

New refrigerators, freezers  
and fridge-freezers with  
fixed furniture door technology

## Service Manual: H8-74-06

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## 1. Safety instructions



### **Danger!**

***Repairs should only be carried out by a qualified electrician.***

***Repairs which are not carried out properly may put the user at risk.***

**In order to avoid electrical shocks it is essential that the following instructions be observed:**

- In the event of a fault the casing and the frame may be live. Always disconnect the appliance from the mains prior to commencing with repairs.
- Touching live parts inside the appliance can result in serious electrical shocks.
- Disconnect the appliance from the mains prior to carrying out repairs.
- A residual current circuit breaker is always to be used when carrying out tests on live parts.
- Always ensure that an earthed conductor is properly connected. Earthed conductor resistance may not exceed figures stipulated in the standard. It is vital for ensuring the safety of persons and the functioning of appliances.
- After a repair has been carried out, a test in accordance with VDE 0701 or the respective national regulations and a functional and leak test are to be carried out.
- Do not touch any of the components in the appliance. The modules are also live!
- Observe instructions on electrostatic hazards.



### **Note!**

It is essential to observe the following instructions:

- Appliances must be cut off from the mains prior to carrying out any repairs. A residual current circuit breaker must be used when carrying out the required tests on current-carrying appliances.



Sharp edges: protective gloves must be worn.



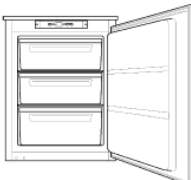

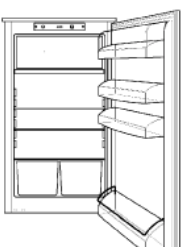
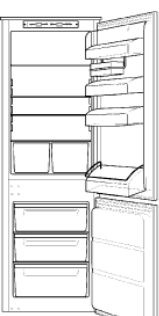
Electrostatic endangered components:  
observe handling instructions!

## 2. Introduction

This manual describes the new models of integrated built-in fridge-freezers, such as ITE 128..., IKE 188..., IKE 178..., IKE 238... or IKE 318-4-4T. This new series has the following modifications:

- new width of the housing: 556 mm instead of 540 mm for the sliding door model
- new Door on Door installation system
- quieter compressor
- perfect workmanship
- the models are available in electromechanical and electronic versions (with the exception of 1780 - the bi-compressor only electronic)
- control panel at the top of the appliance

The door on door series has a version with electronic and mechanical controls for each model, except for the bi-compressor, which is available as an electronic model only. The models are:

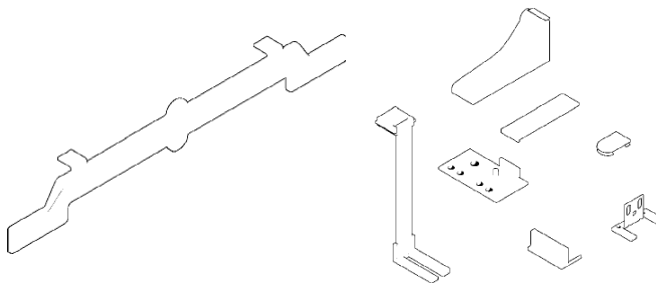
Type		Capacity (litres)	Controls
Freezer		76	electronic
Freezer		76	mechanical
Freezer		109	electronic
Freezer		109	mechanical
Refrigerator		157	electronic
Refrigerator		157	mechanical
Refrigerator		187	electronic
Refrigerator		187	mechanical
Refrigerator		227	electronic
Refrigerator		227	mechanical
3/4 star compartment		143	electronic
3/4 star compartment		143	mechanical
3/4 star compartment		173	electronic
3/4 star compartment		173	mechanical
3/4 star compartment		215	electronic
3/4 star compartment		215	mechanical
Bi-compressor		209 + 76	electronic

### 3. New Door on Door installation system

The new Door on Door installation system:

- easy installation
- immediate installation
- no checking on measurements
- applicable for all types of housing

The individual steps are described in the manual.

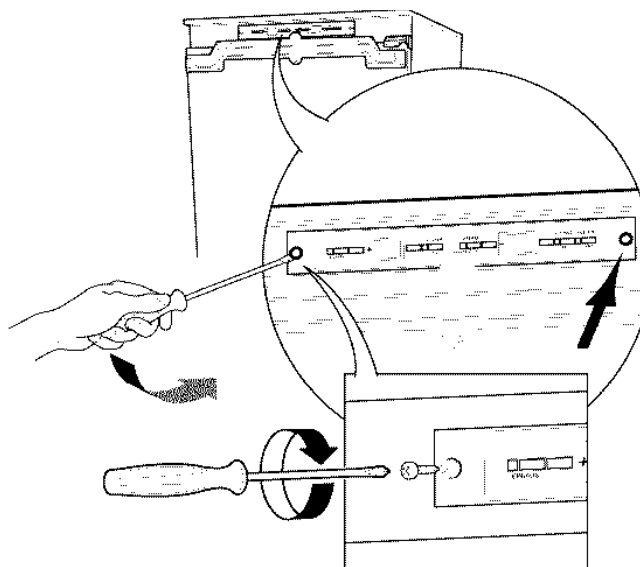


## 4. Accessibility

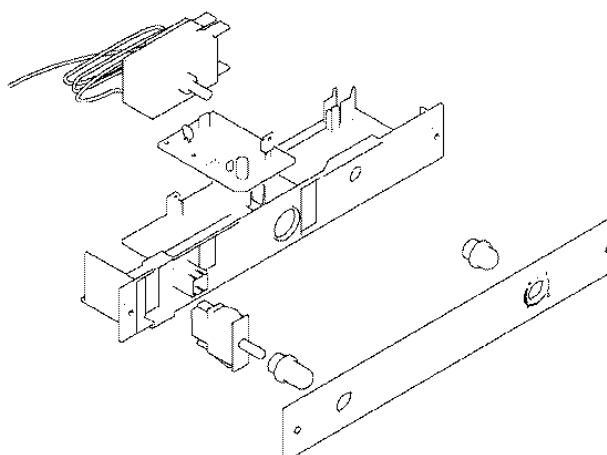
### 4.1 Refrigerator display

In order to remove the control panel, lever off the two cover tops on the left and on the right and loosen the screws.

The panel can now be removed.



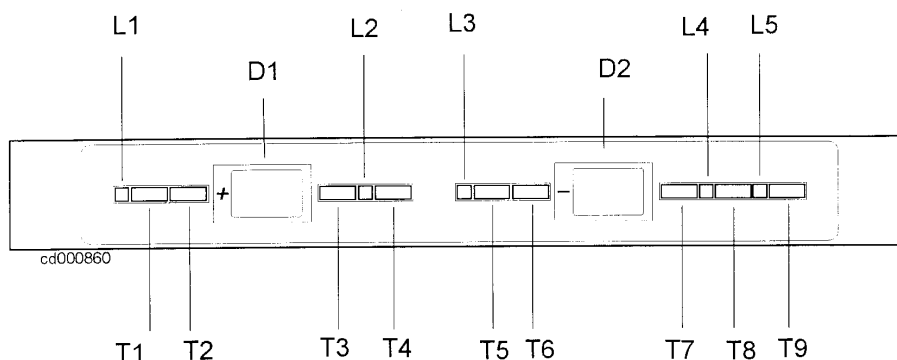
### 4.2 3/4 star compartment



## 5. Operation

### 5.1 Combination bi-compressor

The combination bi-compressor refrigerator is only illustrated with electronic controls.



#### Buttons

- T1 = ON/OFF refrigerator
- T2 = Increase in refrigerator temperature
- T3 = Decrease in refrigerator temperature
- T4 = Rapid-cool function
- T5 = ON/OFF freezer
- T6 = Increase in freezer temperature
- T7 = Decrease in freezer temperature
- T8 = Superfrost function
- T9 = Alarm off

#### LED

- L1 = Refrigerate mains control display (green)
- L2 = Rapid-cool display (yellow)
- L3 = Freeze mains control display (yellow)
- L4 = Frostmatic function
- L5 = Alarm (red)

#### Display

- D1 = Refrigerator
- D2 = Freezer

#### 5.1.1 Switching the appliance on and off

The ON/OFF button must be pressed to switch the appliance on; T1 for the refrigerator and T5 for the freezer. The respective appliance will be switched on immediately.

The ON/OFF button must be pressed for one second to switch the appliance off. The display will indicate 3, 2, 1 and the appliance will then be switched off.

#### 5.1.2 Setting the freezer temperature

If the temperature setting in the freezer is to be changed, the T6 button must be pressed to raise the temperature and the T7 button must be pressed to lower the temperature. Temperatures of between  $-15^{\circ}\text{C}$  and  $-24^{\circ}\text{C}$  can be set.

When the T6 or T7 buttons are pressed, the display will blink for 5 seconds and indicate the temperature setting which has been measured inside the freezer.

Switching the freezer compressor on and off depends on the external NTC sensor (environment).

### 5.1.3 Superfrost function

Pressing the T8 button will activate the superfrost function with which the compressor is supplied consistently for 54 hours. In order to deactivate the function, the T8 button must be pressed again before the 54 hours have lapsed. The LED 14 will light up for as long as the freeze function is activated.

### 5.1.4 Temperature alarm

If the freezer temperature exceeds  $-8^{\circ}\text{C}$  an alarm will be activated and the L5 LED and the display will blink. A buzzer will also sound. The buzzer is switched off by pressing the T9 button. The display will indicate the maximum temperature reached for 5 seconds and the L5 LED will blink. The L5 LED will only switch off if the temperature falls to below  $-8^{\circ}\text{C}$ .

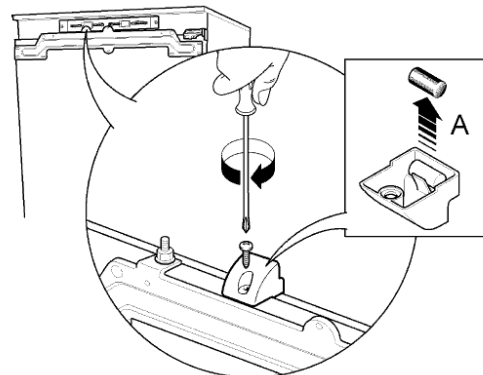
If the alarm switches off automatically without the T9 button having been pressed, the buzzer will switch off but the L5 LED and the display will continue to blink. If the T9 button is pressed, the L5 LED will stop blinking and the display will indicate the maximum temperature reached for a period of 5 seconds.

### 5.1.5 "Door open" alarm

This alarm is activated by a sensor (Reed) in the electronic system if a small magnet is detected on the refrigerator door.

Activation takes place after:

door opened (freezer)	80 seconds
door opened (refrigerator)	5 minutes
	(the alarm is not implemented for all of the models)



### 5.1.6 Setting the refrigerator temperature

In order to adjust the temperature set in the refrigerator, the T2 button (raise temperature) or the T3 button (lower temperature) is pressed. Temperature settings range from  $+2^{\circ}\text{C}$  to  $+8^{\circ}\text{C}$ .

If the T2 or T3 buttons are pressed, the display will blink for 5 seconds and the temperature setting will be indicated. The display indicates a fixed temperature which has been measured inside the refrigerator.

### 5.1.7 Refrigerator holiday function (only for coolers and bi-compressors)

The maximum possible temperature setting in the refrigerator compartment reaches  $+8^{\circ}\text{C}$ ; if the T2 button is pressed again after this temperature has been reached, the display will show "H" for holiday in order to indicate that the holiday function has been activated. For this function the refrigerator is maintained at a constant temperature of  $+15^{\circ}\text{C}$ .

Although food is not kept fresh at this temperature, it is very useful when the refrigeration compartment is not being used, since it prevents the occurrence of unpleasant smells.

In order to deactivate the function, set a different temperature until the "H" in the display goes off.



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### 5.1.8 Refrigerator controls

The compressor is activated when both the external NTC sensor (environment) and the NTC sensor for the evaporator measure the switch-on temperature. It is switched off when the temperature measured by the external NTC sensor (environment) reaches the switch-off temperature.

The interval time of the compressor may be extremely long if the room temperature is low. For this reason the refrigerator control function provides for a maximum deactivation period of six hours.

If room temperatures are high the activation times of the compressor may be extremely long or the compressor may remain constantly activated if the thermostatic setting has not been adjusted; for this reason the control function provides for a maximum activation period of 18 hours.

For the 4\*\*\*\* compartment only: in the case of low room temperatures an equalising resistance device is automatically activated by an electronic unit equipped with a sensor.

### 5.1.9 Rapid-cool function in the refrigerator (COOLMATIC)

Pressing the T4 button will activate the rapid-cool function, by means of which the temperature in the refrigerator is automatically set at +2°C. The function switches off automatically after 6 hours or by means of pressing the T4 button.

The yellow L2 LED lights up in order to indicate that the function has been activated.

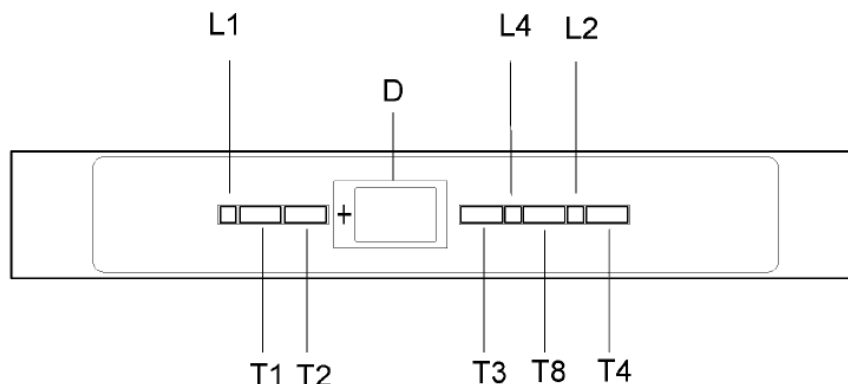
### 5.1.10 Demonstration mode

The demonstration mode is activated if the button for lowering the temperature and the ON/OFF button are pressed simultaneously for 5 seconds. The temperature inside the appliance must be higher than +10°C in order to be able to activate the function.

The display module is activated and the light is switched on as soon as the door is opened, but the compressor is not switched on.

## 5.2 3/4 star compartment

The combination bi-compressor refrigerator is only illustrated with electronic controls.



### Buttons

- T1 = ON/OFF refrigerator
- T2 = Increase in temperature
- T3 = Decrease in temperature
- T4 = Rapid-cool function
- T8 = Superfrost function

### LED

- L1 = Refrigerate ON/OFF (green)
- L2 = Rapid-cool function (yellow)
- L4 = Superfrost function (yellow)

The description of the functions, the buttons and the LEDs is the same as for the combination bi-compressor.

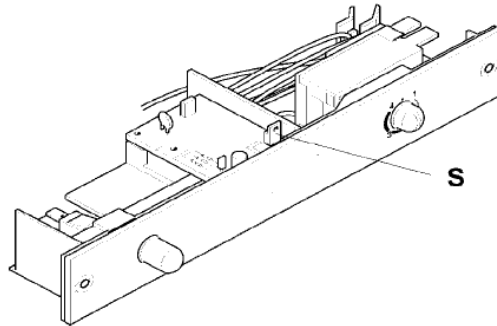
The superfrost function and the implementation of an equalizing resistance with automatic switch-on are different.

### 5.2.1 Superfrost function in the 4-star compartment

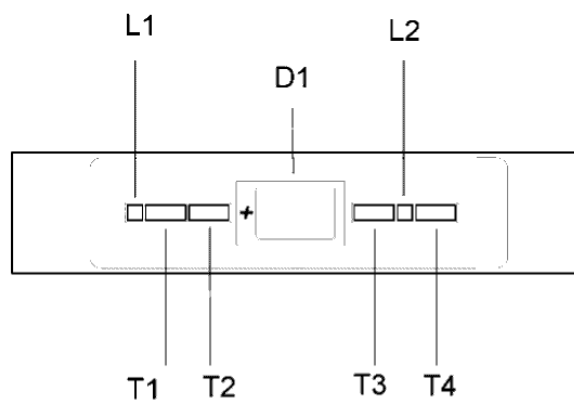
Pressing the T8 button activates the superfrost function, with which the appliance is automatically cooled down to a temperature of +2°C in the refrigerator for a period of 48 hours. In order to deactivate the function, the T8 button must be pressed again before the 48 hours have lapsed. The LED 14 will light up for as long as the superfrost function is activated.

### 5.2.2 Equalizing resistance with an automatic switch-on device (3/4 star compartment)

The 3/4-star compartment model is equipped with an equalizing resistance device which switches on automatically if the NTC sensor (S) on the electronic module measures a room temperature of less than +24°C.





## 5.3 Refrigerator display

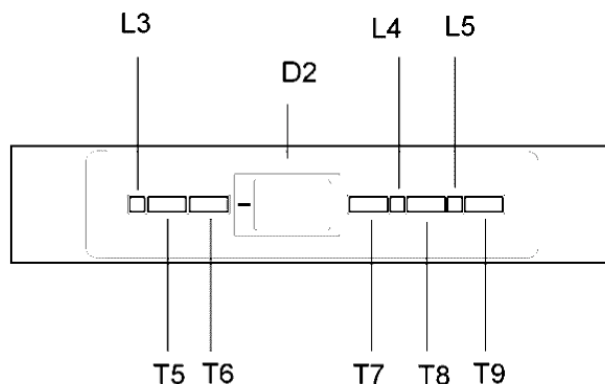


The functions, buttons and LEDs are the same as those of the combination bi-compressor.

### Symbols


"0" – "39" constant light:	display for the average temperature in the refrigerator
"2" – "8" blinking light:	display while adjusting the temperature; display switches off 5 seconds after completion of setting
"0" constant light:	display for a refrigerator temperature of less than 0°C
"H" constant light:	display of the holiday function
 constant light:	air NTC sensor failure
 constant light:	evaporator NTC sensor failure

## 5.4 Freezer display



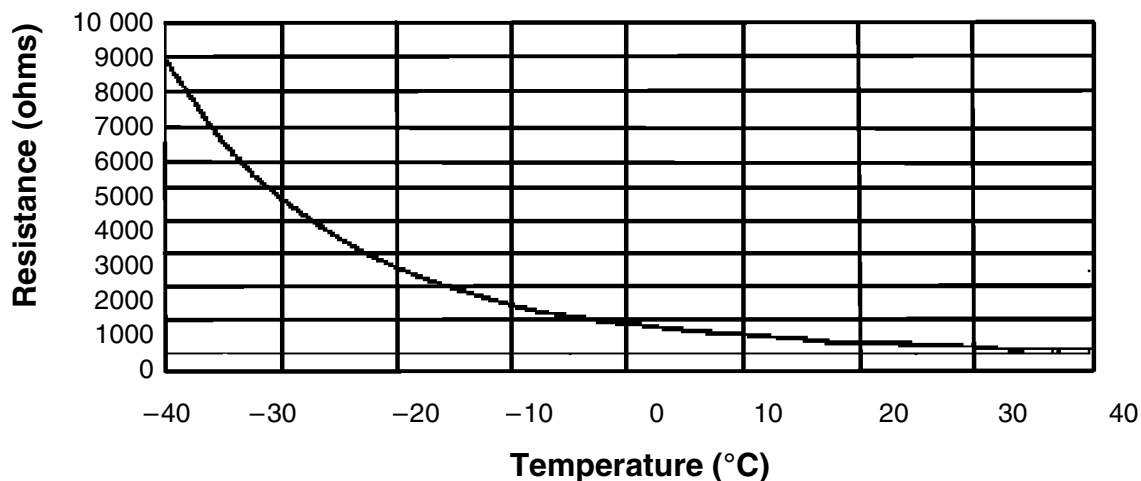
The functions, buttons and LEDs are the same as those of the combination bi-compressor.

### Symbols

“+39” – “-35” constant light:	display of the average temperature in the freezer
“-15” – “-24” blinking light:	display while adjusting the temperature; display switches off 5 seconds after completion of setting
“+39” – “-35” blinking light:	display if the freezer temperature exceeded $-8^{\circ}\text{C}$ and then dropped again
“+39” – “-8” constant light:	display of the highest temperature in the compartment after a power cut (when the re-set button is pressed, the current temperature is indicated for 5 seconds. At the same time the light is switched off)
 constant light:	failure of the NTC sensor in the freezer

## 6. NTC sensor failure

The NTC sensors have the following temperature resistances:




The electronic unit considers abnormal resistance levels to be a sensor failure. A symbol appears on the display.

If a sensor is faulty, the corresponding compressor is switched on for 30 minutes and off for 45 minutes.


All of the NTC sensors are foamed and can therefore not be replaced.

NTC sensor failure symbols:


refrigerator (air NTC sensor faulty):

symbol  in the thermometer

Refrigerator (evaporator NTC sensor faulty):

symbol  in the thermometer

Refrigerator (refrigerator NTC sensor faulty):

symbol  in the thermometer

If the surrounding temperatures at the point of installation are extreme (above +39°C and below -35°C) the NTC sensors may fail and result in error messages although the NTC sensors are not faulty.

If surrounding temperatures at the point of installation exceed +39°C and fall below -35°C, NTC sensor error messages should be ignored.

## 6.1 NTC sensor properties

Conversion chart

° C	$\Delta$	OHM
10	±0.6	5348
9	±0.6	5611
8	±0.6	5888
7	±0.6	6182
6	±0.6	6491
5	±0.4	6818
4	±0.4	7164
3	±0.4	7529
2	±0.4	7916
1	±0.4	8325
0	±0.4	8758
-1	±0.4	9216
-2	±0.4	9701
-3	±0.4	10215
-4	±0.4	10759
-5	±0.4	11337
-6	±0.6	11949
-7	±0.6	12598
-8	±0.6	13288
-9	±0.6	14019
-10	±0.6	14795
-11	±0.7	15620
-12	±0.7	16497
-13	±0.7	17429
-14	±0.7	18420
-15	±0.7	19475
-16	±0.8	20596
-17	±0.8	21791
-18	±0.8	23063
-19	±0.8	24418
-20	±0.8	25862
-21	±0.9	27402
-22	±0.9	29045
-23	±0.9	30797
-24	±0.9	32668
-25	±0.9	34666
-26	±1	36800
-27	±1	39082
-28	±1	41521
-29	±1	44131
-30	±1	46921
-31	±1	49910
-32	±1	53111
-33	±1	56541
-34	±1	60218
-35	±1	64161
-36	±1	68393
-37	±1	72932
-38	±1	77808
-39	±1	83046
-40	±1	88577