

**WAECO**  
by Dometic GROUP

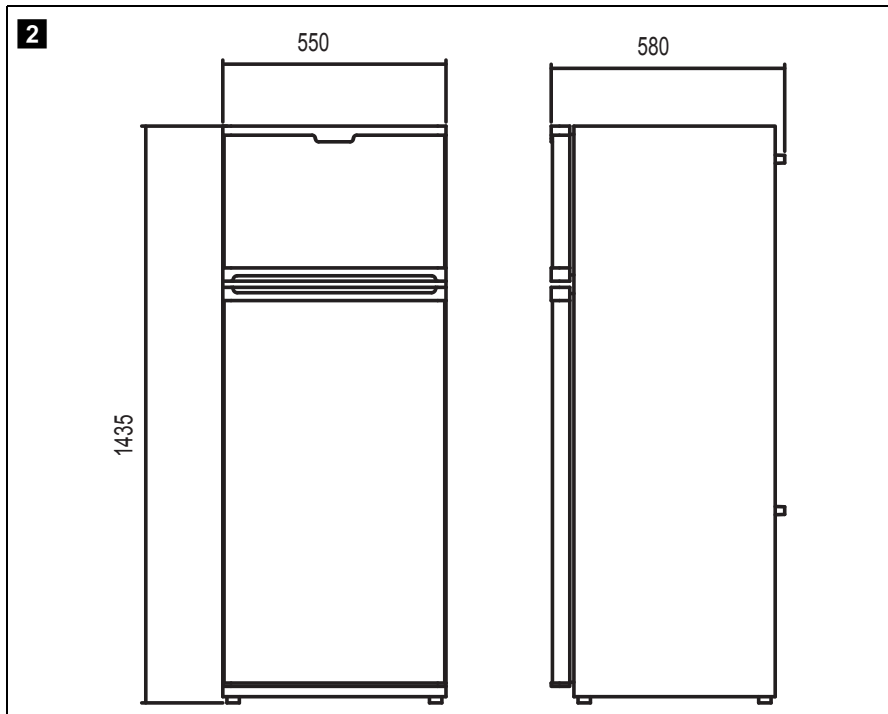
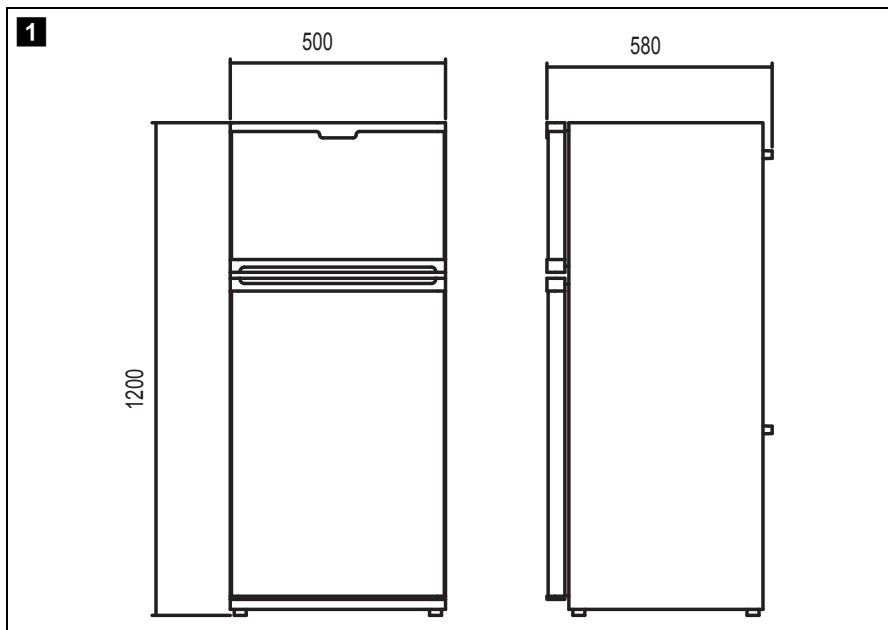


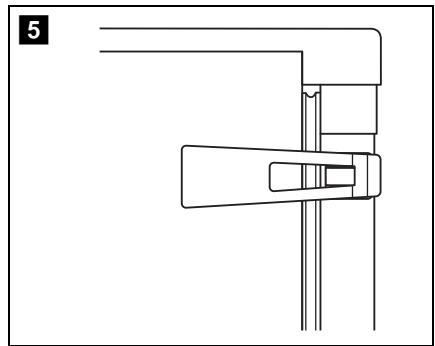
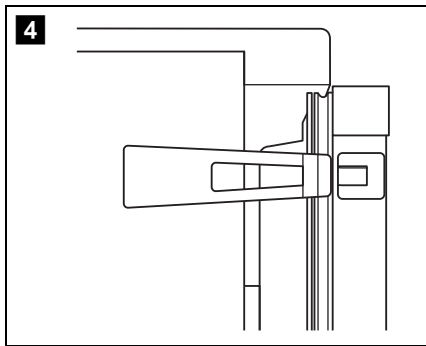
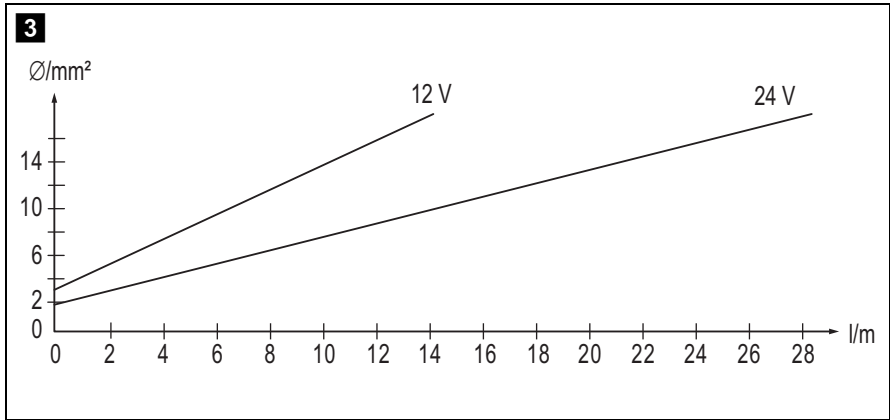
# WAECO CoolMatic

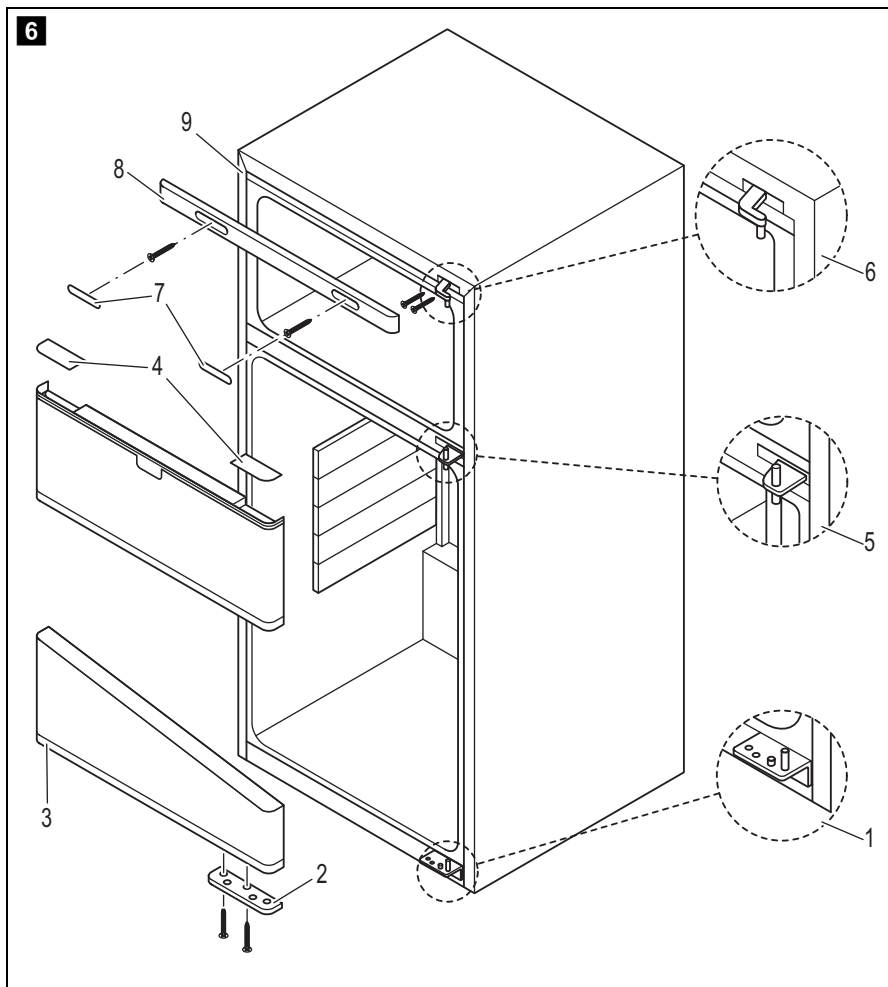
## HDC-161, HDC-221

**Refrigerator**

Instruction Manual







**Please read this manual carefully before starting the machine. Keep it in a safe place for future reference. If the device is resold, this operating manual must be handed over to the purchaser along with the device.**

## Contents

1	Notes on using the instruction manual . . . . .	6
2	Safety instructions . . . . .	7
3	Scope of delivery . . . . .	8
4	Intended use . . . . .	9
5	Technical description . . . . .	9
6	Using the refrigerator . . . . .	9
7	Cleaning and maintenance . . . . .	15
8	Guarantee . . . . .	15
9	Disposal . . . . .	16
10	Troubleshooting . . . . .	16
11	Technical data . . . . .	18

## 1 Notes on using the instruction manual

The following symbols are used in this instruction manual:



### Caution!

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



### Caution!

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



### 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.

**6 1, page 5:** this refers to an element in an illustration. In this case, item 1 in figure **6 1** on page 5.

**Please observe the following safety instructions.**

## 2 Safety instructions



### Caution!

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

- Damage to the device resulting from mechanical influences and overvoltage
- Alterations to the device made without the explicit permission of Dometic WAECO International
- Usage for purposes other than those described in the installation manual

### 2.1 General safety



- Have a trained technician make installations in wet rooms.
- 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 services.
- Do not open the refrigerant circuit under any circumstances.
- Place the device in a dry location where it is protected against splashing water.
- Do not place the device near naked flames or other heat sources (heaters, direct sunlight, gas ovens etc.).
- Ensure that the ventilation slots are not covered.
- The device is not suitable for storing caustic materials or materials containing solvents.
- Before starting up the device for the first time, check whether the operating voltage and the battery voltage correspond (see type plate).



- **Danger of fatal injuries!**

**When using the device on boats:** if the device is powered by the mains, ensure that the power supply has a ground fault interrupter circuit.

- Food may only be stored in its original packaging or in suitable containers.
- If the cable is damaged, it must be replaced to prevent possible electrical hazards. Only replace a damaged power cable with a power cable of the same type and specifications.

## 2.2 Operating the device safely



- **Electronic devices are not toys.**  
Always keep and use the device out of the reach of children.
- If you connect the device to a battery, make sure that food does not come into contact with the battery acid.



- Protect the device against rain and moisture.
- Disconnect the cooling device and other power consuming devices from the battery before connecting the battery to a quick charging device.  
Overvoltage can damage the electronics of the device.

- **Danger of fatal injuries!**  
Do not touch exposed cables with your bare hands.  
This especially applies when operating the device with an AC mains power supply.

## 3 Scope of delivery

Quantity	Description
1	Refrigerator
1	Security bolt and hooks
1	Assembly kit for changing the door hinge
1	Instruction manual

### 3.1 Accessories

Description	Item number
rectifier	MPS-50

## 4 Intended use



The refrigerator is suitable for cooling and freezing foodstuffs. The device is also suitable for use on boats.

If you wish to cool medicines, please check if the cooling capacity of the device is suitable for the medicine in question.

## 5 Technical description

The refrigerator is suitable for use with a 12 V or 24 V DC voltage and can therefore also be used for camping or on boats. It can also be connected to a 230 V mains supply via the MOBITRONIC MPS-50 rectifier.

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

It can cool products to +10 °C to +2 °C and keep them cold. In the freezer compartment, it can cool products to –18 °C and freeze them.

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

You can use the variable thermostat to set the desired temperature.

## 6 Using the refrigerator



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 “Cleaning and maintenance” chapter on page 15).

### 6.1 Energy saving tips

- Choose a well ventilated installation location which is protected against direct sunlight.
- Allow food to cool down first before placing it in the device.
- Do not open the refrigerator more often than necessary.
- Do not leave the door open for longer than necessary.
- Defrost your refrigerator as soon as a layer of ice forms.
- Avoid unnecessarily low temperatures.
- Clean the condensor of dust and impurities at regular intervals.



## 6.2 Connecting the refrigerator

### Connecting to a battery

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



To avoid voltage loss and therefore a drop in performance, the cable should be kept as short as possible and should not be interrupted if this is possible.

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 **3**, page 4.

Key for **3**, page 4

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



#### Caution!

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).
- ▶ Connect the refrigerator
  - As directly as possible to the pole of the battery or
  - To a plug socket which is fused with at least 15 A (at 12 V) or 7.5 A (at 24 V).



#### Caution!

Disconnect the cooling device and other power consuming devices from the battery before connecting the battery to a quick charging device.

Overvoltage can damage the electronics of the device.

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).

	<b>12 V</b>	<b>24 V</b>
<b>Switch-off voltage</b>	10.4 V	22.8 V
<b>Switch-on voltage</b>	11.7 V	24.2 V

### Connecting to 230 V mains supply



#### **Danger of fatal injuries!**

Never handle plugs and switches with wet hands or if you are standing in a puddle.



If you are operating your refrigerator on board a boat with a mains connection of 230 V from the land, you must install a ground protection circuit breaker between the 230 V mains supply and the refrigerator.

Seek advice from a trained technician.

- Use the MOBITRONIC MPS-50 rectifier to operate the refrigerator with a 230 V mains supply.

### Dividing the interior space

You can divide the interior space of the refrigerator variably by arranging the grids and shelves according to your needs.

To divide the interior space according to your needs, proceed as follows:

- Left the rear part of the shelf and pull it out to the front until the front part glides out of the guides.
- Turn the shelf down and pull it out completely.
- Select the required position and guide the shelf back in.

## 6.3 Using the refrigerator

The refrigerator conserves fresh foodstuffs. The freezer compartment conserves frozen foodstuffs and freezes fresh foodstuffs.



Ensure that food or liquids in glass containers are not excessively refrigerated.

Liquids expand when they freeze and can thus destroy the glass containers.

- Switch the refrigerator on by turning the knob to level "1".



After switching on, the refrigerator requires approx. 180 s until the compressor starts up.



Ensure that the objects placed in the refrigerator are suitable for cooling to the selected temperature.

- Turn the knob further if necessary to set the temperature in levels from “1” to “7” (see table below).

### Setting the temperature

You can set the temperature in levels using the knob. The integrated thermostat regulates the temperature as shown in the following table.

Level	Meaning
0	Device switched off
1	Minimum cooling capacity
7	Maximum cooling capacity



The cooling capacity can be influenced by:

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

### Conserving foodstuffs

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



#### Caution!

Do not conserve **warm** food in the refrigerator compartment.  
Do not place glass containers with liquid in the freezer compartment.



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

The refrigerator compartment is divided in different zones with different temperatures:

- The colder zones are immediately over the drawers for fruit and vegetables near the back wall.
  - You can keep frozen food in the freezer compartment for several months. The refrigerator attains temperatures of up to  $-18^{\circ}\text{C}$  in this area.
- Observe the following when using the device:
- Do not re-freeze products which are defrosting or have been defrosted, consume them as soon as possible.

- Each individual drawer and shelf can bear an evenly divided load of max. 20 kg.
- 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 are better conserved.

### Making ice cubes



#### Caution!

Do not eat ice cubes or ice cream immediately after removing it from the freezer compartment as this can cause cold burns.

Make ice cubes in the freezer compartment in the following manner:

- Fill the ice cube trays up to three quarters full with water.
- Place the ice cube trays in the freezer compartment.



Do **not** remove containers which have frozen in place to the base of the compartment with sharp or pointed objects. This can damage the refrigerator.

### Defrosting the refrigerator

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



#### Caution!

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

To defrost the refrigerator, proceed as follows:

- Take out the contents of the refrigerator.
- Place them in another cooling device to keep them cool, if necessary.
- Set the knob to "0".
- Leave the door open.
- Wipe off the defrosted water.

### Switching off and storing the refrigerator

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

- Turn the knob to "0".
- Disconnect the power cable from the battery or pull the DC cable plug out of the rectifier.
- Clean the refrigerator (see "Cleaning and maintenance" chapter on page 15).

- Leave the door slightly open.  
This prevents odours from building up.

### Locking the refrigerator

You can lock the refrigerator, to prevent children accessing it, for example. To do this you need to glue on a security bolt and hook.



The surfaces to be bonded must be clean and dry.

To glue on the security bolt and hook, proceed as follows:

- Remove the protective paper from the hook.
- Press the self-adhesive hook firmly onto the side edge of the door (**4**, page 4), if possible out of the reach of children.
- Remove the protective paper from the bolt.
- Hold the security bolt over the hook.  
The hook must fit into the opening of the bolt and it must not be possible to open the door if the bolt is shut (**5**, page 4).
- Press the self-adhesive label firmly onto the side wall of the refrigerator.
- To **open** the refrigerator push the security bolt to the side.
- To **close** the refrigerator push the door shut.  
The security bolt latches in place automatically.

### Changing the door hinge

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

To change the door hinge, proceed as follows (**6**, page 5):

- Remove the bolt of the lower hinge and the lower hinge (**6** 1, page 5).
- Take off the lower door.
- Remove the closing mechanism on the bottom of the door (**6** 2, page 5).
- Insert the locking mechanism on the left side again (**6** 3, page 5).
- Remove the marked covers on the top of the door (**6** 4, page 5).
- Remove the middle hinge (**6** 5, page 5).
- Take off the top door.
- Remove the bolt of the top hinge (**6** 6, page 5).
- Pull the pins (**6** 7, page 5) out of the profile (**6** 8, page 5).

- Remove the profile (6 8, page 5).
- Unscrew the top hinge (6 6, page 5).
- Take hinge AA out of the spare parts bag included in delivery and attach to the top side of (6 6, page 5).
- Attach the profile (6 8, page 5) and the pins (6 7, page 5) again.
- Also attach the pins from the spare parts bag.
- Attach the top bolt in hinge AA.
- Insert the socket for the bolts (two per door) in the holes intended for this on the left side (the sockets including the locking mechanism are in the spare parts bag).
- Put the top door back in place.
- Attach the middle hinge (6 5, page 5) to the left side.
- Cover the top hinge AA with the covers from the spare parts bag.
- Put the bottom door back in place.
- Insert the bottom hinge (6 1, page 5) and the bolt on the left side.

## 7 Cleaning and maintenance



### Caution!

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



### Caution!

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

- As soon as the refrigerator becomes dirty, clean it with a damp cloth.
- Make sure that no water drips into the sealing. This can damage the electronics.
- Wipe the refrigerator dry with a cloth after cleaning.

## 8 Guarantee

Our general guarantee conditions apply. If the product is defective, please send it back to the WAECO branch in your country (addresses on the back of the instruction manual) or to your specialist dealer. For repair and guarantee processing, the following documents must be sent along with the device:

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

## 9 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.

## 10 Troubleshooting

### Compressor does not run

Fault	Possible cause	Remedy
$U_T = 0 \text{ V}$	The connection between the battery and the electronics is interrupted	Establish a connection
	Main switch defective (if installed)	Replace the main switch
	Additional supply line fuse has blown (if installed)	Replace the fuse
$U_T \leq U_{ON}$	Battery voltage is too low	Charge the battery
Start attempt with $U_T \leq U_{OFF}$	Loose cables	Establish a connection
	Poor contact (corrosion)	Establish a connection
	Battery capacity too low	Replace the battery
Start attempt with $U_T \geq U_{ON}$	Cable cross section too low	Replace the cable ( <b>3</b> , page 4)
	Ambient temperature too high	–
	Insufficient ventilation	Move the refrigerator
	Condensor is dirty	Clean the condensor
Fan defective (if installed)	Fan defective (if installed)	Replace the fan
	Electric circuit between the pins in the compressor interrupted	Replace the compressor

$U_T$  Voltage between the positive and negative electronic terminals

$U_{ON}$  Switch-on voltage of the electronics

$U_{OFF}$  Switch-off voltage of the electronics

(See table on page 11)

**Interior temperature too low in control setting “1”**

<b>Fault</b>	<b>Possible cause</b>	<b>Remedy</b>
Compressor runs constantly	Thermostat sensor has no contact to the vaporiser	Secure the sensor
	Short circuit in the thermostat line Thermostat defective	Change the thermostat
Compressor runs for a long time	Large quantities have been frozen in the freezer compartment	–

**Cooling capacity drops, interior temperature rises**


<b>Fault</b>	<b>Possible cause</b>	<b>Remedy</b>
Compressor runs for a long time/continuously	Vaporiser iced over	Defrost the vaporiser
	Cooling area insulation is insufficient (moist/wet)	Adjust/replace the door seal
	Ambient temperature too high	–
	Insufficient ventilation	Move the refrigerator
	Condensator is dirty	Clean the condensator
	Fan defective (if installed)	Replace the fan
Compressor does not run often	Battery capacity exhausted	Charge the battery

**Unusual noises**

<b>Fault</b>	<b>Possible cause</b>	<b>Remedy</b>
Loud humming	A component of the refrigerant circuit cannot move freely (lies against the wall)	Bend the component carefully
	Foreign body jammed between the cooling device and the wall	Remove the foreign body
	Fan noise (if installed)	–



## 11 Technical data

	HDC-161	HDC-221
Capacity:	165 l	218 l
Freezer proportion:	40 l	41 l
Connection voltage:	12 V DC or 24 V DC	
Average power consumption:	75 W	
Cooling temperature range – refrigerator:	+10 °C to +2 °C	
Cooling temperature range – freezer:	0 °C to –18 °C	
Relative humidity:	max. 90 %	
Constant inclination:	max. 30°	
Dimensions:	See <b>1</b> , page 3	See <b>2</b> , page 3
Weight:	approx. 37 kg	approx. 46 kg
Testing/certification:		

Versions, technical modifications and delivery options reserved.

This device is CFC-free.

The coolant circuit contains R134a.

**(D) Dometic WAECO International GmbH**  
Hollefeldstraße 63 · D-48282 Emsdetten  
☎ +49 (0) 2572 879-195 · 📠 +49 (0) 2572 879-322  
Mail: info@dometic-waeco.de · Internet: www.dometic-waeco.de

## Europe

**(A) Dometic Austria GmbH**  
Neudorferstrasse 108  
2353 Guntramsdorf  
☎ +43 2236 908070  
📠 +43 2236 90807060  
Mail: info@waeco.at

**(CH) Dometic Switzerland AG**  
Riedackerstrasse 7a  
CH-8153 Rümlang (Zürich)  
☎ +41 44 8187171  
📠 +41 44 8187191  
Mail: info@dometic-waeco.ch

**(DK) Dometic Denmark A/S**  
Nordensvej 15, Taulov  
DK-7000 Fredericia  
☎ +45 75585966  
📠 +45 75586307  
Mail: info@waeco.dk

**(E) Dometic Spain S.L.**  
Avda. Sierra del Guadarrama, 16  
E-28691 Villanueva de la Cañada  
Madrid  
☎ +34 902 111 042  
📠 +34 900 100 245  
Mail: info@dometic.es

**(F) Dometic S.N.C.**  
ZA du Pré de la Dame Jeanne  
F-60128 Plailly  
☎ +33 3 44633500  
📠 +33 3 44633518  
Mail: info@dometic.fr

**(FIN) Dometic Finland OY**  
Mestarintie 4  
FIN-01730 Vantaa  
☎ +358 20 7413220  
📠 +358 9 7593700  
Mail: info@dometic.fi

**(I) Dometic Italy S.p.A.**  
Via Virgilio, 3  
I-47100 Forlì  
☎ +39 0543 754901  
📠 +39 0543 756631  
Mail: info@dometic.it

**(N) Dometic Norway AS**  
Skolmar 24  
N-3232 Sandefjord  
☎ +47 33428450  
📠 +47 33428459  
Mail: firmapost@waeco.no

**(NL) Dometic Benelux B.V.**  
Ecustraat 3  
NL-4879 NP Etten-Leur  
☎ +31 76 5029000  
📠 +31 76 5029090  
Mail: info@dometic.nl

**(S) Dometic Scandinavia AB**  
Gustaf Melins gata 7  
S-42131 Västra Frölunda  
(Göteborg)  
☎ +46 31 7341100  
📠 +46 31 7341101  
Mail: info@waeco.se

**(UK) Dometic UK Ltd.**  
Dometic House · The Brewery  
Blandford St. Mary  
Dorset DT11 9LS  
☎ +44 844 626 0133  
📠 +44 844 626 0143  
Mail: sales@dometic.co.uk

## Overseas + Middle East

**(AUS) Dometic Australia**  
1 John Duncan Court  
Varsity Lakes QLD 4227  
☎ +61 7 55076000  
📠 +61 7 55076001  
Mail: sales@waeco.com.au

**(HK) WAECO Impex Ltd.**  
Suites 2207-2211 · 22/F · Tower 1  
The Gateway · 25 Canton Road  
Tsim Sha Tsui · Kowloon  
Hong Kong  
☎ +852 24611386  
📠 +852 24665553  
Mail: info@dometic-waeco.com.hk

**(ROC) WAECO Impex Ltd.**  
Taipei Office  
2 FL-3 · No. 56 Tunhua South Rd, Sec 2  
Taipei 106, Taiwan  
☎ +886 2 27014090  
📠 +886 2 27060119  
Mail: marketing@waeco.com.tw

**(UAE) Dometic AB**  
Regional Office Middle East  
P O Box 74775  
Dubai, United Arab Emirates  
☎ +971 4 321 2160  
📠 +971 4 321 2170  
Mail: info@dometic.ae

**(USA) Dometic Marine Division**  
2000 N. Andrews Ave. Extension  
Pompano Beach, FL 33069 USA  
☎ +1 954 973 2477  
📠 +1 954 979 4414  
Mail: marinesales@dometicus.com

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