

Appliance Documentation

GGPv 6520 / 1420 ab Index 40

GGPv 6570 / 1470 ab Index 40

BGPv 65.. / 84.. ab Index 40

Gastro / bakery standard ProfiLine freezer, ventilated



GGPv 6520

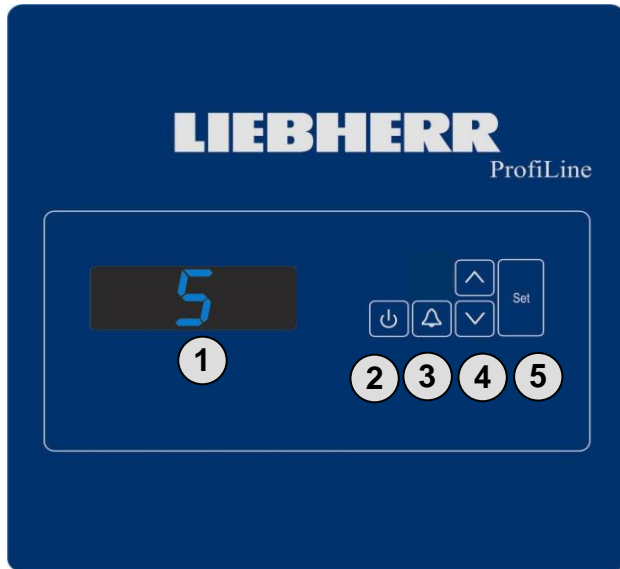


BGPv 8470

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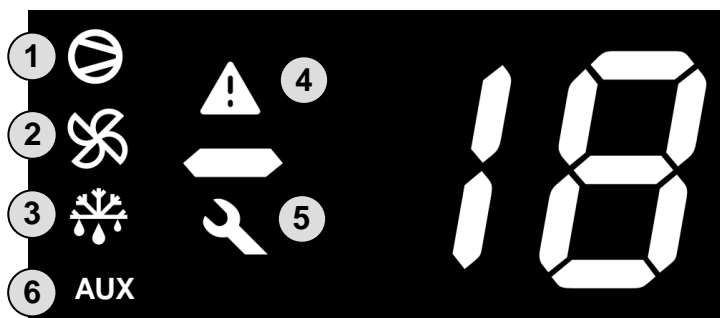
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1.0 Operating and control elements



- 1 : Display for temperature display and controls
- 2 : ON/OFF button
- 3 : Alarm OFF button
- 4 : Temperature setting buttons
- 5 : Set button(Enter)

1.1 Meaning of the controls



- | | |
|-----------------|---|
| 1 : LED shines | compressor is running. |
| 1 : LED flashes | switch-on delay of the compressor is active. |
| 2 : LED shines | evaporator fans are running. |
| 2 : LED flashes | switch-on delay of the fans is active (e.g. after defrosting). |
| 3 : LED shines | defrosting phase is active. |
| 3 : LED flashes | switch-on delay of the defrosting (e.g. in case of defrost request during compressor standstill). |
| 4 : LED shines | alarm (e.g. door open, temperature too warm) |
| 5 : LED shines | fault (e.g. in case of sensor defect) |
| 6 : LED shines | electric heaters (e.g. drain pipe, intake duct, door rail heater, if any) active. |

2.0 Functions at a glance

| | |
|--|--|
| Control: | Electronic control system |
| Temperature display: | Digital |
| Temperature range: | GGPv 65, BGPv: -10°C to -35°C GGPv 14: -10°C to -26°C |
| Temperature alarm: | Visual and audible |
| Door alarm: | Visual and audible |
| Potential-free alarm contact: | Present |
| HACCP function: | Not present (cannot be retrofitted either) |
| Interface: | Not present |
| Fan: | Present |
| Defrosting: | Automatic |
| Interior light: | Not present |
| Service menu: | Not present |
| Compressor: | Standard |
| Solenoid valve refrigeration circuit: | Fitted (for defrosting) |

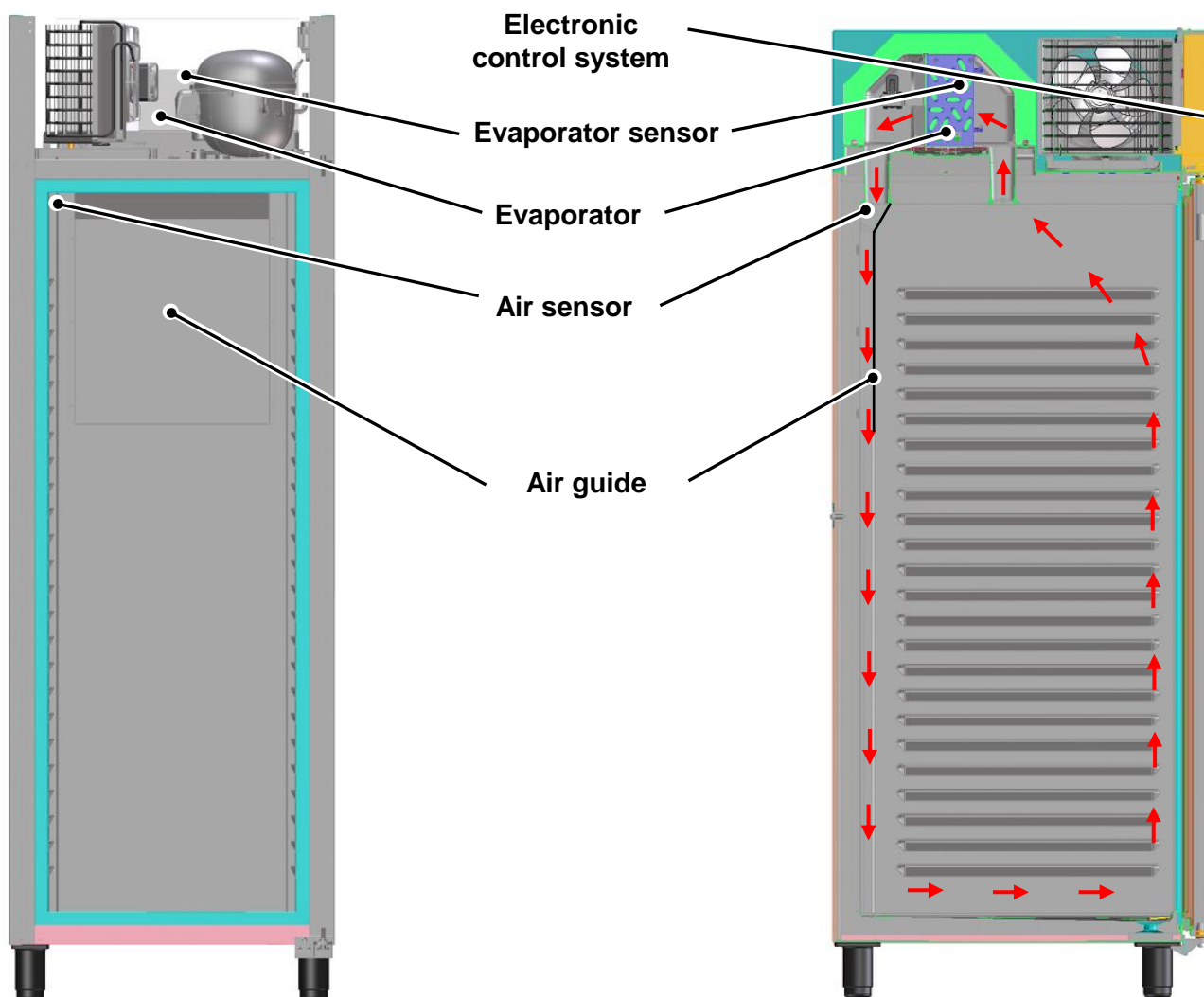
3.0 Description of the appliance

The GGPv ..20/70 and BGPv models are dynamically cooled freezers with lamellar evaporators. A double fan sucks air from the interior through the evaporator and blows the cold air back into the interior.

The temperature is controlled by an air sensor.

Defrosting is carried out by hot gas.

3.1 Sensor positions, schematic diagrams



4.0 Main components and their functions

4.1 Electrical components and functions

| Electronic control system | |
|--------------------------------------|--|
| Type: | Electronic microprocessor controller from CAREL with digital display The parameters are assigned to the electronic control system by LIEBHERR |
| Components: | Electronic control system casing |
| Adjusting range: | GGPv 65, BGPv: -10°C to -35°C GGPv 14: -10°C to -26°C |
| Display range: | -50°C to +90°C |
| Functions | |
| Temperature alarm: | <p>When: As soon as the temperature drops below or exceeds the set value by 5 K (at GGPv 14.. from idx.40A: drops by 5K or exceeds by 8K)</p> <p>Audible: Intermittent beep (suppressed during start-up)</p> <p>Visual: The alarm symbol shines and either the code HI (too warm) or LO (too cold) appears in the display.</p> <p>To avoid unnecessary warnings (e.g. door opening) the temperature has to exceed/drop below the threshold for at least 30 minutes (from idx.40A at least 60 minutes).</p> <p>After the defrosting phase has ended, the alarm is inactive for one hour.</p> |
| Door alarm: | <p>When: Door open longer than 4 minutes</p> <p>Audible: Intermittent beep</p> <p>Visual: The alarm symbol shines and the code "dor" appears in the display.</p> <p>When the door is open the alarm symbol immediately flashes and the temperature display flashes – the alarm proper is activated only after the above-stated time.</p> |
| Potential-free alarm contact: | <p>The potential-free contact takes the form of a changer and can be integrated into a central monitoring system if required.</p> <p>In a fault scenario (alarm, power failure) the contact gets activated.</p> |

| | | |
|--------------------|------------------|---|
| Defrosting: | Activation: | <ul style="list-style-type: none">- Automatic after 4 hours accumulated compressor run time (but at least 2x/day).- Manual, when the "down" button is depressed for 5 seconds. |
| | Function: | <p>Hot gas defrosting (see section 4.2.2.2.).</p> <p>The defrost water is collected in the evaporator tray and is conducted through a drain pipe (trap) into the defrost water evaporation tray. During the next cooling phase this tray is heated by hot gas and the water evaporates.</p> |
| | End: | <p>The defrosting phase is usually ended thermally (+10°C). Should it not be ended thermally, the defrosting phase is terminated after 8 minutes (<i>from idx.40A after 10 minutes</i>).</p> <ul style="list-style-type: none">- The compressor starts again after a drain time of 10 minutes.- The evaporator fans start with a further 5-minute delay. |
| | Note: | The electric heater for the intake opening and the drain pipe to the evaporation tray is active as soon as the appliance is switched on. |
| | Display: | <p>The defrosting symbol shines during the defrosting phase. During the defrosting phase the value last displayed before defrosting started is retained. The display is reactivated as soon as the set value is reached for the first time after the defrosting phase has ended, in any event within the alarm delay time.</p> <p>(The temperature alarm is deactivated for one hour after the end of the phase).</p> |
| | Special feature: | <p>In case of power failure, defrosting takes place one hour after the power is restored – thereafter according to programmed interval.</p> <p>If the appliance was switched off by the ON/OFF switch, all times are reset to 0! That is to say, after the power is restored the appliance operates normally and is defrosted the next time according to the programmed interval.</p> |

Sensors

| | | |
|--------------------|-----------|--|
| Air sensor: | Position: | In the interior, at the top back left corner. |
| | Function: | <p>Supplies the switching values for the electronic control system and</p> <ul style="list-style-type: none"> - generates the display value. The "<i>display update</i>" parameter was set to a medium value-> and is therefore a little damped in response! - Switches the compressor OFF/ON The hysteresis is 2 K. (Example: At a set value of -18°C, the compressor switches on at -16°C and off at -18°C). <p>To reduce temperature fluctuations, the "<i>measuring stability</i>" parameter was set to the lowest value -> sensor responds quickly!</p> <p>In case of a fault (interruption or short circuit) the fault symbol lights up and the E0 code appears in the display. -> The appliance operates in the emergency mode: 15 minutes ON, 15 minutes OFF</p> |

| | | |
|---------------------------|-----------|---|
| Evaporator sensor: | Position: | Slipped into the evaporator |
| | Function: | <p>Supplies the switching values for the electronic control system and</p> <ul style="list-style-type: none"> - ends the defrosting phase at +10°C <p>In case of a fault (interruption or short circuit) the fault symbol lights up and the E1 code appears in the display. -> The appliance continues to operate in the normal mode – however the defrosting is ended by way of the time limit</p> |

Switches

| | | |
|--------------------------------------|-----------------|-------------------|
| Door switch: | Position: | In front panel. |
| | Type: | Push-button |
| | Contact type: | Make contact |
| | Function: | Operation by door |
| <u>Switching signal when:</u> | | |
| door closed: | door alarm | OFF |
| | evaporator fans | ON |
| door open: | door alarm | ON |
| | evaporator fans | OFF |

| | | |
|--------------------------|-----------|---|
| Temperature fuse: | Position: | Screwed onto the front side of the evaporator. |
| | Type: | Safety fuse |
| | Function: | <p>Acts as a pure safety device!</p> <p>Is tripped and therefore interrupts the power supply of the compressor when the evaporator is heated above +72°C.</p> |

Loads

Heater for defrost water drain pipe and intake opening:

Position: The heater is first wound around the intake duct and then placed on the drain pipe in the form of a loop.

Function: The heater ensures that no layer of ice can form in the intake duct and the defrost water can flow into the evaporation tray.

Special feature: The heater is activated as soon as the appliance is switched on.

Door rail heater (in GGPv 14..):

Position: Foamed-in in the door rail.

Function: In the GGPv 14.. model the door rail is electrically heated.

Special feature: The heater is activated as soon as the appliance is switched on.

Frame heater (in GGPv 14..):

Position: Foamed-in in both halves of the housing (+ a standby heater in each case)

Function: In the GGPv 14.. model the entire frame (one heater per housing half) is electrically heated!

Special feature: The heater is activated as soon as the appliance is switched on.

Evaporator fans

Position: Attached to the evaporator

Function: Suck the warm air through the evaporator and blow the cold air through the blow-out opening into the interior.

Special feature: The fans run permanently (exception: door open or defrosting phase)! After the defrosting phase has ended they start with a time delay.

Condenser fan:

Position: Next to the condenser

Function: Cools the condenser and runs in parallel with the compressor

Solenoid valve:

Position: Next to the compressor

Function: Opens a bypass for defrosting

Type: 2/1 valve

Compressor:

Function: **ON:** Air sensor switch-on value.
OFF: Air sensor switch-off value.

Special feature: **The on-delay time of the compressor is 4 minutes.** Should the compressor be addressed during this time, the compressor symbol flashes in the display (compressor start request). As soon as the compressor runs, the LED shines.

Type: Standard

4.2 Refrigeration components and functions

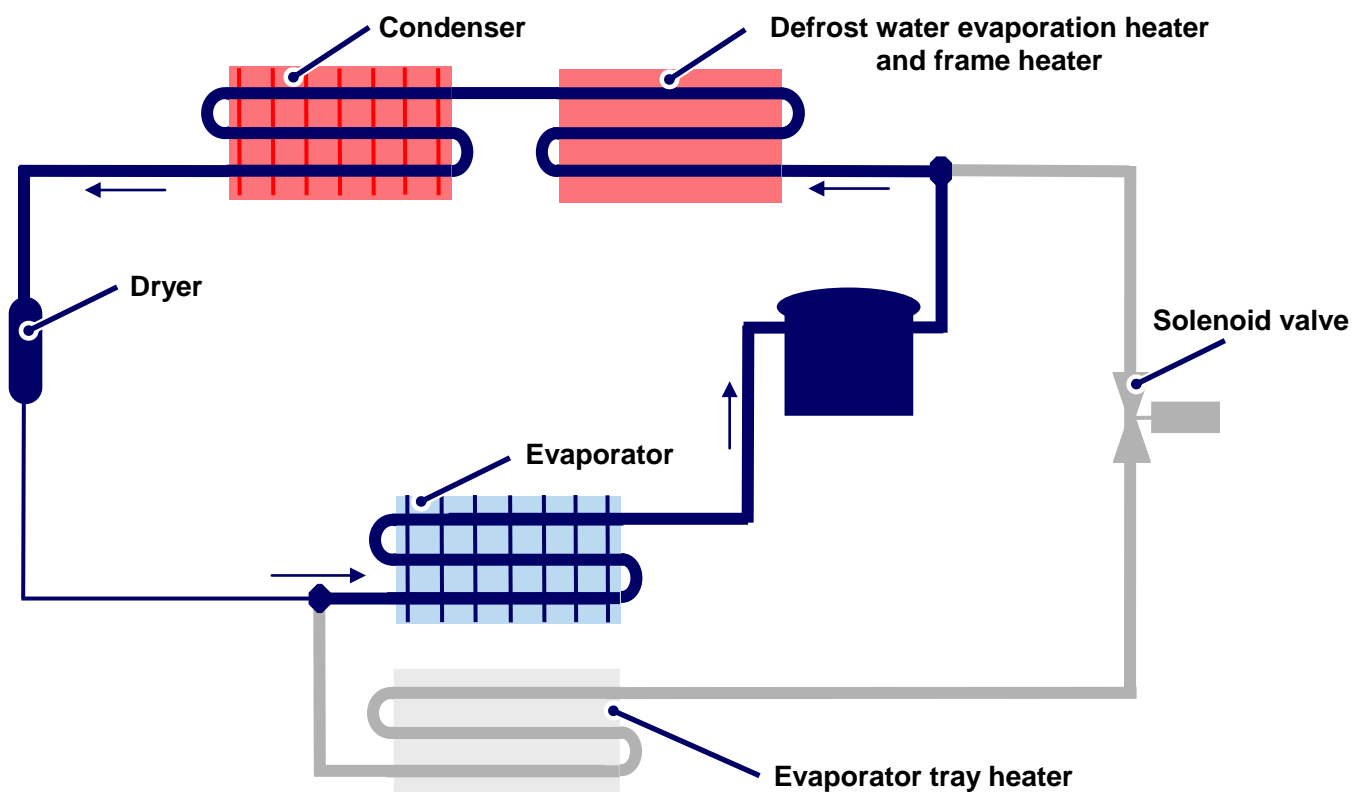
4.2.1 Components

| | | |
|--|-----------------------|--|
| Compressor: | Standard | |
| Solenoid valve: | 2/1 valve | |
| Evaporator: | Design: | Lamellar evaporator. |
| | Type of installation: | On the evaporator tray |
| | Injection point: | Bottom |
| | Flow sequence: | From bottom to top |
| Evaporator tray heater | Position: | Beneath the evaporator. |
| | Type: | Hot gas |
| Frame heater: (GGPv 65.., BGPv) | Position: | Foamed-in in the region of the frame. |
| | Type: | Hot gas |
| Defrost water evaporation heater | Position: | Beneath the defrost water evaporation tray |
| | Type: | Hot gas |
| Condenser: | Design: | Unit-type wire on tube condenser |
| | Type of installation: | Fitted on the appliance behind the front panel |
| Refrigerant: | R290 | |

4.2.2 Principle of operation

4.2.2.1 Refrigerator

The solenoid valve is closed. The refrigerant is routed through the usual circuit.



4.2.2.2 Defrosting by hot gas

The evaporator is defrosted by means of hot gas. The compressor has to run before the defrosting phase. If a defrosting request is made during compressor standstill, the appliance therefore cools in the normal way for two minutes before the solenoid valve is addressed.

When the defrosting phase starts, the solenoid valve opens and the hot gas flows via the bypass into the evaporator tray heater and evaporator. Then the refrigerant is briefly cooled by the iced evaporator and hence liquefied, and is subsequently evaporated in the compressor enclosure by its heat. The gaseous refrigerant heated by the dissipated heat of compressor is subsequently pumped through the circuit.

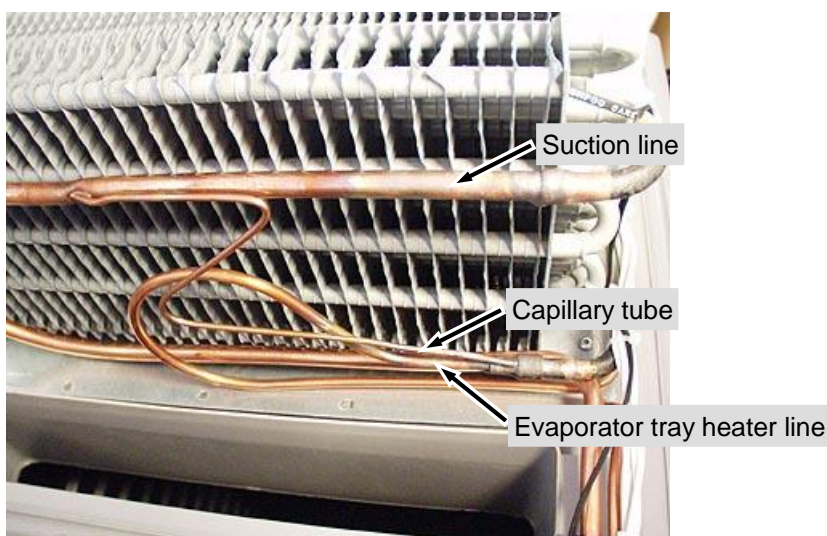
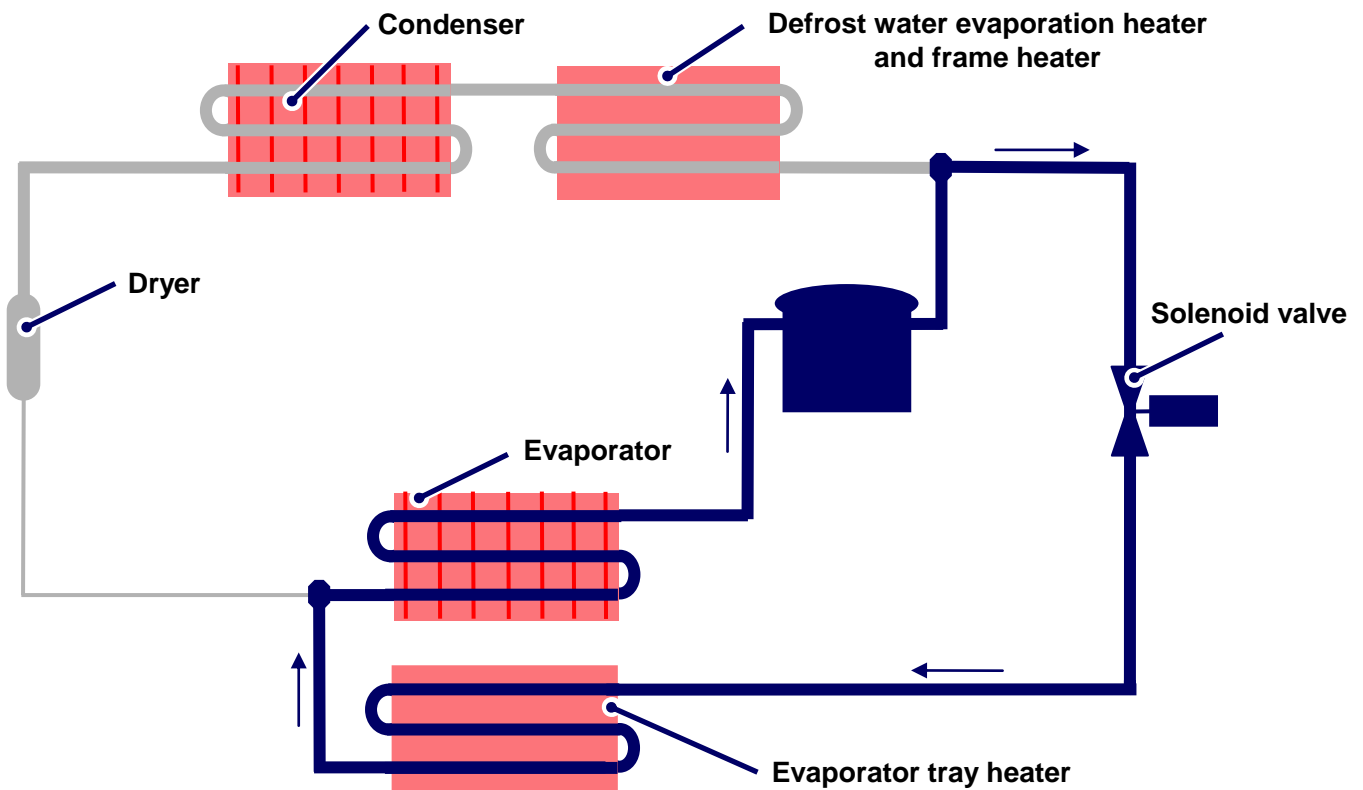


Fig. 4.2.2.2 / 1

4.3 Pressure compensating valve

The pressure compensating valve is fitted on the evaporator hood and enables rapid pressure compensation. The aluminium ribs ensure that the valve is adequately heated by the dissipated heat of the appliance/ambient air and therefore does not have to be electrically heated.

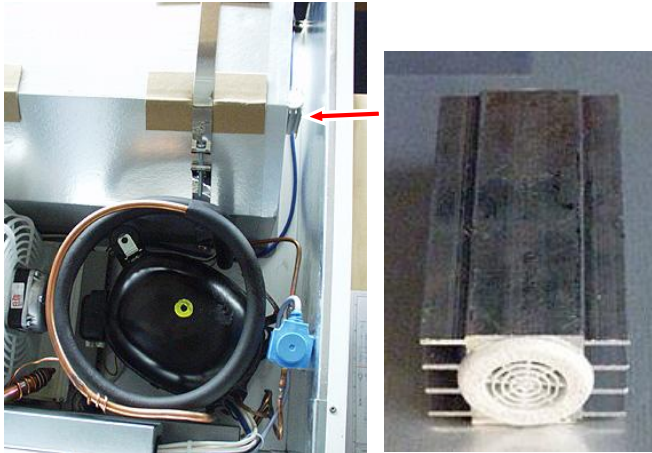


Fig. 4.3 / 1

4.4 Defrost water evaporation tray

The evaporator tray is fitted under the evaporator and fastened with a screw. During the defrosting phase, hot gas flows through the heater and hence ensures that the defrost water can flow into the drain pipe.



Fig. 4.4 / 1

4.5 Evaporator tray heater

The evaporator tray is fitted under the evaporator and fastened with a screw. During the defrosting phase, hot gas flows through the heater and hence sees to it that the water is sure to drain.

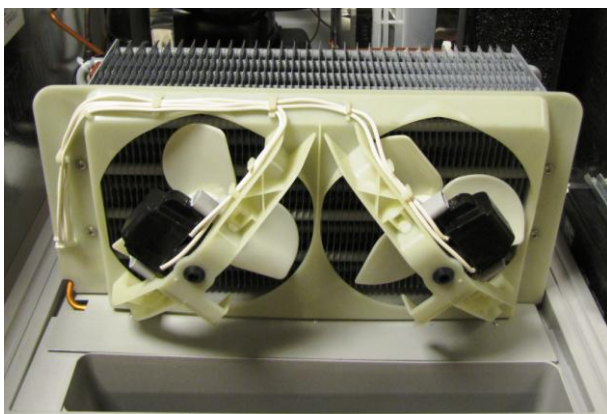


Fig. 4.5 / 1 Fitted evaporator

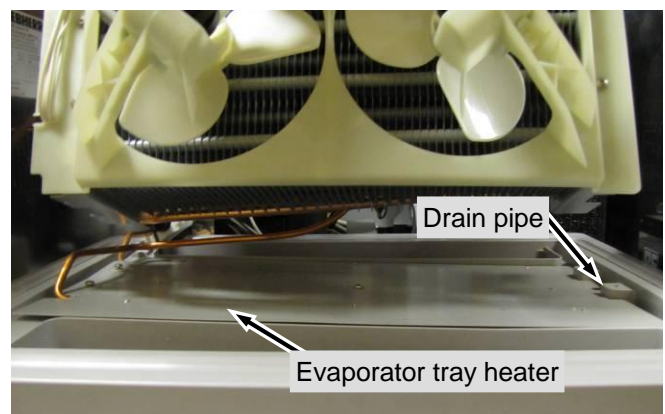


Fig. 4.5 / 2 Detached evaporator

5.0 Assembly instructions / replacement of parts

5.1 Electronic control system

Front housing: Remove screw on the underside and fold up the housing.

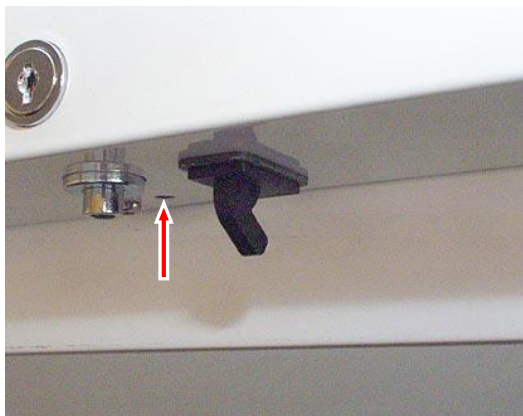


Fig. 5.1 / 1



Fig. 5.1 / 2

Cover of electronic control system: Remove screws fastening the cover and detach the cover



Fig. 5.1 / 3

Electronic control system: - Detach connector from the electronic control system.

- Attention: No coding – possibly mark beforehand**
- Unclip electronic control system from the holder.

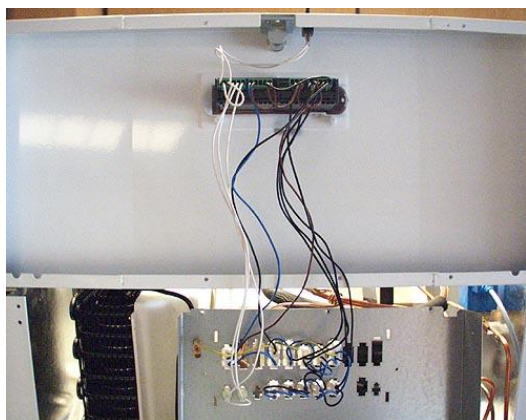


Fig. 5.1 / 4

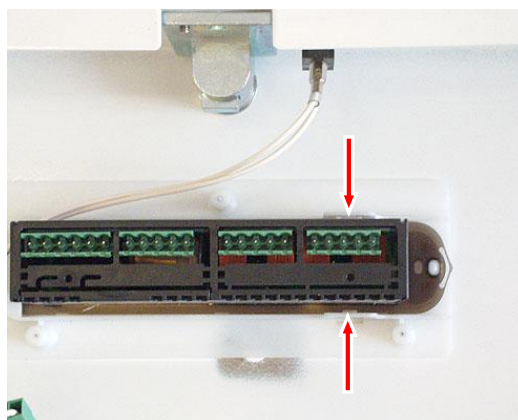


Fig. 5.1 / 5

5.2 Air sensor

Terminal block:

- Remove cover.
- Disconnect sensor at terminal block.
- Press connector assembly out of the connector.



Fig. 5.2 / 1

Sensor:

- Unclip sensor and draw it out of the gland.
- Disconnect sensor at terminal block.
- When fitting the new sensor, pay attention that the cable forms a loop between bead and gland (see Fig. 5.2 / 3).



Fig. 5.2 / 2



Fig. 5.2 / 3

5.3 Evaporator sensor and temperature fuse

Evaporator hood:

- Undo screws and ties. Remove evaporator hood.
- When fitting the hood, pay attention that it seals all the way round.



Fig. 5.3 / 1

Sensor:

- Draw sensor out of the evaporator and disconnect at the terminal block.
- When fitting, pay attention that the sensor is slipped halfway into the evaporator and is located in position with a cable tie.

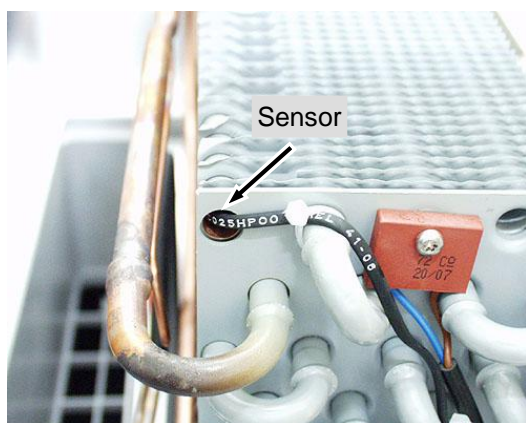


Fig. 5.3 / 2

Temperature fuse:

- Detach temperature fuse from the evaporator and disconnect at the compressor terminal board.

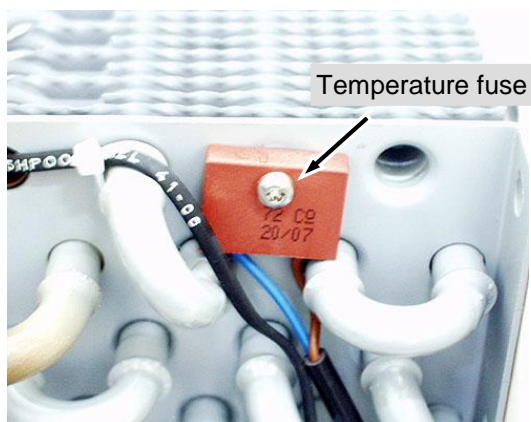


Fig. 5.3 / 3

5.4 Evaporator fans

- Fans:**
- Remove evaporator hood.
 - Undo screw of the fan holder and remove fans.

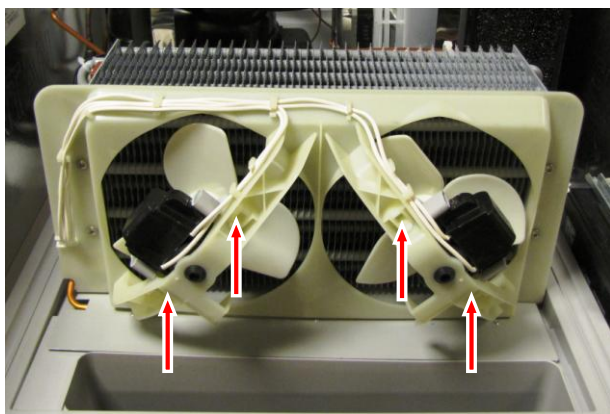


Fig. 5.4 / 1

5.5 Condenser fan

- Fan:**
- Remove screw fastening the fan holder.
 - Unhook the holder from the condenser at the top and remove it.
 - Unscrew motor holder.

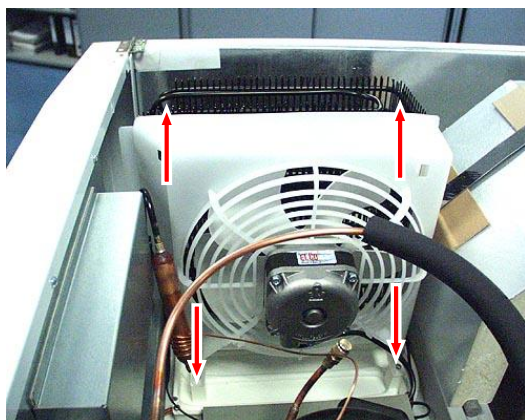


Fig. 5.5 / 1



Fig. 5.5 / 2

5.6 Solenoid valve

- Coil:**
- The coil of the solenoid valve can be drawn off upwardly (i.e. no intervention in the refrigeration circuit is necessary).



Fig. 5.6 / 1



Fig. 5.6 / 2

6.0 Technical data

| | | |
|---|----------|------------------|
| Heater for intake opening and drain pipe | Wattage: | approx. 15 watts |
| | Voltage: | 230 volts |

| | | |
|---|----------|------------------|
| Door rail heater (in GGPv 14..): | Wattage: | approx. 29 watts |
| | Voltage: | 230 volts |

| | | |
|---|----------|------------------|
| Frame heater for left half (in GGPv 14..): | Wattage: | approx. 29 watts |
| | Voltage: | 230 volts |

| | | |
|--|----------|------------------|
| Frame heater for right half (in GGPv 14..): | Wattage: | approx. 29 watts |
| | Voltage: | 230 volts |

| | | |
|-----------------------|----------|------------------|
| Condenser fan: | Wattage: | approx. 38 watts |
| | Speed: | 1300 rpm. |
| | Voltage: | 220 - 240 volts |

| | | |
|------------------------|----------|------------------|
| Evaporator fan: | Wattage: | approx. 29 watts |
| | Speed: | 2200 rpm. |
| | Voltage: | 220 volts |

Sensor values:

| Temperature °C | Resistance value kOhm |
|----------------|-----------------------|
| +50 | approx. 4 |
| +45 | approx. 4.9 |
| +40 | approx. 5.8 |
| +35 | approx. 6.9 |
| +30 | approx. 8.3 |
| +25 | approx. 10 |
| +20 | approx. 12 |
| +15 | approx. 14.7 |
| +10 | approx. 18 |
| +5 | approx. 22 |
| 0 | approx. 27 |
| -5 | approx. 33.9 |
| -10 | approx. 42.3 |
| -15 | approx. 53.4 |
| -20 | approx. 67 |
| -25 | approx. 86,4 |
| -30 | approx. 111,3 |
| -35 | approx. 144 |
| -40 | approx. 185 |

7.0 Messages and error codes

7.1 1st level parameters (no password necessary)

- The first parameter level is reached by pressing the "Alarm" button (5 seconds).
- Press the "Down" button to navigate within this level.
- After the "Set" button has been pressed, the current value of the chosen parameter is displayed.
- Press "Set" button again to get back into the parameter level.
- Press the "Alarm" button for 5 seconds to leave the parameter level.

| Parameter | | value | notes |
|-----------|----------------------------------|---------|--------------------------|
| /3 | Refresh of displayed temperature | 6 | Refreshing every 30 Sec. |
| St | setpoint | -20°C | |
| r5 | Logger activated | 1 | see 7.1.1 |
| rt | Period of logged temperature | --- | 999 |
| rH | Max. value of temperature logger | --- | |
| rL | Min. value of temperature logger | --- | |
| d5 | Defrost delay | 60 min. | |
| d/1 | Value of evaporator sensor | --- | |
| AL | Lower alarm treshold | 5K | |
| AH | Upper alarm treshold | 5K | |
| Ad | Alarm delay | 30 min. | 60 mintutes from Idx.40A |
| H0 | adress | 1 | |

The LIEBHERR-ASS-organisation must be consulted, before any parameters get changed!

7.1.1 Calling up the min. and max. internal temperature

- The first parameter level is reached by pressing the "Alarm" button (5 seconds).
- Press the "Down" button until the "rt" parameter is displayed.
- > After the "Set" button has been pressed the **period** in which the internal temperature was measured is displayed.
- Press the "Down" button until the "rL" parameter is displayed.
- > After the "Set" button has been pressed the **coldest internal temperature** within the period is displayed.
- Press the "Down" button until the "rH" parameter is displayed.
- > After the "Set" button has been pressed the **warmest internal temperature** within the period is displayed.

To delete the saved values:

The first parameter level is reached by pressing the "Alarm" button (5 seconds).

- Press the "Down" button until the "rt" parameter is displayed.
- > After the "Set" button has been pressed, the period in which the internal temperature was measured is displayed.
- Keep the "Down" button depressed for five seconds -> rES appears in the display.

7.2 Error codes

| Error code | Defective component | Audible alarm/alarm contact | Emergency operation |
|------------|--|-----------------------------|-------------------------------|
| E0 | Air sensor | ON/ON | 15 minutes ON, 15 minutes OFF |
| E1 | Evaporator sensor | ON/ON | Normal mode |
| EE | Electronic control system defective (operating parameters) | ON/ON | All OFF |
| EF | Electronic control system defective (control parameters) | ON/ON | All OFF |
| Eht | Evaporator too hot | ON/ON | All OFF |

To reset the alarm „Eht“, first the appliance must be switched off and then then it must be unplugged.

7.3 Status displays

| Display | Status | Audible alarm/alarm contact |
|---------|--------------------------------|-----------------------------|
| HI | Overtemperature alarm | ON/ON |
| LO | Undertemperature alarm | ON/ON |
| Ed1 | Defrosting phase ended by time | OFF/OFF |
| dor | Door alarm | ON/ON |
| dFb | Defrosting manual started | |
| dFE | Defrosting manual ended | |
| ON | Appliance switched on | |
| OFF | Appliance switched off | |