

Appliance Documentation

IGN 2556

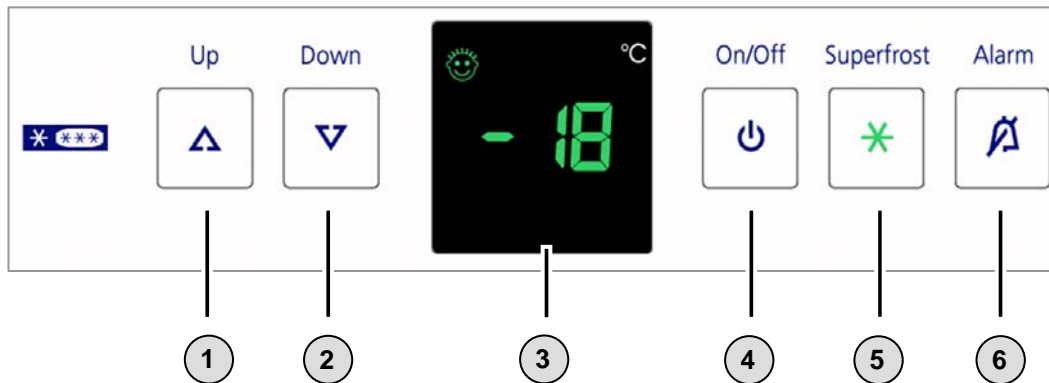
from Index 20

IGN 2566from Index 20
with IceMaker**IGN 2556****IGN 2566**

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1.0 Operating and control elements



Freezer compartment

- | | | |
|---|-------------------------------------|--|
| 1 | Up | Setting button temperature higher |
| 2 | Down | Setting button temperature lower |
| 3 | Temperature/function display | |
| 4 | ON/OFF | ON/OFF button |
| 5 | SuperFrost | SuperFrost function |
| 6 | Alarm | Alarm OFF button for audible alarm |

2.0 Functions at a glance

Control:	Electronic
Temperature display:	Actual value
Temperature range:	-14°C to -28°C
Temperature alarm:	Visual, audible
Door alarm:	Audible
Fan:	Present
Defrosting:	Automatic
Interior light:	Present
Service menu:	Present
Compressor:	VCC
Solenoid valve refrigeration circuit:	Not present

3.0 Description of appliance

The **IGN 2556/2566** is a NoFrost freezer using a series 6 control system with actual value display. The appliance 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. The **IGN 2566** is equipped with an IceMaker.

3.1 Sensor positions, schematic diagrams

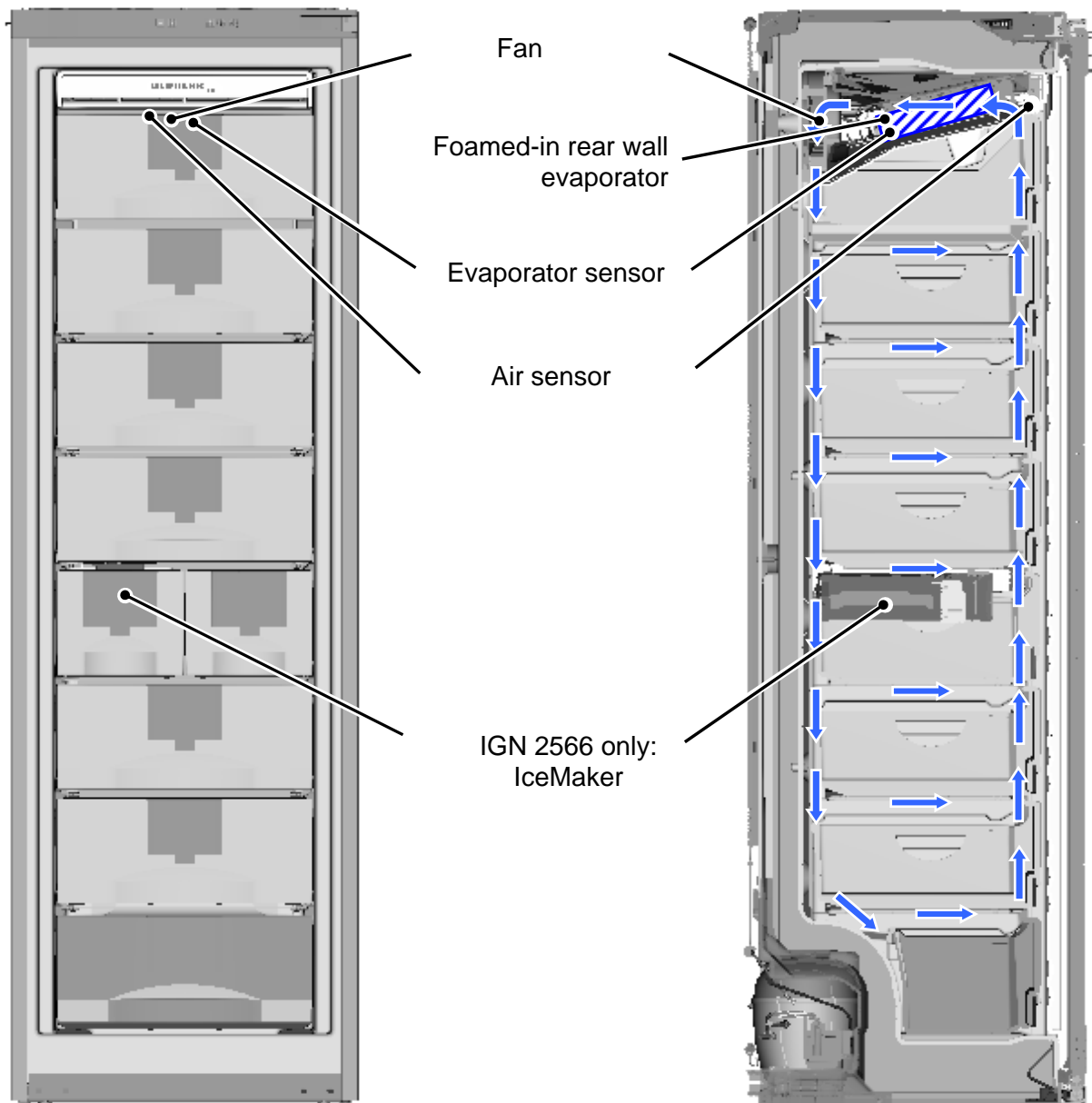


Fig. 3.1 / 1

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 6 electronic control system
Components:	Electronic single-board solution

4.1.2 Freezer compartment

Electronic control system	
Setting range:	-14°C to -28°C
Display range:	0°C to -49°C Values outside the range are indicated by a cross bar

Functions	
Temperature alarm:	<p>Alarm value: 4K warmer than set value.</p> <p>Warmest alarm value: -10 °C</p> <p>Coldest alarm value: -20 °C</p> <p>Delay: 20 minutes</p> <p>Visual: Flashing alarm LED</p> <p>Audible: 4 beeps (suppressed during start-up)</p> <p>During start-up: The temperature display flashes until the switch-off value is reached, the audible alarm is switched OFF.</p> <p>(e.g. given a set value of -18°C, a temperature of -14°C must be present for at least 20 minutes, then a temperature alarm is raised.)</p> <p>When the defrosting phase begins, the temperature alarm is suppressed for 1.5 hrs.</p>

Defrosting:	<p>ON: - During start-up after 6 hours cumulative compressor running time.</p> <p>- After a cumulative compressor running time of 10 to 30 hours maximum, depending on the number/duration of the door openings.</p> <p>When the defrosting phase begins, the compressor and the fan are switched OFF and the defrost heater is switched ON.</p> <p>Duration: The defrost heater remains switched ON until</p> <ul style="list-style-type: none"> - the freezer compartment evaporator sensor has reached +32°C or - a max. defrosting time of 50 minutes has been reached. <p>Info: After the end of the heating phase the compressor is switched ON with a 15-minute delay. Fan ON, from -25°C.</p> <p>If the SuperFrost function is activated during the defrosting phase, this will not interrupt defrosting.</p>
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Door alarm:	<p>When: If door is open, after 60 seconds.</p> <p>Audible: 3 beeps.</p>
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SuperFrost:

ON: Freezer compartment sets itself to -32°C (quantity-controlled, min. 30 hrs., max. 65 hrs.)

The appliance sets itself to -32°C for at least 30 hours. In the following 35 hours cooling by 11K to the set value must have been reached or a total time of 65 hours must have elapsed in order that SuperFrost is automatically ended.

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.

Sensor

Air sensor:

Position: Behind the front panel of the evaporator module.

Function:

- Switches the compressor ON/OFF.
- Generates the display value.

Evaporator sensor:

Position: Slipped into the lamellar evaporator.

Function:

- Switches the defrost heater OFF (ends the defrosting phase).
- Switches the fan ON/OFF.

Switch

Door switch:

Position: In front panel

Type: Reed contact

Contact type: Make contact

Function: **Activation via:** magnet on the door, magnet is replaceable.

Switching signal when:

door open:	fan	OFF
	door alarm	ON after 60 seconds

Loads

Fan:

Position: In the evaporator module, at the back centre.

Function:

Evaporator sensor	Compressor	Door	Fan
Switch-on value	OFF	CLOSED	OFF
Switch-on value	ON	CLOSED	ON
Switch-on value	OFF/ON	OPEN	OFF
Switch-off value	OFF/ON	CLOSED/ OPEN	OFF

e.g. If the evaporator sensor has reached the switch-on value for the fan **and** the compressor is ON **and** the door is CLOSED, **then** the fan is **ON**.

- Switch-on value evaporator sensor:
- a) During start-up/after defrosting: -25°C
 - b) In the normal mode 2K colder than air sensor



Defrost heater: Position: Clipped into lamellar evaporator
 Function: Keeps the evaporator free from ice. Activation via electronic control system.

Defrost heater ON:

- Depending on the number and duration of door openings, the electronic system calculates the defrost cycles between 10-30 hours cumulative compressor running time.
- Upon start-up after 6 hours cumulative compressor running time.

Defrost heater OFF:

- When the evaporator sensor has reached +32°C
- When max. time of 50 minutes is exceeded.

Heater cannot be replaced → only complete evaporator module!

Compressor: Type: VCC compressor, frequency-controlled.
 Function: **ON:** Air sensor switch-on value
 Note: On-delay time (8 minutes) must have elapsed.
OFF: Air sensor switch-off value.

VCC compressor, frequency-controlled.

- Compressor with 4 different speeds (1600 / 1900 / 3000 / 3600 rpm).
- The inverter electronic control is fitted directly on the compressor. The inverter electronic control controls the compressor with a pulse-width modulated square-wave voltage.
- For speed value input, the inverter electronic module receives a square wave frequency signal from the power PCB. This frequency signal is output with 56, 71, 87, 100 or 117 Hz, depending on the speed at which the compressor is to run.

Frequency in Hz	Speed in rpm	Operation
56	Compressor OFF	Compressor OFF
71	1600	Ideal case
87	1900	Control mode
100, 0 (signal interruption), other values than the defined frequencies	3000	Start-up, signal interruption, signal fault
117	3600	SuperFrost

- Runtime longer than 70 minutes:
Speed increase by one step during compressor operation.
- Runtime shorter than 40 minutes:
Speed reduction on next start-up.

For troubleshooting, see section 8.2 Troubleshooting VCC compressor / inverter



4.2 Refrigeration components and functions

4.2.1 Freezer compartment

Compressor

Compressor: VCC, frequency-controlled

Frame heater

Position: Foamed-in in the housing, in the contact area of the magnetic door seal.

Evaporator

Type: Lamellar evaporator.

Type of installation: In evaporator module on appliance ceiling

Injection point: Front centre

Flow sequence: Front to back

5.0 Assembly instructions / replacement of parts

5.1 General

5.1.1 Electronic control system

Covers: Disengage covers at the marked points.

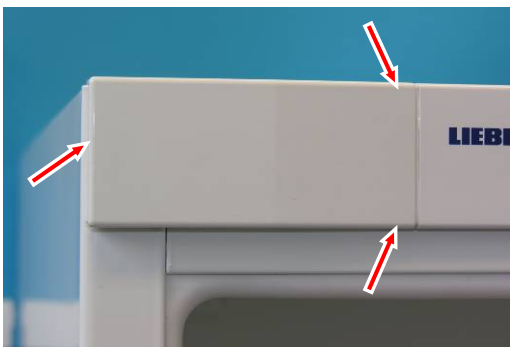


Fig. 5.1.1/ 1 Left cover



Fig. 5.1.1/ 2 Right cover

Front panel: Unlock locating lugs at the left and right of the front panel.



Fig. 5.1.1/ 3 Left locating lug



Fig. 5.1.1/ 4 Right locating lug

PCB carrier: Draw the front panel forwards for removal and expose the cables. Disconnect and detach group connectors.

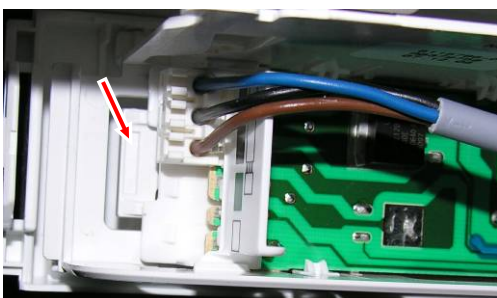


Fig. 5.1.1/ 5 Group connector

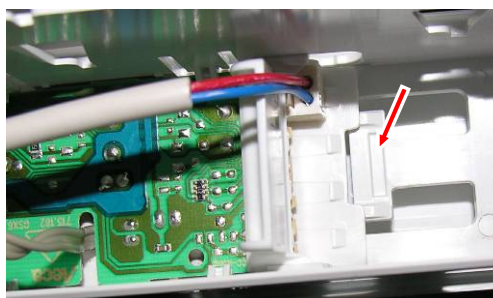


Fig. 5.1.1/ 6 Group connector



Fig. 5.1.1/ 7 Front panel assembly

5.1.2 Door magnet

Magnet holder: Press marked locating lugs together and detach magnet holder upwardly.



Fig. 5.1.2 / 1

5.2 Freezer compartment

5.2.1 Evaporator module

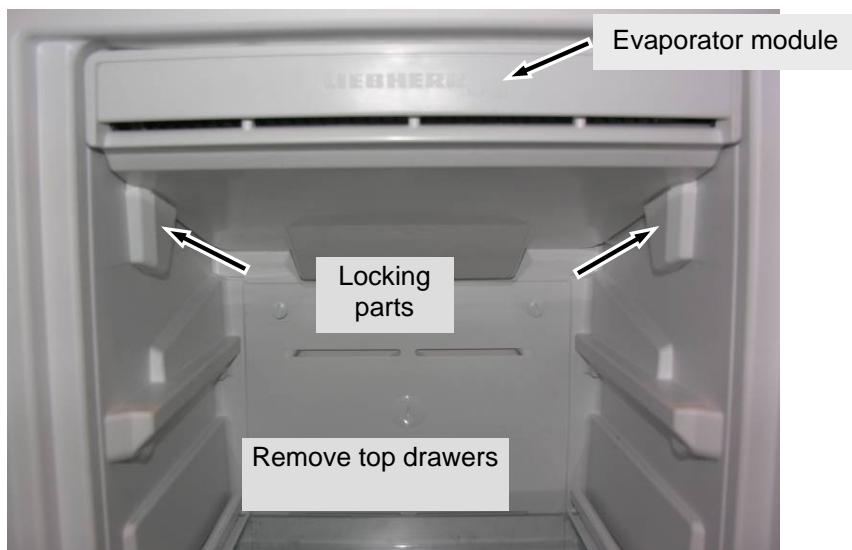


Fig. 5.2.1/ 1 Evaporator module

Locking parts: Are snapped into place at the right and left for locking the evaporator module.

Transit support: Remove the adhesive tape as transit support of the "top polystyrene moulding", it is no longer needed for assembly (Fig. 5.2.1/ 3).

Top polystyrene moulding: Lift off the polystyrene moulding first at the front, then at the back. Draw the "top polystyrene moulding" forwards for removal.



Fig. 5.2.1/ 2 Remove locking part

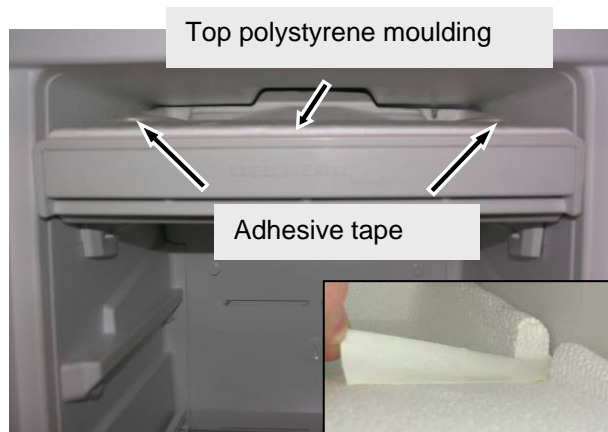


Fig. 5.2.1/ 3 Remove adhesive tape

5.2.2 Evaporator sensor

Evaporator module: Dismantle the evaporator module as described below under **5.2.1 Evaporator module**.

Evaporator sensor: Is slipped inbetween the lamellas and in case of defect it has to be cut off and repaired

with the repair kit (Art. No. 9590 062).

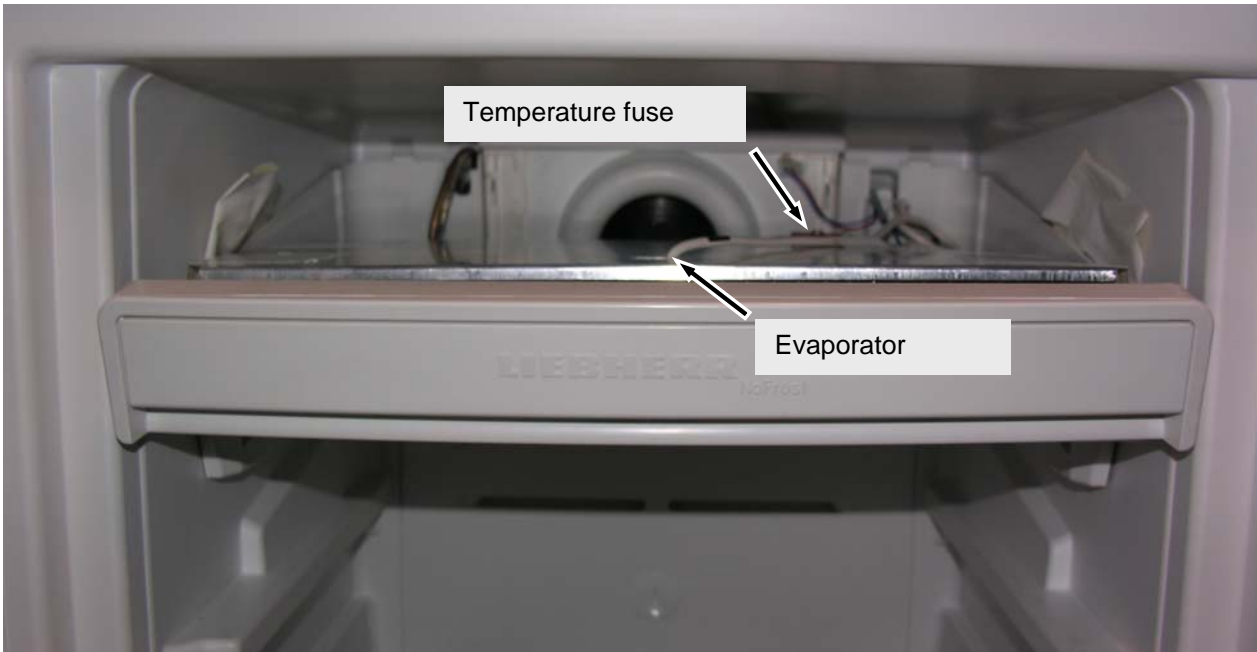


Fig. 5.2.2/ 1 Evaporator module folded down

5.2.3 Air sensor

Evaporator module: Dismantle the evaporator module as described below under **5.2.1 Evaporator module**.

Front polystyrene moulding: Is situated behind the front panel is the evaporator module (is only inserted). Acts as an air seal of the air sensor in the direction of the lamellar evaporator.

Air sensor: Is engaged behind the front panel of the evaporator module and in case of defect it has to be cut off and repaired with the repair kit (Art. No. 9590 062).



Fig. 5.2.3/ 1 Removal of the polystyrene

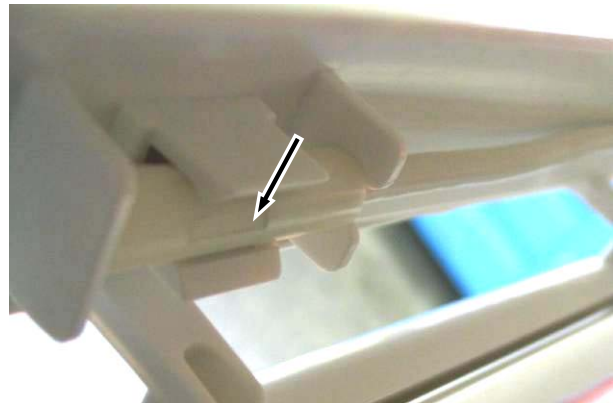


Fig. 5.2.3/ 2 Air sensor

5.2.4 Fan

Evaporator module: Dismantle the evaporator module as described below under **5.2.1 Evaporator module**.

Fan casing: and Detach fan connector. Lift the fan casing out of the housing support, swing it down and remove it.

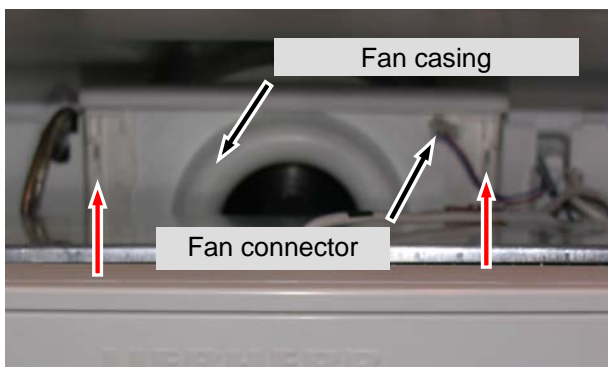


Fig. 5.2.4/ 1 Fan casing



Fig. 5.2.4/ 2 Fan casing, swung down

Fan: Lay the fan casing front face down, and remove the attached sealing rubber at the rear. Detach the fan from the housing.



Fig. 5.2.4/ 3 Fan housing, front face

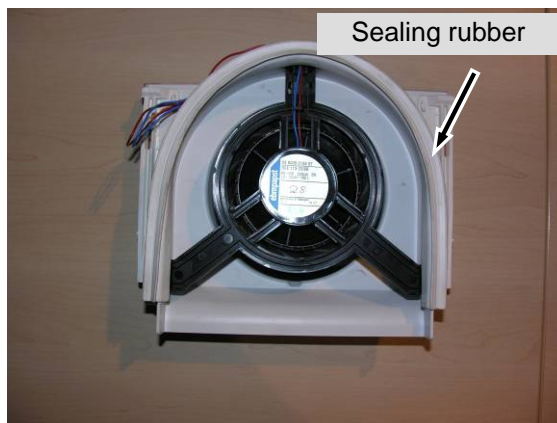


Fig. 5.2.4/ 4 Fan housing, rear



Fig. 5.2.4/ 5 Fan housing, components



5.2.5 Temperature fuse

Evaporator module: Dismantle the evaporator module as described below under **5.2.1 Evaporator module**.

Temperature fuse: Fastened by a screw.
To be noted for replacement:
- Cut off only at the coloured wires (not heater wire!)
- Fix the wires in such a way that they do not touch the heater.

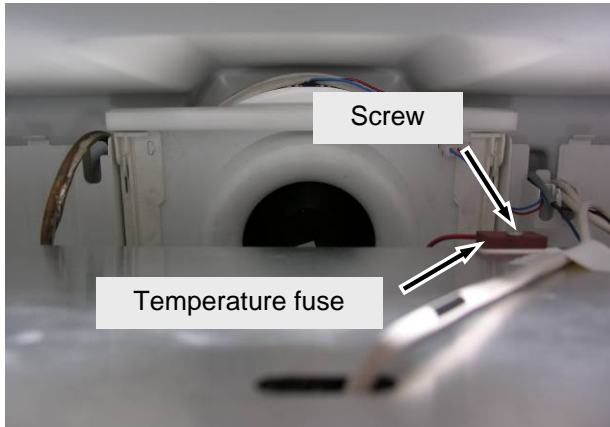


Fig. 5.2.5/ 1 Temperature fuse

5.2.6 IGN 2566 only, IceMaker

Holder: Press the locating lugs in the two openings of the holder inwards and draw the holder forwards for removal (see **Fig. 5.2.6/ 1**).

Reed contact: The reed contact for drawer recognition is situated in the holder.

IceMaker: Draw the IceMaker forwards and lower it for removal. Disconnect the IceMaker cables.

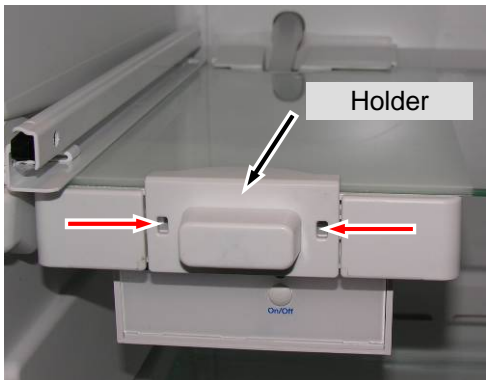


Fig. 5.2.6/ 1 Disengaging the holder

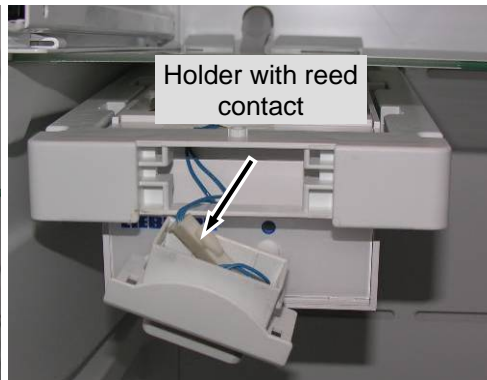


Fig. 5.2.6/ 2 Reed contact in holder



Fig. 5.2.6/ 3 IceMaker

5.2.7 IGN 2566 only, double solenoid valve IceMaker

- Solenoid valve**
- Undo marked screw (see **Fig. 5.2.7/ 1**).
 - Remove cover.
 - Detach electrical connectors.
 - Undo screw fitting of water hose.



Fig. 5.2.7/ 1

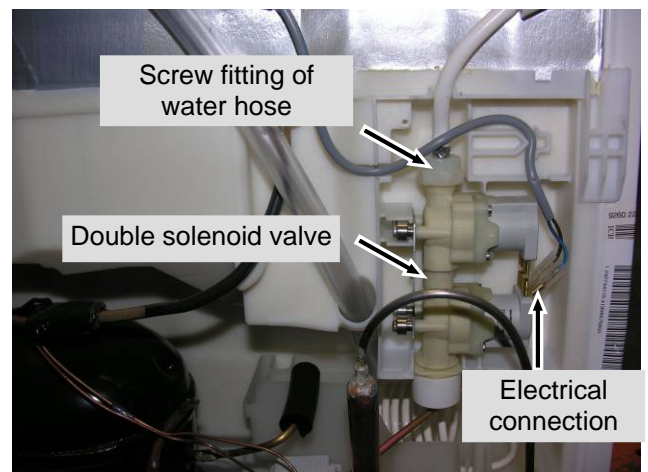


Fig. 5.2.7/ 2

6.0 Technical data

6.1 General

Sensor values: 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

6.2 Freezer compartment

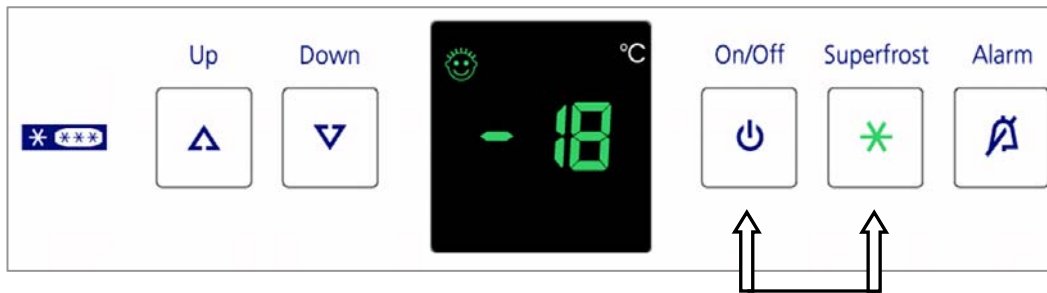
Fan: Wattage: 1.6 watts
Voltage: 9 volts/DC

Defrost heater: Wattage: 199 watts
Voltage: 230 volts/AC

Temperature fuse: Tripping temperature: +93°C

7.0 Service menu

The service menu may be used by service technicians only.



Activation of service menu: Press "ON/OFF" + "SuperFrost" simultaneously for about 3 seconds

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

7.1 Manual defrosting

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				
1	Actual value	Press "ON/OFF" and "SuperFrost" simultaneously for 3 seconds	"H" flashes with SuperFrost LED	Service menu active. Stepwise manual defrosting.
Evaporator must be cold				
1	"H" flashes together with SuperFrost LED	Press "SuperFrost"	"A" flashes	Defrosting activated.
Manual defrosting is ended: <ul style="list-style-type: none"> - by switching appliance OFF/ON. - automatically after the defrosting parameters have been reached. (evaporator sensor +32°C or max. defrosting time 50 minutes) 				

7.2 Demo mode

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				
1	Actual value	Press "ON/OFF" and "SuperFrost" simultaneously for 3 seconds	"H" flashes with SuperFrost LED	Service menu active. Stepwise manual defrosting.
2	"H" flashes with SuperFrost LED	Press "Up" once	"d1" or "d0" flashes with SuperFrost LED	Service menu active. Stepwise demo mode
3a	d1	Press SuperFrost.	-18°C	Demo mode ON
3b	d0	Press SuperFrost.	Actual value	Demo mode OFF
Demo mode (Demo mode can be deactivated only via service menu, not by OFF/ON.) Operation switches to the mode wanted, demo mode or normal mode, as soon as "SuperFrost" has been actuated.				

7.3 Service mode

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				
1	Actual value	Press "ON/OFF" and "SuperFrost" simultaneously for 3 seconds	"H" flashes with SuperFrost LED	Service menu active. Stepwise manual defrosting.
Service mode -- test display LED, buttons, door contact --				
1	"H" flashes with SuperFrost LED	Press "Up" twice	"L" flashes with SuperFrost LED	Service mode selected
2	"L" flashes with SuperFrost LED	Press "SuperFrost"	"rd" flashes	Service mode activated
3	"rd" flashes	Door closed and open	All button LEDs and display segments shine	Door contact, LEDs, display
4	All button LEDs and display segments shine	Press all the buttons	- "L0" shines - 2 seconds beep	Buttons / button actuation is confirmed by beep
After step 4, actuation of the last button, a beep sounds.				
Service mode -- Testing electric loads--				
5	"L0" shines	No operation	"L0" shines	All OFF --
6	"L0" shines	Press "Up"	"L1" shines	Compressor ON low speed --
7	"L1" shines	Press "Up"	"L4" shines	Defrost heater ON 199 watts
8	"L4" shines	Press "Up"	"L7" shines	Fan ON low speed 1.4 watts
9	"L7" shines	Press "Up"	"L8" shines	Fan ON high speed 1.6 watts
Return to step 5 is brought about by pressing the up button again.				
End		Press "ON/OFF"		

1) Power input = power input of the appliance in the respective testing step!

7.4 Sensor test (temperature display) and door contact test "E"

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				
1	Actual value	Press "ON/OFF" und "SuperFrost" simultaneously for 3 seconds	"H" flashes with SuperFrost LED	Service menu active. Stepwise manual defrosting.
Sensor test and door contact test (sensor values without offset, appliance in control mode)				
1	"H" flashes with SuperFrost LED	Press "Up" three times	"E" flashes with Superfrost LED	Sensor test mode selected
2	"E" flashes with Superfrost LED	Press "SuperFrost"	"E3" flashes alternately with sensor temperature	Air sensor
3	"E3" flashes alternately with sensor temperature	Press "Up"	"E4" flashes alternately with sensor temperature	Evaporator sensor
4	"E4" flashes alternately with sensor temperature	Press "Up"	"E7" flashes alternately with sensor temperature	Ambient sensor
5	"E7" flashes alternately with sensor temperature	Press "Up"	"E8" flashes alternately with "1" or display is OFF	Door contact (display OFF=door closed, 1=door open)
End		Press ON/OFF twice		

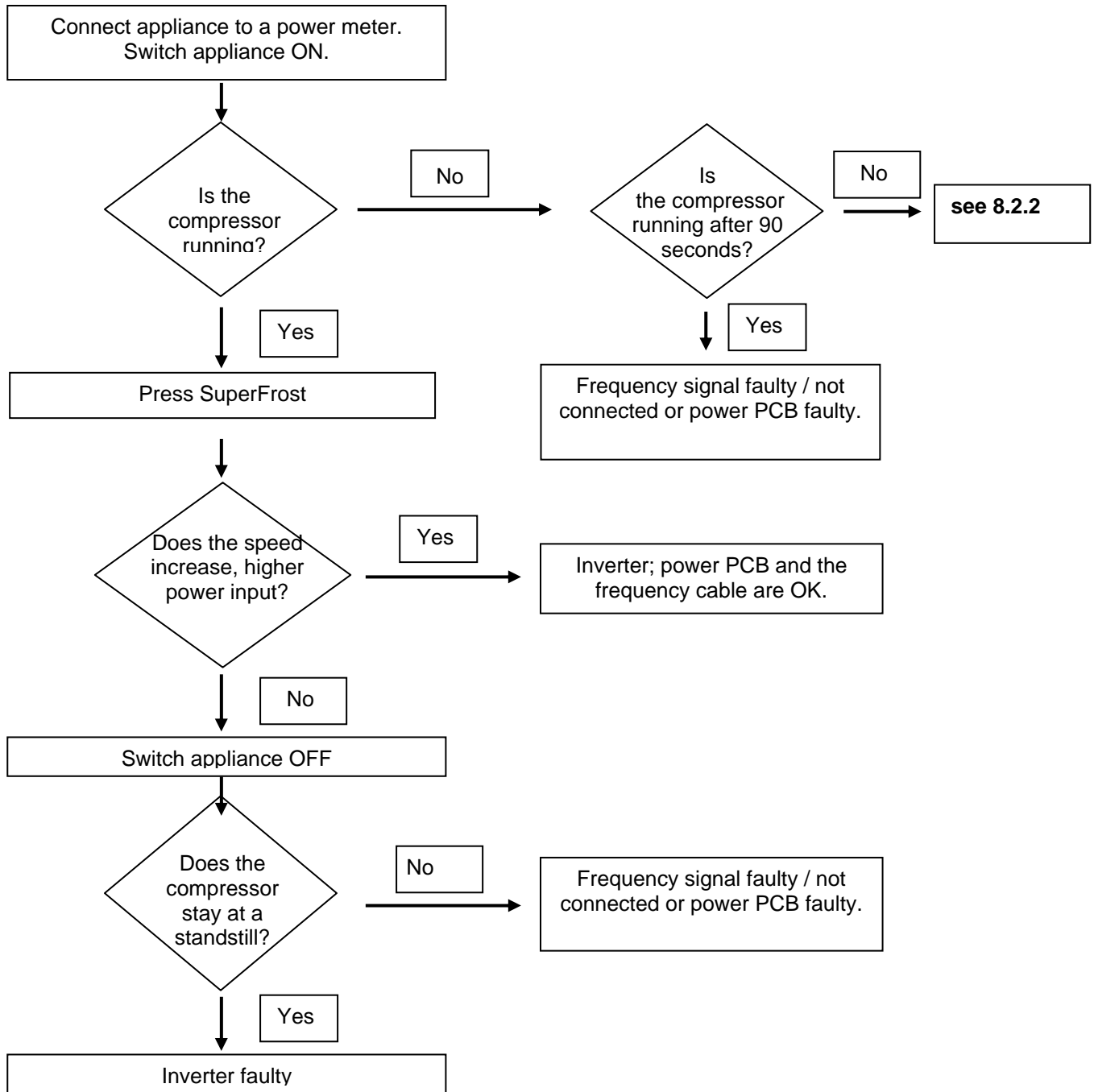
8.0 Error code, troubleshooting

8.1 Table of error codes

Error code	Defective component	Emergency mode
F3	Freezer compartment air sensor	Compressor switches OFF. Info: Compressor switches ON again only when the appliance has been switched OFF and on again.
F4	Freezer compartment evaporator sensor	Compressor continuous operation (highest speed)
ru	Ambient sensor	Appliance continues to operate in normal mode, only without regard to the ambient temperature. Info: Is displayed only in the service mode of the service menu, in step 2 instead of "rd".

8.2 Troubleshooting VCC compressor / inverter

8.2.1 Checking the inverter and the frequency signal



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

8.2.2 Checking the compressor

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

Select step 6 (compressor ON) in the service menu under "7.3 service mode". 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.

