

INSTRUCTION MANUAL

Refrigerated Counters

Warranty

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Please read the user' s manual before you use this product.
If you request unnecessary services, you may waste money.
Thus, fix simple troubles by yourself which you have found.



Content:

Preface.....	2
Use of the equipment.....	3
Technical features.....	3
Operation.....	3
Control unit.....	4
Handling.....	4
Installation procedure.....	5
Connecting to the main power supply.....	5
Maintenance instructions.....	6
Cleaning.....	6
Cleaning the refrigerator surface.....	6
Cleaning the inside of the refrigerator.....	7
Cleaning the condenser.....	7
Troubleshooting.....	7
Technical service.....	7
Configuration Sketch Map.....	8
Operating Instruction.....	8
Electrical Control Circuit Diagram.....	12
Technical Parameters.....	13
Official Approval And Rules.....	13



1. Preface

This instruction manual provides all the necessary information regarding:

- ▲ use of the refrigerator
- ▲ technical specifications
- ▲ installation and handling
- ▲ operator procedures and instructions
- ▲ maintenance operation

The manual is to be considered an integral part of the refrigerator and should be stored in a safe place for future consult to permit a good working life of the refrigerator.



ATTENTION

The manufacturer cannot be held liable in the following cases:

- improper installation (not in accordance with the guidelines indicated herein)
- misuse of the refrigerator
- power supply defects
- improper or inadequate maintenance
- unauthorised modification or tampering
- use of non-original spare parts
- partial or total failure to comply with the instructions

All electrical equipment can be hazardous to health. Current standards and legal requirements must be complied with during the installation and use of any equipment.



2. Use of the equipment

The refrigerator are for preserving fresh perishable foodstuffs, with an in-built refrigerated unit.

The operating temperature for refrigeration is:

- between -2°C and $+8^{\circ}\text{C}$ at room temperature of $+43^{\circ}\text{C}$ an 60%RD.

The operating temperature for frozen food maintenance is:

- between -18°C and -22°C at room temperature of $+43^{\circ}\text{C}$ an 60% RD.

3. Technical features

The refrigerator is a ventilated system, the evaporator is in a separate insulated box on the top. All the materials used in the manufacture of this unit are guaranteed to be suitable for use with foodstuffs. The gases used in refrigerator is R134a; in the refrigerator for frozen food maintenance is R404a.

The refrigerating circuit are in compliance with the current normative.

4. Operation

The gas in the refrigerating circuit is in the first time compressed, liquefied and then evaporated in the ventilated evaporator, situated on the top of the container.

This cycle involves the absorption of heath from the air in the refrigerator compartment and the reason is cooled. The heat produced is then dissipated to the outside environment by a condenser unit located on the top of the refrigerator.



5. Control unit

The refrigerator is command from a “digital control unit” and a “main switch pilot light” in the top panel of the refrigerator.

The “main switch pilot light” is for turning on the power supply.

The red pilot light comes on to indicate that the unit is connected to the main electricity and to start work.

The red pilot light comes off to indicate that the unit is disconnected and don’ t work. The “digital control unit” is for the regulation of all parameters to provide the correct working of the refrigerator. Please consult all parameters in the attachment manual of the “digital control unit”.

This manual is part of the instruction manual and is very important in case of service.

6. Handling

The refrigerator arrive in PET film and packed in cardboard box on a wood pallet.



The refrigerator must be transported and handled with care to avoid posing a hazard to persons or property.

Never place a refrigerator with an in-built refrigerated unit on its side or turn it upside

down as this may damage or impair operation of the refrigerated unit.

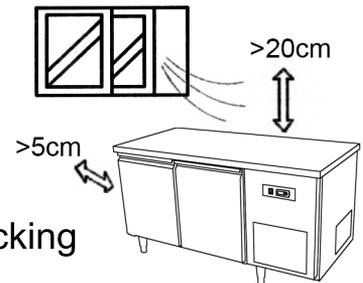
We can not held liable for any damage or defects arising directly or indirectly from improper handling of the equipment or non-compliance with the safeguards illustrated above.





7. Installation procedure

▲ Place the refrigerator in the coolest and best ventilated part of the room. Don't install the refrigerator in the near of heat and direct sunlight sources.



▲ Remove the straps securing the cardboard packing

Remove the cardboard. Covering

Remove the PET protection film

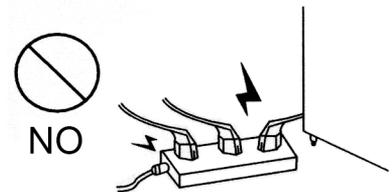
▲ Clean the refrigerator with mild detergent and then dry it with a soft cloth.



8. Connecting to the main power supply

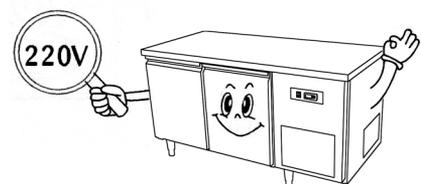
 This operation must be carried out by professionally and qualified persons.

The refrigerator are supplied complete with a power supply cable for the connection to the main power supply. A thermomagnetic circuit breaker (not supplied) must be installed between the mains power point and the power supply cable of the refrigerator.



Before proceeding make sure that:

▲ the mains voltage corresponds to the voltage on the refrigerator 220V/50Hz/1Ph; to ensure proper operation it is essential for the power supply voltage to come within a range of +/- 6% of the unit's rated voltage





- ▲ the electric system to which the refrigerator is sized to cater for the rated electric output of the buffet unit being installed
- ▲ the electronic system to which the refrigerator is connected is made in compliance with current standard requirements
- ▲ the electric connections and the installation of the thermomagnetic circuit breaker have been done by qualified person.

Connecting steps:

- ▲ Install a thermomagnetic circuit breaker suited to the rated output of the unit being installed
- ▲ Connect the refrigerator unit to the thermomagnetic circuit breaker outlet
- ▲ Check that the refrigerator is in order as demonstrated by the pilot light incorporated in the main switch coming on

9. Maintenance instructions

The smooth operation and life of the equipment are mainly determined by correct and regular maintenance

Cleaning:

Regular cleaning of the refrigerator unit is strongly recommended each month. Please follow the instructions below.

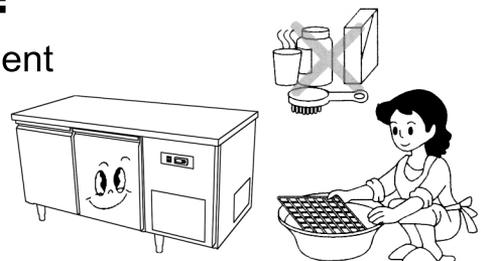


Disconnect the refrigerator power supply cable from the mains prior to carrying out any type of cleaning operation.

Cleaning the refrigerator surface:

Clean the refrigerator with mild detergent and then dry it with a soft cloth.

Do not use abrasive detergents!



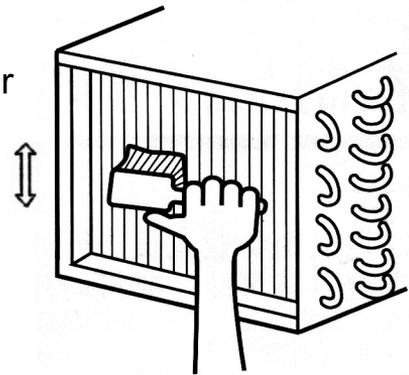


Cleaning the inside of the refrigerator:

Clean the inside area min. each month with a detergent suitable for use with foodstuffs.

Cleaning the condenser:

For an efficient operation of the refrigerator it is advisable to clean the condenser regularly approx. every 4 months with a dry brush or vacuum cleaner.



10. Troubleshooting

Refrigerator stops working (light off):

- ☆ Power supply failure

▲ Remedies:

- ☆ Check that the plug is inserted properly in the socket
- ☆ Check that the switch on/off
- ☆ Check that the mains voltage powers the plug

Refrigerator temperature go up:

- ☆ Unit too near to a heat source
- ☆ Condenser dirty or close

▲ Remedies:

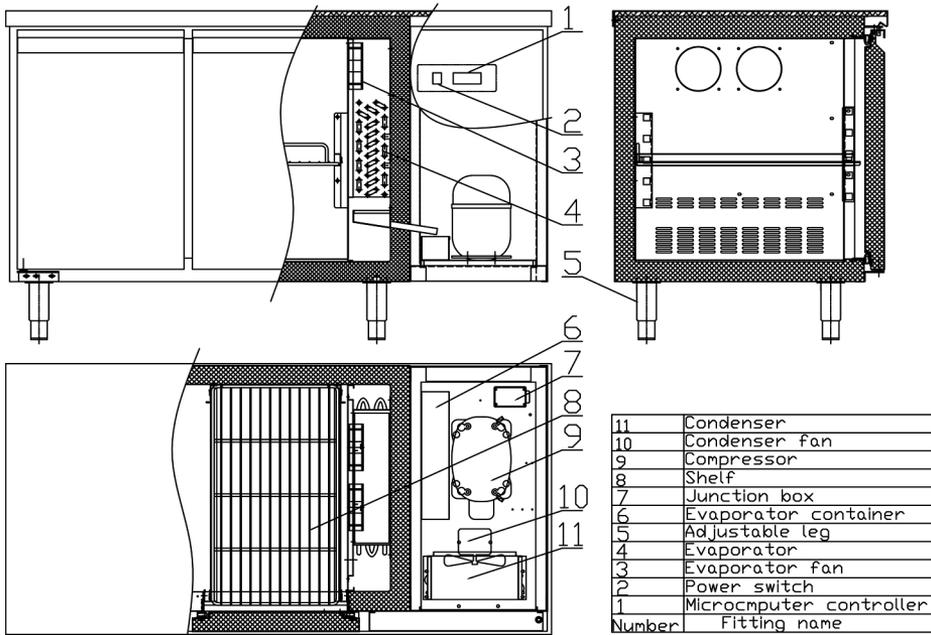
- ☆ Move the counter or the heat source further away
- ☆ Clean the condenser

11. Technical service

For technical service please contact the dealer technical department and give him the serial n°, and the date of buy.



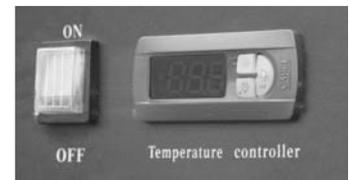
12. Configuration Sketch Map



Operating Instruction

Por. 1 CAREL PJ32C

1. New upright air-cooling refrigerator should be opened and ventilate it before it is in use. After that, users should use warm water clean its inside.
2. After connecting the power supply, press the “POWER” switch on the controller keyboard (Red Indicator Light ON), the fridge will come to work. The microcomputer controller, installed in the controller keyboard, could automatically adjust the temperature ranges. This intelligent digital controller works as: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.

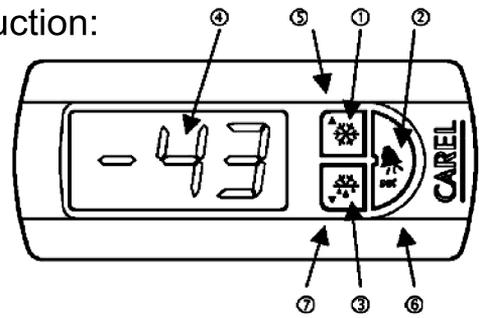




3. Microcomputer Controller Operation Instruction:

4. Microcomputer panel sketch map, meanings of running indicator light and LED showing.

5. Above figure is front panel “pug-in”: display and key-press. The display can show 3-figure number (refer to ④, above fig) and three key-presses with LED background light (refer to ①, ②, ③, above fig).



(Mod. CAREL PJ32C)

6. ① LED show the state (on/off) of performance component (compressor usually):

Lighting all the time	Compressor is running
Blinking continuously	Waiting for starting of compressor
Blink twice and pause one times	Performing uninterruptedly

② Alarming signal: only top type matching with alarming signal and key-press with background light LED (red).

③ Defrosting process. LED state:

Lighting all the time	Start defrosting
Blinking continuously	Wait for defrosting

④ According to function in different statuses, LED will display information as follows:

▲ Running normally: The temperature measured by environment sensor or second sensor;



- ▲ Setting parameter: Code of parameter and corresponding numerical value;
 - ▲ During alarming: Corresponding code of alarming and temperature appear alternatively. Measured temperature will display in the form of “ °C ”.
- Temperature range: -50~90 °C.

Function of key-press:

The three key-presses (⑤, ⑥ and ⑦) control the on/off of electricity and set parameters. Function of the three key-presses can divide into two parts: one is common operation, the other is used for modifying parameter.



During normally running, pressing the ⑤ button for more than 5 seconds can activate or stop sustaining running state of compressor (users can't adjust privately)



Running normally:

- Turn off the buzzer;
- Display or set point value;
- If no alarming, press the ⑥ for more than 5 seconds: Enter into menu for setting 'F (frequent)' (users can't adjust privately).



Running normally:

- Press ⑦ button for more than 5 seconds: start to activate a manual defrost.

Modify parameter: (users can't adjust privately)

7. Set the control temperature (users can't adjust privately)

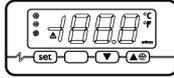
The set temperature is 4°C. The process is as follows:

1. Press ⑥ for several seconds, and then the set value will be displayed;
2. Immediately, the preset value starts blinking;
3. Modify the numerical value by adjusting button ⑤ or ⑦, until you satisfy it;
4. Press button ⑥ again to confirm the new set value.



Por. 2 EVK203

2 USER INTERFACE



2.1 Turning on/off the instrument

To turn on the instrument you have to supply it; to turn it off it is enough to cut off the power supply.

Through the digital input (only EVK213 and EVK223) it is also possible to turn off the instrument at a distance (or turn off the instrument via software; in this case the instrument remains connected to the power supply and the regulators are turned off).

2.2 The display

If the instrument is turned on, during the normal operation the display will show the quantity you have set with parameter P5:

- if P5 = 0, the display will show the cabinet temperature
- if P5 = 1, the display will show the working setpoint
- if P5 = 2, the display will show the evaporator temperature
- if P5 = 3, the display will show "cabinet temperature - evaporator temperature"
- if P5 = 4, the display will show the condenser temperature (only EVK253).

2.3 Showing the cabinet temperature

- make sure the keyboard is not locked and no procedure is running
- press \downarrow 2 s: the display will show the first available label
- press \uparrow or \downarrow to select "Pb1"
- press **set**

To quit the procedure:

- press **set** or do not operate 60 s
- press \uparrow or \downarrow as long as the display shows the quantity you have set with parameter P5 or do not operate 60 s.

2.4 Showing the evaporator temperature

- make sure the keyboard is not locked and no procedure is running
- press \downarrow 2 s: the display will show the first available label
- press \uparrow or \downarrow to select "Pb2"
- press **set**

To quit the procedure:

- press **set** or do not operate 60 s
- press \uparrow or \downarrow as long as the display shows the quantity you have set with parameter P5 or do not operate 60 s.

If the evaporator probe is not enabled (parameter P3 = 0), the label "Pb2" will not be shown.

2.5 Showing the condenser temperature (only EVK253)

- make sure the keyboard is not locked and no procedure is running
- press \downarrow 2 s: the display will show the first available label
- press \uparrow or \downarrow to select "Pb3"
- press **set**

To quit the procedure:

- press **set** or do not operate 60 s
- press \uparrow or \downarrow as long as the display shows the quantity you have set with parameter P5 or do not operate 60 s.

If the condenser probe is not enabled (parameter P4 = 0), the label "Pb3" will not be shown.

2.6 Activating the defrost by hand

- make sure the keyboard is not locked and no procedure is running
- press \uparrow 4 s.

If the function of the evaporator probe is the one of defrost probe (parameter P3 = 1) and to the defrost activation the evaporator temperature is above the one you have set with parameter d2, the defrost will not be activated.

2.7 Locking/unlocking the keyboard

To lock the keyboard:

- make sure no procedure is running
- press **set** and \downarrow 2 s: the display will show "Loc" 1 s.

If the keyboard is locked, you will not be allowed to:

- show the evaporator temperature
- show the condenser temperature (only EVK253)
- activate the defrost by hand
- modify the working setpoint with the procedure related in paragraph 3.1 (you also can modify the working setpoint through parameter SP).

These operations provoke the visualization of the label "Loc" 1 s.

To unlock the keyboard:

To unlock the keyboard:

- press **set** and \downarrow 2 s: the display will show "UnL" 1 s.

2.8 Silencing the buzzer

- make sure no procedure is running
- press a button (the first pressure of the button does not provoke its usual effect).

3 SETTINGS

3.1 Setting the working setpoint

- make sure the keyboard is not locked and no procedure is running
- press **set** LED \otimes will flash
- press \uparrow or \downarrow in 15 s; also look at parameters r1, r2 and r3
- press **set** or do not operate 15 s.

You also can modify the working setpoint through parameter SP.

3.2 Setting configuration parameters

To gain access the procedure:

- make sure no procedure is running
- press \uparrow and \downarrow 4 s: the display will show "PA"
- press **set**
- press \uparrow or \downarrow in 15 s to set "-19"
- press **set** or do not operate 15 s
- press \uparrow and \downarrow 4 s: the display will show "SP".

To select a parameter:

- press \uparrow or \downarrow

To modify a parameter:

- press **set**
- press \uparrow or \downarrow in 15 s
- press **set** or do not operate 15 s

To quit the procedure:

- press \uparrow and \downarrow 4 s or do not operate 60 s.

Switch off/on the power supply of the instrument after the modification of the parameters.

3.3 Restoring the default value of configuration parameters

- make sure no procedure is running
- press \uparrow and \downarrow 4 s: the display will show "PA"
- press **set**
- press \uparrow or \downarrow in 15 s to set "743"
- press **set** or do not operate 15 s
- press \uparrow and \downarrow 4 s: the display will show "dEF"
- press **set**
- press \uparrow or \downarrow in 15 s to set "149"
- press **set** or do not operate 15 s: the display will show "dEF" flashing 4 s, after which the instrument will quit the procedure
- switch off/on the power supply of the instrument.

Make sure the default value of the parameters is appropriate, in particular if the probes are PTC probes.

4 SIGNALS

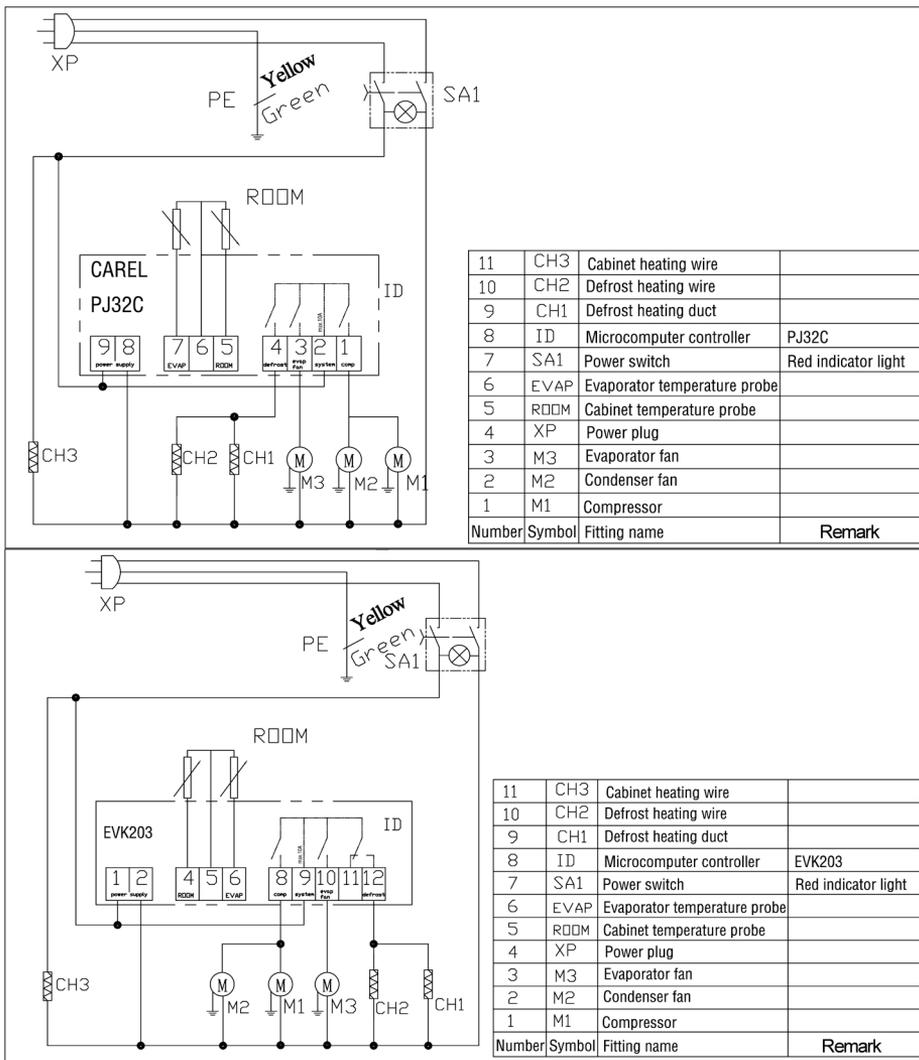
4.1 Signals

LED	MEANING
\otimes	LED compressor if it is lit, the compressor will be turned on if it flashes: <ul style="list-style-type: none"> ▪ the modification of the working setpoint will be running ▪ a compressor protection will be running (parameters C0, C1, C2 and i7)
\otimes	LED defrost if it is lit, the defrost will be running if it flashes: <ul style="list-style-type: none"> ▪ the defrost will be required but a compressor protection will be running (parameters C0, C1 and C2) ▪ the dripping will be running (parameter d7) ▪ the heating of the freezing fluid will be running (parameter dA)
\otimes	LED evaporator fan if it is lit, the evaporator fan will be turned on if it flashes, the after dripping evaporator fan delay will be running (parameter F3)
\triangle	LED alarm if it is lit, an alarm will be running



Our products have been modified precisely before leaving factory, so to avoid damaging compressor unit or other malfunctions, users mustn't modify the microcomputer parameters privately.

Electrical Control Circuit Diagram





Technical Parameters

Model code	Power source (V)	Rating frequency (Hz)	Defrosting power (W)	Rated power (W)	Temperature range (°C)	Refrigerant	Effective capacity (m ³)	Dimension (mm)	Weight (kg)
HEC903	220	50	0	250	-2~+8	R134a	0.28	1360×700×850	92.5
HEC904	220	50	0	300	-2~+8	R134a	0.42	1795×700×850	120
HEC905	220	50	0	350	-2~+8	R134a	0.63	2230×700×850	145

NOTES :

If the technical data has any changes, we will not notify you any longer.

OFFICIAL APPROVAL AND RULES

Our products full fill the present E.U. rules, including the CE mark of the European official approval

89/336/EEC including amendments-electromagnetic compatibility (EMC)

73/23/EEC including amendments-low voltage (LVD)

EN 60335-1:2005

EN 60335-2-24:2004

EN 55014-1:2003

EN 55014-2:2002

EN 61000-3-2:2001

EN 6100-3-3:2002

Serial № C003-106-076



