9124729
SERVICE MANUAL
MODULAR CONVENIENCE COUNTER
MCC HOT USA

- NOTICE -

This service manual is prepared to be used by trained Service Technicians and should not be used by those not properly qualified. If you have attended a training for this product, you may be qualified to
Perform all repair procedures, replacements and adjustments described in this service manual.

The information presented in this document is only valid for standard hot and cold modular convenience counters, (MCC) configurations and is not intended to be all encompassing. The individual specifications may differ.

Procedures for which you do not have the necessary tools, instruments or skills should not be performed by you.

Technical data and specifications mentioned in this manual are subject to amendment without prior notice.

Version	Issue date	Remarks
	dd/mm/yy	
Rev 1	01-06-2020	First release based on Self Serve
Rev 2	03-05-2021	Adding Full Serve
Rev 3	01-06-2021	Adjusting controller hot/cold
Rev 4	01-04-2022	Addition multiple Shelfs version, electrical schematics revision
Rev 5	July 2022	Change to EU and USA manual
		ERC Alternatives replacement
		Adding FS element replacement

KEEP THIS USER MANUAL FOR FUTURE USE

We refer to our General Terms and Conditions for Sales and Delivery that are available upon request.

The manufacturer does not accept any liability for damage or injury caused by failing to adhere to these regulations or by not observing the usual caution or care in actions, operation, maintenance or repair activities, even if not explicitly described in this manual.

As a result of constant commitment to improvement, it may happen that your unit deviates in detail from what is described in this manual. For this reason, the given instructions are only a guideline for the installation, use, maintenance and repair of the unit referred to in this manual.

This manual has been composed with the utmost care. The manufacturer shall, however, not be held responsible for any mistakes in this manual nor for any consequences thereof.

Modifications:
In case of unauthorized modifications in or on the unit, every liability on the part of the manufacturer becomes null and void.

Index

1.0 Introduction

1.1 General

This manual is intended for trained technicians, performing repairs on the MDD
The features and controls are being described, along with directions for the safest and most efficient way to service these counters.
All pictograms, symbols and drawings in this manual apply to all available MDD models.

1.2 Identification of the unit

The identification plate can be found on the outside of the machine, and contains the following data:

- Name of the supplier or the manufacturer
- Serial number
- Voltage
- Power consumption
- Model
- Year of construction
- Frequency

1.3 Pictograms and symbols

In this manual, the following pictograms and symbols are used:

WARNING symbols:

WARNING
Possible physical injury or serious damage to the unit,

WARNING
Risk of Fire.

WARNING
Hazardous electrical voltage.

WARNING
Danger of getting injured by hot surfaces.

SAFETY symbols:

SAFETY
Wear safety gloves for installation and dismantling.

SAFETY
Wear eye protection.

SAFETY
ALWAYS Remove power plug from main outlet before working on the unit.

Disposal
According local regulations

SAFETY
Clean Hands and/or Tools

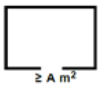
Suggestions and recommendations.

Notification
Take care off:

Reading
Instructions referred to read

Recycling symbol.

Part of manual
Still under construction



Minimum room floor area.

Cleaning
On regularly interval

Pictures or photos
Still to be added

1.4.1 General regulations

The technician, working on the unit will be fully responsible for abiding the locally prevailing safety rules and regulations.

Technical activities must be performed by qualified and authorized persons only.

Before working on any electrical part, or dismantling the unit by means of using a screwdriver, **ALWAYS REMOVE** the power plug from the main outlet.

Anyone performing technical repairs, replacements or adjustments on or with this unit must be familiar with the contents of this service manual and carefully follow all guidelines and instructions.

Never change the order of the steps to be performed.

The pictograms, labels, instructions and warning signs attached to the unit, are part of the safety measures. They may never be covered or removed, and have to be clearly visible during the entire lifetime of the unit.

Immediately repair or replace damaged or illegible pictograms, warnings and instructions.

Notes:

- To avoid short-circuiting, never clean the unit using a water hose.
  For detailed cleaning instructions, please refer to MCC user manual.

- The shelves, glass and back of the hot unit can get hot.

- All units must be cleaned regularly to ensure proper functioning.

- Do not store explosive substances;
  such as aerosol cans with flammable propellant in this appliance.

1.4.2 Moving

- Before moving the unit, first switch off the mains switch and disconnect power by pulling the plug from the wall socket.
- Remove pans containing a liquid product from the unit.
- Always keep the unit in upright position.

1.4.3 Outdoor use restrictions

WARNING
To avoid short-circuiting, the units may not be used outdoors nor in a rainy or very moist environment.

1.5 Hygiene

WARNING
Immediately remove products in damaged packaging from the equipment and destroy the products.

Clean all components that have come in contact with products from damaged Packaging.

The quality of a fresh product always depends on hygiene.
It is essential that products are packaged immediately after preparation.

Prevent fresh raw vegetables or already prepared, cooled products from coming into contact with raw meat products to avoid transmitting salmonella.

First thoroughly clean hands and/or tools that have touched raw meat and/or meat juices.

For detailed cleaning instructions, please refer to MCC user manual section 5.

1.6 Service and technical support

The electrical schematics of the unit are included at the end of this manual.
In case of malfunctions which are not fixable by you, you can contact Fri-Jado.
Make sure you have the following data available:

- Model.
- Serial number.

This data can be found on the identification plate.

1.7 Storage

If the unit will not be used temporarily, and will be stored, follow these instructions:

- Clean the unit thoroughly.
- Wrap the unit from getting dusty.
- Store the unit in a dry, non-condensing environment.
- Do not expose units with R290 refrigerant during storage and transport to Temperatures higher than 70 ºC (158 ºF).
- Ensure good ventilation.

1.8 Disposal

Dispose of the machine, any components or lubricants removed from it safely in accordance with all local and national safety and environment requirements.

2.0 Detailed description

2.1 Technical description Self Serve

Panels are made of galvanized steel plating, stainless steel and/or aluminum.
Some of the visible internal and external parts have been provided with a powder coating.
Glass used is tempered.
Unit can be moved by means of a pallet truck.

Product contact parts are made of stainless steel AISI 304 or AISI 430 and tempered glass.

2.2 Hot units Self Serve: (Patented Hot Blanket Holding technology)

Heating in hot self-serve units is achieved by means of heated shelves in combination with an hot-air curtain per shelf. This air curtain isolates the hot air inside the unit from the ambient air.

Hot serve over units have a single heat source in the base of each shelf and use fans to distribute the heat throughout the cabinet.

An electronic thermostat controls the temperature.
The electronic thermostat has been pre-set at the factory.

This value can be changed for self-serve models between 40 ºC and 70 ºC (104 ºF and 158 ºF) and for serve over models between 40 ºC and 85 ºC (104 ºF and 185 ºF).

One LED-module per level provides lighting of the products.
The LED-lighting and the heating are switched on and off separately, In the future Lightning and heating can be switched on simultaneously.

Hot Air flow Self Serve

2.3 Intended use

Self-serve models have been designed solely to keep packaged products cold or warm and to display them.

Serve over models can be used for unpacked foodstuff as well.

Any other use will not be regarded as intended use.

The manufacturer accepts no liability whatsoever for loss or injury caused by failing to strictly adhere to the safety guidelines and instructions in this manual or due to carelessness during installation, use, maintenance and repair of the unit referred to in this manual and any of its Accessories.

Use the unit in perfect technical condition only.

2.6 Technical description Full Serve Hot Humidified4

The MCC Hot FS is a multilevel serve over heated display cabinet intended for hot presentation of food products.

A heating element and an array of fans are located in the base of the unit and circulate hot air throughout the cabinet, creating uniform holding conditions.
Any air in- and outlet openings should be kept clear. A digital controller is installed to regulate the temperature inside the cabinet.

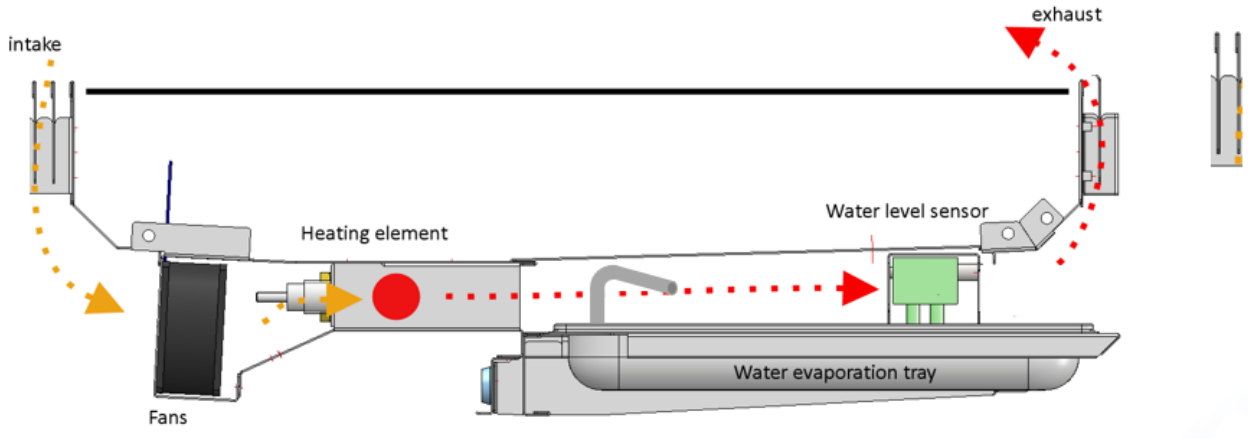
A water tray is present underneath the base deck which can be used to increase the humidity levels inside the cabinet, hereby increasing the shelf life of delicate products.

To make sure the cabinet is installed, operated and serviced in a safe manner, the instructions provided by the manufacturer should be adhered to at all times.
The cabinets can also be supplied with or without under frame to be installed into an existing counter top.

Heating in hot full-serve units is achieved by means of a finned heating element in combination with hot-air blowers. The blower fans suck air on the intake side, blowing this air along the heating element causes the air to heat up.

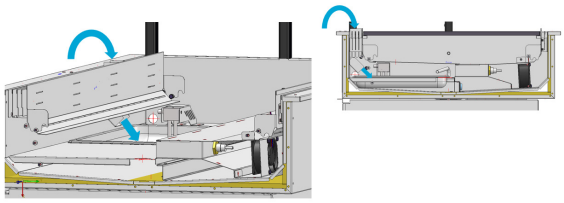
To prevent products from drying, humidification is applied by means of a water tray underneath the hot air flow. Hot air holds more moisture. The moist hot air is blown into the unit, creating a higher humidity inside the “closed” unit.

Serve over models can be fitted with an optional humidification system in the form of a passive water tray or an independently controlled boiler type system (which requires a permanent water supply and drain).

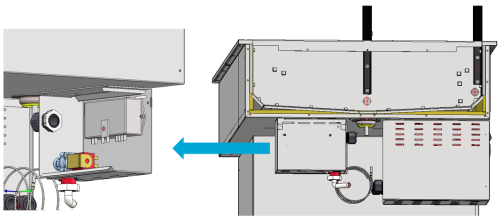


Filling of the water tray can be done either by hand, or automatically. For the automatic filling system, an additional electrical box is implemented which controls the filling process.

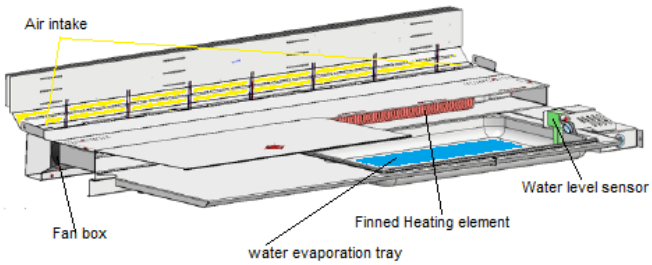
Hand filling system

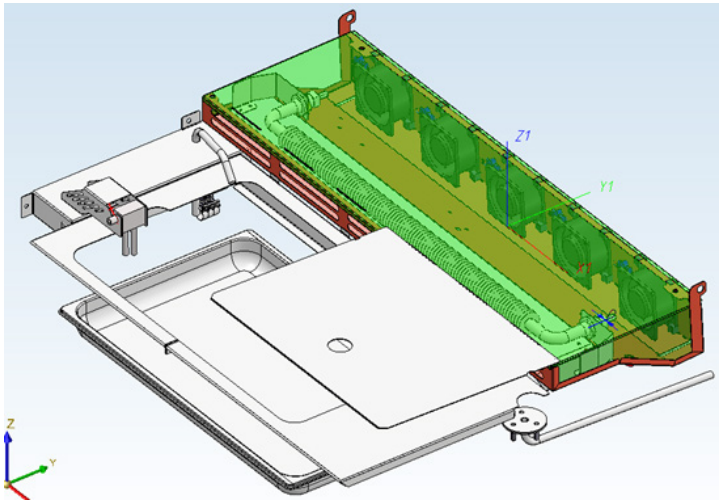


Automatic filling system

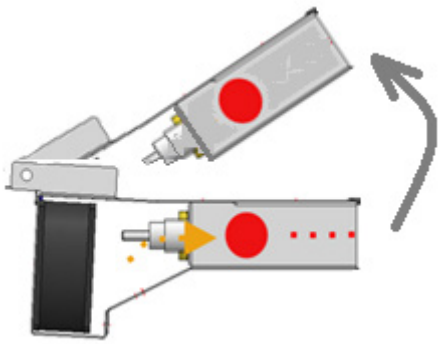


Complete build up structure of the MCC hot Full serve first version.

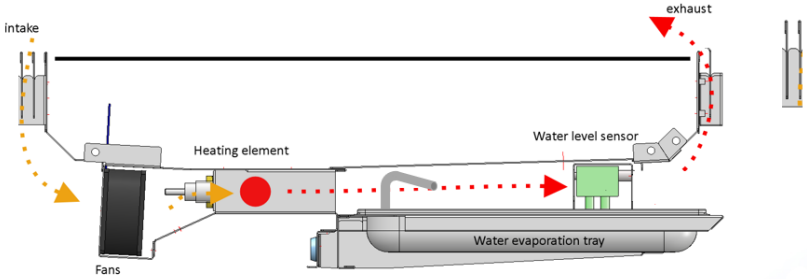




Second version (turnable heating compartment)



Hot air flow Full Serve



3.0 Unpacking

3.0 Start to unpack

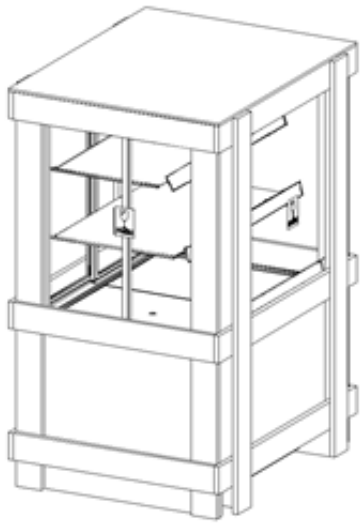
All packing materials used for this unit are suited for recycling.

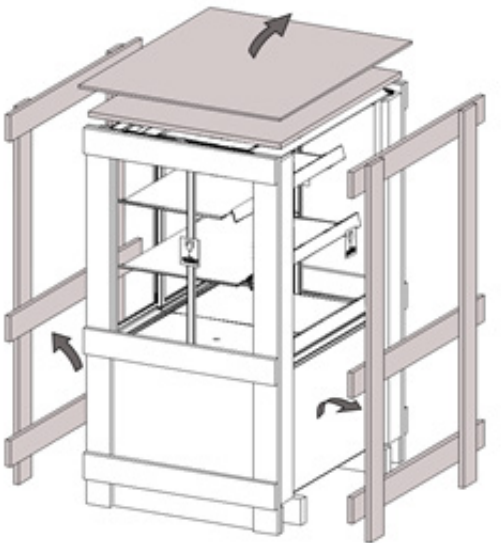
Before and during unpacking, check the state of the unit. In case of damage, photograph the damage, store the packing material, and contact the transporter as soon as possible but at the latest within fifteen working days after receiving the goods.

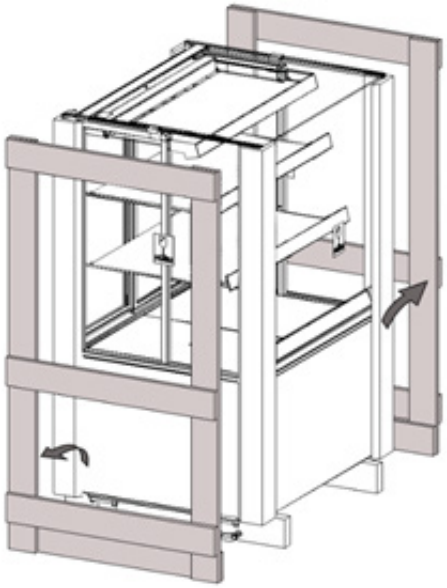
3.1 Unpacking the unit

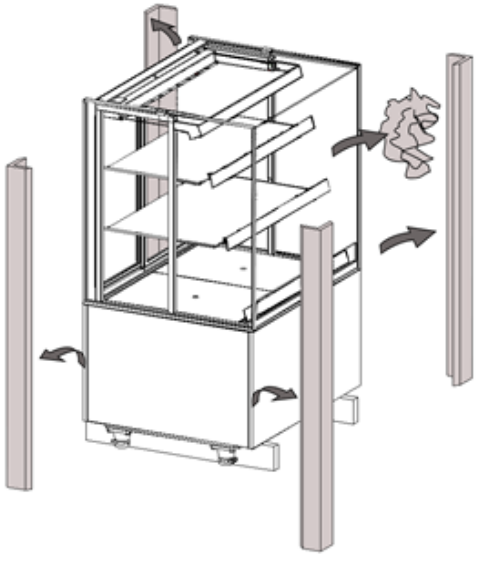
The MCC is placed inside a crate during transport, take the following steps to unpack.

1. Remove the top crate pane and foam.
2. Remove the front and rear boards.
3. Remove both side boards.
4. Lift the unit from the support beams using a pallet truck or forklift.
5. Remove the supporting beams.
6. Observe the safety and warning signs.

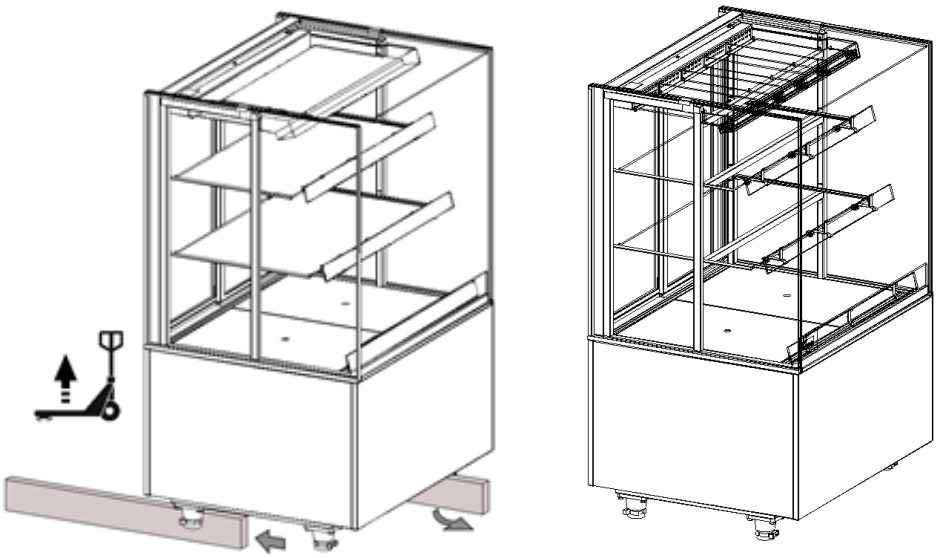






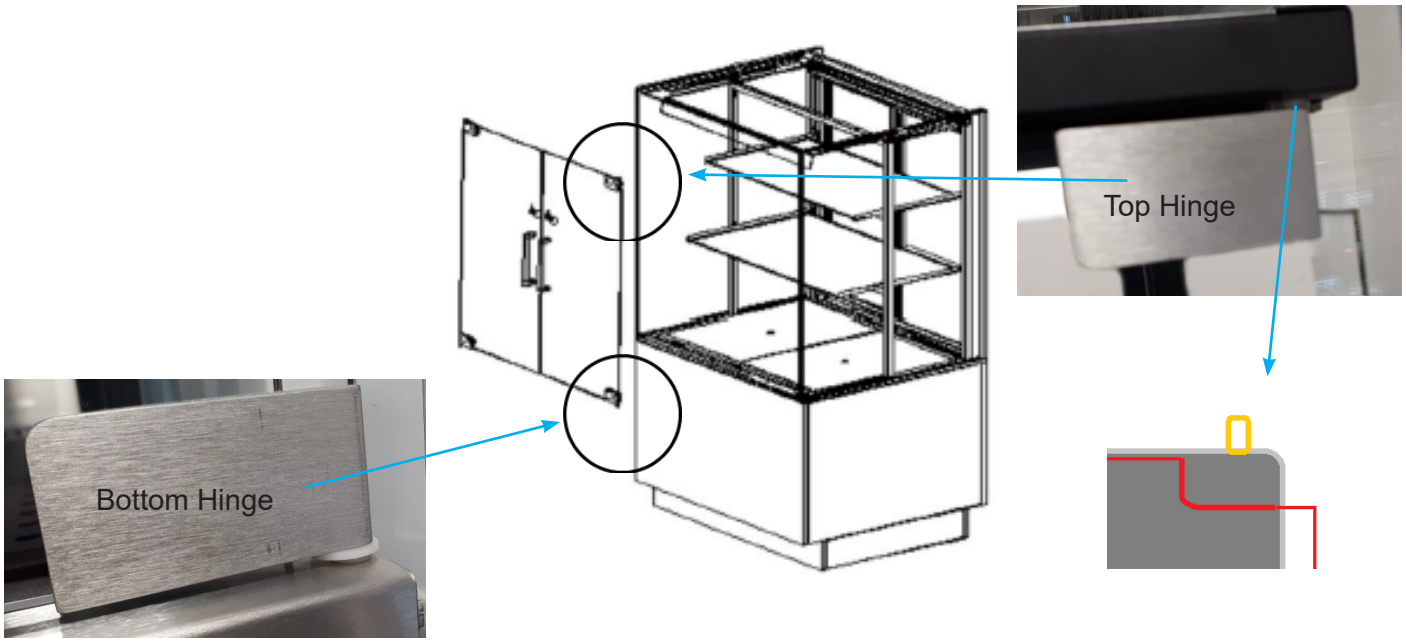


Refer to User manual for installation procedure

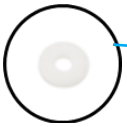


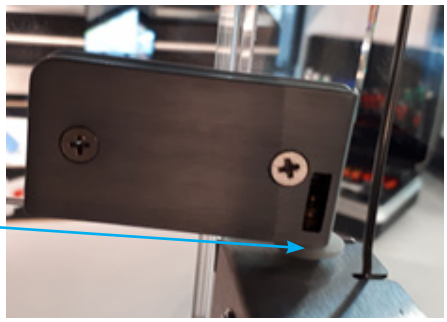
3.1 Mounting of optional front doors. first version. (for details, first version refer 6.0)

There are 2 different heights of plastic washers to align the height of the front doors.
Position the doors with the handles to the outside and with the warning sticker above the handle.

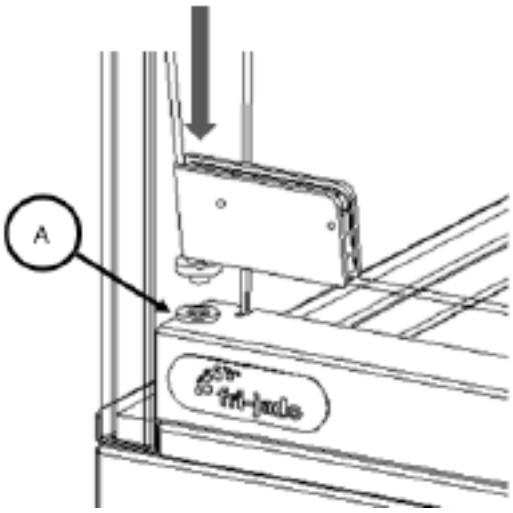


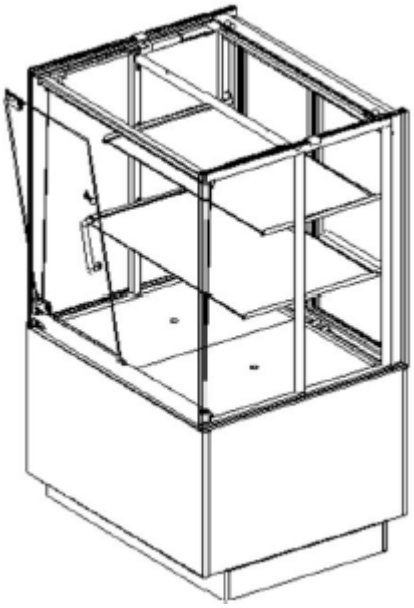
Put the thick or thin plastic washer (depending on leveling) on the bottom hinge pin of the door. Do this at all doors.



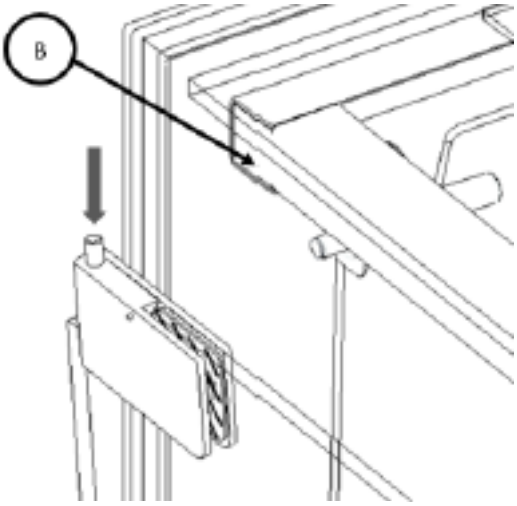


Place the hinge pin with the nylon washer on in the bottom hole (A). Keep the door in a tilted position during this action.

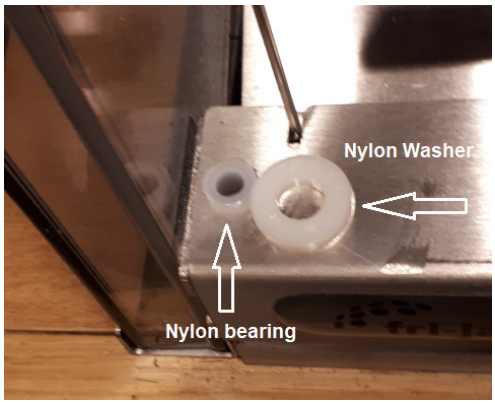




Press the hinge pin at the upper side downwards. Turn the door in a ´vertical´ position so the upper hinge pin will align with the upper hole. Release the hinge pin into the upper hole (B).



Be sure inside the hole a nylon bearing is placed, in the bottom holes as well as in the top holes.

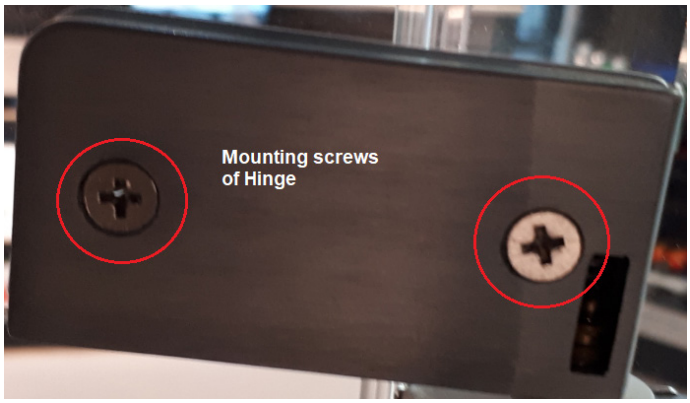


If both hinge pins are correctly clicked into the bottom and upper hole, the door is mounted correctly.

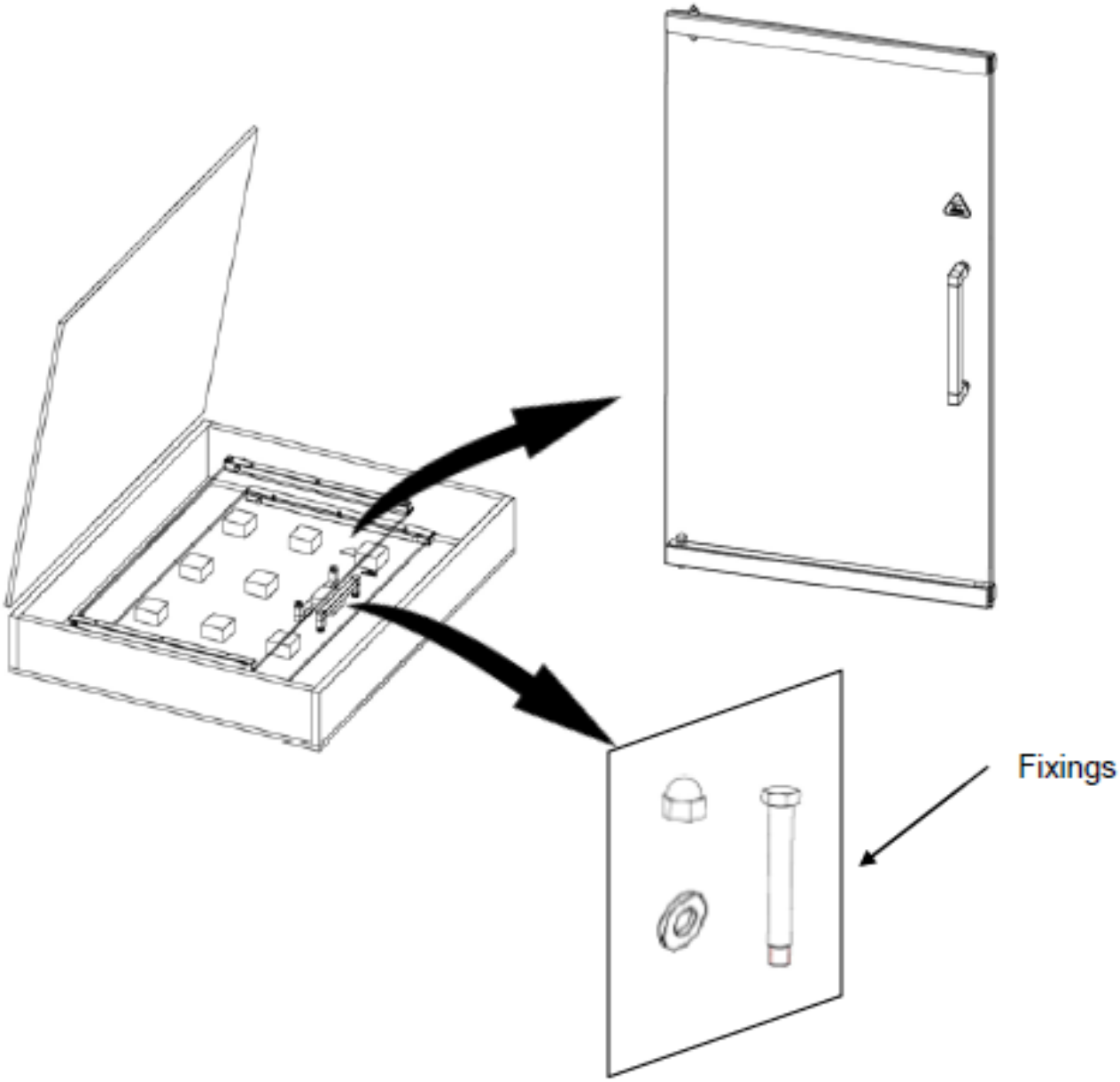
Adjusting the hight of the doors

To adjust the doors in height after placement, Loose the mounting screws of the hinge a little.

If loose, the glass can be moved slightly inside the hinge assembly



3.2 Mounting of optional front doors. Second version (for details, first version refer 6.1)



4.0 Installation

4.0.0 Installation and positioning

WARNING

Position the unit on a flat and horizontal surface.

A temporally inclined plane of maximum 5° is allowed.

- Place the unit level on a sufficiently sturdy floor.
- Keep the weight of the unit in mind.
- Use a level-ling instrument to level the unit by adjusting the unit's legs.
- Be sure that the personnel have sufficient room to work with the unit.
- Keep a distance of at least 150 mm (6 inch) between the back wall and the unit.
- Do not position a unit near a doorway, a ventilation device or a refrigerator in order to avoid any negative effects on the unit's operation by a cold airflow.

  The unit is designed for a maximum draft of 0.2 m/s (0.65 ft./sec).
- Do not place the unit into direct sunlight.
- Hot units should not be used below 20 ºC (68 ºF) ambient temperatures. and a relative air humidity remains below 60%.
- Keep the plinth free from any obstacles to ensure ventilation.

Hot Unit

The unit is set at 65 ºC (149 ºF) intake air temperature for the self-service models, and 80 ºC (176 ºF) for the serve over model.
If required this temperature can be adjusted to some degree.

At a ambient temperature of 20 ºC (68 ºF) and an initial core temperature of 85 ºC (185 ºF) these factory settings of the unit's temperature ensure a constant core temperature of at least 63 ºC (145.5 ºF) for 4 hours.

Switching-on the unit:
• Switch the heating on.
• Preheat the unit for approx. 30 minutes.
• Switch on the lighting.

Loading the unit:

• Only place products that have a core temperature of at least 85 ºC (185 ºF).
• Only package the hot products in bags or containers that are suitable for this purpose.
• To ensure a good contact with the heated trays, only place a single layer of products.
• The maximum loading height is 50mm (2 inch) below the bottom of the shelf/air guide above.
• The maximum carrying-capacity per shelf is 30 kg/m (66 lbs/m), by equal load.

Warning Electrical shock Hazard

- Grounding instructions:
  Only connect the appliance to an alternating current, to a grounded wall socket, with a mains voltage in accordance with the information indicated on the type plate of the appliance.

- It is the consumer's responsibility to make sure the electrical installation conforms with current national and local codes and wiring regulations.

- It is not allowed to use a multi plug or extension cord. Such can result in fire, electrical shock, or personal injury.

Failure to follow these instructions can result in serious injury or in death.

4.1 Applying price rail

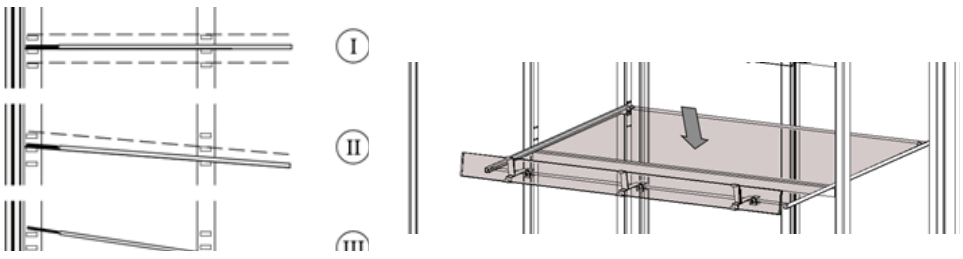
Optional price rails for Hot self-serve models can be mounted using the front screws underneath each of the Hot SS shelves. Do not loosen this screws entirely!

Price rails for serve over models can be mounted on the air inlet grill and on the glass shelves.

4.2 Repositioning the glass shelves on Hot FS models

The glass shelves can be positioned at three horizontal levels (I), or one of three angled positions (II and III) by changing the positions of the LED-armature with respect to the rear.

Examples:



For repositioning details refer to User manual

4.3 Hot SS models

The shelves can be positioned at two angled positions (0º and 3º).
Refer to user manual.

Hot FS models
Water connection for automatic fill, Refer to user manual 3.6.1
Water Manually fill, Refer to user manual 3.6.2

Unit	GN tray size	Max. reservoir water level	Reservoir water level when alarm activates	Max. water volume to add (only when alarm is on!)
MCC-60 H FS	GN 1/2 40mm	2,5L (0.66 gallon)	0,75L (0.19 gallon)	1,75L (0.46 gallon)
MCC-90 H FS	GN 1/1 40mm	5L (1.32 gallon)	1,5L (0.39 gallon)	3,5L (0.92 gallon)
MCC-120 H FS	GN 1/1 40mm	5L (1.32 gallon)	1,5L (0.39 gallon)	3,5L (0.92 gallon)

4.4 Plateau Options

On all MCC models, except the MCC Hot SS, the bottom presentation deck can be set at a variety of horizontal levels.

Refer to user manual

4.5 Solid back option

On request the unit can be ordered having a solid back in stead of sliding doors

4.6 First use

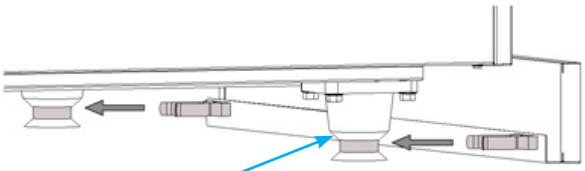
Before starting to use the unit, clean the inside thoroughly with mild detergent and water. After cleaning it wipe it with a cloth moistened with clean water to remove residual detergent, then dry the entire unit.

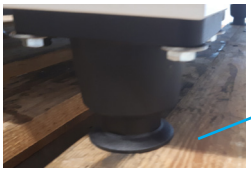
4.7 Level the unit

Place the unit on a sturdy, flat surface and level the unit by adjusting the unit's legs (max. +15mm).

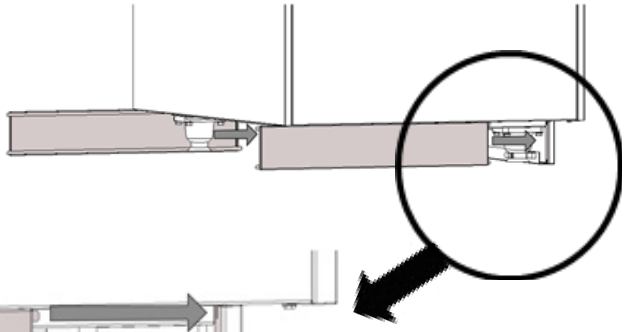
4.8 Mounting the plinths

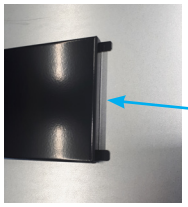
Place the rear plinth by attaching it to both rear Adjustable legs using its two clamps.

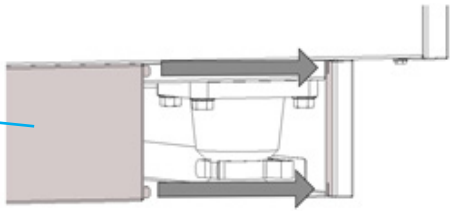




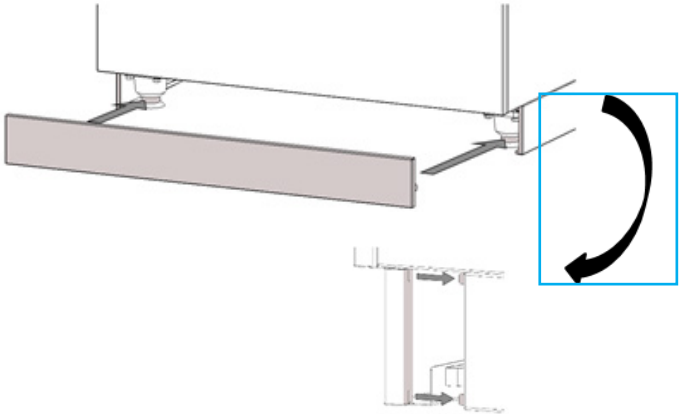
Insert the pegs of both side plinths into the slots of the rear plinth.



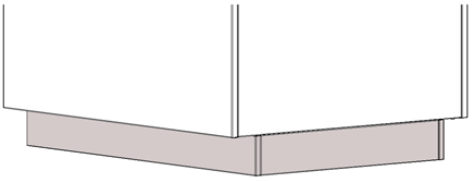




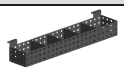
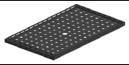
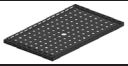
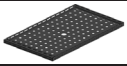
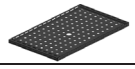
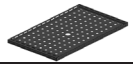
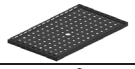
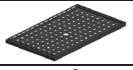
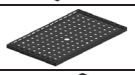
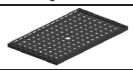
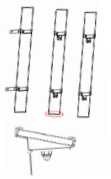
Secure the side plinths by inserting the pegs into the slots of the front plinth, while clamping the front plinth to the front adjustable legs.

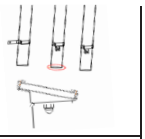
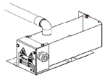


Result



4.1 Accessories

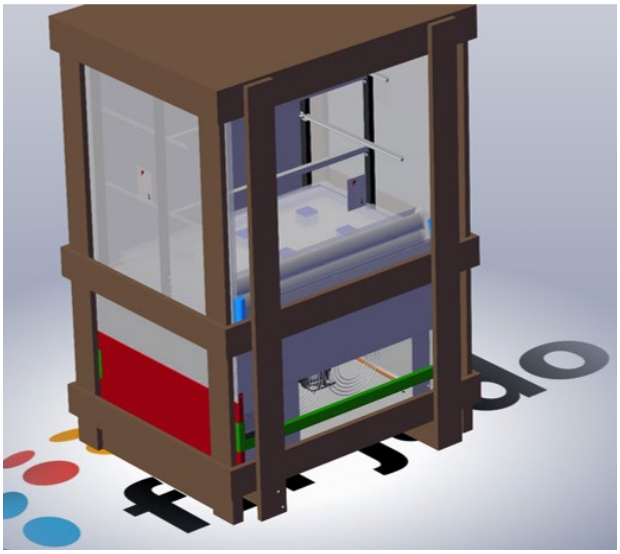
Accessoires	MCC Hot Self Serve	Compatibility	
Condiment holder	9380198	MCC 60/90/120	
Merchandising rack 410 mm - Top Shelf	9384463	MCC 60/90/120	
Merchandising rack 475 mm - Middle Shelf	9384473	MCC 60/90/120	
Merchandising rack 550 mm - Bottom Shelf	9384475	MCC 60/90/120	
Shelf divider 410 mm - Top Shelf	9384505	MCC 60/90/120	
Shelf divider 475 mm - Middle Shelf	9384503	MCC 60/90/120	
Shelf divider 550 mm - Bottom Shelf	9384505	MCC 60/90/120	
Shelf insert 250x410 mm - Top Shelf	9384534	MCC 60	
Shelf insert 250x475 mm - Middle Shelf	9384535	MCC 60	
Shelf insert 250x550 mm - Bottom Shelf	9384536	MCC 60	
Shelf insert 400x410 mm - Top Shelf	9384461	MCC 90	
Shelf insert 400x475 mm - Middle Shelf	9384470	MCC 90	
Shelf insert 400x550 mm - Bottom Shelf	9384471	MCC 90	
Shelf insert 550x410 mm - Top Shelf	9384537	MCC120	
Shelf insert 550x475 mm - Middle Shelf	9384538	MCC120	
Shelf insert 550x550 mm - Bottom Shelf	9384539	MCC120	
Accessoires	**MCC Hot Self Serve**	**MCC Hot Self serve humidified**	**MCC Hot Full serve**
Price rail set MCC SS 60	9389801		
Price rail set MCC SS 90	9389802		
Price rail set MCC SS 120	9389803		
Price rail set MCC FS 60		9389811	9389811 
Price rail set MCC FS 90		9389812	9389812
Price rail set MCC FS 120		9389813	9389813
Bumper MCC 60	9380206	9380206	9380206 
Bumper MCC 90	9380207	9380207	9380207 
Bumper MCC 120	9380205	9380205	9380205 
Castor set	9389851	9389851	9389851 
Total height of MCC + 23 cm			
Accessoires	**MCC Cold Self Serve**	**MCC Cold Self serve with doors**	**MCC Cold Full serve**
Price rail set MCC 90	9389812	9389812	9389812 

Price rail set MCC 120	9389813	9389813	9389813	
Price rail set MCC 150	9389814	9389814	9389814	
Evaporation tray	9389820	9389820	9389820	
Bumper MCC 90	9380207	9380207	9380207	
Bumper MCC 120	9380205	9380205	9380205	
Bumper MCC 150	9380208	9380208	9380208	
Castor set	9389852	9389852	9389852	
Total height of MCC + 23 cm				

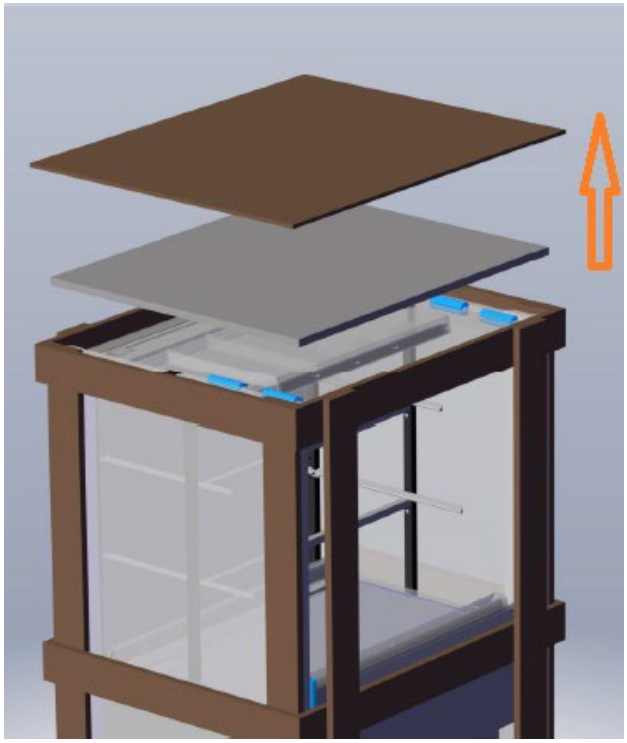
9389831	Ass. Front door set 60
9389832	Ass. Front door set 90
9389833	Ass. Front door set 120
9389834	Ass. Front door set 150

5.0 MCC Drop-in

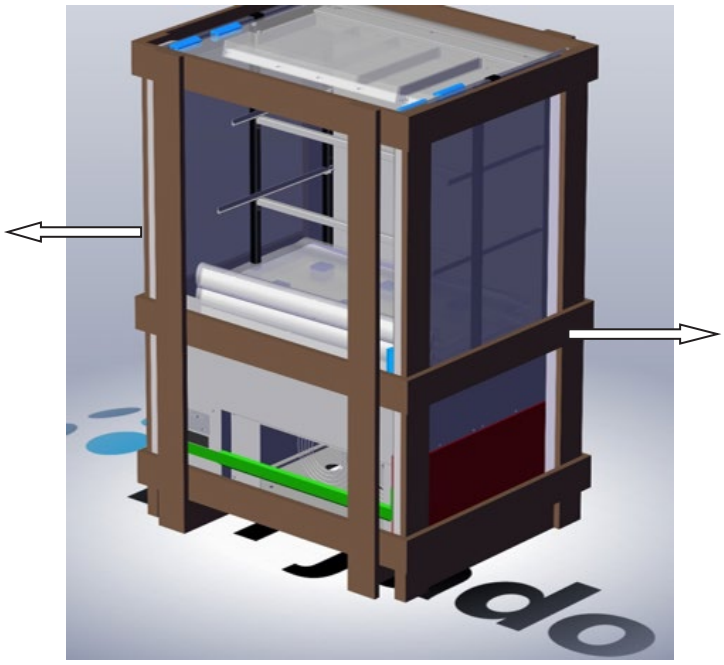
The MCC Drop in will be delivered, packed in a crate



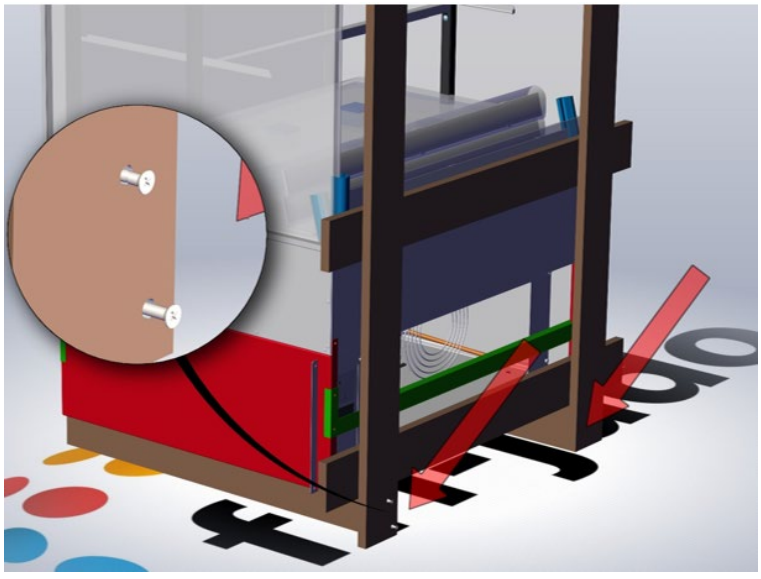
Start unpacking by removing top cover



Remove short sides first (Left and Right), by unscrewing them.

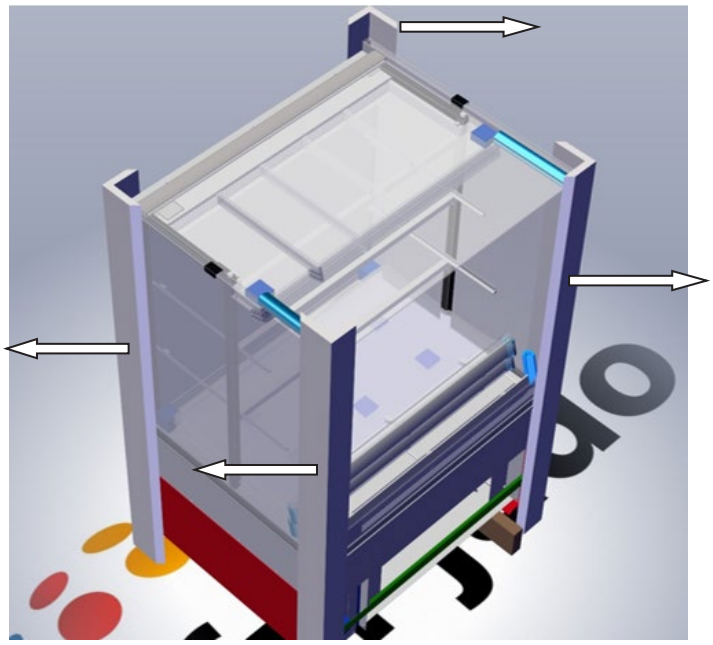


Next, remove front and back panel, they are also screwed onto the support beams under the unit.



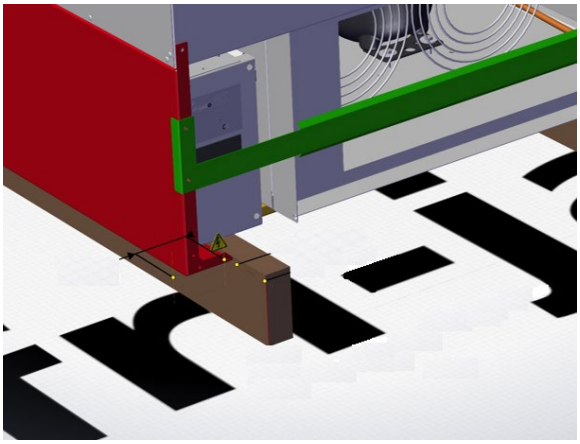
Keep the support beams for further use.

Remove wrapping foil and remove corner pieces EPS foam.



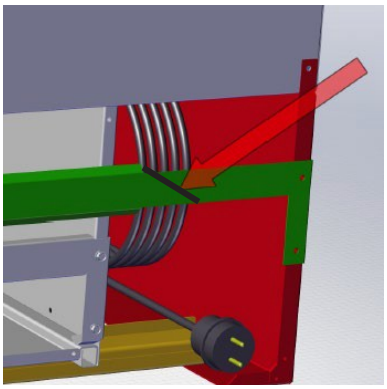
Unit is placed on a metal sub frame for transport purposes. Frame is kept together with metal strip at the front and the back.

Keep strip in place during placing process. Keep wooden support beams for further usage.

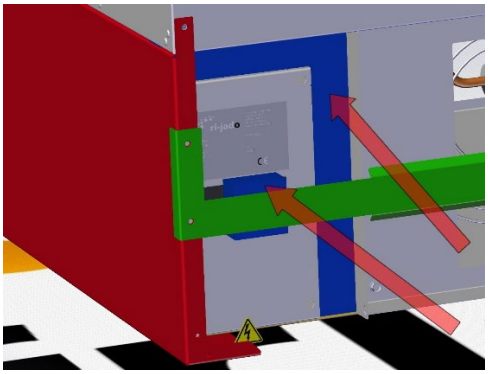


After lowering the cabinet into the cut-out in the counter top:

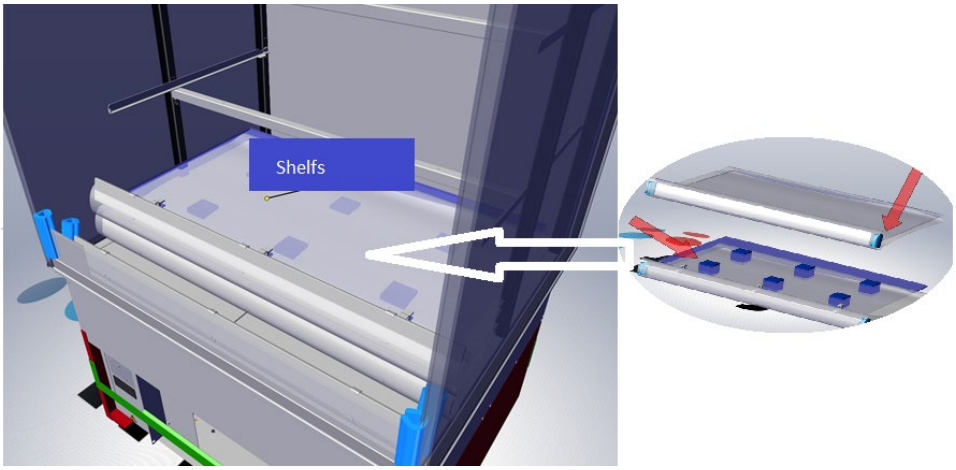
Remove tie-wrap which is holding the power cord.



Remove foam which holds the electrical box

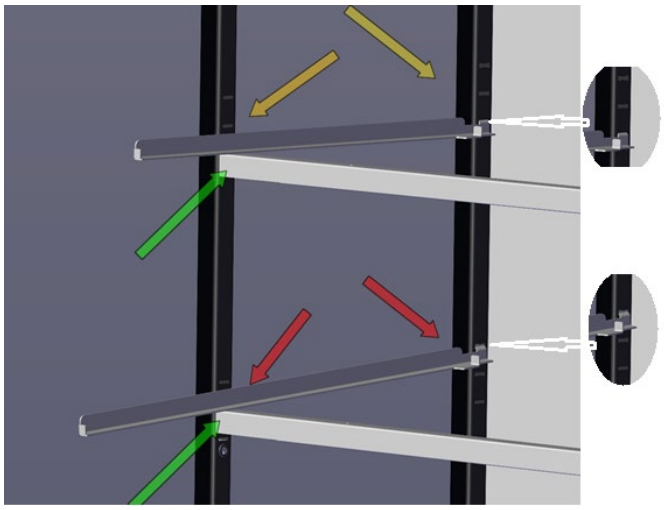


Remove documents and glass shelfs from unit.



After placing cabinet in final position, remove tie-wraps which hold the shelf holders.

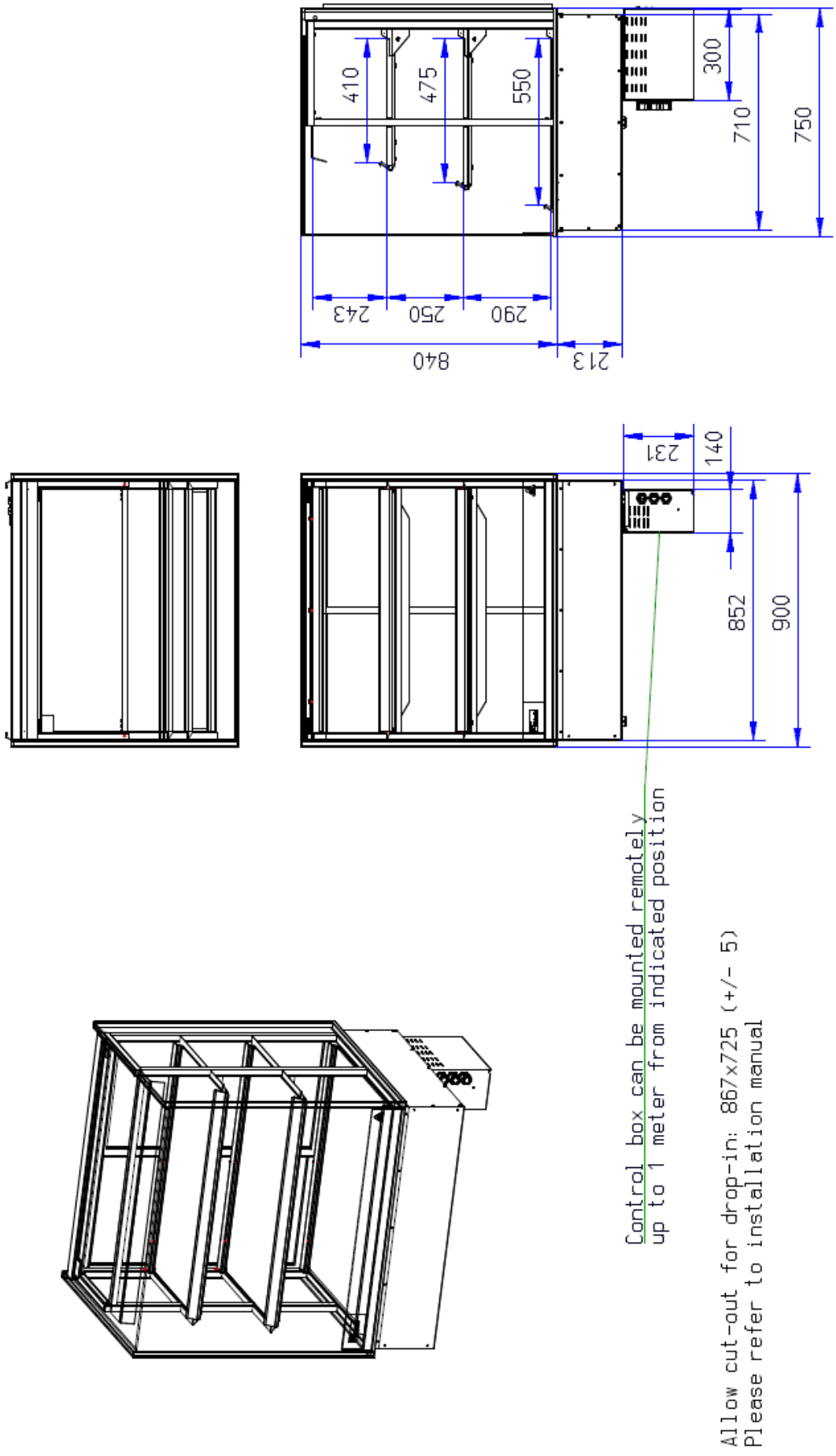
Make sure the shelf holders are placed in the required sleeve, for the wanted angled or straight position of the shelfs.



Shelf rails of top shelf should be placed in lowest position.

Shelf rails of middle shelf should be placed in highest position

5.1 MCC 90 Drop-in Dimensions Self Serve (For reference)



5.2 MCC Hot Drop-in Requirements Self Serve

Important remark before installation:

When installing Front doors on the drop in unit, Please follow Front door installation procedure, until step in which the glass is put in.

Placing the doors in a later stage, means the unit must be lifted again.

Installation must comply with:

- Make sure the counter is still easily accessible for service after installation by means of a removable hatch.
- Provide enough space to place the counter with a stacker.
  Maintain the dimensions and minimum requirements as indicated in the installation manual.
- Provide adequate ventilation; keep the minimum air inlet and outlet opening as indicated.
- Make sure the room/shop[in which the counter in placed meets the minimum dimensions as indicated in the installation manual.
- All warning signs/labels, minimum floor area label and Data plate must remain visible after installation.
- Operation of the appliance must be accessible.

5.3 MCC Hot Drop-in Specifications Self Serve (For reference)

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
General					
Length incl. end walls	mm	n.a.	900	1200	1500
Length excl. end walls	mm	n.a.	850	1150	1450
Depth	mm	n.a.	750		
Height on stand	mm	n.a.	1420		
Height above worktop	mm	n.a.	840		
Underframe height	mm	n.a.	580		
Plinth height	mm	n.a.	100		
Drop-in cut out (W x D)	mm	n.a.	867 x 725 (+/- 5)	1167 x 725 (+/- 5)	1467 x 725 (+/- 5)
Electronics panel cut out (W x H)	mm	n.a.	153 x 244 (+/- 5)		
Weight (net)	kg	n.a.	175	202	229
Weight (gross)	kg	n.a.	207	240	273
Packaging dimensions (W x D x H)	mm	n.a.	1020 x 870 x 1460	1320 x 870 x 1460	1620 x 870 x 1460
Nr. of presentation levels		n.a.	3		
Dimensions bottom shelf	mm	n.a.	590 x 800	590 x 1100	590 x 1400
Dimensions middle shelf	mm	n.a.	475 x 800	475 x 1100	475 x 1400
Dimensions top shelf	mm	n.a.	410 x 800	410 x 1100	410 x 1400
Shelf display area	m2	n.a.	1,18	1,62	2,07
Usable display volume	l	n.a.	258	355	452
Drain diameter	mm	n.a.	32		
Minimum room floor area	m2	n.a.	11,00	14,35	17,70
Minimum air inlet surface area	cm2	n.a.	1100	1250	
Minimum air outlet surface area	cm2	n.a.	500	700	900

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Performance					
Climate class*		n.a.	3		
Classification*		n.a.	M1		
TDA*	m2	n.a.	1,18	1,60	2,02
TEC at 3M1*	kWh/day	n.a.	12,8	t.b.d.	t.b.d.
TEC/TDA at 3M1*	kWh/day/m2	n.a.	10,85	t.b.d.	t.b.d.
Energy class at 3M1*		n.a.	E	t.b.d.	t.b.d.
TEWI**	kg of CO_2	n.a.	27023	t.b.d.	t.b.d.
Sound pressure	dB (A)	n.a.	<70		
Minimum ambient temperature	°C	n.a.	17		
Maximum ambient temperature	°C	n.a.	25		
Maximum relative air humidity	%	n.a.	60		

* According to ISO 23953, open front, test type 1 (24 hours without night cover)

** Total equivalent warming impact according to EN 378, based on 10 years of operation at climate class 3, 0,295 kg CO_2/kWh and a leakage rate of 1% per year

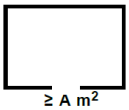
5.4 MCC Drop-in Installation (Self Serve)

Doc. nr.	Rev.	Registration form.	
9124589	0	MCC Drop in installation instruction	fri-jado

Safety instructions

WARNING
Self-contained units: Risk of Fire or explosion. Flammable refrigerant used.

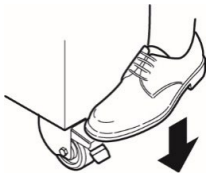
WARNING
The maximum load on top of the unit may never exceed 10 kg.



MINIMUM ROOM FLOOR AREA
Self-contained units: Refer to the data label on the unit for the required floor area.

WARNING
See installation instructions for grounding requirements.

WARNING
Always use the brakes on both front wheels when applicable:



Cold units with remote CO2 (R744) refrigerant

WARNING
Remote R744 refrigerant is environmentally friendly but under high pressure. It is non-toxic with zero Ozone Depletion Potential (ODP) and very low Global Warming Potential (GWP).

Read this manual carefully and follow all precautions described herein.

SAFETY
Wear eye protection when working on the refrigeration system.

WARNING
Remote R744 filled under high pressure.(max. 60 bar)

- Do not tamper with the system.
- The system must be installed and maintained by qualified persons only.
- Fixate the unit to the floor.
- The ventilation openings of the cladding of the unit (including accessories) must not be blocked or covered. Ensure that the air circulation remain unobstructed.

Doc. nr.	Rev.	Registration form.	
9124589	0	MCC Drop in installation instruction	fri-jado

MCC Hot version:

Important remark before installation:

When installing Front doors on the drop in unit, Please follow Front door installation procedure (under construction), until the step in which the glass must be placed.

Placing the doors in a later stage, means the unit must be lifted again.

Installation must comply with:

- Make sure that the furniture is still easily accessible for service after installation by means of a removable hatch.
- Provide enough space to place the furniture with a stacker.
  Maintain the dimensions and minimum height as indicated in the installation manual.
- Provide adequate ventilation; keep the minimum air inlet and outlet opening as indicated on the last page.
- Make sure that the room / shop in which the furniture is placed meets the minimum dimensions as indicated in the installation manual.
- All warning signs / labels, minimum floor area label and Data plate must remain visible after installation.
- Operation of the appliance must be accessible.

MCC Cold version:

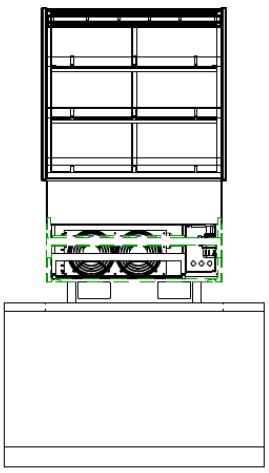
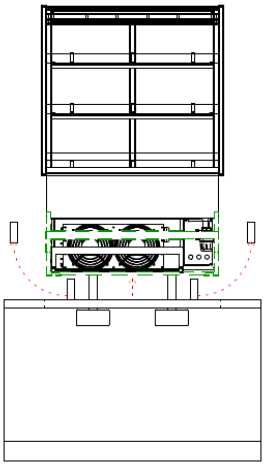
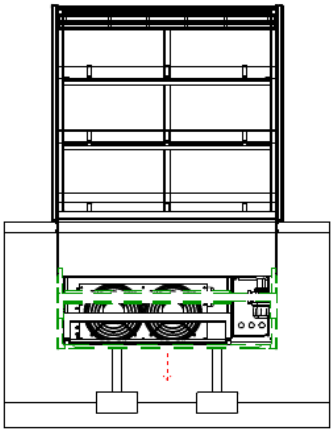
Important remark before installation:

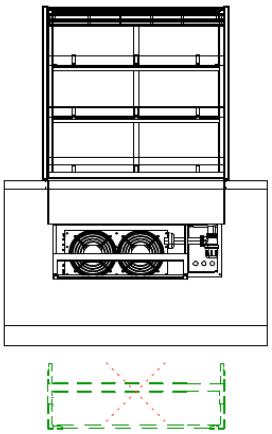
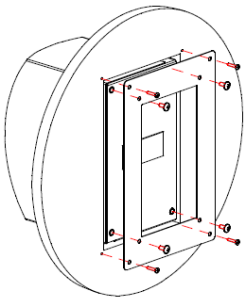
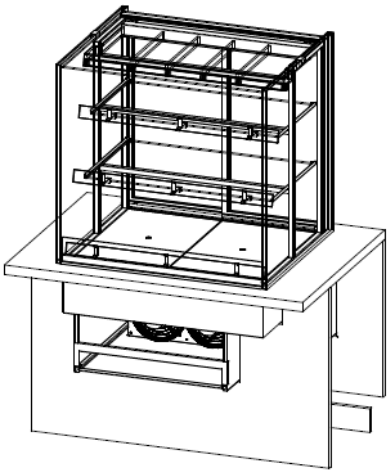
When installing Front doors on the drop in unit, Please follow Front door installation procedure 9124721, until the step in which the glass is put in. Placing the doors in a later stage, means the unit must be lifted again.

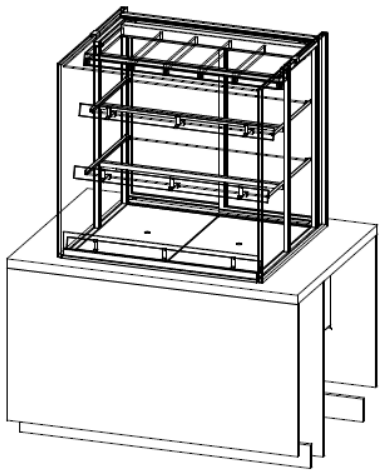
Installation must comply with:

- No spark-forming components or components with a high surface temperature may be present in the substructure / counter where the furniture is placed.
- The refrigeration components must not be directly accessible by unauthorized Personnel.
- Make sure that the furniture is still easily accessible for service after installation by means of a removable hatch. The condenser must be cleaned regularly.

  Keep enough space on the back of the unit, to enable servicing which implies the back panel of the furniture can be removed.
- Provide enough space to place the furniture with a stacker.
  Maintain the dimensions and minimum height as indicated in the installation manual.
- Provide adequate ventilation; keep the minimum air inlet and outlet opening as indicated in the installation manual. Place baffles to prevent hot exhaust air from being sucked back through the condenser.
- Make sure that the room / shop in which the furniture is placed meets the minimum dimensions as indicated in the installation manual.
- Make sure that the warning signs / labels are / remain visible after installation.
- Operation of the appliance must be accessible.
- Additional ventilation: prevent gas accumulation due to leakage. Used gas is heavier then air.
- Avoid high temperatures in the vicinity of the furniture.

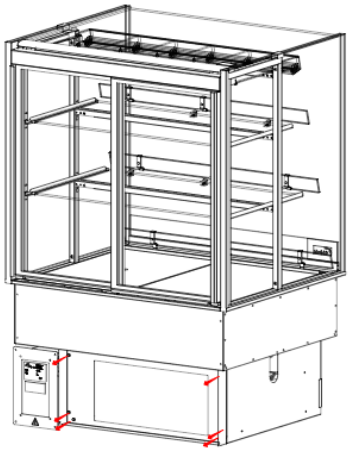
	Step 1. Position the cabinet above the cut-out in the counter top with a forklift and support it using the wooden beams supplied with the unit
	Step 2. Lift the cabinet from below, using stable filler blocks and remove the wooden support beams
	Step 3. Apply sealant or a thin flexible foam seal around the cut-out in the countertop. Carefully lower the cabinet into the counter

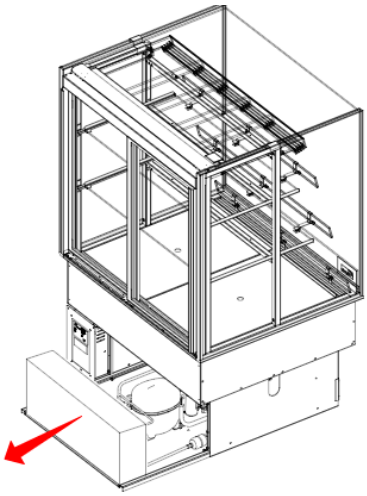
	Step 4. Remove and discard the metal transportation frame.
	Step 5. Install the control panel using the supplied mounting plate and screws. (up to 1 meter from the original position)
	Step 6. Install a partition panel to prevent recirculation of hot condenser air. (refrigerated models only)

	Step 7. Install all remaining trim panels. Make sure ventilation openings have the correct size and the cabinet remains accessible for service and maintenance.

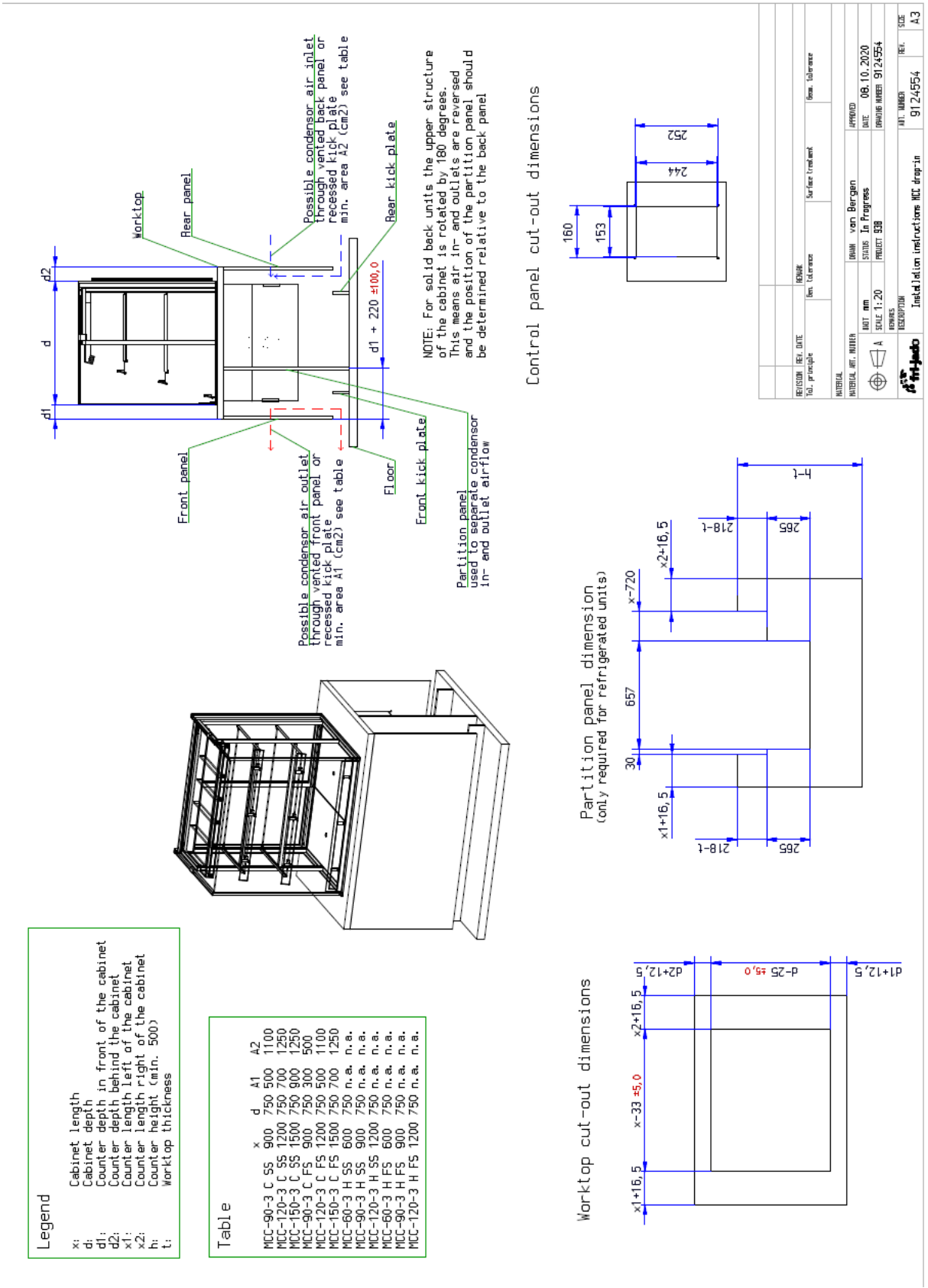
Make sure, after build in, the cool engine is still accessible.

Keep in mind the complete cool engine is extendable on self-contained units, at the back side of the unit for maintenance and service purposes.





For remote units, please keep latch for service.


Worktop
Rear panel
Possible condensor air inlet through vented back panel or recessed kick plate min. area A2 (cm2) see table
Rear kick plate
d2
d
d1
d1 + 220 ±100,0
NOTE: For solid back units the upper structure of the cabinet is rotated by 180 degrees. This means air in- and outlets are reversed and the position of the partition panel should be determined relative to the back panel
Front panel
Possible condensor air outlet through vented front panel or recessed kick plate min. area A1 (cm2) see table
Floor
Front kick plate
Partition panel used to separate condensor in- and outlet airflow
Control panel cut-out dimensions
160
153
252
244
Partition panel dimension
(only required for refrigerated units)
x-720
657
30
x1+16,5
x2+16,5
265
218-t
t-4
Worktop cut-out dimensions
x1+16,5
x-33 ±5,0
x2+16,5
d-25 ±5,0
d1+12,5
d2+12,5
Legend
x: Cabinet length
d: Cabinet depth
d1: Counter depth in front of the cabinet
d2: Counter depth behind the cabinet
x1: Counter length left of the cabinet
x2: Counter length right of the cabinet
h: Counter height (min. 500)
t: Worktop thickness
Table
x d A1 A2
MCC-90-3 C SS 900 750 500 1100
MCC-120-3 C SS 1200 750 700 1250
MCC-150-3 C SS 1500 750 900 1250
MCC-90-3 C FS 900 750 300 500
MCC-120-3 C FS 1200 750 500 1100
MCC-150-3 C FS 1500 750 700 1250
MCC-60-3 H SS 600 750 n.a. n.a.
MCC-90-3 H SS 900 750 n.a. n.a.
MCC-120-3 H SS 1200 750 n.a. n.a.
MCC-60-3 H FS 600 750 n.a. n.a.
MCC-90-3 H FS 900 750 n.a. n.a.
MCC-120-3 H FS 1200 750 n.a. n.a.
DRAWN van Bergen
STATUS In Progress
PROJECT 938
DATE 08.10.2020
DRAWING NUMBER 9124554
UNIT mm
SCALE 1:20
MATERIAL
MATERIAL ART. NUMBER
REVISION REV. DATE
Tol. principle
Gen. tolerance
REMARK
Surface treatment
Gen. tolerance
APPROVED
ART. NUMBER 9124554
REV.
SCALE A3
DESCRIPTION Installation instructions MCC drop-in

6.0 Installation Front door section (first version)

REVISION	REV. DATE	REMARK	Surface treatment	Geom. tolerance
01	29.01.2021	cable		
Tol. principle		Gen. tolerance		

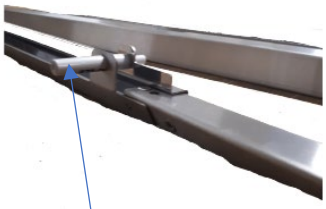
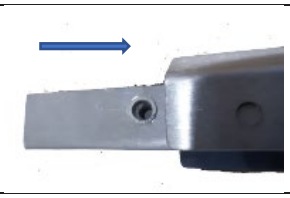
MATERIAL

MATERIAL ART. NUMBER		DRAWN	Kappers	APPROVED	
	UNIT mm	STATUS	In Progress	DATE	04.03.2020
A	SCALE 1:10	PROJECT		DRAWING NUMBER	9380104
	REMARKS				

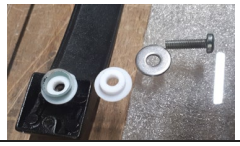
DESCRIPTION	ART. NUMBER	REV.	SIZE
Ass. MCC-90 SS front door module	9380104	A	A4

Pos. Number	Amount	Unit	Article number	Description
1	1	pc	9380105	Ass. Front door top supports MCC-90
2	1	pc	9380108	Ass. MCC-90 Front door [Left]
3	1	pc	9380109	Ass. MCC-90 Front door [Right]
4	1	pc	9380107	Ass. bottom support self-close door MCC-90
5	2	pc	9383040	Stainless steel rod ø2mm

6.0 Installation Front door section (first version)

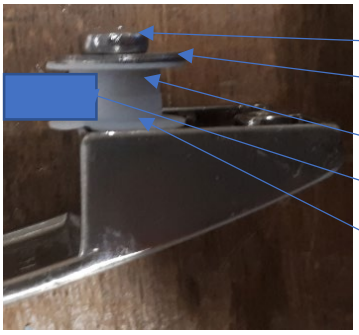
	Step1. Remove any remaining protective coatings from the stainless steel parts provided.
 Place soft close damper	Step 2. Depending on variant: **With standard underframe:** Remove front underframe panel (two screws, one on each bottom corner). **Drop-In:** Raise the unit at least 30cm from tabletop level in order to access the screws for the child-guard. Be careful to support the unit such that no components or connections underneath the base of the unit are damaged while doing so.
	Step 3. Slide profiles into each other. Be careful to guide the rivet nut into the profile.
	Step 4. Slide square profiles into each other.
	Step 5. Place end cover on profile end.
	Step 6. Mount handle on glass door.

6.0 Installation Front door section (first version)



Step 7.

Make sure to use place the white nylon rings on both side of the glass.



Step 8.

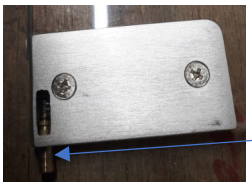
Bold

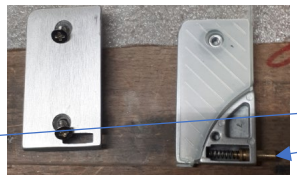
Washer (steel)

Nylon washer with collar 1 

Glass

Nylon washer with collar 2 





Step 9.

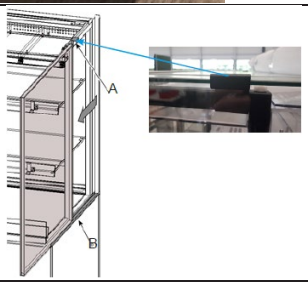
Place hinge on glass door.
One on the bottom, one on top.

(Hight adjustment washer 3701241 and 3701242)

For placement washers wait till step 22

Step 10.

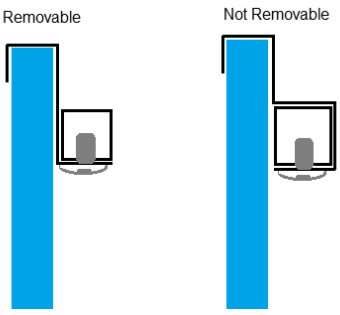
Place glass between nylon sheets
Glass position



Step 11.

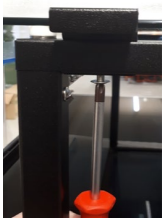
Remove side glass (both sides)

CAUTION:
Once past the top guide, the glass pane might fall if not properly held

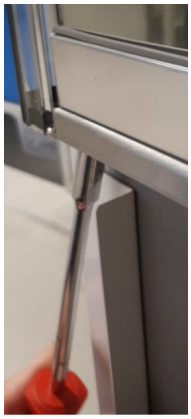
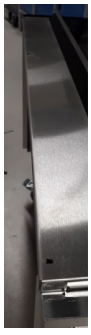
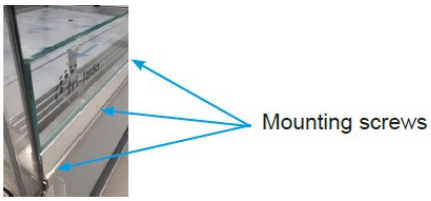


Step 12.

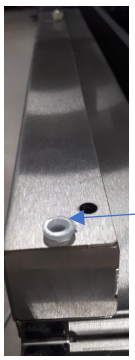
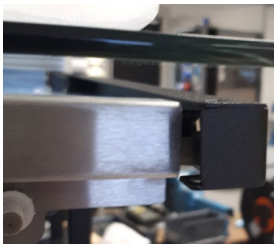
Remove side glass holder, depending on version.



6.0 Installation Front door section (first version)

	Step 13. Remove white stud. Remove top column cover (two screws)
	Optional Step 14. (only necessary when top column is stuck) Remove back cover(s) left and right (sliding door stopper). Both fixed with three screws.
	Step 15. Place new (longer) top column cover (two screws) Re-mount side glass holder. (the first screw) Mount second screw just before back column Replace white stud removed in step 13.
 	Step 16. Remove screws (3x) to detach child guard from the bottom (recycle these screws to fix the bottom support!)  Dispose of the child guard in accordance with local regulations

6.0 Installation Front door section (first version)

 	Step 17. Place square profiles (prepared in step 4) in previous position from child glass. Use same screws to mount. Place nylon bearing in profile (packet in bag with hinge).
	Step 18. Place bumper rubber in bottom profile (two).
	Step 19. Place top profile set (step 3) in top column cover.
	Step 20. Place additional white stud on top of top column cover Place nylon bearing in top column cover from below.
	Step 21. Put glass door in place.
Very carefully, try to close the glass door(s). They are not adjusted in height yet,	

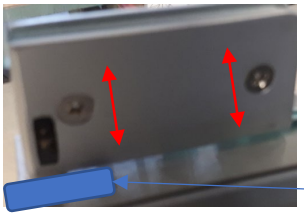
6.0 Installation Front door section (first version)

so they can scratch the bottom plate.

Very carefully, try to close the glass door(s).

**They are not adjusted in height yet,
so they can scratch the bottom plate.**

Always place hight adjustment nylon washer first before placing the bottom hinge pin in its bearing



Step 22.

Adjust glass door height by adjusting position in the hinge (place in step 9).

Also available in kit, 3701241 and 3701242
Height adjustment nylon washer set.
See step 9.

Height adjustment is done by repositioning the hinge on the glass, or adding the height adjustment washer(s).

6.1 Installation Front door section (Second version)

9124721 Service Instruction
Installation front doors MCC (2nd version)

The technician, working on the unit will be fully responsible for abiding the locally prevailing safety rules and regulations.

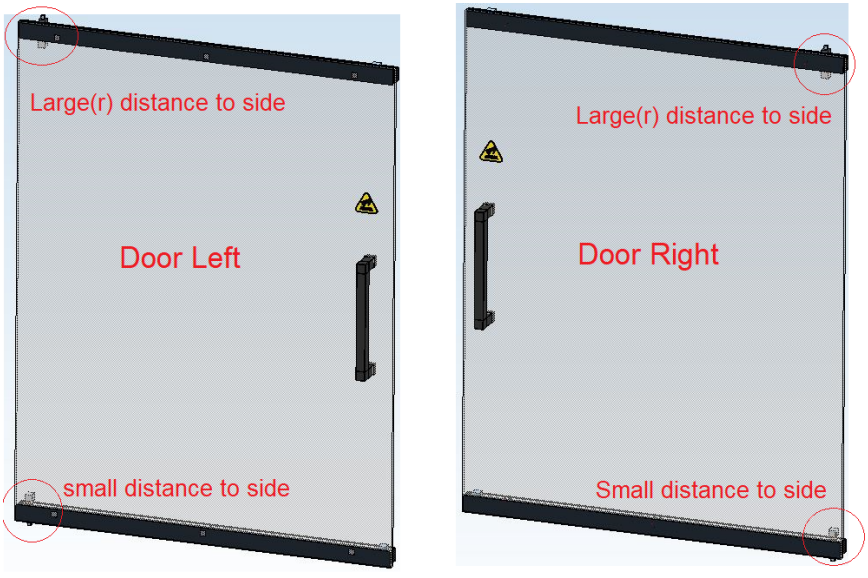
Technical activities must be performed by qualified and authorized persons only.

Before working on any electrical part, or dismantling the unit by means of using a screwdriver or any other tool, **ALWAYS REMOVE THE POWER PLUG** from the main outlet.

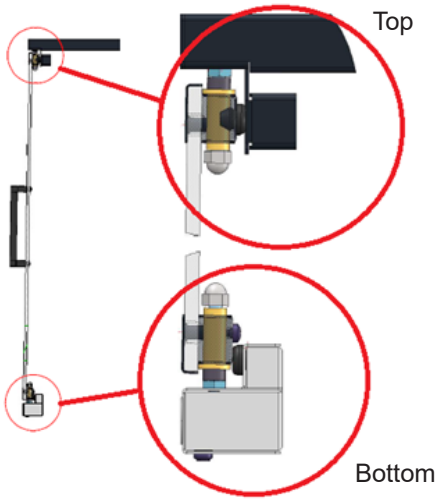
6.1 Installation Front door section (Second version)

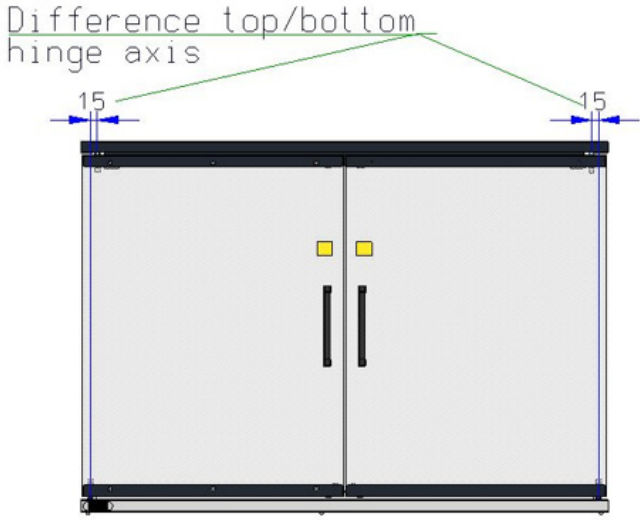
fri-jado

	Door set
MCC 60	9380369
MCC 90	9380370
MCC 120	9380371
MCC 150	9380372



6.1 Installation Front door section (Second version)





Depending on variant:

With standard under frame:
Remove front under frame panel (two screws, one on each bottom corner).

Drop-In:
Raise the unit at least 30cm from tabletop level in order to access the screws for the child- guard. Be careful to support the unit such that no components or connections underneath the base of the unit are damaged while doing so.

Step 1.

Remove Child guard:

Refer service manual chapter replacement and adjustment

a. Remove front panel.

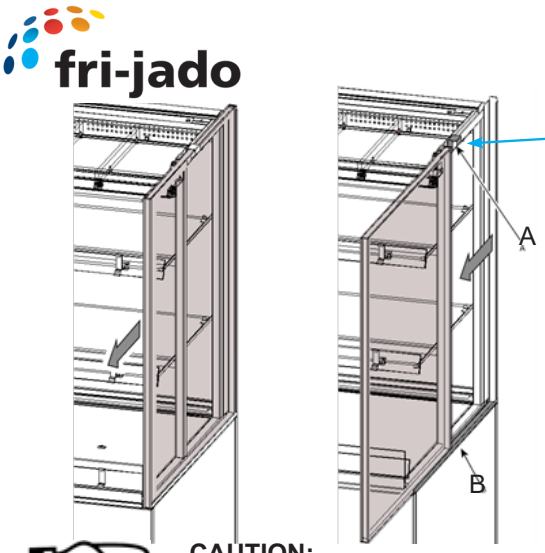
b. Loosen mounting screws (3x depending on unit length) of child guard. *Screwed from underneath.*

c. Remove Child guard

d. Position under beam on place of child guard

e. Fasten mounting screws.

6.1 Installation Front door section (Second version)



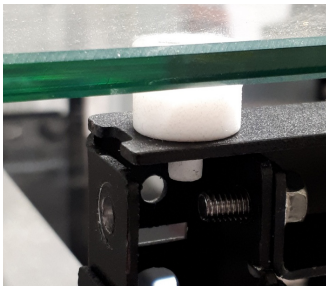
Step 2.

a. **Remove side glass** both sides:

b. Slide the double glass pane towards the front along the top (A) and bottom (B) guiding rails.

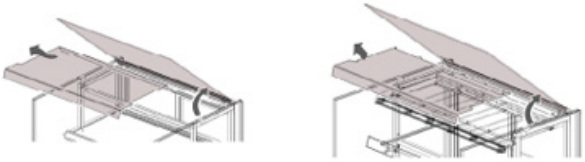
c. The side pane can be removed from the unit once it has slid entirety past the top guide.

CAUTION:
Once past the top guide, the glass pane might fall if not properly held.
Hence do not leave it standing upright without being supported by both guide rails or holding it.



Step 3.

a. **Remove white (or black) stud,** both sides.
(*Black stud is screwed in)*



Step 4.

a. **Remove top air guide or assy. air box**
(which is applicable depending on version).

Step 5.

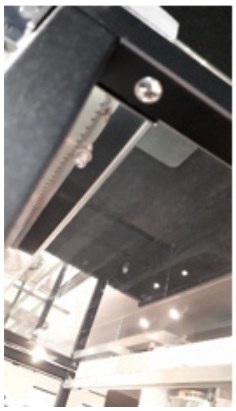
a. **Remove side glass holder**,
left and right.

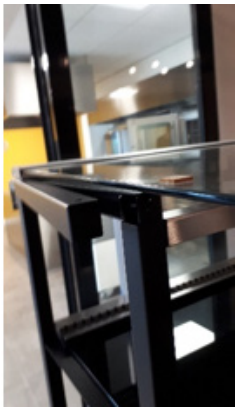
Step 6.

a. **Remove or loosen back cover(s)**
left and right (sliding door stopper).

Both fixed with three screws.

6.1 Installation Front door section (Second version)





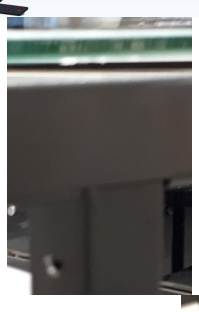
Step 7.

a. **Remove top column cover** by removing last screw. (one each side)

Step 8.

a. **Place new (longer) top column cover(s)/ window support** (two screws).

b. Mount screws in new top column cover

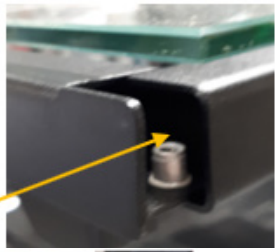


Step 9.

a. **Replace white (or black) stud** removed earlier.

Step 10.

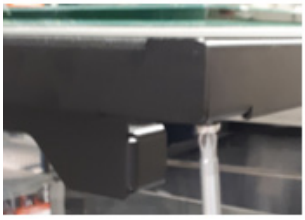
a. **Replace side glass holder** removed earlier.



Step 11.

a. **Place top front beam** in side profiles.

Slide the beam into the front of the profile.



View from underneath

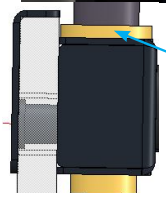
Step 12.

a. **Fasten the top front beam** in side profiles with screws. (both sides)

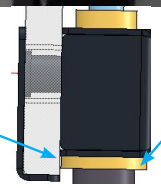
6.1 Installation Front door section (Second version)

fri-jado

Bottom Side



Flange

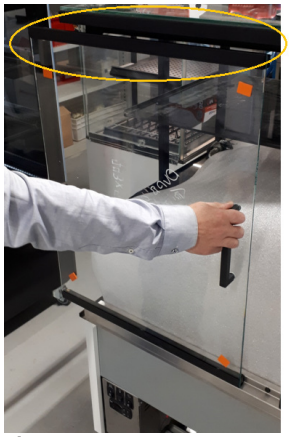


TOP Side

Step 13.

a. **Check placing bearing(s)** in door, one in the top,
one at the bottom.

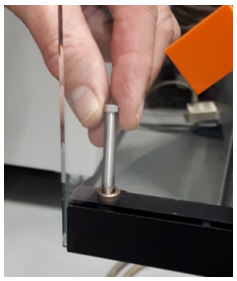
Make sure the flange of the bearing sits opposite of the glass.



Step 14.

a. Place a door on the lower beam, let it stick out of the unit.

CAUTION:
Be careful not to touch the top beam with the glass door.

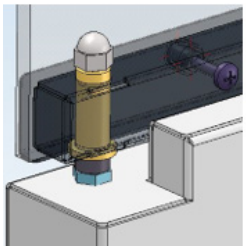


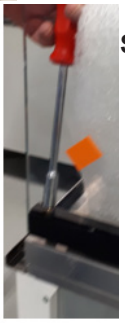
Step 15.

a. Place hinge pin into bearing

Step 16.

a. Place distance ring on hinge pin.

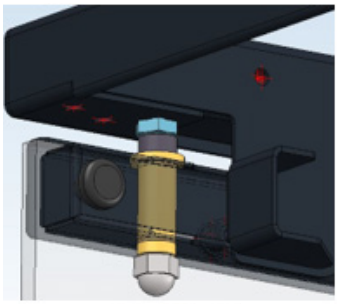


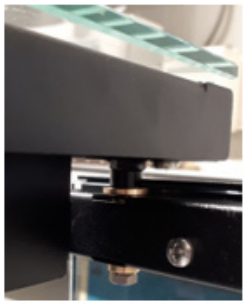


Step 17.

a. Fasten hinge pin loosely, making sure the door is kept in place

6.1 Installation Front door section (Second version)



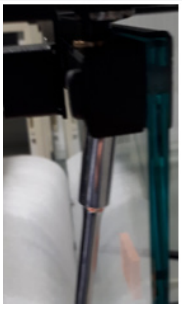


Step 18.

a. Place top hinge pin into top bearing.

b. Place distance ring on top hinge pin.

c. Fasten top hinge pin, tighten tight !



Step 19.

a. Fasten lower hinge pin, tighten tight !

Step 20.

Repeat step 14 till 19 for each front door, depending on MCC variation.

Replace removed sliding doors covers in reverse order.

Replace top air guide or assy air box, in reverse order. If this does not fit anymore please order:

	Top air guide	Assy air box
MCC 60	9382062	N.A.
MCC 90	9382061	9380002
MCC 120	9382063	9380098
MCC 150	9382124	9380137

Fri-Jado B.V.
Blauwhekken 2
4751 XD Oud Gastel
The Netherlands
Tel: +31 (0) 76 50 85 400

7.0 Operation MCC Hot

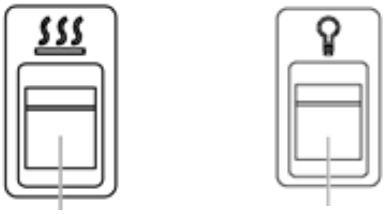
7.0 Hot Units

The display value is not the product temperature!

When switched on, the display performs a lamp test; the display and LED's will flash for several seconds to check all function are working correctly.

7.0.1 Control Panel

On/Off Switches (hot unit).



Key Function			
∧ ⏻	Press and hold at power up: FACTORY RESET ("*FAC*" is displayed)	∧ ⏻	Press for one second: UP Press and hold: ON/OFF
❄ ∨		❄ ∨	Press for one second: DOWN
< ❄	Press for one second: BACK Press and hold: PULL-DOWN	SET	Press for one second: TEMPERATURE SETPOINT/OK Press and hold: MENU
Display Icons			
☾	Night mode (Energy saving)	✲	Fan running
		🔔	Active alarm
		°C	Unit (°C or °F)

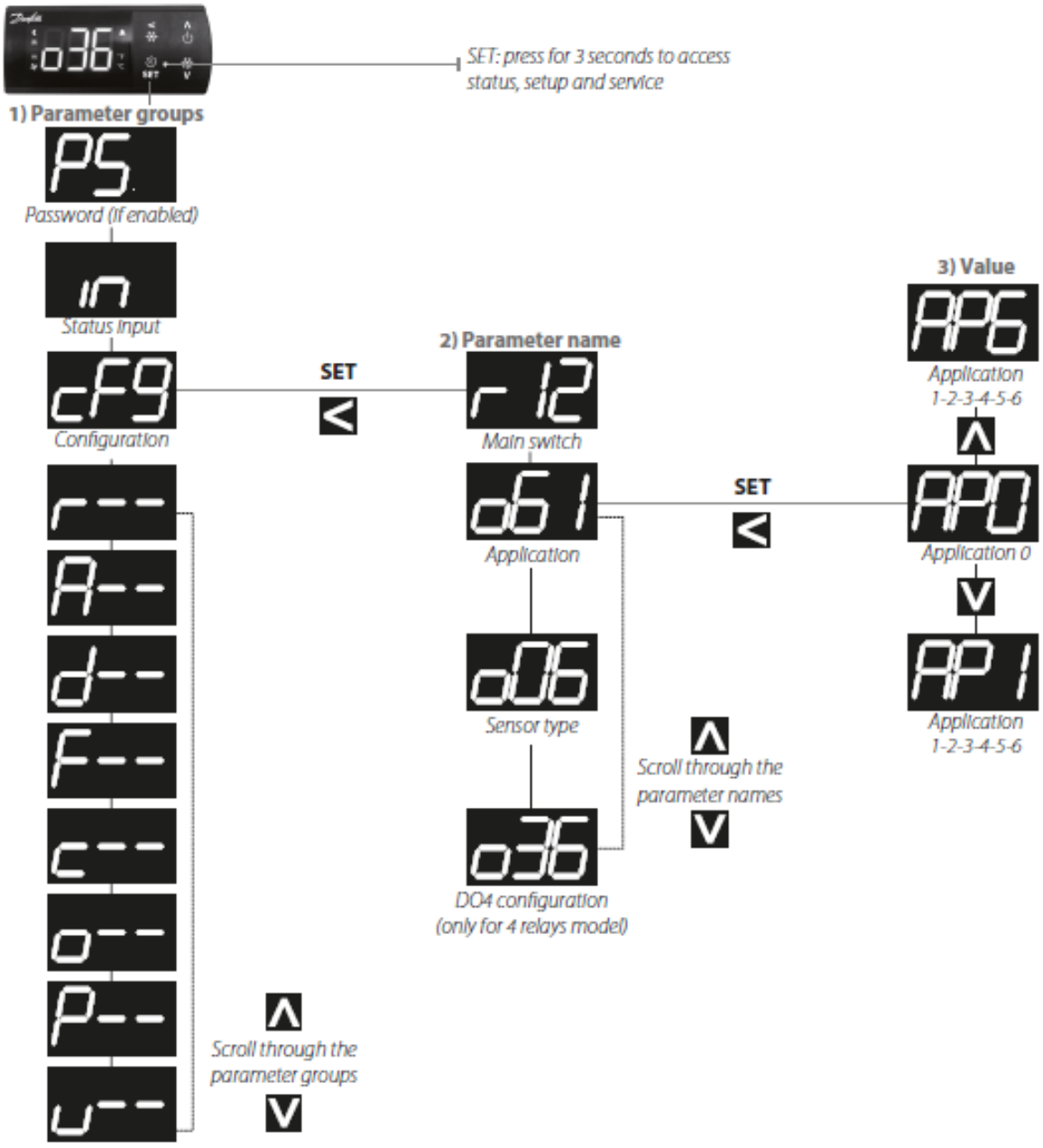
7.0.2 Factory settings

The unit is set at 149 ºF (65 ºC) intake air temperature.
If required this temperature can be adjusted to some degree.

At a ambient temperature of 68 ºF (20 ºC) and an initial core temperature of 185 ºF (85 ºC) the factory settings of the unit's temperature ensure a constant core temperature of at least 145.5 ºF (63 ºC) for 4 hours.

7.1 Operation MCC Hot **<access controller>**

7.1.0 Menu Structure



Quick Configuration via “cFg” menu

- Press SET for three seconds to access the parameters groups.
- Select “CFg” menu and press SET to enter. The first menu “r12” (main switch) is displayed.
- Switch OFF main switch (r12=0) for changing the pre-installed application.
- Press UP/DOWN to scroll through the parameter list.
- Configure the “o61” parameter to select a pre-installed application:
- Press SET to access the “o61” parameter.
- Press UP/DOWN to select an application.
- Press SET to confirm, “o61” is displayed.
- Continue to set the next parameters in the “cFg” menu.

7.2 Operation <access controller>

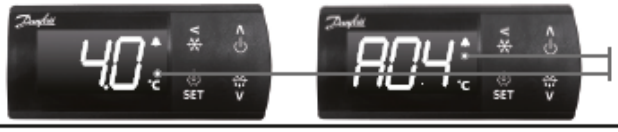
Adjust set point temperature

(short press) SET: adjust setpoint temperature.

UP/DOWN: change the temperature setpoint (in setting mode the setpoint flashes).

SET: save the temperature setpoint.

View active alarm



Temperature and alarm codes alternate flashes until the alarm is resolved. The alarm bell is shown.

Unlock keyboard

- After 5 minutes of no activity, the keypad is locked (if P76=yes).
- When the keypad is locked any button press shows "LoC" in the display.
- Press UP and DOWN buttons simultaneously for 3 seconds to unlock the keyboard. "unl" is displayed for 3 seconds.

7.2.0 Switching-on the unit

- Switch the unit on, by means of the main switch (located top front, and/or top back)
- Switch on controller for specified shelf (Multi-temp only)
- Preheat the unit/shelf for at least 30 minutes.
- Switch on the lighting with appropriate switch (next to controller)

7.2.1 Loading the unit

- Only place products that have a core temperature of at least 185 ºF (85 ºC) or above.
- Only with packaged hot products in bags or containers that are suitable for this purpose, withstanding these temperatures.
- To ensure a good contact with the heated trays, only place a single layer of products.
- The maximum carrying-capacity per shelf is 30 kg/m (66 lbs/m), by equal load.

9124747
Service Instruction
Controller replacement

Due to supply issues, Fri-Jado uses different kind of controllers as placed in our units from factory.

Four possible controllers are used.

For Service replacements we only deliver Eliwell ICPlus 902

Please find below the difference in connections and parameters.

For disassembly instructions refer to the original service manual for the unit at hand.

Service Replacement-unit, (UL certified)

Eliwell ICPlus 902
9281071 (programmed)
9381056 (unprogrammed)

We use four different types of controllers:

Eliwell ICPlus902

Eliwell IDNext 961
9381054

Eliwell ID Next 961

ERC 211
9221109

Danfoss ERC211

VDH Alfa 31
9381055

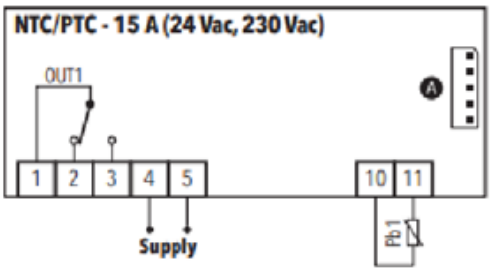
VDH Alfa 31

fri-jado

Eliwell ICPlus 902

9281071 (programmed)
9381056 (unprogrammed)

ICPlus 902 (NTC/PTC - 15A (24Vac, 230Vac))

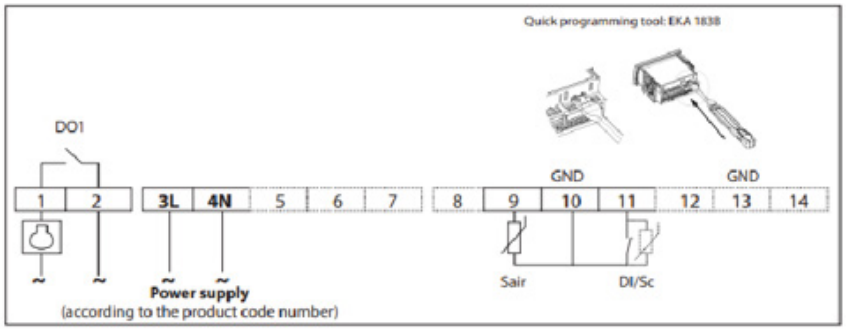


4
5
1
3
10
11

ERC 211

9221109

4.4.1| ERC 211 - connection diagram

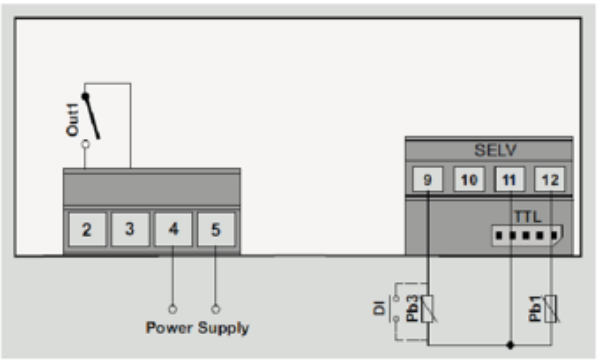


3L
4N
2
1
9
10

Eliwell IDNext 961

9381054

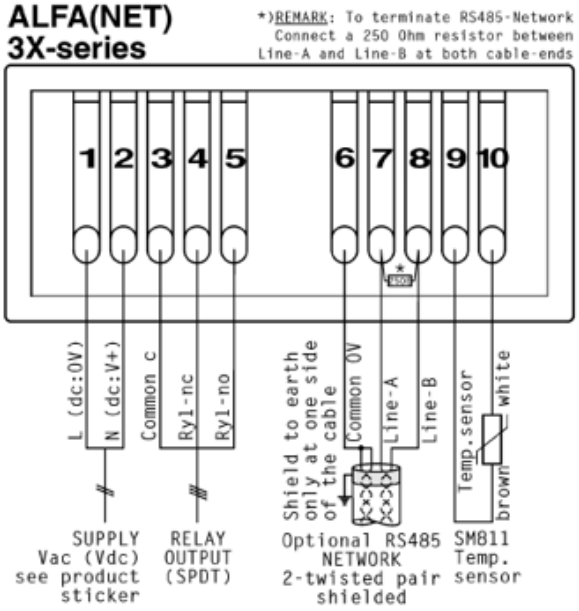
IDNext 961 P (230 Vac)



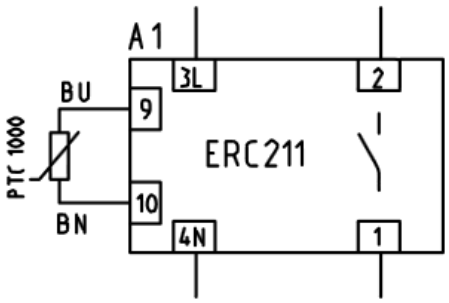
4
5
3
2
11
12

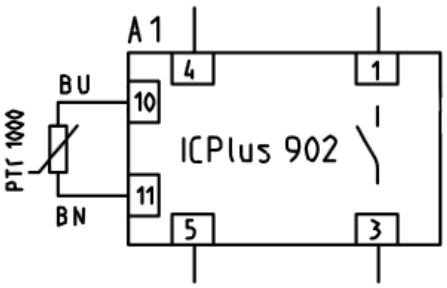
VDH Alfa 31
9381055

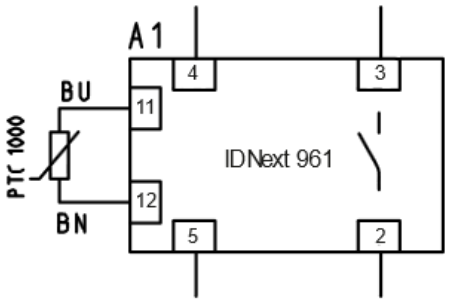
1
2
3
5
9
10

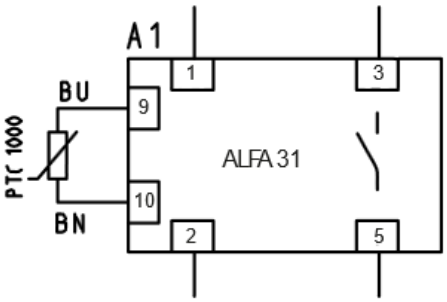


Difference in connections between the four controllers









Normal Parameter list	Unit	Type	USA	Custom	961 next	VDH	902 plus	Rev.
9124657	MCC	H SS	USA				X	A
9124658	MCC	H FS	USA				X	A

Doc. nr.	Rev.	Registration form.	
9124657	**A**	**Settings – 149 °F**	fri-jado

MCC Hot SS USA	

Controller: Eliwell ICPlus 902

Note: Use tool **STICK 20** for inserting parameters and only change orange arced parameters manually!
Note: When adjusting parameters manually change "**dro"** first if needed.

User parameters:

SP1	Temperature set point	**149**	°F
dF1	Differential	**2**	K
HS1	Max set point limitation	**210**	°F
LS1	Min set point limitation	**32**	°F
LoC	Keypad lock n(0)=lock disabled y(1)=lock enabled	**n**	
ndt	Display with decimal point, n(0)=no y(1)= yes	**y**	
CA1	Display offset	**0**	°F
H00	Sensor type, 0 = ptc, 1 = ntc	**0**	

Installer parameters:

rE1	HC1	Cold "C(0)" or hot "H(1)" operation	**H**	
	HA1	Max temp alarm	**212**	°F
diS	dro	Unit of measurement (0 =°C 1 =°F)	**1**	

MCC HOT FS USA	

Controller: Eliwell ICPlus 902

Note: Use tool **STICK 20** for inserting parameters and only change orange arced parameters manually!
Note: When adjusting parameters manually change "**dro"** first if needed.

User parameters:

SP1	Temperature set point	**203**	°F
dF1	Differential	**2**	K
HS1	Max set point limitation	**210**	°F
LS1	Min set point limitation	**32**	°F
LoC	Keypad lock n(0)=lock disabled y(1)=lock enabled	**n**	
ndt	Display with decimal point, n(0)=no y(1)= yes	**y**	
CA1	Display offset	**0**	°F
H00	Sensor type, 0 = ptc, 1 = ntc	**0**	

Installer parameters:

rE1	HC1	Cold "C(0)" or hot "H(1)" operation	**H**	
	HA1	Max temp alarm	**212**	°F
diS	dro	Unit of measurement (0 =°C 1 =°F)	**1**	

9.0 Maintenance

CLEANING AND MAINTENANCE

WARNING

Never use a water hose for cleaning.
Water can seep into the unit through the ventilation holes of the unit.

Because of hygiene aspects and optimum condition of the unit it is of up most importance to keep a daily cleaning pattern from first use onwards.

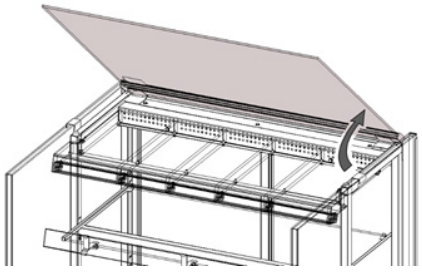
Maintenance schedule for users

Item	Action	Frequency
Inside	Clean	Daily
Glass Panes	Clean	Weekly
Outside	Clean Use Stainless Steel cleaning spray to remove stains, and restoring the gloss.	Weekly
Condenser	Clean	Monthly

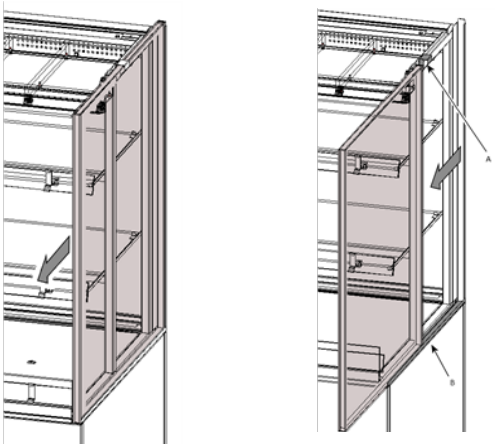
For detailed cleaning instructions refer to User manual chapter 5

Examples:

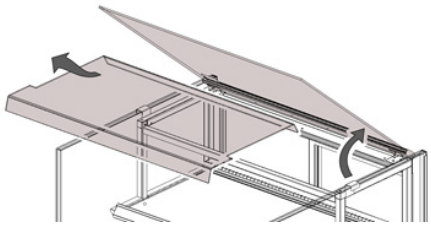
Cleaning possibility the top glass pane all units

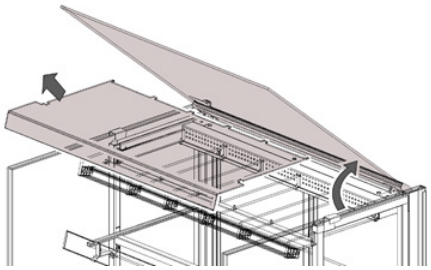


Cleaning possibility side pane all units



Cleaning possibility off the top air guides





9.1 Parameter MCC Hot Settings (Full Serve)

r00	Temperature set point	**95**	°C
r01	Differential	1	K
r02	Min set point limitation	0	°C
r03	Max set point limitation	99	°C
r04	Display offset	0	°C
r05	Display unit (°C/°F)	°C	
r09	Calibration of Sair	0.0	°C
r12	Main switch	1	
r13	Night set back	0	
r40	Thermostat reference displacement	0	
r96	Pull-down duration	0	
r97	Pull-down limit temperature	0	
A03	Delay for temperature alarm (normal conditions)	30	min
A12	Delay for temperature alarm (pull down/start-up/defrost)	60	min
A13	High temperature alarm limit	100	°C
A14	Low temperature alarm limit	-30	°C
A27	DI1 delay	30	min
A37	Condenser high alarm limit	80	°C
A54	Condenser high block limit	85	°C
A72	Voltage protection enable	no	
A73	Minimum cut-in voltage	0	V
A74	Minimum cut-out voltage	0	V
A75	Maximum voltage	270	V
d01	Defrost method (no=no defrost, nAt=natural)	**no**	
d02	Defrost stop temperature	6	°C
d03	Defrost Interval	8	hr.
d04	Max. defrost time	30	min
d05	Defrost delay at power up	0	min
d06	Drip delay	0	min

d10	Defrost stop sensor (non=time, Air=Sair)	non	
d18	Compressor accumulated	0	hr.
d30	Defrost delay after pull-down	0	min
c01	Compressor minimum ON time	0	min
c02	Compressor minimum OFF-time	0	min
c04	Compressor OFF delay	0	sec
c70	Zero crossing selection	yES	
o01	Delay of outputs	0	sec
o02	DI1 configuration	oFF	
o03	Serial address	0	
o05	Password	no	
o06	Sensor type selection (n5=NTC5 K, n10=NTC10 K, Ptc=PTC, Pt1=Pt1000)	**Ptc**	
o07	Cooling/heating (rE=refrigeration / Ht=heat)	**Ht**	
o15	Display resolution (°C)	0.1	
o23	Relay counter	0	
o61	Predefined applications	AP0	
o67	Save settings as factory	no	
o91	Display at defrost	d	
P73	DI1 input polarity	no	
P76	Keyboard lock enable	no	
u01	Air temperature (Sair)	-	°C
u02	Read the present regulation reference	-	
u10	DI1 input	-	
u13	Status of night operation	-	
u58	Compressor relay status	-	-
u80	Firmware version readout	-	

9.2 Parameter MCC Hot Settings (Self Serve)

r00	Temperature set point	**65**	°C
r01	Differential	**1**	K
r02	Min set point limitation	**40**	°C
r03	Max set point limitation	**70**	°C
r04	Display offset	0	°C
r05	Display unit (°C/°F)	°C	
r09	Calibration of Sair	**0**	°C
r12	Main switch	1	
r13	Night set back	0	
r40	Thermostat reference displacement	0	
r96	Pull-down duration	0	
r97	Pull-down limit temperature	0	
A03	Delay for temperature alarm (normal conditions)	30	min
A12	Delay for temperature alarm (pull down/start-up/defrost)	60	min
A13	High temperature alarm limit	**100**	°C
A14	Low temperature alarm limit	-30	°C
A27	DI1 delay	30	min
A37	Condenser high alarm limit	80	°C
A54	Condenser high block limit	85	°C
A72	Voltage protection enable	no	
A73	Minimum cut-in voltage	0	V
A74	Minimum cut-out voltage	0	V
A75	Maximum voltage	270	V
d01	Defrost method (no=no defrost, nAt=natural)	**no**	
d02	Defrost stop temperature	6	°C
d03	Defrost Interval	8	hr.
d04	Max. defrost time	30	min
d05	Defrost delay at power up	0	min
d06	Drip delay	0	min

d10	Defrost stop sensor (non=time, Air=Sair)	non	
d18	Compressor accumulated	0	hr.
d30	Defrost delay after pull-down	0	min
c01	Compressor minimum ON time	0	min
c02	Compressor minimum OFF-time	**0**	min
c04	Compressor OFF delay	0	sec
c70	Zero crossing selection	yES	
o01	Delay of outputs	**0**	sec
o02	DI1 configuration	oFF	
o03	Serial address	0	
o05	Password	no	
o06	Sensor type selection (n5=NTC5 K, n10=NTC10 K, Ptc=PTC, Pt1=Pt1000)	**Ptc**	
o07	Cooling/heating (rE=refrigeration / Ht=heat)	**Ht**	
o15	Display resolution (°C)	0.1	
o23	Relay counter	0	
o61	Predefined applications	AP0	
o67	Save settings as factory	no	
o91	Display at defrost	d	
P73	DI1 input polarity	no	
P76	Keyboard lock enable	no	
u01	Air temperature (Sair)	-	°C
u02	Read the present regulation reference	-	
u10	DI1 input	-	
u13	Status of night operation	-	
u58	Compressor relay status	-	-
u80	Firmware version readout	-	

10.0 Trouble Shooting

10.0.0 Problems which can be checked by user

Each user can check the following points as mentioned in the user manual:

- Is the power supply OK?
- Check the fuses and the earth leakage switch in the meter cup board.
- Are all the switches in the correct “on” position?

Item	Malfunction	Possible action
Unit	Unit does not work	• Check the power supply. • Are all switches in the correct position.
Unit	Display shows error code	• Contact your supplier or service agency.
Lamp	Does not light up	• Switch ON.
Mains cord	Damaged	• Replace.
Window	Damaged	• Replace.

10.0.1 Cold units

WARNING
All service operations on the refrigeration system and gas charging must be performed by fully certified and qualified persons, in a well ventilated environment.

10.0.2 Replace the mains cord

WARNING
Hazardous electrical voltage.

If the mains cord is damaged, it must be replaced by a fully certified and qualified person, in order to avoid hazards.

10.0.3 Error codes and solutions

See page 69

10.0.4 Heating element testing (Self Serve units)

Resistance
1. Remove wiring (two) from the element.
2. Connect the probe of the multimeter to each of the wires.
3. Test the probe with a Ohm tester, values see below.

Current
1. Place ampere pliers around red wire of Element.
2. In normal working condition, test current see below. (230V version)

		MCC60			MCC90			MCC120	
Shelf	Power	Current	Resistance	Power	Current	Resistance	Power	Current	Resistance
	Watt	***Ampere***	***Ohm***	***Watt***	***Ampere***	***Ohm***	***Watt***	***Ampere***	***Ohm***
Top	465	2,02	113,7	700	3,04	75,6	935	4,07	56,6
Middle	570	2,48	92,8	850	3,70	62,2	1130	4,91	46,8
Bottom	750	3,26	70,5	1125	4,89	47,0	1500	6,52	35,3

10.0.5 Heating element testing (Full Serve units)

Resistance

1. Remove wiring (two) from the element.
2. Connect the probe of the multimeter to each of the wires.
3. Test the probe with a Ohmtester, values see below.

Current

1. Place ampère pliers around red wire of Element.
2. In normal working condition, test current see below. (230V version)

		MCC60			MCC90			MCC120	
Shelf	Power	Current	Resistance	Power	Current	Resistance	Power	Current	Resistance
	Watt	***Ampere***	***Ohm***	***Watt***	***Ampere***	***Ohm***	***Watt***	***Ampere***	***Ohm***
	1500	6,5	35,25	1800	7,8	29,3	2400	10,5	22

10.0.6 PTC sensor testing (Hot Unit)

1. Remove wiring from the sensor.
2. Connect a temperature tester to the probe of the sensor for comparison.
3. Test the probe with a Ohm tester.

Temperature		**Resistance Ω**
ºF	***ºC***	***+/- 5 Ohms***
-4	-20	951
14	-10	877
32	0	807
50	10	740
68	20	677
77	25	990

10.0.7 Alarm codes <hot units>

Alarm Code

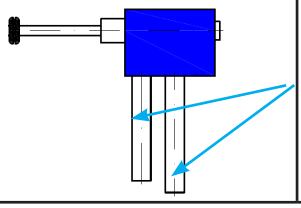
Alarm status	Alarm Code
Air temperature sensor (Sair) error	E29
Defrost sensor (S5) error	E27
Condenser sensor (Sc) error	E30
High temperature alarm	A01
Low temperature alarm	A02
High voltage alarm	A99
Low voltage alarm	AA1
High condenser temperature alarm	A61
Door alarm	A04
Standby alarm	A45
DI external alarm	A15

11.0 Trouble Shooting Symptoms and causes

Symptom	**Possible causes**
No power	1. Main circuit breaker open 2. Fuse Blown 3. Loose wire connection
Main fuse or breaker blown	1. Wiring incorrectly 2. Short circuit heating element 3. Short circuit fan element 4. Short circuit wiring
Illumination does not work	1. Led malfunction 2. Tumble switch malfunction 3. Led driver malfunction 4. Loose / short circuit wiring connection
No heating	1. Heating element malfunction 2. Relay malfunction 3. Loose wiring connection 4. Thermostat malfunction 5. Loos wiring connection 6. Air flow not functioning
No cooling	1.Compressor malfunction 2 Loose wiring connection 3. Thermostat malfunction 4. Loose wiring connection 5. Air flow not functioning
Unit does not reach desired temperature	1. Heating element malfunction (HOT unit only) 2. Cooling unit malfunction (COLD unit only) 3. Strong air current along unit / Draft 4. Burned contact on contactor 5. Sensor malfunction 6. Sliding doors not closed
No indication on controller	1. Electronic controller malfunction 2. Blown fuse 3. Loose wiring connection
No air flow inside unit	1. Fans do not work 2. Blown fuse 3. Loose wiring connection 4. 24Vdc power supply malfunction
Evaporator full of ice	1. Set point too low 2. Humidity too high 3. Defrost sensor not in right position 4. Defrost sensor malfunction 5. Parameters not according the specified values 6. Electronic thermostat malfunction
Products dry out (Hot FS only)	1. No water intake / Not filled by hand 2. No water intake, supply not open 3. No water intake, inlet valve blocked, or defective 4. No water, or too much water, Water level sensor

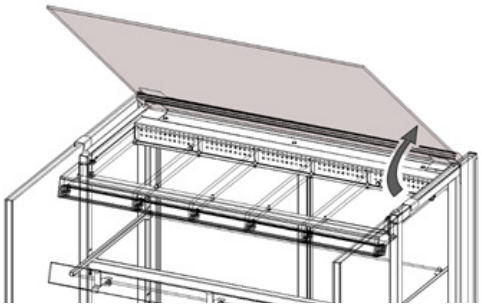
11.1 Trouble Shooting Analytical description

Description of part	Symptoms	Possible causes	Solution / Action
Contactor	Contactor does not work	Wiring	Check wiring
		Coil malfunction	Check resistance of coil +/- 525Ω
		Contact burned	Check the contacts
			Replace contactor
Heating element (HOT unit)	Unit is not reaching the set temperature	Wiring	Check wiring
		Element malfunction	Check power on elements per shelf
			Check current with AC current tester
			Check Resistance (refer 6.4)
			Replace element
		Air flow not Working, Fan's not turning	Check wiring
			Check power on fans per shelf
			Replace Air box / Power Supply
Tumble switch	Light, heating or cooling does not switch on	Wiring	Check wiring
		Contact burned	Check the voltage on "in" and "output"
LED	Light does not turn on	Wiring	Check Wiring
		LED broken	Replace LED
		Led driver defect	Replace LED driver
Electronic thermostat	Display does not light up	Wiring	Check wiring
	The unit is not reaching the set temperature	Loose sensor	Check sensor
		Thermostat Malfunction	Replace thermostat
		Thermostat setting	Check parameters

PTC 1000 sensor (Hot Unit)	The unit is not reaching the set temperature or does not heat up at all The unit becomes too hot	Broken Sensor Loose sensor Broken Sensor Loose sensor	Replace sensor Check sensor wiring Replace sensor Check sensor wiring
Water intake (Hot FS only)	Not filling of Humidification tray 	Water supply closed Inlet Valve Contaminated of water level sensor	Open water supply Check, clean or replace Clean or replace

12.0 Replacement and Adjustments

12.1 Top glass replacement

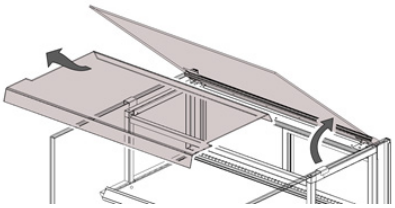


1. For replacement, open top glass pane entirely.

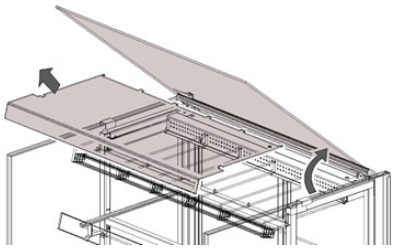
Be aware of the weight of the glass.

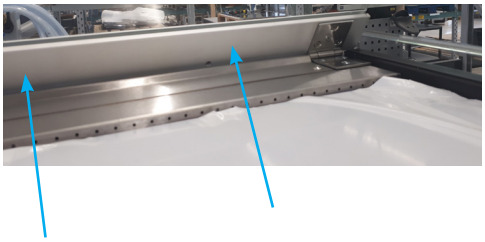
2. Remove the air guide (for the hot version) or the air box (for the cold version) by simply lifting them out.

HOT

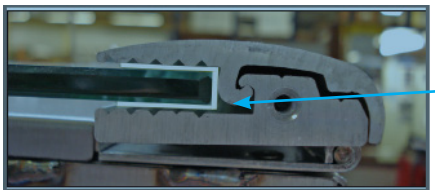


COLD





3. Loosen the adjusting screws which secure the glass with a torques key TX15
Depending on the length of the unit, there are 4, 6 or 8 screws.

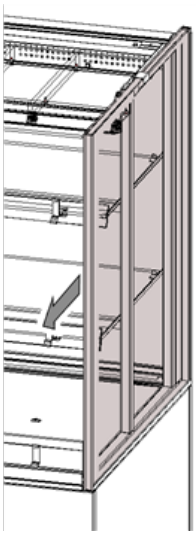


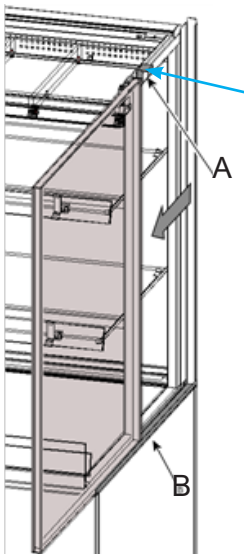
4. When refitting the glass, make sure the silicon protection profile is on.

12.2. Side glass replacement

The side pane glass of the units can easily be replaced.

1. Slide the double glass pane towards the front along the top (A) and bottom (B) guiding rails.
   The side pane can be removed from the unit once it has slid entirety past the top guide.





CAUTION:
Once past the top guide, the glass pane might fall if not properly held.

Hence do not leave it standing upright without being supported by both guide rails or holding it.

2. Before placing a new side pane, clean the guiding rails. (Top, back and bottom)

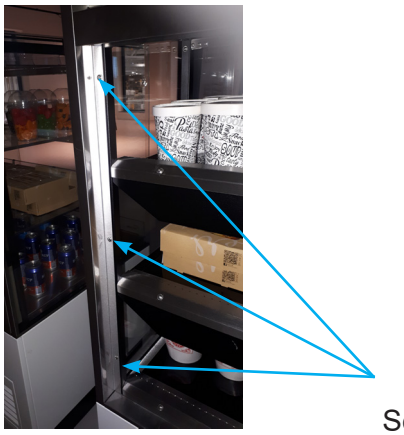
3. Before sliding the new pane into the rails, ensure the transparent sides of the pane are facing forwards and up.

4. Slide it all the way back till the front of the pane is in line with the front plating.

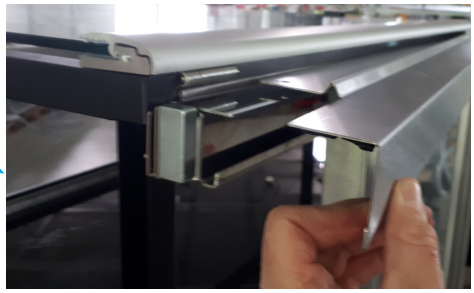
12.4 Sliding door Replacement (First version (magnets in rails))

(Two different versions, please select appropriate type)

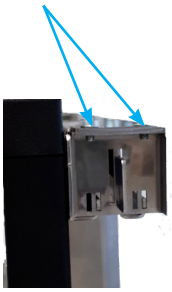
In order to replace the sliding doors, take following step:



1. Remove Sliding door stopper (three screws). Left and right side.
2. Remove rail cover, loosen mounting screws and pull cover backwards.



3. Remove rail stopper (two screws on top).



4. Remove sliding door(s).

5. Replace in reverse order.

12.4.1 Sliding door Replacement (Second version, magnets in door)

(Two different versions, please select appropriate type)

Recognizable: Two screws on top of rail cover. Top back side, two left and two right.

screws

In order to replace the sliding doors, take following step:

1. Remove Sliding door stopper (three screws). Left and right side.
2. Remove Rail cover, four screws, on top of rails two left and two right.
3. Remove rail stopper
4. Remove sliding door(s).
5. Replace in reverse order.

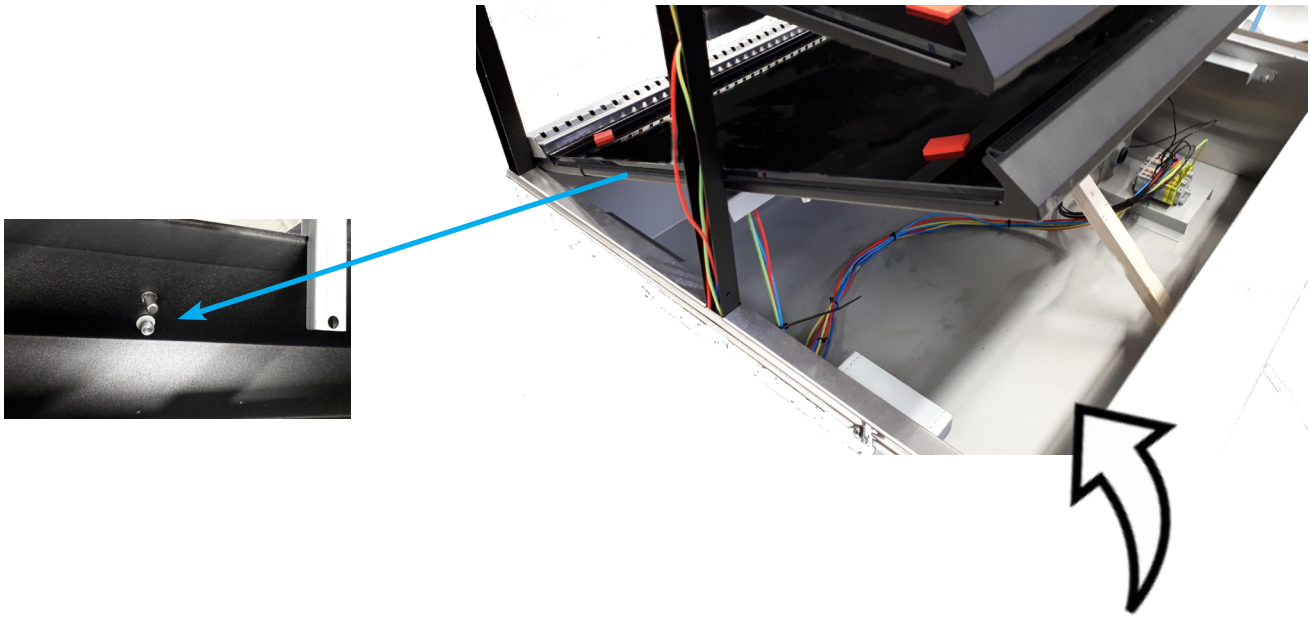
12.5 Sensor Replacement (Hot Unit)

1. Remove the brackets (two pieces, one left, one right). One Screw each.

2. Lift bottom shelf at the front. It is turnable.

3. Sensor is located at the back.

4. Sensor is screwed from the outside in.



5. Remove glass pane from lowest shelf. (see 11.10).

6. Remove fan box. (see 11.9).

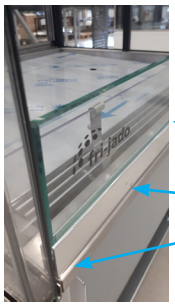
7. Unscrew the sensor holding plate.

8. Click sensor out of mounting bracket.

9. Place new sensor, put wiring in the same location as the old wiring.

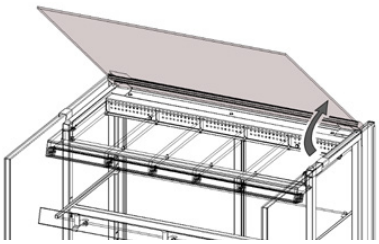
12.7 Child glass replacement

1. Remove front panel (see 11.16).
2. Loosen mounting screws (3x) of child glass. Screwed from underneath
3. Place new child glass.
4. Mount in reverse order.



12.8 MCC Air guide replacement

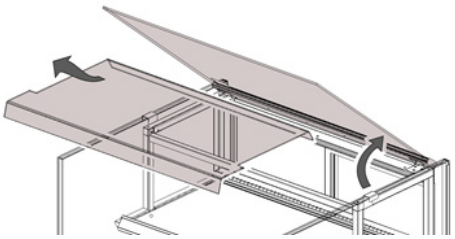
1. Air guide replacement
2. For replacement, open top glass pane entirely.



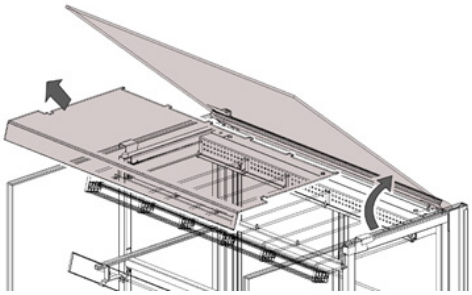
Be aware of the weight of the glass.

3. Remove the air guide by simply lifting them out.

HOT

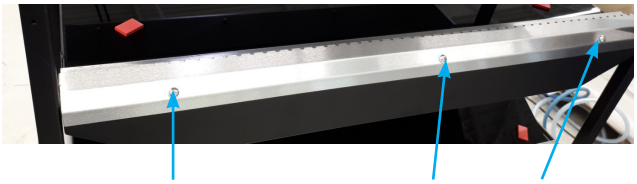


COLD

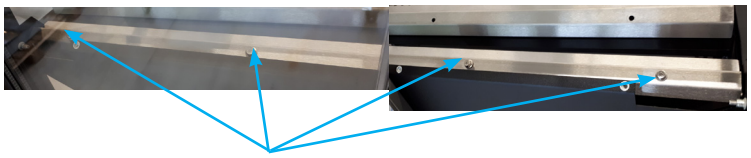


12.9 Fan box replacement (MCC Hot)

1. Remove air box cover (3 screws).

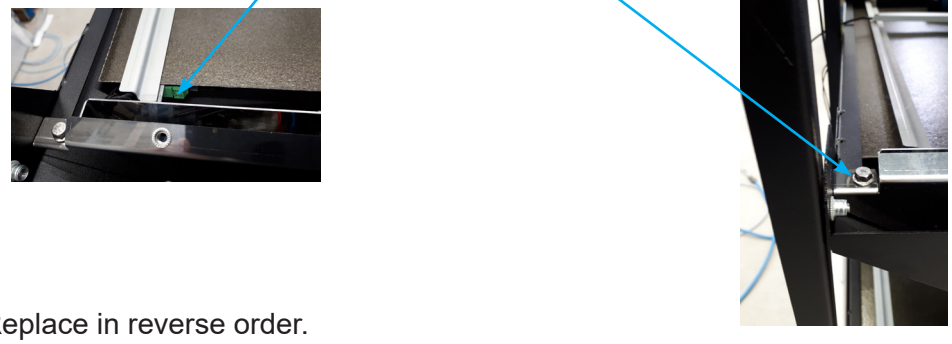


2. Remove glass pane clamp.
(4 or more bolts depending on unit length)



3. Remove Glass pane (refer 11.10).

4. Remove air box (1 connector, two screws).



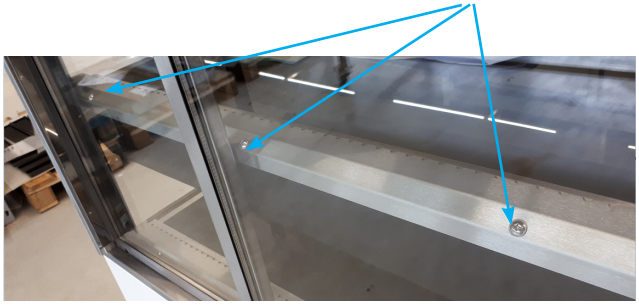
5. Replace in reverse order.

Note:
If replacement has to take place on a solid back unit, the back panel assembly must be removed before accessing the air box screws mentioned in step 1

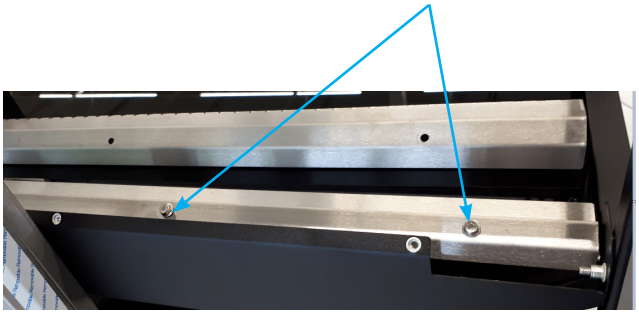
12.10 Replacement of shelf glass pane

Each shelf is covered with a tempered glass pane.
To replace follow steps below:

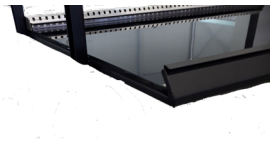
1. Remove air outlet cover by removing the screws (depending on length three or more screws)



2. Remove glass mounting profile by removing the screws (depending on length three or more screws)



3. Lift out glass pane, starting lifting from the back.
(Take care of glass holder strip on the front side of the glass)



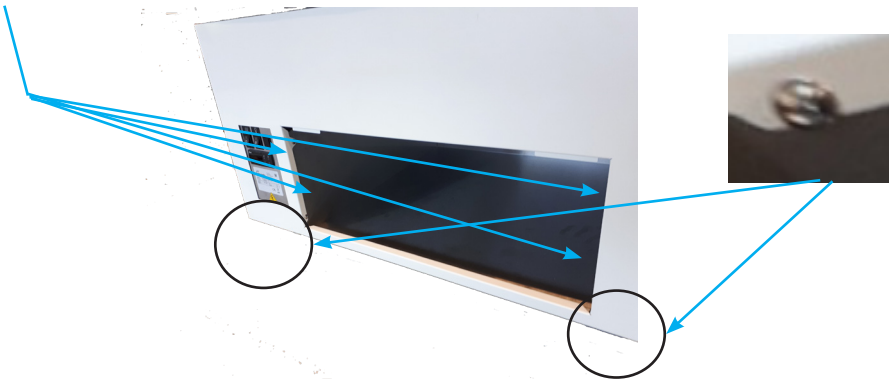
4. Take new glass pane, place front glass holder strip and place pane into position.

12.11 Opening Electrical box

Depending on the MCC version the electric box is placed at the back or in the front of the unit. For drop in versions the box can be placed anywhere in the build in counter.

First remove the panel (back or front depending on version)
Panel is fixed with two screws underneath the unit. Loosen those.

In some versions you also need to loosen the screws on the side of the under storage compartment.



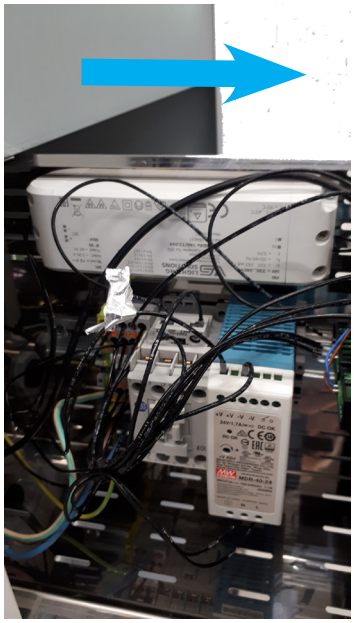
After loosening the screws, you can remove the panel by pulling it slightly down and then turning it towards you.

Two lips on the top of the panel, keep the panel in place.

Depending on the version you find one Screw on top of the electrical box, or two screws, underneath the pull out handle from the box.

Remove those screws.

Now you can pull the box toward you. The box will slide in its rails

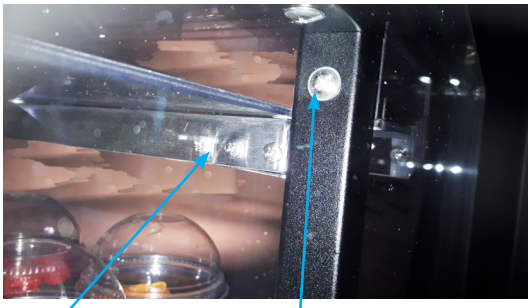


Normal version (24V psu)

Special version (15V psu)
See serial number remarks in parts section

12.12 Led light Replacement

All LED Lights are mounted in the same way.



1. Remove side glass panes. (Refer 7.2)
2. Remove column cover.
   (two screws, one on top backside and one at the bottom back side)
3. Pull off column cover.
4. Remove screw holding the LED housing .

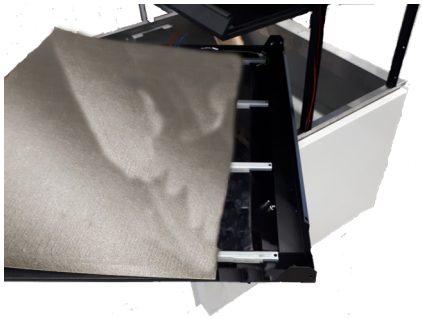
Column screw (top)

5. Disconnect connector in Column, before you do so,
   make a note of the placing of the red and black cable in the connector.
6. Take LED light out of LED light holder, and place new LED.
7. Connect the wires from the new LED in the column, taking care of the notes you made regarding the red and black cable.

12.13 Heating element replacement

1. Remove Shelf Glass pane (refer 11.10)
2. Remove air box (refer 11.9).
3. Remove side glass (refer 11.2)
4. Remove column cover (middle left column cover, seen from back of unit).

5. Loosen Element holders, depending on the version the holders are twisted at the back side, or fastened with screws.



6. Take off the top element holders.
Heating Element is now free to take out.

Make a note of the placement of the wiring.

7. Take out element.

If possible, follow the wires going down in the column.
If not, cut the wire in the column, leaving enough length to make a connection to the wires from the new element.

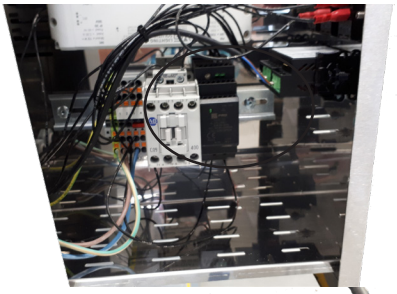
NEVER make a connection underneath the heating element

Connect the wires in the column
using a wago connector like the one on this picture:

Take care of connecting:
Red to Red,
Blue to Blue, and
Yellow to Yellow.

12.14 Controller Replacement

1. Open Electric box (refer 11.11)



2. Unscrew the brown and Blue wire
(Make note of connection points)

3. Unscrew the four black wires.
(Make note of number and connection position)

4. Using a flat screwdriver push out
the controller to the front of the box

5. Place new controller, by pushing it in.

6. Connect wires again, to the marked positions (point 2 and 3)

7. Check all parameter settings according the parameter list.(Chapter 9)

12.16 Panel Replacement

1. Remove Plinths (refer 4.8)

Front panel

1. Remove front panel, by removing the holding screws (left and right bottom corner)

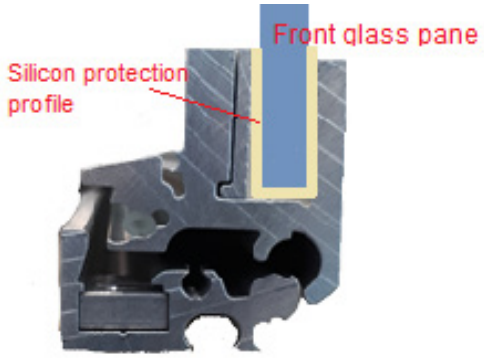
2. Pull panel slightly towards you and down, to remove.
3. Replace in reverse order

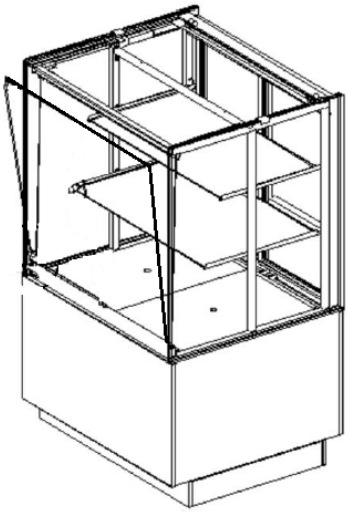
Back panel

1. Remove back panel, by removing the holding screws (left and right bottom corner)

2. Pull panel slightly towards you and down, to remove.
3. Replace in reverse order

12-17 Front glass pane replacement (Full serve models)





1. Lift top glass to ”unlock” the front glass
2. Slightly turn the front glass towards you
3. In the right tilted position, you can take glass pane including profile out.
4. Replace in reverse order.

12.1 Hot Full serve element replacement

For the MCC 60 Hot Full Serve a new heating element is implemented.

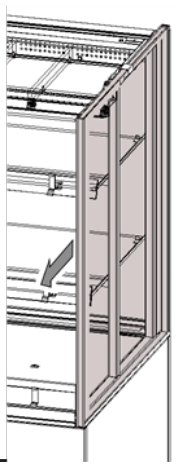
Don’t place the old element type any more.

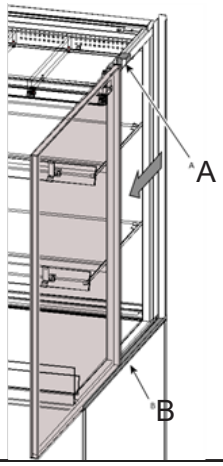
Number for this kit is:
9382269s
Heating element 1500W 230V (packed)

Article number	Description
2005828	Faston type G BU 6.3 WIRE 1.5/2.6
4302179	Bag 120x180mm
9124793	Instruction element replacement MCC 60
9382269	Heating Element 1500 Watt 230V
4280208	Screw M4x8 pan head
0169189	Nut M14 for heating element
0142307	Nut M4 hexagon DIN 934
0169197	Gasket Klingersil C4430
9191297	Drill 5,0mm for Stainless steel
30133806	Support heating element
9384611	Element bracket 60 right
9384612	element bracket 60 left
4311158	Box sleeve 500x100x100

Existing situation

New situation





Step 1. Remove power plug from wall outlet.

Step 2.
For easy access, please remove both side glasses.

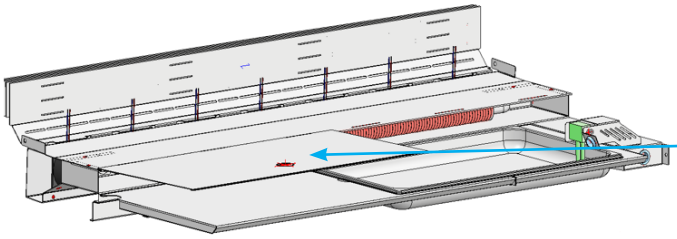
Slide the double glass pane towards the front along the top (A) and bottom (B) guiding rails.

The side pane can be removed from the unit once it has slid entirety past the top guide.

Before sliding the glass pane back into the rails, ensure the transparent sides of the pane are facing forwards and up.

Slide it all the way back till the front of the pane is in line with the front plating.

12.1 Hot Full serve element replacement



Step 3.

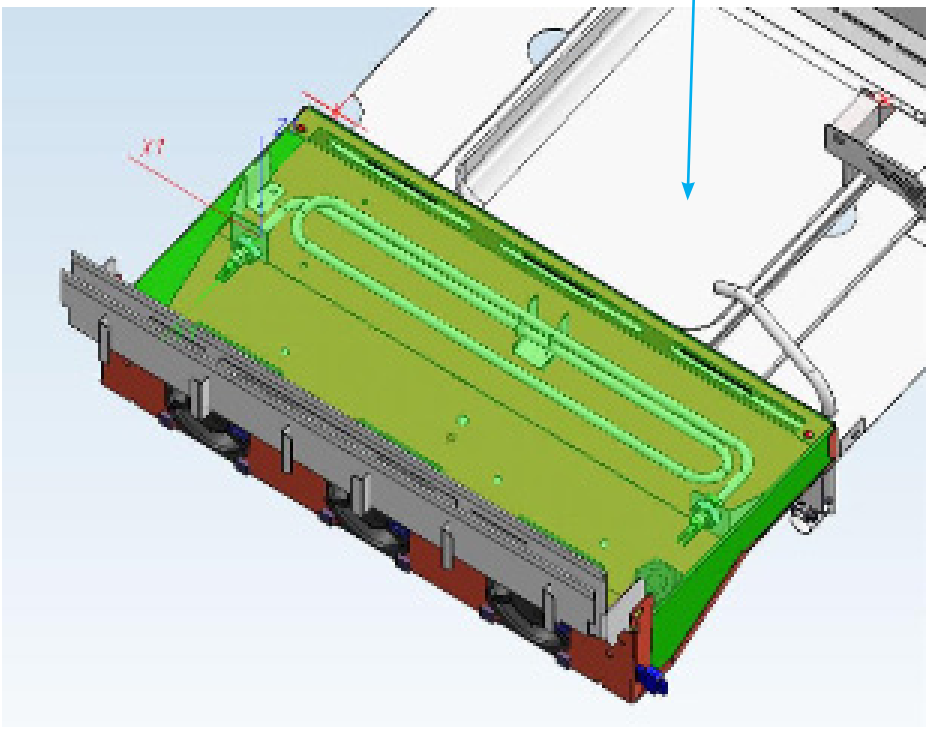
Remove bottom product plateau, both, left and right.

Step 4.

Remove cover deck, both left and right.

Step 5.

Remove GN pan, careful not to spill water.



Step 6,

Remove top cover from heating element box 4 bolts.

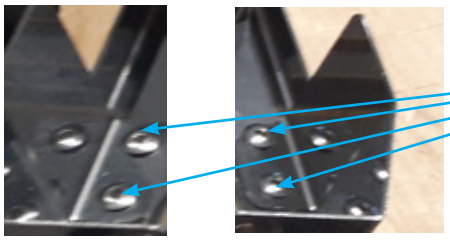
Step 7.

Remove wire connection from element by removing the nut.

Step 8.

Remove old type heating element by removing the mounting nuts.

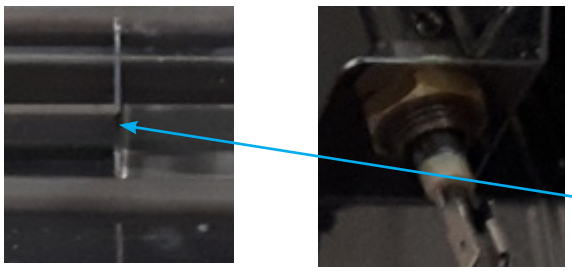
12.1 Hot Full serve element replacement



Step 9.

Remove rivet (4) by drilling them out, which are holding the heating element mounting brackets, both left and right.

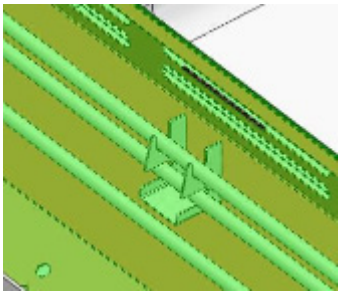
Step 10.

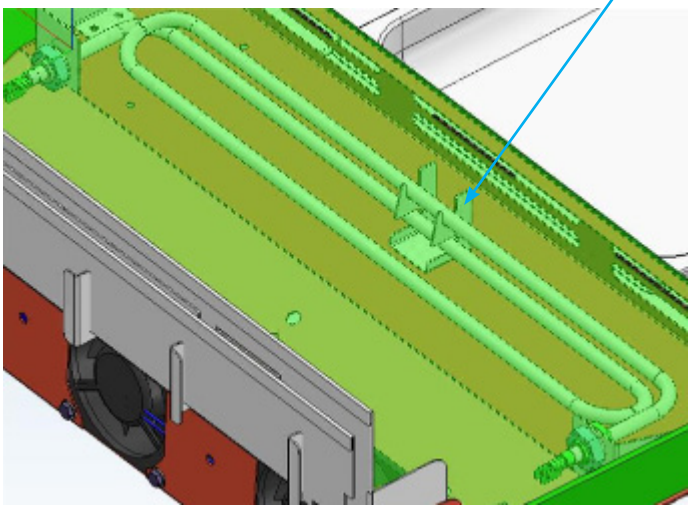


Place new heating element holding brackets, and mount these with the bolts and nuts, as delivered.

Step 11.

Place distance bracket on heating element (in the middle) and positioning the element in the new mounting holes.





Step 12.

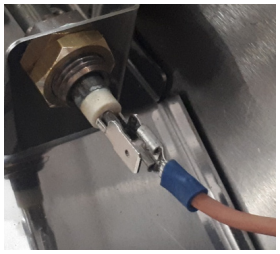
Mount the element in place using the delivered mounting nuts and gaskets. Tighten the nuts with wrench softly.

Step 13.

Cut fastons (ring type) from power wire and replace this by the newly delivered fastons (clamp type) perform this for both connections.

Step 14.

Connect power wires to the heating element with the newly connected fastons (clamp type)

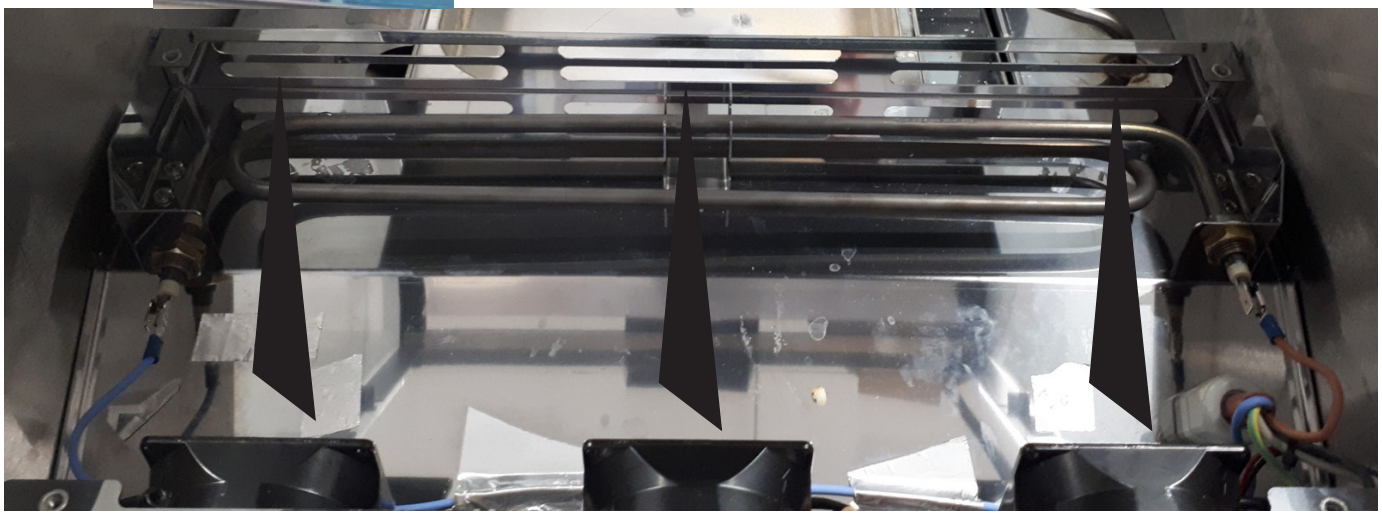


12.1 Hot Full serve element replacement

Make sure after placement, the power wire is not between the blowers and the element.

Airflow should not be interrupted by the wire.

Wire under airflow from blower !



Step 15.

Close heating element cover (removed in step 6).

Step 16.

Close unit by replacing all parts removed during the first 5 steps, in reverse order.

Step 17.

Put power cord in wall outlet and test unit.

13.0 Technical Specifications MCC Hot - 2 (Full Serve) US

Specification	Unit	Model			
		24-2	36-2	48-2	60-2
General					
Length incl. end walls	"	23 5/8	35 7/16	47 1/4	n.a.
Length excl. end walls	"	21 5/8	33 7/16	45 1/4	n.a.
Depth	"	29 1/2			
Height on stand	"	29 1/2			n.a.
Height above worktop	"	20 1/2			n.a.
Underframe height	"	35 7/16			n.a.
Plinth height	"	3 15/16			n.a.
Drop-in cut out (W x D)	"	22 5/16 x 28 9/16 (+/- 3/16)	34 1/8 x 28 9/16 (+/- 3/16)	45 15/16 x 28 9/16 (+/- 3/16)	n.a.
Electronics panel cut out (L x H)	"	6 x 9 5/8 (+/- 3/16)			
Weight (net)	lbs	243	320	397	n.a
Weight (gross)	lbs	298	390	481	n.a
Packaging dimensions (W x D x H)	"	28 3/8 x 34 1/4 x 57 1/2	40 3/16 x 34 1/4 x 57 1/2	51 15/16 x 34 1/4 x 57 1/2	
Nr. of presentation levels		2			n.a.
Dimensions bottom shelf	"	23 1/4 x 19 11/16	23 1/4 x 31 1/2	23 1/4 x 43 5/16	n.a.
Dimensions top shelf	"	19 5/16 x 19 11/16	19 5/16 x 31 1/2	19 5/16 x 43 5/16	n.a.
Shelf display area	ft2	5,81	9,26	12,81	n.a.
Usable display volume	ft3	5,44	7,27	9,99	n.a.

Specification	Unit	Model			
		24-2	36-2	48-2	60-2
Performance					
TDA*	ft2	7,10	10,66	14,32	n.a.
TEC at climate class 0*	BTU/h	2730	4095	5494	n.a.
TEC at climate class 0*	BTU/day	65411	98099	131777	n.a.
TEC/TDA at climate class 0*	BTU/day/ft2	9206			
Sound pressure	dB(A)	<70			n.a.
Minimum ambient temperature	°F	68			n.a.
Maximum ambient temperature	°F	86			n.a.
Maximum relative air humidity	%	60			n.a.

* According to ISO 23953

Specification	Unit	Model			
		24-2	36-2	48-2	60-2
Electrical					
Electrical connection		NEMA 6-20P*			n.a.
Nominal voltage	V	1~ 208			n.a.
Nominal frequency	Hz	50/60			n.a.
Maximum power	W	1715	2080	2774	n.a.
Nominal current	A	6,2	9,3	12,4	n.a.
Required fuses		1 x 16A			n.a.
Heating fan power	W	36	60	84	n.a.
Nr. of heating fans		3	5	7	n.a.
Heating element power	W	1500 (-0/+10%)	1800 (-0/+10%)	2400 (-0/+10%)	n.a.
LED lighting power	W	14	25	35	n.a.

* Standard plug

13.1 Technical Specifications MCC Hot - 2 (Self Serve) US

Specification	Unit	Model			
		24-2	36-2	48-2	60-2
General					
Length incl. end walls	"	23 5/8	35 7/16	47 1/4	n.a.
Length excl. end walls	"	21 5/8	33 7/16	45 1/4	n.a.
Depth	"	29 1/2			n.a.
Height on stand	"	29 1/2			n.a.
Height above worktop	"	20 1/2			n.a.
Underframe height	"	35 7/16			n.a.
Plinth height	"	3 15/16			n.a.
Drop-in cut out (W x D)	"	22 5/16 x 28 9/16 (+/- 3/16)	34 1/8 x 28 9/16 (+/- 3/16)	45 15/16 x 28 9/16 (+/- 3/16)	n.a.
Electronics panel cut out (L x H)	"	6 x 9 5/8 (+/- 3/16)			n.a.
Weight (net)	lbs	243	320	397	n.a
Weight (gross)	lbs	298	390	481	n.a
Packaging dimensions (W x D x H)	"	28 3/8 x 34 1/4 x 57 1/2	40 3/16 x 34 1/4 x 57 1/2	51 15/16 x 34 1/4 x 57 1/2	n.a.
Nr. of presentation levels		2			n.a.
Dimensions bottom shelf	"	21 5/8 x 19 11/16	21 5/8 x 31 1/2	21 5/8 x 43 5/16	n.a.
Dimensions top shelf	"	18 11/16 x 19 11/16	18 11/16 x 31 1/2	18 11/16 x 43 5/16	n.a.
Shelf display area	ft2	5,49	8,83	12,16	n.a.
Usable display volume	ft3	3,28	5,26	7,24	n.a.

Specification	Unit	Model			
		24-2	36-2	48-2	60-2
Performance					
TDA*	ft2	7,10	10,66	14,32	n.a.
TEC at climate class 0*	BTU/h	3173	4743	6381	n.a.
TEC at climate class 0*	BTU/day	75954	113897	153035	n.a.
TEC/TDA at climate class 0*	BTU/day/ft2	10689			n.a.
Sound pressure	dB(A)	<70			n.a.
Minimum ambient temperature	°F	68			n.a.
Maximum ambient temperature	°F	86			n.a.
Maximum relative air humidity	%	60			n.a.

* According to ISO 23953

Specification	Unit	Model			
		24-2	36-2	48-2	60-2
Electrical					
Electrical connection		NEMA 6-20P*			n.a.
Nominal voltage	V	1~ 208			n.a.
Nominal frequency	Hz	50/60			n.a.
Maximum power	W	1561	2209	2943	n.a.
Nominal current	A	7,1	10,1	13,4	n.a.
Required fuses		1 x 20A			n.a.
Heating fan power	W	7	11	15	n.a.
Nr. of heating fans		4	6	8	n.a.
Heating element bottom shelf power	W	750 (-0/+10%)	1125 (-0/+10%)	1500 (-0/+10%)	n.a.
Heating element top shelf power	W	650 (-0/+10%)	850 (-0/+10%)	1130 (-0/+10%)	n.a.
LED lighting power	W	14	25	35	n.a.

* Standard plug

13.2 Technical Specifications MCC Hot - 3 (Full Serve) US

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
General					
Length incl. end walls	"	23 5/8	35 7/16	47 1/4	n.a.
Length excl. end walls	"	21 5/8	33 7/16	45 1/4	n.a.
Depth	"	29 1/2			n.a.
Height on stand	"	55 7/8			n.a.
Height above worktop	"	33 1/16			n.a.
Underframe height	"	22 13/16			n.a.
Plinth height	"	3 15/16			n.a.
Drop-in cut out (W x D)	"	22 5/16 x 28 9/16 (+/- 3/16)	34 1/8 x 28 9/16 (+/- 3/16)	45 15/16 x 28 9/16 (+/- 3/16)	n.a.
Electronics panel cut out (L x H)	"	6 x 9 5/8 (+/- 3/16)			n.a.
Weight (net)	lbs	298	375	452	n.a
Weight (gross)	lbs	355	445	536	n.a
Packaging dimensions (W x D x H)	"	28 3/8 x 34 1/4 x 57 1/2	40 3/16 x 34 1/4 x 57 1/2	51 15/16 x 34 1/4 x 57 1/2	n.a.
Nr. of presentation levels		3			n.a.
Dimensions bottom shelf	"	23 1/4 x 19 11/16	23 1/4 x 31 1/2	23 1/4 x 43 5/16	n.a.
Dimensions middle shelf	"	19 5/16 x 19 11/16	19 5/16 x 31 1/2	19 5/16 x 43 5/16	n.a.
Dimensions top shelf	"	16 3/4 x 19 11/16	16 3/4 x 31 1/2	16 3/4 x 43 5/16	n.a.
Shelf display area	ft2	8,07	12,92	17,87	n.a.
Usable display volume	ft3	5,69	9,11	12,54	n.a.

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
Performance					
TDA*	ft2	8,40	13,02	17,65	n.a.
TEC at climate class 0*	BTU/h	3207	4982	6790	n.a.
TEC at climate class 0*	BTU/day	77285	119937	162554	n.a.
TEC/TDA at climate class 0*	BTU/day/ft2	9212			n.a.
Sound pressure	dB(A)	<70			n.a.
Minimum ambient temperature	°F	68			n.a.
Maximum ambient temperature	°F	86			n.a.
Maximum relative air humidity	%	60			n.a.

* According to ISO 23953

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
Electrical					
Electrical connection		NEMA 6-20P*			n.a.
Nominal voltage	V	1~ 208			n.a.
Nominal frequency	Hz	50/60			n.a.
Maximum power	W	1722	2092	2792	n.a.
Nominal current	A	7,8	9,4	12,7	n.a.
Required fuses		1 x 20A			n.a.
Heating fan power	W	36	60	84	n.a.
Nr. of heating fans		3	5	7	n.a.
Heating element power	W	1500 (-0/+10%)	1800 (-0/+10%)	2400 (-0/+10%)	n.a.
LED lighting power	W	21	37	53	n.a.

* Standard plug

13.3 Technical Specifications MCC Hot - 3 (Self Serve) US

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
General					
Length incl. end walls	"	23 5/8	35 7/16	47 1/4	n.a.
Length excl. end walls	"	21 5/8	33 7/16	45 1/4	n.a.
Depth	"	29 1/2			n.a.
Height on stand	"	55 7/8			n.a.
Height above worktop	"	33 1/16			n.a.
Underframe height	"	22 13/16			n.a.
Plinth height	"	3 15/16			n.a.
Drop-in cut out (W x D)	"	22 5/16 x 28 9/16 (+/- 3/16)	34 1/8 x 28 9/16 (+/- 3/16)	45 15/16 x 28 9/16 (+/- 3/16)	n.a.
Electronics panel cut out (L x H)	"	6 x 9 5/8 (+/- 3/16)			n.a.
Weight (net)	lbs	298	375	452	n.a
Weight (gross)	lbs	355	445	536	n.a
Packaging dimensions (W x D x H)	"	28 3/8 x 34 1/4 x 57 1/2	40 3/16 x 34 1/4 x 57 1/2	51 15/16 x 34 1/4 x 57 1/2	n.a.
Nr. of presentation levels		3			n.a.
Dimensions bottom shelf	"	21 5/8 x 19 11/16	21 5/8 x 31 1/2	21 5/8 x 43 5/16	n.a.
Dimensions middle shelf	"	18 11/16 x 19 11/16	18 11/16 x 31 1/2	18 11/16 x 43 5/16	n.a.
Dimensions top shelf	"	16 1/8 x 19 11/16	16 1/8 x 31 1/2	16 1/8 x 43 5/16	n.a.
Shelf display area	ft2	7,75	12,38	17,01	n.a.
Usable display volume	ft3	4,59	7,31	10,06	n.a.

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
Performance					
TDA*	ft2	8,40	13,02	17,65	n.a.
TEC at climate class 0*	BTU/h	3753	5801	7848	n.a.
TEC at climate class 0*	BTU/day	89739	139215	188691	n.a.
TEC/TDA at climate class 0*	BTU/day/ft2	10689			n.a.
Sound pressure	dB(A)	<70			n.a.
Minimum ambient temperature	°F	68			n.a.
Maximum ambient temperature	°F	86			n.a.
Maximum relative air humidity	%	60			n.a.

* According to ISO 23953

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
Electrical					
Electrical connection		NEMA 6-20P*		NEMA 15-20P*	n.a.
Nominal voltage	V	1~ 208		3~ 208	n.a.
Nominal frequency	Hz	50/60			n.a.
Maximum power	W	2099	3011	4011	n.a.
Nominal current	A	9,5	13,7	13,5	n.a.
Required fuses		1 x 20A		3 x 20A	n.a.
Heating fan power	W	11	16	22	n.a.
Nr. of heating fans (total)		6	9	12	n.a.
Heating element bottom shelf power	W	750 (-0/+10%)	1125 (-0/+10%)	1500 (-0/+10%)	n.a.
Heating element middle shelf power	W	650 (-0/+10%)	850 (-0/+10%)	1130 (-0/+10%)	n.a.
Heating element top shelf power	W	465 (-0/+10%)	700 (-0/+10%)	935 (-0/+10%)	n.a.
LED lighting power	W	21	37	53	n.a.

* Standard plug

13.4 Technical Specifications MCC Hot (Self Serve) Humidified US

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
General					
Length incl. end walls	"	23 5/8	35 7/16	47 1/4	n.a.
Length excl. end walls	"	21 5/8	33 7/16	45 1/4	n.a.
Depth	"	29 1/2			n.a.
Height on stand	"	55 7/8			n.a.
Height above worktop	"	33 1/16			n.a.
Underframe height	"	22 13/16			n.a.
Plinth height	"	3 15/16			n.a.
Drop-in cut out (W x D)	"	22 5/16 x 28 9/16 (+/- 3/16)	34 1/8 x 28 9/16 (+/- 3/16)	45 15/16 x 28 9/16 (+/- 3/16)	n.a.
Electronics panel cut out (L x H)	"	6 x 9 5/8 (+/- 3/16)			n.a.
Weight (net)	lbs	298	375	452	n.a
Weight (gross)	lbs	355	445	536	n.a
Packaging dimensions (W x D x H)	"	28 3/8 x 34 1/4 x 57 1/2	40 3/16 x 34 1/4 x 57 1/2	51 15/16 x 34 1/4 x 57 1/2	n.a.
Nr. of presentation levels		3			n.a.
Dimensions bottom shelf	"	23 1/4 x 19 11/16	23 1/4 x 31 1/2	23 1/4 x 43 5/16	n.a.
Dimensions middle shelf	"	19 5/16 x 19 11/16	19 5/16 x 31 1/2	19 5/16 x 43 5/16	n.a.
Dimensions top shelf	"	16 3/4 x 19 11/16	16 3/4 x 31 1/2	16 3/4 x 43 5/16	n.a.
Shelf display area	ft2	8,07	12,92	17,87	n.a.
Usable display volume	ft3	5,69	9,11	12,54	n.a.

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
Performance					
TDA*	ft2	8,40	13,02	17,65	n.a.
TEC at climate class 0*	BTU/h	3207	4982	6790	n.a.
TEC at climate class 0*	BTU/day	77285	119937	162554	n.a.
TEC/TDA at climate class 0*	BTU/day/ft2	9212			n.a.
Sound pressure	dB(A)	<70			n.a.
Minimum ambient temperature	°F	68			n.a.
Maximum ambient temperature	°F	86			n.a.
Maximum relative air humidity	%	60			n.a.

* According to ISO 23953

Specification	Unit	Model			
		24-3	36-3	48-3	60-3
Electrical					
Electrical connection		NEMA 6-20P*			n.a.
Nominal voltage	V	1~ 208			n.a.
Nominal frequency	Hz	50/60			n.a.
Maximum power	W	1722	2092	2792	n.a.
Nominal current	A	7,8	9,4	12,7	n.a.
Required fuses		1 x 20A			n.a.
Heating fan power	W	36	60	84	n.a.
Nr. of heating fans		3	5	7	n.a.
Heating element power	W	1500 (-0/+10%)	1800 (-0/+10%)	2400 (-0/+10%)	n.a.
LED lighting power	W	21	37	53	n.a.

* Standard plug

13.5 Technical Specifications MCC Hot - 4 (Full Serve) US

Specification	Unit	Model			
		24-4	36-4	48-4	60-4
General					
Length incl. end walls	"	23 5/8	35 7/16	47 1/4	n.a.
Length excl. end walls	"	21 5/8	33 7/16	45 1/4	n.a.
Depth	"	29 1/2			n.a.
Height on stand	"	55 7/8			n.a.
Height above worktop	"	33 1/16			n.a.
Underframe height	"	22 13/16			n.a.
Plinth height	"	3 15/16			n.a.
Drop-in cut out (W x D)	"	22 5/16 x 28 9/16 (+/- 3/16)	34 1/8 x 28 9/16 (+/- 3/16)	45 15/16 x 28 9/16 (+/- 3/16)	n.a.
Electronics panel cut out (L x H)	"	6 x 9 5/8 (+/- 3/16)			n.a.
Weight (net)	lbs	309	390	472	n.a
Weight (gross)	lbs	366	461	556	n.a
Packaging dimensions (W x D x H)	"	28 3/8 x 34 1/4 x 57 1/2	40 3/16 x 34 1/4 x 57 1/2	51 15/16 x 34 1/4 x 57 1/2	n.a.
Nr. of presentation levels		4			n.a.
Dimensions bottom shelf	"	23 1/4 x 19 11/16	23 1/4 x 31 1/2	23 1/4 x 43 5/16	n.a.
Dimensions middle shelves	"	19 5/16 x 19 11/16	19 5/16 x 31 1/2	19 5/16 x 43 5/16	n.a.
Dimensions top shelf	"	16 3/4 x 19 11/16	16 3/4 x 31 1/2	16 3/4 x 43 5/16	n.a.
Shelf display area	ft2	10,76	17,22	23,57	n.a.
Usable display volume	ft3	5,51	8,79	12,11	n.a.

Specification	Unit	Model			
		24-4	36-4	48-4	60-4
Performance					
TDA*	ft2	8,40	13,02	17,65	n.a.
TEC at climate class 0*	BTU/h	3207	4982	6790	n.a.
TEC at climate class 0*	BTU/day	77285	119937	162554	n.a.
TEC/TDA at climate class 0*	BTU/day/ft2	9212			n.a.
Sound pressure	dB(A)	<70			n.a.
Minimum ambient temperature	°F	68			n.a.
Maximum ambient temperature	°F	86			n.a.
Maximum relative air humidity	%	60			n.a.

* According to ISO 23953

Specification	Unit	Model			
		24-4	36-4	48-4	60-4
Electrical					
Electrical connection		NEMA 6-20P*			n.a.
Nominal voltage	V	1~ 208			n.a.
Nominal frequency	Hz	50/60			n.a.
Maximum power	W	1729	2104	2810	n.a.
Nominal current	A	7,8	9,5	12,8	n.a.
Required fuses		1 x 20A			n.a.
Heating fan power	W	36	60	84	n.a.
Nr. of heating fans		3	5	7	n.a.
Heating element power	W	1500 (-0/+10%)	1800 (-0/+10%)	2400 (-0/+10%)	n.a.
LED lighting power	W	28	49	71	n.a.

* Standard plug

13.6 Technical Specifications MCC Hot - 4 (Self Serve) Humidified US

Specification	Unit	Model			
		24-4	36-4	48-4	60-4
General					
Length incl. end walls	"	23 5/8	35 7/16	47 1/4	n.a.
Length excl. end walls	"	21 5/8	33 7/16	45 1/4	n.a.
Depth	"	29 1/2			n.a.
Height on stand	"	55 7/8			n.a.
Height above worktop	"	33 1/16			n.a.
Underframe height	"	22 13/16			n.a.
Plinth height	"	3 15/16			n.a.
Drop-in cut out (W x D)	"	22 5/16 x 28 9/16 (+/- 3/16)	34 1/8 x 28 9/16 (+/- 3/16)	45 15/16 x 28 9/16 (+/- 3/16)	n.a.
Electronics panel cut out (L x H)	"	6 x 9 5/8 (+/- 3/16)			n.a.
Weight (net)	lbs	309	390	472	n.a
Weight (gross)	lbs	366	461	556	n.a
Packaging dimensions (W x D x H)	"	28 3/8 x 34 1/4 x 57 1/2	40 3/16 x 34 1/4 x 57 1/2	51 15/16 x 34 1/4 x 57 1/2	n.a.
Nr. of presentation levels		4			n.a.
Dimensions bottom shelf	"	23 1/4 x 19 11/16	23 1/4 x 31 1/2	23 1/4 x 43 5/16	n.a.
Dimensions middle shelves	"	19 5/16 x 19 11/16	19 5/16 x 31 1/2	19 5/16 x 43 5/16	n.a.
Dimensions top shelf	"	16 3/4 x 19 11/16	16 3/4 x 31 1/2	16 3/4 x 43 5/16	n.a.
Shelf display area	ft2	10,76	17,22	23,57	n.a.
Usable display volume	ft3	5,51	8,79	12,11	n.a.

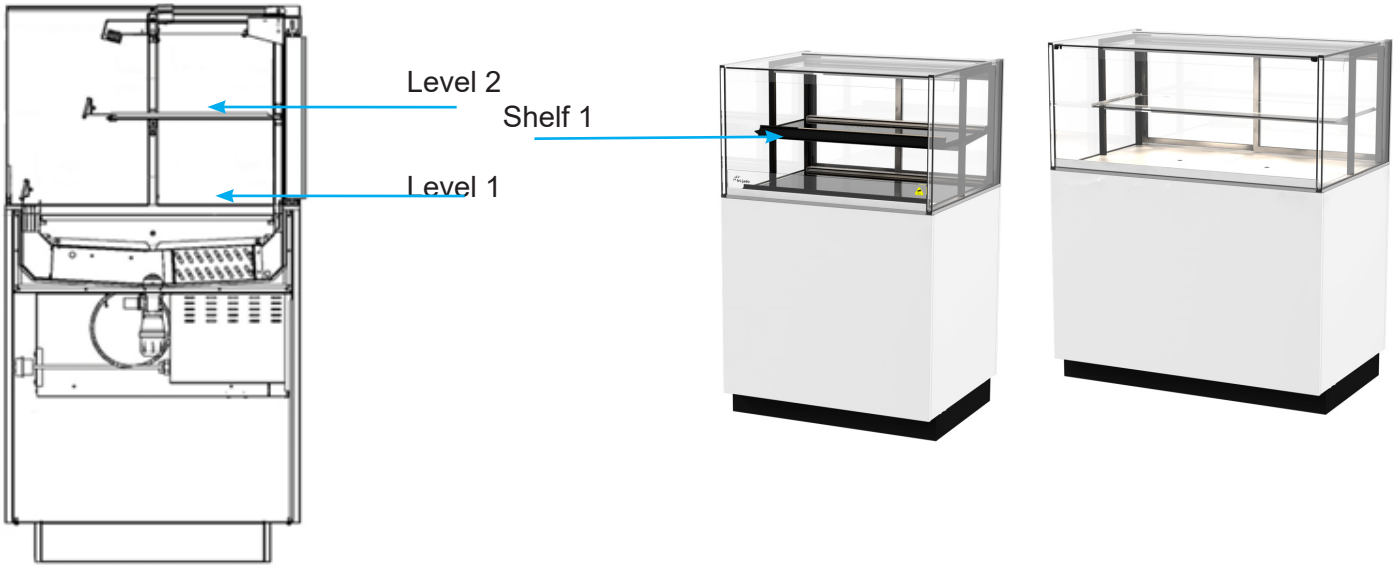
Specification	Unit	Model			
		24-4	36-4	48-4	60-4
Performance					
TDA*	ft2	8,40	13,02	17,65	n.a.
TEC at climate class 0*	BTU/h	3207	4982	6790	n.a.
TEC at climate class 0*	BTU/day	77285	119937	162554	n.a.
TEC/TDA at climate class 0*	BTU/day/ft2	9212			n.a.
Sound pressure	dB(A)	<70			n.a.
Minimum ambient temperature	°F	68			n.a.
Maximum ambient temperature	°F	86			n.a.
Maximum relative air humidity	%	60			n.a.

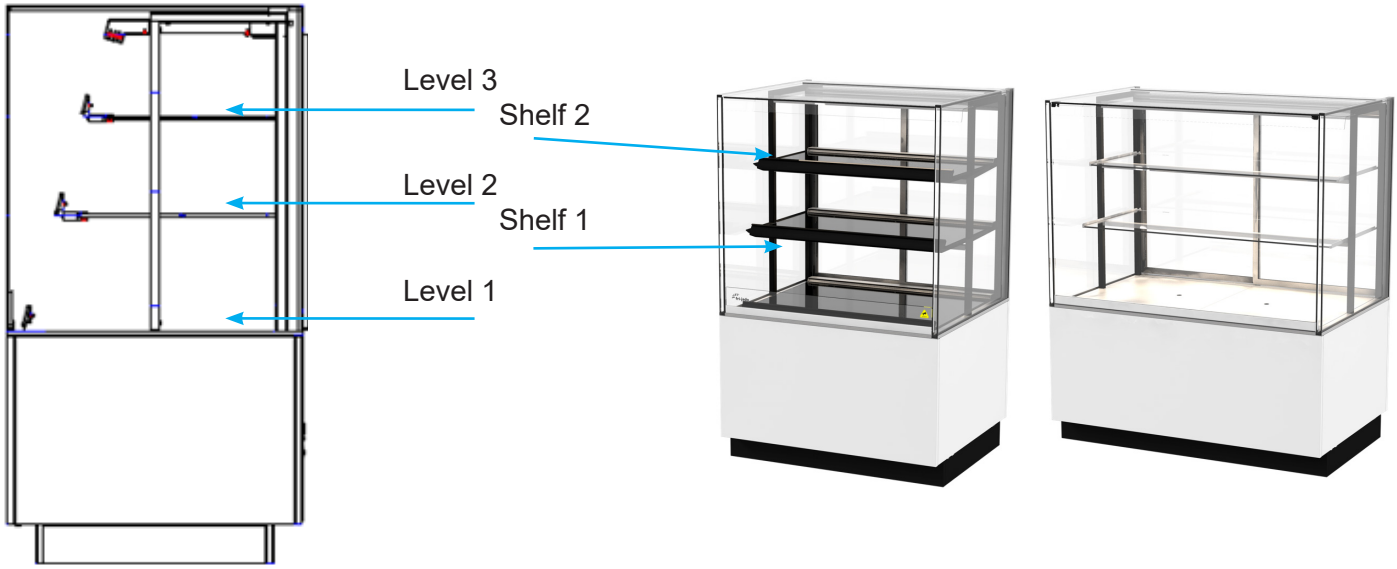
* According to ISO 23953

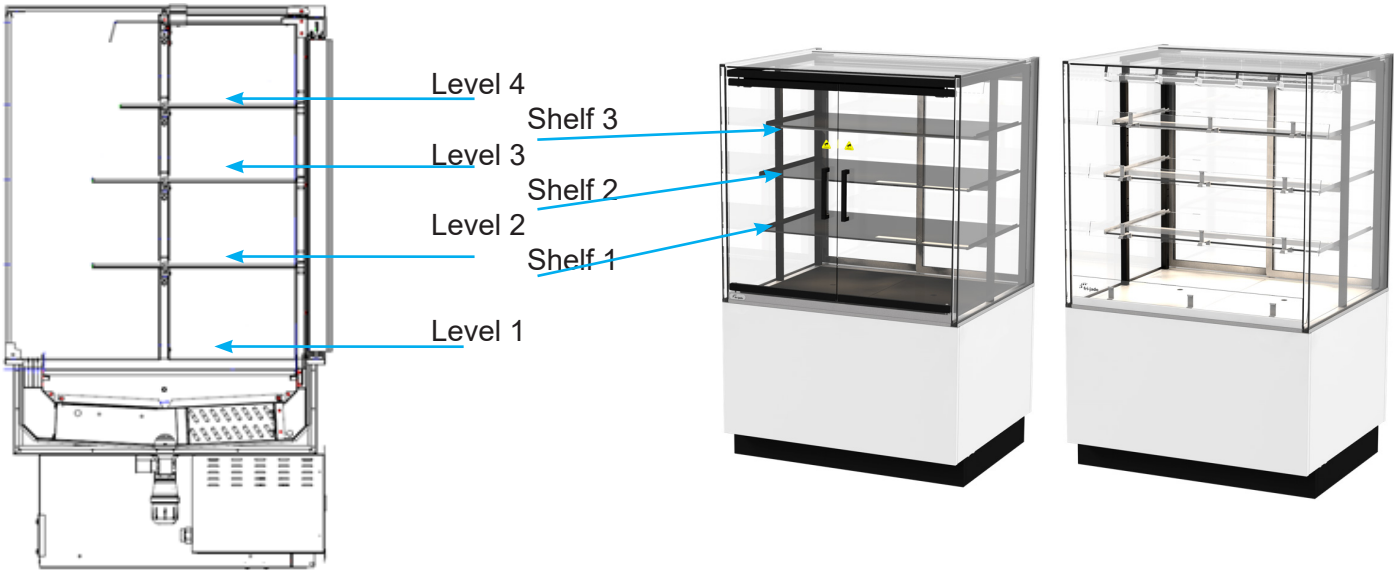
Specification	Unit	Model			
		24-4	36-4	48-4	60-4
Electrical					
Electrical connection		NEMA 6-20P*			n.a.
Nominal voltage	V	1~ 208			n.a.
Nominal frequency	Hz	50/60			n.a.
Maximum power	W	1729	2104	2810	n.a.
Nominal current	A	7,8	9,5	12,8	n.a.
Required fuses		1 x 20A			n.a.
Heating fan power	W	36	60	84	n.a.
Nr. of heating fans		3	5	7	n.a.
Heating element power	W	1500 (-0/+10%)	1800 (-0/+10%)	2400 (-0/+10%)	n.a.
LED lighting power	W	28	49	71	n.a.

* Standard plug

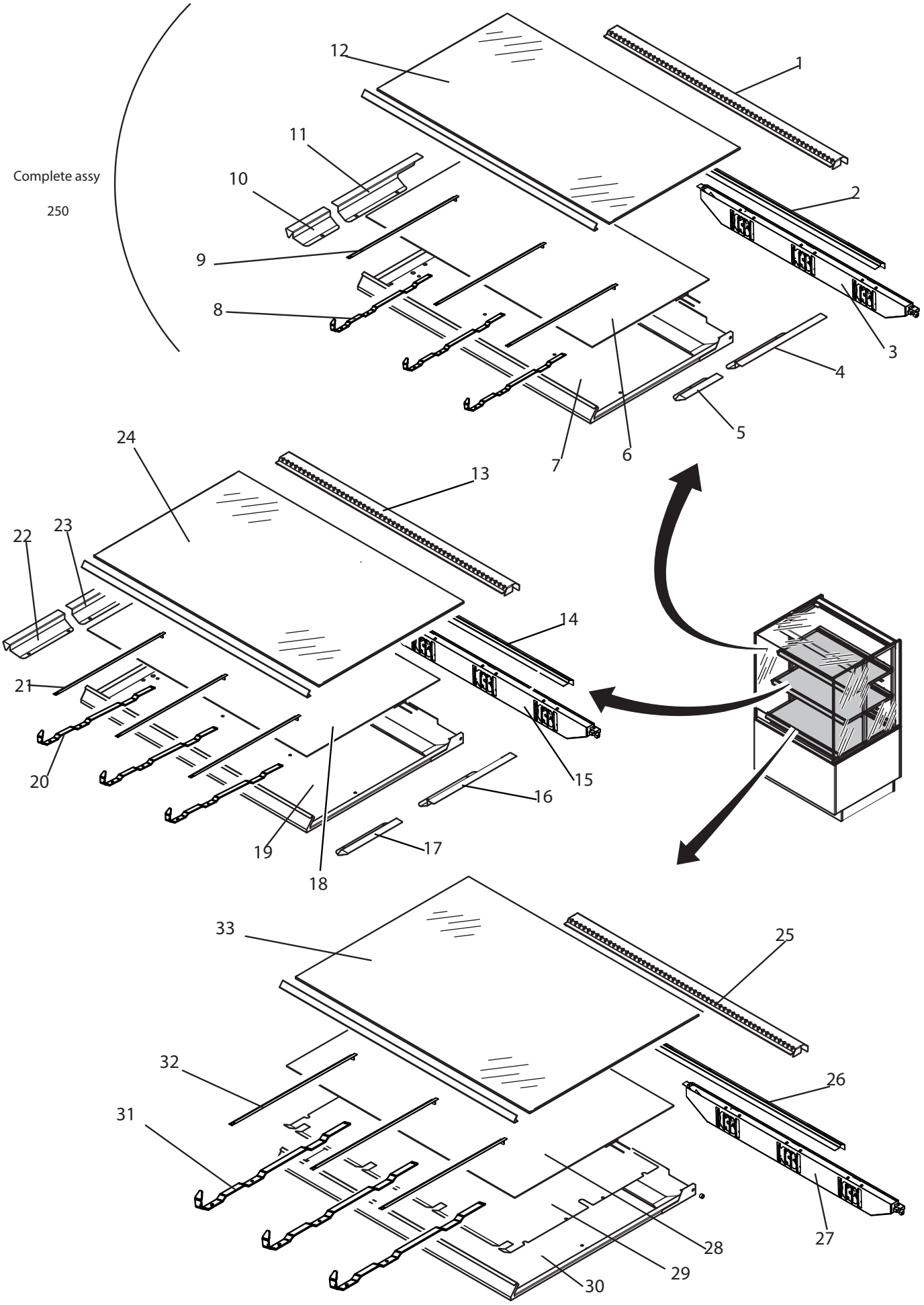
13.7 Explanation difference in levels and shelfs







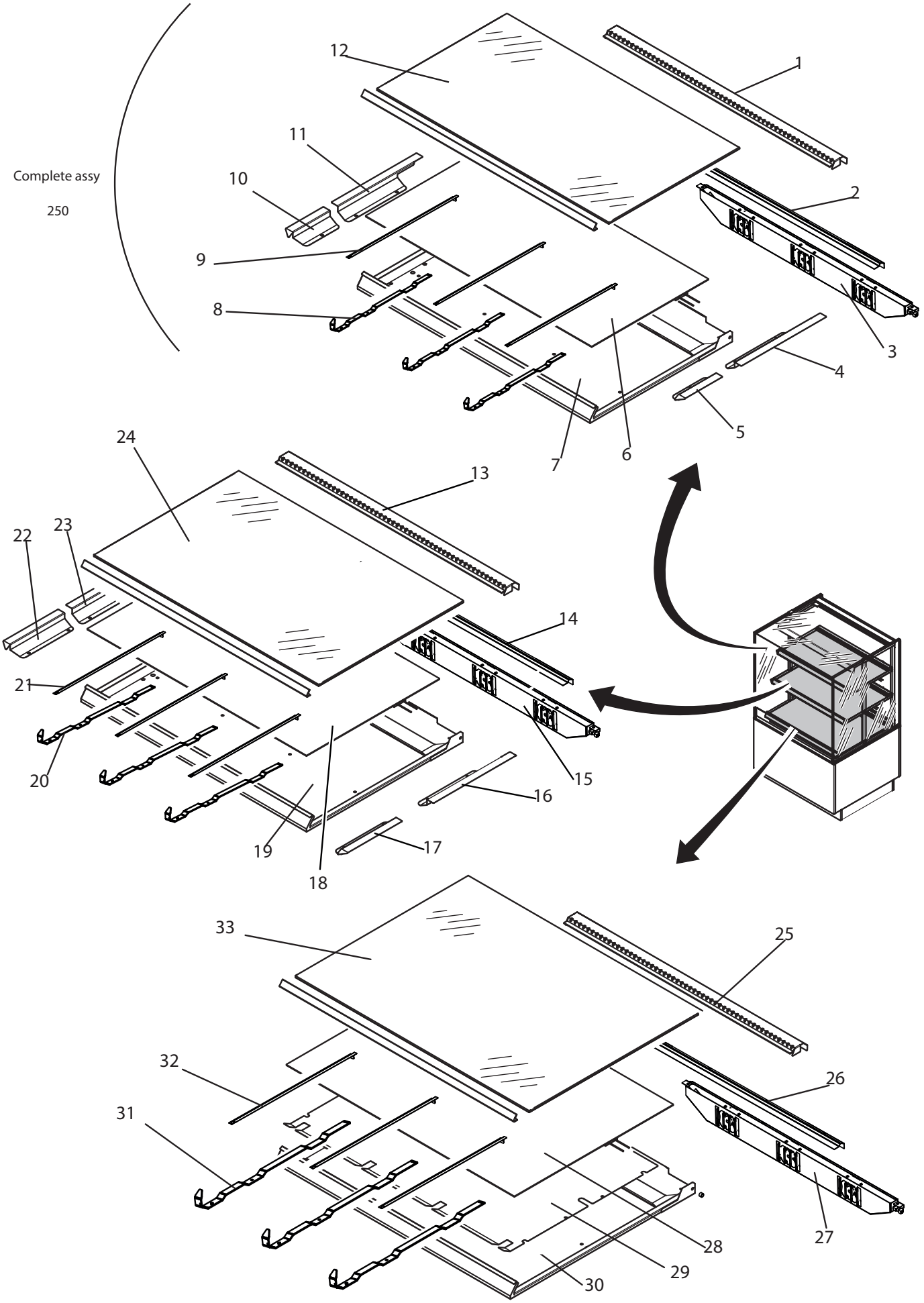
14.0 Exploded view MCC Hot 3 Level (Self Serve)



14.0 Exploded view MCC Hot 3 Level (Self Serve)

Number	Description	Article number	Quantity
1	Rear cover Shelf MCC 60 Rear cover Shelf MCC 90 Rear cover Shelf MCC 120	9384303 9384235 9384304	
3	Fan Box Top MCC 60 Fan Box Top MCC 90 Fan Box Top MCC 120	9380072s 9380058s 9380074s	See Remark Serial number
4	Air blocker right rear top MCC 60	9384170	
5	Air blocker right top MCC 60	9384069	
6	Heating element 475x400 450W MCC60 Heating element 775x400 700W MCC90 Heating element 1075x400 1000W MCC120	9382088 9382091 9382094	
7	Weld. Assy Shelf MCC 60 Small Weld. Assy Shelf MCC 90 Small Weld. Assy Shelf MCC 120 Small	9380400 9380403 9380406	Complete shelf assy see 250
8	Support element Shelf Top	9384335	3
9	Element Clamp shelf top	9384334	
10	Air blocker left top	9384068	
11	Air blocker left rear top	9384169	
12	Glass shelf Top MCC 60 Glass shelf Top MCC 90 Glass shelf Top MCC 120	9382035s 9382141s 9382079s	
13	Rear cover Shelf MCC 60 Rear cover Shelf MCC 90 Rear cover Shelf MCC 120	9384303 9384235 9384304	
15	Fan Box Middle MCC 60 Fan Box Middle MCC 90 Fan Box Middle MCC 120	9380072s 9380058s 9380074s	See remark serial number
16	Air blocker right rear top	9384170	
17	Air blocker right middle	9384079	
18	Heating element 475x470 550W MCC 60 Heating element 775x470 850W MCC 90 Heating element 1075x470 1150W MCC 120	9382089 9382092 9382095	
19	Wled. Assy Shelf MCC 60 middle Wled. Assy Shelf MCC 90 middle Wled. Assy Shelf MCC 120 middle	9380401 9380404 9380407	
20	Support element shelf middle	9384320	
21	Element clamp shelf middle	9384321	
22	Air blocker left middle	9384078	
23	Air blocker left rear top	9384169	
24	Glass shelf middle MCC 60 Glass shelf middle MCC 90 Glass shelf middle MCC 120	9382036s 9382140s 9382080s	
25	Rear cover Shelf MCC 60 Rear cover Shelf MCC 90 Rear cover Shelf MCC 120	9384303 9384235 9384304	
27	Fan Box Bottom MCC 60 Fan Box Bottom MCC 90 Fan Box Bottom MCC 120	9380072s 9380058s 9380074s	See remark serial number
28	Heating element 475x540 750W MCC 60 Heating element 775x540 1125W MCC90 Heating element 1075x540 1500WMCC120	9382090 9382093 9382096	

14.1 Exploded view MCC Hot 3 Level(Self Serve)



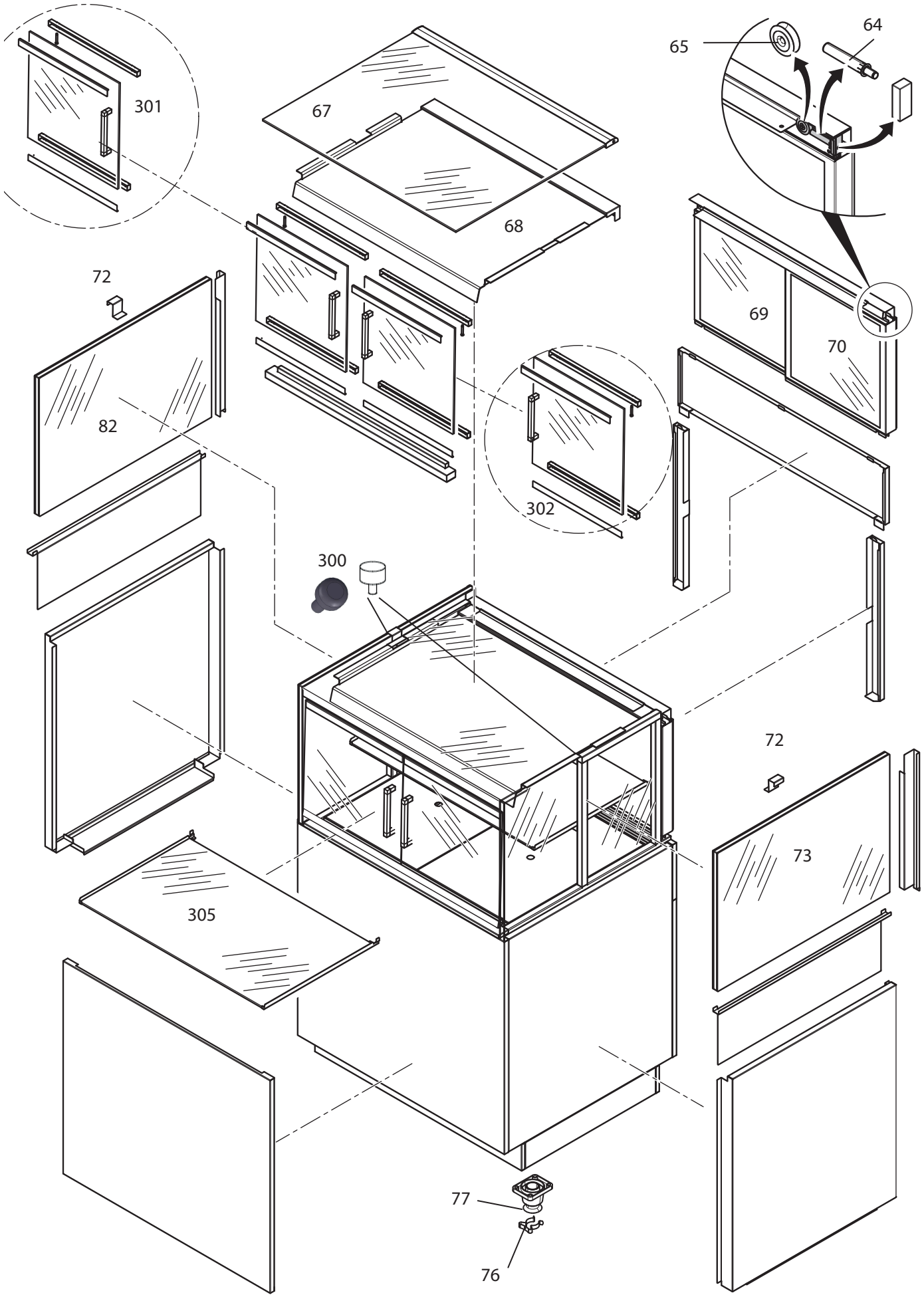
14.1 Exploded view MCC Hot 3 Level(Self Serve)

29	Reflector plate MCC 60 Reflector plate MCC 90 Reflector plate MCC 120	9384086 9384226 9384184	
30	Assy Shelf MCC 60 bottom Assy Shelf MCC 90 bottom Assy Shelf MCC 120 bottom	9380402 9380405 9380408	
31	Support element bottom shelf	9384337	
32	Element clamp shelf bottom	9834336	
33	Glass shelf bottom MCC 60 Glass shelf bottom MCC 90 Glass shelf bottom MCC 120	9382037s 9382142s 9382081s	Remark; Inner exhaust nozzle must be glued on
250	Assy shelf MCC Hot SS 60 small 230V Assy shelf MCC Hot SS 60 middle 230V Assy shelf MCC Hot SS 60 large 230V Assy shelf MCC Hot SS 90 small 230V Assy shelf MCC Hot SS 90 middle 230V Assy shelf MCC Hot SS 90 Large 230V Assy shelf MCC Hot SS 120 small 230V Assy shelf MCC Hot SS 120 middle 230V Assy shelf MCC Hot SS 120 Large 230V	9380081s 9380082s 9380085s 9380087s 9380089s 9380091s 9380093s 9380095s 9380097s	Complete packed shelf assy. including heating element and fan box, assembled

Serial number Remark
Starting of serial number ..... use mentioned article numbers
For serial number before use article numbers below

Number	Description	Article number	Quantity
3	**Fan box top shelf**		**1**
15	**Fan box middle shelf**		**1**
27	**Fan box bottom shelf**		**1**
58	**Power supply**		**1**

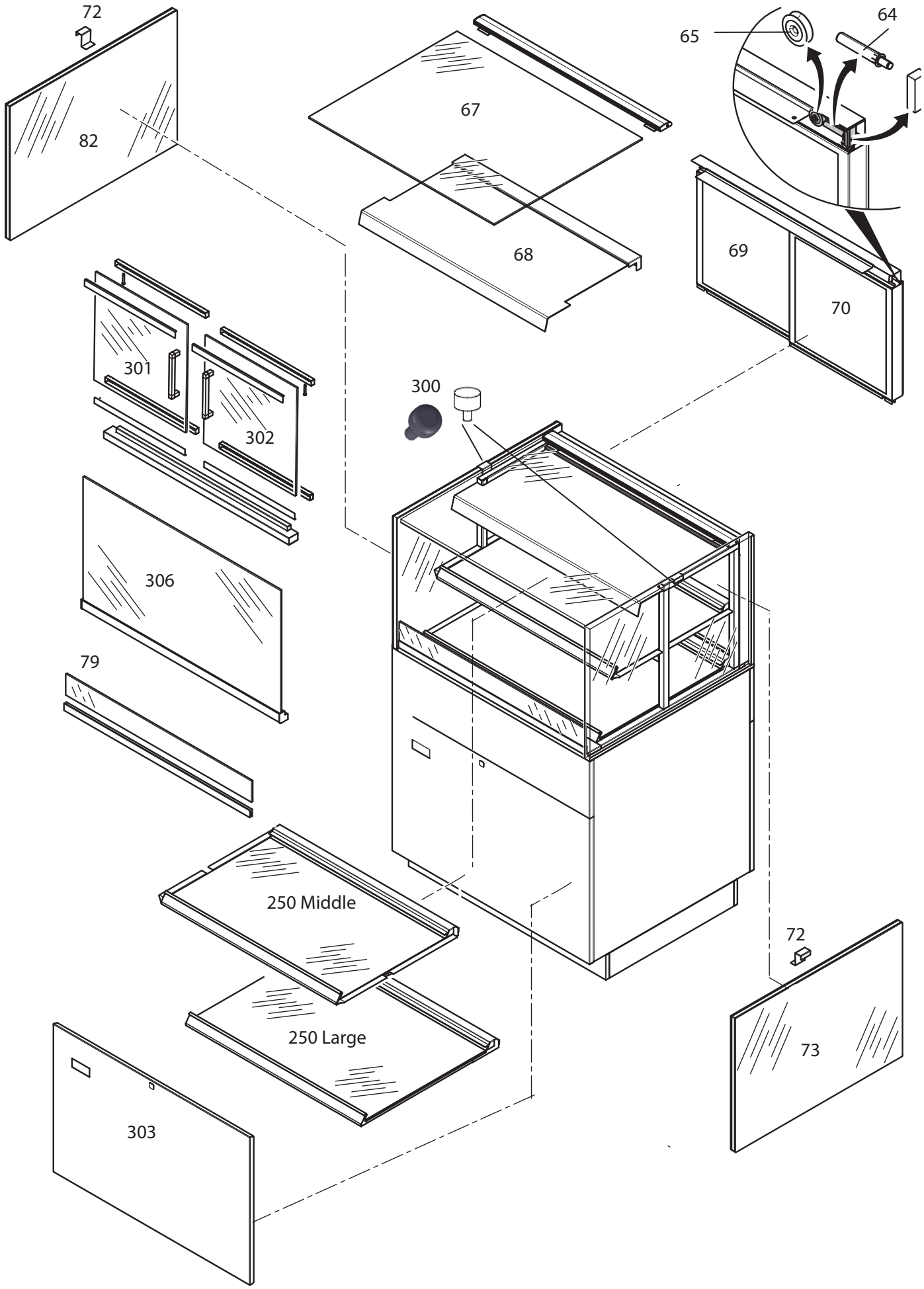
14.0 Exploded view MCC Hot 2 Level



14.0 Exploded view MCC Hot 2 Level

Number	Description	Article number	Quantity
64	Soft close damper 3N	9281078	4
65	Steel roller bearing	9382100	4
67	Top Glass Square MCC 60 SS Top Glass Square MCC 90 SS Top Glass Square MCC 120 SS	9382165s 9382164s 9382166s	1 1 1
68	Air guide MCC 60 Air guide MCC 90 Air guide MCC 120	9382062 9382061 9382063	1 1 1
69	Assy Glass sliding door 60 Right Assy Glass sliding door 90 Right Assy Glass sliding door 120 Right	9380764 9380766 9380768	1 1 1
70	Assy Glass sliding door 60 Left Assy Glass sliding door 90 Left Assy Glass sliding door 120 Left	9380765 9380767 9380769	1 1 1
72	Side glass topside bracket	9384201	1
73	Side glass MCC 2 level see 82	9382750s	2
76	Tool-clamp	8071090	1
77	Adjustable leg	9291162	4
82	Side glass MCC 2 level see 73	9382750s	2
300	Plug top glass-pane (White) Plug top glass-pane (Black)	9263022 9381046	2 2
301	Assy. Front door Right MCC90 Assy. Front door Right MCC120	9380585 9380586 seen from customer side	1 1
302	Assy. Front door Left MCC60 Assy. Front door Left MCC90 Assy. Front door Left MCC120	9380581 9380582 9380583 seen from customer side	1 1 1
305	Shelf glass MCC 60 Shelf glass MCC 90 Shelf glass MCC 120	9382036s 9382140s 9382081s	1 1 1

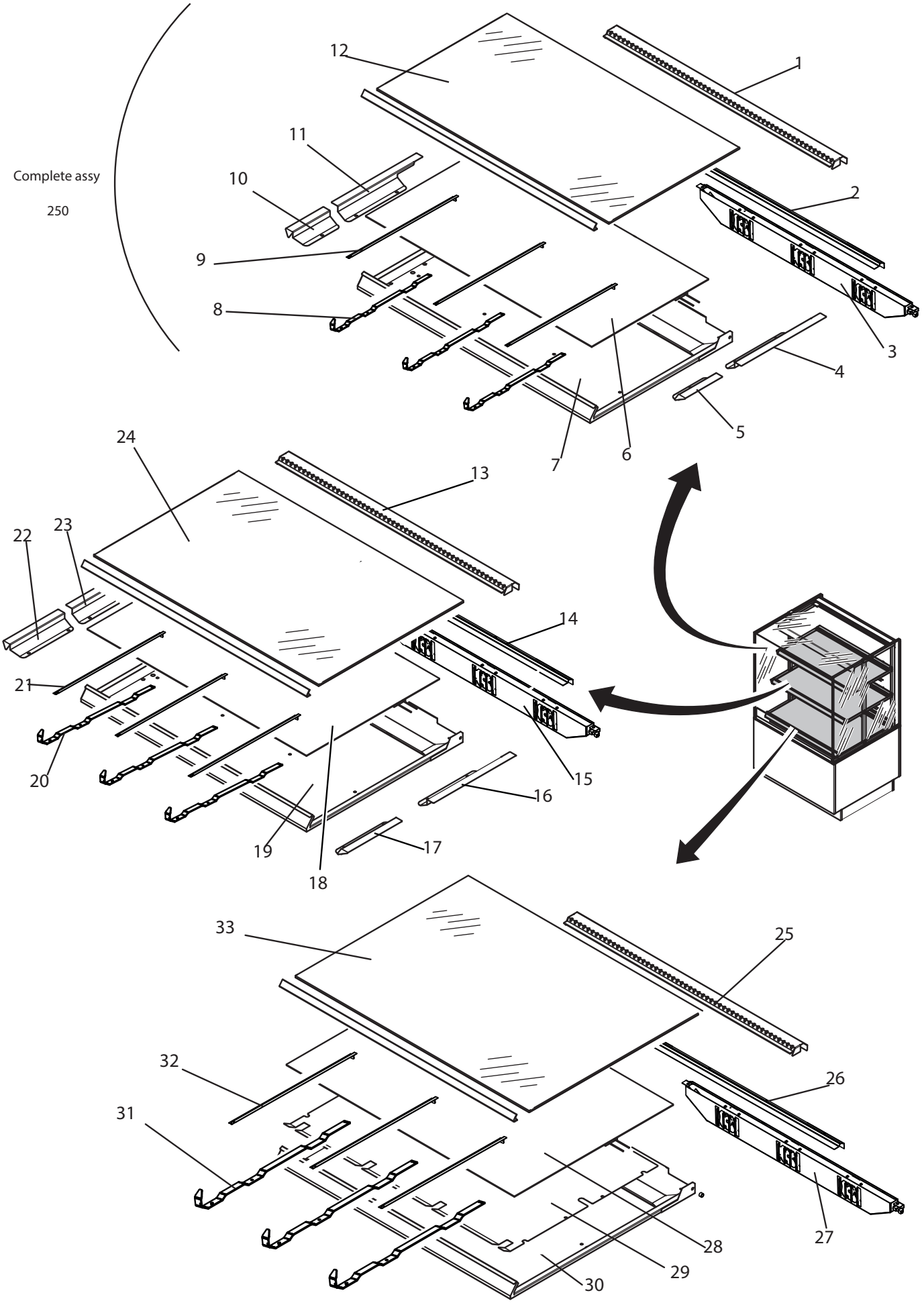
14.1 Exploded view MCC Hot 2 Level



14.1 Exploded view MCC Hot 2 Level

Number	Description	Article number	Quantity
64	Soft close damper 3N	9281078	4
65	Steel roller bearing	9382100	4
67	Top Glass Square MCC 60 SS Top Glass Square MCC 90 SS Top Glass Square MCC 120 SS	9382165s 9382164s 9382166s	1 1 1
68	Air guide MCC 60 Air guide MCC 90 Air guide MCC 120	9382062 9382061 9382063	1 1 1
69	Assy Glass sliding door 60 Right Assy Glass sliding door 90 Right Assy Glass sliding door 120 Right	9380764 9380766 9380768	1 1 1
70	Assy Glass sliding door 60 Left Assy Glass sliding door 90 Left Assy Glass sliding door 120 Left	9380765 9380767 9380769	1 1 1
72	Side glass topside bracket	9384201	2
73	Side glass MCC 2 level	9382750s	2
76	Tool-clamp	8071090	4
77	Adjustable leg	9291162	4
79	Child guard assy MCC60 Child guard assy MCC90 Child guard assy MCC120	9380017s 9380018s 9380019s	1 1 1
82	Side glass MCC 2 level	9382750s	2
250	Assy shelf MCC Hot SS 60 middle 230V Glass pane Assy shelf MCC Hot SS 60 large 230V Glass pane Assy shelf MCC Hot SS 90 middle 230V Glass pane Assy shelf MCC Hot SS 90 Large 230V Glass pane Assy shelf MCC Hot SS 120 middle 230V Glass pane Assy shelf MCC Hot SS 120 Large 230V Glass pane	9380350* 9382036 9380352* 9382037 9380346* 9382140 9380348* 9382142 9380344* 9382080 9380342* 9382081	*Complete packed shelf assy. including: glass, heating element and fan box, assembled
300	Plug top glass-pane (White) Plug top glass-pane (Black)	9263022 9381046	2 2
301	Assy. Front door Right MCC90 Assy. Front door Right MCC120	9380585 9380586 seen from customer side	1 1
302	Assy. Front door Left MCC60 Assy. Front door Left MCC90 Assy. Front door Left MCC120	9380581 9380582 9380583 seen from customer side	1 1 1
303	Front panel	On special request	1
306	Assy. glass pane till ted forward MCC 60 Assy. glass pane till ted forward MCC 90 Assy. glass pane till ted forward MCC 120	9382751s 9382752s 9382753s	1 1 1

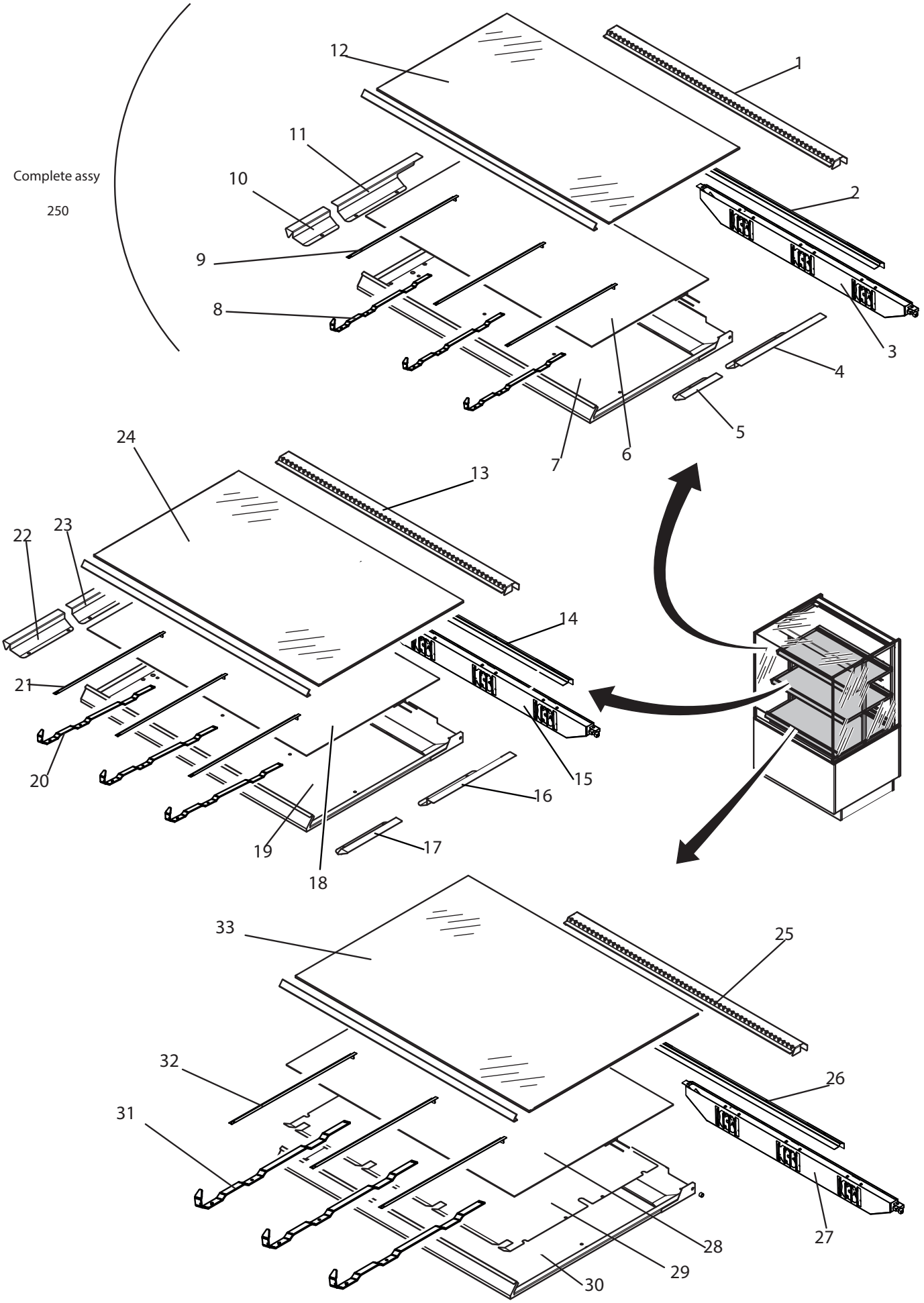
14.2 Exploded view MCC Hot 3 Level (Self Serve)



14.2 Exploded view MCC Hot 3 Level (Self Serve)

Number	Description	Article number	Quantity
1	Rear cover Shelf MCC 60 Rear cover Shelf MCC 90 Rear cover Shelf MCC 120	9384303 9384235 9384304	1 1 1
3	Fan Box Top MCC 60 Fan Box Top MCC 90 Fan Box Top MCC 120	9380072s 9380058s 9380074s	See Remark Serial number
4	Air blocker right rear top MCC 60	9384170	1
5	Air blocker right top MCC 60	9384069	1
6	Heating element 475x400 450W MCC60 Heating element 775x400 700W MCC90 Heating element 1075x400 1000W MCC120	9382088 9382091 9382094	1 1 1
7	Weld. Assy Shelf MCC 60 Small Weld. Assy Shelf MCC 90 Small Weld. Assy Shelf MCC 120 Small	9380400 9380403 9380406	Complete shelf assy see 250
8	Support element Shelf Top	9384335	3
9	Element Clamp shelf top	9384334	3
10	Air blocker left top	9384068	1
11	Air blocker left rear top	9384169	1
12	Glass shelf Top MCC 60 Glass shelf Top MCC 90 Glass shelf Top MCC 120	9382035s 9382141s 9382079s	1 1 1
13	Rear cover Shelf MCC 60 Rear cover Shelf MCC 90 Rear cover Shelf MCC 120	9384303 9384235 9384304	1 1 1
15	Fan Box Middle MCC 60 Fan Box Middle MCC 90 Fan Box Middle MCC 120	9380072s 9380058s 9380074s	See remark serial number
16	Air blocker right rear top	9384170	1
17	Air blocker right middle	9384079	1
18	Heating element 475x470 550W MCC 60 Heating element 775x470 850W MCC 90 Heating element 1075x470 1150W MCC 120	9382089 9382092 9382095	1 1 1
19	Wled. Assy Shelf MCC 60 middle Wled. Assy Shelf MCC 90 middle Wled. Assy Shelf MCC 120 middle	9380401 9380404 9380407	1 1 1
20	Support element shelf middle	9384320	3
21	Element clamp shelf middle	9384321	3
22	Air blocker left middle	9384078	1
23	Air blocker left rear top	9384169	1
24	Glass shelf middle MCC 60 Glass shelf middle MCC 90 Glass shelf middle MCC 120	9382036s 9382140s 9382080s	1 1 1
25	Rear cover Shelf MCC 60 Rear cover Shelf MCC 90 Rear cover Shelf MCC 120	9384303 9384235 9384304	1 1 1
27	Fan Box Bottom MCC 60 Fan Box Bottom MCC 90 Fan Box Bottom MCC 120	9380072s 9380058s 9380074s	See remark serial number
28	Heating element 475x540 750W MCC 60 Heating element 775x540 1125W MCC90 Heating element 1075x540 1500WMCC120	9382090 9382093 9382096	1 1 1

14.3 Exploded view MCC Hot 3 Level(Self Serve)



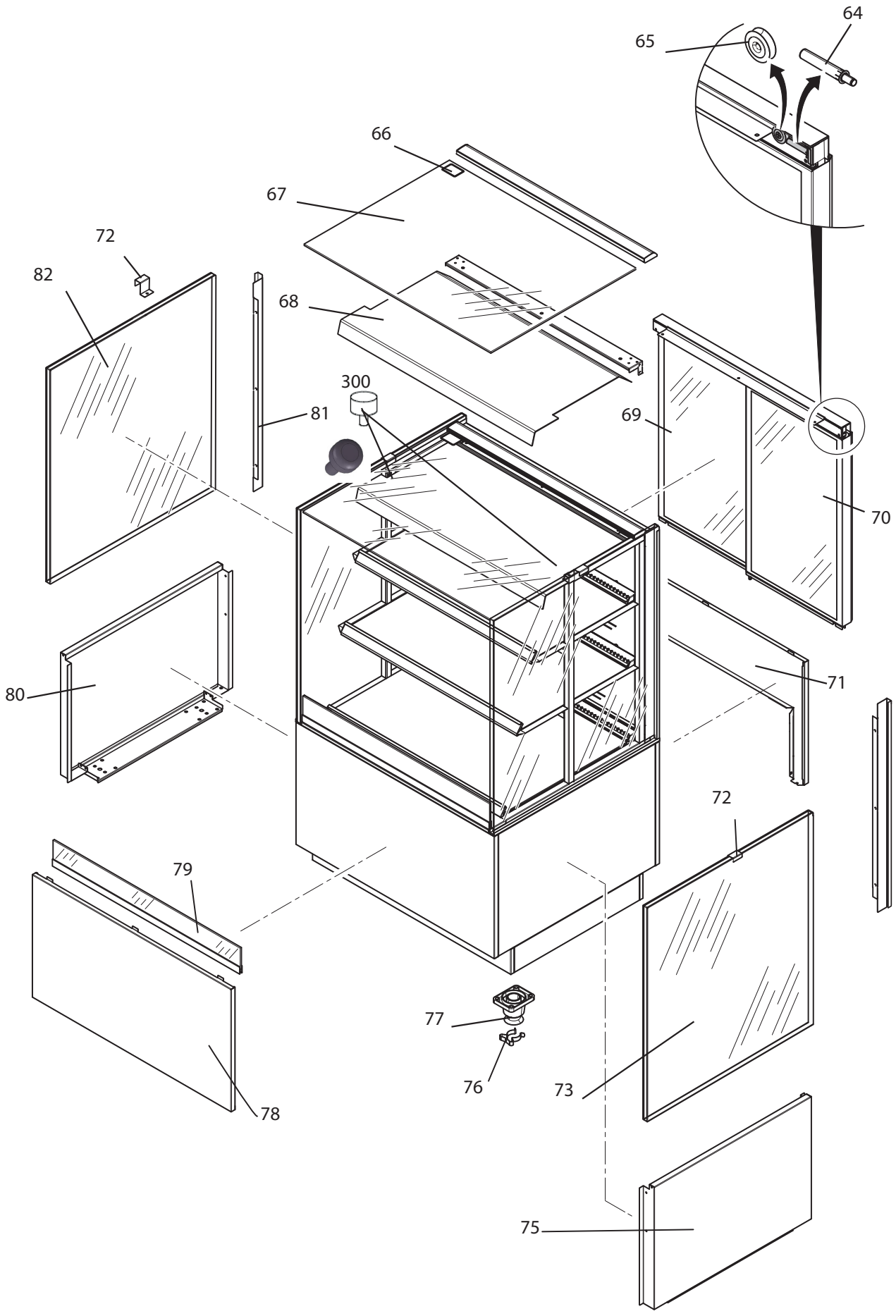
14.3 Exploded view MCC Hot 3 Level(Self Serve)

29	Reflector plate MCC 60 Reflector plate MCC 90 Reflector plate MCC 120	9384086 9384226 9384184	1 1 1
30	Assy Shelf MCC 60 bottom Assy Shelf MCC 90 bottom Assy Shelf MCC 120 bottom	9380402 9380405 9380408	1 1 1
31	Support element bottom shelf	9384337	1
32	Element clamp shelf bottom	9834336	1
33	Glass shelf bottom MCC 60 Glass shelf bottom MCC 90 Glass shelf bottom MCC 120	9382037s 9382142s 9382081s	Remark; Inner exhaust nozzle must be glued on
250	Assy shelf MCC Hot SS 60 small 230V Assy shelf MCC Hot SS 60 middle 230V Assy shelf MCC Hot SS 60 large 230V Assy shelf MCC Hot SS 90 small 230V Assy shelf MCC Hot SS 90 middle 230V Assy shelf MCC Hot SS 90 Large 230V Assy shelf MCC Hot SS 120 small 230V Assy shelf MCC Hot SS 120 middle 230V Assy shelf MCC Hot SS 120 Large 230V	9380081s 9380082s 9380085s 9380087s 9380089s 9380091s 9380093s 9380095s 9380097s	Complete packed shelf assy. including: glass, heating element and fan box, assembled

Serial number Remark
Starting of serial number ..... use mentioned article numbers
For serial number before use article numbers below

Number	Description	Article number	Quantity
3	**Fan box top shelf**		**1**
15	**Fan box middle shelf**		**1**
27	**Fan box bottom shelf**		**1**
58	**Power supply**		**1**

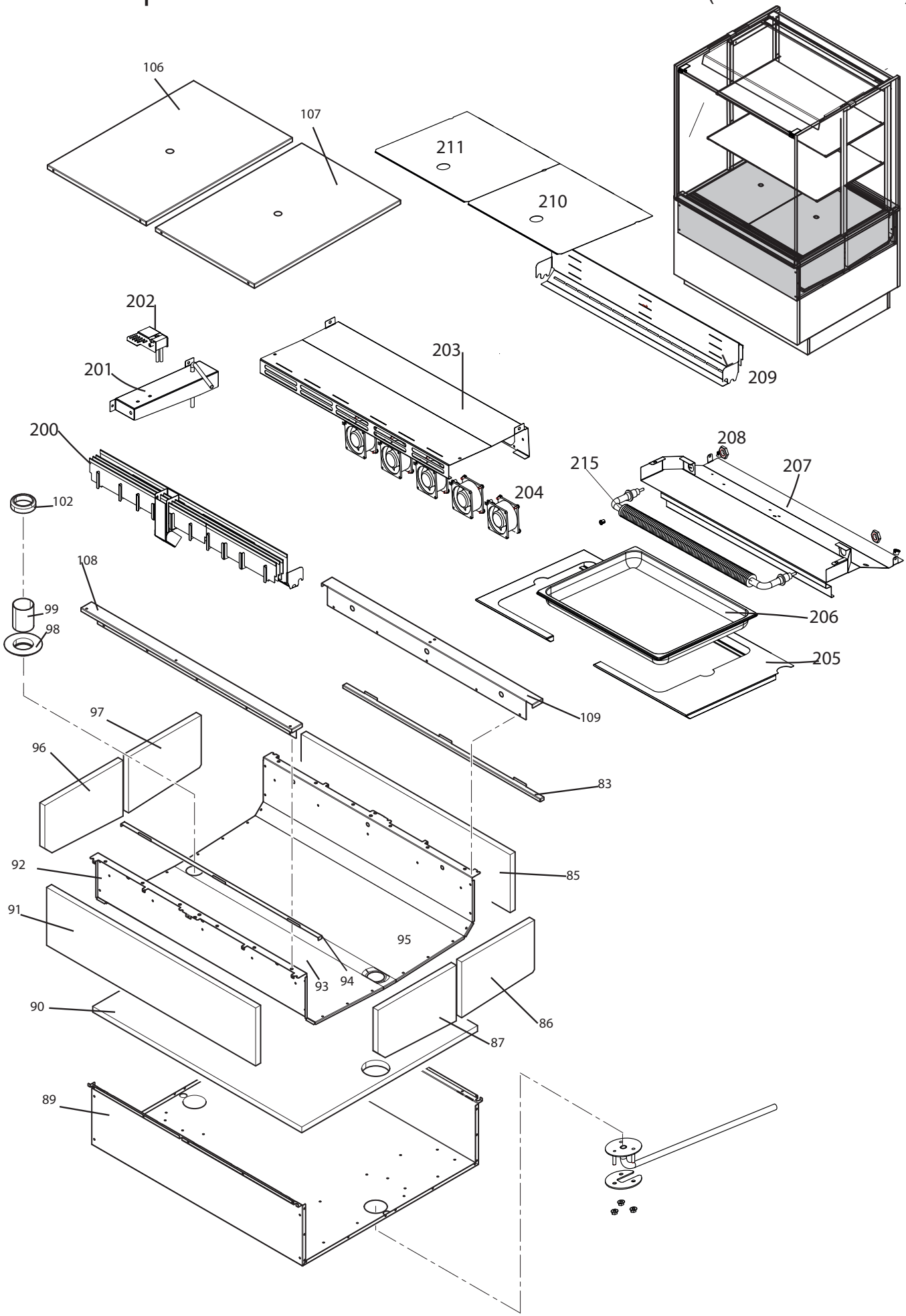
14.4 Exploded view MCC Hot 3 Level (Self Serve)



14.4 Exploded view MCC Hot 3 Level (Self Serve)

Number	Description	Article number	Quantity
64	Soft close damper 3N	9281078	4
65	Steel roller bearing	9382100	4
66	Label max. Load 10 kg	9123759	1
67	Top Glass Square MCC 60 SS Top Glass Square MCC 90 SS Top Glass Square MCC 120 SS	9382165s 9382164s 9382166s	1 1 1
68	Air guide MCC 60 Air guide MCC 90 Air guide MCC 120	9382062 9382061 9382063	1 1 1
69	Assy Glass sliding door 60 Right V0 Assy Glass sliding door 60 Right V1 Assy Glass sliding door 90 Right V0 Assy Glass sliding door 90 Right V1 Assy Glass sliding door 120 Right V0 Assy Glass sliding door 120 Right V1	9380226s 9380216s 9380220s 9380210s 9380222s 9380212s	1 1 1 1 1 1
70	Assy Glass sliding door 60 Left Assy Glass sliding door 90 Left Assy Glass sliding door 120 Left	9380217s 9380211s 9380213s	1 1 1
71	Back panel MCC 60 Back panel MCC 90 Back panel MCC 120	9384006 9384007 9384008	1 1 1
72	Side glass topside bracket	9384201	1
73	Side glass MCC 3 + 4 level	9382030s	2 (see 82)
74	Base end cover panel	9384021	
75	Side panel MCC 3 + 4 Level	9384005	2 (see 80)
76	Tool-clamp	8071090	1
77	Adjustable leg	9291162	4
78	Front panel MCC 60 Front panel MCC 90 Front panel MCC 120	9384001 9384002 9384003	1 1 1
79	Child guard assy MCC60 Child guard assy MCC90 Child guard assy MCC120	9380017s 9380018s 9380019s	1 1 1
80	Side panel MCC 3 + 4 Level	9384005	2 (see 75)
81	Base end cover panel MCC 3 + 4 Level	9384021	1
82	Side glass MCC 3 + 4 level	9382030s	2 (see 73)
300	Plug top glass-pane (White) Plug top glass-pane (Black)	9263022 9381046	2 2

14.5 Exploded view MCC Hot Structure X level (Full Serve version 1)

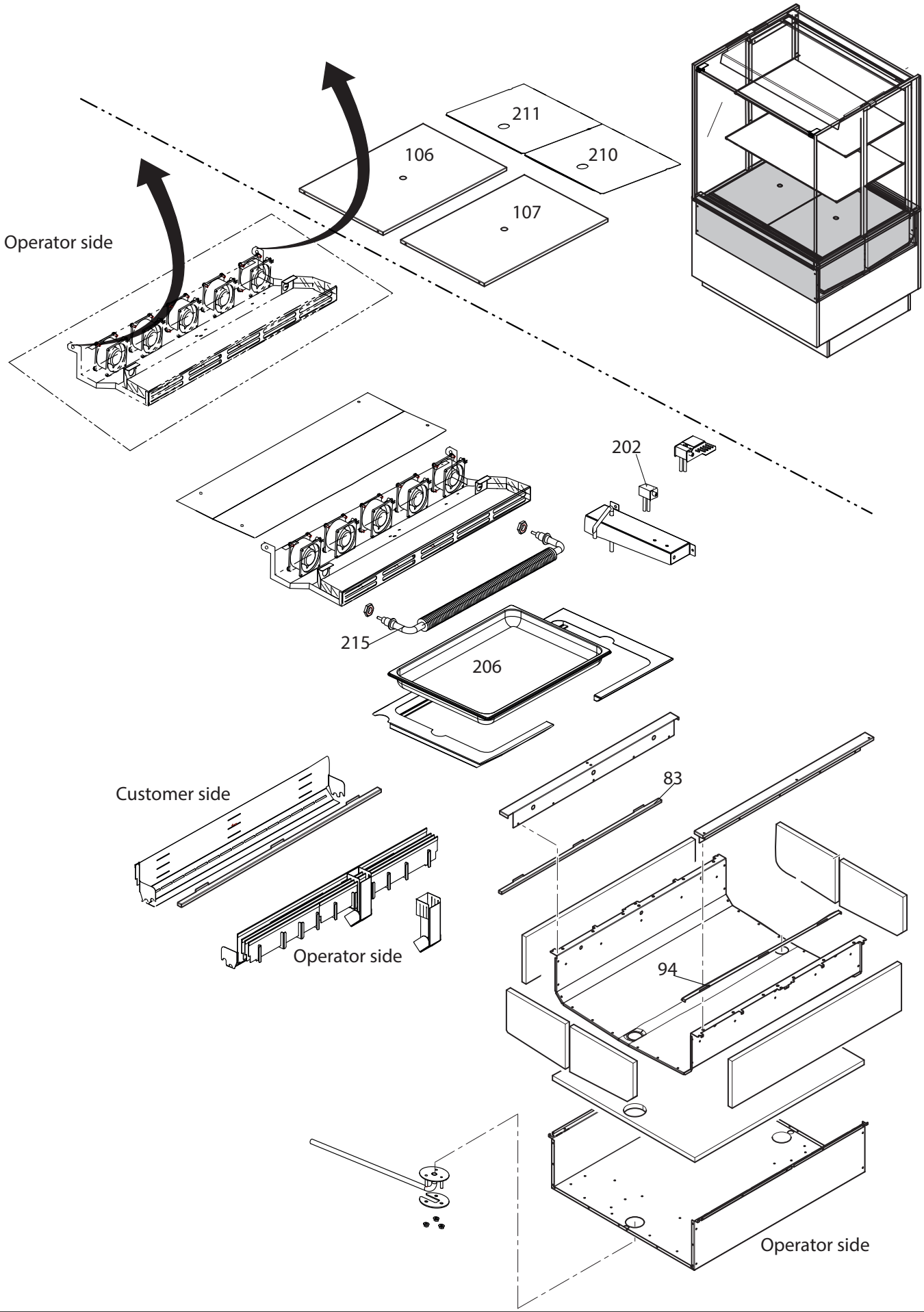


14.5 Exploded view MCC Hot Structure X level (Full Serve version 1)

Number	Description	Article number	Quantity
83 / 94	product plateau support MCC 60 product plateau support MCC 90 product plateau support MCC 120	9384082 9384125 9384290	2 2 2
85	Insulation back MCC 60 Insulation back MCC 90 Insulation back MCC 120	9382177 9382172 9382173	1 1 1
86 / 87 / 96 / 97	Insulation side cold set of two	9382078	set of 2
89	Base outer frame MCC 60 Base outer frame MCC 90 Base outer frame MCC 120	9384023 9384024 9384025	1 1 1
90	Insulation bottom MCC 60 Insulation bottom MCC 90 Insulation bottom MCC 120	9382076 9382083 9382119	1 1 1
91	Insulation front	9382077	1
92	Inner shell MCC 60 Inner shell MCC 90 Inner shell MCC 120	9384096 9384142 9384219	1 1 1
102	Rosette type 240 1 1/4”	9381001	1
106 / 107	Product plateau MCC 60 400 mm Product plateau MCC 90 mm Product plateau MCC 120 mm	9384082 9384125 9384290	2 2 2
202	Water level sensor	9382215s	1
203		Only on special request	
204	Fan 8556N	30010380s	4 till 7
205		Only on special request	
206	GN pan MCC 60 GN pan MCC 90 GN pan MCC 120		1 1 1
208	Nut connection heating element		1
209		Only on special request	
210 / 211	Deck		2
215 (230 Volts)	Element MCC 60 1500W 230V Element MCC 90 1800W 230V Element MCC 120 2400W 230V	9382270s 30002245s 30002244s	1 1 1

14.6 Exploded view MCC Hot Structure X level

(Full Serve version 2)

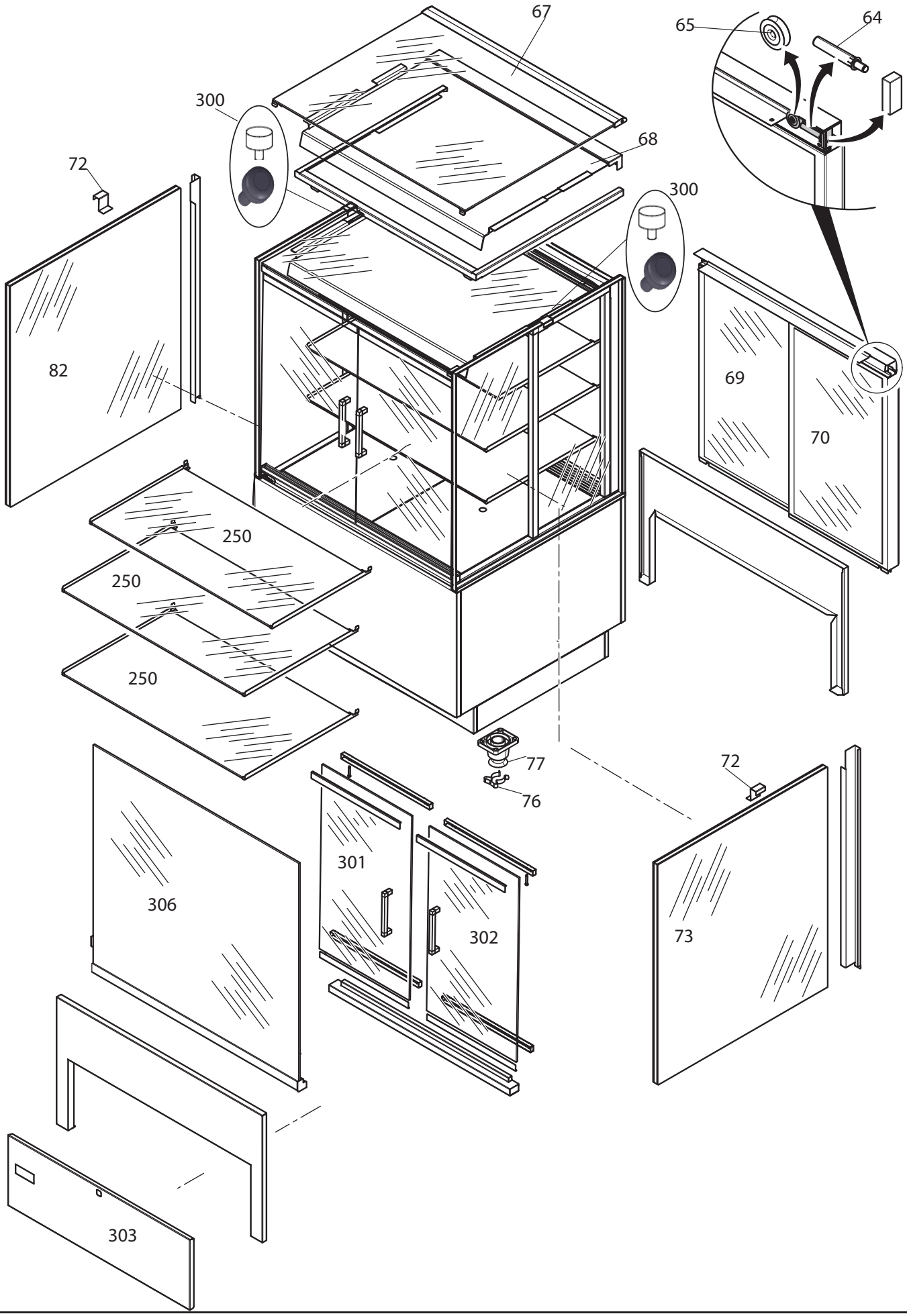


14.6 Exploded view MCC Hot Structure X level

(Full Serve version 2)

Number	Description	Article number	Quantity
83 / 94	product plateau support MCC 60 product plateau support MCC 90 product plateau support MCC 120	9384082 9384125 9384290	1
106 / 107	Product plateau MCC 60 400 mm Product plateau MCC 90 mm Product plateau MCC 120 mm	9384082 9384125 9384290	2
202	Water level sensor	9382215s	1
204	Fan 8556N	30010380s	4 till 7
206	GN pan MCC 60 GN pan MCC 90 PN pan MCC 120		1 1 1
210 / 211	Deck	Only on special request	2
215 (208 Volts)	Element MCC 60 1500W 208V Element MCC 90 1800W 208V Element MCC 120 2400W 208V	9382270s 9382176 9382177	1 1 1

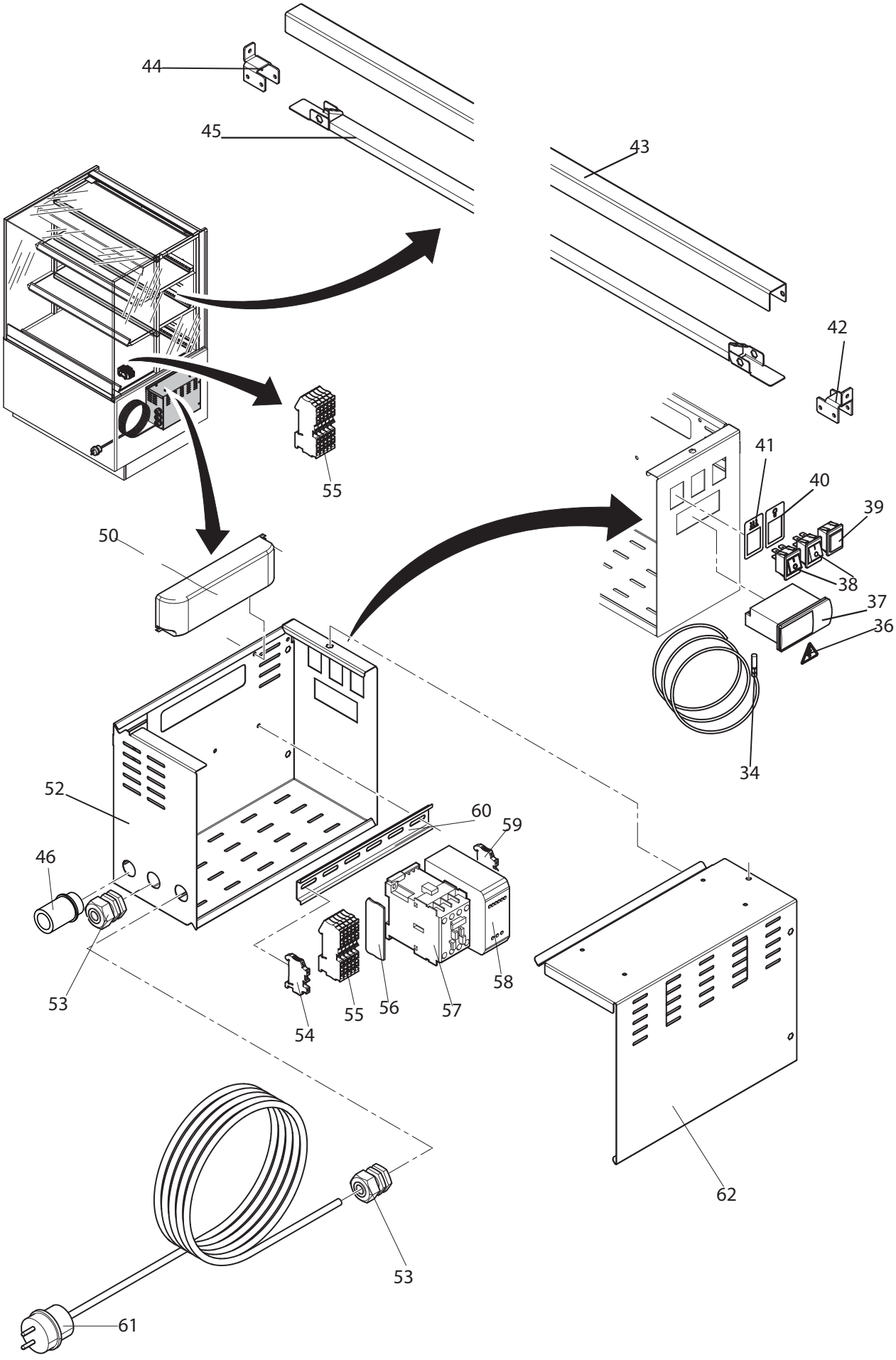
14.7 Exploded view MCC Hot 4 Level



14.7 Exploded view MCC Hot 4 Level

Number	Description	Article number	Quantity
64	Soft close damper 3N	9281078	4
65	Steel roller bearing	9382100	4
67	Top Glass Square MCC 60 Top Glass Square MCC 90 Top Glass Square MCC 120	9380203s 9380200s 9380201s	1 1 1
68	Air guide MCC 60 Air guide MCC 90 Air guide MCC 120	9382062 9382061 9382063	1 1 1
69	Assy Glass sliding door 60 Right Assy Glass sliding door 90 Right Assy Glass sliding door 120 Right	9380216s 9380210s 9380212s	1 1 1
70	Assy Glass sliding door 60 Left Assy Glass sliding door 90 Left Assy Glass sliding door 120 Left	9380217s 9380211s 9380213s	1 1 1
72	Side glass topside bracket	9384201	2
73	Side glass MCC	9382030s	2 (see 82)
76	Toolclamp	8071090	4
77	Adjustable leg	9291162	4
82	Side glass MCC	9382030s	2 (see 73)
85	Front glass pane tilted forward MCC 60 Front glass pane tilted forward MCC 90 Front glass pane tilted forward MCC 120 Front glass pane tilted forward MCC 150	9382033s 9382029s 9382034s 9382123s	1 1 1 1
250	Glass plateau MCC 60 425mm Glass plateau MCC 60 490 mm Glass plateau MCC 90 425mm Glass plateau MCC 90 490mm Glass plateau MCC 120 425mm Glass plateau MCC 120 490mm	9380423 9380424 9380425 9380426 9380427 9380428	1 1 1 1 1 1
300	Plug top glass-pane (White) Plug top glass-pane (Black)	9263022 9381046	2 2
301	Assy. front door left MCC 60 Assy. front door left MCC 90 Assy. front door left MCC 120		1 1 1
302	Assy. front door right MCC 60 Assy. front door right MCC 90 Assy. front door right MCC 120		1 1 1
303	Front panel turnable MCC 60 Front panel turnable MCC 90 Front panel turnable MCC 120	On request	1 1 1
306	Assy. glass tiled forward MCC 60 3/4 level Assy. glass tiled forward MCC 90 3/4 level Assy. glass tiled forward MCC 120 3/4 level	9382033s 9382029s 9382034s	1 1 1

14.8 Exploded view MCC Hot Electrical



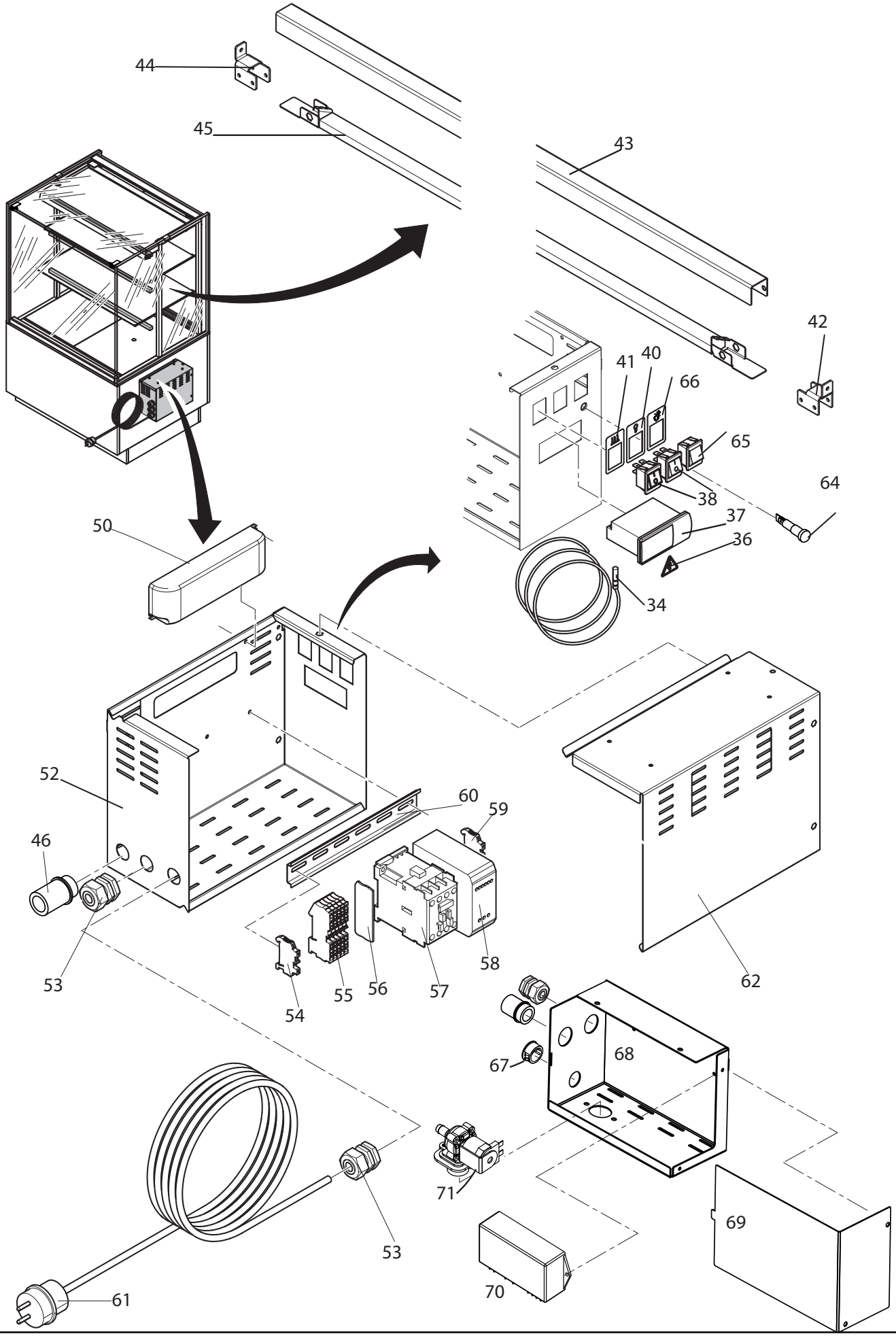
14.8 Exploded view MCC Hot Electrical

Number	Description	Article number	Quantity
34	Sensor PTC 1000	9221011	1
35	Model plate	9110810	1
36	Sticker Black Elect. Sign triangle	3500105	1
37	Thermostat ERC211	9221109	1
38	Switch	9181008	2
39	Switch dummy	30002730	Depending variation
40	Sticker Lighting	9181071	1
41	Sticker Lower Heat	9181072	1
42	Led Armature support bracket	9384091	Depending variation
43	LED Armature MCC 60 LED Armature MCC 90 LED Armature MCC 120	9384110 9384090 9384111	Depending variation
45	Led 3000k 12V 400mm MCC 60: Led 3000k 12V 700mm MCC90 Led 3000k 12V 1000mm MCC 120:	9382075s 9382067s 9382068s	Depending variation
44	Led Armature support bracket	9384091	Depending variation
50	Led driver EDXe 160/12.054	30007730	1
52	Box electronics	9384094	1
53	Strain relief Nut for cable gland	9222076 9222077	1 1
54	End Clamp Clip-fix 35-5 PHX	9191222	1
55	Terminal PT 4 (GN/YE) Terminal PT 4 (GY)	9191239 9191240	Depending variation
56	End cover D=PT 4 PHX	9191223	2
57	Contactor AB100-C09KL400	3500069	1
58	Power supply 24VDC 40W	9381012	See remark serial number
59	End Clamp Clip-fix 35-5 PHX	9191222	2
60	Din rail	9293057	1
61	Power cable	9091383	1
62	Cover Electronics box	9384095	1

Serial number Remark Starting of serial number ..... use above mentioned article numbers. For serial number before use article numbers below

Number	Description	Article number	Quantity
3	Fan box top shelf		**1**
15	Fan box middle shelf		**1**
27	Fan box bottom shelf		**1**
57 A	Timing relays	**30003932**	**1**
57 B	Relays	**9290114s**	**1**
58	Power supply	**9381019**	**1** Output voltage should be 16,7 Vdc

14.9 Exploded view MCC Hot Electrical (Humidified)

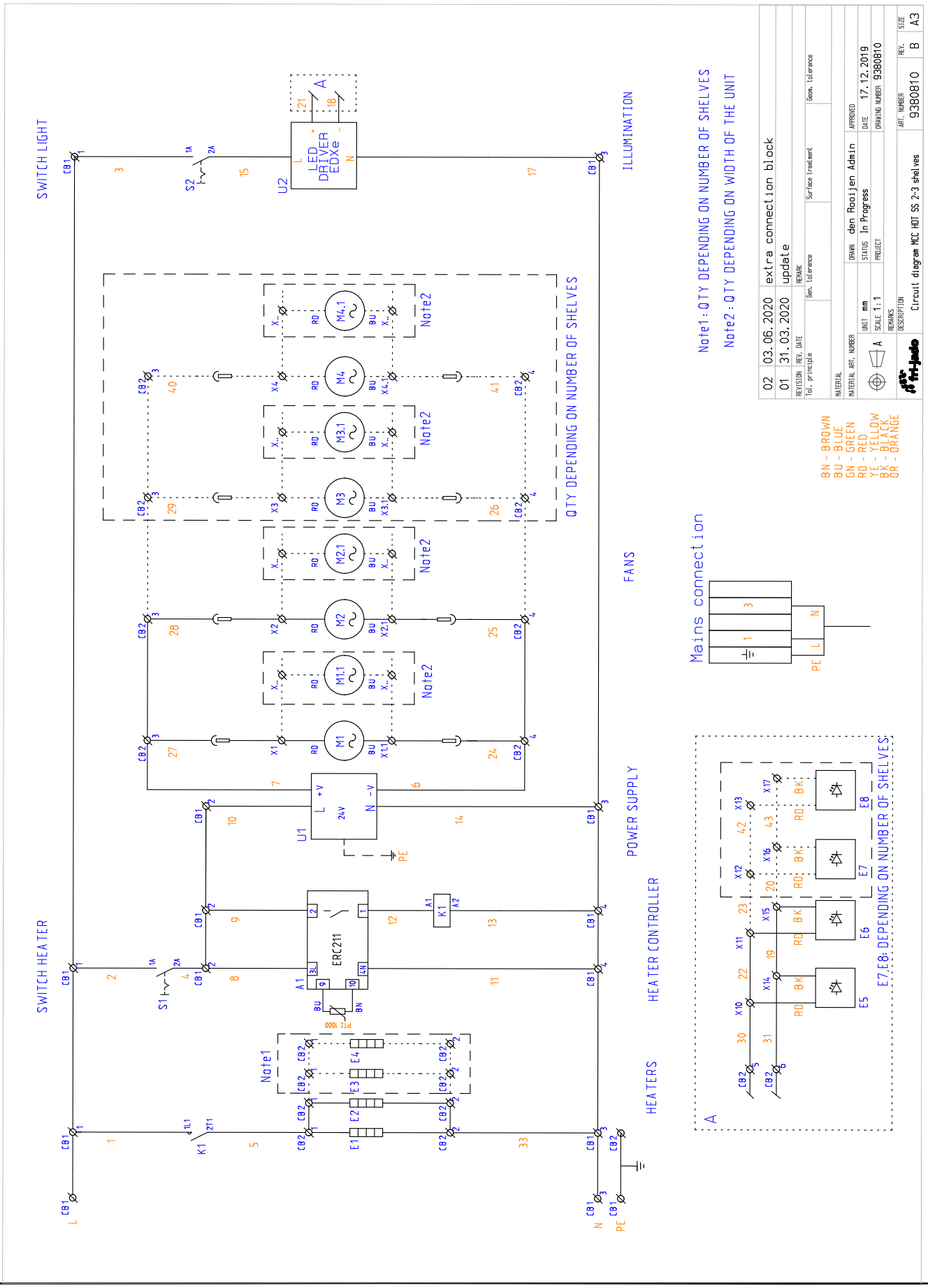


14.9 Exploded view MCC Hot Electrical (Humidified)

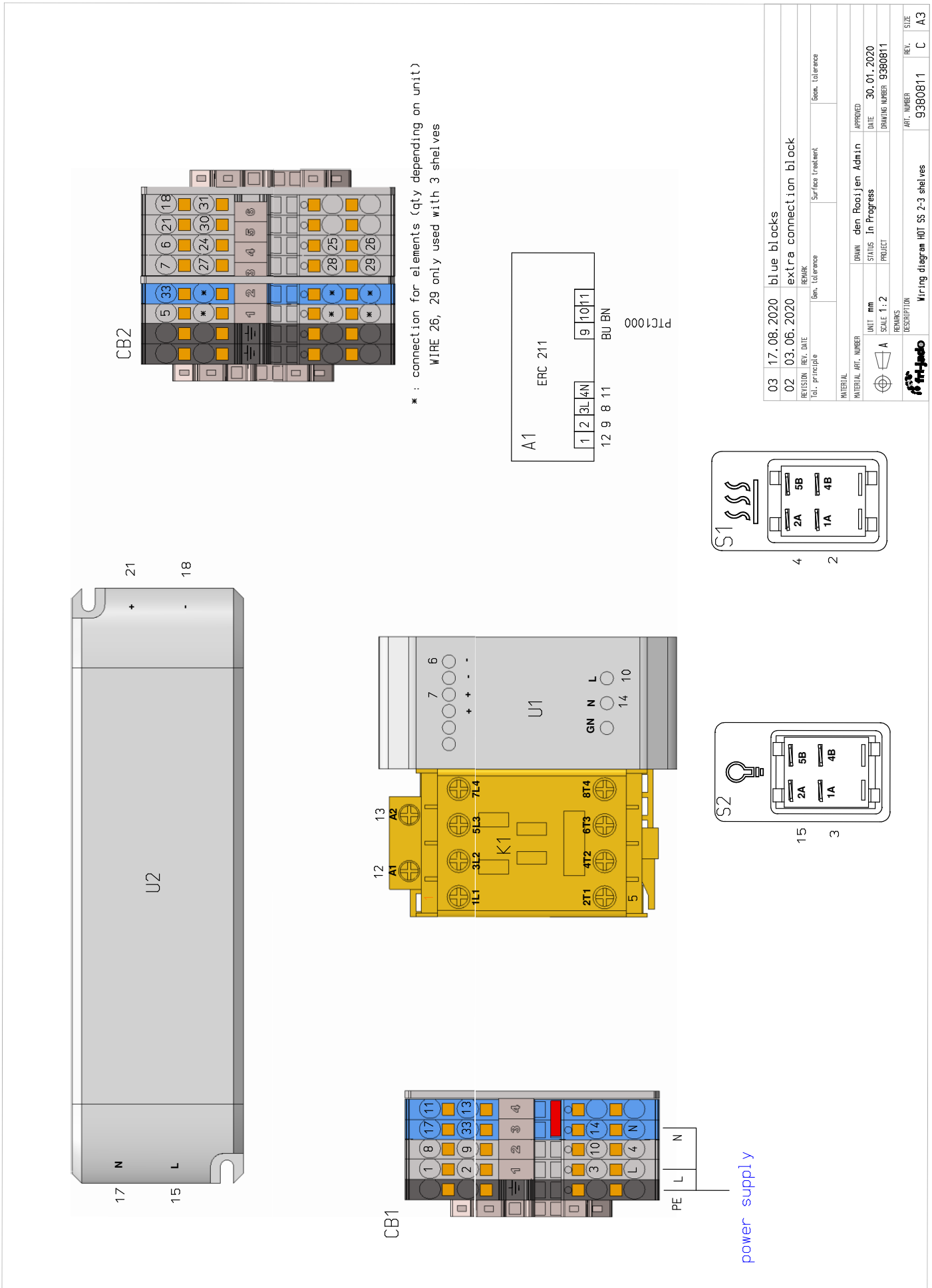
Number	Description	Article number	Quantity
34	Sensor PTC 1000	9221011	1
35	Model plate	9110810	1
36	Sticker Black Elect. sign triangle	3500105	1
37	Thermostat ERC211	9221109	1
38	Switch	9181008	2
39	Switch dummy	30002730	Depending variation
40	Sticker Lightning	9181071	Depending variation
41	Sticker Lower Heat	9181072	1
42	Led Armature support bracket	9384091	Depending variation
43	LED Armature MCC 60 LED Armature MCC 90 LED Armature MCC 120	9384110 9384090 9384111	Depending variation
45	Led 3000k 12V 400mm MCC 60: Led 3000k 12V 700mm MCC90 Led 3000k 12V 1000mm MCC 120:	9382075 9382067 9382068	Depending variation
44	Led Armature support bracket	9384091	Depending variation
50	Led driver EDXe 160/12.054	30007730	1
52	Box electronics	9384094	1
53	Strain relief Nut for cable gland	9222076 9222077	Depending variation
54	End Clamp Clipfix 35-5 PHX	9191222	Depending variation
55	Terminal PT 4 (GN/YE) Terminal PT 4 (GY)	9191239 9191240	Depending variation
56	End cover D=PT 4 PHX	9191223	2
57	Contactor AB100-C09KL400	3500069	1
58	Power supply 24VDC 40W	9381012	See remark serial number
59	End Clamp Clipfix 35-5 PHX	9191222	2
60	Dinn rail	9293057	1
61	power cable	9091383	1
62	Cover Electonics box	9384095	1
64	signal light	9291031	1
65	reset switch	9381042	1
66	label reset switch	30004729	1
70	PCB water level control	9181047s	1
71	Valve inlet 2.5l.min	9261040s	1

15.0 Electrical schematic MCC Hot (Self Serve, One phase)

Schematics till production week 42 2021

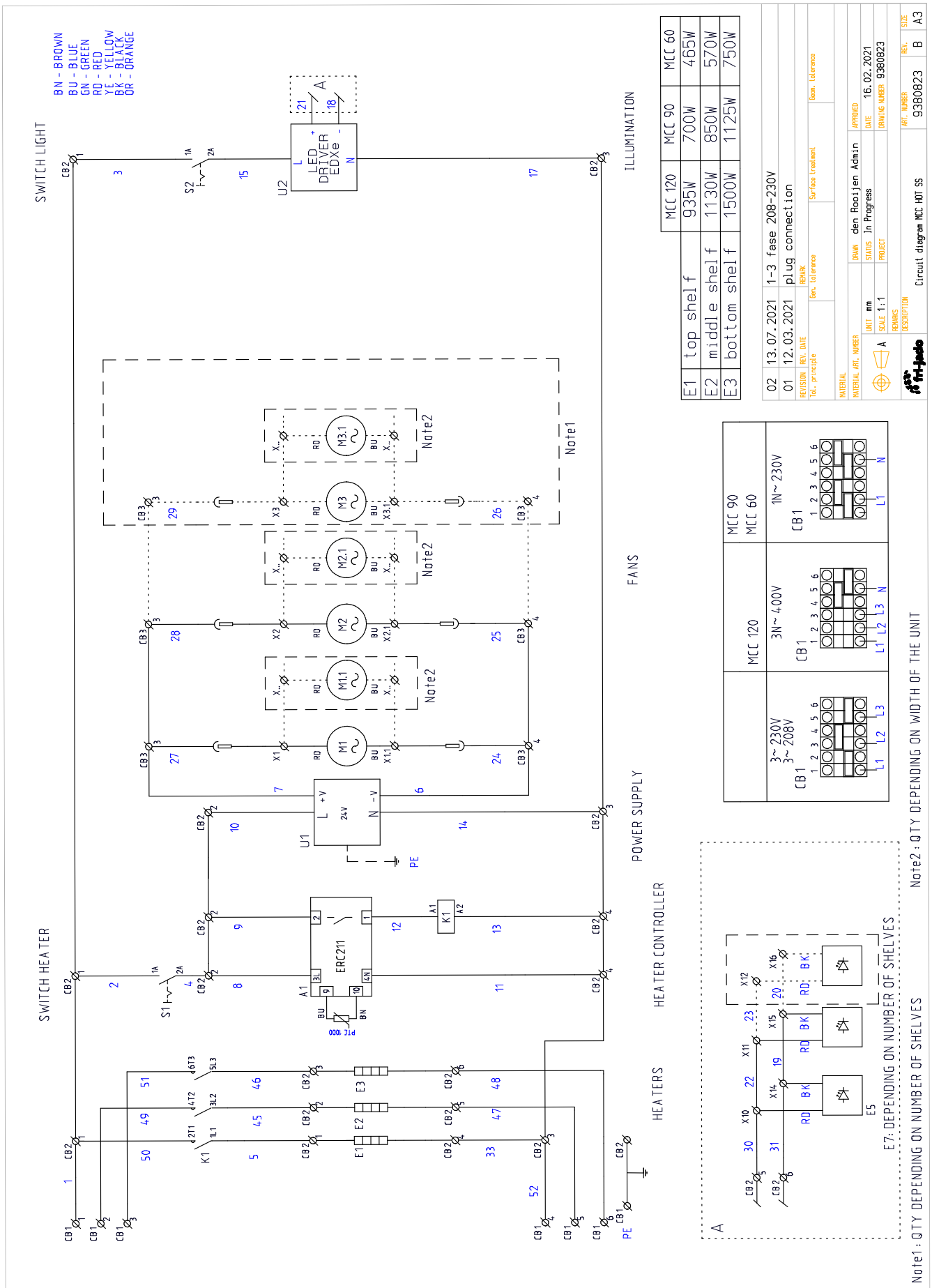


15.0.1 Electrical wiring MCC Hot (Self Serve, One phase)



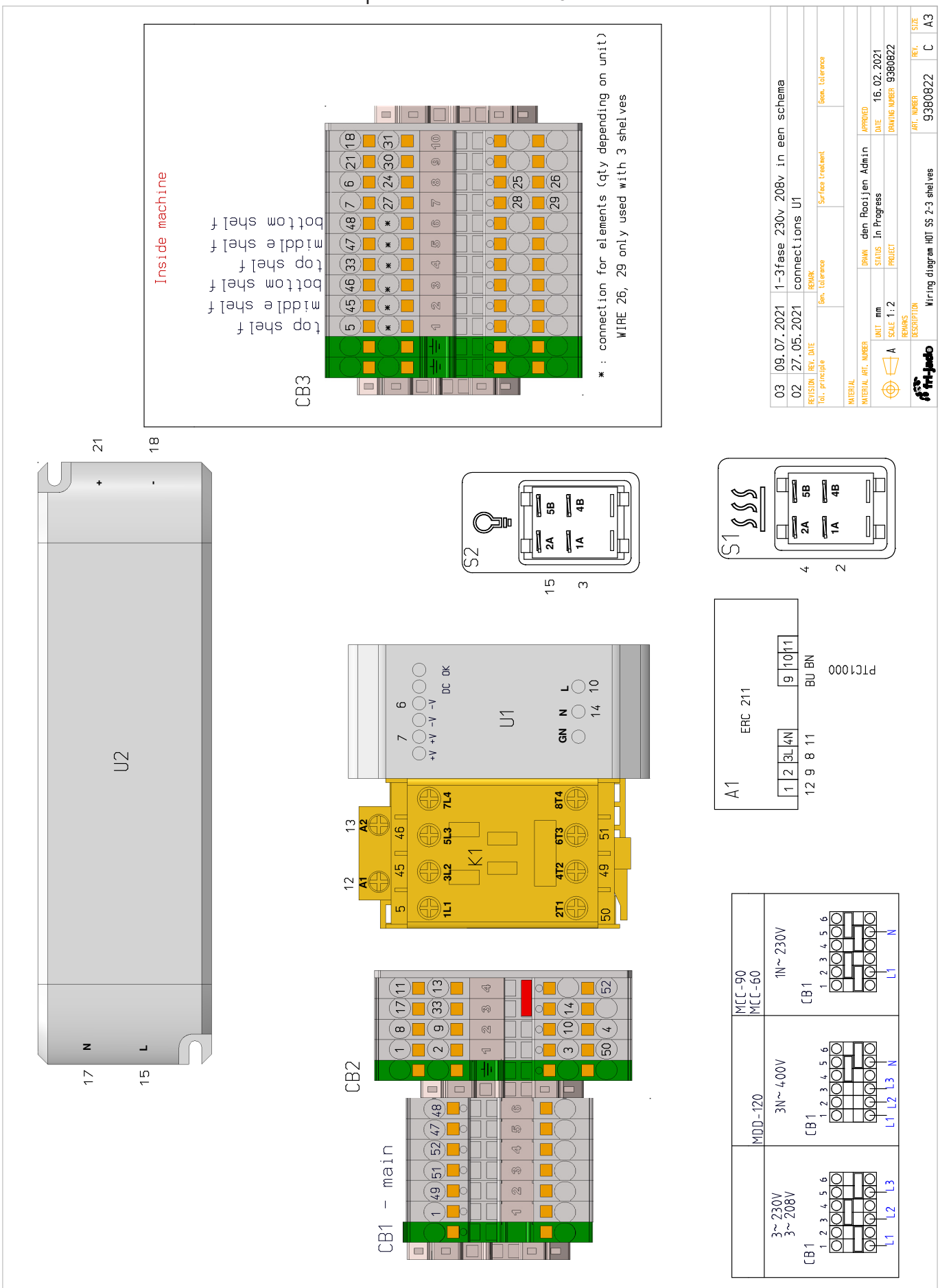
15.0.2 Electrical schematic MCC Hot (Self Serve)

Schematics started production week 42 2021

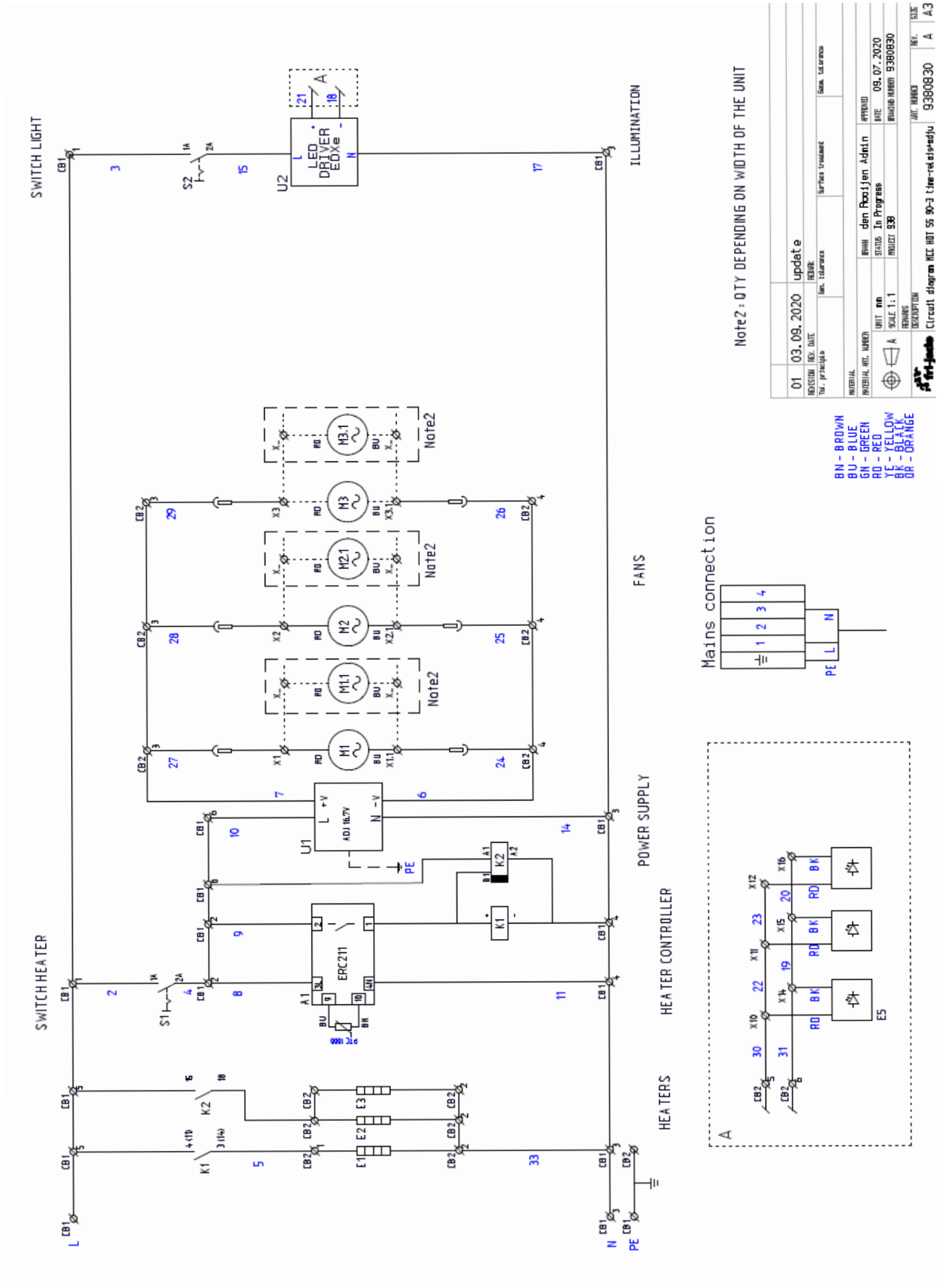


15.0.3 Electrical wiring MCC Hot (Self Serve)

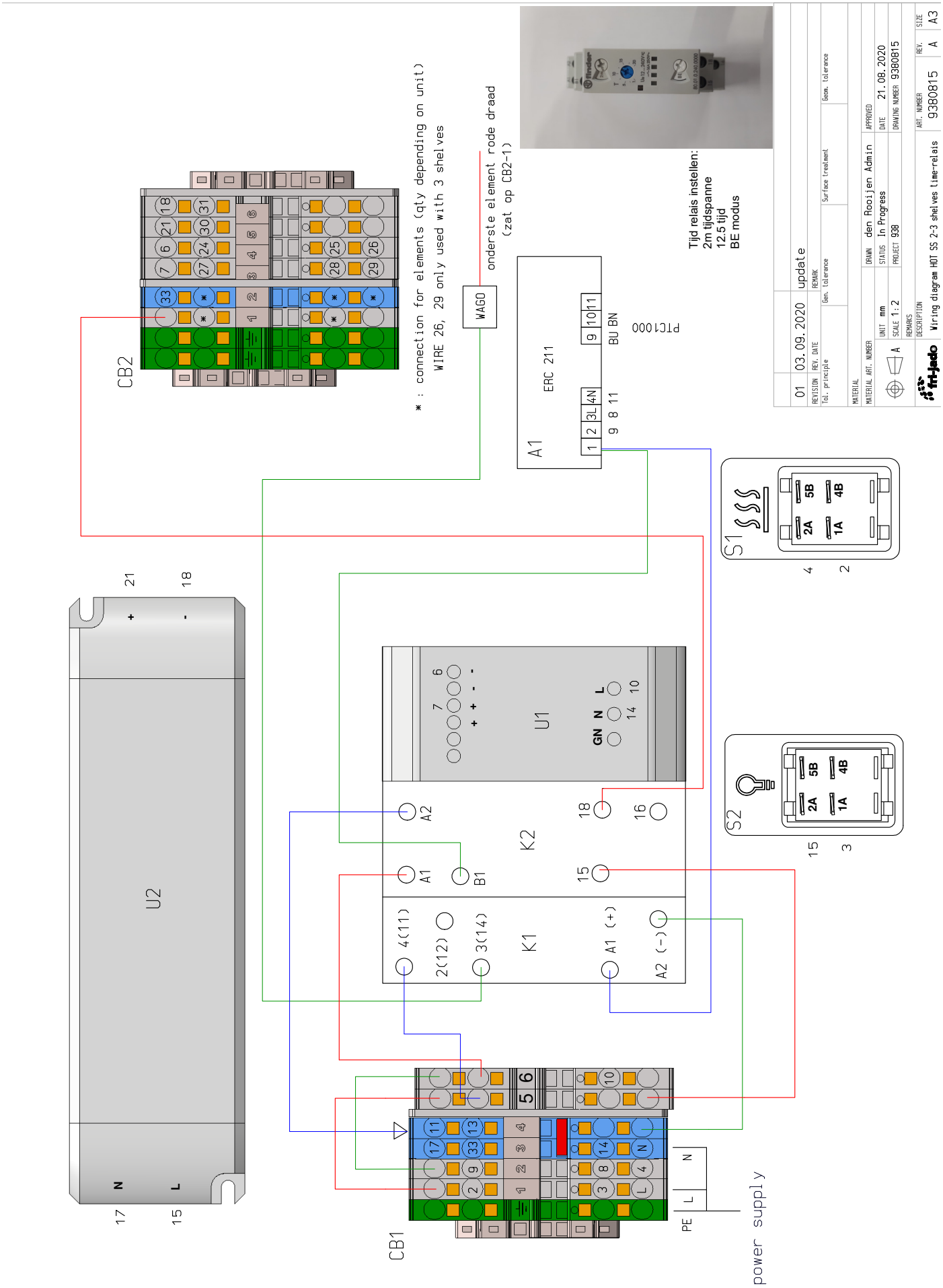
Schematics started production week 42 2021



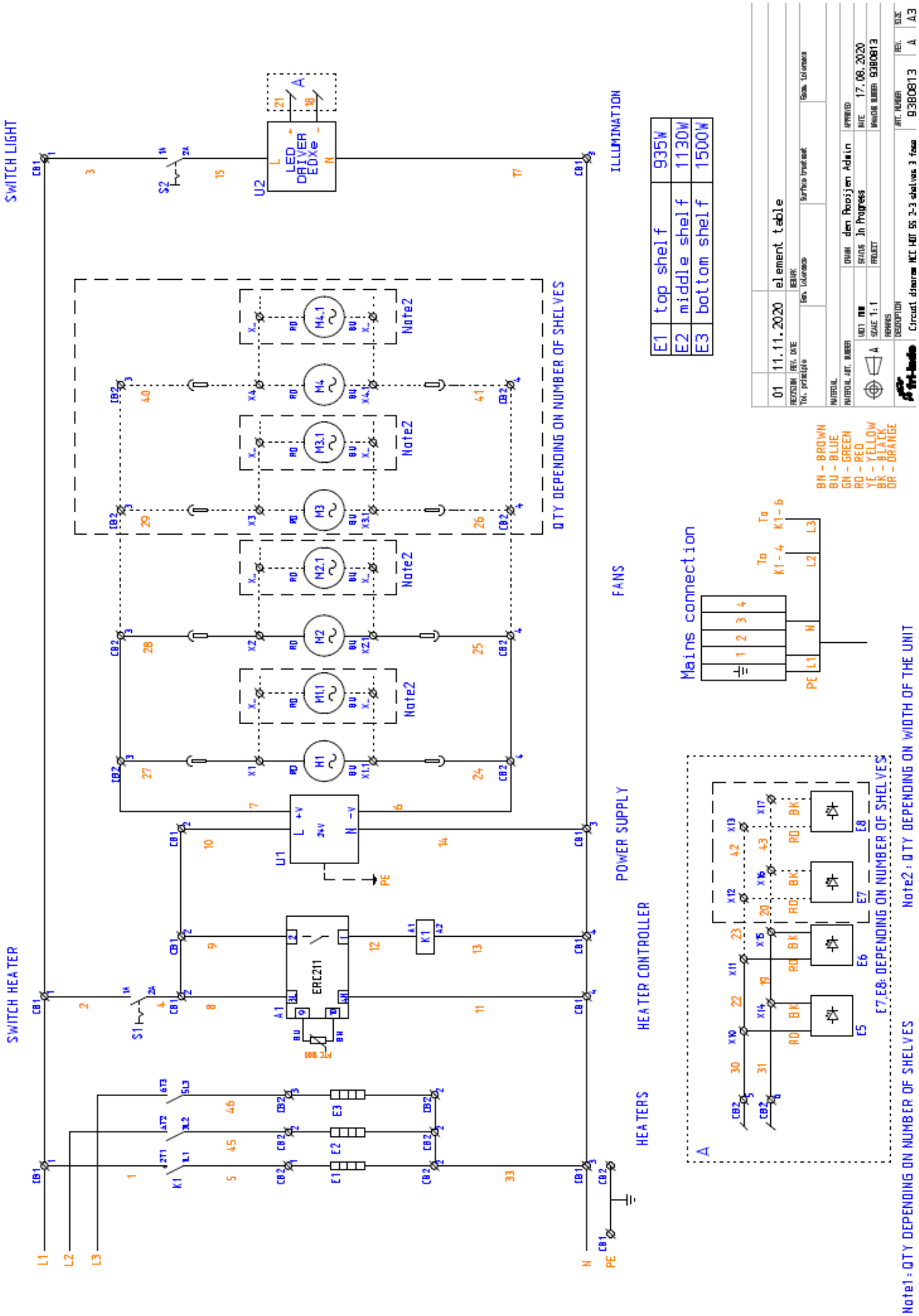
15.1.0 Electrical schematic MCC Hot (Self Serve) (One phase and time relay)



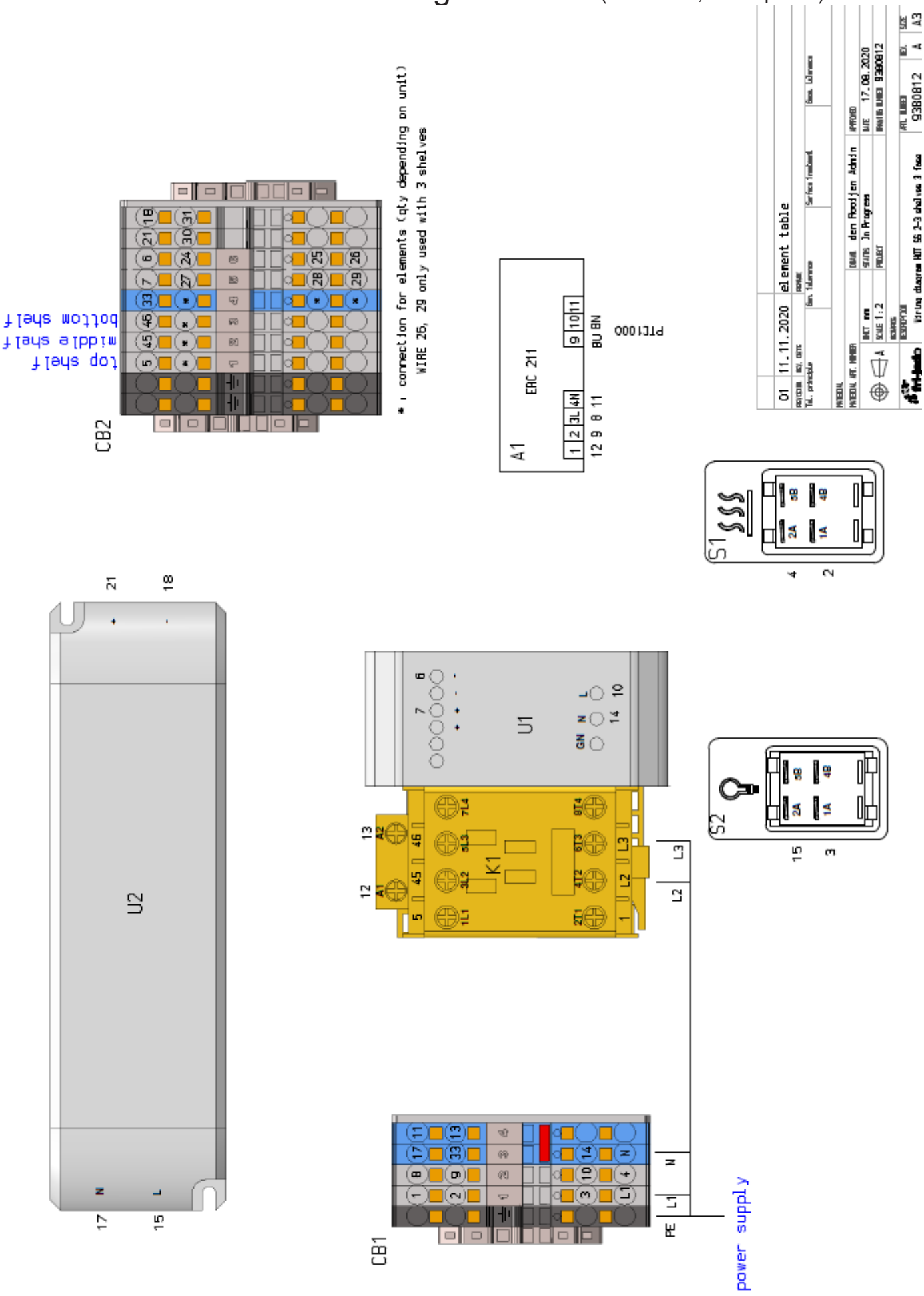
15.1.1 Electrical wiring MCC Hot (Self Serve) (One phase and time relay)



15.2.1 Electrical schematic MCC Hot (Self Serve, Three phase)

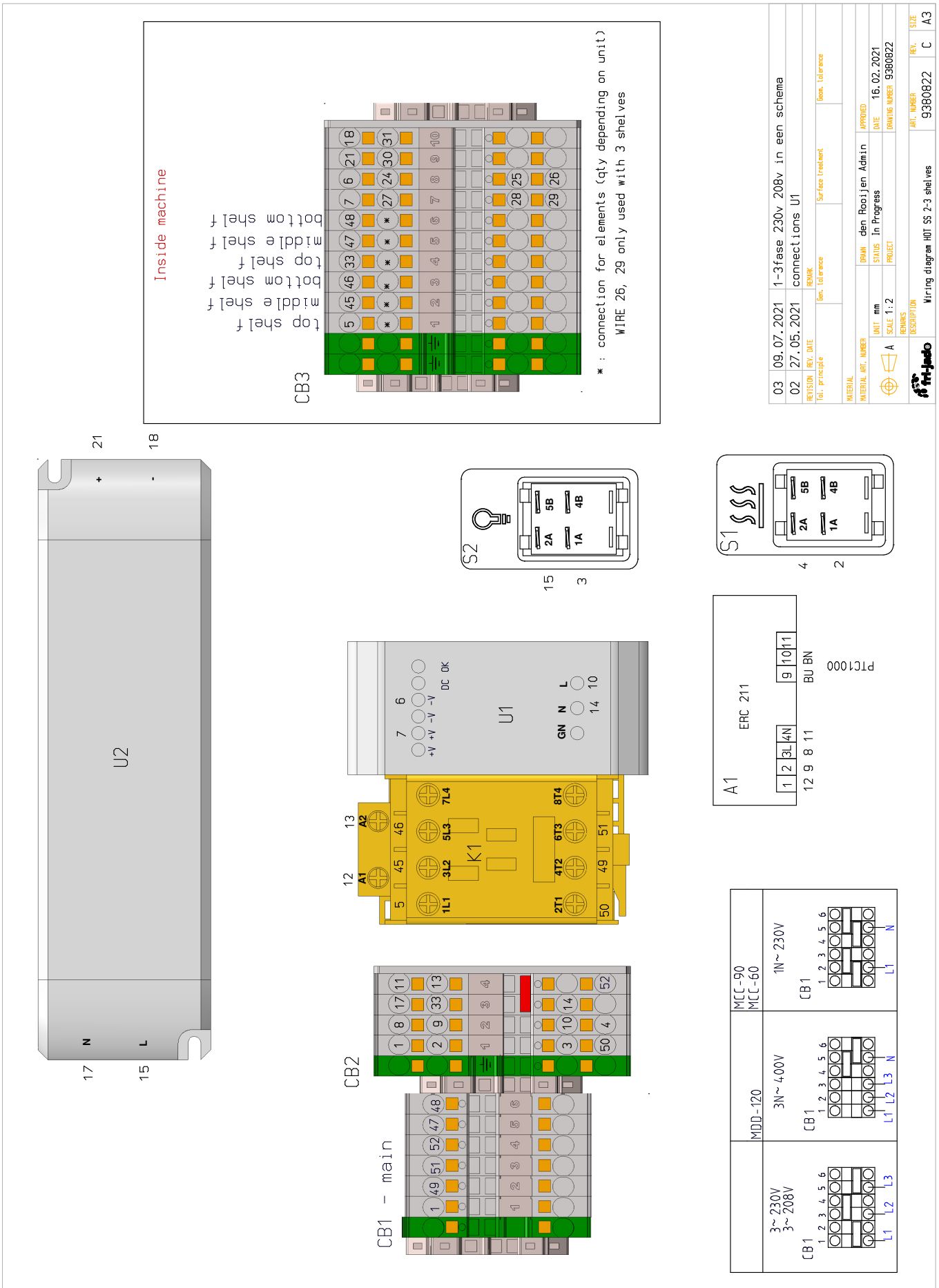


15.2.2 Electrical wiring MCC Hot (Self Serve, Three phase)



15.2.3 Electrical wiring MCC Hot (Self Serve, Three phase)

Schematics started production week 42 2021



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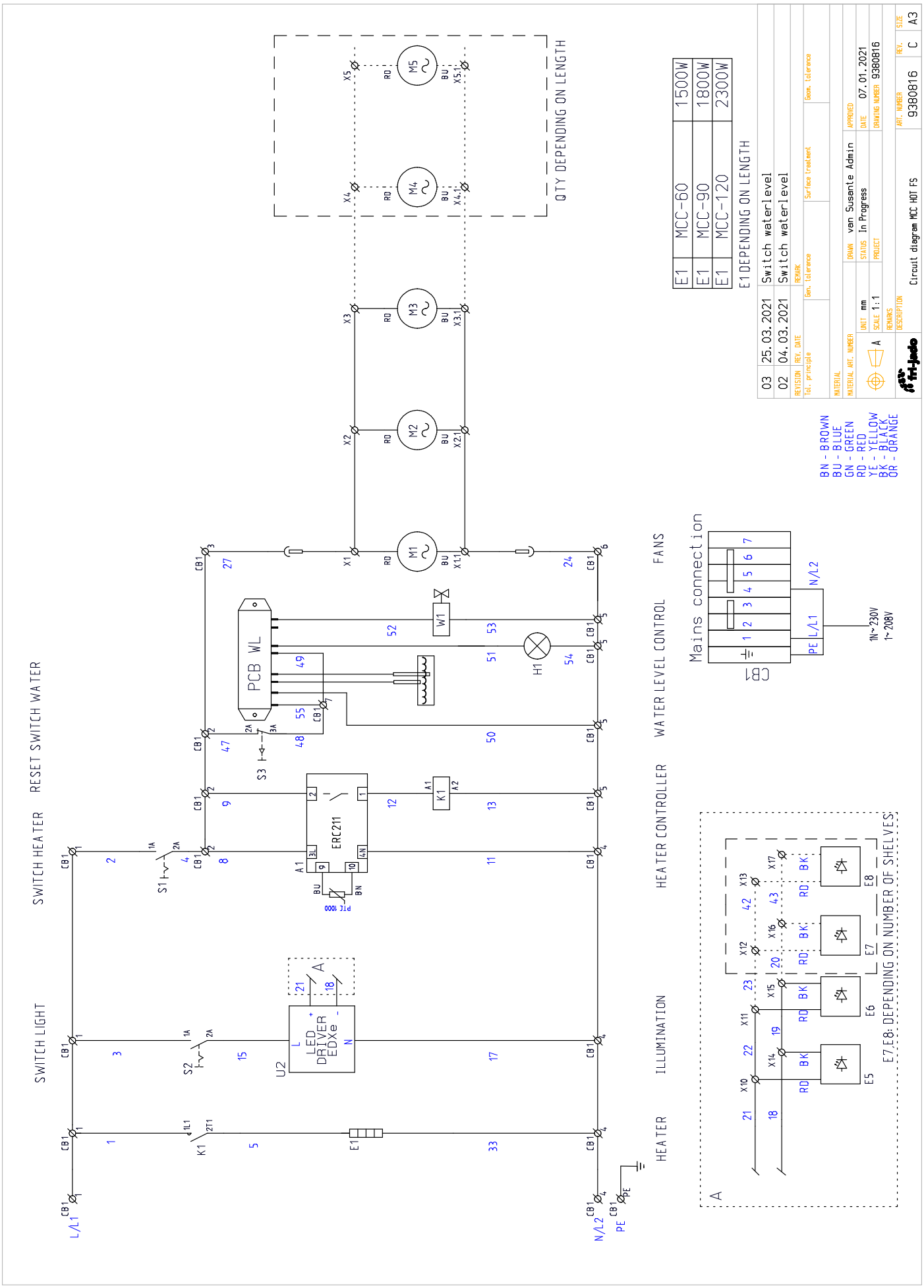
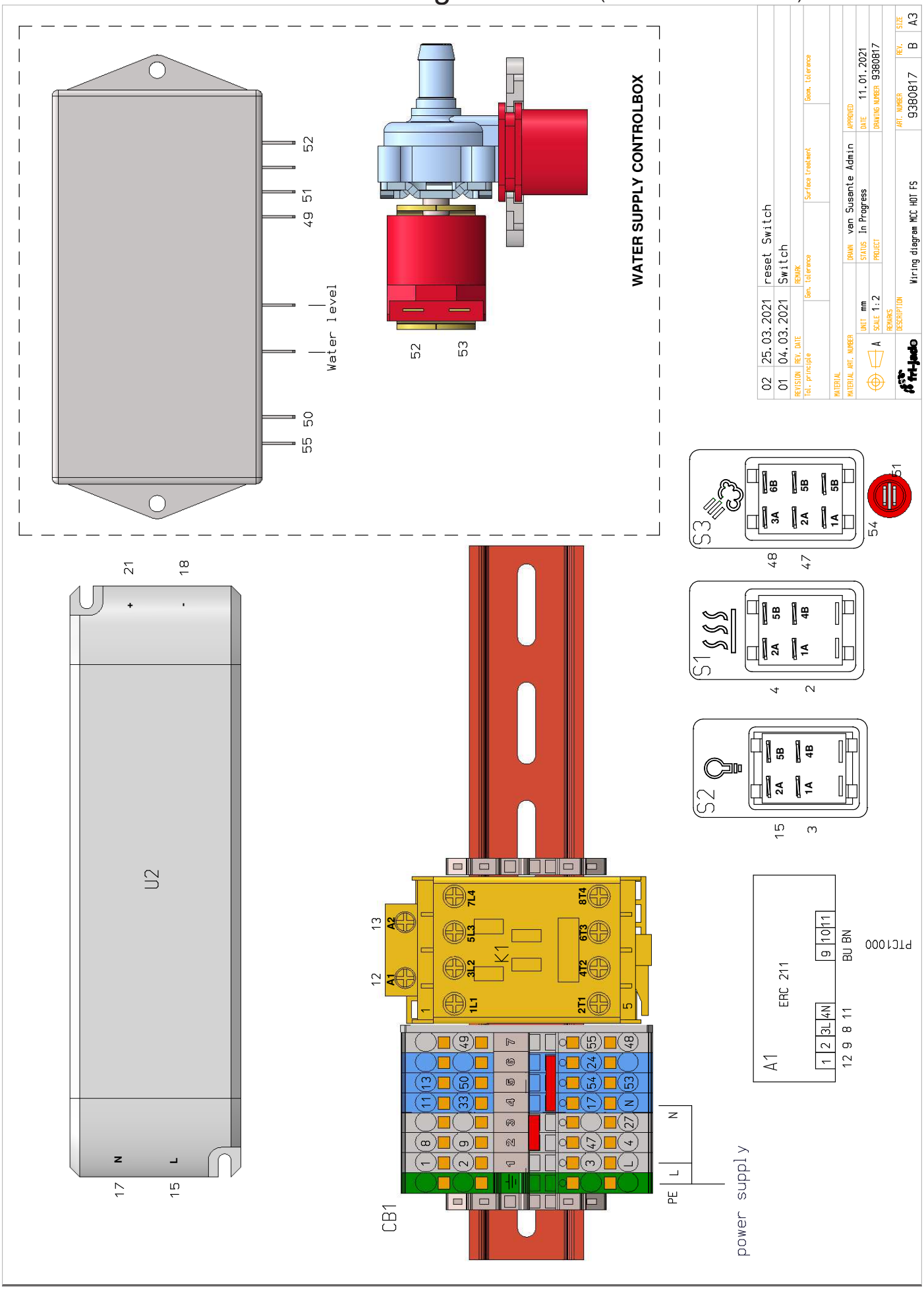
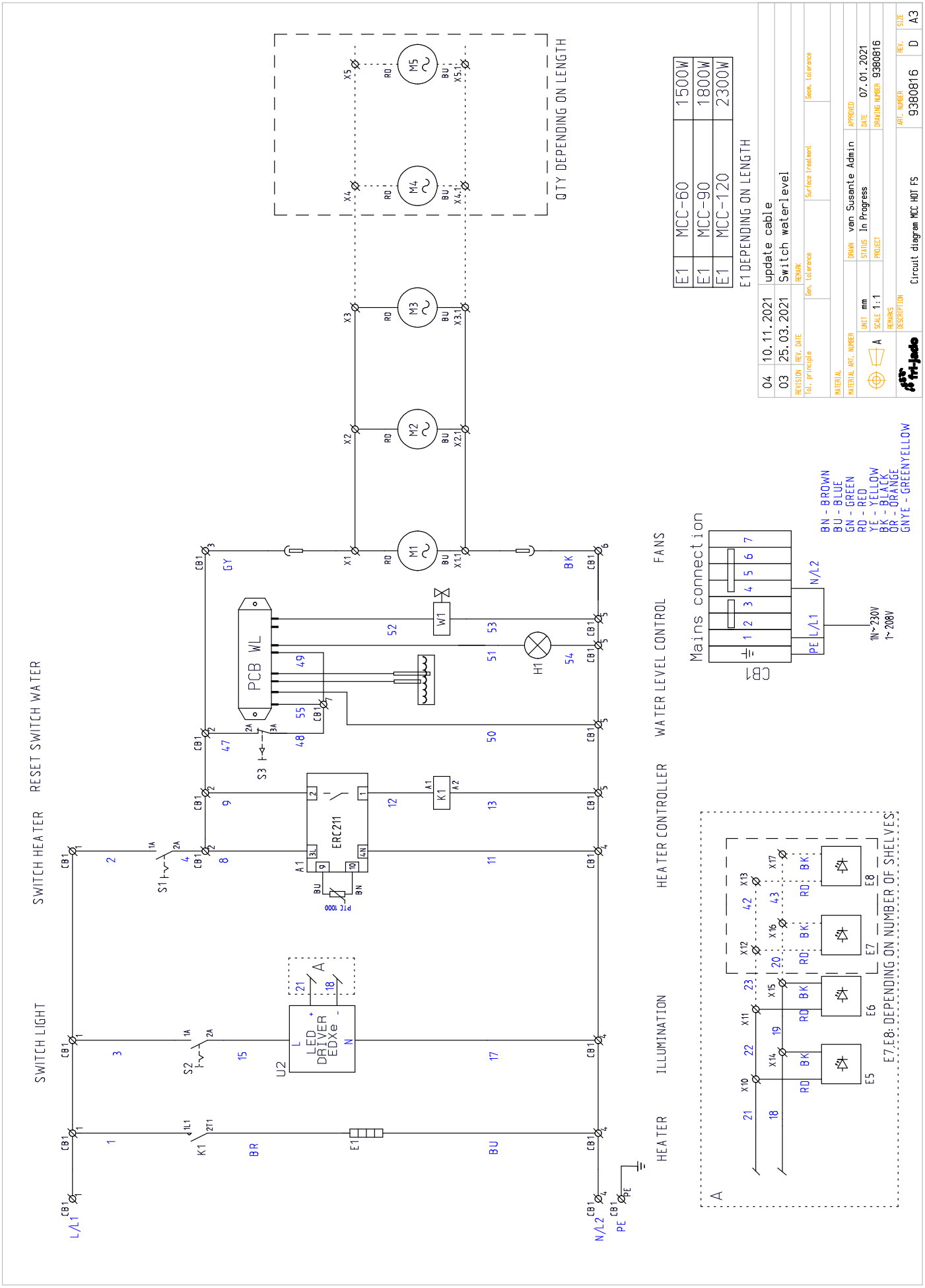
15.3 Circuit Diagram MCC Hot (Full Serve first version)



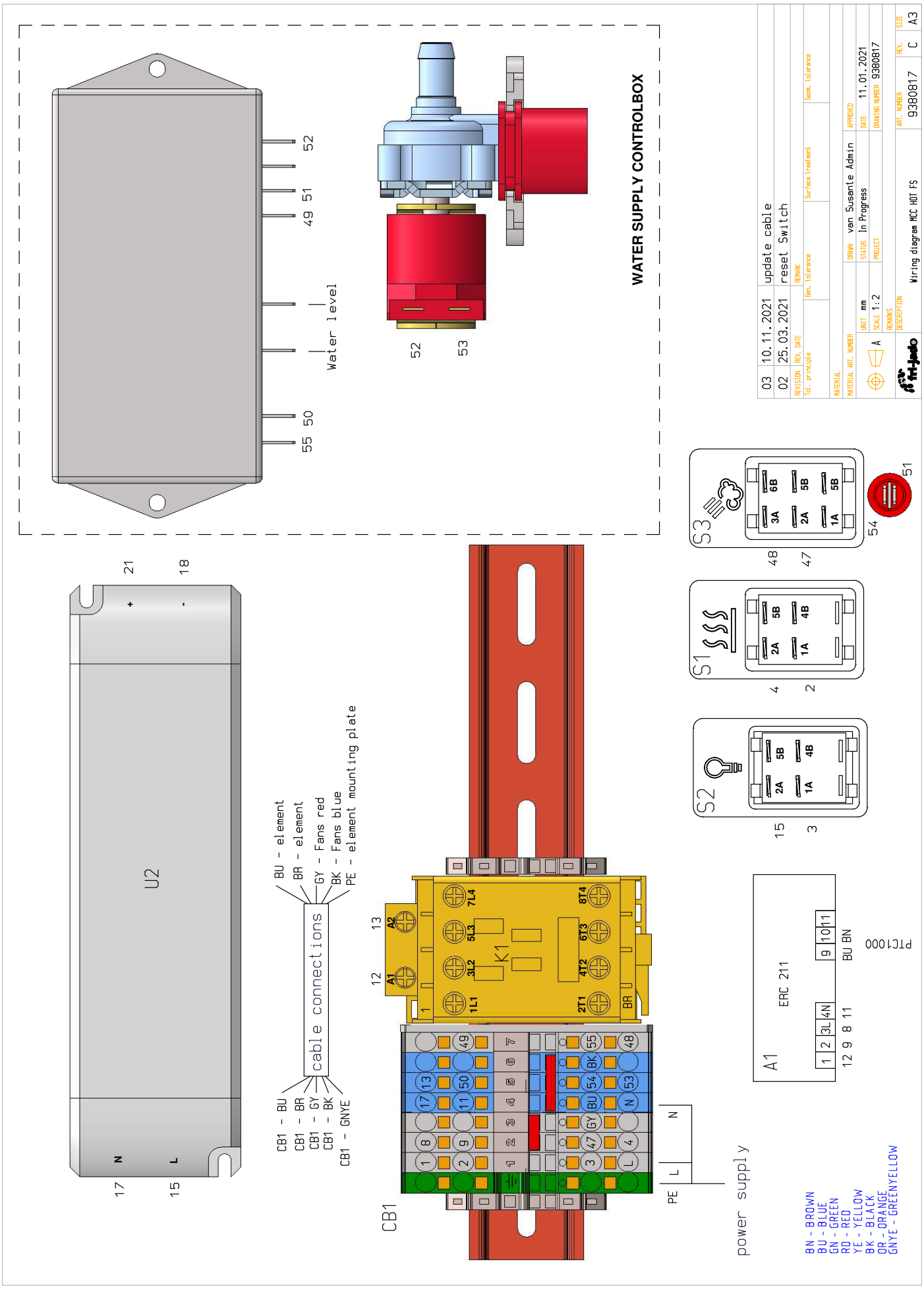
15.4 Electrical wiring MCC Hot (Full Serve first version)



15.5 Circuit Diagram MCC Hot (Full Serve second version)



15.6 Circuit Diagram MCC Hot (Full Serve first second version)



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