

# CDP



## OPERATING MANUAL

**CDP 115**

Peltier cooling unit for waterbaths

## Manufacturer and customer service

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Please contact our customer service before sending appliances for repair or before returning equipment, otherwise, we have to refuse acceptance of the shipment.

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Date 06/2013

We reserve the right to make changes

## About this manual

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### Purpose and target group

This manual describes the construction, function, assembly and operation of CDP 115 Peltier cooling units for MEMMERT waterbaths. It is intended for use by trained personnel of the operator, who have the task of assembling and/or operating the unit.

If you as the operator are asked to work on the unit, you should read this manual carefully before starting work on the unit. Familiarise yourself with the safety regulations. Only perform the work that is described in this manual. If there is something you don't understand, or certain information is missing, ask your superior or get in touch with the manufacturer. Do not do anything without authorisation.

**i** This manual cannot describe all the possible combinations of setup and connection variations. To make matters clearer, the assembly of two representative waterbaths is described; the depictions may therefore differ slightly from the actual appearance. But the assembly always follows the same pattern.

### Other documents that you must read:

You should also consult the instruction manual for the waterbath on which the cooling unit is to be operated.

### Storage and Forwarding

This instruction manual belongs with the unit and should always be stored so that persons working on the unit have access to it. It is the responsibility of the operator to ensure that persons who work on or who will work on the unit are informed as to the whereabouts of this instruction manual. We recommend that it is always stored in a protected location close to the cooling unit. Make sure that the instruction manual is not damaged by heat or damp. If the cooling unit or the waterbath is sold or transported and then set up again at a different location, this instruction manual must also go with it.

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## 1. Safety regulations

**Warning!**

After removing covers, current-carrying parts may be exposed. You may get an electric shock if you touch these parts. Disconnect the mains plug before removing any covers. Any work inside the unit may only be performed by qualified electricians.

**Warning!**

If any fluid penetrates the housing this could cause electric shocks and short circuits. Do not immerse the unit in water and protect it from spray water.



Also observe the safety regulations and notes in the instruction manual for the waterbath used.

## 2. Description

### 2.1 Overview

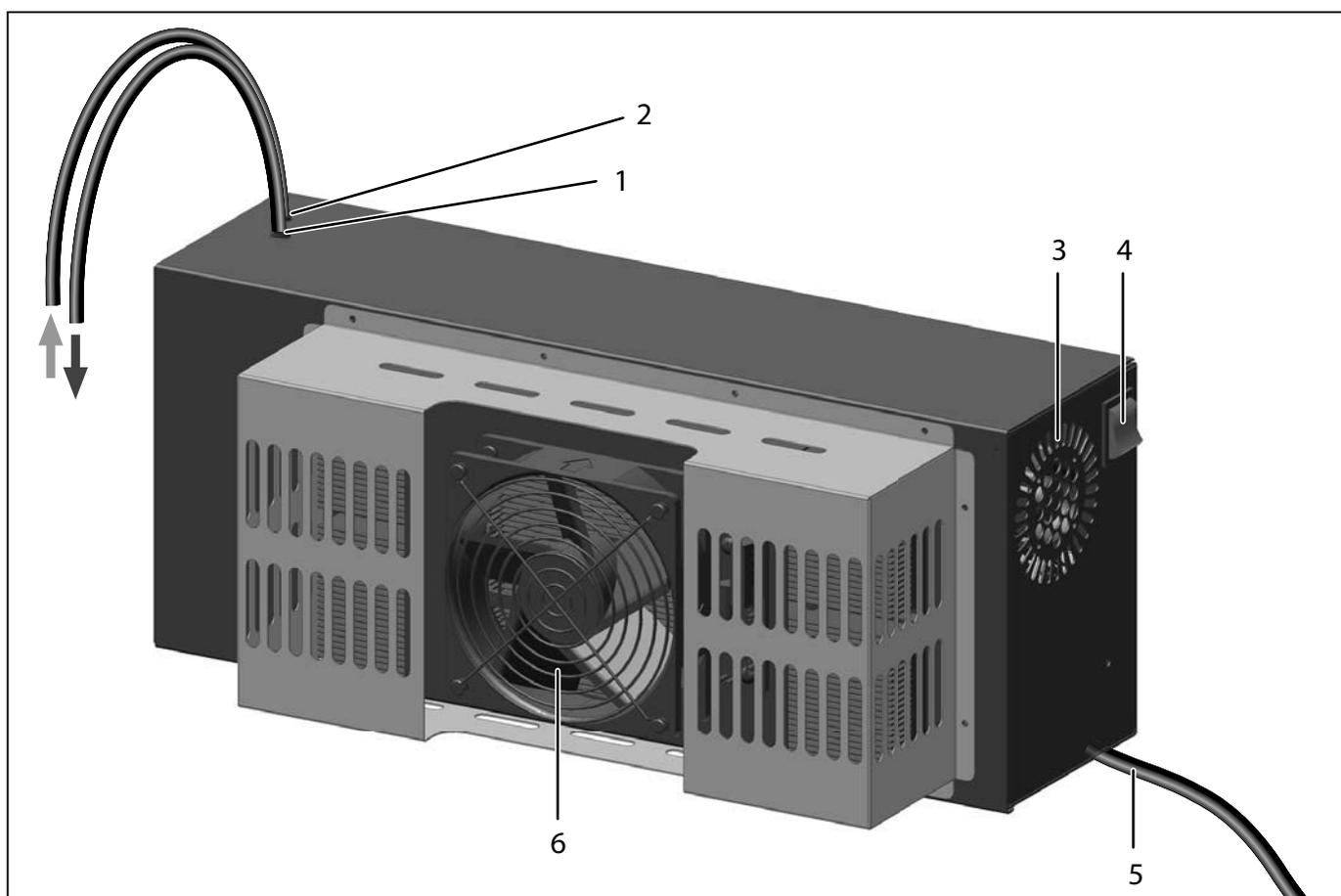


Fig. 1 Waterbath cooling unit CDP 115

- 1 Return tube to the waterbath
- 2 Supply tube from the waterbath
- 3 Housing fan
- 4 On/Off switch
- 5 Mains lead
- 6 Peltier cooling unit with fan

## 2.2 Function

The waterbath cooling unit CDP 115 makes it possible to cool the water in Memmert waterbaths to temperatures below room temperature. To do this, water is pumped from the waterbath, cooled by a Peltier module and then returned to the waterbath (Fig. 2).

The cooling performance is constant and cannot be regulated. The temperature control of the water is taken over by the waterbath; its controller automatically takes into account the cooling performance of the cooling unit.

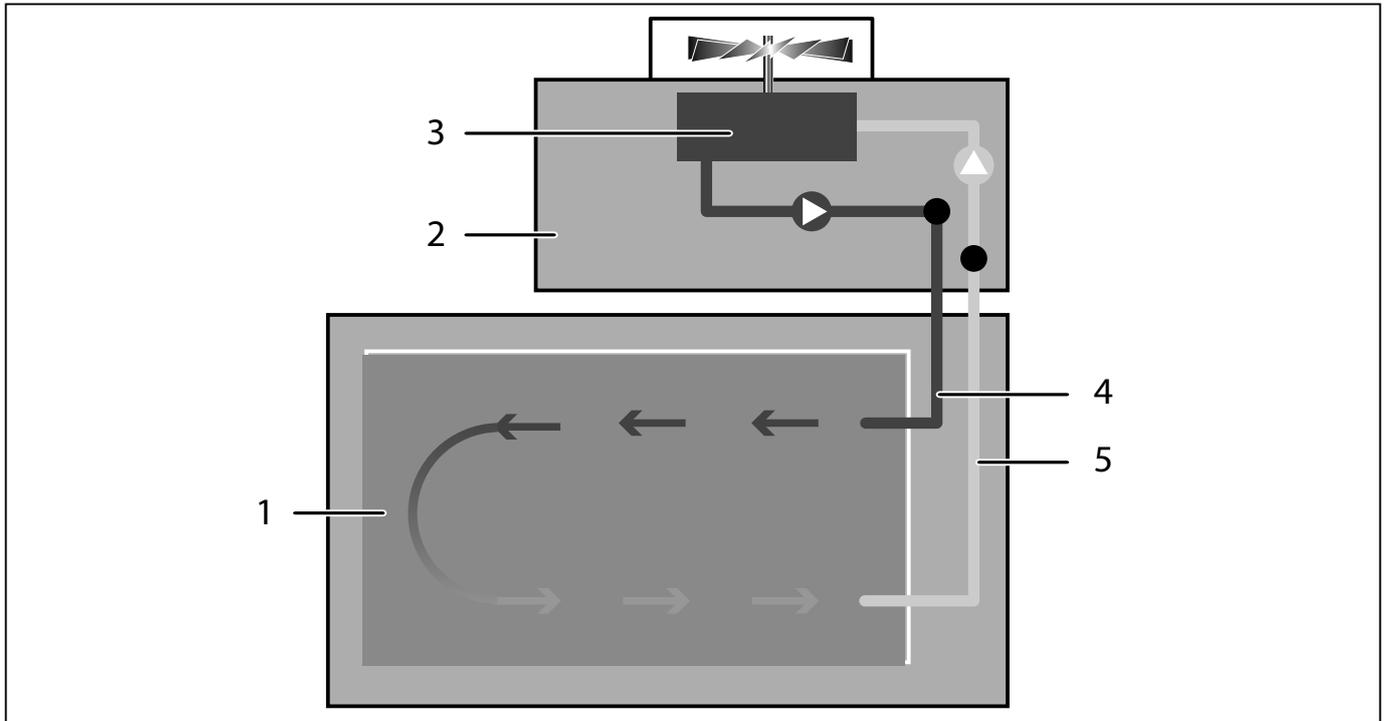


Fig. 2 How the waterbath cooling unit CDP 115 works

- 1 MEMMERT waterbath
- 2 Waterbath cooling unit CDP 115
- 3 Peltier cooling unit
- 4 Water return from the cooling unit to the waterbath
- 5 Water supply from the waterbath to the cooling unit

## 2.3 Technical data

Dimensions W x H x D	450 x 185 x 120 mm
Weight	8 kg
Electrical connection	230 V/50 Hz
Current consumption	max. 160 W
Effective refrigeration capacity (W)	115 W
Flow rate	600 ml/min

## 2.4 Intended use

The waterbath cooling unit CDP 115 may only be operated in conjunction with Memmert waterbaths of types W..7, W..10, W..14, W..22, W..29 and W..45. You can determine which type of waterbath you have from the nameplate on the waterbath.

The waterbath cooling unit CDP 115 may only be used for pumping and cooling water, and may not be used with other liquids.

## 3. Assembly and connection

- 1 The operating location of the waterbath cooling unit should be chosen so that the fan opening of the Peltier cooling element (see Fig. 1) remains as free as possible to achieve the maximum cooling performance. The other two fan openings in the housing must also remain uncovered.

### 3.1 Installation options

The waterbath cooling unit CDP 115 can be installed in two ways; it can be

- ▶ attached to the waterbath (only for waterbaths with gable lids, Fig. 3; assembly description from page 9)
- ▶ set up separately next to the waterbath (Fig. 4; assembly description from page 14).

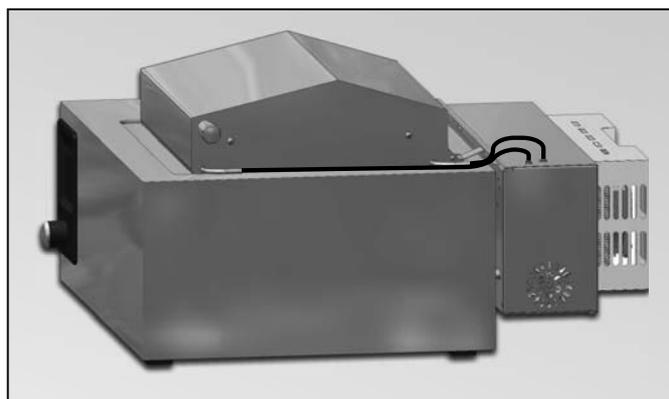


Fig. 3 Cooling unit is fixed to the rear of the waterbath



Fig. 4 Cooling unit standing next to the waterbath

### 3.2 Required accessories

Various accessories are required to connect and assemble the waterbath cooling unit CDP 115. What these are depends on the one hand on the installation method planned (fitted onto the waterbath or separately, see Fig. 3 and Fig. 4) and on the other, on the waterbath type for which the cooling unit is to be operated. (You can determine which type of waterbath you have from its nameplate.)

All accessories are contained in a fixtures and connections set (not part of the delivery, see Table 1). If you want to assemble the cooling unit on waterbaths with a gable lid, you will also require a special lid with notches for the cooling tubes.

The following is an overview of the accessories available.

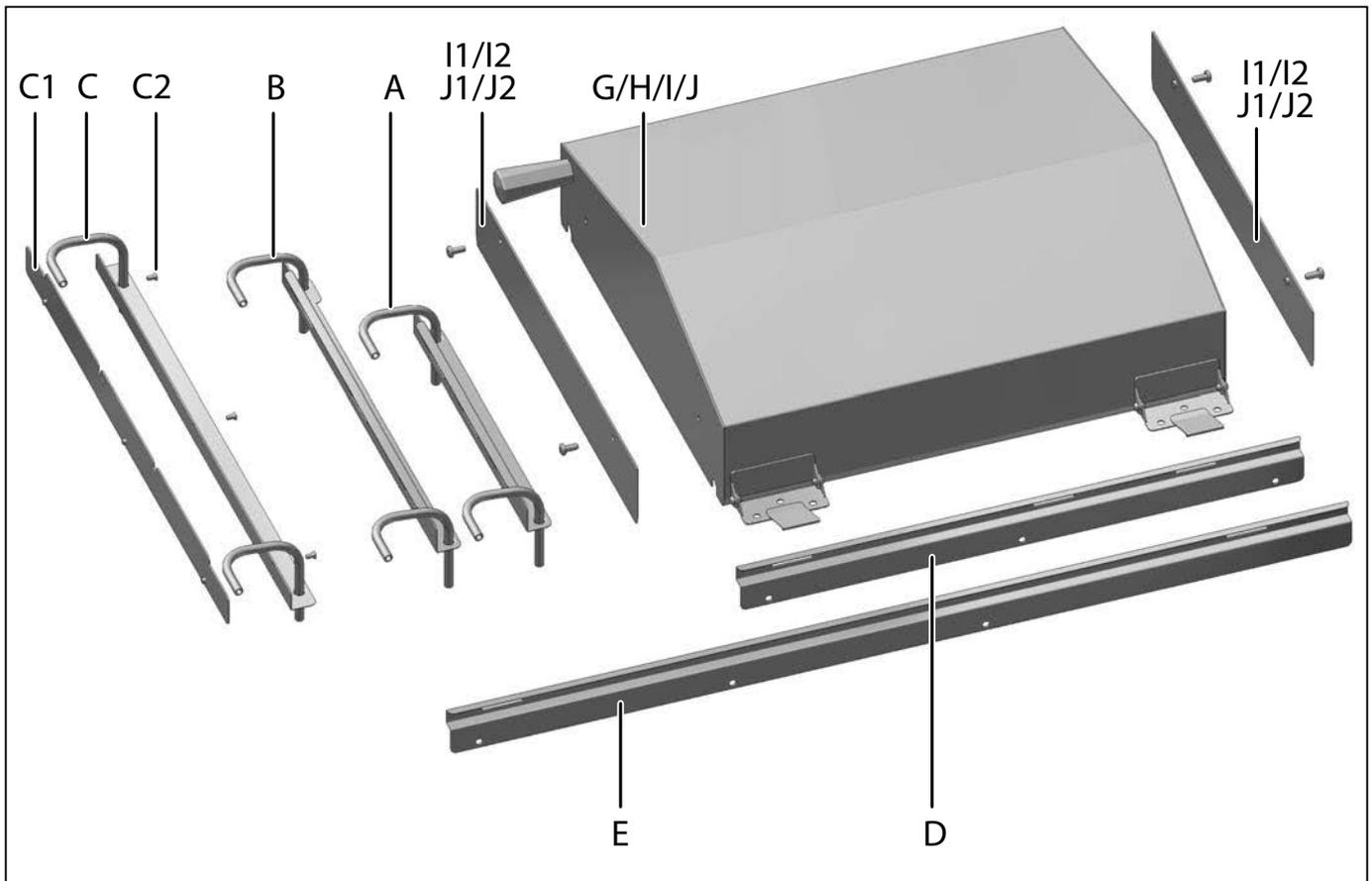


Fig. 5 Available assembly accessories (for a description, see Table 1)

Accessories	Includes	Item in Fig. 5	Order No.
Fixtures and connection set	Tube suspender for waterbath W..7/10	A	...-L9
	Tube suspender for waterbath W..14/22	B	
	Tube suspender for waterbath W..29/45 with intermediate rail and 3 screws	C, C1, C2	
	Fixing rail for attachment of cooling unit to waterbath W..7/10/14/22	D	
	Fixing rail for attachment of cooling unit to waterbath W..29/45	E	
Special lid for W..7		G	...-L4*
Special lid for W..10		H	
Special lid for W..14/22 with two closing panels and screws		I, I1, I2	
Special lid for W..29/45 with two closing panels and screws		J, J1, J2	

Table 1 Overview of available accessories  
 \* When ordering, please specify waterbath size

The following overview illustrates which of these accessories you require for which installation option:

Waterbath model	Lid design of waterbath	Required accessories (see Table 1) for ...	
		... Assembly on waterbath (see Fig. 3)	... Standalone unit (see Fig. 4)
W..7	flat	not possible	A
	sloping	A D G	–
W..10	flat	not possible	A
	sloping	A D H	–
W..14/22	flat	not possible	B
	sloping	B D I	–
W..29/45	flat	not possible	C
	sloping	C E J	–

Table 2 Overview of required accessories

### 3.3 Attachment on waterbath (only for waterbaths with gable lid)

#### 3.3.1 Replacing lid of waterbath

In order for the cooling unit to be attached to the waterbath, the standard lid must be replaced with a special lid (G/H/I/J) (see Table 1 and Fig. 5).

1. Remove the supplied closing panels and fixture material (I1/I2/J1/J2) from the special lid I/J (only for special lids for waterbaths W..14/22/29/45).  
If the waterbath is to be operated without a shaking device: Attach the closing panel I1/J1 with two supplied screws on the inside of the lid (Fig. 6). (This is to prevent heat loss through the side cut-out in the lid for the shaking device.)

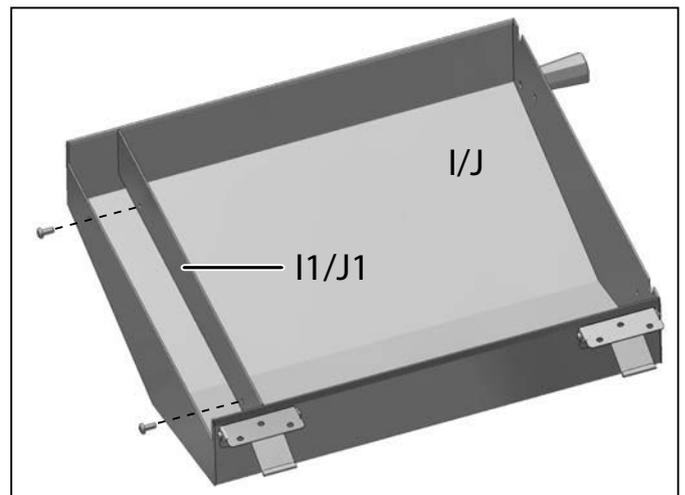


Fig. 6 Addition of closing panel when operating the waterbath without shaker device

2. Unscrew the hinges of the original lid from the waterbath (Fig. 7); remove lid.
3. Pull the O-rings off the screws.
4. Place the special lid G/H/I/J onto the waterbath, push six screws through the hinges of the lid and push the O-rings onto the screws (Fig. 8).
5. Screw the special lid tight to the waterbath.

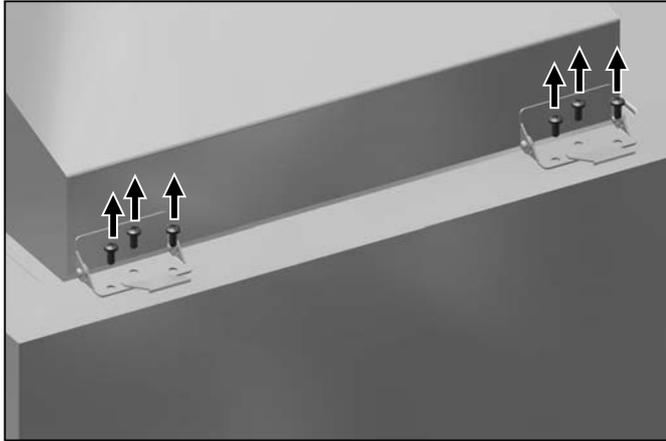


Fig. 7 Unscrew standard lid from waterbath

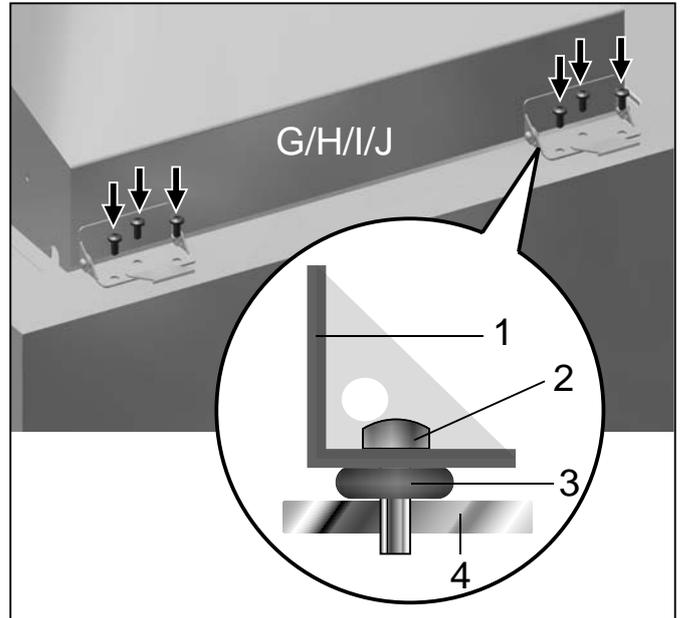


Fig. 8 Screw the special lid tight to the waterbath  
 1 Lid hinge  
 2 Screw  
 3 O-ring  
 4 Top side of waterbath

### 3.3.2 Attaching the tube suspender to the waterbath

For waterbaths of the type W..29 and W..45:

1. Insert the intermediate rail C1 from below behind the frame of the basin so that the rail will stay between the frame and the basin (Fig. 9).
2. Screw tube suspender C with three supplied screws C2 onto the intermediate rail (Fig. 10).

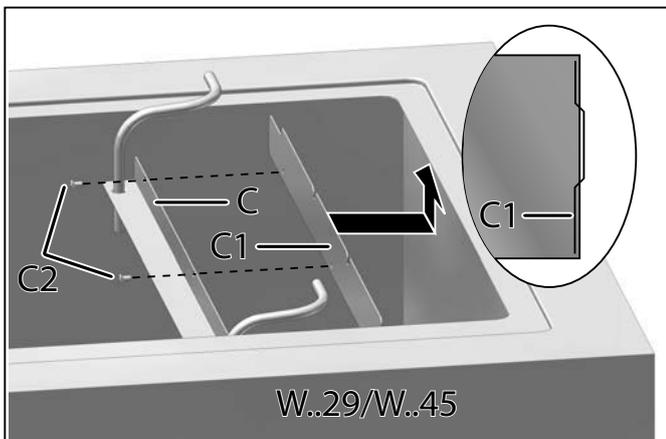


Fig. 9 Fix intermediate rail (C1) and tube suspender (C) to the waterbath

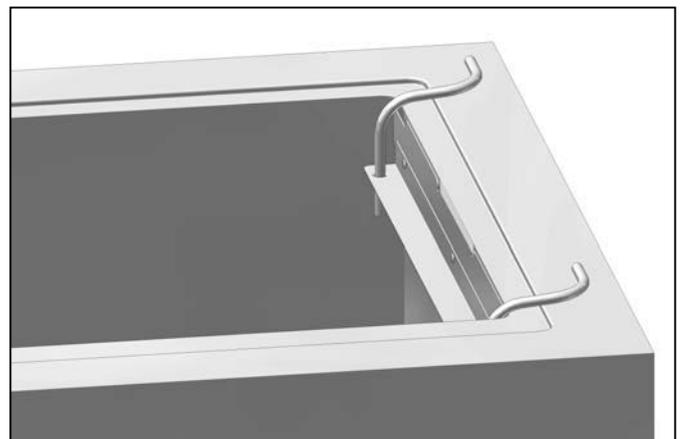
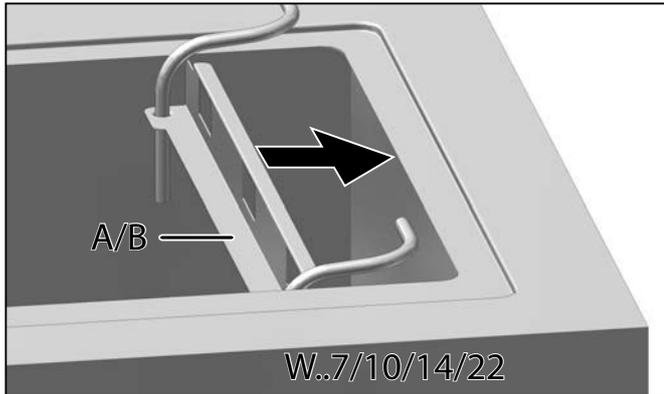


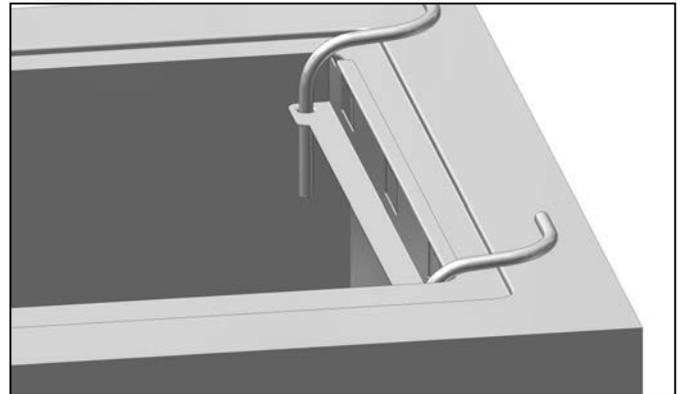
Fig. 10 Tube suspender fixed to the waterbath

*For waterbaths of the type W..7, W..10, W..14 and W..22:*

Place tube suspenders A and B onto the edge of the top right-hand side of the waterbath, as illustrated in Fig. 11 and Fig. 12.



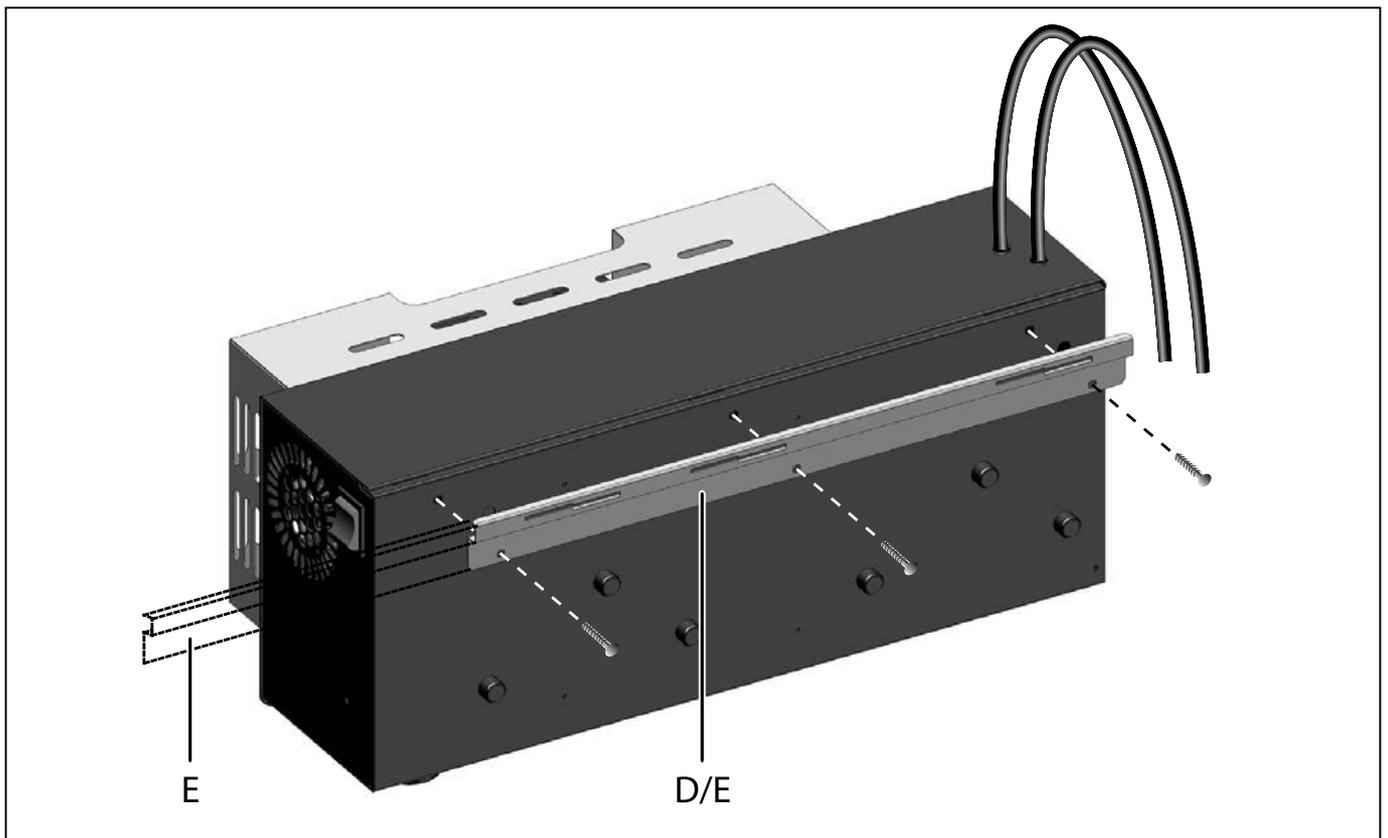
*Fig. 11 Fix tube suspender (A or B) onto waterbath*



*Fig. 12 Tube suspender fixed to the waterbath*

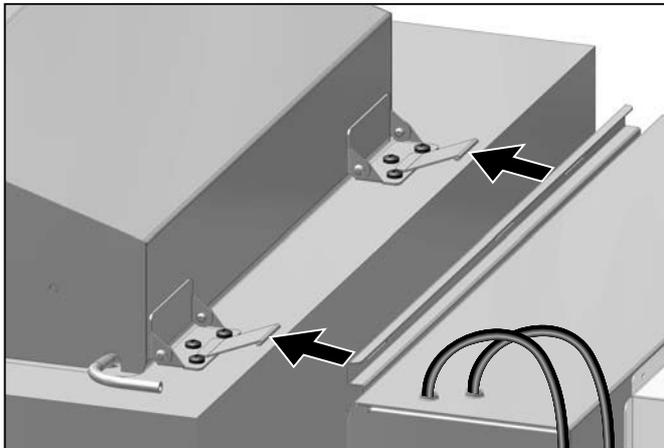
### 3.3.3 Attaching the cooling unit to the waterbath

1. Screw attachment rail D or E to the cooling unit with three screws, as shown in Fig. 13. The attachment rail E must stick out in the direction of the mains switch.

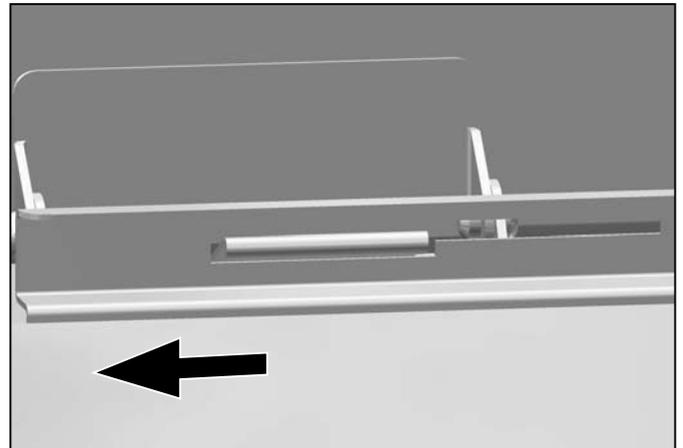


*Fig. 13 Screw attachment rail to the cooling unit*

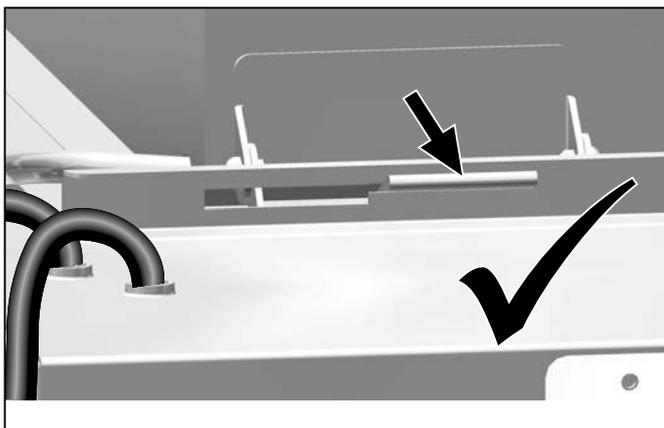
2. Attach cooling unit with the attachment rail on the rear of the waterbath into the bracket on the hinges of the special lid (Fig. 14) and move horizontally (Fig. 15), so that the bracket snaps into place (Fig. 16).



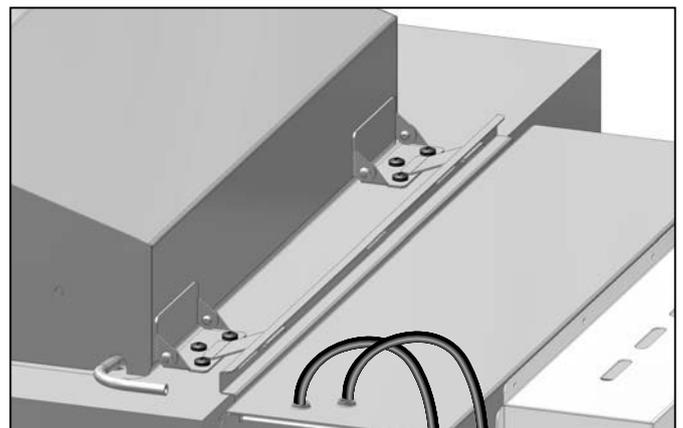
*Fig. 14 Attach cooling unit with attachment rail on the rear of the waterbath into the bracket on the hinges of the lid*



*Fig. 15 Push cooling unit forwards so that the retaining bracket of the lid snaps into place in the bracket (see Fig. 16)*



*Fig. 16 Retaining bracket of lid in place in the attachment rail*



*Fig. 17 Assembly of cooling unit finished*

### 3.3.4 Connecting the cooling unit

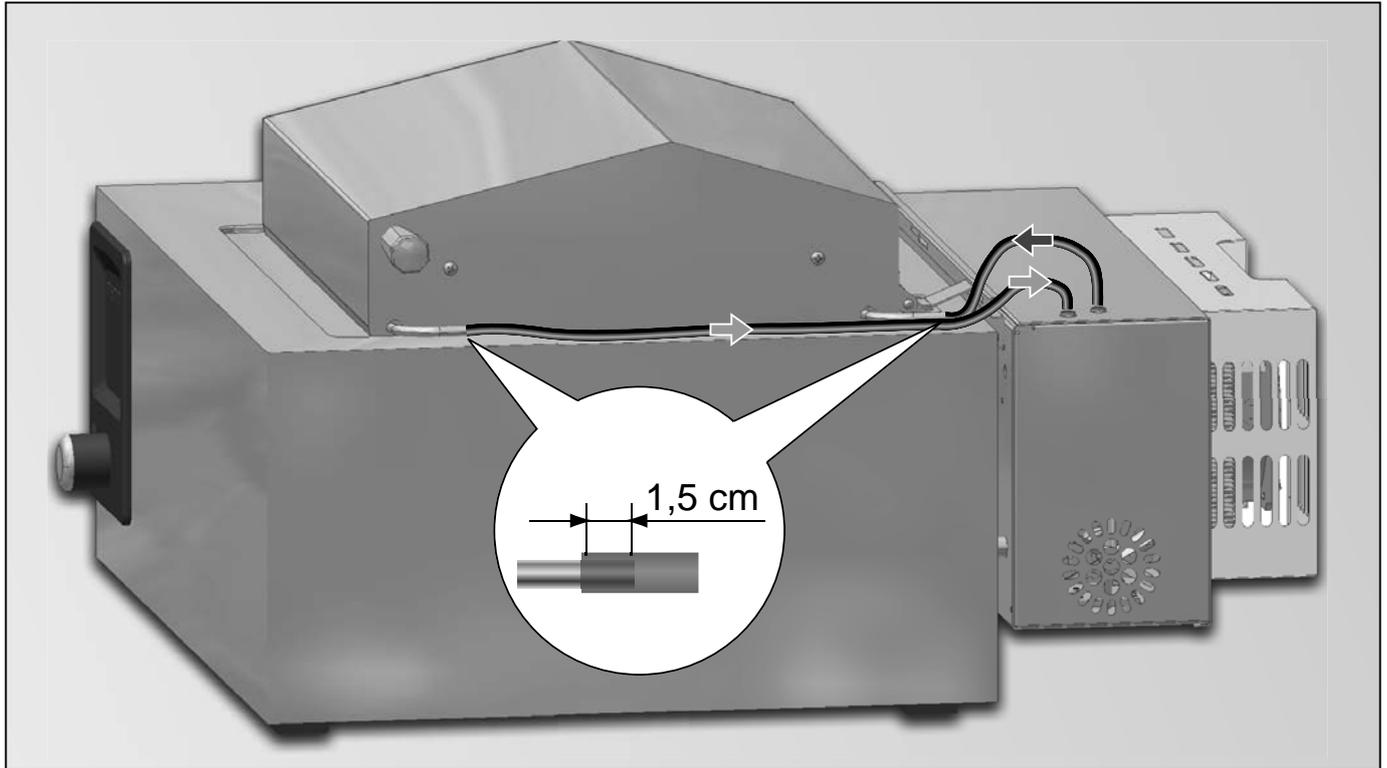


Fig. 18 Connecting tubes

1. Cut the tubes of the cooling unit to the lengths actually required for connection to the tube suspender. Do not confuse the supply and return tubes when doing this (markings on the tubes and Fig. 18): The rear tube of the cooling unit must be plugged onto the rear connection of the tube suspender. Keep the tubes as short as possible, but do not bend them. Store any excess tube material; it will still be required.
2. Plug tubes onto the connections of the tube suspender (sticks out 1.5 cm, Fig. 18).
3. Push a sufficiently long piece of the cut off tube material onto the suction tube in the waterbath basin and cut it to size, so that it sticks out about 1 cm beyond the edge of the basin (Fig. 19).
4. Connect the mains lead of the cooling unit.

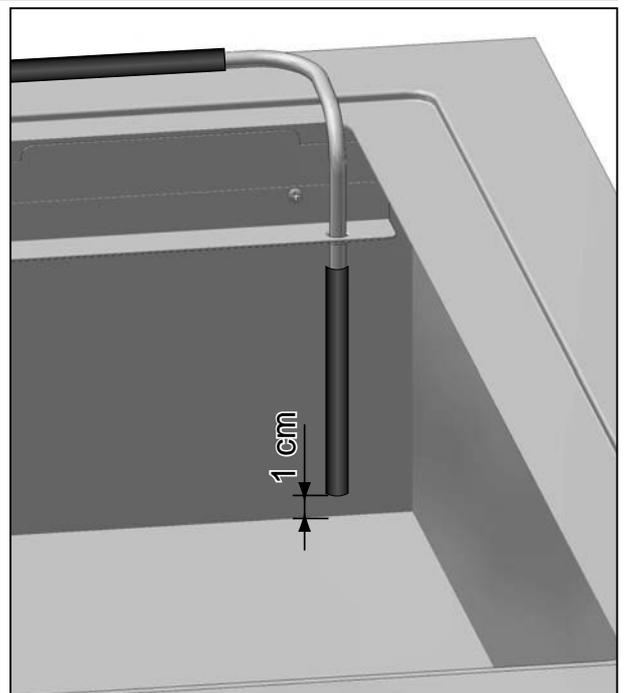


Fig. 19 Place a piece of the cut off tube material onto the suction tube and cut to size

### 3.4 Standalone unit

1. Fix tube suspenders (A/B/C) to the waterbath as described in section 3.3.2 on page 10.
2. Place cooling unit to the right of the waterbath, as shown in Fig. 20. Make sure that the cooling unit is standing on its rubber feet when this is done (Peltier fan is facing upwards, the mains switch is facing to the rear).
3. Cut the tubes of the cooling unit to the lengths actually required for connection to the tube suspender. Do not confuse the supply and return tubes when doing this (markings on the tubes and Fig. 20): The upper tube of the cooling unit must be plugged onto the rear connection of the tube suspender A/B/C.  
Keep the tubes as short as possible, but do not bend them. Store any excess tube material; it will still be required.
4. Plug tubes onto the connections of the tube suspender (sticks out 1.5 cm, Fig. 20).
5. Push a sufficiently long piece of the cut off tube material onto the suction tube in the waterbath basin and cut it to size, so that it sticks out about 1 cm beyond the edge of the basin (Fig. 19).
6. Connect the mains lead of the cooling unit.

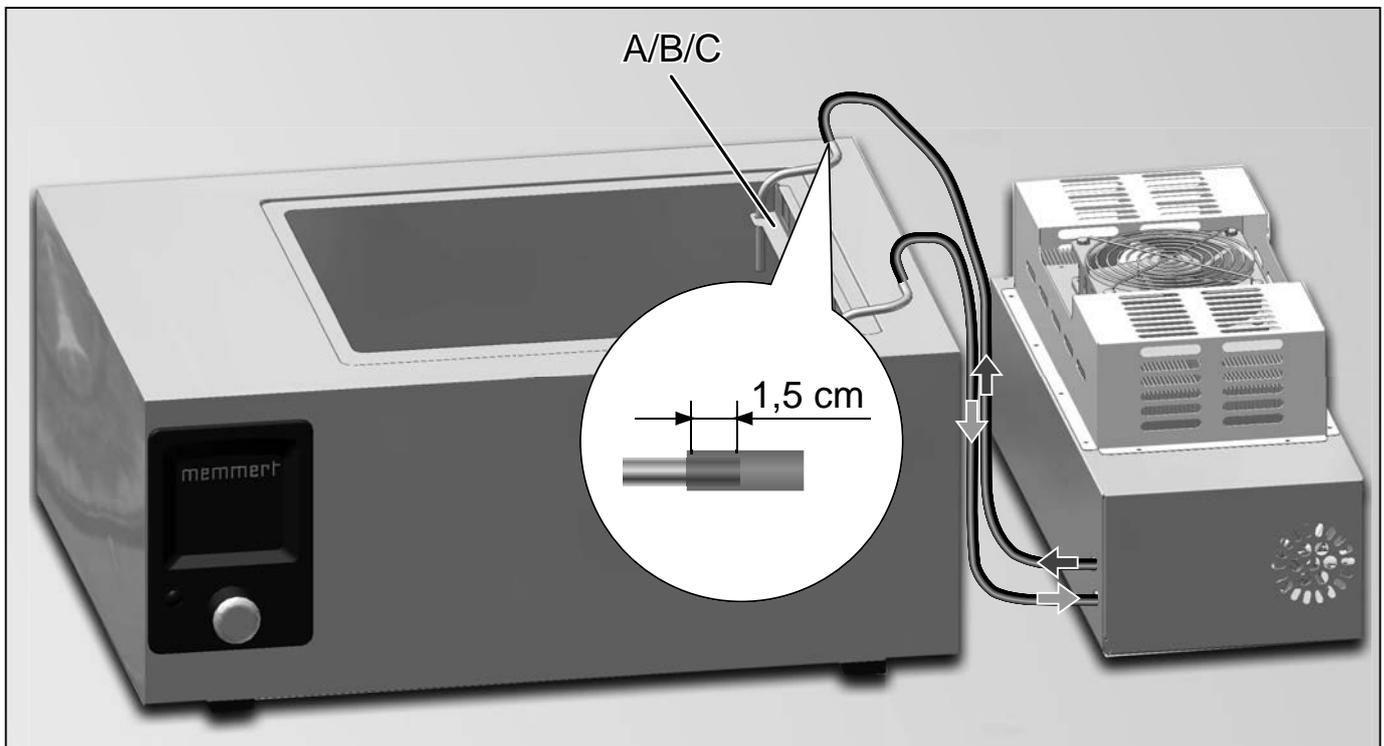


Fig. 20 Cooling unit standing next to the waterbath

## 4. Operation

- There must not be any coarse-grained particles in the waterbath. This could damage the cooling unit.

### 4.1 Switching on and off

- ▶ To start operating, switch on the cooling unit on the mains switch (Fig. 21).
- ▶ Use the mains switch to switch off the cooling unit.

You can see that the unit is on if the fan is turning. If the fan is not turning, the automatic switch-off has probably been triggered (see section 4.3).

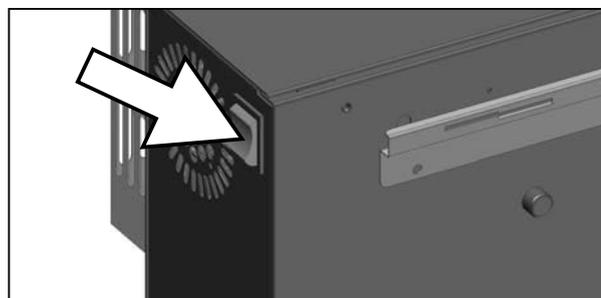


Fig. 21 Mains switch

### 4.2 In operation

The refrigeration capacity is constant and cannot be regulated. The cooling unit works at a constant power as long as it is switched on. The temperature control of the water is taken over by the waterbath; its controller automatically takes into account the cooling performance of the cooling unit.

Do not operate the cooling unit when the waterbath heater is switched off. This could trigger the automatic switch-off (see next section).

- If the water in the waterbath is to be heated up to above room temperature, it is recommended that you switch the cooling unit off.

### 4.3 Automatic switch-off

The cooling unit has a low temperature fuse which switches off the unit automatically when the water temperature is at about 3 °C, to prevent icing and possible damage to the cooling element. When the water temperature reaches about 5 °C, the cooling unit switches back on again.

### 4.4 Function test

- ▶ You can see that the unit is on, and that the Peltier element is cooling, if the fan is turning.
- ▶ To check that the unit is pumping, pull off the suction tube from the tube suspender and place a finger on it to test for suction. If there is no suction effect: See next section, Troubleshooting.

## 4.5 Troubleshooting

- ▶ Is the unit connected to the mains supply? If not, connect unit to the mains.
- ▶ Is the unit switched on? If not, switch unit on.
- ▶ Are all tubes correctly connected? If not, connect tubes.
- ▶ Is the waterbath heater switched on? If not, switch waterbath heater on.
- ▶ It is possible that the tubes in the tube suspender are blocked. In this case, replace the tube suspender.

If the error cannot be eliminated, the cause is probably a defect in the unit. In this case you should contact customer service (see page 2).

## 4.6 Dismantling the cooling unit

1. Switch off the cooling unit; pull out the mains plug.
2. Remove the tube suspender from the waterbath. Keep the tubes in place when doing this.
3. Attach the closing panel I1/J1 with two supplied screws on the right side of the inside of the lid (Fig. 22). (This is to prevent heat loss through the cut-out in the lid for the tube suspender.)

The waterbath can now be used again without the cooling unit.

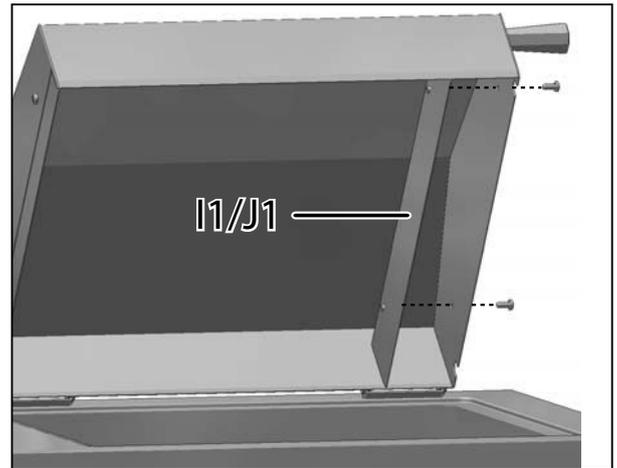


Fig. 22 Assemble the closing panel

## 5. Disposal

Have the unit disposed of as scrap metal by a specialist disposal company.

## 6. EC Declaration of Conformity



memmert

### EC Declaration of Conformity

Manufacturer's name and address: MEMMERT GmbH + Co. KG  
Äußere Rittersbacher Straße 38  
D-91126 Schwabach

Product: Peltier cooling unit  
Type: CDP  
Sizes: 115  
Nominal voltage: AC 230 V 50/60 Hz  
alternative AC 115 V 50/60 Hz

The designated product is in conformity with the European EMC-Directive

**2004/108/EEC**  
*including amendments*

**Council Directive of 03 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility.**

*Full compliance with the standards listed below proves the conformity of the designated product with the essential protection requirements of the above-mentioned EC Directive:*

DIN EN 61326-1:2006-10  
DIN EN 61000-3-11:2001-04

EN 61326-1:2006  
EN 61000-3-11 :2000

The designated product is in conformity with the European Low Voltage Directive

**2006/95/EEC**  
*including amendments*

**Council Directive on the approximation of the laws of the Member States relating to Electrical equipment for use within certain voltage limits.**

*Full compliance with the standards listed below proves the conformity of the designated product with the essential protection requirements of the above-mentioned EC Directive:*

DIN EN 61 010-1 (VDE 0411 part 1):2002-08  
DIN EN 61 010-2-010 (VDE 0411 part 2-010):2004-06

EN 61 010-1:2001  
EN 61 010-2-010:2003

Schwabach, 03.06.09

(Legally binding signature of the issuer)

**This declaration certifies compliance with the above mentioned directives but does not include a property assurance. The safety note given in the product documentation which are part of the supply, must be observed.**





19.06.2013

CDP englisch

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