

Please read this instruction manual carefully before installation and first use, and store it in a safe place. If you pass on the product to another person, hand over this instruction manual along with it.

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1 Explanation of symbols

**DANGER!**

Safety instruction: Failure to observe this instruction will cause fatal or serious injury.

**WARNING!**

Safety instruction: Failure to observe this instruction can cause fatal or serious injury.

**CAUTION!**

Safety instruction: Failure to observe this instruction can lead to injury.

**NOTICE!**

Failure to observe this instruction can cause material damage and impair the function of the product.

**NOTE**

Supplementary information for operating the product.

➤ **Action:** This symbol indicates that action is required on your part. The required action is described step-by-step.

✓ This symbol describes the result of an action.

Fig. 1 5, page 3: This refers to an element in an illustration. In this case, item 5 in figure 1 on page 3.

2 Safety instructions

The manufacturer accepts no liability for damage in the following cases:

- Faulty assembly or connection
- Damage to the product resulting from mechanical influences and excess voltage
- Alterations to the product without express permission from the manufacturer
- Use for purposes other than those described in the operating manual

2.1 General safety



DANGER!

- On boats: If the device is powered by the mains, ensure that the power supply has a residual current circuit breaker.



WARNING!

- Have a qualified technician perform the installation in wet rooms.
- Do not operate the device if it is visibly damaged.
- If this device's power cable is damaged, it must be replaced by the manufacturer, customer service or a similarly qualified person in order to prevent safety hazards.
- This device may only be repaired by qualified personnel. Inadequate repairs may cause serious hazards.
- This device can be used by children aged 8 years or over, as well as by persons with diminished physical, sensory or mental capacities or a lack of experience and knowledge, providing they are supervised, or have been taught how to use the device safely and are aware of the resulting risks.
- Cleaning and user maintenance must not be carried out by children without supervision.
- Children must be supervised to ensure that they do not play with the device.
- Always keep and use the device out of the reach of children under 8 years of age.
- Do not store any explosive substances, such as spray cans with propellants, in the device.



CAUTION!

- Danger of crushing! Do not put your fingers into the hinge.
- Foodstuff may only be stored in its original packaging or in suitable containers.



NOTICE!

- Check that the voltage specification on the type plate is the same as that of the power supply.
- Never pull the plug out of the socket by the connection cable.

- If the refrigerator is connected to the DC socket: Disconnect the refrigerator and other electric consumers from the battery before connecting the quick charging device.
- If the refrigerator is connected to the DC socket: Disconnect the refrigerator or switch it off when you turn off the engine. Otherwise you may discharge the battery.
- The refrigerator is not suitable for storing substances which are caustic or contain solvents.
- Keep the drainage outlet clean at all times.
- Do not open the refrigerant circuit under any circumstances.
- Never transport the device in a horizontal position, so that no oil can leak out of the compressor.
- Make sure that the refrigerator circuit is not damaged during transportation. The refrigerant in the refrigerator circuit is highly flammable.
In the event of any damage to the refrigerator circuit:
 - Avoid naked flames and sparks.
 - Air the room well.
- Set up the device in a dry location where it is protected against splashing water.

2.2 Operating the device safely



DANGER!

- Do not touch exposed cables with your bare hands. This applies especially when operating the device from the AC mains.



CAUTION!

- Before starting the device, ensure that the power supply line and the plug are dry.
- If you connect the device to a battery, make sure that no food comes into contact with the battery acid.



NOTICE!

- Do not use electrical devices inside the cooling device unless they are recommended by the manufacturer for that purpose.
- Do not place it near naked flames or other heat sources (heaters, direct sunlight, gas ovens etc.)

- **Danger of overheating!**

Always ensure sufficient ventilation so that the heat generated during operation can dissipate. Make sure that the device is sufficiently far away from walls and other objects so that the air can circulate.

- Ensure that the ventilation vents are not covered.
- Do not fill the inner container with ice or fluid.
- Never immerse the appliance in water.
- Protect the appliance and the cable against heat and moisture.
- Make sure that foodstuffs do not touch the walls of the cooling area.

3 Scope of delivery

Quantity	Description
1	Refrigerator with shelves
1	Operating manual

4 Accessories

Available as accessories (not included in the scope of delivery):

Item no.	Description	Explanation
MPS 35	Rectifier	Transforms an input voltage of 100 to 240 V~ at 12 V== or 24 V==, so that the refrigerator can be connected to an AC power supply.

5 Intended use



The refrigerator is suitable for cooling and freezing foodstuffs.



CAUTION! Health hazard!

Please check if the cooling capacity of the device is suitable for storing the food or medicine you wish to cool.

The refrigerator is only suitable for installation in a fitted niche. Once it is installed, only the front of the appliance may be accessible.

6 Technical description

The WAECO CoolMatic CRX series cooling appliances can cool products and keep them cool. Products can be deep-frozen in the freezer compartment. If the refrigerator is operated without a freezer compartment, frozen products can be stored in the short term using the fast-cooling function.

All materials used in the refrigerator are compatible for use with foodstuffs. The refrigerant circuit is maintenance-free.

The device is suitable for use with a DC voltage of 12 V or 24 V (e.g. in camper vans, caravans or on boats).

With a rectifier (**accessory**), the 12 V and 24 V refrigerators can be operated on an AC mains network:

- Rectifier MPS35: for use with a 100 – 240 V supply

When used on boats the refrigerator can be subjected to a constant inclination of 30°.

CRX50, CRX65, CRX80:

The temperature is set using the control panel on the inside left of the refrigerator. Four temperature ranges from +3 °C to +12 °C, and a fast-cooling function, are available for selection.

CRX110:

The temperature is set using a thermostat on the inside left of the refrigerator. Five temperature ranges from +3 °C to +12 °C, and a winter mode, are available for selection.

6.1 Control elements inside the fridge

The various types of refrigerators are shown in the following illustrations:

- CRX50: fig. **1**, page 3
- CRX65: fig. **2**, page 3
- CRX80: fig. **3**, page 4
- CRX110: fig. **4**, page 4

No.	Explanation
1	Freezer compartment (detachable: CRX50, CRX65, CRX80 only)
2	Control panel
3	Wire shelf (folding, so that bottles can be put in the fridge)
4	Shelf
5	Fruit compartment
6	Bottle restraint (to hold bottles in the door)
7	Compartment with lid (hinged)

6.2 Control elements

No. in fig. 5 , page 5, fig. 6 , page 5	Explanation
1	IR sensor for switching the interior light
2	LED Service display
3	LED Green: Compressor is running Orange: Compressor is off
4	On/off button
5	Inner lighting
6	Temperature selection button
7	LED: Fast cooling function on (CRX50, CRX65, CRX80) LED: Winter mode on (CRX110)
8	LEDs: Temperature levels 1 to 4

7 Installing and connecting the refrigerator

7.1 Safety instructions for installation on boats

Please note the following instructions for installation on boats:



DANGER!

If the appliance is powered by the mains, ensure that the voltage supply has a residual current circuit breaker.



NOTICE!

- The device can be tilted sideways up to 30°. When setting up the refrigerator, note that it must be fastened to take account of this. If you have any questions regarding installation, consult your specialist dealer.
- Install the refrigerator so that the warm air produced can easily flow away (either upwards or to the sides, fig. **7**, page 6).
- The appliance is designed for ambient temperatures between +16 °C and +43 °C.

7.2 Installing the refrigerator

Observe the following when installing the refrigerator:

- Install the refrigerator so that the warm air produced can easily flow away (either upwards or to the sides, fig. **7**, page 6).

Key for fig. **7**, page 6

No.	Explanation
1	Cold intake air
2	Hot waste air
3	Condenser
4	Spacing above the refrigerator if there is not sufficient air to circulate above or at the side.

- Keep objects clear of openings in the housing or installation structure (such as ventilation slots, etc.).
- Condensate is produced when the refrigerator is operating normally. You can either wipe up the condensate in regular intervals, or drain it through an outlet in the rear of the refrigerator.

Proceed as follows to install the refrigerator:

- If you wish to drain the condensate through a hose:
Remove the drain plug (fig. **8** 1, page 6).
- Connect a hose with an inside diameter of 10 mm to the outlet port (fig. **8** 2, page 6).
- Undo the transport lock (chapter “Releasing the lock” on page 50).
- Open the refrigerator door.
- Remove the blanking plugs (fig. **9** 2, page 7).
- Push the refrigerator into the recess.
- Fix the refrigerator in place using suitable screws (fig. **9** 1, page 7).
- Press the blanking plugs (fig. **9** 2, page 7) into the openings.

7.3 Changing the door hinge

You can also change the hinge of the door, so that it opens to the left rather than the right.

- Proceed as shown in fig. **11**, page 8 to fig. **12**, page 8, to change the hinges.

7.4 Connecting the refrigerator

Connecting the refrigerator to DC voltage



NOTICE!

- To avoid voltage drops and loss of performance, keep the connection cable as short as possible and not be interrupted. Therefore avoid additional switches, plugs or power strips.
- Disconnect the cooling device and other electric consumers from the battery before you connect the battery to a quick charging device. Overvoltage can damage the electronics of the device.

The refrigerator can be operated with a 12 V or a 24 V DC voltage supply.

For safety reasons, the refrigerator is equipped with an electronic system to prevent the polarity being reversed. This protects the refrigerator against reversed polarity when connecting to a battery and against short circuiting.

To protect the battery, the refrigerator switches off automatically if the voltage is insufficient (see table below).

	12 V	24 V
Cut-off voltage	10.4 V	22.8 V
Cut-in voltage	11.7 V	24.2 V

- Determine the required cross section of the cable in relation to the cable length according to fig. **13**, page 8.

Key for fig. **13**, page 8:

Coordinate axis	Meaning	Unit
I	Cable length	m
Ø	Cable cross section	mm ²



NOTICE!

Make sure the polarity is correct.

- Before starting up the device for the first time, check whether the operating voltage and the battery voltage match (see type plate).

- Connect your refrigerator to a plug socket which is fuse-protected with at least 15 A (at 12 V) or 7.5 A (at 24 V) (fig. **14** 1, page 9).
- Connect the red cable (fig. **14** rt, page 9) to the positive terminal of the battery.
- Connect the black cable (fig. **14** sw, page 9) to the negative terminal of the battery.

Connecting the refrigerator to AC voltage



DANGER! mortal danger!

- Never handle plugs and switches with wet hands or if you are standing on a wet surface.
- If you are operating your refrigerator on board a boat with an AC mains connection using a shore connection, you must install a residual current circuit breaker between the AC mains supply and the refrigerator.
Seek advice from a trained technician.

You can connect the refrigerator to 100 – 240 V~ AC power if you use the MPS 35 rectifier (**accessory**).

The MPS 35 rectifier features a priority circuit which conserves the battery connected. When a 100 – 240 V~ mains connection is used, the rectifier automatically switches from battery to mains operation.

When disconnected from the 100 – 240 V~ mains supply, the rectifier automatically switches back to battery operation. Mains operation via the rectifier always takes priority over battery operation.

Proceed as follows when you connect the refrigerator to the AC supply:

- Attach the rectifier on the back of the refrigerator.
- Connect the rectifier as shown in fig. **15**, page 9.
- Connect the refrigerator to the rectifier (fig. **15** 2, page 9):
 - Red cable: positive battery terminal
 - Black cable: negative battery terminal
- Plug the connector into the AC socket (fig. **15** 1, page 9).

8 Using the refrigerator



NOTE

- Before starting your new refrigerator for the first time, you should clean it inside and outside with a damp cloth for hygienic reasons (please also refer to the chapter “Cleaning and maintenance” on page 51).
- Do not use force to press the flap of the freezer.
- Do not pull out the dividing wall if there is ice in the freezer.
- Do not remove the panel sticker when operating the refrigerator.

8.1 Energy saving tips

- Choose a well ventilated location which is protected from direct sunlight.
- Allow hot food to cool down first before you put it in the refrigerator.
- Do not open the refrigerator more often than necessary. If the door is left open for more than 5 minutes, the light starts to flash.
- Do not leave the door open for longer than necessary.
- Defrost your refrigerator as soon as a layer of ice forms.
- Avoid unnecessarily low temperature settings.
- Clean dust and dirt from the condenser at regular intervals.

8.2 Using the refrigerator



NOTICE!

- Do not place any electrical devices inside the cooler. The only exceptions are devices approved for the purpose by the manufacturer.
- Ensure that food or liquids in glass containers are not excessively refrigerated. Liquids expand when they freeze and can therefore destroy glass containers.
- Food may only be stored in its original packaging or in suitable containers.
- Make sure that you only put items in the cooler which may be kept at the selected temperature.

The fridge conserves fresh foodstuffs. You can also conserve frozen foodstuffs in the freezer compartment and freeze fresh foodstuffs.

- Switch the refrigerator on by pressing the on/off button.

**NOTE**

After switching on, the refrigerator needs some time before the compressor starts up.

Setting the temperature

- Press the temperature selection button to set the temperature to one of four levels between “cool” and “very cold”.
The number of LEDs which light up above the temperature selection button indicate the temperature range:
 - 1 = cool
 - ...
 - 4 = very cold
- Press the temperature selection button again to switch from level 4 to level 1.

**NOTE**

The cooling performance can be affected by:

- The ambient temperature
- The amount of food to be conserved
- The frequency with which the door is opened.

If the ambient temperature is at 16 °C – 20 °C, set the refrigerator to at least level 2.

Setting the fast cooling function (CRX50, CRX65, CRX80 only)**NOTICE!**

- Only use the fast-cooling function when the removable freezer compartment is **not** being used. Otherwise there is a risk that the freezer compartment becomes too cold and condensate cannot be prevented from forming on the outside of the refrigerator. The energy consumption will also increase dramatically.
- Note that bottles and other containers can burst when frozen.
- Note that it is difficult to open the refrigerator directly after closing it.

The option of operating the refrigerator using a fast-cooling function allows temperatures suitable for freezing foods to be reached.

- Press the temperature selection button for longer than 3 seconds.

- ✓ The LED above the temperature selection button lights up.
- Press the temperature selection button again for longer than 3 seconds to operate the refrigerator in normal mode.

Setting the winter mode (CRX110 only)

The winter mode ensures optimum operation at ambient temperature of below 16 °C:

- Press the temperature selection button for longer than 3 seconds.
- ✓ The refrigerator switches to winter mode and the LED lights up above the temperature selection button.
- Press the temperature selection button again for longer than 3 seconds to operate the refrigerator in normal mode.

Conserving foodstuffs



NOTICE!

- Do not conserve **warm** foodstuffs in the refrigerator.
- Do not place glass containers containing liquid in the freezer compartment.



NOTE

Food which can easily absorb tastes and odours, as well as liquids and products with a high alcohol content, should be conserved in air-tight containers.

You can conserve foodstuffs in the refrigerator. The time for which the food can be conserved in this way is usually stated on the package.

The refrigerator is divided in different zones with different temperatures:

- The colder zones are immediately above the drawers for fruit and vegetables, near the back wall.
- Observe the temperature information and best before date on the food packaging.
- Observe the following when using the refrigerator:
 - Never re-freeze products which have started defrosting or have been defrosted; consume them as soon as possible.
 - Wrap food in aluminium foil or cling film and shut in a suitable box with a lid. This ensures that aromas, the shape and the freshness will be better conserved.

Defrosting the refrigerator

The appliance has two options to remove the condensation resulting from operation:

- pass it directly outside:
Remove the drain plug (fig. **8** 1, page 6).
Connect a hose with an inside diameter of 10 mm to the outlet port (fig. **8** 2, page 6).
- Wiping it up occasionally:
Wipe the condensate up when necessary.

Defrosting the freezer



NOTICE!

Never use mechanical tools to remove ice or to loosen objects stuck to the device. The only exceptions are devices approved for the purpose by the manufacturer.

This is how to defrost the refrigerator:

- Empty the contents.
- If necessary, put them in another cooling device to keep them chilled.
- Press the on/off button until the refrigerator switches off.
- Close the door properly.

8.3 Releasing the lock



NOTICE!

Only adjust the locking mechanism when the door is open. If you use it with the door closed, you will damage the device.

The refrigerator has a locking mechanism (fig. **16** 1, page 9) which is also used to protect it during transport. The following settings are possible:

- **Lock** (turn wheel clockwise to the end stop): the door is locked and secured.
To open the door, lift the handle up and open it.
- **Vent** (turn wheel anti-clockwise to the end stop): The door is slightly open, but fixed in position.
Use this position if you are not going to use the unit for a long time.

8.4 Switching off and storing the refrigerator

If you do not intend to use the refrigerator for a long time, proceed as follows:

- Press the on/off button until the refrigerator switches off.
- Disconnect the connection cable from the battery or disconnect the plug on the AC cable plug from the rectifier.
- Clean the refrigerator (see chapter “Cleaning and maintenance” on page 51).
- Turn the locking wheel (fig. **16** 1, page 9) anti-clockwise to the end stop (“Vent”).
- Close the door until it latches in.
- ✓ The door stays open thus preventing smells from arising.

9 Cleaning and maintenance



NOTICE!

- Do not use abrasive cleaning agents or hard objects during cleaning as these can damage the refrigerator.
- Do not use hard or pointed tools to speed up the defrosting process.

- Clean the refrigerator regularly and as soon as it becomes dirty with a damp cloth.
- Make sure that no water drips into the seals. This can damage the electronics.
- Wipe the refrigerator dry with a cloth after cleaning.
- Clean dust and dirt from the condenser at regular intervals.

10 Warranty

The statutory warranty period applies. If the product is defective, please contact the manufacturer's branch in your country (see the back of the instruction manual for the addresses) or your retailer.

For repair and guarantee processing, please include the following documents when you send in the device:

- A copy of the receipt with purchasing date
- A reason for the claim or description of the fault

11 Disposal



WARNING! Children beware!

Before disposing of your old refrigerator:

- Take off the doors.
- Leave storage surfaces in the refrigerator so that children cannot climb inside.

- Place the packaging material in the appropriate recycling waste bins wherever possible.



If you wish to finally dispose of the product, ask your local recycling centre or specialist dealer for details about how to do this in accordance with the applicable disposal regulations.

12 Troubleshooting

The significance of the red LED (fig. 5 2, page 5, fig. 6 2, page 5)

For operational faults it illuminates several times. The number of pulses depends on the type of fault.

Each flash lasts for one quarter of a second. After the series of impulses a pause follows. The sequence for the fault is repeated every four seconds.

Number of flashes	Fault	Possible cause
1	Line Voltage	The supply voltage is outside of the set range.
2	Excessive fan current	The fan load on the electronics unit is more than 1 A.
3	The motor doesn't start	The rotor is jammed. The pressure difference in the cooling system is too high (> 5 bar).
4	Speed too low	If the cooling system is overloaded, the minimum speed of the motor of 1,850 rpm cannot be maintained.
5	Overheating of the electronics unit	If the cooling system is loaded too heavily or the temperature is set too high, the electronics can overheat.
Constantly	NTC errors	NTC is defective.

Compressor does not run (battery connection)

Problem	Possible cause	Remedy
$U_{KL} = 0 \text{ V}$	There is an interruption in the battery–electronics connection	Establish a connection
	Main switch faulty (if installed)	Replace the main switch
	Additional supply line fuse has blown (if installed)	Replace the supply line fuse
$U_{KL} \leq U_{ON}$	Battery voltage is too low	Charge the battery
Start attempt with $U_{KL} \leq U_{OFF}$	Loose cables Poor contact (corrosion)	Establish a connection
	Battery capacity too low	Replacing the battery
	Cable cross section too small	Replace the cable (fig. 13, page 8)
Start attempt with $U_{KL} \geq U_{ON}$	Ambient temperature too high	–
	Insufficient ventilation	Move the refrigerator to another location
	Condenser is dirty	Clean the condenser
Electric circuit between the pins in the compressor interrupted	Defective compressor	Replace the compressor

U_{KL} Voltage between the positive and negative terminals of the electronics

U_{ON} Cut-in voltage of the electronics

U_{OFF} Cut-off voltage of the electronics

Compressor is not running (connected to AC supply)

Problem	Possible cause	Remedy
No voltage	Connection supply line interrupted	Establish a connection
	Main switch faulty (if installed)	Replace the main switch
	Additional supply line fuse has blown (if installed)	Replace the supply line fuse
Voltage is present but the compressor doesn't run	Ambient temperature too high	–
	Insufficient ventilation	Move the refrigerator to another location
	Condenser is dirty	Clean the condenser
Electric circuit between the pins in the compressor interrupted	Defective compressor	Replace the compressor


Poor cooling, increase in interior temperature

Problem	Possible cause	Remedy
Compressor runs for a long time/continuously	Ambient temperature too high	–
	Insufficient ventilation	Move the refrigerator to another location
	Condenser is dirty	Clean the condenser
	Faulty fan	Replace the fan
Compressor does not run often	Battery capacity exhausted	Charge the battery

Unusual noises

Problem	Possible cause	Remedy
Loud humming	A component of the refrigerant circuit cannot move freely (touching the wall)	Bend the component carefully away from the obstruction
	There is a foreign object stuck between the cooling unit and the wall	Remove the foreign object
	Fan noise	–

13 Technical data

	CRX50	CRX65	CRX80
Refrigerator compartment capacity:	41.2 l	50 l	70.6 l
Freezer compartment capacity:	4.4 l	7.0 l	7.5 l
Capacity:	45 l	57 l	78 l
Voltage:	12 V $\overline{=}$ or 24 V $\overline{=}$		
Rated current			
12 V $\overline{=}$:	5.0 A	5.5 A	5.6 A
24 V $\overline{=}$:	2.6 A	2.8 A	2.9 A
Cooling temperature range			
Refrigerator:	3 °C to +12 °C		
Freezer:	–15 °C to –5 °C		
Fast cooling (without dividing wall)	maximum –6 °C \pm 2 °C		
Climatic class:	T		
Relative humidity:	Max. 90 %		
Constant inclination:	maximum 30°		
Max. pressure:	LP 11 bar/HP 25 bar		
Propellant:	C ₅ H ₁₀		
Refrigerant:	R134a		
Refrigerant quantity:	38 g	42 g	48 g
Dimensions:	fig. 17 , page 10	fig. 18 , page 10	fig. 19 , page 10
Weight:	17 kg	19 kg	21 kg
Inspection/certification:			

	CRX110
Refrigerator compartment capacity:	98 l
Freezer compartment capacity:	9.5 l
Capacity:	107.5 l
Voltage:	12 V $\overline{=}$ or 24 V $\overline{=}$
Rated current 12 V $\overline{=}$: 24 V $\overline{=}$:	6.2 A 3.0 A
Cooling temperature range Refrigerator: Freezer:	3 °C to +12 °C –18 °C to –6 °C
Climatic class:	T
Relative humidity:	Max. 90 %
Constant inclination:	maximum 30°
Max. pressure:	LP 11 bar/HP 25 bar
Propellant:	C ₅ H ₁₀
Refrigerant:	R134a
Refrigerant quantity:	47 g
Dimensions:	fig. 20, page 11
Weight:	27.6 kg
Inspection/certification:	