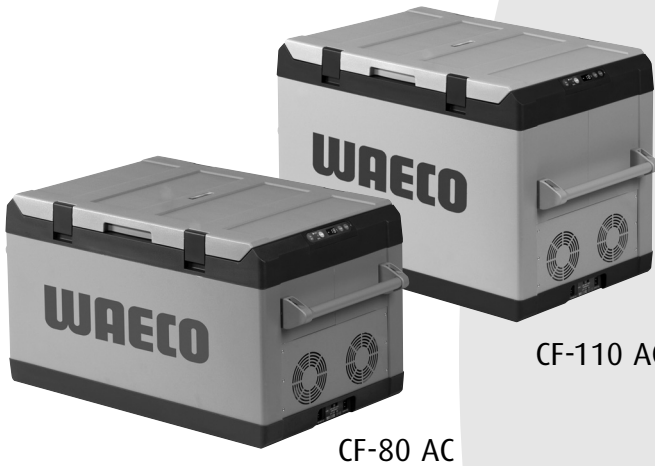


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# WAECO

mobile solutions



CF-110 AC

CF-80 AC

# WAECO CoolFreeze

## CF-80, CF-110



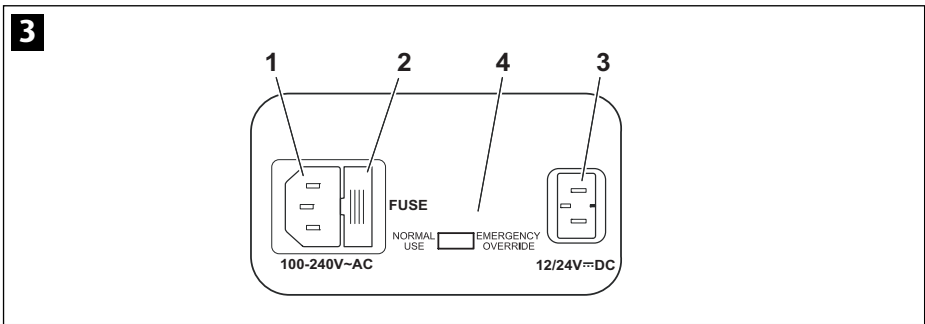
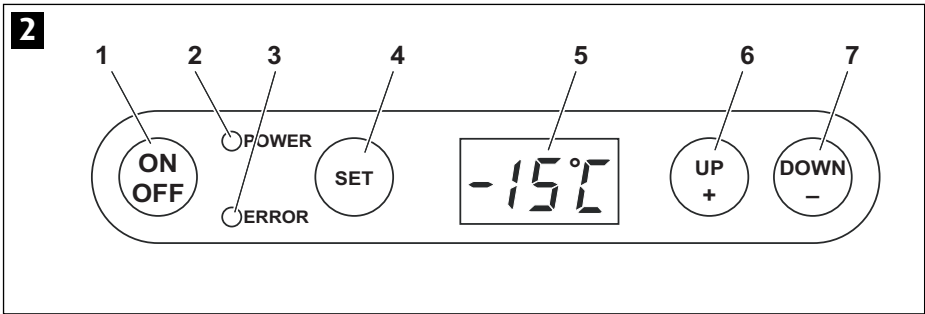
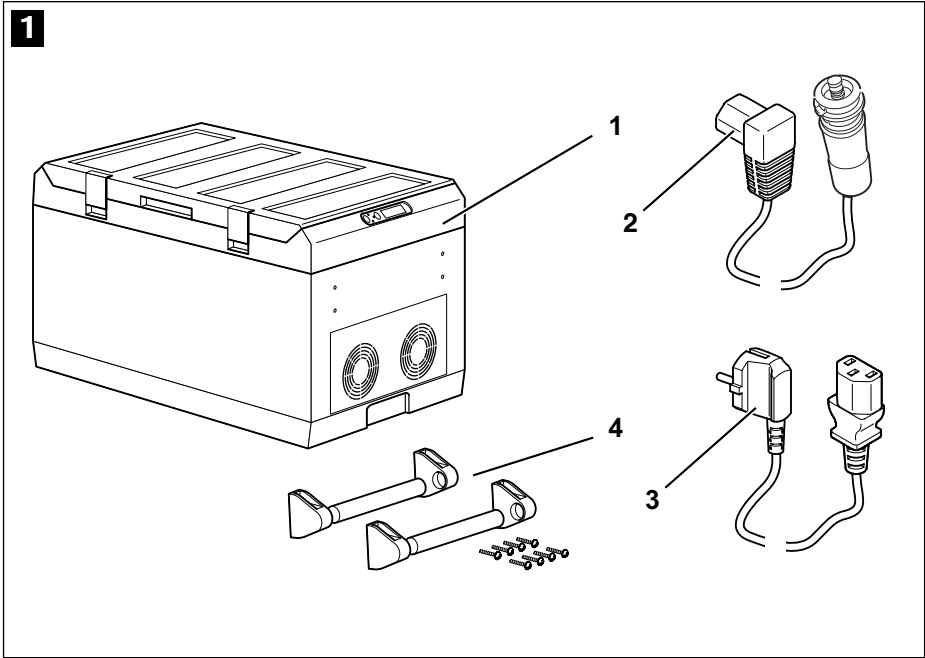
**Compressor Cooler Instruction Manual**

Please read this operating manual carefully before starting the device.

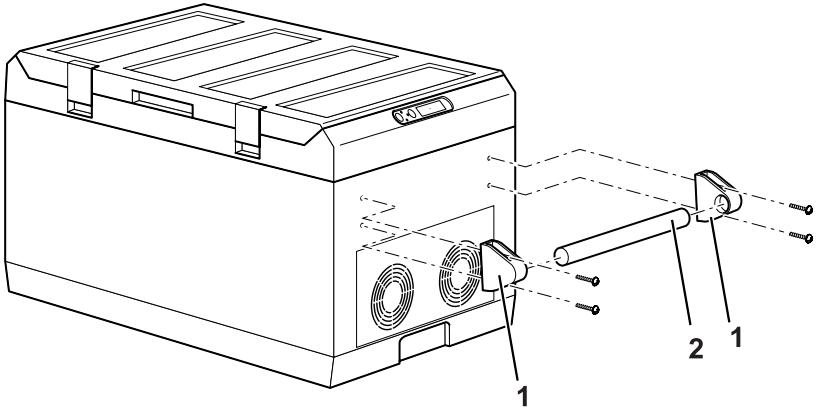
Keep it in a safe place for future reference. If the device is handed over to another person, this operating manual must be handed over along with the device.

## Contents

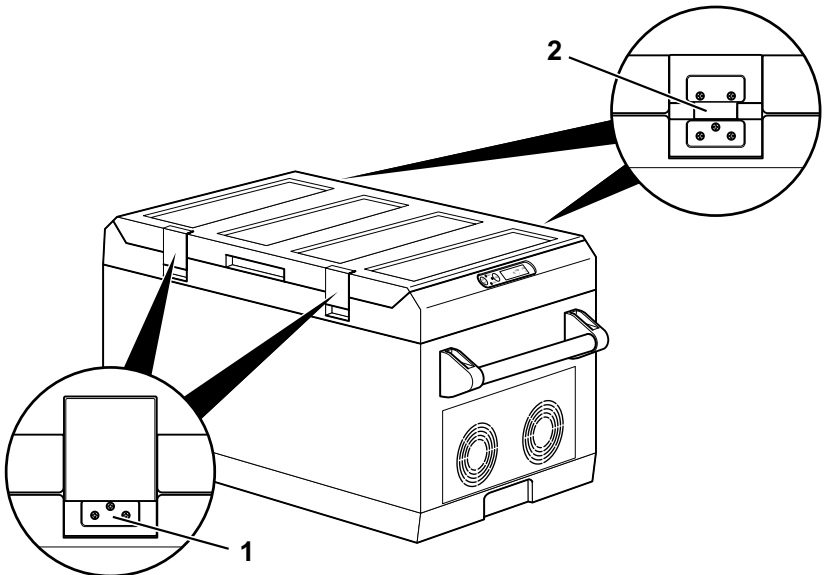
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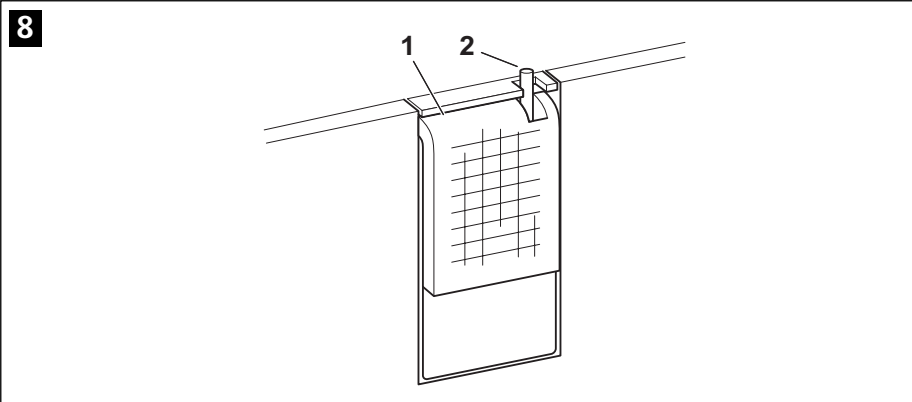
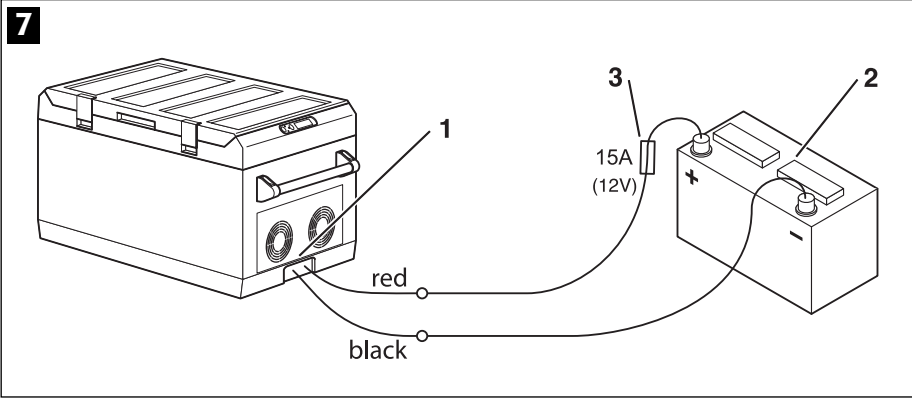
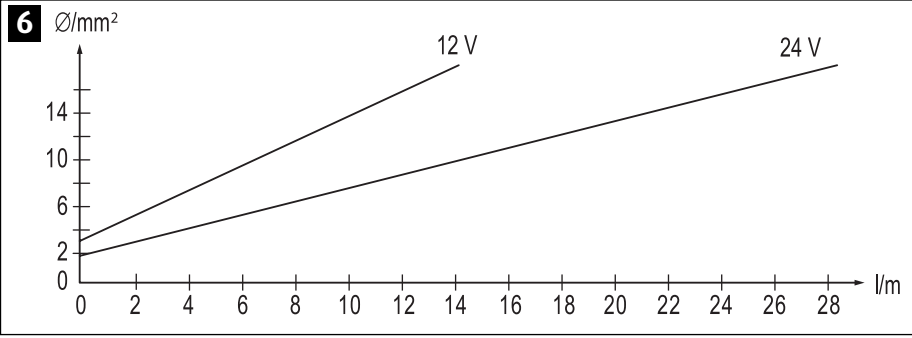


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## 1. Notes on using the manual

The following symbols are used in this operating manual:



**Caution!**

**Safety instruction:** Failure to observe this instruction can cause personal injury or damage the device.



**Caution!**

**Safety instruction:** relating to a danger from an electrical current or voltage. Failure to observe this instruction can cause injury or damage the device and impair its function.



**Note:**

Supplementary information for operating the device.

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

✓ This symbol indicates the result of an action

**Fig. 2** 1, page 4: This refers to an element in an illustration.

In this case, item 1 in figure **2** on page 4.

Please observe the following safety instructions.

## 2. Safety instructions



**Caution!**

WAECO International will not be held liable for claims for damage resulting from the following:

- Damage to the device resulting from mechanical influences and over voltage.
- Alterations to the device made without the explicit permission of WAECO International.
- Use for purposes other than those described in the operating manual.

### 2.1 General Safety



• **Caution – Danger of electrocution**

When using the device on boats: If the device is powered by the mains, ensure that the power supply is protected with a ground fault interrupter circuit.

- Check that the voltage specification on the type plate corresponds to that of the energy supply.

- Only connect the device as follows:
  - using the cable supplied (Fig. **1** 2, page 4) to a 12- V or 24- V battery
  - or with the AC cable supplied (Fig. **1** 3, page 4) to the 100–240V AC mains.
- If the connection cable is damaged, it must be replaced to prevent possible electrical hazards.
- Do not pull the plug out of the cigarette lighter or the socket by the cable.
- Pull out the connection cable:
  - Before cleaning and maintenance
  - After use
  - Before changing a fuse.
- Disconnect the cooling device and other power consuming devices from the battery before you connect the battery to a quick charging device. Overvoltage can damage the electronics of the device.



- **Electronic devices are not toys!**

Always keep and use the device out of the reach of Children

- Do not operate the device if it is visibly damaged.
- This device may only be repaired by qualified personnel. Inadequate repairs can lead to considerable hazards. Should your device need to be repaired, please contact WAECO customer service.
- Do not open the refrigerant circuit under any circumstances!
- The cooler is not suitable for transporting caustic materials or materials containing solvents.
- Food may only be stored in its original packaging or in suitable containers.

## 2.2 Operating the device safely



- **Warning! – Danger of electrocution**

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

- Before starting the device, ensure that the power supply line and the plug are dry.



- **Warning!**
- Do not place any electrical devices inside the cooler.
- Set up the device in a dry location where it is protected against splashing water.
- Protect the device and the cable against rain and moisture.
- Do not place the device near naked flames or other heat sources (heaters, direct sunlight, gas ovens etc.)



- **Warning! Danger of overheating!**  
Ensure at all times that there is sufficient ventilation so that the heat generated during normal operation is able to dissipate. Ensure that the ventilation slots are not covered. Make sure that the device is sufficiently far away from walls and other objects so that the air can circulate.
- Never immerse the device in water.
- Do not fill the inside with fluid.

### 3. Scope of delivery

Fig. **1** , page 4, shows the scope of delivery.

Item	Quantity	Description
1	1	Cooler
2	1	Connection cable for 12/24 V DC connection
3	1	connection cable for 100-240V AC connection
4	2	Carrying handle, consisting of 2 holders, 1 handle, 4 screws
-	1	Operating manual
- (CF-80)	2	Internal basket
- (CF-80)	2	Internal compartment divider (plastic)
- (CF-110)	1	Internal basket with wire dividers (2 off)

### 4. Intended use



The cooler is suitable for cooling and freezing foods. The device is also suitable for use on boats.



The appliance is designed for use with a 12 V DC or 24 V DC battery in a car, boat or caravan, or on a 100-240 V AC mains supply.



#### **Caution – When cooling perishable medicines!**

If you wish to cool medicines, please check if the cooling capacity of the device is adequate for this purpose.



## 5. Function description

The cooler can chill products, keep them cool as well as freeze them. A low maintenance, CFC-free refrigerant circuit with compressor provides the cooling. The extra strong CFC-free insulation and powerful compressor ensure especially fast cooling.

The cooler is portable and can be carried by two detachable handles.

When used on boats, the cooler can withstand a constant heel (inclination) of 30°C .

### Scope of functions:

- Power pack with priority circuit for connecting to the AC mains.
- 3-level battery monitor for protecting the vehicle battery.
- Programmed turbo mode for rapid cooling.
- Display with temperature gauge.
- Temperature adjustment.  
(with two buttons in steps of 1°C (2°F)).
- Detachable carrying handles.
- Emergency override switch for 'limp home' mode.

## 5.1 Operating and display elements

Operating panel (Fig. **2** , page 4)

Item	Description	Explanation
1	ON OFF	Switches the cooler on or off when the button is pressed for between one and two seconds
2	POWER	Status indication LED lights up green: Compressor is on LED lights up orange: Compressor is off
3	ERROR	LED flashes red: Device is switched on but not ready for operation
4	SET	Selects the input mode - Temperature setting - Celsius or Fahrenheit display - Set battery monitor
5	-	Display, shows the information
6	UP +	Press once to increase the value
7	DOWN -	Press once to decrease the value

## 5.2 Connections

Connection sockets (Fig. **3** , page 4)

Item	Description
1	Connection socket AC voltage supply
2	Fuse holder
3	Connection socket DC voltage supply
4	Emergency switch

## 6. Operation

### 6.1 Before initial use



#### Note:

Before starting your new cooler for the first time, you should clean it inside and outside with a damp cloth for hygienic reasons (please also refer to "Cleaning and maintenance" on page 17)

The handles are enclosed unassembled. If you wish to attach the handles, proceed as follows:

- Make a handle by putting two holders (Fig. **4** 1, page 5) and a handle (Fig. **4** 2, page 5) together.
- Fasten the holders with the enclosed screws in the holes provided.

#### Selecting the temperature units – °C or °F

You can switch the temperature display between Celsius and Fahrenheit.

This is how to do it:

- Switch on the cooler.
- Press the "SET" button (Fig. **2** 4, page 4) twice.
- Use the "UP +" (Fig. **2** 6, page 4) and "DOWN -" (Fig. **2** 7, page 4) buttons to select Celsius or Fahrenheit.
- ✓ The selected temperature units then appear in the display for a few seconds. The display flashes several times before it returns to the current temperature.

#### Turning the lid around

You can turn the lid around if you want to open the lid from the other side. To do this, proceed as follows:

- Undo the screws on the lock lugs (Fig. **5** 1, page 5) and remove them.
- Undo the screws on the hinges (fig. **5** 2, page 5) and remove them.
- Lay the lid down.
- Fit the hinges on the side you want.
- Fit the lock lugs on the side you want.

## 6.2 Energy saving tips

- Choose a well ventilated installation location which is protected from direct sunlight.
- Allow hot food to cool down first before you place it into the device.
- Do not open the cooler more often than necessary.
- Do not leave the lid open for longer than necessary.
- Defrost the cooler once a layer of ice forms.
- Avoid unnecessarily low temperature settings.

## 6.3 Connecting the cooler

### Connecting to a battery (Vehicle or boat)

The cooler can be operated with 12 V or 24 V DC, either using cigarette plug lead supplied, or plug removed and "hard wired" as follows:



#### Caution – Danger of damaging the device!

Disconnect the cooler and other consumer units from the battery before you connect the battery to a quick charging device. Overvoltage can damage the electronics of the device.

For safety reasons the cooler is equipped with an electronic system to prevent polarity reversal. This protects the cooler against short-circuiting when connecting to a battery.



#### Caution – Danger of damaging the device!

For fixed installations where cigarette plug is removed, and if cable is extended, to avoid drops in voltage and therefore performance, keep the cable as short as possible and only disconnect it when necessary. For this reason avoid additional switches, plugs or power strips.

- Determine the required cross section of the cable in relation to the cable length according to Fig. 6 , page 6.

Key for Fig. 6 , page 6

Co-ordinate axis	Meaning	Unit
l	Cable length	m
∅	Cable cross section	mm <sup>2</sup>

**Caution – Danger of damaging the device!**

Make sure that the polarity is correct.

- Before starting up the device for the first time, check whether the operating voltage and the battery voltage correspond (see type plate).
- Make sure that the cable at the positive battery terminal (Fig. 7 2, page 6) is protected with a 15 A (12V) fuse (Fig. 7 3, page 6) fitted as close to battery as possible.
- Plug the 12/24-V connection cable (Fig. 1 2, page 4) into the DC socket on the cooler (Fig. 7 1, page 6).
- Connect the red cable (Fig. 7 red, page 6) to the positive terminal of the battery (Fig. 7 2, page 6).
- Connect the black cable (Fig. 7 black, page 6) to the negative terminal of the battery (fig. 7 2, page 6).

**Connecting to a 100-240V AC mains (E.g. in the home or office)****Caution – Danger of electrocution!**

Never handle plugs and switches with wet hands or if you are standing on a wet surface.

**Caution – Danger of electrocution!**

If you are operating your cooler on board a boat from a mains connection of 100-240 V AC, you must install a residual current circuit breaker between the 100-240 V AC mains and the cooler. Seek advice from a trained technician.

The cooler has a built-in multi-voltage mains adapter with a priority circuit for connecting to a 100-240V AC supply. The priority circuit automatically switches to mains operation if the appliance is connected to a 100-240 V AC supply, even if the 12/24 V cable is still connected.

When switching between the AC mains and the battery supply, the red LED may light up briefly.

- Plug the 100-240 V connection cable (Fig. 1 3, page 4) into the AC voltage socket and connect it to the 100-240 V AC voltage mains.

### 6.4 Using the battery monitor.



The device is equipped with a multi-level battery monitor that protects your vehicle battery against excessive discharging when the device is connected to the on-board 12/24 V supply.

If the cooler is operated when the vehicle ignition is switched off, the cooler switches off automatically as soon as the supply voltage falls below a set level. The cooler will switch back on once the battery has been recharged to the restart voltage level.



#### Caution – Danger of damage!

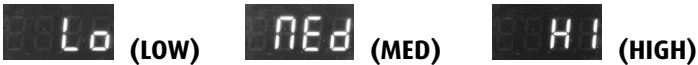
When switched off by the battery monitor, the battery will no longer be fully charged. Avoid starting repeatedly or operating current consumers without longer charging phases. Ensure that the battery is recharged.

In “HIGH” mode, the battery monitor responds faster than the levels “LOW” and “MED” (see the following table).

Battery monitor mode	LOW	MED	HIGH
Switch-off voltage at 12 V	10.1 V	11.4 V	11.8 V
Restart voltage at 12 V	11.1 V	12.2 V	12.6 V
Switch-off voltage at 24 V	21.5 V	24.1 V	24.6 V
Restart voltage at 24 V	23.0 V	25.3 V	26.2 V

This is how to select the battery monitor mode:

- Switch on the cooler.
- Press the “SET” button (Fig. 2 4, page 4) three times.
- Use the “UP +” (Fig. 2 6, page 4) and “DOWN -” (Fig. 2 7, page 4) buttons to select the battery monitor mode.
- Digital Display will be as follows:



- ✓ The selected mode then appears in the display for a few seconds. The display flashes several times before it returns to the current temperature.



#### Note:

When the cooler is supplied by the starter battery, select the battery monitor mode “HIGH”. If the cooler is connected to a supply battery, the battery monitor mode “LOW” will suffice.

If you wish to operate the cooler from the AC mains, set the battery monitor to the “LOW” position.

## 6.5 Using the cooler



### **Caution – Danger of overheating!**

Ensure at all times that there is sufficient ventilation so that the heat generated during operation can dissipate. Ensure that the ventilation slots are not covered. Make sure that the device is sufficiently far away from walls and other objects so that the air can circulate.

- Place the cooler on a firm foundation.  
Make sure that the ventilation slots are not covered and that the heated air can dissipate.
- Close the cooler, see “Connecting the cooler” on page 12.



### **Note:**

If you wish to operate the cooler from the AC mains, set the battery monitor to the “LOW” position. See “Using the battery monitor” on page 14.



### **Caution – Danger from excessively low temperature!**

Ensure that the only objects placed in the cooler are those intended to be cooled at the selected temperature.

- Press the “ON/OFF” button (Fig. 2 1, page 4) and hold down for between one and two seconds.
- ✓ The ‘POWER’ LED is lit green.
- ✓ The display (Fig. 2 6, page 4) switches on and shows the current temperature in °C.



### **Note – Displayed temperatures**

#### **CF-80**

- i) With plastic dividers in: the display temperature is that of the middle of the freezer compartment (furthest away from main control panel).
- ii) With plastic dividers removed: the actual compartment temperature will be considerably warmer than the displayed temperature.

#### **CF-110**

- i) The temperature displayed is that of the middle of the large interior compartment.  
Temperatures elsewhere in the compartment (both models) will deviate from the displayed temperature.

- ✓ The cooler starts cooling the interior.

## 6.6 Setting the temperature

- Press the "SET" button (Fig. 2 4, page 4) once.
- Use the "UP +" (Fig. 2 6, page 4) and "DOWN -" (Fig. 2 7, page 4) buttons to select the cooling temperature.
- ✓ The cooling temperature appears in the display for a few seconds. The display flashes several times and then the current temperature is displayed again.

## 6.7 Using The Emergency Switch

- The emergency override switch (Fig. 3 4, page 4) is located in the connection panel.
- For normal operation the switch should be in the 'NORMAL USE' position.
- In the unlikely event of an electronic control failure slide the Switch to 'EMERGENCY OVERRIDE'.

NOTE: in this position the appliance will run all the time and will therefore perform as a freezer only.

## 6.8 Switching off the cooler

- Empty the cooler.
- Switch the cooler off.
- Pull out the connection cable.

If you do not want to use the cooler for a longer period of time:

- Leave the cover slightly open. This prevents odour build-up.

## 6.9 Defrosting the cooler

Humidity can form frost in the interior of the cooling device or on the evaporator. This reduces the cooling capacity. Defrost the device in good time to avoid this.



### **Warning! – Danger of damaging the device!**

Never use hard or pointed tools to remove ice or to loosen objects which have frozen in place.

---

To defrost the cooler, proceed as follows:

- Take out the contents of the cooling device.
- If necessary, place them in another cooling device to keep them cool. Switch off the device.
- Leave the lid open.
- Wipe off the defrosted water.

## 6.10 Replacing the device fuse

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### Caution – Danger of electrocution!

Disconnect the connection cable before you replace the device fuse.

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- Pull off the connection cable.

## 6.11 Replacing the light bulb

- Press the switch pin (Fig. 8 2, page 6) downwards so that the transparent part (Fig. 8 1, page 6) of the lamp can be removed at the front.
- Replace the light bulb ensuring that:
  - i) the LED's inside the bulb face toward the transparent cover.
  - ii) the polarity is correct. Test for operation and if the new bulb does not work fit it the other way around.
- Press the lamp back into the housing.

## 7. Cleaning and maintenance

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### Caution – danger of electrocution!

Always pull out the mains plug on the power supply before you clean and service the device.

---



### Caution – Danger of damaging the device!

Never clean the device under running water or in dish water.

Do not use abrasive cleaning agents or hard objects during cleaning as these can damage the device.

Never use brushes, scouring pads or hard or pointed tools to remove ice or to loosen objects which have frozen in place.

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- Occasionally clean the inside of the device with a damp cloth.



## 8. Guarantee

Our general guarantee conditions apply. If the product is defective, please take it to your nearest authorised WAECO repair agent. For repair and guarantee processing, please include the following documents when you send in the device:

- A copy of the receipt with purchase date.
- Reason for the claim or a description of the fault.

## 9. Troubleshooting

<b>Fault</b>	<b>Possible cause</b>	<b>Suggested remedy</b>
Device does not function, LED does not glow.	Battery voltage is too low.	Test the battery and charge it as needed.
	No voltage present in the AC voltage socket.	Try using another plug socket.
	The device fuse is defective.	Replace the device fuse, see "Replacing the device fuse" on page 17.
The device does not cool (plug is inserted, "POWER" LED is lit).	The integrated mains adapter is defective.	This can only be repaired by an authorised repair centre.
	Defective compressor.	This can only be repaired by an authorised repair centre.
The device does not cool (plug is inserted, "ERROR" LED flashes).	Battery voltage is too low.	Test the battery and charge it as needed.
The display shows an error message (e.g. "Err1") and the appliance does not cool.	The appliance has switched off due to an internal fault.	This can only be repaired by an authorised repair centre.

## 10. Disposal



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

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

## 11. Technical data

	<b>CF-80</b>	<b>CF-110</b>
Overall capacity:	80 litres	106 litres
Connection voltage:	12/24 V DC and 100-240V AC	
Rated current:		
- 12 V DC	7.5A	
- 24 V DC	3.5A	
- 100-240 V AC	1.3 to 0.7A	
Cooling range:	+10°C to - 18°C (+50°F to 0°F)	
Dimensions (WxHxD) in mm:	790x455x500	790x555x500
Weight:	29kg	32kg



### Note:

If the ambient temperature is above 32°C, (90°F), the minimum temperature cannot be attained.

Test/Certificates:



- 73/23/EEC - Low Voltage Electrical Equipment Directive

- 89/336/EEC - EMC Directive

- 95/54/EEC



Versions, and delivery options may vary due to technical modifications. This device is CFC-free. The coolant circuit contains R134a.

# WAECO

## mobile solutions

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