	Fridge/freezer with	B

DYNAMIC COOLING with 0° zone

SERVICE INSTRUCTION

Table of contents:

1.General

This instruction describes the fridge part in a Combi with Dynamic Cooling and 0° zone.

Dynamic Cooling is a new kind of cooling where the air is distributed by one fan in the fridge compartment, and one fan in the 0° zone. A fin evaporator is diagonally placed along the inner side of the back of the compartment. This is to obtain a more even airflow through the evaporator and also a more uniform temperature in the fridge compartment, and the 0° zone.

The air is suctioned through the fan grid with a radial flow fan, thereafter the air is blown through the fin evaporator. At the transport of the air through the fins there is a conduction of heat from the warm air to the evaporation of the refrigerant. The air then cools down. The cool air is then distributed into the fridge compartment and the 0° zone where the warmer goods are cooled down.

The temperature in the compartment is regulated with air sensors at the right side of the fridge compartment, and at the back of the 0° zone. To guarantee the defrosting of the evaporator there is also a sensor at the bottom of the evaporator tube.

2. Regulating

- The temperature in the fridge compartment and the 0° zone is regulated with air sensors and an evaporator sensor.
- When the air sensor is warmer than the cut-in temperature the fan starts, and when the evaporator sensor is warmer than the defrost temperature the compressor starts.
- When the air sensor temperature is lower than the cut-out value, the compressor and the fan stops immediately.
- When the door is opened the fan stops immediately while the compressor continues for another 2 minutes. If the door then still is open the compressor also stops.
- An extra defrost period when only the fan runs until that the evaporator temperature is +3°C . It is the accumulated uptime of the compressor that decides when this period shall occur, and the uptime is depending on how much the refrigerator has to work.

3. The ERF-panel
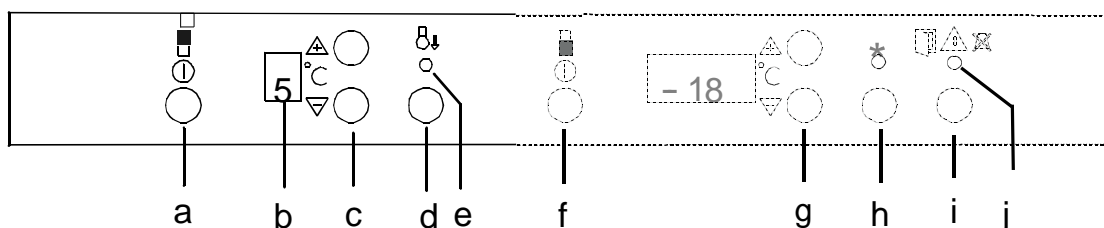
a) Switch (off / on) fridge compartment
b) Refrigerator thermometer
c) Temperature selector / thermostat fridge compartment
d) Fast cooling button, Quick Chill
e) Fast cooling lamp - Lights when fast cooling
f) Switch (off / on) freezer compartment
g) Temperature selector / thermostat freezer compartment
h) Freezing button
i) Reset button
j) Red warning lamp

4. FLEC-functions
4.1 Start/stop of the refrigerator
Start:

1. Push the switch button (**a**) to start the refrigerator.
2. When the refrigerator is started the refrigerator thermometer shows a "-" in the display. For AEG is the actual temperature shown.
3. The refrigerator thermometer uses a type of average value measuring where displayed temperature shall correspond to the temperature of the goods. It may therefore be up to 24 hours until the temperature is stabilized.

Stop:

1. Push the switch button (**a**) during at least 1 second to shut the cabinet off.
2. Remove the plug from socket.

Note!
The refrigerator is considered charged until the plug is removed from the socket.

4.2 Temperature setting, fridge compartment

- Push the temperature selector (**c**) to set decided temperature, press the upper button "**+**" for warmer and the lower button "**-**" for colder.
- At the first push on any of these buttons the thermometer displays the earlier selected temperature with flashing digits. The temperature can then be set by pushing on "**+**" or "**-**". The selected temperature is always displayed flashing. After ca. 5 seconds the flashing stops and the thermometer displays the temperature in the refrigerator. To control selected value push "**+**" or "**-**" once.
- When the refrigerator is restarted the temperature needs not to be reselected. The FLEC-electronic is automatically set on the latest selected temperature.

4.3 Temperature, 0° zone

- The temperature in the 0° zone is constantly just above 0°C. No adjustment by the user is needed.

4.4 Displaying the temperature

- The thermometer displays temperatures between +3°C and +9°C
- At warmer temperatures than +9°C "-" is displayed. For AEG the actual temperature is shown.

4.5 Quick Chill / Fast cooling

1. The function is activated when the fast cooling button (**e**) is pushed, this is indicated by that the yellow lamp (**d**) lights and that the letter "**C**" is displayed. For AEG the actual temperature is shown instead.
2. Directly when the function is activated, the refrigerator starts to regulate the temperature in the compartment as if selected temperature is +3°C during 6h. During the first 45 minutes after start the fan works continuously.
3. If one wishes to cool down cans or bottles fast, the grid has to be opened to its maximum.
4. After 45 minutes the fan once again regulates normally.
5. After 6 h from start the refrigerator automatically regulates to the earlier selected value.
6. The fast cooling function may also be interrupted by pressing the button (**e**) , also now the refrigerator regulates to the earlier selected value.

4.6 Door alarm

- The door alarm is activated when the door has been open for more than 5 minutes.
- This is indicated by that the red warning lamp (**j**) is blinking and that the acoustic alarm sounds.
- The acoustic alarm is shut off by pressing the reset button (**i**), if the door still is open the acoustic alarm shall sound again after ca. 5 minutes.

- To put the red warning lamp out the door must be closed.

4.7 Door switch
The traditional switch is replaced by a "Reed-element" (**a**) on the PCB and a magnet (**b**) on the upper door (in the middle of the upper side of the door). See picture:
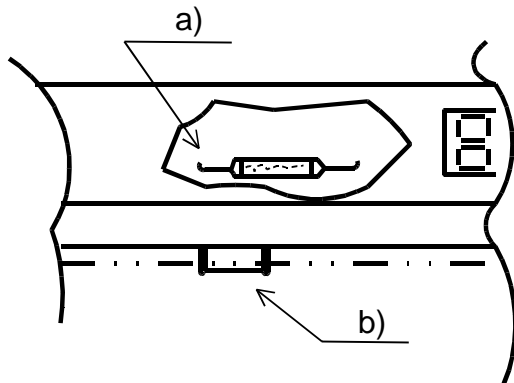
4.7 Error indicating, sensors
If any of the sensors should be defect (the resistance to high or to low, short circuited or interrupted) the compressor and fan for the fridge compartment is on for 20 minutes and off for 30 minutes, and the fan for the 0° zone is stopped.
At sensor errors the thermometer displays:

Air sensor fridge compartment defective:

Air sensor 0° zone defective:

Evaporator sensor defective:

4.8 EEPROM error (Printed circuit board defective)

The thermometer display shows:

Compressor and fan for the fridge compartment is on for 20 minutes and off for 30 minutes, and the fan for the 0° zone is stopped.

5.Special functions
5.1 Functions control electronic board
The electronic makes it possible to run a test program, which might be useful after, for example, replacement of the PCB.

1. Open the door.
2. Stop the fridge and the freezer by pressing their on/off buttons (**a**) and (**f**).
3. Simultaneously press the buttons for reset (**i**) and for freezing (**h**) and keep them pressed for about 5 seconds.
4. All segments in the temperature display shall then be lit.
5. All indicator lamps are lit.
6. When any of the buttons are pressed the buzzer shall sound.
7. The compressor and the light is off.
8. The test program is automatically interrupted after ca. 40 minutes.
9. The test program may also be interrupted by simultaneously pressing the buttons for reset (**i**) and for freezing (**h**) and keep them pressed for about 5 seconds.

5.2 Demo mode
1. Demo mode is activated by simultaneously pressing the buttons for on/off (**a**) or (**f**) and for colder freezer (**g**), and keep them pressed for about 5 seconds.
2. This function can only be started if the temperature of the air sensor is warmer than +10°C.
3. When the function is started the temperature displays flashes "**5**", resp "**18**" with 4 seconds on and 1 second off.
4. Except door alarm all functions works normally, including light.
5. The fans are on irrespective of the door is open or closed.
6. The compressor is off.
7. Demo mode function is interrupted by simultaneously pressing the buttons for on/off (**a**) or (**f**) and for colder freezer (**g**), and keep them pressed for about 5 seconds.

5.3 Rise of temperature in 0° zone
If needed, the temperature in the 0° zone can be raised with 2°C. This is done by pushing the "+" and "-" buttons simultaneously, and holding them until a beep sounds.
NOTE! If the product has a "LCD on door", the "reset" button and the "-" button for the fridge should be pressed instead.

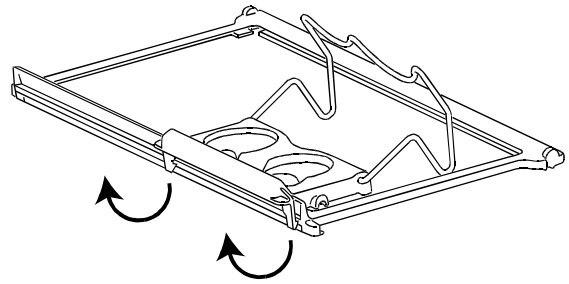## 6.The feature window
6.1 Quick Chill

The air control is opened to Max position when cooling cans and bottles down.
Min position is the normal position.

MAX   **MIN**
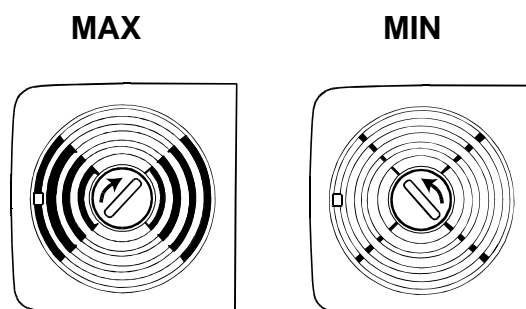
6.2 Bottle and can holder

Dismantling the bottle and can holder:

- Take the fast cooling shelf out of the compartment.

- To loosen the holder from the shelf, bend out the latches at the rear.

6.3 The carbon filter

### The function of the carbon filter:
The built-in carbon filter allows that goods with strong smell may be placed near other goods without taking smell and taste.

Exchange of the carbon filter
To obtain best function the carbon filter should, at normal use, be replaced once a year. New carbon filter can be bought at your local retail dealer.
The filter is situated behind the grid and is accessible by opening it. The grid is opened by simultaneously pressing the right lever (**1**) and turning the grid outwards (**2**). Take the carbon filter out of the holder (**3**).
Put then the new carbon filter into the holder. The filters are to be handled with care. Avoid having carbon chips to come loose from the surface.

①   ②   ③
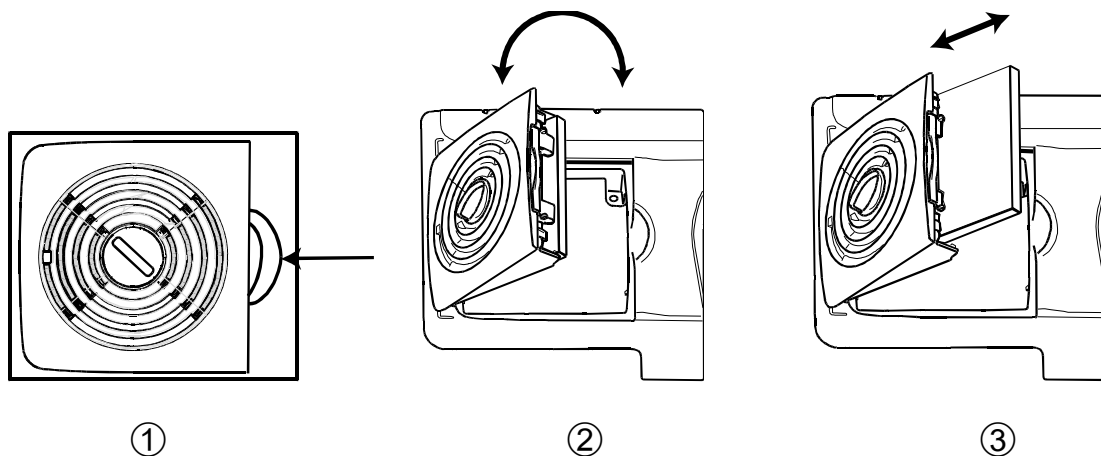
7.The fan
7.1 General

The fan for the fridge compartment is a 24 V DC fan connected directly to the PCB. The fan for the 0° zone is a 24 V DC fan running at 20 V by the transformer placed next to the PCB. The fridge compartment fan is a radial blower that blows the air evenly in all directions, and the 0° zone is an axial fan.

7.2 Exchange of the fridge compartment fan

1. Remove the lower fan module (**a**), 2 screws, see picture **1**.
2. Remove the middle protective cover (**b**), 1 screw, see picture 1(only on some models).
3. Remove the lid (**c**), see picture **1**.
4. Loosen the wiring, see picture **2**
5. Remove the upper fan module (**d**). Note 5 screws, 2 behind the grid.
6. Release fan wire connector, see picture **3**.
7. Remove the holder for the fan holder and fan from the latches.
8. Assembly of the new fan is done in reversed order. **NOTE** When assembling the fan holder on the latches, to find the right position use the index hole, see picture **4**.
9. When assembling the middle protective cover, make sure that the air block (**f**) is hooked on the taps, and that the sensor holder is hooked on the air block (see picture **5** on next page). For models without middle protective cover, this text is valid for the lower fan module.
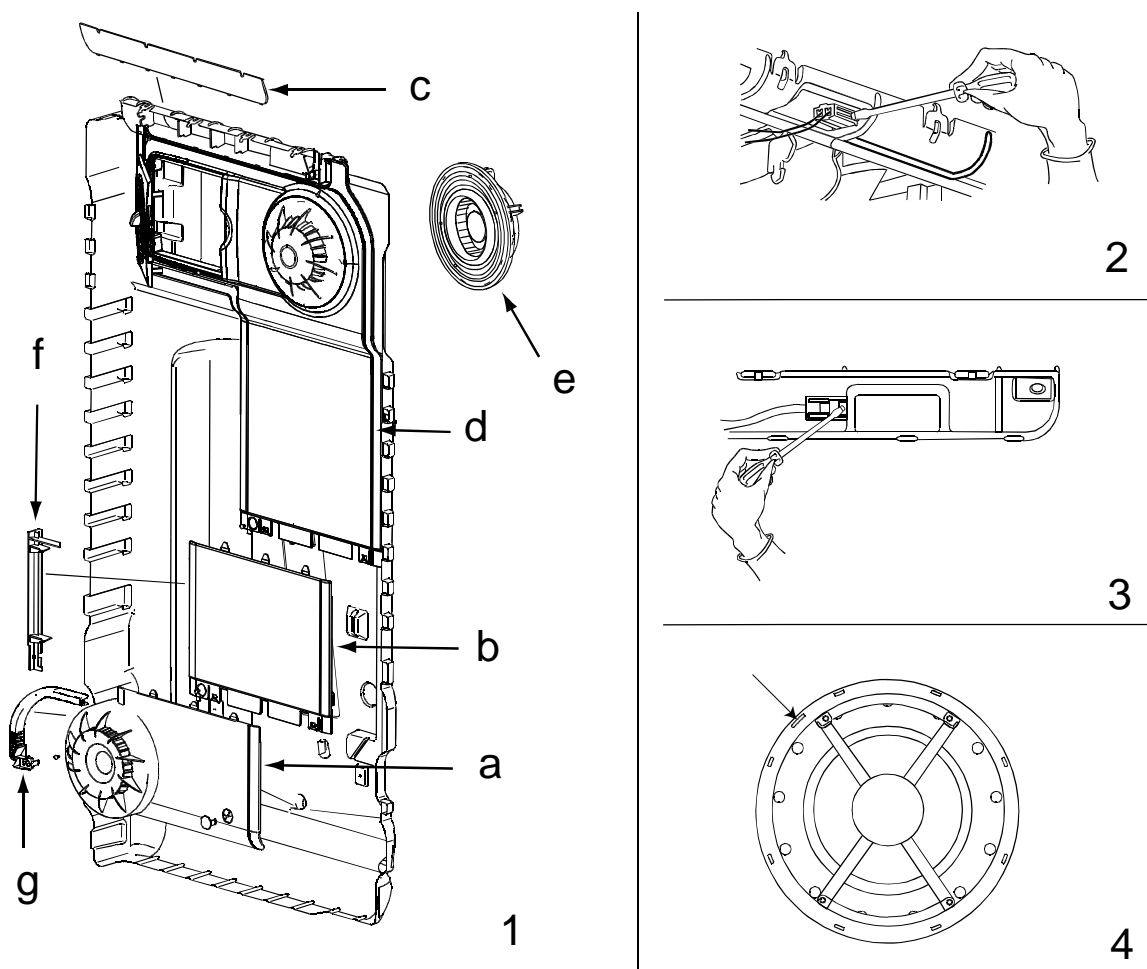
7.3 Exchange of the fan for the 0° zone

1. Remove the lower fan module (**a**), 2 screws, see picture **1** above.
2. Disconnect the fan contact at the back of the cabinet.
3. Remove the fan (**h**) from the fan holder (**i**), see picture **6** below.
4. Assembling is done in reverse order. The fan is oriented to the right position by a tap that should fit into a recess in the fan.
5. Make sure that all 8 fastening hooks have gripped the edge of the fan.
6. Make sure that the cable is placed in the cable locks, see picture **7**.

7.4 Exchange of sensor for the 0° zone

1. Remove the lower fan module (**a**), 2 screws, see picture **1** above.
2. Undo the screw on the next cover, to be able to loosen the sensor cable.
3. Assembling is done in the reverse order.

g

f

5

h

i

6

7
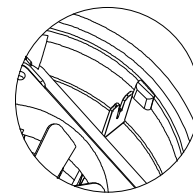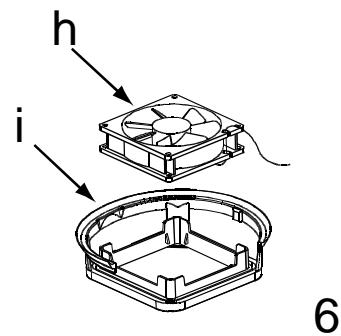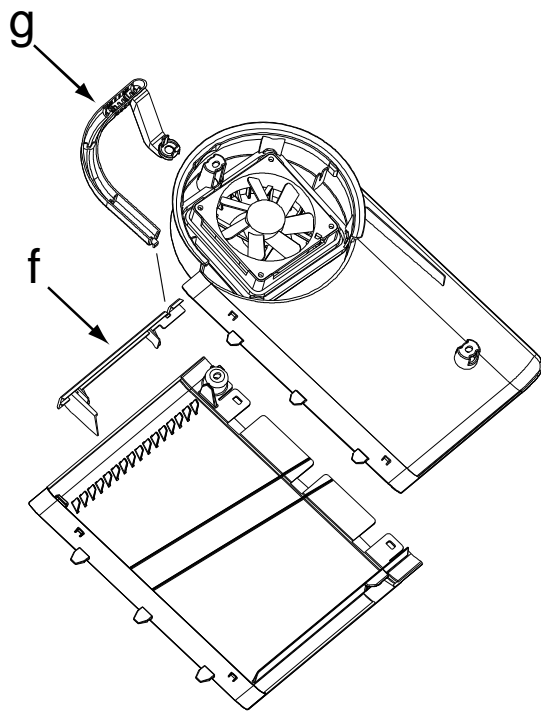
8.Evaporator
8.1 General
As heat-absorbing surface is a fin evaporator used where the fins are attached to the evaporator tube with equal distances between all the fins. The air flows along the surface of the fins and there is a heat transfer between the air and the fins. Thereafter the heat is transferred to the evaporator tube where it contributes to the evaporation of the refrigerant. This heat transfer process makes the temperature of the air sink during its transport between the fins and cold air can be distributed into the compartment. Because of the design of the fins it is very important that the fins are not deformed. If that should occur the water might not drains during the defrosting.

8.2 Exchange of the evaporator
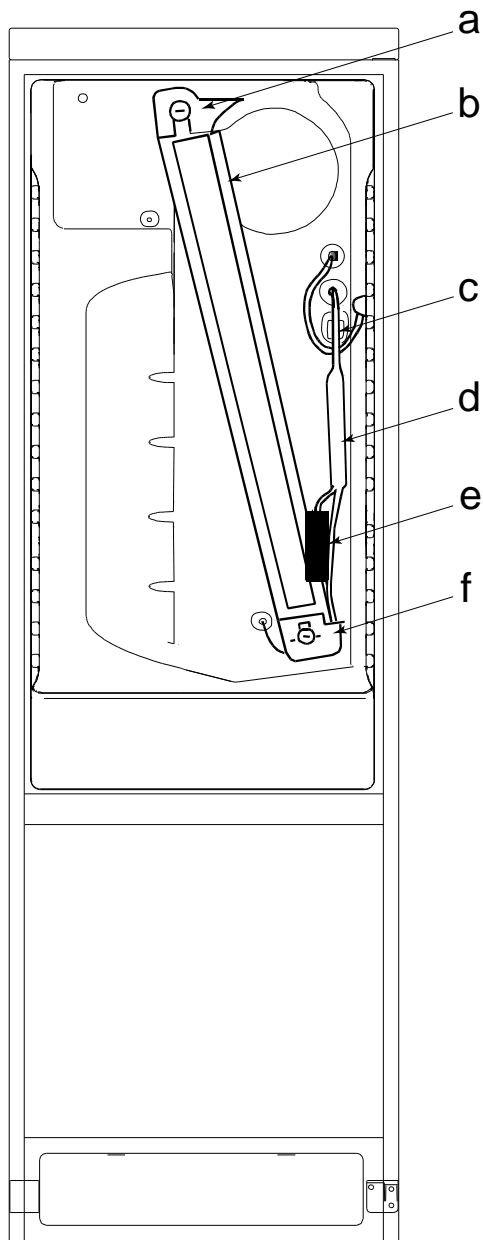
a): Upper evaporator holder

b): Evaporator incl. gasket

c): Heat exchanger

d): Accumulator

e): Damping mat, injection noise

f): Lower evaporator holder

Operations:
1. Remove all protective covers.
2. Loosen upper and lower evaporator holder by turning the retaining screw a half turn.
3. When the cooling system is empty, remove the suction pipe from the compressor, next replace the complete evaporator and heat exchanger unit with a new unit.
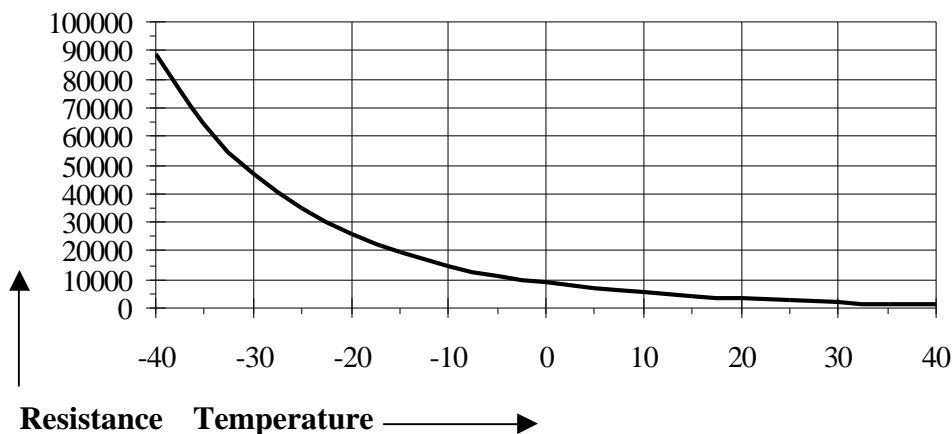
9.Sensors
9.1 General

The refrigerator part contains three temperature sensors, NTC, for measurement of the temperature. Two sensors are placed in the air, and one on the evaporator.
The sensor contact has a position wall and can only be correctly assembled in the socket on the PCB. The picture below also shows the freezer sensor.
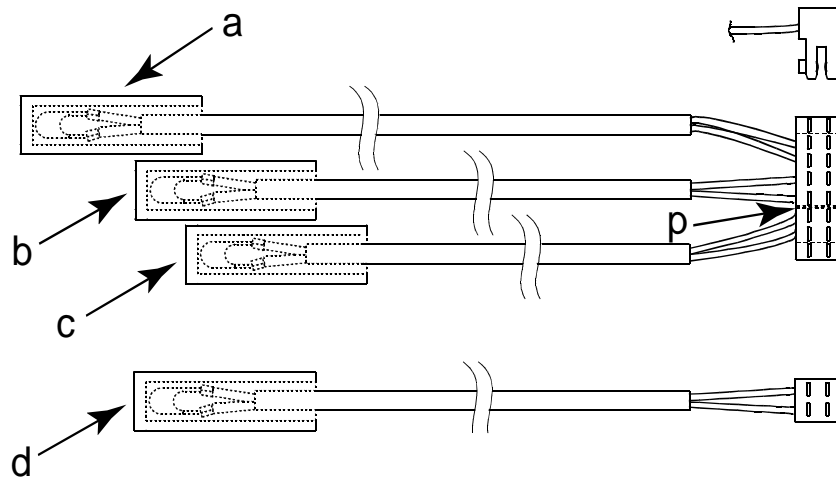
a) Sensor, 0° zone, white wiring with marking
b) Evaporator sensor, fridge, black wiring
c) Air sensor, fridge, white wiring
d) Freezer sensor, brown wiring. Single sensor.

The sensor characteristics are shown below.

Resistance – Temperature for NTC sensor

Resistance   Temperature ——▶

⚠ **Attention!**
It is extremely important that the different conduit entries are completely tight. If the entries are not tight, heat is transferred in to the sensors. This will have an influence on the regulating of the refrigerator and on what the thermometer displays.

11

9.2 Replacement of the air and evaporator sensors

Air sensor fridge
White wiring

Evaporator sensor
fridge. Black wiring

Air sensor 0° zone
White wiring with
marking.
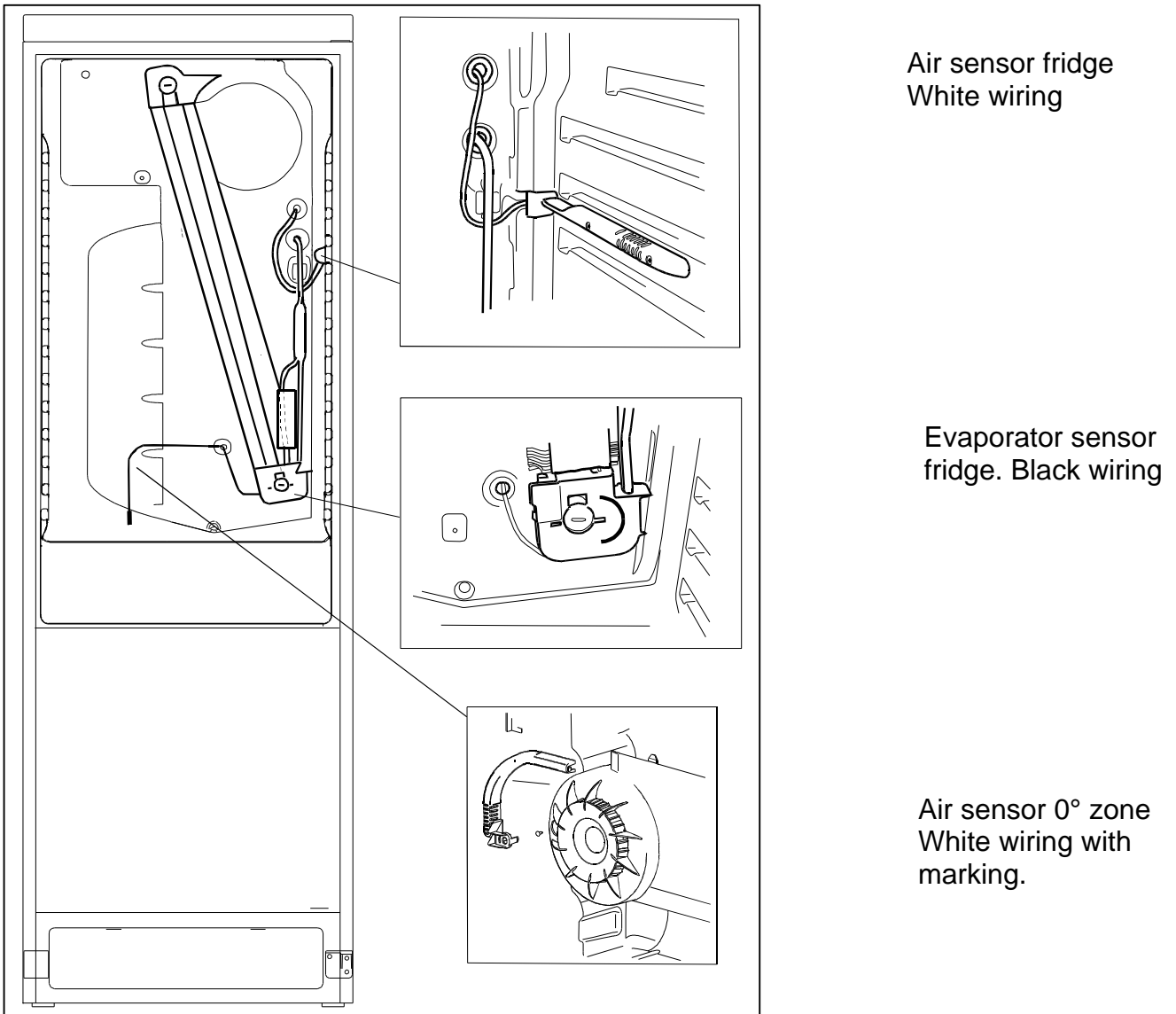
Operations:

Evaporator sensor:
1. Remove the lover fan module.
2. Loosen the lower evaporator holder and bulb fastener holder by turning the retaining screw a half turn.
3. Pull the bulb out of the bulb fastener.
4. Assembling in reverse order.

Air sensor:
1. Remove all protective covers, the upper fan module by also removing the connection to the fan.
2. Remove the two screws and loosen the air sensor holder.
3. The new air sensor wiring shall be routed under the suction tube according to the picture above.
4. Loosen the air sensor holder for the 0° zone from the air block, see picture **5** on page **9**.
5. Assembling in reverse order.

10. Printed circuit board (PCB)

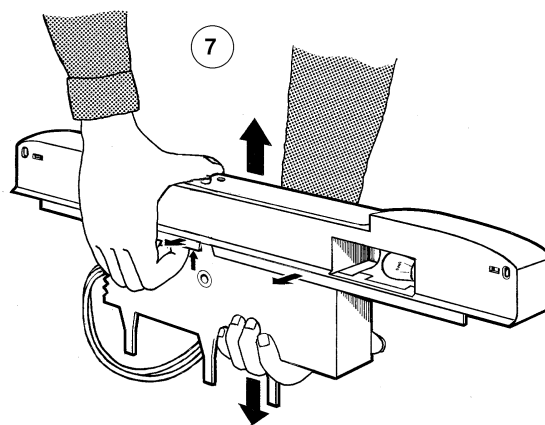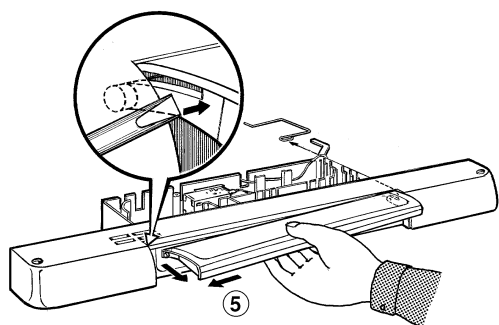### 10.1 Exchange of the printed circuit board

At exchange of the PCB, chassis complete with the PCB shall always be exchanged. Note that chassis complete is return coded and shall be returned to the factory in original packing together with the service order.

Operations at exchange of the PCB:

Open the control panel by ….
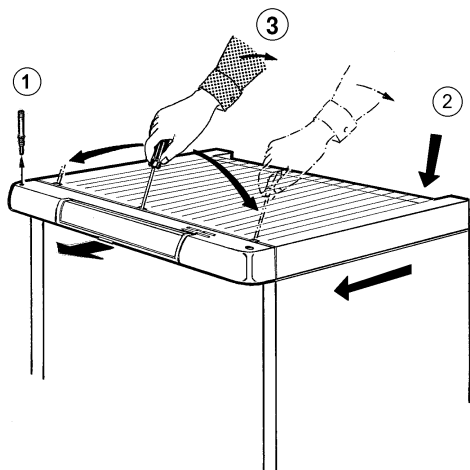
1. Loosen the upper door by unscrewing the pivot pin from above.
2. Dismantle the top by loosening the two rear screws and then pull the top forward in order to enable it to pass by the pivots. This action must be taken because the halogen transformer is too large to be removed through the front.
3. Loosen the front panel by way of the three snap fixings at the upper side of the panel.
4. Secure the door by taping or by screwing home the pivot pin.
5. Release the cover in front of the controls (only for Electrolux models).
6. Loosen the chassis by first snapping loose possible lamp glass.
7. Bend the front part carefully while simultaneously snapping the chassis from its fixings by pulling it in a downward direction.

Exchange of the printed circuit board without halogen lighting

Same as above except item 2. The top does not need dismantling – the front part can be taken out without removing the top.

11. Displays in the sign window

"3" - "9"	Steady light:	Displays the average temperature in the refrigerator.
"3" - "8"	Flashing:	Displayed during temperature setting. Disappears 5 seconds after temperature setting is complete.
"-"	Steady light:	Displayed if the temperature in the refrigerator is above +9º C.
	Steady light:	Sensor failure on air sensor.
	Steady light:	Sensor failure on evaporator sensor.
	Steady light:	Sensor failure on the 0° zone sensor.
C		Quick Chill