Flat Glass Display Case
KBF Series
User Manual



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TECHNICAL SPECIFICATIONS

MODEL	KBF-36FG	KBF-48FG	KBF-60FG	KBF-72FG
Number of doors	2			
Capacity (cu. ft)	10	13.7	17.6	21.5
Number of Shelves	2			
HP	1/3		1/2	2/3
Electrical	110V/60HZ/1P			
Amps	8.0	9.0	10.0	12.0
Temperature Range	36-41 °F			
Refrigerant	R134a			
Dimensions	35.4" x 27" x 48"	47.2" x 27" x 48"	59" x 27" x 48"	70.8" x 27" x 48"
Shipping Weight (lbs.)	463	562	661	749

INSTALLATION

TRANSPORTATION

1. To prevent the oil contained in the compressor from flowing into the cooling circuit, it is necessary to always carry, store and handle the unit in a vertical position and follow the instructions found on the packaging.
2. If the unit was placed in a non-vertical position during the transportation, keep the unit in a vertical position for approximately 24 hours before using the unit and turning it on, to allow the oil to flow back into the compressor.

UNPACKING

1. Remove the wooden baseboard and plastic covering.
2. Make sure that the unit has not been damaged.
3. Remove plastic film from all the stainless-steel panels, if applicable.

IMPORTANT: **The packaging should be kept away from children as it is potentially dangerous.**

Dispose of the packaging according to the regulation from the local authorities.

POSITION

1. Never clean the unit with pressurized water jets.
2. Place the unit on a flat and stable surface.
3. Install the unit in a location where it can be overseen by trained personnel.
4. For good ventilation, keep 20 cm (7 inches) between the unit and walls or other objects. Increase the distance if the objects surrounding are heating sources. When the unit is in place, press the brake on the wheels to keep it from moving.
5. Fix the shelves on the unit.

ELECTRICAL CONNECTION

Before inserting the plug into the electrical socket, carefully read the following precautions:

1. Make sure that the unit is correctly connected to a properly grounded outlet, in compliance with current safety standards.
2. Make sure that the voltage is in accordance with what is indicated on the rating label.
3. The current voltage available should be enough for the maximum energy required by the unit.
4. If necessary, use multiple outlets, which are all properly grounded, in compliance with current safety standards.
5. If in doubt, please consult qualified technicians.

THE REFRIGERATED SHOWCASE MUST BE CONNECTED TO AN ELECTRICAL SOCKET WITH A GROUND.

OPERATION

Before using, the unit should be completely cleaned as it comes into contact with food.

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1. Make sure that the main switch is in the (I) position, then plug in the unit.
2. Before starting the unit, ensure the sliding doors are properly closed.
3. Turn the main switch to the (I) position, the condensing unit will automatically start.
4. For lighting, press the lighting button. The lighting button is located on the thermostat.
5. If there is some condensation in front of the curved glass, please turn the switch to (I) position for defogging.
6. Allow the unit to reach proper temperature before loading with product.

WORKING TEMPERATURE ADJUSTMENT

To reset the temperature inside the showcase, please follow as below:

CAUTION: You are suggested not to reset the temperature controller frequently.

Temperature Controller Operation

Display

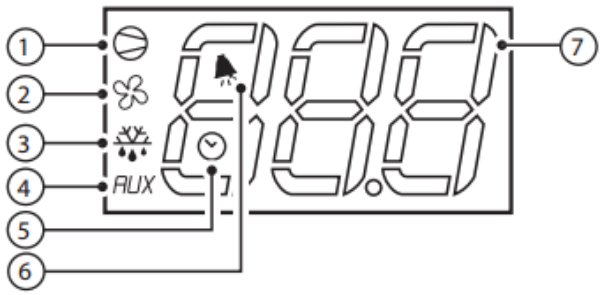


Fig. 3.a

but. no.	function	normal operation			start up
		ON	OFF	flash	
1	compressor	on	off	call	ON
2	fan	on	off	call	ON
3	defrost	on	off	call	ON
4	auxiliary output (AUX)	output active	output not active	-	ON
5	clock (RTC)	RTC available, enabled (tEN=1) and at least one time band has been set	RTC not available or not enabled (tEN=0) or no time band set		ON (if the clock is fitted)
6	alarm	alarm in progress	no alarm in progress	-	ON
7	digits	three digits with decimal point and range -199 to 999. See parameters /4, /5, /6 for the type of probe displayed, values in °C/°F and decimal point			

Table 3.a

Keypad (models C, S, X, Y)

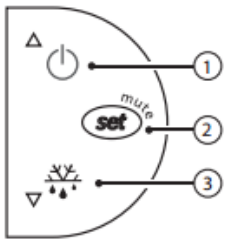


Fig. 3.b

but. no.	normal operation		start up	
	pressing the button alone	pressing with other buttons		
1	more than 3 s: switch ON/ OFF	pressed together with 3 activates / deactivates the continuous cycle	-	
2	- 1 s: displays/sets the set point - more than 3 s: accesses the parameter setting menu (enter password 22) - mutes the audible alarm (buzzer)	-	for 1 s RESET current EZY set	pressed together (2 and 3) activate parameter reset procedure
3	more than 3 s: activates / deactivates the defrost	pressed together with 1 activates / deactivates the continuous cycle	for 1 s displays firmware version	

Table 3.b

Table of Controller Parameters

Par.	Description	Type	Min	Max	UOM.	Def.	Parameter visible in models
PS	password	F	0	200	-	22	M/S (with 1 & 2 probes), X, Y, C
/2	probe measurement stability	C	1	15	-	4	M/S (with 1 & 2 probes), X, Y, C
/4	select probe displayed	F	1	3	-	1	M/ S (with 2 probes), X, Y, C
/5	select °C/°F	C	0(°C)	1(°F)	-	0	M/ S (with 1 & 2 probes), X, Y, C
/6	disable decimal point	C	0	1	-	0	M/S (with 1 & 2 probes), X, Y, C
/7	enable probe 2 alarm (model M only)	C	0	1	-	0	M
/C1	probe 1 offset	F	-50.0	50.0	(°C/°F)	0	M/S (with 1 & 2 probes), X, Y, C
/C2	probe 2 offset	F	-50.0	50.0	(°C/°F	0	M/S (with 2 probes), X, Y, C
/C3	probe 3 offset	F	-50.0	50.0	(°C/°F)	0	M/S (with 2 probes), X, Y, C
St	set point	S	r1	r2	°C/°F	4	M/S (with 1 & 2 probes), X, Y, C
rd	control differential	F	0	19.0	°C/°F	2	S (with 1 & 2 probes), X, Y, C
r1	minimum set point value	C	-50	r2	°C/°F	-50	M/S (with 1 & 2 probes), X, Y, C
r2	maximum set point value	C	r1	200	°C/°F	90	S (with 1 & 2 probes), X, Y, C
r3	select direct/reverse operation	C	0	2	-	0	M/S (with 2 probes), X, Y, C
r4	night-time set point delta	C	-50	50	°C/°F	3	S (with 1 & 2 probes), X, Y, C
c0	compressor and fan start delay on power-up	C	0	100	min	0	S (with 1 & 2 probes), X, Y, C
c1	minimum time between consecutive compressor starts	C	0	100	min	0	S (with 1 & 2 probes), X, Y, C
c2	minimum compressor off time	C	0	100	min	0	S (with 1 & 2 probes), X, Y, C
c3	minimum compressor on time	C	0	100	min	0	S (with 1 & 2 probes), X, Y, C
c4	compressor on time with duty setting	C	0	100	min	0	S (with 1 & 2 probes), X, Y, C
cc	continuous cycle duration	C	0	15	h	4	S (with 1 & 2 probes), X, Y, C
c6	temperature alarm bypass after continuous cycle	C	0	15	h	2	S (with 1 & 2 probes), X, Y, C
d0	type of defrost	C	0	4	-	0	S (with 1 & 2 probes), X, Y, C
dI	interval between defrosts	F	0	199	h/min (see dC)	8	S (with 1 & 2 probes), X,Y, C
dt	end defrost temperature set point/defrost temperature threshold with temp. control	F	-50	130	°C/°F	4	S (with 2 probes), X, Y, C
dP	maximum defrost duration	F	1	199	min/s (see dC)	30	S (with 1 & 2 probes), X, Y, C
d4	defrost when switching the instrument on	C	0	1	-	0	S (with 1 & 2 probes), X, Y, C
d5	defrost delay on power-up or when enabled by digital input	C	0	199	min	0	S (with 1 & 2 probes), X, Y, C
d6	freeze control temperature display during defrost	C	0	1	-	1	S (with 1 & 2 probes), X, Y, C

ALARM SIGNALS

When an alarm is activated, the display shows the corresponding message that flashes alternating with the temperature.

- If fitted and enabled, the buzzer and the alarm relay are also activated. All the alarms have automatic reset (that is, they stop when the causes are no longer present), except for alarm 'CHt' which has manual reset (instrument on/off using the UP button or by disconnecting the power supply).
- Pressing the SET button mutes the buzzer, while the code displayed, and the alarm relay only go off when the causes of the alarm have been resolved. The alarm codes are shown in the table below:

The possible alarm codes are shown in the following table:

alarm code	buzzer and alarm relay	LED	alarm description	reset	ENABLE ALARM parameters involved	easy	easy compact	easy split
E0	active	ON	probe 1 error= control	automatic	-	✓	✓	✓
E1	not active	ON	probe 2 error= defrost	automatic	d0= 0 / 1 / 4, F0= 1	✓	✓	✓
E2	not active	ON	probe 3 error= condenser/product	automatic	easy, easy compact [A4=10/11] easy split [A4=13/14]	✓	-	✓
IA	active	ON	external alarm	automatic	[A4 = 1] [+A7]	✓	-	✓
dOr	active	ON	open door alarm	automatic	easy, easy compact [A4=7/8][+A7] easy split [A4=7/8/10/11][+A7]	✓	-	✓
LO	active	ON	low temperature alarm	automatic	[AL] [Ad]	✓	✓	✓
HI	active	ON	high temperature alarm	automatic	[AH] [Ad]	✓	✓	✓
EE	not active	ON	unit parameter error	not possible	-	✓	✓	✓
EF	not active	ON	operating parameter error	manual	-	✓	✓	✓
Ed	not active	ON	defrost ended by timeout	on first defrost ended correctly	[dP] [dt] [d4] [A8]	✓	✓	✓
dF	not active	OFF	defrost running	automatic	[d6=0]	✓	✓	✓
cht	not active	ON	dirty condenser pre-alarm	automatic	easy, easy compact [A4=10] easy split [A4=13]	✓	-	✓
CHt	active	ON	dirty condenser alarm	manual	easy, easy compact [A4=10] easy split [A4=13]	✓	-	✓
EtC	not active	ON	clock alarm	by setting the time	if bands are active	✓	-	✓
SrC (easy split only)	not active	ON	maintenance request signal	manual, set HMr=1	[HMP] [HMd] [HMr]	-	-	✓

MAINTENANCE

CLEANING

For health standards and good quality of beverages or foods, clean interiors of the unit as often as possible.

***CAUTION**: Do not clean the unit by means of a water jet or pressurized washer.*

1. Before carrying out cleaning, turn the unit off and remove the power plug.
2. Do not use abrasive powders that might damage the interior parts of the showcase.
3. Use neutral soap and warm water to wash the interiors. Rinse carefully with water to remove any soap residues.
4. To maintain a high standard of working performance, leave the unit turned on during the night and day to avoid deposits.

***CAUTION**: Do not use any damaging solvents (petrol, alcohol, etc.) for cleaning the unit. The unit*

may get damaged. Do not use and sharp objects for cleaning. The unit may be cleaned with a damp towel but should never directly come in contact with water. After cleaning the unit, make sure all parts are dried completely.

INSTRUCTIONS FOR DISPOSAL

When replacing your old unit with a new one, comply with the following information:

- Old units are not to be disposed of as regular waste. Valuable raw materials can be obtained by recycling old units.

Render your old unit unusable:

- Cut off and remove the main power plug from the unit, then discard separately.

CAUTION: Substances and gases in the thermal insulation must be disposed of professionally. Ensure that refrigeration tubing is not damaged prior to disposal. Please discard the unit according to the regulations of local law.

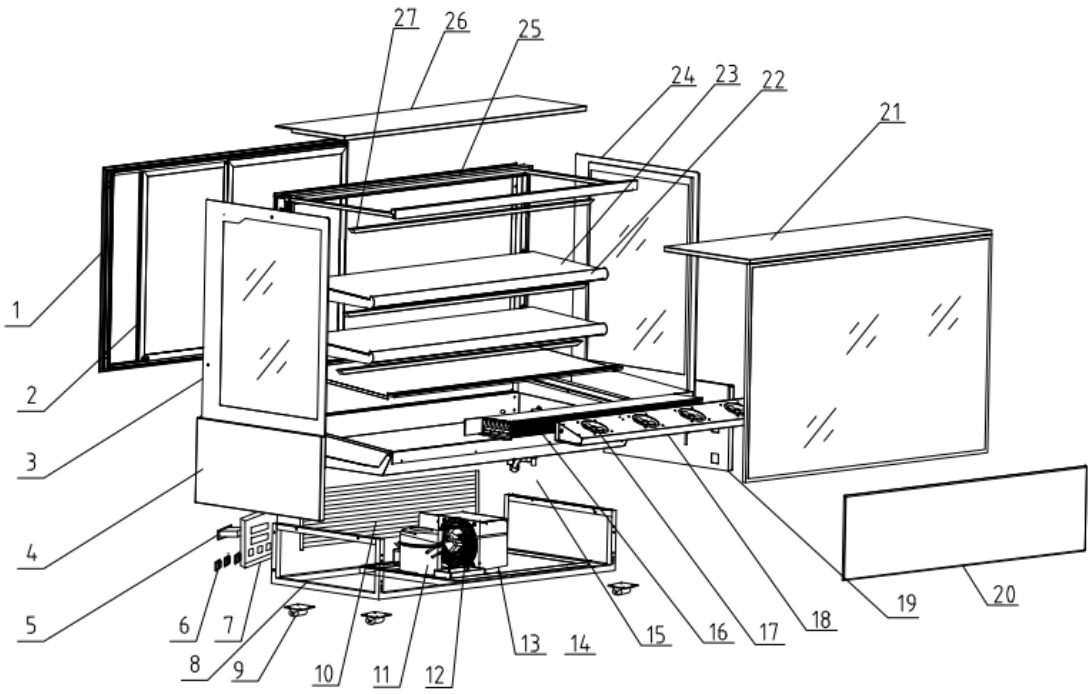
Troubleshooting

System	Possible Reasons	Solution	Remark
No power input /power direction lamp does not light	Broken fuse	Replace	As for authorized service department to check and repair
	Poor connection of plug and socket	Repair or replace the socket	
	Failure in input control circuit		
Compressor does not work	Thermostat does not work	Replace	
	Thermostat is not on the working position	Turning to the working position	
	Poor contract of thermostat	Insert the plug tightly	
	Loose plug pins in the starter	Insert the plug tightly	
	Broken compressor	Replace	
	Broken starter or capacitor	Repair or replace	
Compressor runs, but the temperature in the showcase is high	Circulating temperature is too high	Adjust the thermostat properly	Ask for authorized service department to check and too much dust and dirt on repair it
	Too much dust and dirt on the condenser	Clean it on time	
	Frost on the evaporator is too thick	Stop the machine to defrost. Set the temperature higher	
	Thermostat is out of work	Replace	

Condenser fan does not run	The capacitor of the fan is out of work	Replace	
	The ball-bearing of the fan motor lacks oil	Fill oil	
	The winding of the fan motor is damaged	Replace	
Compressor starts/stops frequently	The winding of the compressor is short circuit	Check with a multi meter, replace the compressor.	
	Poor contact of the socket	Repair or replace	
The fan of the evaporator does not work	The fan motor is damaged	Replace	

WARNING: If the machine has any problems or has been damaged, do not try to repair or replace it by yourself. Please contact KOOL-IT technical service at 1-888-275-4538.

PARTS BREAKDOWN



MODEL: KBF-36FG

Part	Description	MVP Code	MVP Description
1	Door frame	137-0005	#M3.0.1 DOOR FRAME
2	Sliding door	137-0011	#M3.0.2 SLIDING DOOR
3	Left glass	137-0054	#M7.0.3 LEFT GLASS
4	Left panel	137-0055	#M7.0.4 LEFT PANEL
5	Thermostat	137-0002	#CAREL01 THERMOSTAT
6	Switch	137-0056	#M7.0.5 SWITCH
7	Control Panel	137-0057	#M7.0.6 CONTROL PANEL
8	Under frame	137-0016	#M43.Z01 UNDER FRAME
9	Caster	137-0060	#M7.3C CASTER
10	Backboard	137-0012	#M3.0.8 BACKBOARD
11	Compressor	137-0068	#SECOP.2 COMPRESSOR
12	Condenser fan	137-0071	#YZF6-13 CONDENSER FAN
13	Condenser	137-0013	#M3.CN.1 CONDENSER
14	Water box	137-0059	#M7.0.9 WATER BOX
15	Drain-pipe	137-0062	#M3.EV.1 EVPORATOR
16	Evaporator	137-0026	#4.EV.1 EVAPORATOR
17	Evaporator fan	137-0001	#12038A 1HBL EVAPORATOR FAN
18	Fan board	137-0006	#M3.0.10 FAN BOARD
19	Right panel	137-0047	#M7.0.11 RIGHT PANEL
20	Front Panel		2
21	Front glass	137-0008	#M3.0.13 FRONT GLASS
22	Shelf		1
23	Shelf glass	137-0010	#M3.0.15 SHELF GLASS
24	Right glass	137-0052	#M7.0.16 RIGHT GLASS
25	Body	137-0004	#M3.0.0 BODY
26	Top panel	137-0017	#M3.ZS.1 TOP PANEL
27	Lamp	137-0015	#M3.LP.1 LAMP

MODEL: KBF-48FG

Part	Description	MVP Code	MVP Description
1	Door frame	137-0019	#M4.0.1 DOOR FRAME
2	Sliding door	137-0024	#M4.0.2 SLIDING DOOR
3	Left glass	137-0054	#M7.0.3 LEFT GLASS
4	Left panel	137-0055	#M7.0.4 LEFT PANEL

5	Thermostat	137-0002	#CAREL01 THERMOSTAT
6	Switch	137-0056	#M7.0.5 SWITCH
7	Control Panel	137-0057	#M7.0.6 CONTROL PANEL
8	UNDER FRAME	137-0028	#M4.Z01 UNDER FRAME
9	Caster	137-0060	#M7.3C CASTER
10	Backboard	137-0025	#M4.0.8 BACKBOARD
11	Compressor	137-0068	#SECOP.3 COMPRESSOR
12	Condenser fan	137-0071	#YZF6-13 CONDENSER FAN
13	Condenser	137-0013	#M3.CN.1 CONDENSER
14	Water box	137-0059	#M7.0.9 WATER BOX
15	Drain-pipe	137-0062	#M4.EV.1 EVPORATOR
16	Evaporator	137-0026	#4.EV.1 EVAPORATOR
17	Evaporator fan	137-0001	#12038A 1HBL EVAPORATOR FAN
18	Fan board	137-0020	#M4.0.10 FAN BOARD
19	Right panel	137-0047	#M7.0.11 RIGHT PANEL
20	Front Panel	137-0021	#M4.0.12 FRONT PANEL
21	Front glass	137-0008	#M4.0.13 FRONT GLASS
22	Shelf	137-0023	#M4.0.14 SHELF
23	Shelf glass	137-0051	#M7.0.15 SHELF GLASS
24	Right glass	137-0052	#M7.0.16 RIGHT GLASS
25	Body	137-0019	#M4.0.0 BODY
26	Top panel	137-0029	#M4.ZS.1 TOP PANEL
27	Lamp	137-0027	#M4.LP.1 LAMP

MODEL: KBF-60FG

Part	Description	MVP Code	MVP Description
1	Door frame	137-0045	#M7.0.1 DOOR FRAME
2	Sliding door	137-0053	#M7.0.2 SLIDING DOOR
3	Left glass	137-0054	#M7.0.3 LEFT GLASS
4	Left panel	137-0055	#M7.0.4 LEFT PANEL
5	Thermostat	137-0003	#JUCHUANG THERMOSTAT
6	Switch	137-0056	#M7.0.5 SWITCH
7	Control Panel	137-0057	#M7.0.6 CONTROL PANEL
8	Under frame	137-0065	#M7.Z01 UNDER FRAME
9	Caster	137-0060	#M7.3C CASTER
10	Backboard	137-0058	#M7.0.8 BACKBOARD
11	Compressor	137-0068	#SECOP.3 COMPRESSOR

12	Condenser fan	137-0071	#YZF6-13 CONDENSER FAN
13	Condenser	137-0013	#M7.CN.1 CONDENSER
14	Water box	137-0059	#M7.0.9 WATER BOX
15	Drain-pipe	137-0062	#M7.EV.1 EVPORATOR
16	Evaporator	137-0063	#M7.EV.1 EVAPORATOR
17	Evaporator fan	137-0001	#12038A 1HBL EVAPORATOR FAN
18	Fan board	137-0046	#M7.0.10 FAN BOARD
19	Right panel	137-0047	#M7.0.11 RIGHT PANEL
20	Front Panel	137-0048	#M7.0.12 FRONT PANEL
21	Front glass	137-0008	#M7.0.13 FRONT GLASS
22	Shelf	137-0050	#M7.0.14 SHELF
23	Shelf glass	137-0051	#M7.0.15 SHELF GLASS
24	Right glass	137-0052	#M7.0.16 RIGHT GLASS
25	Body	137-0019	#M4.0.0 BODY
26	Top panel	137-0066	#M7.ZS.1 TOP PANEL
27	Lamp	137-0064	#M7.LP.1 LAMP

MODEL: KBF-72FG

Part	Description	MVP Code	MVP Description
1	Door frame	137-0031	#M6.0.1 DOOR FRAME
2	Sliding door	137-0038	#M6.0.2 SLIDING DOOR
3	Left glass	137-0054	#M7.0.3 LEFT GLASS
4	Left panel	137-0055	#M7.0.4 LEFT PANEL
5	Thermostat	137-0002	#CAREL01 THERMOSTAT
6	Switch	137-0056	#M7.0.5 SWITCH
7	Control Panel	137-0057	#M7.0.6 CONTROL PANEL
8	Under frame	137-0042	#M6.Z01 UNDER FRAME
9	Caster	137-0060	#M7.3C CASTER
10	Backboard	137-0039	#M6.0.8 BACKBOARD
11	Compressor	137-0068	#SECOP.4 COMPRESSOR
12	Condenser fan	137-0071	#YZF6-13 CONDENSER FAN
13	Condenser	137-0061	#M7.CN.1 CONDENSER
14	Water box	137-0059	#M7.0.9 WATER BOX
15	Drain-pipe	137-0062	#M7.CS.1 EVPORATOR
16	Evaporator	137-0040	#M6.EV.1 EVAPORATOR

17	Evaporator fan	137-0001	#12038A1HBL EVAPORATOR FAN
18	Fan board	137-0032	#M6.0.10 FAN BOARD
19	Right panel	137-0047	#M7.0.11 RIGHT PANEL
20	Front Panel	137-0048	#M7.0.12 FRONT PANEL
21	Front glass	137-0035	#M6.0.13 FRONT GLASS
22	Shelf	137-0036	#M6.0.14 SHELF
23	Shelf glass	137-0037	#M6.0.15 SHELF GLASS
24	Right glass	137-0052	#M7.0.16 RIGHT GLASS
25	Body	137-0030	#M6.0.0 BODY
26	Top panel	137-0043	#M6.ZS.1 TOP PANEL
27	Lamp	137-0041	#M6.LP.1 LAMP
28	Middle support	237-0033	#M6.0.11 MIDDLE SUPPORT

ELECTRICAL DIAGRAM

