LED flashes	Demo mode selected
3	3°C LED static SuperFrost LED flashes	Press "SF" once	Set value	Demo mode ON
Demo mode OFF				
2	3°C LED fast flash SuperFrost LED flashes	Press "SF" once	Set value	Demo mode OFF
If the appliance is switched OFF and ON again during activation of the demo mode, all the refrigerator compartment temperature LEDs shine for 3 seconds as indication of the activated demo mode. Demo mode can be deactivated only via service menu, not by OFF/ON or disconnection from the supply.				

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

7.4 Panel test (7°C LED)

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Set value	Press "Up/Down" and "ON/OFF" simultaneously for 5 seconds	9°C LED static ¹⁾ SuperFrost LED flashes	Service menu active
Panel test				
-- test of sensor buttons, display elements, door sensor and beep --				
2	9°C LED static SuperFrost LED flashes	Press "Up/Down" twice	7°C LED static SuperFrost LED flashes	Panel test selected
3	7°C LED static SuperFrost LED flashes	Press "SF" once	All temperature LEDs ON, all button LEDs ON	Panel test activated
4	All temperature LEDs ON, all button LEDs ON	Doors open/closed and press all the buttons one after the other (confirmed each time by beep)	- Beep for 2 sec. - appliance switches OFF	After the last button has been pressed a beep sounds for 2 seconds, only if the test has been successful.
<p>Panel test cannot be ended in step 2, for example, it has to be performed in full. Should a button/sensor be defective, there will be no 2-second beep and the appliance will not switch OFF. The appliance then has to be unplugged and plugged back in again.</p>				

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

7.5 Service mode (5°C LED)

Step	Display	Operation	Display following operation	Testing option / Info	
Service menu start				SF = SuperFrost	
1	Set value	Press "Up" and "ON/OFF" simultaneously for 5 seconds	9°C LED static ¹⁾ SuperFrost LED flashes	Service menu active	
Service mode -- testing electric loads--					Power input
2	9°C LED static SuperFrost LED flashes	Press "Up/Down" three times	5°C LED static SuperFrost LED flashes	Service mode selected	
10 → 3	5°C LED static SuperFrost LED flashes	Press "SF" once	All temperature LEDs OFF, SuperFrost LED fast flash	Service mode activated / All OFF	
4	All temperature LEDs OFF, SuperFrost LED fast flash	Press "Up/Down" once	9°C LED and SuperFrost LED flash	- Compressor ON, low speed - solenoid valve position B	--
5	9°C LED and SuperFrost LED flash	Press "Up/Down" once	7°C LED and SuperFrost LED flash	- Compressor ON, high speed - Solenoid valve position A	--
6	7°C LED and SuperFrost LED flash	Press "Up/Down" once	9°C LED, 7°C LED and SuperFrost LED flash	Freezer compartment fan ON	4.5 W
7	9°C LED, 7°C LED and SuperFrost LED flash	Press "Up/Down" once	5°C LED and SuperFrost LED flash	Freezer compartment defrost heater ON	163 W / CN 39.. 186 W
8	5°C LED and SuperFrost LED flash	Press "Up/Down" once	9°C LED, 5°C LED and SuperFrost LED flash	Light ON	25 W
9	9°C LED 5°C LED and SuperFrost LED flash	Press "Up/Down" once	9°C LED, 7°C LED, 5°C LED and SuperFrost LED flash	Refrigerator compartment fan ON	7.5 W
3 ← 10	7°C LED, 5°C LED and SuperFrost LED flash	Press "Up" once	All temperature LEDs OFF, SuperFrost LED fast flash	All OFF, return to step 3	
End	Press "ON/OFF" twice: Return to normal/control mode				

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

8.0 Error code, troubleshooting

8.1 Table of error codes

Error code	Defective component	Emergency mode
9°C + 7°C LED flash in synchronism with SF LED	Refrigerator compartment air sensor	Compressor 10 minutes ON and 40 minutes OFF.
9°C + 5°C LED flash in synchronism with SF LED	Refrigerator compartment evaporator sensor	Compressor 10 minutes ON and 40 minutes 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

8.2 Troubleshooting VCC compressor / inverter

8.2.1 Test of inverter/frequency signal with diagnostic LED

The green LED flashes through the translucent front cover of the VCC inverter to indicate malfunction such as

- inverter error
- compressor error
- frequency cable/signal error

by different LED flash codes.



Fig. 8.2.1/ 1 Inverter with diagnostic LED

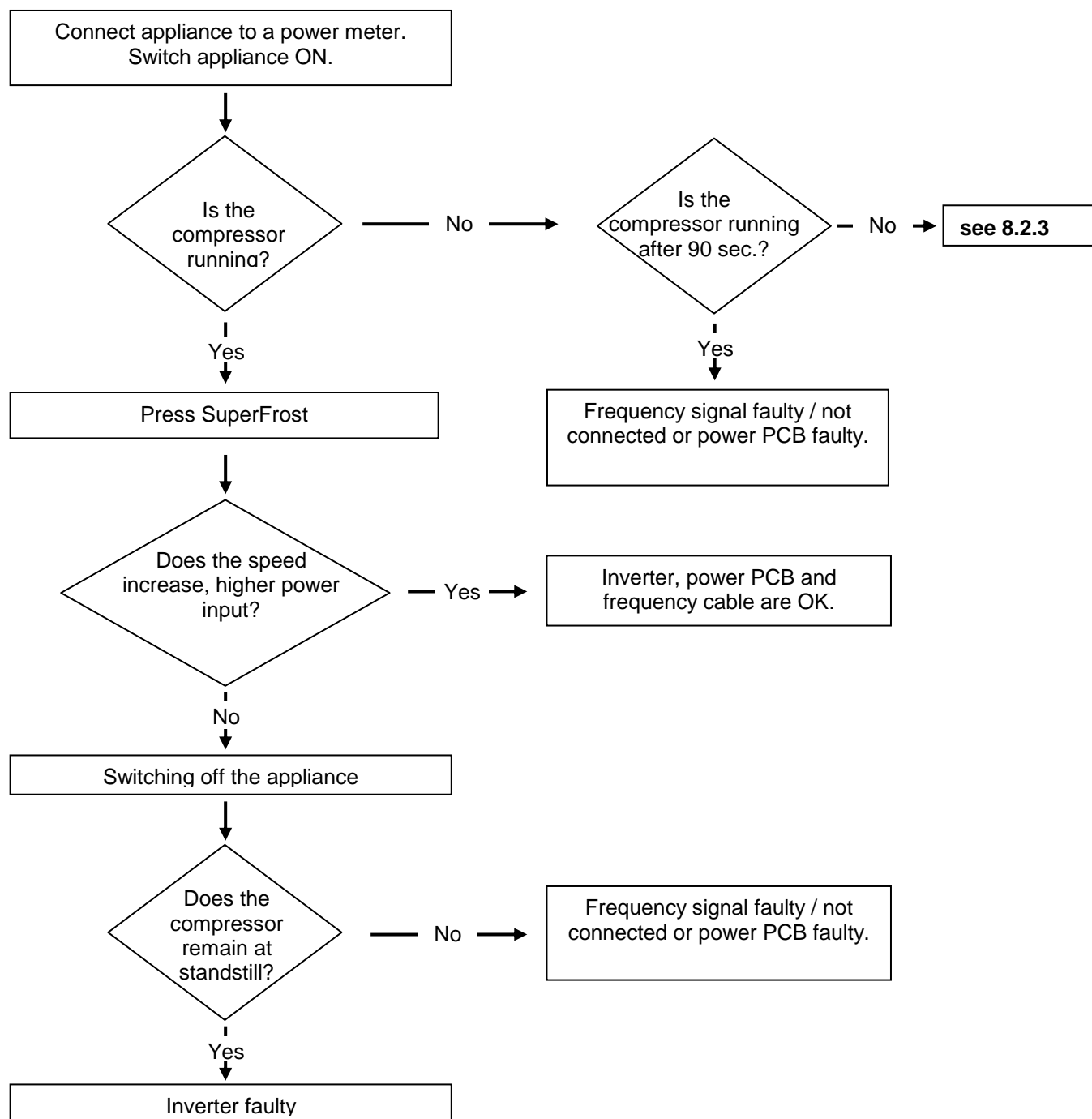
The meanings of the different flash codes:

- 1 flash** (every 15 seconds) **No error**
- 2 flashes** (every 5 seconds) **No frequency signal from PCB**
- 3 flashes** (every 5 seconds) **Inverter error or compressor error** (compressor winding open circuit)
- 4 flashes** (every 5 seconds) **Compressor error**

The error codes have to be processed one after the other. Once an error code has been attended to, a new error code may appear.

8.2.2 Checking the inverter and the frequency signal

Note: Take into account the delayed automatic reclosing of the compressor!



Attention: In case of interruption of the frequency signal, the compressor starts only after 90 seconds!!

8.2.3 Checking the compressor

Fault profile: Compressor does not run (not even after a waiting time of 90 secs)

In service menu, switch on compressor. If the compressor now starts there was probably an operator error. Otherwise proceed as described below.
At the inverter, line voltage (230V) must be applied between N and 1/C.

