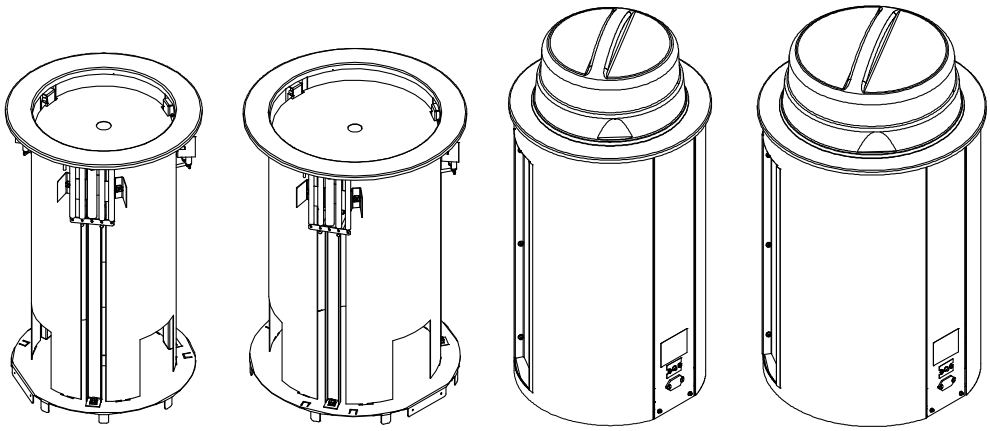
HUPFER®

Operating Instructions



Cup Dispenser

EBR/70-120 | EBR/100-150 | EBRH/70-120 | EBRH/100-150

91285809_A0

1 Introduction

1.1 Appliance Information

Appliance designation	Cup Dispenser
Appliance type/ -s	EBR/70-120 | EBR/100-150 | EBRH/70-120 | EBRH/100-150
Manufacturer	HUPFER® Metallwerke GmbH & Co. KG Dieselstraße 20 48653 Coesfeld PO 1463 D-48634 Coesfeld ☏ +49 2541 805-0 🖷 +49 2541 805-111 www.hupfer.de info@hupfer.de

Read these operating instructions carefully before the first operation of the appliance.

Ensure that sources of danger and possible faulty operations have been pointed out to the operating staff.

Subject to modifications

The products covered by these operating instructions have been developed taking into consideration the requirements of the market and the latest technology. HUPFER® reserves the right to modify the products and appertaining technical documentation in so far as the modifications are in the name of technological progress. The data and weights as well as the description of performance and functions assured in the order confirmation as binding are always decisive.

Manual edition
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1.2 Table of Contents

1.3 List of Abbreviations

Abbreviation	Definition
BGR	Rule of the Professional Association
BGV	Regulation of the Professional Association
CE	Communauté Européenee European Community
DIN	Deutsches Institut für Normung German Institute for Standardisation, technical regulations and technical specifications
EC	European Community European Union
EN	European Standard Harmonised standard for the EU market
E/V	Spare and wearing part
IP	International Protection. The abbreviation IP and a further two-digit index specify the protection class of a housing.

The first digit:: Protection against ingress of solid foreign objects		The second digit: Protection against ingress of water	
0	No protection against contact, no protection against ingress of solid foreign objects	0	No protection against ingress of water
1	Protection against contact with any large surface of the body such as the hand, protection against ingress of foreign objects ∅ > 1.97" (50 mm)	1	Protection against vertically falling water drops
2	Protection against contact with the fingers, protection against ingress of foreign objects ∅ > 0.5" (12 mm)	2	Protection against dripping water (at any angle up to 15° from the vertical)
3	Protection against contact with tools, thick wires or similar objects of ∅ > 0.1" (2.5 mm) protection against foreign objects ∅ > 0.1" (2.5 mm)	3	Protection against water drips at any angle up to 60° from the vertical
4	Protection against contact with tools, thick wires or similar objects of ∅ > 0.04" (1 mm), protection against foreign objects ∅ > 0.04" (1 mm)	4	Protection against water splashing from any direction
5	Protection against contact, protection against dust deposits inside	5	Protection against water jets (projected by a nozzle) at any angle
6	Complete protection against contact, protection against ingress of dust	6	Protection against temporary flooding
		7	Protection against ingress of water during temporary immersion
		8	Protection against pressurised water during continuous immersion

LED	Light Emitting Diode Light diode

1.4 Definitions of Terms

Term	Definition
Authorised specialist	An authorised specialist is a specialist that has been trained by the manufacturer, an authorised service dealer or a company assigned by the manufacturer.
Cover	A bell-shaped cover for keeping food warm on plates and dishes.
Cook&Chill Kitchens	"Cook and Chill": Kitchens where warm food after being cooked is chilled as quickly as possible.
Cook&Serve Kitchens	"Cook and Serve": Kitchens where warm food is served immediately after being cooked or kept warm until it is consumed.
Element formation	Also: contact corrosion. Occurs when different noble metals are in close contact with each other. This happens when a corrosive medium is between both metals, as for example water or even air humidity.
Specialist	A specialist is a person who can evaluate work assigned and can individually recognise any possible dangers due to professional training, specialist knowledge and experience as well as knowledge of the respective guidelines.
Lift	A movement, for example a vertical movement of the stacking platform from bottom to top.
Control	Compare with certain conditions and/or characteristics such as damage, leaks, filling levels, heat.
Convection	Physical properties or mass transfer (e.g. heat or cold) through currents in gases and liquids.
Corrosion	The chemical reaction of a metallic material with its surroundings, e.g. rust.
Machine safety	The term of machine safety means all the measures used to avert injury to persons. The basis for this are national as well as EC-wide valid directives and laws for protecting users of technical devices and systems.
Passive layer	A non-metallic protective layer on a metallic material that prevents or slows down material corrosion.
Check	Compare with certain values such as weight, torque, content, temperature.
Qualified person, qualified staff	Qualified personnel are persons who due to their professional training, experience and instruction as well as their knowledge of the respective standards, guidelines, accident prevention regulations and operating conditions have been authorised by a person responsible for system safety to carry out required activities and can recognise and prevent any possible danger (definition of specialists according to IEC 364).
Schuko®	The abbreviation of the German term "Protective contact" that indicates a system of domestic plugs and sockets equipped with protective earthed contacts used in most of Europe.
Instructed persons	An instructed person is a person who has been instructed on the possible risks resulting from improper behaviour when carrying out the assigned task as well as on the necessary protective equipment and protective measures and trained for this task if necessary.

1.5 Orientation Guide

The front

"The front" means the side of the appliance where it is loaded.

The rear

The side named "the rear" means the opposite side of the front side (the front).

The right

The side named "the right" means the side at the right hand side of the front side (the front).

The left

The side named "the left" means the side at the left hand side of the front side (the front).

1.6 Notes on Use of Manual

1.6.1 Notes on the manual structure

This manual is structured in functional and task orientated chapters.

1.6.2 Notes and their illustrations used in the chapters

DANGER	**Brief description of danger**
	There is an imminent danger to life and limb of the user and / or third parties when the instructions are not followed precisely or the circumstances described are not taken into account. The type of danger is indicated by a symbol and explained in the accompanying text in more detail. In this example the general sign of danger is used.

WARNING	**Brief description of danger**
	There is an indirect danger to life and limb of the user and / or third parties when the instructions are not followed precisely or the circumstances described are not taken into account. The type of danger is indicated by a symbol and explained in the accompanying text in more detail. In this example the general sign of danger is used.

ATTENTION	**Brief description of danger**
	There is a potential risk of injury or damage to property when the instructions are not followed precisely or the circumstances described are not taken into account. The type of danger is indicated by a general sign and explained in the accompanying text in more detail. In this example the general sign of danger is used.

NOTE	**Brief description of additional information**
	Attention is pointed to special conditions or additional important information on the respective subject.

INFO	**Short title**
	Contains additional information on work assisting features or recommendations on the respective subject.

2 Safety Instructions

2.1 Introduction

The chapter on safety instructions describes the risks associated with the appliance in terms of product liability (according to the EU Directive).

2.2 Warning Symbols Used

Symbols are used in these operating instructions to point out the dangers that can occur while operating or cleaning the appliance. In both cases, the symbol provides information on the type and circumstances of danger.

The following symbols can be used:

	General hazardous area
	Hazardous electrical voltage
	Risk of hand injuries
	Risk of crushing
	Risk of hot surfaces
	Wear hand protection

2.3 Safety Instructions for Appliance Safety

Safe operation of the appliance depends on appropriate and thorough use. Negligent handling of the appliance can lead to danger to life and limb of the user and / or third parties as well as hazards to the appliance itself and the other operator's property.

2.3.1 Safety instructions for all appliances

The following points are to be observed to ensure the appliance safety:

- The appliance may only be operated when it is in perfect condition with regards to technical standards.
- All the operating and actuating elements must be in a perfect and functionally reliable condition with regards to technical standards.
- Modifications or retrofits of the equipment are only permitted in consultation with the manufacturer and on receipt of his written agreement.
- In no case may people sit or stand on the appliance.
- Before loading, the crockery dispensing height must be adjusted to the kind of crockery used.
- To avoid injuries to the hands, care should always be taken to ensure that the crockery dispensing height does not fall below the upper rim of the housing.
- Never push the stacking platform down manually into the stacking compartment (e.g. for cleaning). There is a risk of injury, if the stacking platform is released.
- If a crockery stack is too high, do not push it down forcibly using the covers. There is a risk of injury, if the locking is released.

2.3.2 Additional safety instructions for heated appliances

- The heated appliances can only be operated by instructed specialists and kitchen staff and under continuous supervision.
- Heated cup dispensers are intended for dispensing heated crockery. Their use for cooking food and keeping it warm or for room heating is not permitted.
- The crockery temperatures can exceed the permitted maximum temperatures of 149°F (65°C) for touchable appliance surfaces. Always wear protective gloves when dispensing hot crockery. Risk of burning.
- During operation of the appliance, never reach into it and touch the heating element with the fingers. Risk of burning.
- Plastic crockery, top and bottom parts of plastic insulated sets and plastic-coated items for keeping food warm should not be stored nor warmed up in heated cup dispensers. Owing to the high temperatures of the heating elements, the plastics can melt and catch fire.

2.4 Safety Instructions for Cleaning and Care

The following points must be observed when carrying out any cleaning and maintenance operations:

- For reasons of hygiene the cleaning instructions must be strictly observed.
- For cleaning, the appliance must be out of operation and cooled down sufficiently.
- Do not clean the appliance with steam-jet or high-pressure washers. The appliance must be taken out of operation and switched off at the mains beforehand in any area where steam-jet or high-pressure washers are to be used.
- Even appliances without an electrical connection should not be cleaned with running water or pressurised water.

2.5 Safety Instructions for Troubleshooting

The following points shall be observed when carrying out any maintenance and troubleshooting operations:

- All troubleshooting work should only be carried out by authorised specialists.
- When carrying out troubleshooting work, it must be ensured that the appliance is switched off. When operating on the electrical installation, the appliance is to be switched off at the mains and secured against reactivation.
- The local applicable Accident Prevention Regulations must be observed.
- Defective components should only be replaced with original parts.

2.6 Notes on Specific Hazards

Electrical energy

- All work on the electrical installations should only be carried out by a certified electrician or by authorised specialists under supervision and monitoring of a certified electrician according to the applicable electro-technical regulations.
- The appliances on which inspection, maintenance and troubleshooting work is performed must be disconnected from the power supply and secured against reactivation when the voltage is not required for this kind of work. This must only be carried out by a certified electrician.

3 Description and Technical Data

3.1 Performance Description

Cup dispensers are intended for installation in worktops and are used in the field of catering establishments and the food service industry.

They are used mainly for storage of round crockery items (cups, glasses and mugs) ready for use on food distribution belts or on self-service counters in bistros or cafeterias.

Depending on the purpose, the built-in appliances are available in different sizes, heated or unheated.

3.2 Intended Use

Cup dispensers are only intended for dispensing clean and round crockery items made of porcelain or toughened glass.

Depending on the model, the loaded crockery items can be heated up.

The intended use means the predetermined procedures, compliance with the indicated specifications and use of the delivered or additionally available original accessories.

Any other use of the appliance is considered as unintended use.

3.3 Improper Use

It is not permitted to load the cup dispenser with other loads as given.

In no case may people sit or stand on the appliance.

Moreover, it is not permitted to use the cup dispensers for cooking food or keeping it warm and for room heating.

No liability is assumed and no warranty claims can be submitted for damages caused by improper use.

3.4 Appliance Description

3.4.1 View of the appliance

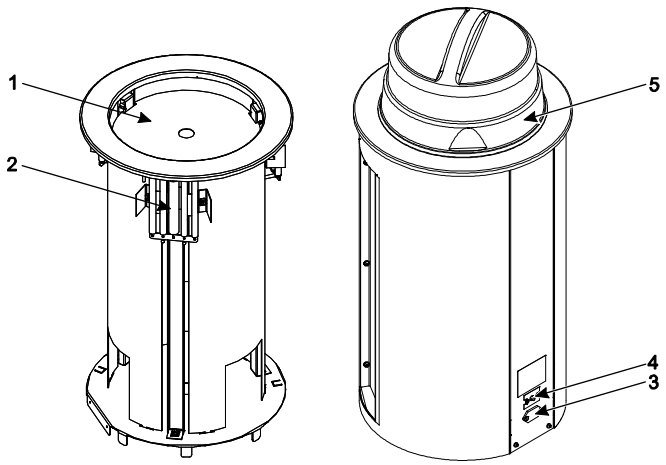


Figure 1 View of the appliance EBR and EBRH

1 Stacking platform
2 Attachment bar with adjustable springs
*heated appliances only
3 Connecting socket for appliance plug*
4 Temperature regulation
5 Cover*

3.4.2 Appliance Description

Cup dispensers accommodate clean crockery items made of porcelain or toughened glass on an adjustable, spring-loaded stacking platform. Owing to the use of special springs, crockery items are moved automatically and constantly over the entire lift upwards to a uniform dispensing height.

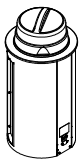
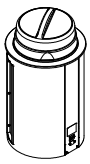
All cup dispensers are universally adjustable appliances with the diameters, stack heights and weights given below.

Appliances with electric heating preheat the crockery items or heat them up to a preset temperature.

The operating temperature can be continuously set on the heated cup dispensers. The controller can be adjusted as required when using built-in appliances.

The covers made of plastic protect the crockery against dust and condensed water even during relatively long periods of temporary storage. Using a cover in the heated appliances lowers the heat loss upwards and reduces the heating time of the inserted crockery or delays the cooling of pre-warmed crockery. The cover is included in the scope of delivery of the heated models.

3.5 Technical Data

	Dim.	EBR/70-120	EBR/100-150	EBRH/70-120	EBRH/100-150
View of the appliance					
Own weight	lbs (kg)	18.7 (8.5)	22 (10)	37.5 (17)	41.9 (19)
Payload	lbs (kg)	88.2 (40)	101.4 (46)	101.4 (46)	101.4 (46)
Permitted total weight	lbs (kg)	106.9 (48.5)	123.5 (56)	138.9 (63)	143.3 (65)
Overall dimensions Ø x h without cover	in (mm)	15.7 x 25.6" (400 x 650)	18.5 x 25.6" (470 x 650)	15.7 x 25.6" (400 x 650)	18.5 x 25.6" (470 x 650)
Overall dimensions Ø x h with cover	in (mm)	-	-	15.7 x 32.3" (400 x 820)	18.5 x 32.3" (470 x 820)
Installation		from the top by means of support frames	from the top by means of support frames	from the top by means of support frames	from the top by means of support frames
Worktop cutout	in (mm)	Ø 15.2" (385)	Ø 17.9" (455)	Ø 15.2" (385)	Ø 17.9" (455)
Stacking platform	in (mm)	Stainless steel, Ø 11" (280)	Stainless steel, Ø 13.8" (350)	Stainless steel, Ø 11" (280)	Stainless steel, Ø 13.8" (350)
Crockery guide		self-guiding crockery stacks	self-guiding crockery stacks	self-guiding crockery stacks	self-guiding crockery stacks
Cup size	in (mm)	Ø 2.8-4.7" (70-120)	Ø 3.9-5.9" (100-150)	Ø 2.8-4.7" (70-120)	Ø 3.9-5.9" (100-150)
Stack height without cover	in (mm)	19.3" (490)	19.3" (490)	19.3" (490)	19.3" (490)
Stack height with cover	in (mm)	24.4" (620)	24.4" (620)	24.4" (620)	24.4" (620)
Capacity (depending on stack height of crockery)		up to 64 (without cover) up to 72 (with cover)	up to 98 (without cover) up to 104 (with cover)	up to 64 (without cover) up to 72 (with cover)	up to 98 (without cover) up to 104 (with cover)
Number of crockery stacks		3-8	3-8	3-8	3-8

	Dim.	EBR/70-120	EBR/100-150	EBRH/70-120	EBRH/100-150
Heating		-	-	Stainless steel tubular heating element	Stainless steel tubular heating element
Thermostat setting	°F (°C)	-	-	68-185 (20-85)	68-185 (20-85)
Maximum crockery temperature	°F (°C)	-	-	158 (70)	158 (70)
Temperature setting		-	-	continuous	continuous
Heat insulation		-	-	special insulation	special insulation
Electrical connection		-	-	230 V 1N AC 50 Hz	230 V 1N AC 50 Hz
Power requirement	kW	-	-	0.6	0.6
Protection class		-	-	IPX4	IPX4

The corresponding test marks can be found on our homepage at www.hupfer.de.

3.6 Rating Plate

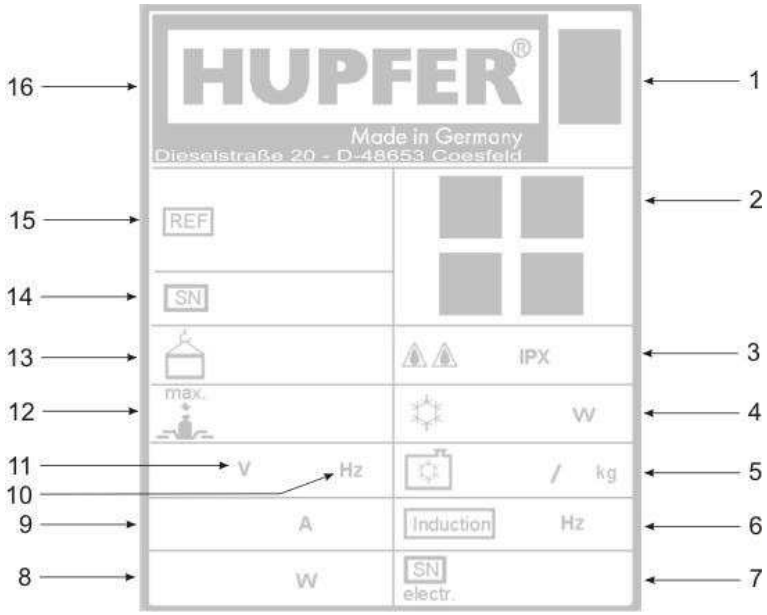


Figure 2 Rating plate

1	Disposal of old appliances	9	Nominal current
2	Certificates/label	10	Frequency
3	Protection class	11	Nominal voltage
4	Chilling capacity	12	Payload
5	Coolant	13	Own weight
6	Induction frequency	14	Serial number/Order number
7	Current serial number	15	Item and brief description
8	Electric power	16	Manufacturer

4 Transport, Assembly, Putting into Operation and Decommissioning

4.1 Transport

ATTENTION	Appliance damages caused by improper transport
	In the case of off-site transport in a vehicle such as a lorry, the appliances should be secured properly. If the appliances are not secured properly, there is a risk of damage to property and persons caused by squashing. During transport, secure all the individually standing appliances using corresponding transport securing devices.

4.2 Assembly

The following section describes the assembly of the cup dispenser.

Primarily, the unheated appliances EBR/70-120 and EBR100-150 are described that do not require any electrical installations after the assembly.
Subsequently, there follows the assembly description of the heated appliances EBRH/70-120 and EBRH/100-150, that must be connected to the power supply after the assembly.

4.2.1 Unheated appliances (EBR/70-120 | EBR/100-150)

NOTE	Appliance location
	Built-in appliances may only be used after being retrofitted or built-in (e.g. in a cabinet).

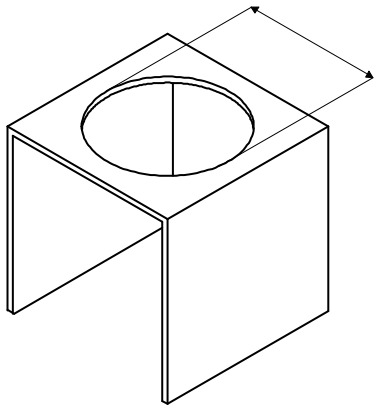


Figure 3 Worktop cut-out

Step 1: Preparation

- Prepare the worktop cut-out.
  The cut-out dimension for the **EBR/70-120** is 15.2" (385 mm) (diameter).
  The cut-out dimension for the **EBR/100-150** is 17.9" (455 mm) (diameter).
- Remove the protective plastic film from the metal plates.

INFO	Disposal of packing material
	The packing consists of recyclable materials and can be disposed of appropriately. Thereby, the different materials are to be separated and disposed in an environmentally compatible manner. In any case, the local bodies responsible for disposal are to be involved for this purpose.

Step 2: Installation

EBR/70-120

- Insert the appliance into the worktop cut-out from above and fasten it.

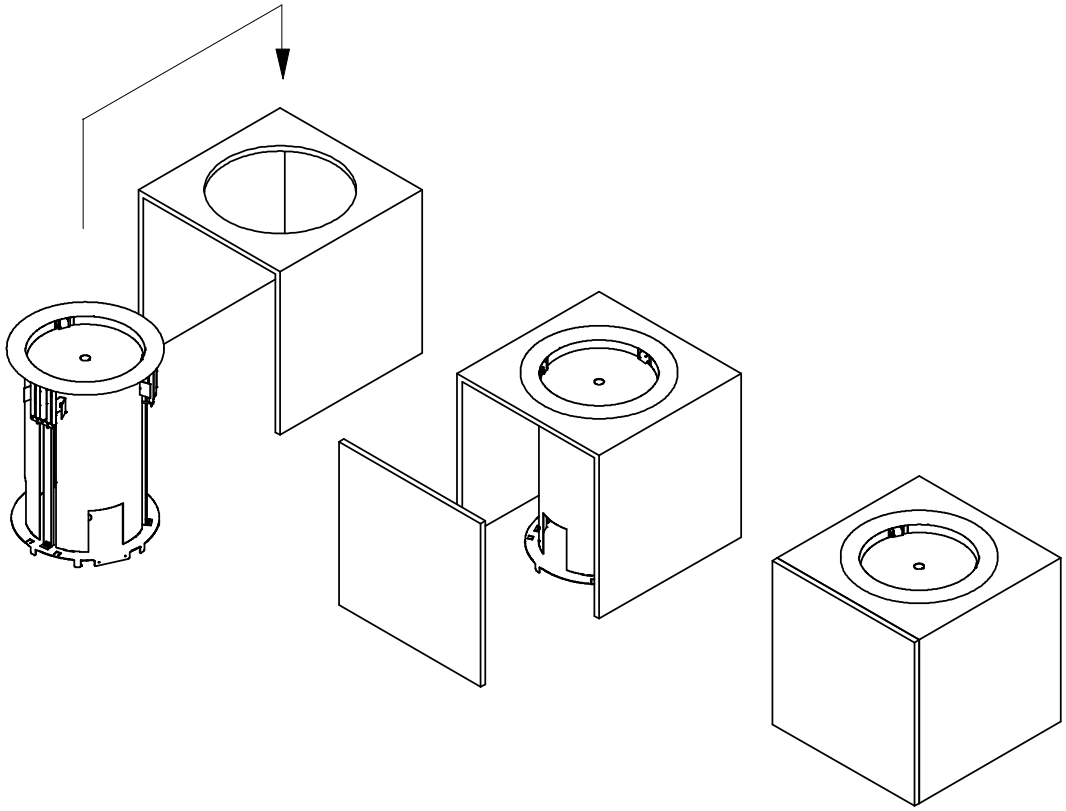


Figure 4 Assembly instructions

4.2.2 Heated appliances (EBRH/70-120 and EBRH/100-150)

DANGER	Hazardous electrical voltage
	The electrical voltage may be considerably dangerous to limb and life of persons and lead to injuries. All work on the electrical installations should only be carried out by a certified electrician or by authorised specialists under supervision and monitoring of a certified electrician according to the applicable electro-technical regulations.

ATTENTION	Risk of hot surfaces
	The internal surfaces and base plates of the heated appliances can become hot during and/or after the operation. The heated appliances should not come into contact with light inflammable materials. Ensure that there is enough space between the housing and cladding required for air circulation.

NOTE	Appliance location
	The built-in appliances may only be put into operation after being retrofitted or built-in (e.g. in a cabinet).

There is a connecting cable set with a wiring diagram attached to the built-in heated appliances.
The set consists of a connecting lead with a Schuko® plug and a connecting lead with a mains plug fitted on the appliance. The connecting leads are wired up via the on/off switch with an integrated indicator light.

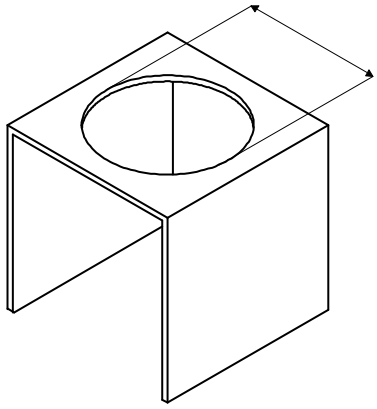


Figure 5 Worktop cut-out

Step 1: Preparation

- Prepare the worktop cut-out.
  The cut-out dimension for the **EBR/70-120** is 15.2" (385 mm) (diameter).
  The cut-out dimension for the **EBR/100-150** is 17.9" (455 mm) (diameter).

Step 1: Preparation

- Prepare cut-outs in the worktop and the front cladding corresponding to the indicated dimensions.
  The worktop cut-out dimensions are given in inch (mm) as shown in the corresponding drawing of the built-in appliance.
  The cut-out dimension for the switch is 1.2" x 0.9" (30x22 mm).
- Remove the protective plastic film from the metal plates.

INFO	Disposal of packing material
	The packing consists of recyclable materials and can be disposed of appropriately. Thereby, the different materials are to be separated and disposed in an environmentally compatible manner. In any case, the local bodies responsible for disposal are to be involved for this purpose.

Step 2: Installation

NOTE	Presetting the operating temperature
	In contrast to the mobile appliances with the switch and controller arranged next to each other, the switch of the built-in appliance can be placed anywhere on the front side. Under these circumstances, the controller is no longer accessible for operating after the installation. Ensure that the desired temperature is set on the thermostat before the installation.

- Insert the appliance into the worktop cut-out and fasten it.

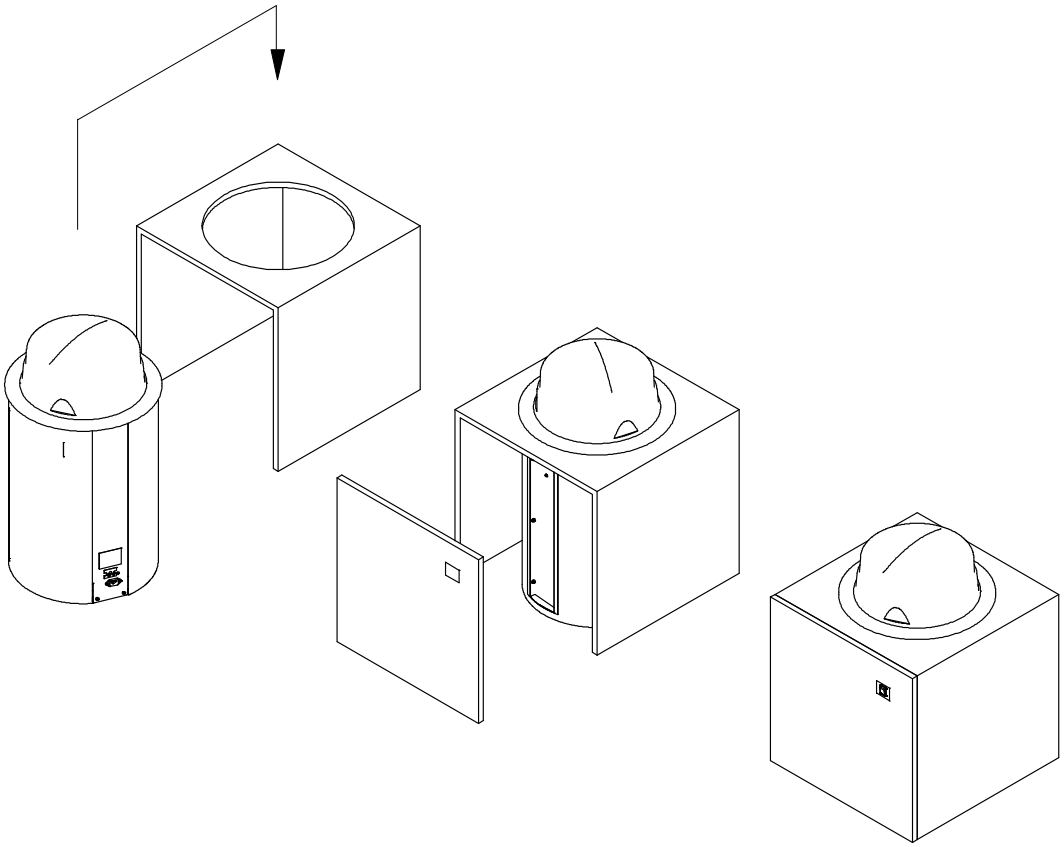


Figure 6 Assembly instructions

Step 3: Connect

- Connect the appliance according to the wiring diagram: Insert the appliance plug of the connecting lead set into the socket of the cup dispenser and the mains plug of the connecting lead set into the on-site power supply socket.
- Put thermally insulating plates around the appliance.

The appliance is ready to be put into operation.

4.3 Putting into Operation

Before the appliance is put into operation it must be clean and dry.

The function of the operating elements and heating in the heated appliances must be checked before putting them into operation.

4.4 Storage and Recycling

Temporary storage must take place in a dry and frost-free environment. The cup dispenser must be kept covered with a suitable covering material to be protected against dust ingress.

The cup dispenser kept in the storage location must be checked for damages and corrosion every 6 months.

NOTE	Condensed water formation
	Ensure that there is sufficient ventilation and no large temperature fluctuations in the storage location to avoid condensed water formation.

Before the appliance is taken back into operation it must be clean and dry.

If the cup dispenser is required to be recycled, all the heating devices (if available) must be removed safely and completely, the recyclable materials must be separated properly and disposed in an environmentally compatible manner according to the Waste Disposal Regulations.
In any case, the local bodies responsible for disposal are to be involved for this purpose.

5 Operation

5.1 Arrangement and Function of the Operating Elements

NOTE	Presetting the operating temperature
	In contrast to the mobile appliances with the switch and controller arranged next to each other, the switch of the built-in appliance can be placed anywhere on the front side. Under these circumstances, the controller is no longer accessible for operating after the installation. Ensure that the desired temperature is set on the thermostat before the installation.

The On/Off switch of the appliance is located on the front of the cover of the heated cup dispensers. An indicator light integrated into the switch shows, whether the appliance is ready to be operated.

5.2 Adjustment of the Cup Dispenser

WARNING	Risk of hot surfaces
	The internal surfaces of the heated appliances and the base plates can become hot during operation and only cool down slowly in the air. To adjust the stacking platform, allow the appliance to cool down sufficiently with the cover removed.

The adjustments should only be carried out on the appliances which are switched off, disconnected from the power supply and cooled down (room temperature).

Before work starts, it is always necessary to check whether the cup dispenser to be operated is correctly set for the crockery to be used.

The following functions are to be checked separately:

- The dispensing height, so that the staff cannot suffer injury or become trapped and no breakage of crockery can occur.

Basically, the appliance must be adjusted if at least one of the following crockery parameters alters:

- Diameter
- Height
- Stack height
- Weight.

5.2.1 Spring adjustment

ATTENTION	Damage to persons and property due to improper adjustment
	When the dispensing height is exceeded, there is a risk of accident or injury due to tipping of the crockery stack and breakage of dishes. If the level falls below the dispensing height, injuries to the fingers due to squashing can occur when removing dishes. Adjust appropriately the dispensing height by hooking or unhooking the springs. When adjusting springs on sharp edges, pay particular attention to the ends of the tension springs. Act carefully.

Before loading the appliance, the dispensing height must be adjusted to the kind of crockery used. The dispensing height is adjusted by hooking or unhooking tension springs. So long as the same kind of crockery is always used, the dispensing height only needs to be set once.

The dispensing height must be adjusted so that over the entire lift the uppermost item of crockery is constantly moved upwards to a uniform dispensing height between 1.6" (4 cm) and 2.4" (6 cm) above the upper rim of the housing.

Step 1 - Checking the spring adjustment

- Load a stack of 15 to 20 items on to the stacking platform to test the dispensing height.
- Wait for a reaction.

If the dispensing height of the crockery stack is about 1.97" (5 cm) above the upper edge of the appliance, the spring system is adjusted correctly.

If the crockery stack drops down only a little or not at all, the dispensing height must be altered by adjusting the springs.

Step 2 - Altering the spring adjustment

The dispensing height is adjusted by hooking or unhooking tension springs on two attachment bars. The springs are arranged in groups of 5, where 1 is a base spring (2) and 4 are adjustable springs (1) with lower tension.

Figure 7 Attachment bar with tension springs

If the dispensing height is too high, adjustable springs must be unhooked.
If the dispensing height is too low, adjustable springs must be added.

Procedure for setting the springs:

- Take the inserted crockery items out of the cup dispenser (if available).
- Hook or unhook adjustable springs uniformly in all groups of springs.
- Preferably unhook the adjustable springs. Always leave the base springs inserted, if possible. Always unhook the springs on the lower attachment bar.

Both steps must be repeated as often as possible, until the dispensing height is in the range from 1.57" (4 cm) to 2.36" (6 cm). So long as the same kind of crockery is always used, the dispensing height only needs to be set once.

NOTE	Arrangement of the springs
	A symmetrical arrangement of springs between the attachment bars is necessary for guiding the stacking platform uniformly and without friction. A slightly asymmetrical arrangement of springs within an attachment bar does not pose any problem.

NOTE	Spring system
	Since all the cup dispensers are designed for a maximum crockery load, the available spring system of the appliances is entirely sufficient for all usual crockery items. Owing to the base springs with higher tension, the unheated cup dispensers are also unsuitable for plastic items.

5.2.2 Calculating the capacity for cup dispensers

The total capacity of a cup dispenser depends on the kind of crockery loaded.

All the leading manufacturers give the necessary data for calculating the intermediate stack height in the following manner:

$$H_Z = \frac{(H_n - H_1)}{n-1}$$

H_Z: Intermediate stack height
H_1: Height of the first crockery item
H_n: Height of n crockery items
n: Number of crockery items

C
apacity per crockery stack can be calculated together with the stack height H_S of the cup dispenser:

$$K = \frac{(H_S - H_1)}{H_Z} + 1$$

K: Items per crockery stack
H_S: Stack height of the cup dispenser

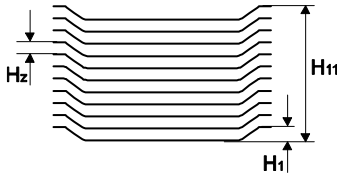


Figure 8 Intermediate stack height H_z of 11 crockery items

Example:

$$H_Z = \frac{(140 - 28)}{10} = 11{,}2 \text{ mm}$$

H_1= 1.1" (28 mm): Height of the first crockery item
H_{11}= 5.5" (140 mm): Height of 11 crockery items
t= 11: Number of crockery items
H_S = 24.6" (625 mm): Stack height

$$K = \frac{(625 - 28)}{11{,}2} + 1 = 54 \text{ Teile}$$

So 54 crockery items can be stacked into the stacking compartment.

5.3 Operation

Before the appliance is put into operation it must be clean and dry.

Before work starts, it is always necessary to check whether the cup dispenser is adjusted correctly for the crockery to be used.

- The correct dispensing height must be ensured, so that the staff cannot suffer injury or become trapped and no breakage of crockery can occur.

Use of the cover

ATTENTION	Risk of injury
	If a crockery stack is too high, do not use the covers to push it down forcibly. There is a risk of injury when the cover is removed.

NOTE	Use of the cover
	The cover ensures effective protection against ingress of dust and condensed water even during relatively long periods of temporary storage. Using the cover in the heated appliances lowers the heat loss upwards and reduces the heating time of the inserted crockery or delays the cooling of pre warmed crockery.

5.3.1 Switching on the appliance

NOTE	Heated appliances
	Some parts of this section relate exclusively to the heated appliances and do not apply to the unheated models.

DANGER	Hazardous electrical voltage
	The electrical voltage may be considerably dangerous to limb and life of persons and lead to injuries. Only use the plug connection provided for this. The appliance should not be operated with a damaged connecting line or other visible damages. All work on the electrical installations should only be carried out by a certified electrician or by authorised specialists under supervision and monitoring of a certified electrician according to the applicable electro-technical regulations.

- Cover all the stacking compartments with covers to avoid heat loss.
- Switch on the appliance with the On/Off switch. The indicator integrated in the switch will light up to show that the appliance is ready for operation.

NOTE	Crockery temperature
	Depending upon the number and arrangement of the crockery stacks, the required temperature of the crockery with the cover on and an initial crockery temperature of at least 59 °F (15 °C) will be reached after 2 to 3 hours.

5.3.2 Loading the appliance

NOTE	Loading
	Before the crockery items are inserted, the stack height must be set correctly. Insert the items individually or in small safely manageable stacks.

ATTENTION	Breakage of crockery
	The maximum loading height of the crockery baskets must be about 0.1" to 0.2" (3 to 5 mm) below the upper rim, otherwise this can cause breakage of crockery. Do not stack the crockery items into the crockery baskets up to the upper edge of the crockery basket.

- Place the first items on the centre of the stacking platform and move it down slowly.
- Put the further items precisely onto the items already placed on the appliance.
- The maximum filling level is achieved, when the stacking platform does not lower anymore while loading further items.
- If no cover is used, the uppermost crockery item should not protrude more than 2.4" (6 cm) above the upper rim of the housing.

NOTE	Filling level
	A higher filling level is possible in the appliances used with the covers. Depending on the inherent stability of the items, they can be stacked up to the lower rim of the cover. However, in the heated models the crockery items resting above the upper rim of the appliance cannot be heated to the required temperature. The crockery with the cover should not protrude more than 5.1" (13 cm). Even when stationary, the cup dispenser must never be loaded beyond the permitted maximum value of 5.1" (13 cm).

Unloading crockery

WARNING	Risk of burning
	In the heated appliances the crockery temperatures can exceed the permitted maximum temperatures of 149 °F (65 □) for touchable appliance surfaces. Never reach into the appliance or touch the heating element with the fingers during the operation. Always wear protective gloves when dispensing hot crockery.

- Remove the cover and put it down.
- Unloading crockery items.
- Put the cover back on.

5.4 Measures at the End of Operation

WARNING	Risk of hot surfaces
	The internal surfaces of the appliance and the base plates can become hot during operation and only cool down slowly in the air. For cleaning, allow the appliance to cool down sufficiently with the cover removed and wear suitable protective gloves.

- Switch off the appliance with the On / Off switch.

6 Fault Detection and Troubleshooting

6.1 Safety Measures

DANGER	Hazardous electrical voltage
	The electrical voltage may be considerably dangerous to limb and life of persons and lead to injuries. Before looking for faults, switch off the appliance at the mains. Pull out the mains plug and insert it into the plug park provided.

6.2 Notes on Troubleshooting

Please check first whether there is an operating fault. You can eliminate some faults on your own.

Service work should only be carried out by authorised specialist staff.

Defective components should only be replaced with original parts.

In the event of after-sales service and when ordering spare parts specify the data given in the rating plate.

Inspection and maintenance intervals depend on the use of the appliance. Consult your dealer's after-sales service department.

Regular inspection and maintenance of the appliance prevent disruptions to operation and ensure safety.

6.3 Fault and Action Table

Fault	Possible cause	Action
Appliance does not become warm; indicator light does not come on.	Defective building fuses.	Check fuse and repair, if necessary.
Appliance does not become warm; indicator light does not come on.	Defective On / Off switch.	Switch off the appliance at the mains and have it checked and repaired by authorised specialist staff, if necessary.
Appliance does not become warm; indicator light does not come on.	Defective connecting cable or mains plug	Switch off the appliance at the mains and have it checked and repaired by authorised specialist staff, if necessary.
Appliance does not become warm; indicator light is on.	Thermostat is defective.	Take the appliance out of operation and have it checked and repaired by authorised specialist staff, if necessary.
Appliance becomes warm; indicator light does not come on.	Defective indicator light.	Take the appliance out of operation and have it checked and repaired by authorised specialist staff, if necessary.
Appliance becomes warm; indicator light does not come on.	Defective On / Off switch.	Take the appliance out of operation and have it checked and repaired by authorised specialist staff, if necessary.
Stacking platform does not move crockery items upwards to the dispensing height even with a low load.	Spring breakage	Replace defective springs by new ones

7 Cleaning and Care

7.1 Safety Measures

DANGER	Hazardous electrical voltage
	The electrical voltage may be considerably dangerous to limb and life of persons and lead to injuries. Before cleaning, switch off the appliance at the mains. Pull out the mains plug and insert it into the plug park provided.

WARNING	Risk of hot surfaces
	The internal surfaces of the appliance and the base plates can become hot during operation and only cool down slowly in the air. For cleaning, allow the appliance to cool down with the cover removed and wear suitable protective gloves.

ATTENTION	Do not clean with running water
	The appliance should not be cleaned with running water, steam-jet or high-pressure washers. The appliance must be taken out of operation and switched off at the mains beforehand in any area where steam-jet or high-pressure washers are to be used.

7.2 Hygiene Measures

The correct behaviour of the operating staff is decisive for optimal hygiene.

All persons must be informed about the locally valid hygiene regulations, observe them and comply with them.

Stick a waterproof plaster to cover wounds on the hands and arms.

Never sneeze or cough on clean crockery.

7.3 Cleaning and Care

The appliance must be cleaned dry daily or wiped with a damp cloth. Dry well the appliance after carrying out wet cleaning, in order to prevent the development of mould, uncontrolled growth of germs and bacteria and, consequently, contamination of the crockery.

All cup dispensers have a base outlet located below the stacking compartment that is provided for the removal of broken crockery or other objects, which have accidentally fallen down into the appliance. Objects can be removed by means of a vacuum cleaner or gripping tongs.

The plastic covers can be cleaned manually with a damp cloth. In the case of solid impurities, appliances can also be cleaned in a commercial dishwasher. Washing and rinsing agents suitable for polycarbonate should be used.

7.4 Special Care Instructions

The resistance to corrosion of stainless steels is based on a passive layer which is formed on the surface when oxygen is admitted. The oxygen in the air is sufficient for the formation of the passive layer, so that faults or damage to the passive layer can be remedied again automatically by mechanical action.

The passive layer develops or reforms more quickly when the steel comes into contact with flowing water containing oxygen. The passive layer can be chemically damaged or disrupted by agents having a reducing (oxygen-consuming) action when the steel comes into contact with them in concentrated form or at high temperatures.

Such aggressive substances are for example:

- substances containing salt and sulphur
- chlorides (salts)
- seasoning concentrates (e.g. mustard, vinegar essence, seasoning cubes, saline solutions

Further damages can occur due to:

- extraneous rust (e.g. from other components, tools or rust film)
- iron particles (e.g. grinding dust)
- contact with non-ferrous metals (element formation)
- lack of oxygen (e.g. no admission of air, low-oxygen water).

General working principles for the handling of appliances made of "refined stainless steel":

- Always keep the surface of appliances made from stainless steel clean and accessible to the air.
- Use cleaning agents suitable for stainless steel. No bleaching and chloride-containing cleaning agents should be used.
- Remove layers of lime scale, grease, starch and egg-white daily by cleaning. Corrosion can occur underneath these layers due to lack of air admission.
- After each cleaning operation remove all cleaning agent residues by rinsing thoroughly with copious fresh water. Afterwards, the surface should be thoroughly dried.
- Do not bring parts made from stainless steel into contact with concentrated acids, seasonings, salts etc. for longer than is absolutely necessary. Acid fumes which generate during cleaning of tiles also promote the corrosion of "refined stainless steel".
- Avoid damaging the surface of the stainless steel, particularly by metals other than stainless steel.
- Residues of extraneous metals produce extremely small amounts of chemical elements which can cause corrosion. In any case, contact with iron and steel should be avoided because that leads to extraneous rust. If stainless steel comes into contact with iron (steel wool, steel particles from pipes, water containing iron), this can be a trigger for corrosion. Therefore, for mechanical cleaning use exclusively refined steel wool or brushes with natural, plastics or refined steel bristles. Steel wool or brushes with unalloyed steel lead to extraneous rust due to abrasion.

8 Spare Parts and Accessories

8.1 Introduction

Service work should only be carried out by authorised specialist staff.

Defective components should only be replaced with original parts.

In the event of after-sales service and when ordering spare parts, always specify the data and corresponding part number indicated on the rating plate.

8.2 Spare Parts and Accessories List

EBR/70-120 | EBR/100-150

Spare part, part number	Item designation	Type	Qty.
014040101	Tension spring	Stainless steel 10 gr.	
014040164	Tension spring	Stainless steel 5 gr.	
4510022	Plug	Appliance installation 2p PE 10A UL	
91010530	Platform	compl., for EBR/70-120	
91018976	Platform	compl., for EBR/100-150	
91002458	Support frame	compl., for EBR/70-120	
91019049	Support frame	compl., for EBR/100-150	
91011080	Plate guide	compl., with spacer bracket	

EBRH/70-120 | EBRH/100-150

Spare part, part number	Item designation	Type	Qty.
014128901	Connecting cable set		
313.1 (0162201)	Cover	Polycarbonate, for EBRH/70-120	
0162202	Cover	Polycarbonate, for EBRH/100-150	
014040101	Tension spring	Stainless steel 10 gr.	
014040164	Tension spring	Stainless steel 5 gr.	
4510022	Plug	Appliance installation 2p PE 10A UL	
4001214-02	Thermostat	20-85℃, 1S Kl. 870	
91010879	Heating	Stainless steel 230 V 200W 8,5/836 U	
91095077	Limiter	Temp. safety 90℃ 2Ö	
91010530	Platform	compl., for EBR/70-120	
91018976	Platform	compl., for EBR/100-150	
91002458	Support frame	compl., for EBR/70-120	
91019049	Support frame	compl., for EBR/100-150	
91011080	Plate guide	compl., with spacer bracket	

The following plug types can be used with cup dispensers:

- 2-pole Schuko® angle plug (standard)
- CEE plug 230 V - 16 A - 3-pole in Germany on request, in Switzerland standard
- 3-pole British mains plug in accordance with BS 1363 A for Great Britain and Hong Kong