9124728
SERVICE MANUAL
MODULAR CONVENIENCE COUNTER
MCC COLD EU

- 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.

**Reproduction of this service manual,
Without the express written consent of Fri-Jado,
Is prohibited.**

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	07-2022	Change into EU and USA manual version
		ERC alternatives replacement
Rev 6	10-2023	Adding part number front doors
Rev 7	05-2024	Adding Next controller and reversible fan motor

KEEP THIS USER MANUAL FOR FUTURE USE

Index

1.0 Introduction

1.1 General

This manual is intended for trained technicians, performing repairs on the MCC.
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 MCC 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

SAFETY
System contains refrigerant under high pressure

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.

- 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 Cold units with R290 (propane) refrigerant

Propane refrigerant is environmentally friendly but also highly flammable.
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.

WARNING

R290

The propane refrigerant is highly flammable. All safety precautions must be followed.
Keep all ventilation openings in the housing of the appliance or in the installation free from
Obstructions.
Do not use mechanical devices or other means to accelerate the defrosting process.
Do not damage the refrigerating circuit.
Do not use electrical appliances inside the food/ice storage compartments.
Propane refrigerant does not contain odor.

SAFETY

Wear eye protection when working on the refrigeration system.

- Install the unit in a well ventilated area with sufficient floor space: refer to the data sheet for minimum space requirement.
- Do not install the unit in basements, in area's with open flames or high surface temperatures.
- Do not tamper with the system.
- The system must be installed and maintained by trained and qualified persons only.
- The ventilation openings of the cladding of the unit (including accessories) must not be blocked or covered. Ensure that the air circulation remain unobstructed.
- Electrical devices used within this unit must be certified by the applicable ATEX directive.

Residual risks:

- Sparks from electrical devices or hot surfaces may unintentionally ignite possible leaked refrigerant gas.

1.4.3 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.

1.4.4 Outdoor use restrictions

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

1.4.3 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 the user manual carefully and follow all precautions described herein.

SAFETY
Wear eye protection when working on the refrigeration system.

- 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.

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.

WARNING
Cold units: Propane refrigerant is highly flammable.

At all times all safety precautions must be followed.

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 Cold units Self Serve: (OmiCold Air flow technology)

Cooling is achieved by means of a thermostatic temperature-controlled cold airflow.
Cold air is passed via the back and shelves over the products.

☞ Between price rail and child glass an opening exists which is vital for the airflow inside the unit.
Price rail must always be kept in place .

For MCC Cold SS:
Price rail is integrated part of air guidance inside the unit.
Removing the price rail will result in a bad functioning MCC

Self-serve models have an additional set of fans mounted in the top to create a stable air curtain on the open side of the cabinet to minimize the infiltration of warm ambient air. The air on the front side passes through the suction grid in the bottom of the unit.

Temperature of the airflow is controlled electronically.
The electronically controlled thermostat is factory pre-programmed.
Set temperature can be changed from -6 ºC to +0 ºC (21.2 ºF to 32 ºF).

The units must be connected to a fixed drainage system or an optional evaporation tray to evacuate condensation water.

One LED-module per level provides lighting of the products.
Lighting and cooling are switched on simultaneously

Self-serve models can be fitted with an optional night curtain.

Air flow Self Serve   Air flow Full Serve
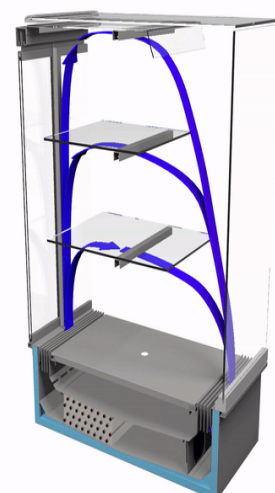
3.0 Unpacking

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.
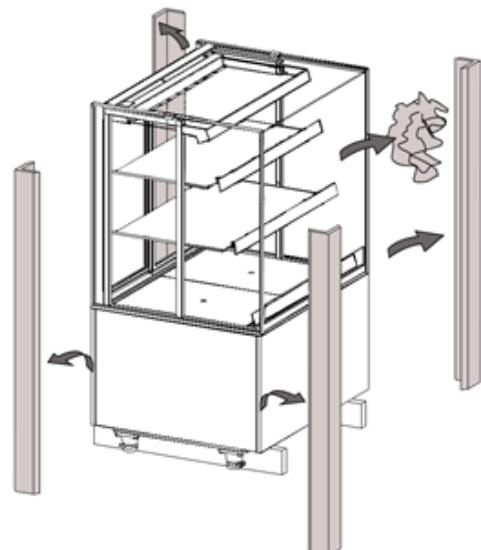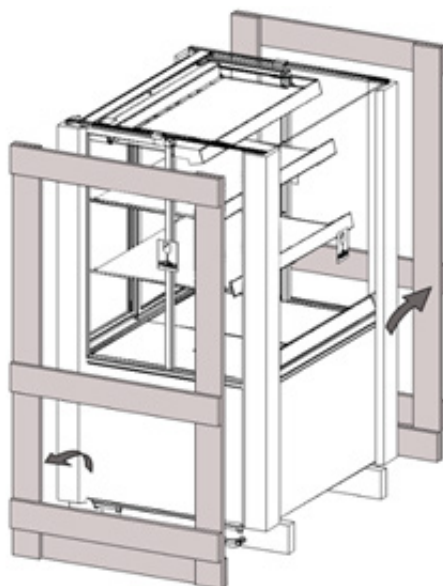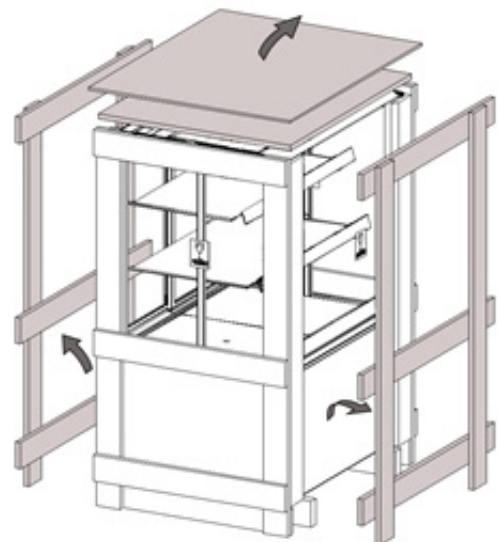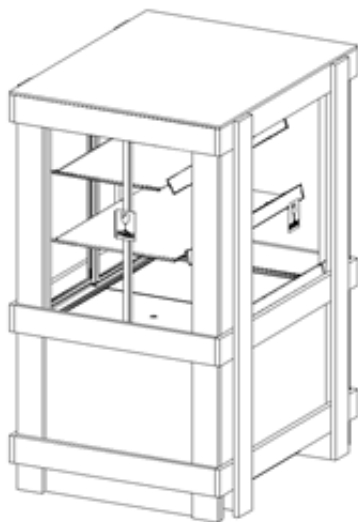
Refer to User manual for installation procedure
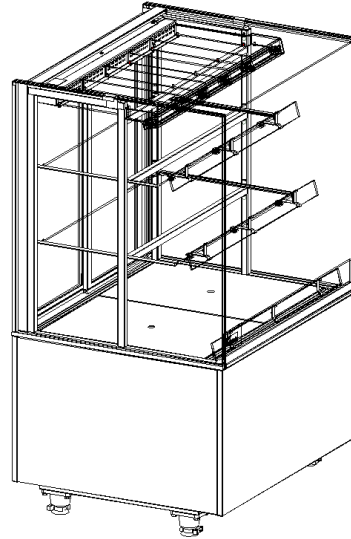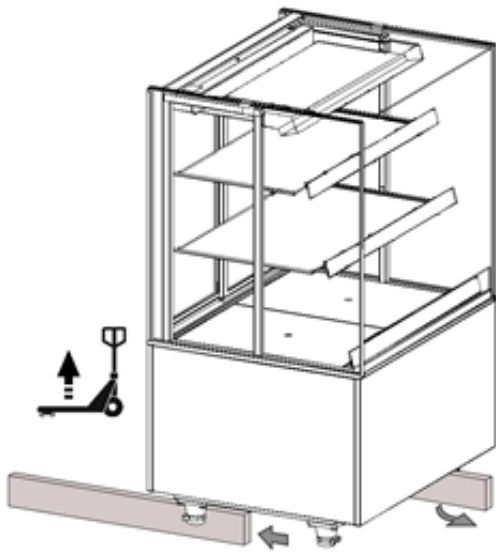
4.0 Installation

4.10 Installation and positioning

WARNING

Cold units: The propane refrigerant is highly flammable.
All safety precautions must be followed.

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.
(Refer to next page)

- MCC cold: Please take notice of label with minimum space required

- 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.

- Be sure that the ambient temperature for cold models remains between
10 ºC - 25 ºC (50 ºF - 77 ºF) and that the relative air humidity remains below 60%.
Cold units have been designed to operate at climate class 3 (according ISO 23953).

- Keep the plinth attached and free from any obstacles to ensure ventilation.
The plinth is acting as air blockage between "cold" air intake and "hot" air outlet

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 even death.

4.1   Applying price rail

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

Cold self-serve models are supplied with price rails as standard.
Price rail is integrated part of air guidance inside the unit.
Removing the price rail will result in a bad functioning MCC

4.2   Repositioning the glass shelves on Cold FS/SS 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 shelf supports at the rear.

Examples:
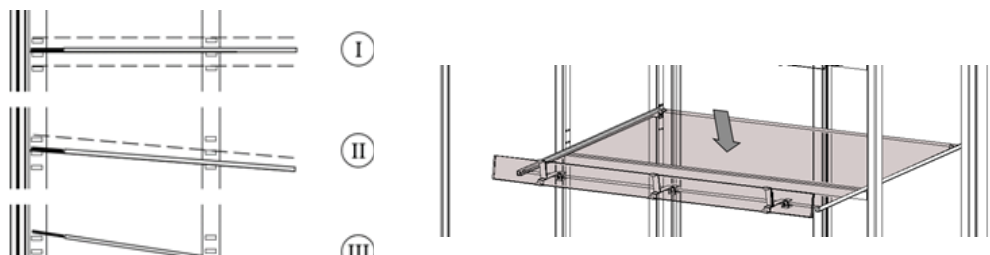
For repositioning details refer to User manual

4.4   Plateau Options
On most MCC models, 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.
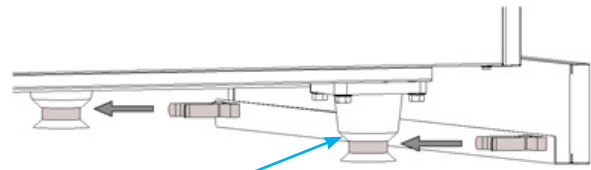
Insert the pegs of both side plinths into the slots of the rear plinth.
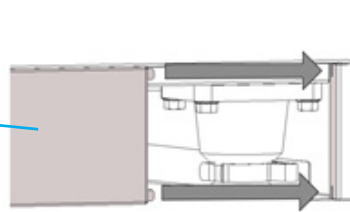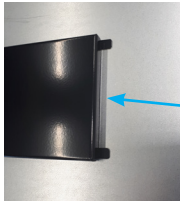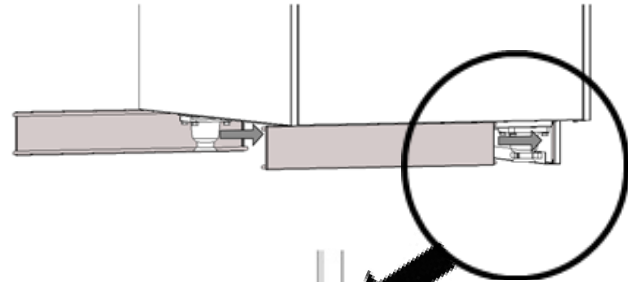
Secure the side plinths by inserting the pegs into the slots of the front plinth, while clamping the front plinth to the front adjustable legs.
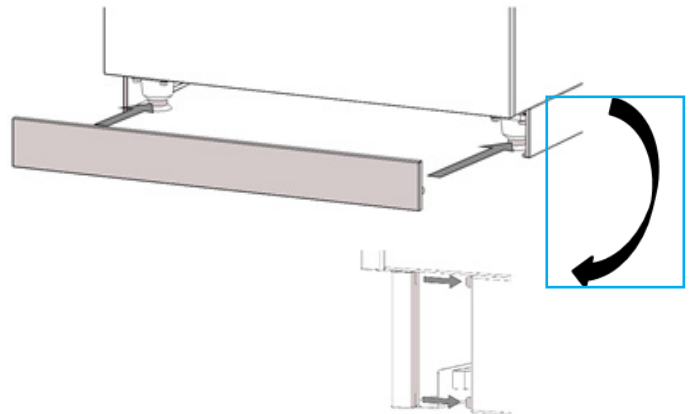
Result
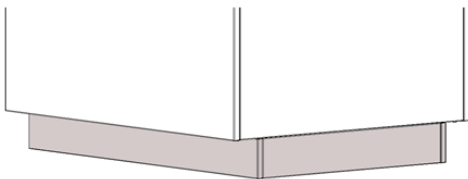
4.1 connecting drain or evaporation tray

4.9 Connecting drain
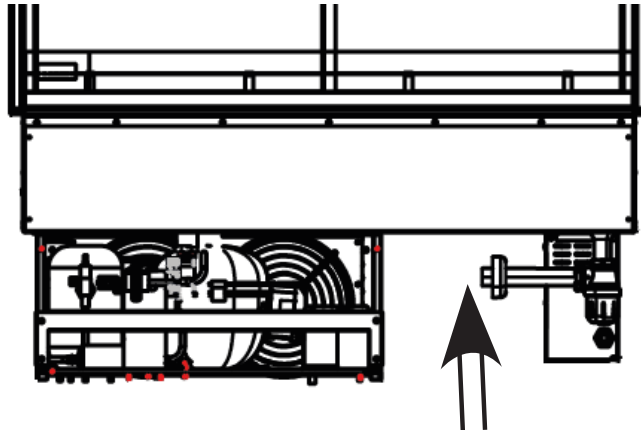
During the installation process of the MCC Cold, a drain connection must be made. Connect the drain of the unit, onto the main drain of the building using PVC piping (not included).

If no drain connection can be made, **an evaporation tray must be placed.**

4.10 Installation of the evaporation tray (including specification)
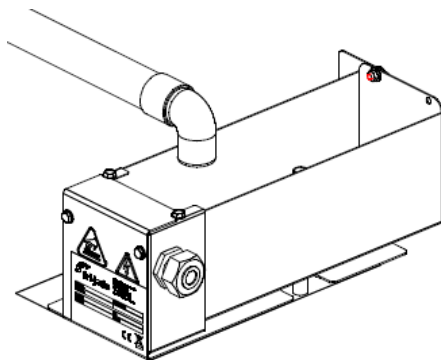
1. Turn of unit, and pull power plug from wall outlet.

2. Open back panel of unit

3. Extend drain of unit, using the delivered drain pipe.
    Cut pipe on required length (depending on measurements of unit).

4. Put angle piece on end of drain pipe, exactly above the evaporator tray.

5. Place evaporation tray in position and mount this with two bolts and nuts

    Evaporation tray must be placed with the serial number label faced to the back of the unit. Label must remain visible (readable) (see drawing below)

6. Connect power cord of evaporator tray to outlet on electrical box of MCC unit.

4.1 connecting drain or evaporation tray

BK1

CB1
1

BN   BN

E1   E2

BN   BN

CB1
2

BK2

2
PE   PE

EVAPORATION HEATERS

BN - BROWN
BU - BLUE
GN - GREEN
RD - RED
YE - YELLOW

Mains connection

PE L N

REVISION	REV. DATE	REMARK			
Tol. principle		Gen. tolerance		Surface treatment	Geom. tolerance
MATERIAL					
MATERIAL ART. NUMBER		DRAWN van Susante Admin		APPROVED	
	UNIT mm	STATUS In Progress		DATE 20.10.2020	
	SCALE 1:1	PROJECT 938		DRAWING NUMBER 9380801	
A	REMARKS				
	DESCRIPTION			ART. NUMBER	REV.	SIZE
fri-jado	Circuit diagram Evaporation tray			9380801	A3

4.1 connecting drain or evaporation tray

BN - BROWN
BU - BLUE
GN - GREEN
RD - RED
YE - YELLOW

F***
Brown
N***
Blue
Yellow/green

Brown wire
wagoterminal grey

Brown wire
wagoterminal blue

Brown wire
wagoblok grijs

Brown wire
wagoterminal blue

Yellow/green wire 26 to wagoterminal

Mains connection

PE L N

Cable input

Sticker

REVISION | REV. DATE
Tol. principle
MATERIAL
MATERIAL ART. NUMBER
REMARK
Gen. tolerance
Surface treatment
Geom. tolerance

UNIT mm
SCALE 1:1
REMARKS
DESCRIPTION
Wiring diagram Evaporation tray

DRAWN van Susante Admin
STATUS In Progress
PROJECT 93B
APPROVED
DATE 29.10.2020
DRAWING NUMBER 9380802

ART. NUMBER
9380802
REV.
SIZE A3

4.11 Intended use

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

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.

Cold Units

Cold units are factory programmed to achieve a product temperature ≤ 5 ºC (41 ºF) at an ambient of 25 ºC (77 ºF) with a relative humidity of 60% by a max. draft of 0.2 m/s (0.66 ft/sec).
This corresponds with 3M1 classification according to ISO 23953:2015.

The set temperature can be changed from -6 ºC to +0 ºC (21.2 ºF to 32 ºF).

Switching-on the unit
• Switch the cooling on by means of the temperature controller.
• Let the unit cool for approx. 30 minutes.

Loading the unit
• Only load products of which the **temperature is maximum 4 ºC (39.2 ºF).**
• 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.
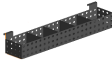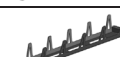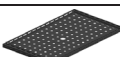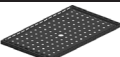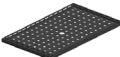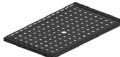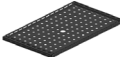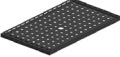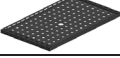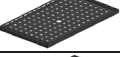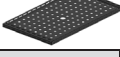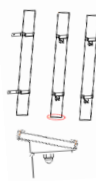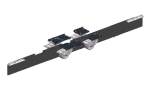
4.2 Connecting Remote refrigeration piping
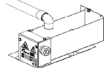
Pressurized system

1. Release pressure
2. Cut tube

Suction Line

Operator side

Liquid Line

Insulation

Warning:
System contains refrigerant under high pressure.
Do not temper with the system.
It must be serviced by qualified persons only.
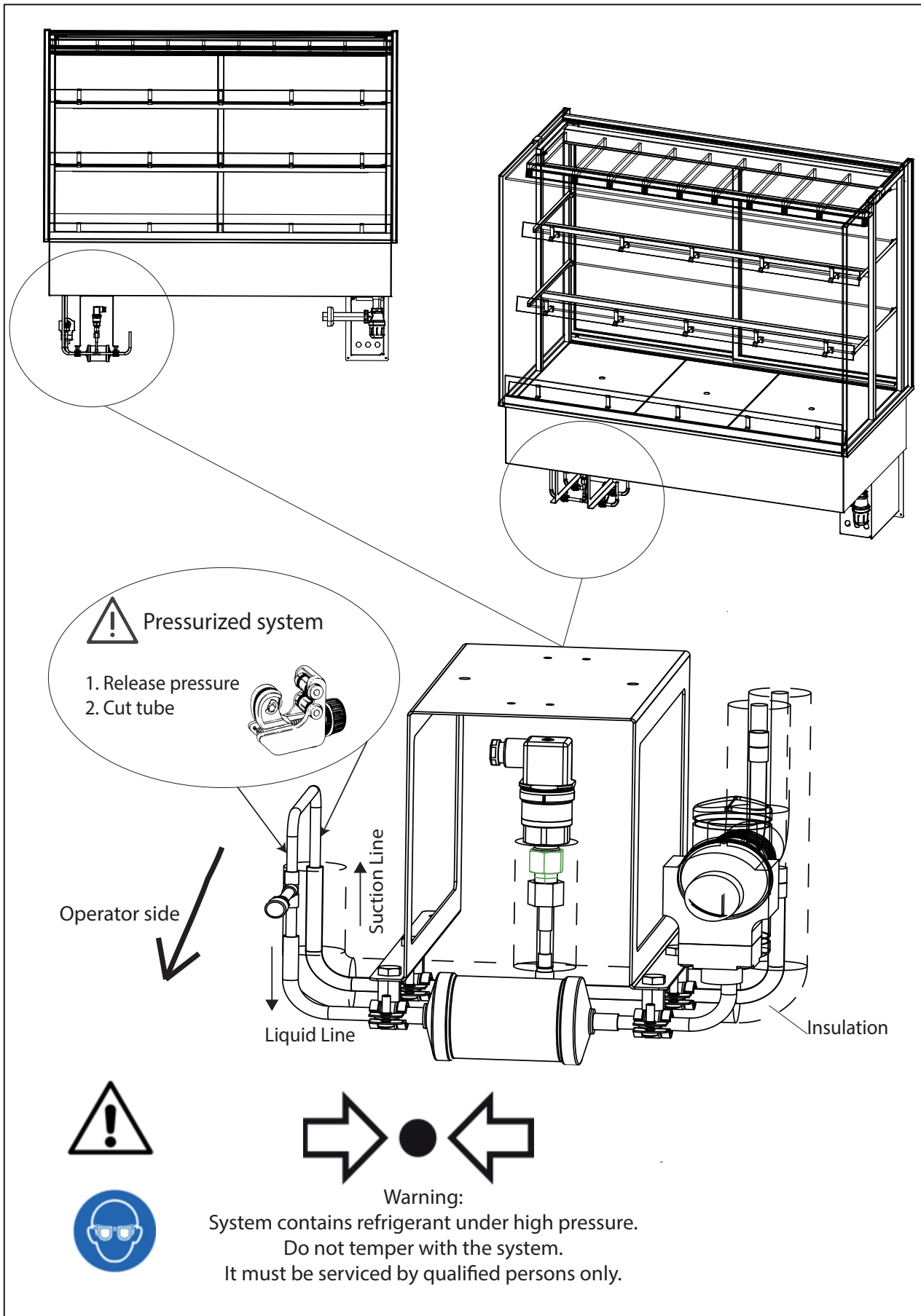
4.3 Accessories

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				

5.0 MCC Drop-in

For installation guide, refer 5.6

The MCC Drop in will be delivered, packed in a crate
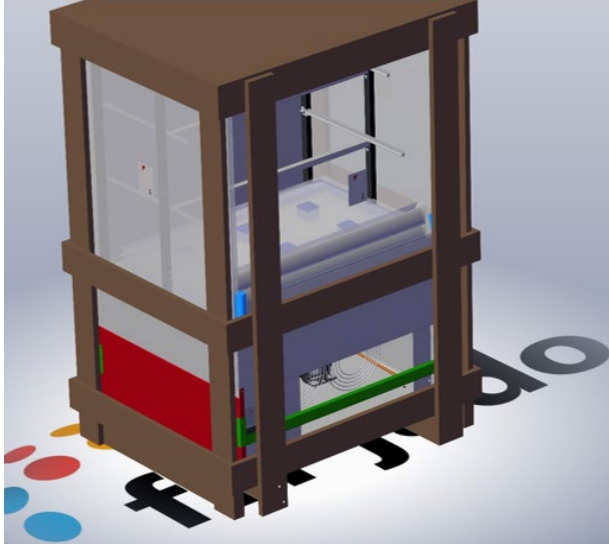
Start unpacking by removing top cover
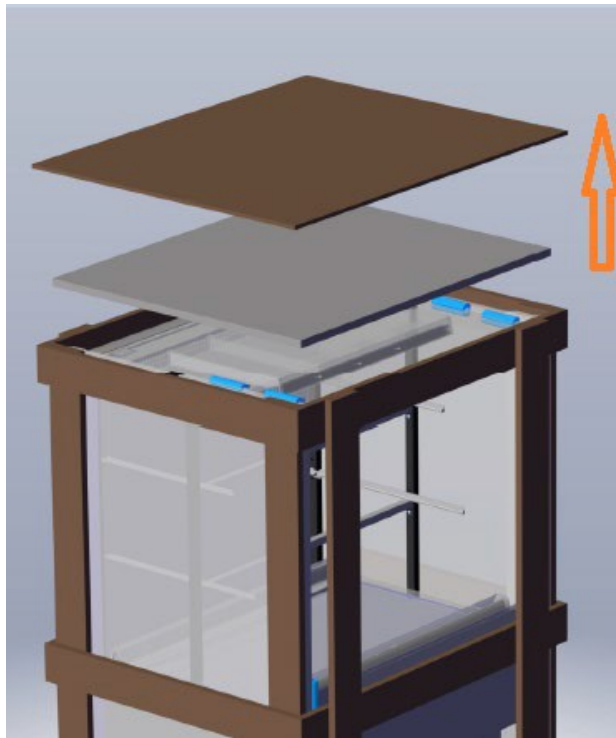
Remove short sides first (Left and Right), by unscrewing them.
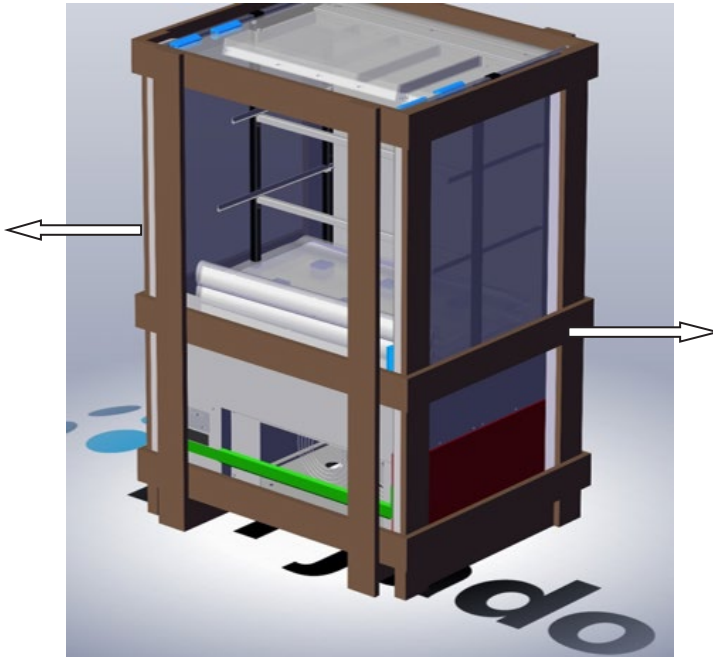
Next, remove front and back panel, they are also screwed onto the support beams under the unit.
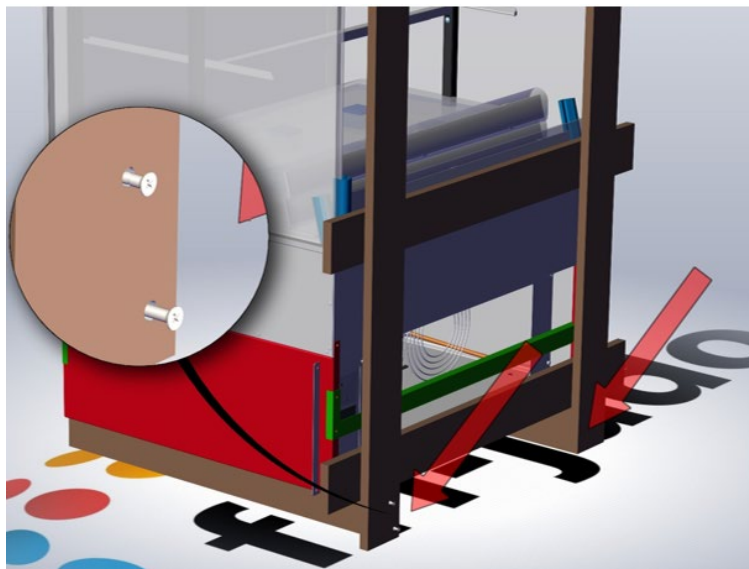
Keep the support beams for further use.

Remove wrapping foil and remove corner pieces EPS foam.
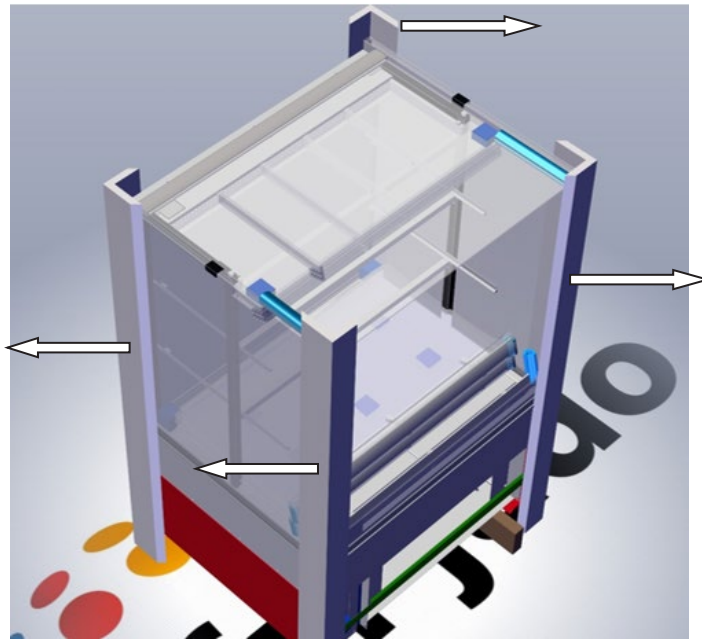
Unit is placed on a metal sub frame for transport purposes. Frame is kept together with metal strip at the front and the back.

Keep strip in place during placing process. Keep wooden support beams for further usage.
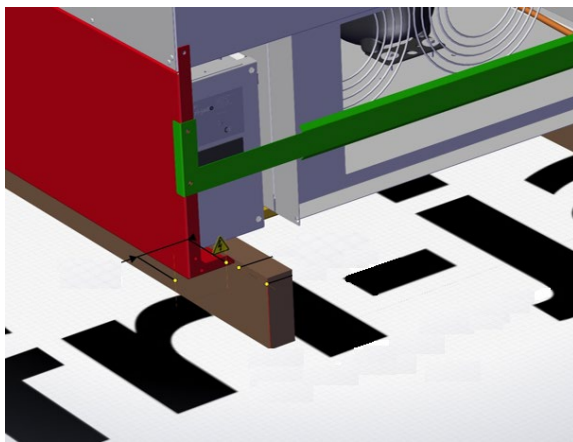
After lowering the cabinet into the cut-out in the counter top:

Remove tie-wrap which is holding the power cord.
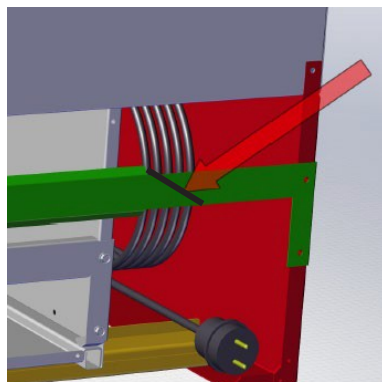
Remove foam which holds the electrical box
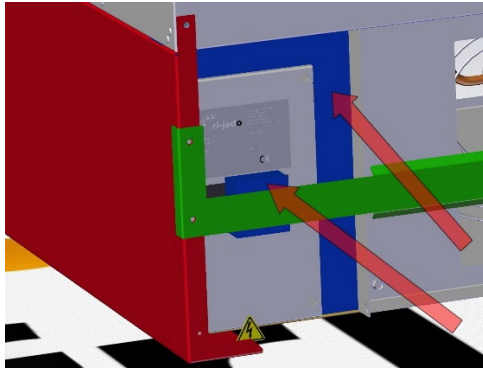
Remove documents and glass shelfs from unit.
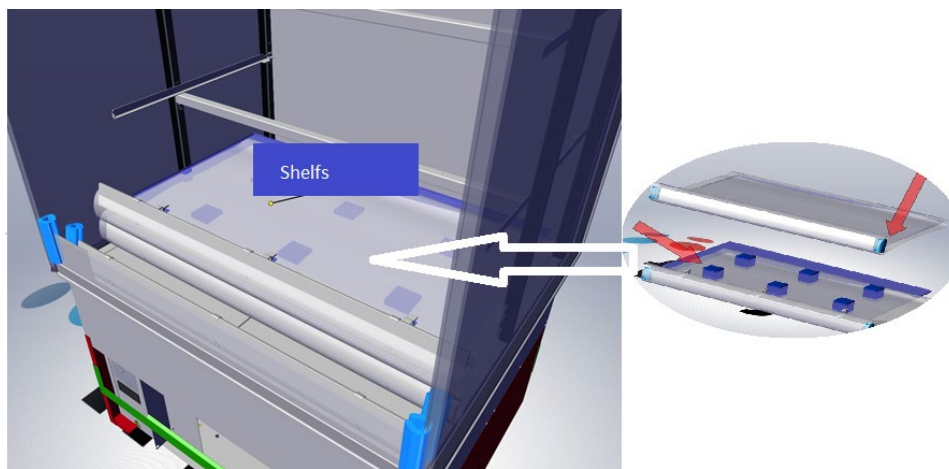
After placing cabinet in final position, remove tie-wraps which hold the shelf holders.

Make sure the shelf holders are placed in the required sleeve, for the wanted angled or straight position of the shelfs.
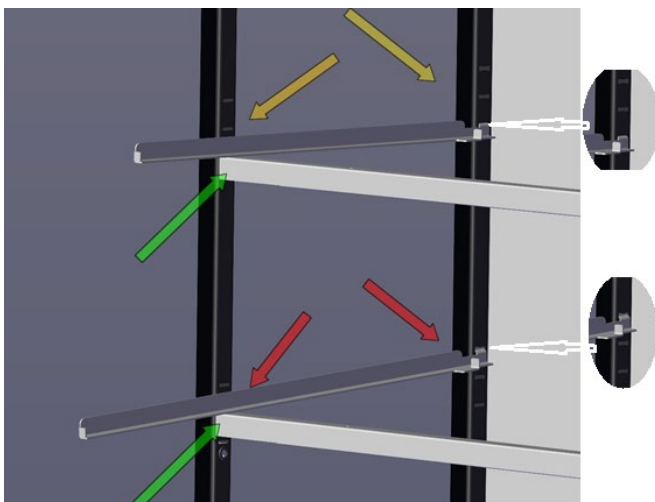
Shelf rails of top shelf should be placed in lowest position.

Shelf rails of middle shelf should be placed in highest position

![fri-jado logo]

5.1 MCC 90 Drop-in Dimensions Self Serve (example)

410
475
550
300
710
750
243
250
290
840
213

231
140
852
900

Control box can be mounted remotely
up to 1 meter from indicated position

Allow cut-out for drop-in: 867x725 (+/- 5)
Please refer to installation manual
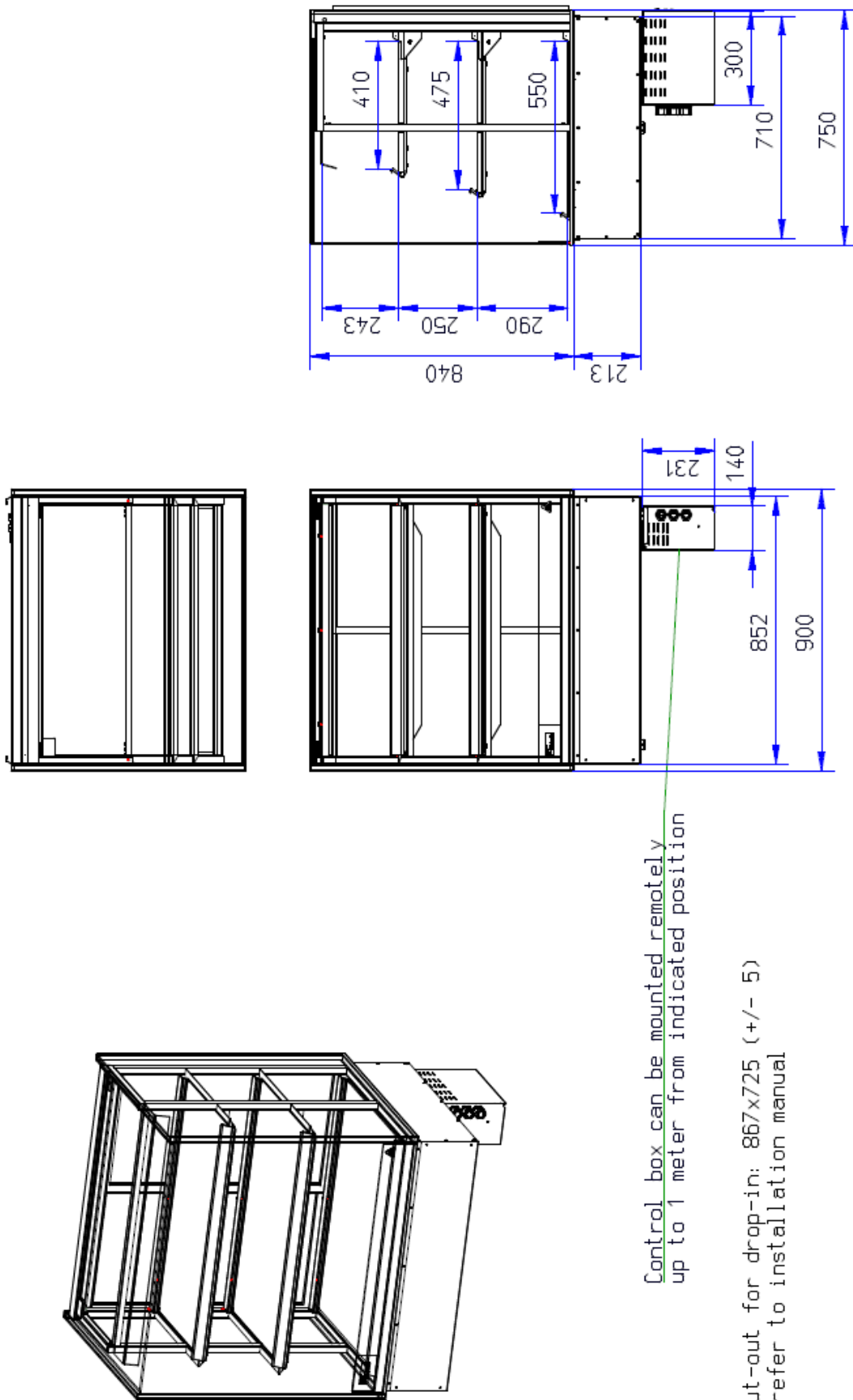
5.2 MCC Cold Drop-in Specifications Self Serve

Specification	Unit	Model 60-3	Model 90-3	Model 120-3	Model 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	Model 90-3	Model 120-3	Model 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

Note:
Airflow inside the cabinet is crucial.
Air intake and Air outlet are not allowed to interfere.
A physical barrier **must be** placed in between the two air flows.
Air inlet and air outlet surfaces must comply with the specifications, (see previous page)

Condensor air out

Condensor air in

Air blockage
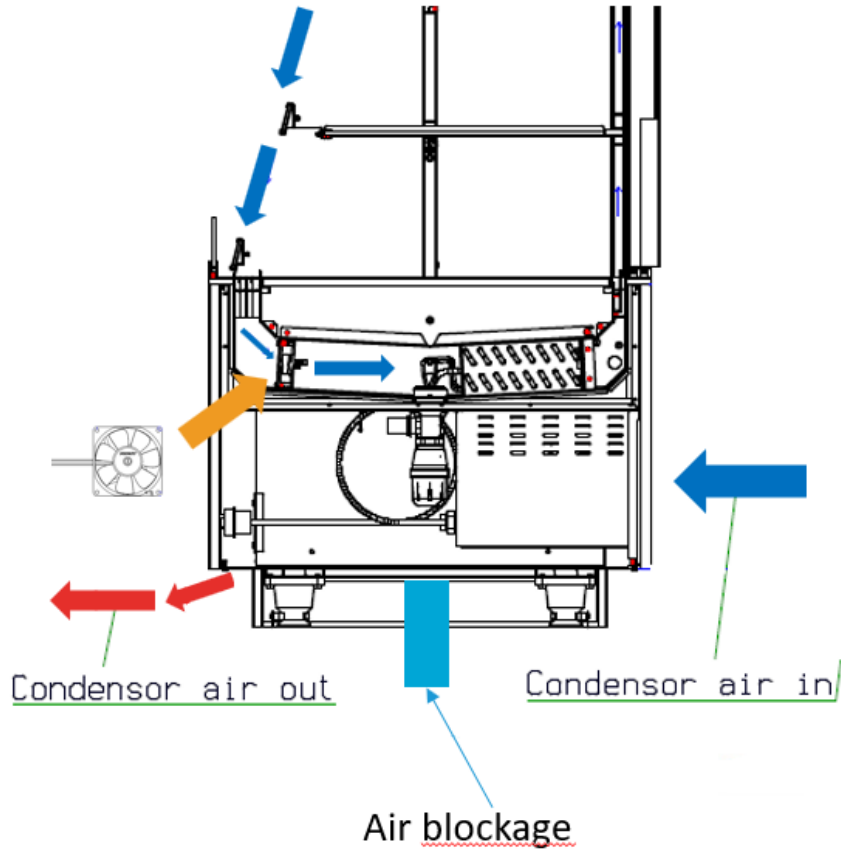
Airflow Drop in unit, see below
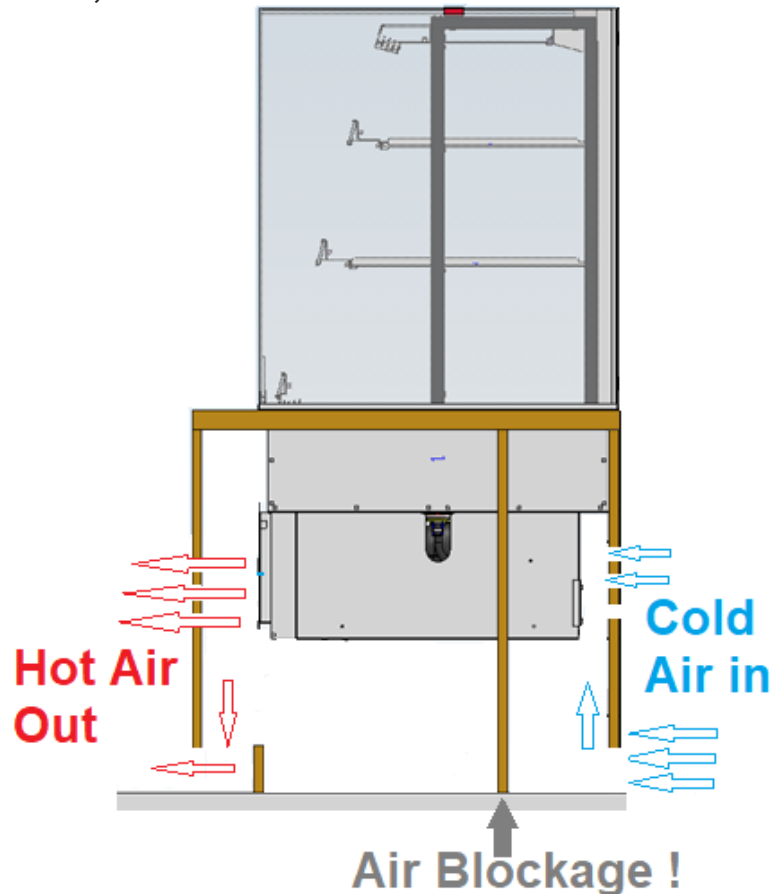
Hot Air Out

Cold Air in

Air Blockage !

Note:
Airflow inside the cabinet is crucial.
Air intake and Air outlet are not allowed to interfere.
A physical barrier **must be** placed in between the two air flows.
Air inlet and air outlet surfaces must comply with the specifications, (see previous page)

Condensor air out

Condensor air in
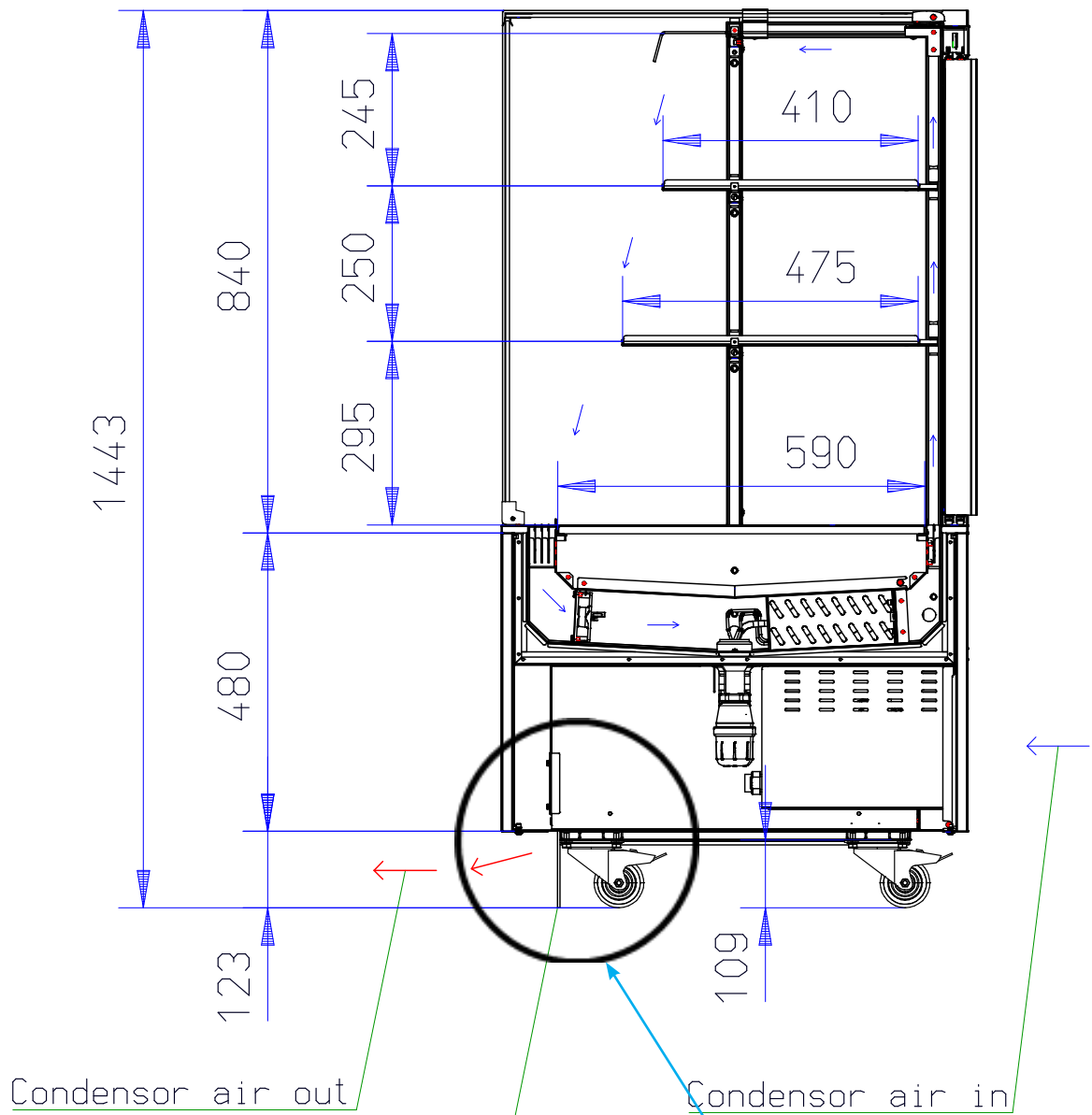
Flexible floor seal front or back
to prevent air circulation

MCC placed on wheels will alway need a floor seal (as seen on picture)
in order to prevent warm outlet air being sucked in at the air inlet,
condenser side.(back side of unit)

5.3 MCC Cold 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:

- No spark-forming components or components with a high surface temperature (according to IEC 60079-15) may be present in the substructure/counter where the counter is placed

- The refrigeration components must not be directly accessible by unauthorized personnel (according to IEC 60335-2-89)

- Make sure that the counter 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 counter can be removed

- Provide enough space to place the counter with a stacker.
  Maintain the dimensions and minimum height as indicated in the installation manual (also applies to hot units)

- 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

- All warning signs/labels, minimum floor area label (Cold unit) and data plate must remain visible after installation

- Operation of the appliance must be accessible.

- Additional ventilation: prevent gas accumulation due to leakage.

- Avoid high temperatures (> 200 ° C) in the vicinity of the furniture

5.4 MCC Drop-in Installation (Self Serve)

MCC Cold version:

Important remark before installation:

When installing Front doors on the drop in unit, Please follow Front door installation procedure 9124652 or 9124721 depending on version, until the step in which the glass is put in.
Placing the doors in a later stage, means the unit must be lifted again.
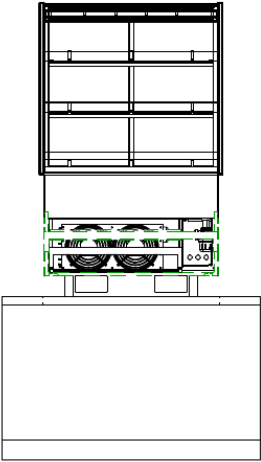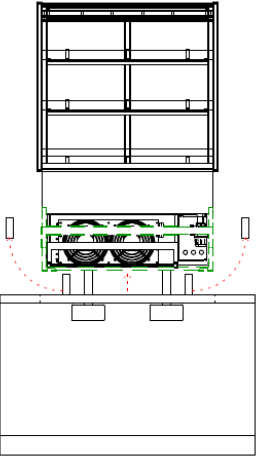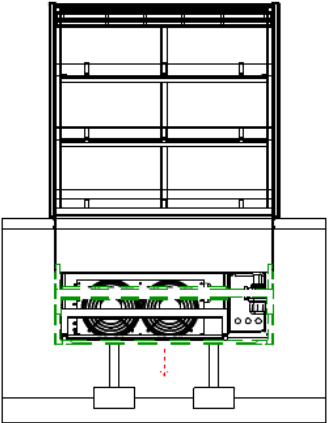
Installation must comply with:

• 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
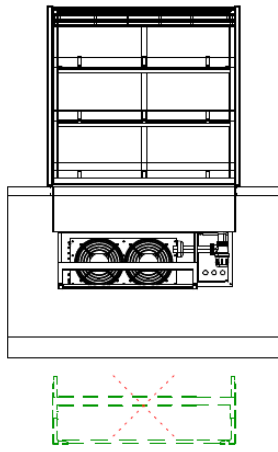
Remove and discard the metal transportation frame.
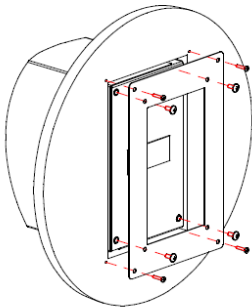
Step 5.

Install the control panel using the supplied mounting plate and screws. (up to 1 meter from the original position)
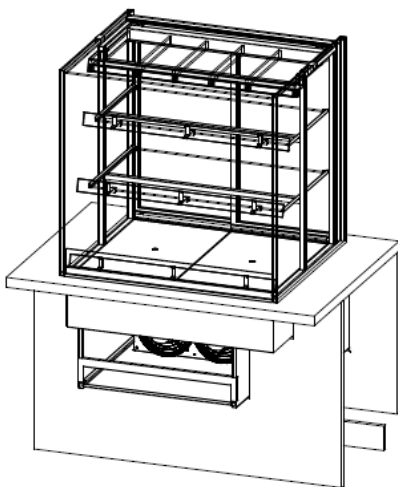
Step 6.

Install a partition panel to prevent recirculation of hot condenser air. (refrigerated models only)

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

Keep in mind the complete engine is extendable at the
back side of the unit for maintenance and service purposes.
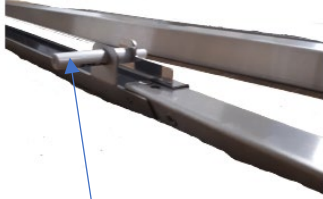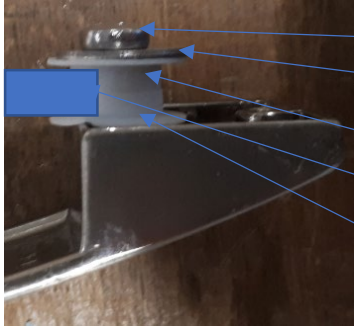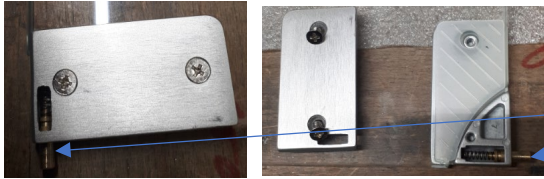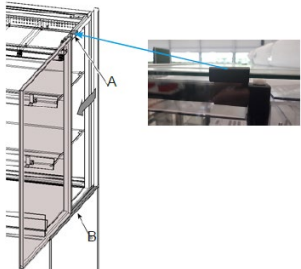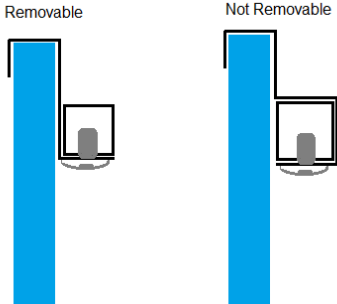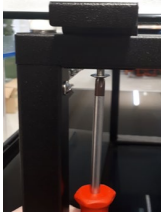
Pos. Number	Amount	Unit	Article number	Description
1	1	pc	9380105	Ass. Front door top supports MCC-90
2	1	pc	9380108	Ass. MCC-90 Front door [Left]
3	1	pc	9380109	Ass. MCC-90 Front door [Right]
4	1	pc	9380107	Ass. bottom support self-close door MCC-90
5	2	pc	9383040	Stainless steel rod ⌀2mm

REVISION	REV. DATE	REMARK
01	29.01.2021	cable

Tol. principle — Gen. tolerance — Geom. tolerance

MATERIAL
MATERIAL ART. NUMBER

UNIT mm
SCALE 1:10
REMARKS
DESCRIPTION   Ass. MCC-90 SS front door module

DRAWN   Kappers
STATUS   In Progress
PROJECT

APPROVED
DATE   04.03.2020
DRAWING NUMBER 9380104

ART. NUMBER   9380104
REV. A   SIZE A4

Surface treatment
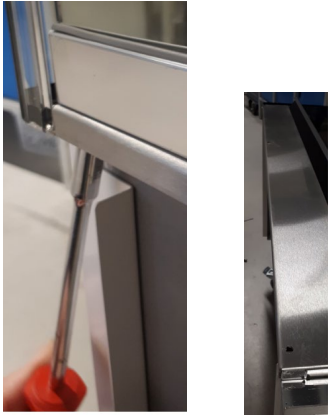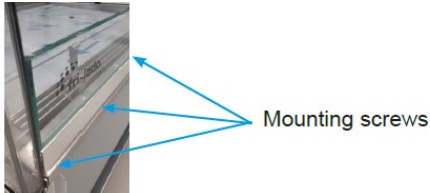
6.0 Installation Front door section (first version)

	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.
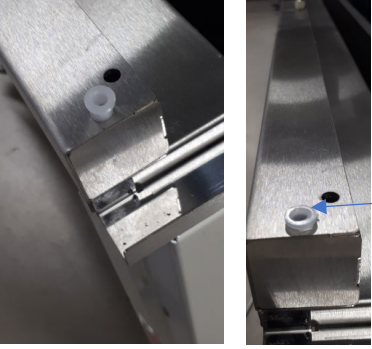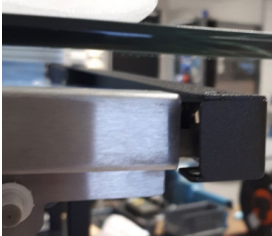
6.0 Installation Front door section (first version)

	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,	

![fri-jado]

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).
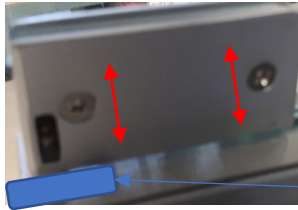
6.1 Installation Front door section (Second version)

**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)
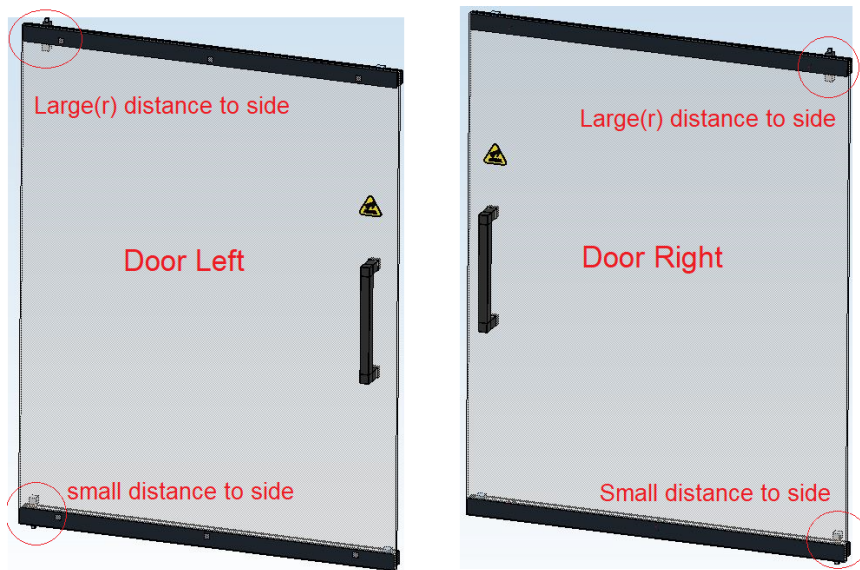
Large(r) distance to side

Door Left

small distance to side

Large(r) distance to side

Door Right

Small distance to side

6.1 Installation Front door section (Second version)

Top

Bottom

Difference top/bottom hinge axis

15   15
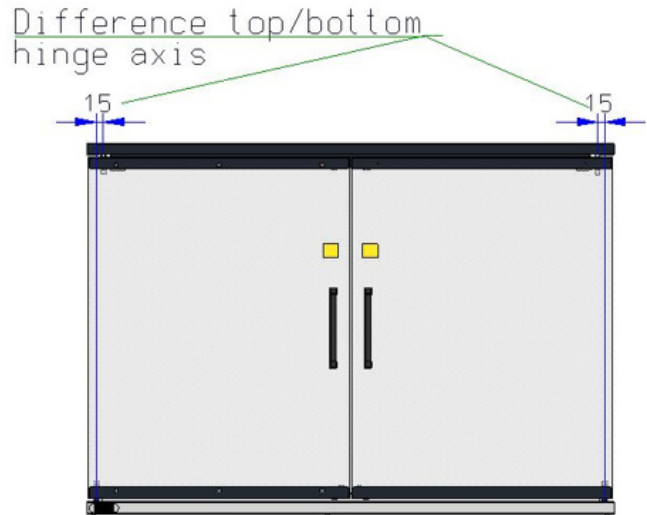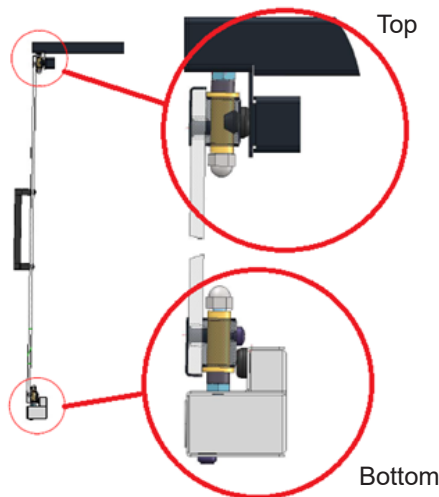
Depending on variant:

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)
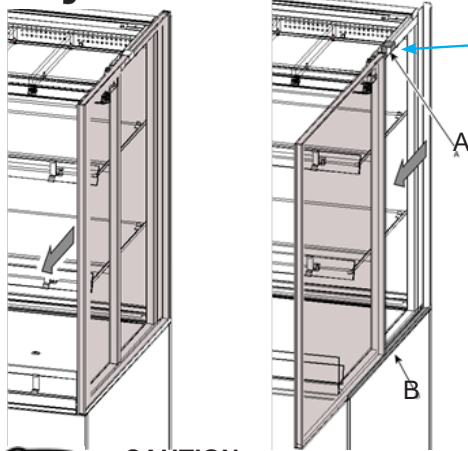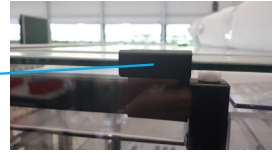
Step 2.

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.
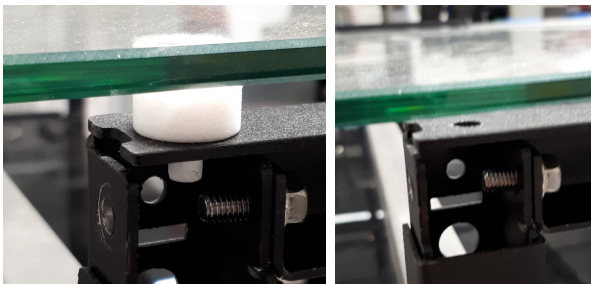
HOT   COLD

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.

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
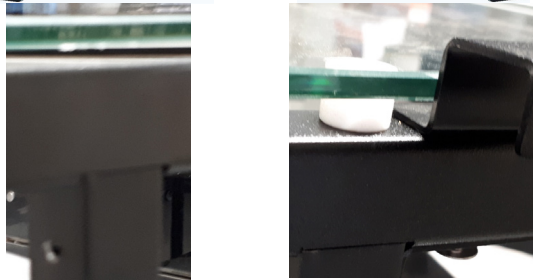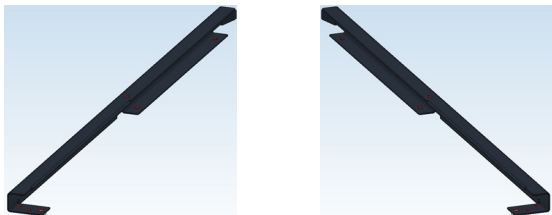
Step 9.

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

Step 10.

a.   **Replace side glass holder** removed earlier.
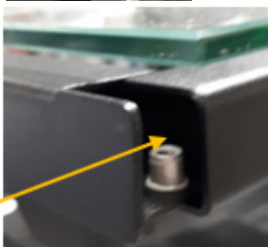
Step 11.

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

Slide the beam into the front of the profile.

Step 12.

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

View from underneath

6.1 Installation Front door section (Second version)

Bottom Side
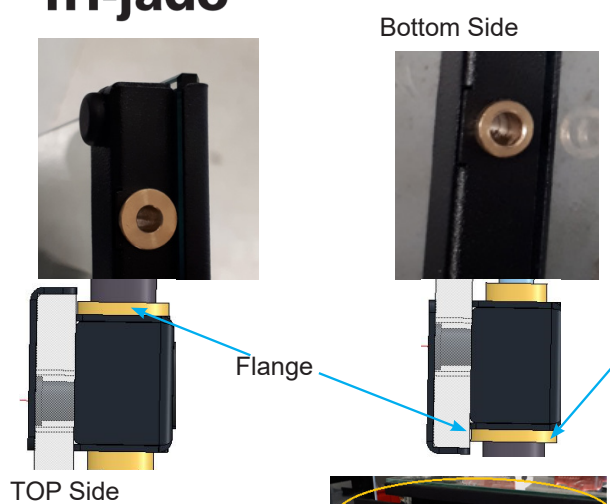
Step 13.

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.

Flange

TOP Side

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.
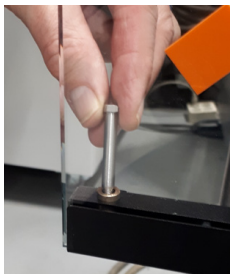
Step 15.

a. Place hinge pin into bearing
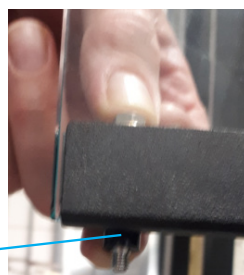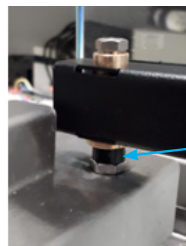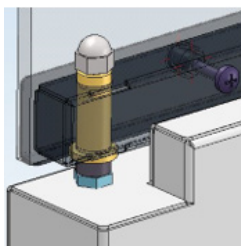
Step 16.

a. Place distance ring on hinge pin.
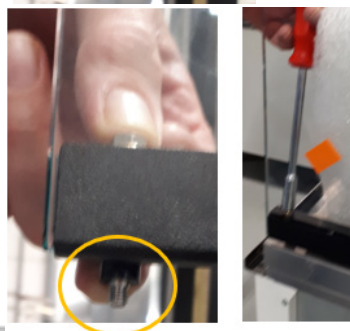
Step 17.

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

9124721 Instruction front doors MCC   Page 6

6.1 Installation Front door section (Second version)
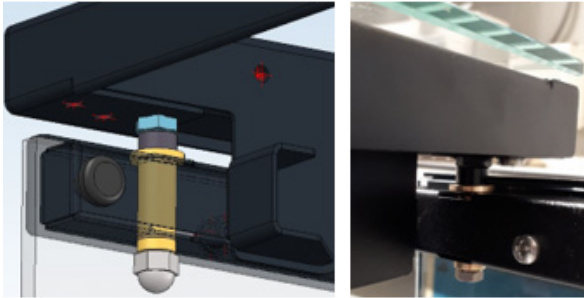
Step 18.

a.   Place top hinge pin into top bearing.

b.   Place distance ring on top hinge pin.

c.   Fasten top hinge pin, tighten tight !
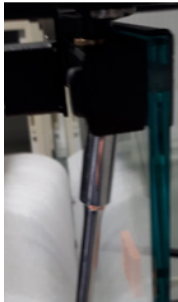
Step 19.

a.   Fasten lower hinge pin, tighten tight !
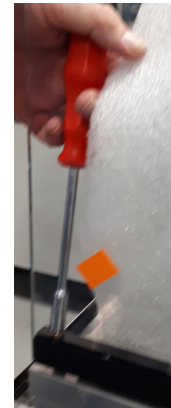
Step 20.

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 Mounting
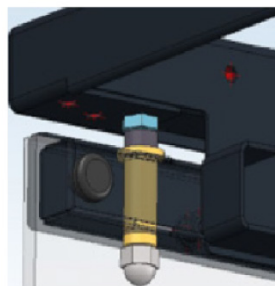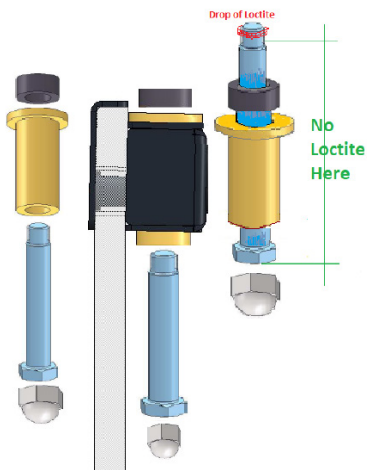
Result

Bottom Mounting
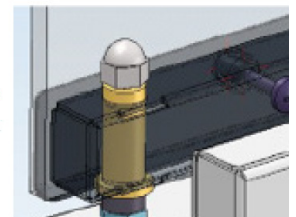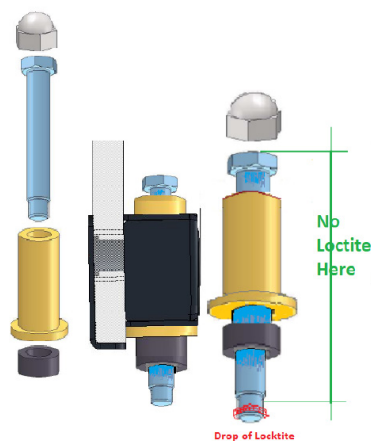
Result

7.0 Operation MCC Cold

7.0 Cold 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

Temperature controller

1. Display
2. Up and Down keys
   Down key = Light on/off
3. Escape/Stand-by key
4. Enter key

Switching-on the unit

• Switch the cooling on by means of the temperature controller.
• Switch the lighting on by pressing the Down key once.
• Let the unit cool for approx. 30 minutes.

USER INTERFACE

🌰	**Reduced SET / Economy LED** Permanently on: Energy Saving active Flashing: Reduced SET active Quick flashing: access to level2 parameters Off: otherwise	✖	**Fans LED** Permanently on: fans active Off: otherwise
❄	**Compressor LED** Permanently on: compressor active Flashing: a delay, a protection or a locked start-up Off: otherwise	❄	**Defrost LED** Permanently on: defrost active Flashing: manual or D.I. activation Off: otherwise
((•))	**Alarm LED** Permanently on: alarm active Flashing: alarm acknowledged Off: otherwise	AUX	**Aux LED** Permanently on: Aux output active Flashing: Deep Cooling cycle active Off: Aux output not active
°C	**°C LED** Permanently on: °C setting (dro = 0) Off: otherwise	°F	**°F LED** Permanently on: °F setting (dro = 1) Off: otherwise

7.0 Operation MCC Cold

7.0.2 Cold Units

Cold units are factory programmed to achieve a product temperature ≤ 5 ºC (41 ºF) at an ambient of 25 ºC (77 ºF) with a relative humidity of 60% by a max. draft of 0.2 m/s (0.66 ft/sec).

This corresponds with a 3M1 classification according to ISO 23953:2015.
The set temperature can be changed from -6 ºC to +0 ºC (21.2 ºF to 32 ºF).

Switching-on the unit

- Switch the cooling on by means of the temperature controller.
- Let the unit cool for at least 30 minutes.

Loading the unit

- Only load products of which the temperature is maximum 4 ºC (39.2 ºF).

- The maximum loading <u>height is 50mm (2 inch) </u>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.

Checking the temperature

- During operation the display of the thermostat shows the temperature in the unit. The maximum reading must not exceed 5 ºC (41 ºF).

- The indication ❄ will light when the cooling is active.

Locking/unlocking the keypad

- The keypad locks automatically in the following situations:
- On start-up,
- After 30 seconds of inactivity.

To unlock the keypad, press and hold ▽ for at least 3 seconds.

7.0 Operation MCC Cold

Checking the SET temperature

1. Unlock the keypad by pressing and holding ▽ for at least 3 seconds.
2. Press and release *SET* to access the "*Machine status*" menu.
3. Scroll through the folders with △ and ▽ until you find the folder **Pb1**, **Pb2** or **Pb3**.
4. Press *SET* to view the value measured by the corresponding probe.

Notes:

- The displayed value cannot be changed.
- Folder **Pb2** can only be viewed on models that manage probe **Pb2**.
- Folder **Pb3** can only be viewed on models that manage probe **Pb3**.

Adjusting the SET Temperature

1. To unlock the keypad, press and hold ▽ for at least 3 seconds, until the label "*UnL*" appears.
2. Press and release *SET* to access the "*Machine status*" menu.
3. Scroll through the folders with △ and ▽ until you find the folder *SEt*.
4. Press *SET* to view the current set point value.
5. Change the set point value using △ and ▽ within 15 seconds.
6. To confirm the value press *SET* or ⏻, let a timeout occur (15 seconds).

Checking the product temperature

- Once every hour, the product temperature should be checked using a digital thermometer, write down the measured values in a log.
- Always use a disinfected thermometer sensor.

Switching off
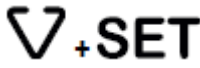
- Remove all products from the unit.
  In order to avoid temperature rise of the products, store them in another cooling unit.
- Switch the cooling off.

7.1 Operation MCC Cold Next controller

☞ *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 functions are working correctly.
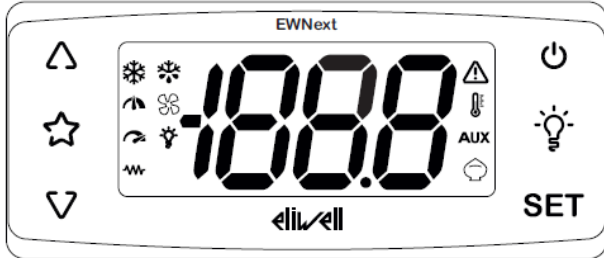
Keys	Press and release	Press for at least 5 seconds
△	• Scroll through the menu options • Increase the values	From outside the menus only. Can be configured by the user (parameter H31) **Default:** Activate manual defrost
☆	Direct access to the function set with parameter H35. From outside the menus only. **Default:** Activates AUX output	
▽	• Scroll through the menu options. • Decrease the values.	• From outside the menus only. Can be configured by the user (parameter H32) • Unlock keypad (press and hold for at least 3 seconds)
⏻	Go back (up one level) in the menu. • Confirm the parameter value.	From outside the menus only. Can be configured by the user (parameter H33) **Default:** Activate stand-by.
💡	Direct access to the function set with parameter H34. From outside the menus only.	
SET	• Access the "Machine Status" menu. • Display alarms (if present).	• Access the "Programming" menu. • Confirm commands
▽+SET	Press both simultaneously for at least 5 seconds at device power-on to load the preset applications (only after unlocking the keypad).	

☞ **Note:**
At device power-on or after 30 seconds since last action on the user interface, the device keypad locks automatically.
If it is locked and any key is pressed, the text '**LoC**' will appear.

To unlock the keypad, press ▲ and hold for at least 3 seconds until the text "**UnL**" appears.

7.1 Operation MCC Cold Next controller

Icon	Function	Description
❄	Compressor	On steadily: compressor active Flashing: delay, protection or activation inhibited Off: compressor off
❄	Defrost	On steadily: defrost active Flashing: defrost activated manually or via digital input Off: defrost inactive
✿	Evaporator fans	On steadily: fans active Off: fans off
☼	Light	On steadily: light on Off: light off
-ᐯᐯᐯ-	Heating	On steadily: Heating regulator active Off: Heating regulator off
⚠	Alarm	On steadily: alarm present Flashing: alarm silenced Off: No alarm active
🌡	Temperature	On steadily: a temperature is displayed (°C or °F) Off: a value not relating to temperature or a label is displayed
AUX	Aux	On steadily: AUX output active (depending on model) Flashing: Deep cooling active Off: AUX output off
◯	Energy saving	On steadily: Energy saving active Flashing: reduced set active

☞ **Note:**
Some icons may be associated with unavailable functions, depending on the model.

☞ **Note:**
If the value of the parameter **CuS**≠0, when the instrument is switched on it shows the label **CuS** and the value of the parameter for approximately 2 seconds.

7.1 Operation MCC Cold Next controller

Password

The passwords **PA1** and **PA2** are required to access the device parameters:

- **PA1**: access the User parameters (default: **PA1** = 0 - disabled)
- **PA2**: access the Installer parameters (default: **PA2** = 15 - enabled)

To change the password value:

1. To unlock the keypad, press and hold ▼ for at least 3 seconds, until the label "**UnL**" appears
2. Press and hold for at least 5 seconds **SET**
3. Scroll through the parameters with ▲ and ▼ until you find the label "**PA2**"
4. Press and release **SET**
5. Set the value "15" using the keys ▲ and ▼
6. Confirm the value by pressing **SET** (the first folder will be displayed)
7. Scroll through the folders with ▲ and ▼ until you find the label "**diS**"
8. Press and release **SET**
9. Scroll through the parameters with ▲ and ▼ until you find the label "**PS1**" or "**PS2**", depending on whether you want to change access password **PA1** or **PA2**
10. To confirm the value press **SET** or , ⏻ or let a time-out occur (15 seconds).

☞ **Note:** If **PA1**=0, the User parameters will be not protected and displayed before **PA2** label.

☞ **Note:** If the value entered is incorrect, the label **PA1/PA2** will be shown again. Repeat the procedure.

Machine Status Menu

To enter the Machine Status menu:

1. To unlock the keypad, press and hold ▲ and ▼ for at least 3 seconds, until the label "**UnL**" appears
2. Press and release **SET**
3. Scroll through the folders with keys ▲ and ▼ until you find the label for the desired folder
4. Press and release **SET**
5. View the value reading
6. To exit press **SET** or ⏻ or let a time-out occur (15 seconds).

List of folders:
- **SEt**: setpoint setting folder
- **ALr**: alarms folder (only visible if there are active alarms)
- **Pb1**: Pb1 probe value folder
- **Pb2**: Pb2 probe value folder
- **Pb3**: Pb3 probe value folder
- **idF**: firmware mask value folder
- **rEL**: firmware release value folder
- **nAM**: product name folder

☞ **Note:** some folders may not be present, depending on the model

7.1 Operation MCC Cold Next controller

Programming Menu

To enter the Programming menu:

a. To unlock the keypad, press and hold ▲ for at least 3 seconds, until the label "**UnL**" appears
b. Press and hold **SET** for at least 5 seconds
    If required, an access PASSWORD **PA1** will be requested for User parameters and **PA2** for Installer (Inst) parameters (see Password section).

User parameters (User):
Upon access the first parameter (**SEt**) will be shown.
1. Scroll through the parameters with keys ▲ and ▼ until you find the label for the parameter you want to change
2. Press and release **SET**
3. Set the desired value using the keys ▲ and ▼
4. To confirm the value press **SET** or ⏻ or let a time-out occur (15 seconds).

Installer parameters (Inst):

Upon access the first folder (**CP**) will be shown.
1. Scroll through the folders with keys ▲ and ▼ until you find the label for the desired folder
2. Press and release **SET**
3. Scroll through the parameters with keys ▲ and ▼ until you find the label for the parameter you want to change
4. Press and release **SET**
5. Set the desired value using the keys ▲ and ▼
6. To confirm the value press **SET** or ⏻ , or let a time-out occur (15 seconds).

👉 **Note:** Switch the device off and on again every time you change the parameter configuration

Locking/unlocking the keypad

The keypad locks automatically in the following situations:
*   at device power-on
*   after 30 seconds of inactivity

To unlock the keypad, press and hold ▼ for at least 3 seconds, until the label '**UnL**' appears
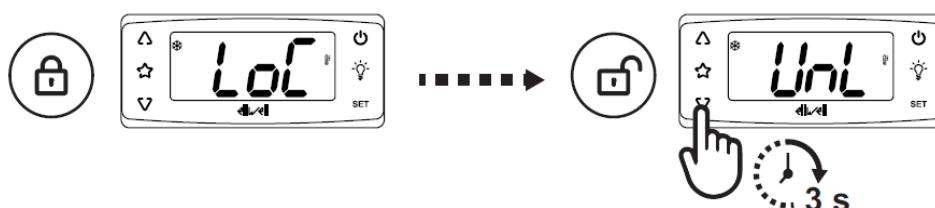
7.1 Operation MCC Cold Next controller

Viewing the probe values

1. Unlock the keypad by pressing and holding ▲ for at least 3 seconds, until the label "**UnL**" appears
2. Press and release **SET** to access the 'Machine status' menu
3. Scroll through the folders with▲ and ▼ until you find the folder **Pb1** or **Pb2** or **Pb3**
4. Press **SET** to view the value measured by the corresponding probe.

Notes:

- the displayed value cannot be changed.
- folder **Pb2** can only be viewed on models that manage probe Pb2.
- folder **Pb3** can only be viewed on models that manage probe Pb3.

Setting the setpoint

1. To unlock the keypad, press and hold ▲ for at least 3 seconds, until the label "**UnL**" appears
2. Press and release **SET** to access the "Machine status" menu
3. Scroll through the folders with ▲ and ▼ until you find the folder **SEt**
4. Press **SET** to view the current set-point value.
5. Change the set-point value using ▲ and ▼ within 15 seconds.

6. To confirm the value press **SET** or ⏻ or let a time-out occur (15 seconds).

8.0 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
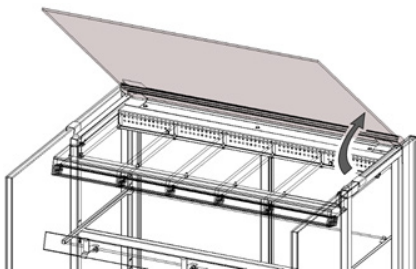
Cleaning possibility side pane all units
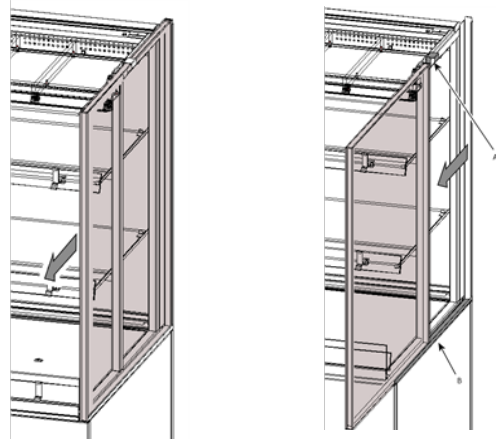
Cleaning possibility off the top air guides

8.1 Parameter MCC Cold Settings (Self Serve)

MCC Cold SS   **Eliwell EWPlus 974 EO**

Parameter	Description	Value	Unit
Table of "user" menu paramters			
SEt	Temperature Setpoint	1	°C
diF	Compressor relay activation differential	1	°C
HSE	Maximum value that can be assigned to the Setpoint	5	°C
LSE	Minimum value that can be assigned to the Setpoint	-1	°C
dty	Type of defrost (0 = electrical, 1 = reverse cycle, 2 = "Free")	0	num
dit	Interval between the start of two consecutive defrost cycles	3	hours
dEt	Defrost timeout; determines the maximum defrost duration	30	min
dSt	Defrost end temperature (determiend by evaporator probe)	4	°C
FSt	Fan stop temperature	50	°C
Fdt	Fan activation delay after a defrost cycle	0	min
dt	Coil drainage time	0	min
dFd	Allows to select the evaporator probes exclusion during defrost	n	flag
HAL	Maximum temperature alarm	10	°C
LAL	Minimum temperatre alarm	-30	°C
tAO	Temperature alarm signal delay time	30	min
dCS	Deep cooling cycle setpoint	-1	°C
tdC	Deep cooling cycle duration	0	min
OSP	Offset on setpoint	0,5	°C
OdF	Intervention differential correction	4	°C
dnt	Duration of night mode	10	hours
DFt	Duration of fast cooling mode	1	hours
SPn	Night mode setpoint	1	°C
dFn	Night mode offset	2	°C
SPF	Fast cooling setpoint	-1	°C
dFF	Fast cooling offset	0,1	°C
LOC	LOCk Setpoint change shutdown	n	flag
PS1	Password 1	0	num
CA1	Calibration 1 (Pb1)	5	°C
CA2	Calibration 2 (Pb2)	0	°C
CA3	Calibration 3 (Pb3)	0	°C
ddt	Display mode during defrost	2	num
Ldd	Timeout value for display unlick	30	min
H42	Evaporator probe present	y	flag
rEL	firwarme rELease		
tAb	tAble of parameters		
Table of "installer" menu parameters			

8.1 Parameter MCC Cold Settings (Self Serve)

Parameter	Description	Value	Unit
SEt	Temperature Setpoint	1	°C
	Compressor ("CP" folder)		
diF	Compressor relay activation differential	1	°C
HSE	Maximum value that can be assigned to the Setpoint	5	°C
LSE	Minimum value that can be assigned to the Setpoint	-1	°C
Ont	Controller on time for faulty probe	0	min
Oft	Controller off time for faulty probe	1	min
dOn	Compressor relay activation delay after request	0	secs
dOF	Deflay after switching off and subsequent activation	0	min
dbi	Delay between two concecutive compressor activations	2	min
OdO	Delay in activating outputs after the instrument is switched on or after a power failure	0	min
dFA	Delay fimte in activating compressor and condenser fans after request	0	secs
	Defrost ("dEF" folder)		
dty	Type of defrost (0 = electrical, 1 = reverse cycle, 2 = "Free")	0	num
dit	Interval between the start of two consecutive defrost cycles	3	hours
dCt	Selects the count mode for the defrost interval	1	num
dOH	Defrost start delay time after request	0	min
dEt	Defrost timeout; determines the maximum defrost duration	30	min
dSt	Defrost end temperature (determiend by evaporator probe)	4	°C
dPO	Determines whether the instrument must enter defrost mode	y	flag
dSE	Temperature threshold for start of defrost	0	°C
dtt	Time for which the temperature of the evaporator must remain below dSE	0	min
	Fan regulator ("Fan" folder)		
FPt	Characterizes the "Fst" parameter	0	flag
FSt	Fan stop temperature	50	°C
Fad	Fan starting differential	1	°C
Fdt	Fan activation delay after a defrost cycle	0	min
dt	Coil drainage time	0	min
dFd	Allows to select the evaporator probes exclusion during defrost	n	flag
FCO	Evaporator fans operating mode	1	num
FdC	Evaporator fans switch-off delay after compressor disabled	0	min
Fon	Fans ON time in duty cycle	12	secs*10
FoF	Fans OF time in duty cycle	6	secs*10
Fnn	Fans ON time in night duty cycle	1	secs*10
FnF	Fans OF time in night duty cycle	12	secs*10
	Alarms ("AL" folder)		
Att	Parameters HAL and LAL	0	num
AFd	Alarm differential	2	°C
HAL	Maximum temperature alarm	10	°C
LAL	Minimum temperatre alarm	-30	°C

8.1 Parameter MCC Cold Settings (Self Serve)

PAO	Alarm exclusion time after instrument switch on, after a power failure	0	hours
dAO	Temperature alarm exclusion time after defrost	0	min
OAO	Alarm signaling delay after digital input disabling	0	hours
tdO	Alarm activation delay time open door	0	hours
tAO	Temperature alarm signal delay time	30	min
dAt	Alarm for defrosting ended due to time out	n	flag
rLO	External alarm locks controller	n	flag
AOP	Alarm outp polarity	1	num
SA3	Probe Pb3 Alarm Setpoint	30	°C
dA3	Probe Pb3 alarm activation differential	1	°C
Cool protection ("CPr" folder)			
CPS	Cool protection setpoint	-10	°C
CPd	Cool protection differential	1	°C
CPt	Time that the temperature remains below the cool protection setpoint	0	min
Lights & digital inputs ("Lit" folder)			
dOd	Enable utility switch-off on activation of door switch	0	num
dad	Activation delay for digital input	0	min
dCO	Compressor deactivation delay after door opened	0	min
dCd	Fans activation delay after door closed	10	secs
Pressure switch ("Pre" folder)			
Pen	Number of errors allowed for general pressure switch input	5	num
PEI	Minimum/maximum pressure switch error count interval	1	min
Pet	Delay in activating compressor after pressure switch deactivation	0	min
Deep cooling ("dEC" folder)			
dCA	Enable deep cooling	0	num
dCS	Deep cooling setpoint	-1	°C
tdC	Deep cooling duration	0	min
dcc	Defrost delay after deep cooling	0	min
Sid	Deep cooling start threshold	12	°C
toS	Over-threshold time for deep cooling start	5	min
Energy saving ("EnS" folder)			
Est	Energy Saving mode	0	num
ESA	AUX output status in energy saving mode	0	num
ESF	Night mode activation for fans	y	flag
Cdt	Door close time	60	min*10
ESo	Cumulative door open time for disabling Energy Saving mode	0	num
OSP	Offset on setpoint	0,5	°C
OdF	Intervention differential correction	4	°C
dnt	Duration of night mode	10	hours
dFt	Duration of fast cooling mode	1	hours
SPn	Night mode setpoint	1	°C

8.1 Parameter MCC Cold Settings (Self Serve)

dFn	Night mode offset	2	°C
SPF	Fast cooling setpoint	-1	°C
dFF	Fast cooling offset	0,1	°C
ESP	Virtual door regulator's sensitivity	0	num
dOt	Maximum Time Door Open with virtual door switch	0	secs
Communication ("Add" folder)			
PtS	Communication protocol selection	t	flag
dEA	Device address	0	num
FAA	Family address	0	num
Pty	Modbus parity bit setting	n	num
StP	Modbus stop bit setting	1b	flag
Display ("dIS" folder)			
LOC	LOCk Setpoint change shutdown	n	flag
PS1	Password 1	0	num
PS2	Password 2	0	num
ndt	Display with decimal point	y	num
CA1	Calibration 1 (Pb1)	5	°C
CA2	Calibration 2 (Pb2)	0	°C
CA3	Calibration 3 (Pb3)	0	°C
ddL	Display mode during defrost	2	num
Ldd	Timeout value for display unlick	15	min
dro	Select °C or °F	0	num
ddd	Selection of type of value to be displayed	1	num
Configuration ("CnF" folder)			
H08	Stand-by operating mode	2	num
H11	Configuration of digital input 1	10	num
H12	Configuration of digital input 2	0	num
H21	Configurability of digital output 1	1	num
H22	Configurability of digital output 2	3	num
H23	Configurability of digital output 3	5	num
H25	Enable/Disable buzzer	0	num
H32	Configurability of down key	2	num
H33	Configuratbility of ESC key	4	num
H42	Evaporator probe present	y	flag
H43	Probe 3 present	n	flag
reL	reLease firmware		
tAb	tAble of parameters		
Copy card ("Fpr" folder)			
UL	Upload		
Fr	Format Copy Card		

8.2 Parameter MCC Cold Settings (Full Serve)

MCC Cold FS	Eliwell EWPlus 974 EO		9124651	Rev. A

Table of "user" menu paramters			
Parameter	**Description**	**Value**	**Unit**
SEt	Temperature Setpoint	1,0	℃
diF	Compressor relay activation differential	1	℃
HSE	Maximum value that can be assigned to the Setpoint	5	℃
LSE	Minimum value that can be assigned to the Setpoint	-1	℃
dty	Type of defrost (0 = electrical, 1 = reverse cycle, 2 = "Free")	0	num
dit	Interval between the start of two consecutive defrost cycles	6	hours
dEt	Defrost timeout; determines the maximum defrost duration	30	min
dSt	Defrost end temperature (determiend by evaporator probe)	4	℃
FSt	Fan stop temperature	50	℃
Fdt	Fan activation delay after a defrost cycle	0	min
dt	Coil drainage time	0	min
dFd	Allows to select the evaporator probes exclusion during defrost	n	flag
HAL	Maximum temperature alarm	10	℃
LAL	Minimum temperatre alarm	-30	℃
tAO	Temperature alarm signal delay time	30	min
dCS	Deep cooling cycle setpoint	-1	℃
tdC	Deep cooling cycle duration	0	min
OSP	Offset on setpoint	0,5	℃
OdF	Intervention differential correction	4	℃
dnt	Duration of night mode	10	hours
DFt	Duration of fast cooling mode	1	hours
SPn	Night mode setpoint	1	℃
dFn	Night mode offset	2	℃
SPF	Fast cooling setpoint	-1	℃
dFF	Fast cooling offset	0,1	℃
LOC	LOCk Setpoint change shutdown	n	flag
PS1	Password 1	0	num
CA1	Calibration 1 (Pb1)	4,8	℃
CA2	Calibration 2 (Pb2)	0	℃
CA3	Calibration 3 (Pb3)	0	℃
ddt	Display mode during defrost	2	num
Ldd	Timeout value for display unlick	30	min
H42	Evaporator probe present	y	flag
rEL	firwarme rELease		
tAb	tAble of parameters		
Table of "installer" menu parameters			
Parameter	**Description**	**Value**	**Unit**
SEt	Temperature Setpoint	1	℃
Compressor ("CP" folder)			
diF	Compressor relay activation differential	1	℃
HSE	Maximum value that can be assigned to the Setpoint	5	℃
LSE	Minimum value that can be assigned to the Setpoint	-8	℃
Ont	Controller on time for faulty probe	0	min
Oft	Controller off time for faulty probe	1	min

8.2 Parameter MCC Cold Settings (Full Serve)

dOn	Compressor relay activation delay after request	0	secs
dOF	Deflay after switching off and subsequent activation	0	min
dbi	Delay between two concecstive compressor activations	2	min
OdO	Delay in activating outputs after the instrument is switched on or after a power failure	0	min
dFA	Delay fimte in activating compressor and condenser fans after request	0	secs
	Defrost ("dEF" folder)		
dty	Type of defrost (0 = electrical, 1 = reverse cycle, 2 = "Free")	0	num
dit	Interval between the start of two consecutive defrost cycles	6	hours
dCt	Selects the count mode for the defrost interval	1	num
dOH	Defrost start delay time after request	0	min
dEt	Defrost timeout; determines the maximum defrost duration	30	min
dSt	Defrost end temperature (determiend by evaporator probe)	4	°C
dPO	Determines whether the instrument must enter defrost mode	y	flag
dSE	Temperature threshold for start of defrost	0	°C
dtt	Time for which the temperature of the evaporator must remain below dSE	0	min
	Fan regulator ("Fan" folder)		
FPt	Characterizes the "Fst" parameter	0	flag
FSt	Fan stop temperature	50	°C
Fad	Fan starting differential	1	°C
Fdt	Fan activation delay after a defrost cycle	0	min
dt	Coil drainage time	0	min
dFd	Allows to select the evaporator probes exclusion during defrost	n	flag
FCO	Evaporator fans operating mode	1	num
FdC	Evaporator fans switch-off delay after compressor disabled	0	min
Fon	Fans ON time in duty cycle	12	secs*10
FoF	Fans OF time in duty cycle	6	secs*10
Fnn	Fans ON time in night duty cycle	1	secs*10
FnF	Fans OF time in night duty cycle	12	secs*10
	Alarms ("AL" folder)		
Att	Parameters HAL and LAL	0	num
AFd	Alarm differental	2	°C
HAL	Maximum temperature alarm	10	°C
LAL	Minimum temperatre alarm	-30	°C
PAO	Alarm exclusion time after instrument switch on, after a power failure	0	hours
dAO	Temperature alarm exclusion time after defrost	0	min
OAO	Alarm signaling delay after digital input disabling	0	hours
tdO	Alarm activation delay time open door	0	hours
tAO	Temperature alarm signal delay time	30	min
dAt	Alarm for defrosting ended due to time out	n	flag
rLO	External alarm locks controller	n	flag
AOP	Alarm outp polarity	1	num
SA3	Probe Pb3 Alarm Setpoint	30	°C
dA3	Probe Pb3 alarm activation differential	1	°C
	Cool protection ("CPr" folder)		
CPS	Cool protection setpoint	-10	°C
CPd	Cool protection differential	1	°C
CPt	Time that the temperature remains below the cool protection setpoint	0	min

8.2 Parameter MCC Cold Settings (Full Serve)

	Lights & digital inputs ("Lit" folder)		
dOd	Enable utility switch-off on activation of door switch	0	num
dad	Activation delay for digital input	0	min
dCO	Compressor deactivation delay after door opened	0	min
dCd	Fans activation delay after door closed	10	secs
	Pressure switch ("Pre" folder)		
Pen	Number of errors allowed for general pressure switch input	5	num
PEI	Minimum/maximum pressure switch error count interval	1	min
Pet	Delay in activating compressor after pressure switch deactivation	0	min
	Deep cooling ("dEC" folder)		
dCA	Enable deep cooling	0	num
dCS	Deep cooling setpoint	-1	℃
tdC	Deep cooling duration	0	min
dcc	Defrost delay after deep cooling	0	min
Sid	Deep cooling start threshold	12	℃
toS	Over-threshold time for deep cooling start	5	min
	Energy saving ("EnS" folder)		
Est	Energy Saving mode	0	num
ESA	AUX output status in energy saving mode	0	num
ESF	Night mode activation for fans	y	flag
Cdt	Door close time	60	min*10
ESo	Cumulative door open time for disabling Energy Saving mode	0	num
OSP	Offset on setpoint	0,5	℃
OdF	Intervention differential correction	4	℃
dnt	Duration of night mode	10	hours
dFt	Duration of fast cooling mode	1	hours
SPn	Night mode setpoint	1	℃
dFn	Night mode offset	2	℃
SPF	Fast cooling setpoint	-1	℃
dFF	Fast cooling offset	0,1	℃
ESP	Virtual door regulator's sensitivity	0	num
dOt	Maximum Time Door Open with virtual door switch	0	secs
	Communication ("Add" folder)		
PtS	Communication protocol selection	t	flag
dEA	Device address	0	num
FAA	Family address	0	num
Pty	Modbus parity bit setting	n	num
StP	Modbus stop bit setting	1b	flag
	Display ("dIS" folder)		
LOC	LOCk Setpoint change shutdown	n	flag
PS1	Password 1	0	num
PS2	Password 2	0	num
ndt	Display with decimal point	y	num
CA1	Calibration 1 (Pb1)	4,8	℃
CA2	Calibration 2 (Pb2)	0	℃
CA3	Calibration 3 (Pb3)	0	℃
ddL	Display mode during defrost	2	num
Ldd	Timeout value for display unlick	15	min

8.2 Parameter MCC Cold Settings (Full Serve)

dro	Select °C or °F	0	num
ddd	Selection of type of value to be displayed	1	num
Configuration ("CnF" folder)			
H08	Stand-by operating mode	2	num
H11	Configuration of digital input 1	10	num
H12	Configuration of digital input 2	0	num
H21	Configurability of digital output 1	1	num
H22	Configurability of digital output 2	3	num
H23	Configurability of digital output 3	5	num
H25	Enable/Disable buzzer	0	num
H32	Configurability of down key	2	num
H33	Configuratbility of ESC key	4	num
H42	Evaporator probe present	y	flag
H43	Probe 3 present	n	flag
reL	reLease firmware		
tAb	tAble of parameters		
Copy card ("Fpr" folder)			
UL	Upload		
Fr	Format Copy Card		

MCC Cold SS	Eliwell EWNext 978 P/R		9124521	Rev. C

Table of "user" menu paramters			
Parameter	**Description**	**Value**	**Unit**
SEt	Temperature Setpoint	3	℃
diF	Compressor relay activation differential	1	℃
HSE	Maximum value that can be assigned to the Setpoint	10	℃
LSE	Minimum value that can be assigned to the Setpoint	-1	℃
dty	Type of defrost (0 = electrical, 1 = reverse cycle, 2 = "Free")	0	num
dit	Interval between the start of two consecutive defrost cycles	3	hours
dEt	Defrost timeout; determines the maximum defrost duration	30	min
dS1	Defrost end temperature (determiend by evaporator probe)	4	℃
FSt	Fan stop temperature	50	℃
dt	Coil drainage time	0	min
dFd	Allows to select the evaporator probes exclusion during defrost	n	flag
HAL	Maximum temperature alarm	10	℃
LAL	Minimum temperatre alarm	-30	℃
tAO	Temperature alarm signal delay time	30	min
dCS	Deep cooling cycle setpoint	-1	℃
tdC	Deep cooling cycle duration	0	min
OSP	Offset on setpoint	0,5	℃
OdF	Intervention differential correction	4	℃
dnt	Duration of night mode	10	hours
SPn	Night mode setpoint	1	℃
dFn	Night mode offset	2	℃
SPF	Fast cooling setpoint	-1	℃
dFF	Fast cooling offset	0,1	℃
LoC	LOCk Setpoint change shutdown	n	flag
PS1	Password 1	0	num
CA1	Calibration 1 (Pb1)	5	℃
CA2	Calibration 2 (Pb2)	0	℃
ddL	Display mode during defrost	2	num
Ldd	Timeout value for display unlick	30	min
tAb	Table of parameters		
Table of "installer" menu parameters			
Parameter	**Description**	**Value**	**Unit**
SEt	Temperature Setpoint	3	℃
Compressor ("CP" folder)			
diF	Compressor relay activation differential	1	℃
HSE	Maximum value that can be assigned to the Setpoint	10	℃
LSE	Minimum value that can be assigned to the Setpoint	-1	℃
Ont	Controller on time for faulty probe	0	min
Oft	Controller off time for faulty probe	1	min
dOn	Compressor relay activation delay after request	0	secs

dOF	Deflay after switching off and subsequent activation	0	min
dbi	Delay between two concecstive compressor activations	2	min
Cit	Minimum compressor activation time before it can be deactivated	0	min
Cat	Maximum compressor activation time before it can be deactivated	0	min
OdO	Delay in activating outputs after the instrument is switched on or after apower failure	0	min
CP2	Compressor 2 activation delay	0	min
dFA	Delay time in activating compressor and condenser fans after request	0	secs
	Defrost ("dEF" folder)		
dty	Type of defrost (0 = electrical, 1 = reverse cycle, 2 = "Free")	0	num
dit	Interval between the start of two consecutive defrost cycles	3	hours
dCt	Selects the count mode for the defrost interval	1	num
dOH	Defrost start delay time after request	0	min
dEt	Defrost timeout; determines the maximum defrost duration	30	min
dS1	Defrost end temperature 1 (determiend by evaporator probe)	4	℃
dS2	Defrost end temperature 2 (determiend by evaporator probe)	0	℃
dPO	Determines whether the instrument must enter defrost mode	y	flag
dMr	Enables the defrost count reset in the case of manual defrosting	n	flag
d00	Compressor running time before defrost is activated	0	hours
d01	d00 nit of measure	0	num
d11	dit unit of measure	0	num
d20	Can be used to activate the defrost when the compressor is off	n	flag
d40	Enables/disables the use of probe Pb2	1	flag
d41	Sets the defrost activation threshold	0	℃
d42	Sets the maximum time for which the evaporator can remain under d41	0	min
d43	Sets the type of time count in which te evaporator temp. remains under threshold valu	0	num
d44	Sets the trheshold management mode	AbS	flag
d50	Enables/disables the use of probe Pb2 (differential mode)	0	flag
d51	Enables/idsables the use of probe Pb1	0	flag
d52	Sets the defrost activaion threshold	0	℃
d53	Sets the maximum time for which the evaporator can remain above threshold value	0	min
d54	Sets the type of incremental time count in which the evaporator temperature remains	0	num
d55	Sets the threshold management mode	0	flag
	Fan regulator ("Fan" folder)		
FPt	Characterizes the "Fst" parameter	AbS	flag
FSt	Fan stop temperature	50	℃
Fot	Evaporator fan activation temperature	-50	℃
FAd	Fan starting differential	1	℃
Fdt	Fan activation delay after a defrost cycle	0	min
dt	Coil drainage time	0	min
dFd	Allows to select the evaporator probes exclusion during defrost	n	flag
FCO	Evaporator fans operating mode	1	num
FdC	Evaporator fans switch-off delay after compressor disabled	0	min
Fon	Fans ON time in duty cycle	12	secs*10
FoF	Fans OF time in duty cycle	6	secs*10

8.3 Parameter MCC Cold (Self Serve) Settings Next controller

Fnn	Fans ON time in night duty cycle	12	secs*10
FnF	Fans OF time in night duty cycle	6	secs*10
ESF	Night mode activation	n	flag
Alarms ("AL" folder)			
Att	Parameters HAL and LAL	AbS	flag
AFd	Alarm differential	2	℃
HAL	Maximum temperature alarm	10	℃
LAL	Minimum temperatre alarm	-30	℃
PAO	Alarm exclusion time after instrument switch on, after a power failure	0	hours
dAO	Temperature alarm exclusion time after defrost	0	min
OAO	Alarm signaling delay after digital input disabling	0	hours
tdO	Alarm activation delay time open door	0	hours
tAO	Temperature alarm signal delay time	30	min
dAt	Alarm for defrosting ended due to time out	n	flag
EAL	External alarm locks controller	n	flag
AOP	Alarm outp polarity	1	num
SA3	Probe Pb3 Alarm Setpoint	30	℃
dA3	Probe Pb3 alarm activation differential	1	℃
rFt	Low refrigerant alarm signaling delay	0	min
Cool protection ("CPr" folder)			
CPS	Cool protection setpoint	-10	℃
CPd	Cool protection differential	1	℃
CPt	Time that the temperature remains below the cool protection setpoint	0	min
Lights & digital inputs ("Lit" folder)			
ESA	AUX/Lights status during energy saving	1	num
Door switch ("dOr" folder)			
dOd	Digital input shuts off utilities	0	num
dAd	Digital input activation delay	0	min
dCo	Comrpessor switch-off delay from door opening	0	min
AUP	Auxiliary output activation when the door is opened	n	flag
dCd	Fans activation delay after door closed	0	s
Pressure switch ("Pre" folder)			
Pen	Number of errors allowed for general pressure switch input	5	num
PEI	Minimum/maximum pressure switch error count interval	1	min
Pet	Delay in activating compressor after pressure switch deactivation	0	min
Deep cooling ("dEC" folder)			
dCA	Enable deep cooling	0	num
dCS	Deep cooling setpoint	-1	℃
tdC	Deep cooling duration	0	min
dCC	Defrost delay after deep cooling	0	min
Sid	Deep cooling start threshold	12	℃
toS	Over-threshold time for deep cooling start	5	min
Energy saving ("EnS" folder)			
Est	Energy Saving mode	0	num

8.3 Parameter MCC Cold (Self Serve) Settings Next controller

Cdt	Door close time	6	min*10
OSP	Offset on setpoint	0,5	℃
OdF	Intervention differential correction	4	℃
dnt	Duration of night mode	10	hours
SPn	Night mode setpoint	1	℃
dFn	Night mode offset	2	℃
Pull-down ("PLd" folder)			
PdC	Enable pull-down	diS	num
tPd	Pull-down phase duration	30	min
SPF	Regulation setpoint during the pull-down phase	0	℃
DFF	Regulation offset during the pull-down phase	0,1	℃
Pdo	Temperature step in operation with automatic pull-down	0,2	℃
Pdn	Number of steps in operation with automatic pull-down	3	num
Communication ("Add" folder)			
Adr	Modbus protocol address	1	num
bAU	Modus Baudrate selection	96	num
Pty	Modbus parity bit setting	E	num
Display ("dIS" folder)			
LoC	LOCk Setpoint change shutdown	n	flag
PS1	Password 1	0	num
PS2	Password 2	0	num
ndt	Display with decimal point	y	num
CA1	Calibration 1 (Pb1)	5	℃
CA2	Calibration 2 (Pb2)	0	℃
CA3	Calibration 3 (Pb3)	0	℃
ddL	Display mode during defrost	2	num
ddE	Selects the type of value to show on the module ECNext	0	num
Ldd	Timeout value for display unlick	15	min
dro	Select ℃ or ℉	0	num
ddd	Selection of type of value to be displayed	1	num
FiS	Selects display filter	0	num
tAU	Display filter time constant	0	min
Fit	Display filter mode	0	flag
PS1	Access key user parameters	0	num
PS2	Access key installer parameters	15	num
Configuration ("CnF" folder)			
H08	Stand-by operating mode	2	num
H11	Configuration of digital input 1	0	num
H12	Configuration of digital input 2	0	num
H13	Configuration of digital input 3	0	num
H14	Configuration of digital input 4	0	num
H21	Configurability of digital output 1	1	num
H22	Configurability of digital output 2	3	num
H23	Configurability of digital output 3	7	num

8.3 Parameter MCC Cold (Self Serve) Settings Next controller

H24	Configurability of digital output 4	2	num
H31	Configurability of up key	1	num
H32	Configurability of down key	0	num
H33	Configuratbility of power key	4	num
H34	Configuratbility of light key	8	num
H35	Configuratbility of star key	0	num
H42	Evaporator probe present	y	flag
H43	Probe 3 present	n	flag
H45	Defrost input mode for applications with dual evaporator	0	num
H60	Visualisation of application	1	num
CuS	Customer model reference	0	num
tAb	tAble of parameters		
	Copy card ("Fpr" folder)		
UL	Upload		
Fr	Format Copy Card		
	Functions ("FnC" folder)		
oSP	Reduced set activaion		
dEF	Activate defrost		
AUX	AUX output activation/deactivation		
rAP	Reset pressure switch alarms		
Cnt	Reset TelevisAir diagnostic counters		
	Low ambient temperature protection ("CPr" folder)		
tCP	Time temperature remains below low ambient temperature protection setpoint (CPS)	0	min
SCP	Low ambient temperature protection setpoint	-10	℃
dCP	Low ambient temperature protection differential	1	℃

8.4 Parameter MCC Cold (Full Serve) Settings Next controller

MCC Cold FS	Eliwell EWNext 978 P/R		9124651	Rev. E

Table of "user" menu paramters				
Parameter	**Description**		**Value**	**Unit**
SEt	Temperature Setpoint		3	°C
diF	Compressor relay activation differential		1	°C
HSE	Maximum value that can be assigned to the Setpoint		10	°C
LSE	Minimum value that can be assigned to the Setpoint		-1	°C
dty	Type of defrost (0 = electrical, 1 = reverse cycle, 2 = "Free")		0	num
dit	Interval between the start of two consecutive defrost cycles		6	hours
dEt	Defrost timeout; determines the maximum defrost duration		30	min
dS1	Defrost end temperature (determiend by evaporator probe)		4	°C
FSt	Fan stop temperature		50	°C
dt	Coil drainage time		0	min
dFd	Allows to select the evaporator probes exclusion during defrost		n	flag
HAL	Maximum temperature alarm		10	°C
LAL	Minimum temperatre alarm		-30	°C
tAO	Temperature alarm signal delay time		30	min
dCS	Deep cooling cycle setpoint		-1	°C
tdC	Deep cooling cycle duration		0	min
OSP	Offset on setpoint		0,5	°C
OdF	Intervention differential correction		4	°C
dnt	Duration of night mode		10	hours
SPn	Night mode setpoint		1	°C
dFn	Night mode offset		2	°C
SPF	Fast cooling setpoint		-1	°C
dFF	Fast cooling offset		0,1	°C
LoC	LOCk Setpoint change shutdown		n	flag
PS1	Password 1		0	num
CA1	Calibration 1 (Pb1)		4,8	°C
CA2	Calibration 2 (Pb2)		0	°C
ddL	Display mode during defrost		2	num
Ldd	Timeout value for display unlick		30	min
tAb	Table of parameters			
Table of "installer" menu parameters				
Parameter	**Description**		**Value**	**Unit**
SEt	Temperature Setpoint		3	°C
Compressor ("CP" folder)				
diF	Compressor relay activation differential		1	°C
HSE	Maximum value that can be assigned to the Setpoint		10	°C
LSE	Minimum value that can be assigned to the Setpoint		-1	°C
Ont	Controller on time for faulty probe		0	min
Oft	Controller off time for faulty probe		1	min
dOn	Compressor relay activation delay after request		0	secs
dOF	Deflay after switching off and subsequent activation		0	min
dbi	Delay between two concecsutive compressor activations		2	min
Cit	Minimum compressor activation time before it can be deactivated		0	min
Cat	Maximum compressor activation time before it can be deactivated		0	min

8.4 Parameter MCC Cold (Full Serve) Settings Next controller

OdO	Delay in activating outputs after the instrument is switched on or after apower failure	0	min
CP2	Compressor 2 activation delay	0	min
dFA	Delay time in activating compressor and condenser fans after request	0	secs
Defrost ("dEF" folder)			
dty	Type of defrost (0 = electrical, 1 = reverse cycle, 2 = "Free")	0	num
dit	Interval between the start of two consecutive defrost cycles	6	hours
dCt	Selects the count mode for the defrost interval	1	num
dOH	Defrost start delay time after request	0	min
dEt	Defrost timeout; determines the maximum defrost duration	30	min
dS1	Defrost end temperature 1 (determiend by evaporator probe)	4	℃
dS2	Defrost end temperature 2 (determiend by evaporator probe)	0	℃
dPO	Determines whether the instrument must enter defrost mode	y	flag
dMr	Enables the defrost count reset in the case of manual defrosting	n	flag
d00	Compressor running time before defrost is activated	0	hours
d01	d00 nit of measure	0	num
d11	dit unit of measure	0	num
d20	Can be used to activate the defrost when the compressor is off	n	flag
d40	Enables/disables the use of probe Pb2	1	flag
d41	Sets the defrost activation threshold	0	℃
d42	Sets the maximum time for which the evaporator can remain under d41	0	min
d43	Sets the type of time count in which te evaporator temp. remains under threshold value	0	num
d44	Sets the trheshold management mode	AbS	flag
d50	Enables/disables the use of probe Pb2 (differential mode)	0	flag
d51	Enables/idsables the use of probe Pb1	0	flag
d52	Sets the defrost activaion threshold	0	℃
d53	Sets the maximum time for which the evaporator can remain above threshold value	0	min
d54	Sets the type of incremental time count in which the evaporator temperature remains a	0	num
d55	Sets the threshold management mode	0	flag
Fan regulator ("Fan" folder)			
FPt	Characterizes the "Fst" parameter	AbS	flag
FSt	Fan stop temperature	50	℃
Fot	Evaporator fan activation temperature	-50	℃
FAd	Fan starting differential	1	℃
Fdt	Fan activation delay after a defrost cycle	0	min
dt	Coil drainage time	0	min
dFd	Allows to select the evaporator probes exclusion during defrost	n	flag
FCO	Evaporator fans operating mode	1	num
FdC	Evaporator fans switch-off delay after compressor disabled	0	min
Fon	Fans ON time in duty cycle	12	secs*10
FoF	Fans OF time in duty cycle	6	secs*10
Fnn	Fans ON time in night duty cycle	12	secs*10
FnF	Fans OF time in night duty cycle	6	secs*10
ESF	Night mode activation	n	flag
Alarms ("AL" folder)			
Att	Parameters HAL and LAL	AbS	flag
AFd	Alarm differential	2	℃
HAL	Maximum temperature alarm	10	℃
LAL	Minimum temperatre alarm	-30	℃

8.4 Parameter MCC Cold (Full Serve) Settings Next controller

PAO	Alarm exclusion time after instrument switch on, after a power failure	0	hours
dAO	Temperature alarm exclusion time after defrost	0	min
OAO	Alarm signaling delay after digital input disabling	0	hours
tdO	Alarm activation delay time open door	0	hours
tAO	Temperature alarm signal delay time	30	min
dAt	Alarm for defrosting ended due to time out	n	flag
EAL	External alarm locks controller	n	flag
AOP	Alarm outp polarity	1	num
SA3	Probe Pb3 Alarm Setpoint	30	℃
dA3	Probe Pb3 alarm activation differential	1	℃
rFt	Low refrigerant alarm signaling delay	0	min
	Cool protection ("CPr" folder)		
CPS	Cool protection setpoint	-10	℃
CPd	Cool protection differential	1	℃
CPt	Time that the temperature remains below the cool protection setpoint	0	min
	Lights & digital inputs ("Lit" folder)		
ESA	AUX/Lights status during energy saving	1	num
	Door switch ("dOr" folder)		
dOd	Digital input shuts off utilities	0	num
dAd	Digital input activation delay	0	min
dCo	Comrpessor switch-off delay from door opening	0	min
AUP	Auxiliary output activation when the door is opened	n	flag
dCd	Fans activation delay after door closed	0	s
	Pressure switch ("Pre" folder)		
Pen	Number of errors allowed for general pressure switch input	5	num
PEI	Minimum/maximum pressure switch error count interval	1	min
Pet	Delay in activating compressor after pressure switch deactivation	0	min
	Deep cooling ("dEC" folder)		
dCA	Enable deep cooling	0	num
dCS	Deep cooling setpoint	-1	℃
tdC	Deep cooling duration	0	min
dCC	Defrost delay after deep cooling	0	min
Sid	Deep cooling start threshold	12	℃
toS	Over-threshold time for deep cooling start	5	min
	Energy saving ("EnS" folder)		
Est	Energy Saving mode	0	num
Cdt	Door close time	6	min*10
OSP	Offset on setpoint	0,5	℃
OdF	Intervention differential correction	4	℃
dnt	Duration of night mode	10	hours
SPn	Night mode setpoint	1	℃
dFn	Night mode offset	2	℃
	Pull-down ("PLd" folder)		
PdC	Enable pull-down	diS	num
tPd	Pull-down phase duration	30	min
SPF	Regulation setpoint during the pull-down phase	0	℃
DFF	Regulation offset during the pull-down phase	0,1	℃
Pdo	Temperature step in operation with automatic pull-down	0,2	℃

8.4 Parameter MCC Cold (Full Serve) Settings Next controller

Pdn	Number of steps in operation with automatic pull-down	3	num
Communication ("Add" folder)			
Adr	Modbus protocol address	1	num
bAU	Modus Baudrate selection	96	num
Pty	Modbus parity bit setting	E	num
Display ("dIS" folder)			
LoC	LOCk Setpoint change shutdown	n	flag
PS1	Password 1	0	num
PS2	Password 2	0	num
ndt	Display with decimal point	y	num
CA1	Calibration 1 (Pb1)	4,8	℃
CA2	Calibration 2 (Pb2)	0	℃
CA3	Calibration 3 (Pb3)	0	℃
ddL	Display mode during defrost	2	num
ddE	Selects the type of value to show on the module ECNext	0	num
Ldd	Timeout value for display unlick	15	min
dro	Select ℃ or ℉	0	num
ddd	Selection of type of value to be displayed	1	num
FiS	Selects display filter	0	num
tAU	Display filter time constant	0	min
Fit	Display filter mode	0	flag
PS1	Access key user parameters	0	num
PS2	Access key installer parameters	15	num
Configuration ("CnF" folder)			
H08	Stand-by operating mode	2	num
H11	Configuration of digital input 1	0	num
H12	Configuration of digital input 2	0	num
H13	Configuration of digital input 3	0	num
H14	Configuration of digital input 4	0	num
H21	Configurability of digital output 1	1	num
H22	Configurability of digital output 2	3	num
H23	Configurability of digital output 3	7	num
H24	Configurability of digital output 4	2	num
H31	Configurability of up key	1	num
H32	Configurability of down key	0	num
H33	Configuratbility of power key	4	num
H34	Configuratbility of light key	8	num
H35	Configuratbility of star key	0	num
H42	Evaporator probe present	y	flag
H43	Probe 3 present	n	flag
H45	Defrost input mode for applications with dual evaporator	0	num
H60	Visualisation of application	1	num
CuS	Customer model reference	0	num
tAb	tAble of parameters		
Copy card ("Fpr" folder)			
UL	Upload		
Fr	Format Copy Card		
Functions ("FnC" folder)			

8.4 Parameter MCC Cold (Full Serve) Settings Next controller

oSP	Reduced set activaion		
dEF	Activate defrost		
AUX	AUX output activation/deactivation		
rAP	Reset pressure switch alarms		
Cnt	Reset TelevisAir diagnostic counters		
Low ambient temperature protection ("CPr" folder)			
tCP	Time temperature remains below low ambient temperature protection setpoint (CPS)	0	min
SCP	Low ambient temperature protection setpoint	-10	℃
dCP	Low ambient temperature protection differential	1	℃

9.0 Safety Instructions

9.5   **Safety instructions** Cold Units

R290

Units with the natural refrigerant propane (R290) must be installed in a safe
Environment that meets the requirements of the respective directive.
Exclusively electrical devices may be used inside the unit that are certified
by the applicable ATEX directive. The operator is responsible for this.

Read this manual carefully and follow all precautions described herein

**SPECIAL SAFETY INSTRUCTIONS FOR UNITS WITH
       PROPANE (R290) REFRIGERANT**

- In the event of the installation or combination with units as well as electrical /
Refrigeration system components that do not comply with an R290 design in
Accordance with the respective directives, the unit must be covered and
Separated from the adjoining units/components.

- The refrigerant circuit may be exclusively opened and the refrigerant extracted in
a well ventilated room or outdoors.

- Work on the refrigeration system is to be carried out exclusively by authorized,
Qualified specialists who are trained for the refrigerant propane (R290).

- Exclusively electrical devices may be used inside the unit that are certified by the
applicable ATEX directive .

- The cooling circuit and refrigeration system of the unit must not be damaged.
This can lead to an unintentional exothermic reaction of the ignitable gas/air mix.

- The ventilation openings of the cladding of the unit (including accessories) must
not be blocked or covered. In the event of a leak in the refrigeration system, this
can lead to an unintentional exothermic reaction of the ignitable gas/air mix.

- All ventilation openings wherever on the front and / or back side of the appliance
must be kept free.
The minimum distances to other units must be complied with.
Make sure that the air circulation is unobstructed.
In the event of a leak in the refrigeration system, a blockage of the air circulation
can lead to an unintentional exothermic reaction of the ignitable gas/air mix.

- According to the standard DIN EN 378-1, the refrigerant propane is combustible
and explosive (refrigerant group A3).

- The refrigerant propane (R290) can create an ignitable gas/air mix, which can
trigger an exothermic reaction in a critical mixing ratio with air and in connection
with the respective ignition energy (ignition source).

9.1 Maintenance Points MCC Cold

9.6   **Condenser Cleaning** (cold units)

⚠️ **WARNING**
Cleaning of the condenser must be performed by qualified persons and in a well Ventilated environment.

Unscrew the condenser cover
(this can be done using the special key, or
by unscrewing two closing screws, depending
on the version)

Special key
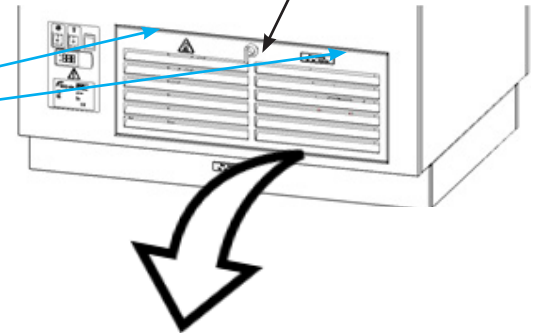
Screws

Keep condenser free from dirt and dust,
clean regularly.

For cleaning use a long haired soft brush
and a vacuum cleaner

👉 Be aware not to damage the aluminum plates

Close the cover and place the screws in place or use the special key, which ever is applicable

⚠️ **WARNING**
No spark-forming components or components with a high surface temperature (according to IEC 60079-15) may be present in the substructure/counter where the unit is placed

R290

9.7   **Units with Next controller**

Units equipped with the next controller, are also equipped with a reversible condenser fan motor.

This function allows the condenser fan motor to reverse its direction of rotation, allowing the fan to blow the collected dust off the condenser autocratically.

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

10.0.4

NTC sensor testing (Cold 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 (range 5kΩ til 100kΩ).

Temperature		Resistance kΩ
ºF	ºC	+/- 500 Ohms
-4	-20	67,77
14	-10	42,47
32	0	27,28
50	10	17,96
68	20	12,09
77	25	10,00

10.0 Trouble Shooting

10.0.8 Alarm codes <cold units>

Alarms If there is any active alarm, the Alarm icon located in the upper left part will light up.
To display the active alarm, you have to press the "set" key and look for the "AL" folder.
In the following table, you will be able to see all the possible alarms.
The following table shows the alarms that the application can generate along with its description.

Tag	Description	Reset
Er01	Room Temperature probe 1 Error	AUTO
Er02	Room Humidity probe error (not used)	AUTO
Er03	Expansion Error	AUTO
AL01	High room temperature alarm	AUTO
AL02	Low room temperature alarm	AUTO
AL03	High humidity alarm	AUTO
AL04	Low humidity alarm	AUTO
AL05	Low water level alarm	AUTO

10.1 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 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. Cooling unit malfunction (COLD unit only) 2. Strong air current along unit / Draft 3. Burned contact on contactor 4. Sensor malfunction 5. 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

10.2 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
Cooling engine (COLD unit)	Cooling system does not initiate (compressor doesn't run	Wiring cooling Engine	Check wiring
		Compressor Malfunction	Replace cooling engine
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
Defrost sensor (Cold Unit)	Ice on evaporator	Condenser blocked	Clean condenser with long haired soft brush
	The unit is not reaching the set temperature or does not cool at all	Broken Sensor	Replace sensor
		Loose sensor	Check sensor wiring
	The unit becomes too cold	Broken Sensor	Replace sensor
		Loose sensor	Check sensor wiring
Air out sensor (Cold Unit)	Ice on evaporator	Condenser blocked	Clean condenser with long haired soft brush
	The unit is not reaching the set temperature or does not cool at all	Broken Sensor	Replace sensor
		Loose sensor	Check sensor wiring
	The unit becomes too cold	Broken Sensor	Replace sensor
		Loose sensor	Check sensor wiring

11.0 Replacement and Adjustments

11.1   **Top glass replacement**

1.   For replacement, open top glass
            pane entirely.

☞   Be aware of the weight of the glass.
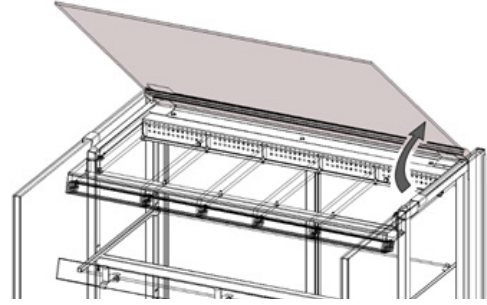
2.   Remove the air guide (for the hot version) or the air box (for the cold version)
            by simply lifting them out.
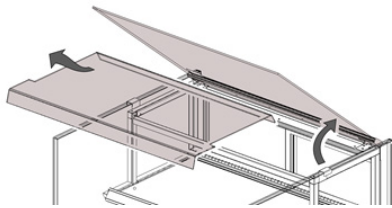
HOT   **COLD**
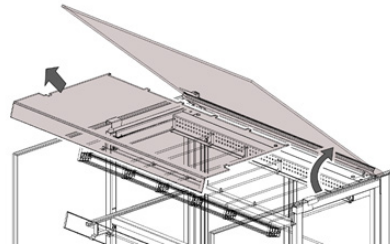
3.   Loosen the adjusting screws which
            secure the glass with a torques key
            TX15
            Depending on the length of the unit,
            there are 4, 6 or 8 screws.
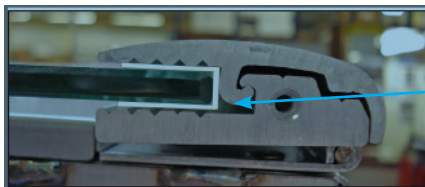
4.   When refitting the glass, make sure the
            silicon protection profile is on.

11.2.   **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.
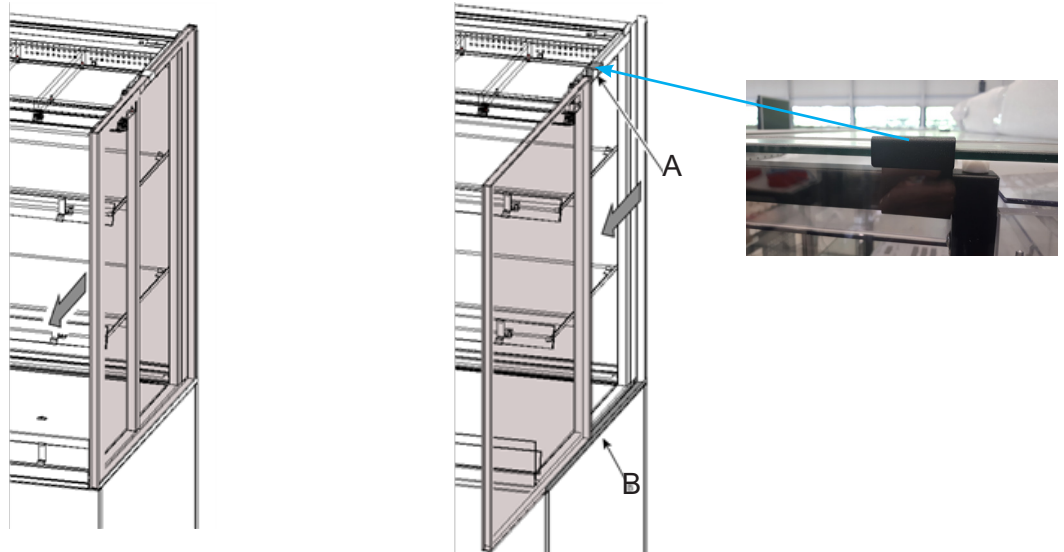
CAUTION:
Once past the top guide, the glass pane might fall if not properly held.

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.

11.4 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.

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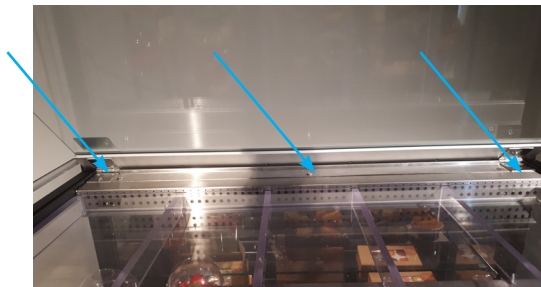
3. Remove rail stopper (two screws on top).

4. Remove sliding door(s).
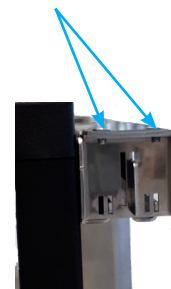
5. Replace in reverse order.

11.4.1 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.
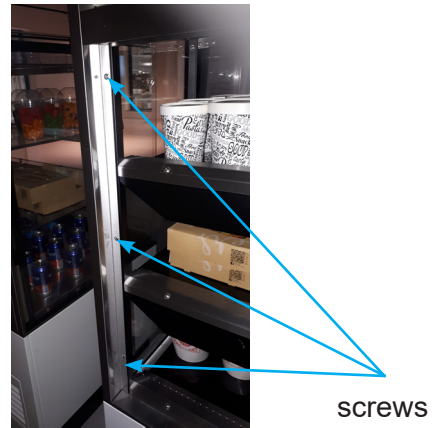
In order to replace the sliding doors, take following step:

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.
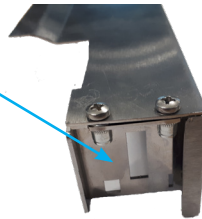
screws

11.7   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.

Mounting screws

11.8   MCC Air guide replacement

1.   Air guide replacement

2.   For replacement, open top glass
        pane entirely.

☞   Be aware of the weight of the glass.
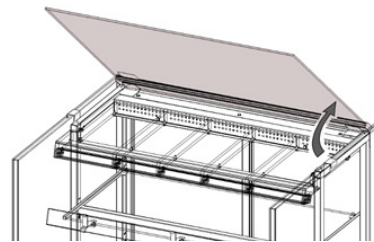
3.   Remove the air guide by simply lifting them out.

COLD
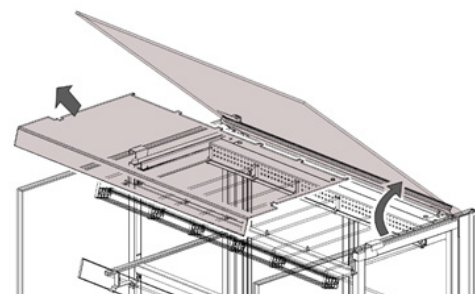
11.11   Opening Electrical box

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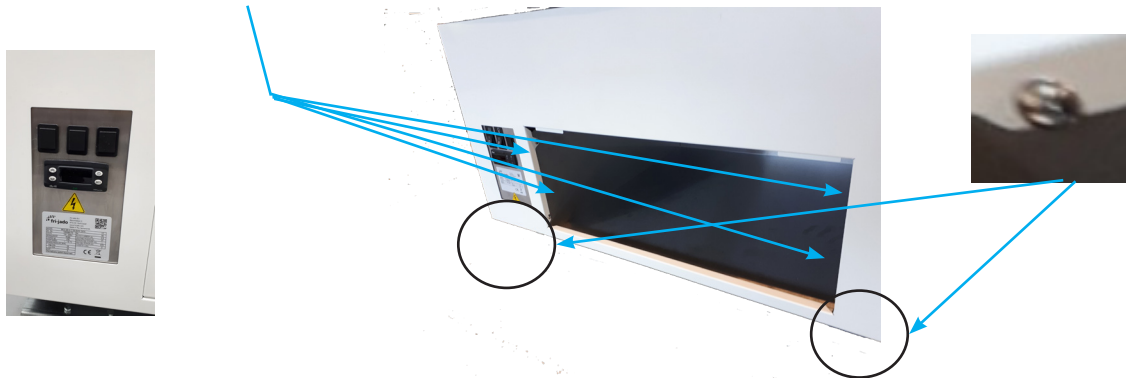
After loosening the screws, you can remove the panel by pulling it slightly down and then turning it towards you.

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
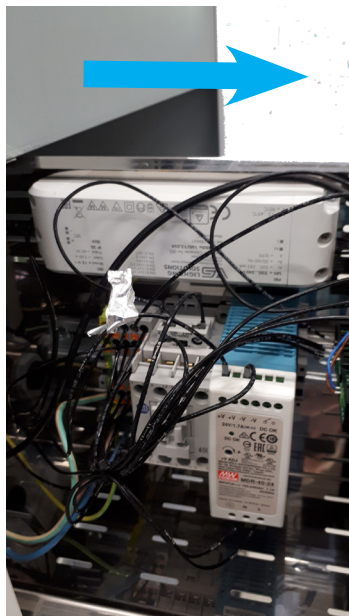
Normal version (24V psu)

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

11.12 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.
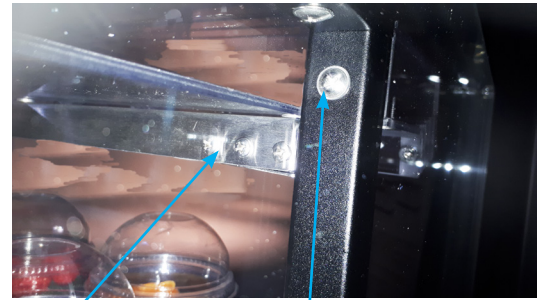
5. Loosen Element holders, depending on the version the holders are twisted at the back side, or fastened with screws.

11.14 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)
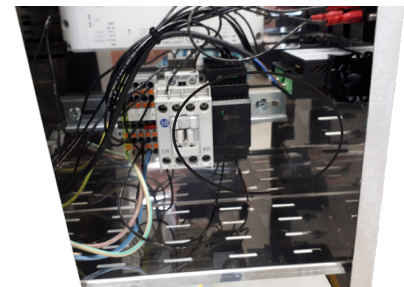
11.15 MCC Cold

Top Fan replacement

Remark; Connection of end wires is done by Wago connector in the side beam.

1. Remove side glass panels (See 11.2)

2. Remove Top glass (See 11.1)

3. Take out Air guide (see 11.8)

4. Remove Air box by unscrewing the mounting screws at the back
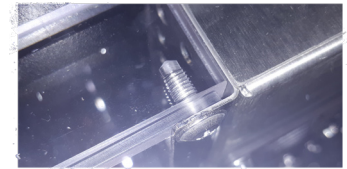
5. Remove colomn covers, left and right back by unscrewing the top and bottom screw.
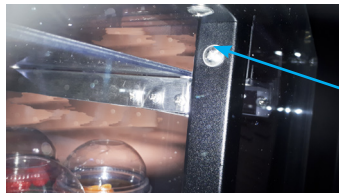
Top cover screw

6. Open the air box by removing the closing screws

7. Take out the faulty fan, and replace.
   Use new waterproof connectors to connect to the wires.

8. Replace is reverse order.

11.16 Panel Replacement

1.   Remove Plinths (refer 4.8)

Front panel

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

Bottom view

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)

Bottom view

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

11-17 Front glass pane replacement (Full serve models)

Front glass pane

Silicon protection profile
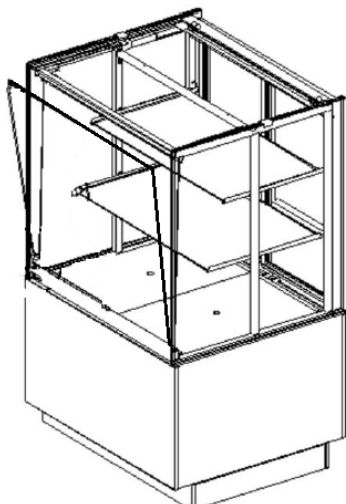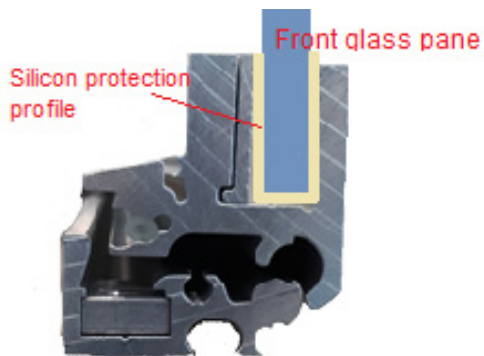
1. Lift top glass to "unlock" the front glass

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.

12.0 Technical Specifications MCC Cold - 2 (Full Serve) EU

⚠️ **WARNING**
Consult the identification plate to get the proper specifications of the unit.
The electrical data may vary from country to country.

Specification	Unit	Model			
		60-2	90-2	120-2	150-2
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.	520		
Underframe height	mm	n.a.	900		
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.	170	200	230
Weight (gross)	kg	n.a.	202	238	274
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.	2		
Dimensions bottom shelf	mm	n.a.	590 x 800	590 x 1100	590 x 1400
Dimensions top shelf	mm	n.a.	475 x 800	475 x 1100	475 x 1400
Shelf display area	m2	n.a.	0,85	1,17	1,49
Usable display volume	l	n.a.	206	283	360
Drain diameter	mm	n.a.	32		
Minimum room floor area	m2	n.a.	8,13	10,53	12,92
Minimum air inlet surface area	cm2	n.a.	500	1100	1250
Minimum air outlet surface area	cm2	n.a.	300	500	700

Specification	Unit	Model			
		60-2	90-2	120-2	150-2
Performance					
Climate class*		n.a.	3		
Classification*		n.a.	M0/M1		
TDA*	m2	n.a.	0,98	1,31	1,64
TEC at 3M1*	kWh/day	n.a.	4,60	10,16	12,72
TEC/TDA at 3M1*	kWh/day/m2	n.a.	7,76		
EEI*	%	n.a.	33	38	42
Energy class at 3M1*		n.a.	C (A→G)	D (A→G)	D (A→G)
TEWI**	kg of CO_2	n.a.	8185	10942	13698
Sound pressure	dB(A)	n.a.	<70		
Minimum ambient temperature	°C	n.a.	15		
Maximum ambient temperature	°C	n.a.	25		
Maximum relative air humidity	%	n.a.	60		

* According to ISO 23953
** Total equivalent warming impact according to EN 378, based on 10 years of operation at climate class 3, 0,295 kg CO₂/kWh and a leakage rate of 1% per year

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Refrigeration					
Refrigerant		n.a.	R290 (propane)		
GWP		n.a.	3		
ODP		n.a.	0		
Flammability class*		n.a.	A3		
Refrigerant charge	g	n.a.	170	210	250
Refrigeration capacity	W	n.a.	750	1050	1350
Capillary tube length	m	n.a.	1,17	1,82	1,10
Capillary tube inner diameter	mm	n.a.	1,00	1,25	
Evaporation temperature	°C	n.a.	-10		
Condensation temperature	°C	n.a.	35		
Air inlet temperature (approx.)	°C	n.a.	4		
Air outlet temperature (approx.)	°C	n.a.	-4		
Superheat	K	n.a.	5		
Sub cooling	K	n.a.	1		
Nr. of circuits		n.a.	2		

* According to ASHRAE Standard 34

Specification	Unit	Model			
		60-2	90-2	120-2	150-2
Electrical					
Electrical connection		n.a.	Two-pole earthed plug 16A*		
Nominal voltage	V	n.a.	1N~ 230		
Nominal frequency	Hz	n.a.	50		
Maximum power**	W	n.a.	394	484	685
Nominal current**	A	n.a.	3,0	4,6	5,1
Required fuses		n.a.	1 x 10A		
Evaporator fan power	W	n.a.	7	10	13
Nr. of evaporator fans		n.a.	5	7	9
Condenser fan power	W	n.a.	16	20	32
Nr. of condenser fans		n.a.	1	2	
Compressor power	W	n.a.	331	404	579
LED lighting power	W	n.a.	25	35	46
Evaporation tray power***	W	n.a.	570		

* Standard plug
** Excluding optional evaporation tray
*** Optional

12.1 Technical Specifications MCC Cold - 2 (Self Serve) EU

Specification	Unit	Model			
		60-2	90-2	120-2	150-2
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.	520		
Underframe height	mm	n.a.	900		
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.	170	200	230
Weight (gross)	kg	n.a.	202	238	274
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.	2		
Dimensions bottom shelf	mm	n.a.	590 x 800	590 x 1100	590 x 1400
Dimensions top shelf	mm	n.a.	475 x 800	475 x 1100	475 x 1400
Shelf display area	m2	n.a.	0,85	1,17	1,49
Usable display volume	l	n.a.	206	283	360
Drain diameter	mm	n.a.	32		
Minimum room floor area	m2	n.a.	8,13	10,53	12,92
Minimum air inlet surface area	cm2	n.a.	1100	1250	
Minimum air outlet surface area	cm2	n.a.	500	700	900

Specification	Unit	Model			
		60-2	90-2	120-2	150-2
Performance					
Climate class*		n.a.	3		
Classification*		n.a.	M1		
TDA*	m2	n.a.	0,96	1,28	1,60
TEC at 3M1*	kWh/day	n.a.	11,13	14,84	18,55
TEC/TDA at 3M1*	kWh/day/m2	n.a.	29,68		
EEI at 3M1*	%	n.a.	49	57	62
Energy class at 3M1*		n.a.	D	E	E
TEWI**	kg of CO_2	n.a.	11986	15981	19976
Sound pressure	dB(A)	n.a.	<70		
Minimum ambient temperature	°C	n.a.	10		
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 CO₂/kWh and a leakage rate of 1% per year

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Refrigeration					
Refrigerant		n.a.	R290 (propane)		
GWP		n.a.	3		
ODP		n.a.	0		
Flammability class*		n.a.	A3		
Refrigerant charge	g	n.a.	170	210	250
Refrigeration capacity	W	n.a.	750	1050	1350
Capillary tube length	m	n.a.	1,17	1,82	1,10
Capillary tube inner diameter	mm	n.a.	1,00	1,25	
Evaporation temperature	°C	n.a.	-10		
Condensation temperature	°C	n.a.	35		
Air inlet temperature (approx.)	°C	n.a.	4		
Air outlet temperature (approx.)	°C	n.a.	-4		
Superheat	K	n.a.	5		
Sub cooling	K	n.a.	1		
Nr. of circuits		n.a.	2		

* According to ASHRAE Standard 34

Specification	Unit	Model			
		60-2	90-2	120-2	150-2
Electrical					
Electrical connection		n.a.	Two-pole earthed plug 16A*		
Nominal voltage	V	n.a.	1N~ 230		
Nominal frequency	Hz	n.a.	50		
Maximum power**	W	n.a.	476	677	802
Nominal current**	A	n.a.	3,0	4,6	5,1
Required fuses		n.a.	1 x 10A		
Evaporator fan power	W	n.a.	7	10	13
Nr. of evaporator fans		n.a.	5	7	9
Air curtain fan power	W	n.a.	5	6	8
Nr. of air curtain fans		n.a.	5	7	9
Condenser fan power	W	n.a.	20	32	
Nr. of condenser fans		n.a.	2		
Compressor power	W	n.a.	404	579	688
LED lighting power	W	n.a.	25	35	46
Evaporation tray power***	W	n.a.	570		

* Standard plug
** Excluding optional evaporation tray
*** Optional

12.2 Technical Specifications MCC Cold - 3 (Full Serve) EU

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.	195	225	255
Weight (gross)	kg	n.a.	227	263	299
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.	8,13	10,53	12,92
Minimum air inlet surface area	cm2	n.a.	500	1100	1250
Minimum air outlet surface area	cm2	n.a.	300	500	700

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.	1,27	1,70	2,12
TEC at 3M1*	kWh/day	n.a.	8,96	11,96	14,95
TEC/TDA at 3M1*	kWh/day/m2	n.a.	7,04		
EEI*	%	n.a.	34	39	42
Energy class at 3M1*		n.a.	C (A-G)	D (A-G)	D (A-G)
TEWI**	kg of CO_2	n.a.	9647	12880	16103
Sound pressure	dB(A)	n.a.	<70		
Minimum ambient temperature	°C	n.a.	10		
Maximum ambient temperature	°C	n.a.	25		
Maximum relative air humidity	%	n.a.	60		

* According to ISO 23953

** 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

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Refrigeration					
Refrigerant		n.a.	R290 (propane)		
GWP		n.a.	3		
ODP		n.a.	0		
Flammability class*		n.a.	A3		
Refrigerant charge	g	n.a.	170	210	250
Refrigeration capacity	W	n.a.	750	1050	1350
Capillary tube length	m	n.a.	1,17	1,82	1,10
Capillary tube inner diameter	mm	n.a.	1,00	1,25	
Evaporation temperature	°C	n.a.	-10		
Condensation temperature	°C	n.a.	35		
Air inlet temperature (approx.)	°C	n.a.	4		
Air outlet temperature (approx.)	°C	n.a.	-4		
Superheat	K	n.a.	5		
Sub cooling	K	n.a.	1		
Nr. of circuits		n.a.	2		

* According to ASHRAE Standard 34

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Electrical					
Electrical connection		n.a.	Two-pole earthed plug 16A*		
Nominal voltage	V	n.a.	1N~ 230		
Nominal frequency	Hz	n.a.	50		
Maximum power**	W	n.a.	406	502	708
Nominal current**	A	n.a.	3,8	3,1	4,7
Required fuses		n.a.	1 x 10A		
Evaporator fan power	W	n.a.	7	10	13
Nr. of evaporator fans		n.a.	5	7	9
Condenser fan power	W	n.a.	16	20	32
Nr. of condenser fans		n.a.	1	2	
Compressor power	W	n.a.	331	404	579
LED lighting power	W	n.a.	37	53	69
Evaporation tray power***	W	n.a.	570		

* Standard plug
** Excluding optional evaporation tray
*** Optional

12.3 Technical Specifications MCC Cold - 3 (Self Serve) EU

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.	195	225	255
Weight (gross)	kg	n.a.	227	263	299
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.	8,13	10,53	12,92
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.	1,25	1,67	2,08
TEC at 3M1*	kWh/day	n.a.	12,75	17,03	21,22
TEC/TDA at 3M1*	kWh/day/m2	n.a.	10,20		
EEI at 3M1*	%	n.a.	49	55	60
Energy class at 3M1*		n.a.	D (A-G)	E (A-G)	E (A-G)
TEWI**	kg of CO_2	n.a.	13730	18343	22846
Sound pressure	dB(A)	n.a.	<70		
Minimum ambient temperature	°C	n.a.	10		
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

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Refrigeration					
Refrigerant		n.a.	R290 (propane)		
GWP		n.a.	3		
ODP		n.a.	0		
Flammability class*		n.a.	A3		
Refrigerant charge	g	n.a.	170	210	250
Refrigeration capacity	W	n.a.	750	1050	1350
Capillary tube length	m	n.a.	1,17	1,82	1,10
Capillary tube inner diameter	mm	n.a.	1,00	1,25	
Evaporation temperature	°C	n.a.	-10		
Condensation temperature	°C	n.a.	35		
Air inlet temperature (approx.)	°C	n.a.	4		
Air outlet temperature (approx.)	°C	n.a.	-4		
Superheat	K	n.a.	5		
Sub cooling	K	n.a.	1		
Nr. of circuits		n.a.	2		

* According to ASHRAE Standard 34

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Electrical					
Electrical connection		n.a.	Two-pole earthed plug 16A*		
Nominal voltage	V	n.a.	1N~ 230		
Nominal frequency	Hz	n.a.	50		
Maximum power**	W	n.a.	488	695	825
Nominal current**	A	n.a.	3,0	4,7	5,2
Required fuses		n.a.	1 x 10A		
Evaporator fan power	W	n.a.	7	10	13
Nr. of evaporator fans		n.a.	5	7	9
Air curtain fan power	W	n.a.	5	6	8
Nr. of air curtain fans		n.a.	5	7	9
Condenser fan power	W	n.a.	20	32	
Nr. of condenser fans		n.a.	2		
Compressor power	W	n.a.	404	579	688
LED lighting power	W	n.a.	37	53	69
Evaporation tray power***	W	n.a.	570		

* Standard plug

** Excluding optional evaporation tray

*** Optional

12.4 Technical Specifications MCC Cold - 4 (Full Serve) EU

Specification	Unit	Model			
		60-4	90-4	120-4	150-4
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.	202	234	266
Weight (gross)	kg	n.a.	234	272	310
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.		4	
Dimensions bottom shelf	mm	n.a.	590 x 800	590 x 1100	590 x 1400
Dimensions middle shelves	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.	1,56	2,15	2,73
Usable display volume	l	n.a.	249	343	436
Drain diameter	mm	n.a.		32	
Minimum room floor area	m2	n.a.	8,13	10,53	12,92
Minimum air inlet surface area	cm2	n.a.	500	1100	1250
Minimum air outlet surface area	cm2	n.a.	300	500	700

Specification	Unit	Model			
		60-4	90-4	120-4	150-4
Performance					
Climate class*		n.a.		3	
Classification*		n.a.		M1	
TDA*	m2	n.a.	1,27	1,70	2,12
TEC at 3M1*	kWh/day	n.a.	8,96	11,96	14,95
TEC/TDA at 3M1*	kWh/day/m2	n.a.		7,04	
EEI*	%	n.a.	34	39	42
Energy class at 3M1*		n.a.	C (A to G)	D (A to G)	D (A to G)
TEWI**	kg of CO_2	n.a.	9647	12880	16103
Sound pressure	dB(A)	n.a.		<70	
Minimum ambient temperature	°C	n.a.		10	
Maximum ambient temperature	°C	n.a.		25	
Maximum relative air humidity	%	n.a.		60	

* According to ISO 23953
** 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

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Refrigeration					
Refrigerant		n.a.		R290 (propane)	
GWP		n.a.		3	
ODP		n.a.		0	
Flammability class*		n.a.		A3	
Refrigerant charge	g	n.a.	170	210	250
Refrigeration capacity	W	n.a.	750	1050	1350
Capillary tube length	m	n.a.	1,17	1,82	1,10
Capillary tube inner diameter	mm	n.a.	1,00		1,25
Evaporation temperature	°C	n.a.		-10	
Condensation temperature	°C	n.a.		35	
Air inlet temperature (approx.)	°C	n.a.		4	
Air outlet temperature (approx.)	°C	n.a.		-4	
Superheat	K	n.a.		5	
Sub cooling	K	n.a.		1	
Nr. of circuits		n.a.		2	

* According to ASHRAE Standard 34

Specification	Unit	Model			
		60-4	90-4	120-4	150-4
Electrical					
Electrical connection		n.a.	Two-pole earthed plug 16A*		
Nominal voltage	V	n.a.	1N~ 230		
Nominal frequency	Hz	n.a.	50		
Maximum power**	W	n.a.	418	520	731
Nominal current**	A	n.a.	3,8	3,1	4,8
Required fuses		n.a.	1 x 10A		
Evaporator fan power	W	n.a.	7	10	13
Nr. of evaporator fans		n.a.	5	7	9
Condenser fan power	W	n.a.	16	20	32
Nr. of condenser fans		n.a.	1	2	
Compressor power	W	n.a.	331	404	579
LED lighting power	W	n.a.	49	71	92
Evaporation tray power***	W	n.a.	570		

* Standard plug
** Excluding optional evaporation tray
*** Optional

12.5 Technical Specifications MCC Cold - 4 (Self Serve) EU

Specification	Unit	Model			
		60-4	90-4	120-4	150-4
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.	202	234	266
Weight (gross)	kg	n.a.	234	272	310
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.	4		
Dimensions bottom shelf	mm	n.a.	590 x 800	590 x 1100	590 x 1400
Dimensions middle shelves	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.	1,56	2,15	2,73
Usable display volume	l	n.a.	249	343	436
Drain diameter	mm	n.a.	32		
Minimum room floor area	m2	n.a.	8,13	10,53	12,92
Minimum air inlet surface area	cm2	n.a.	1100	1250	
Minimum air outlet surface area	cm2	n.a.	500	700	900

Specification	Unit	Model			
		60-4	90-4	120-4	150-4
Performance					
Climate class*		n.a.	3		
Classification*		n.a.	M1		
TDA*	m2	n.a.	1,25	1,67	2,08
TEC at 3M1*	kWh/day	n.a.	12,75	17,03	21,22
TEC/TDA at 3M1*	kWh/day/m2	n.a.	10,20		
EEI at 3M1*	%	n.a.	49	55	60
Energy class at 3M1*		n.a.	D	E	E
TEWI**	kg of CO_2	n.a.	13730	18343	22846
Sound pressure	dB(A)	n.a.	<70		
Minimum ambient temperature	°C	n.a.	10		
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

Specification	Unit	Model			
		60-3	90-3	120-3	150-3
Refrigeration					
Refrigerant		n.a.	R290 (propane)		
GWP		n.a.	3		
ODP		n.a.	0		
Flammability class*		n.a.	A3		
Refrigerant charge	g	n.a.	170	210	250
Refrigeration capacity	W	n.a.	750	1050	1350
Capillary tube length	m	n.a.	1,17	1,82	1,10
Capillary tube inner diameter	mm	n.a.	1,00	1,25	
Evaporation temperature	˚C	n.a.	-10		
Condensation temperature	˚C	n.a.	35		
Air inlet temperature (approx.)	˚C	n.a.	4		
Air outlet temperature (approx.)	˚C	n.a.	-4		
Superheat	K	n.a.	5		
Sub cooling	K	n.a.	1		
Nr. of circuits		n.a.	2		

* According to ASHRAE Standard 34

Specification	Unit	Model			
		60-4	90-4	120-4	150-4
Electrical					
Electrical connection		n.a.	Two-pole earthed plug 16A*		
Nominal voltage	V	n.a.	1N~ 230		
Nominal frequency	Hz	n.a.	50		
Maximum power**	W	n.a.	500	713	848
Nominal current**	A	n.a.	3,1	4,8	5,3
Required fuses		n.a.	1 x 10A		
Evaporator fan power	W	n.a.	7	10	13
Nr. of evaporator fans		n.a.	5	7	9
Air curtain fan power	W	n.a.	5	6	8
Nr. of air curtain fans		n.a.	5	7	9
Condenser fan power	W	n.a.	20	32	
Nr. of condenser fans		n.a.	2		
Compressor power	W	n.a.	404	579	688
LED lighting power	W	n.a.	49	71	92
Evaporation tray power***	W	n.a.	570		

* Standard plug
** Excluding optional evaporation tray
*** Optional

12.6 Explanation difference in levels and shelfs

Level 2
Shelf 1
Level 1

Level 3
Shelf 2
Level 2
Shelf 1
Level 1

Level 4
Shelf 3
Level 3
Shelf 2
Level 2
Shelf 1
Level 1
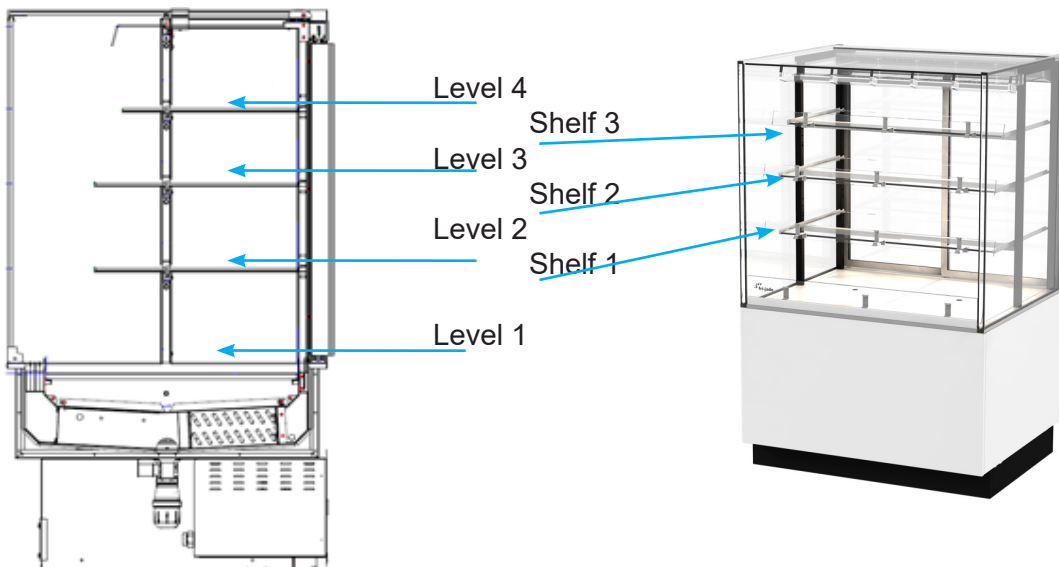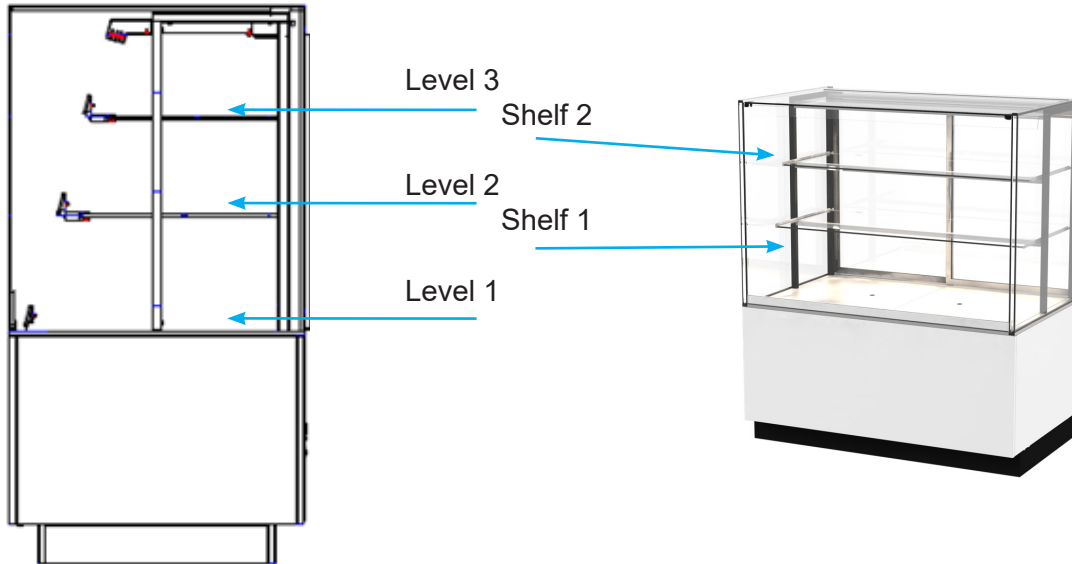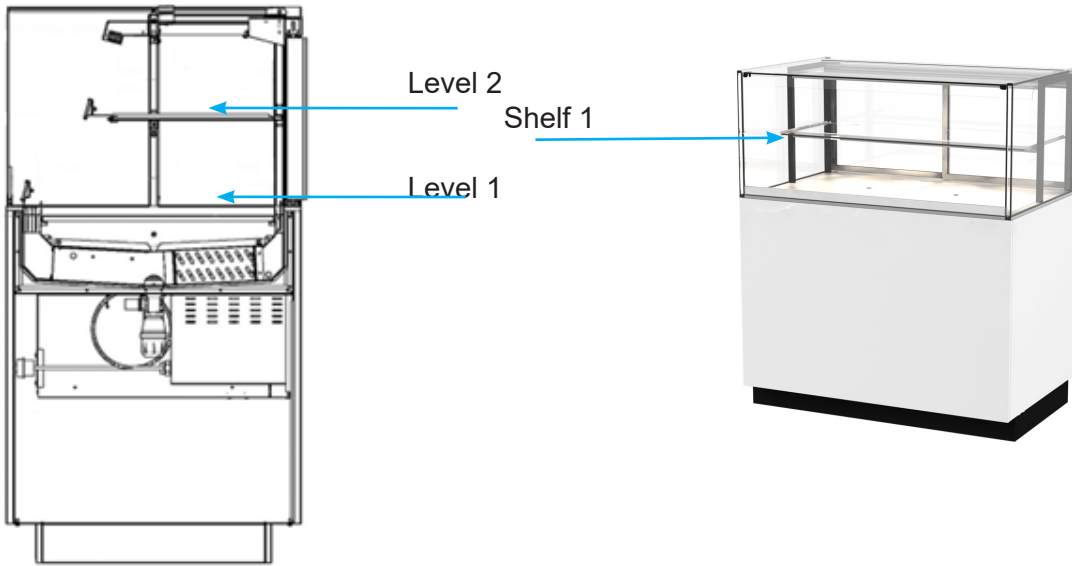
13.0 Exploded view MCC Cold Electrical (Self Serve)
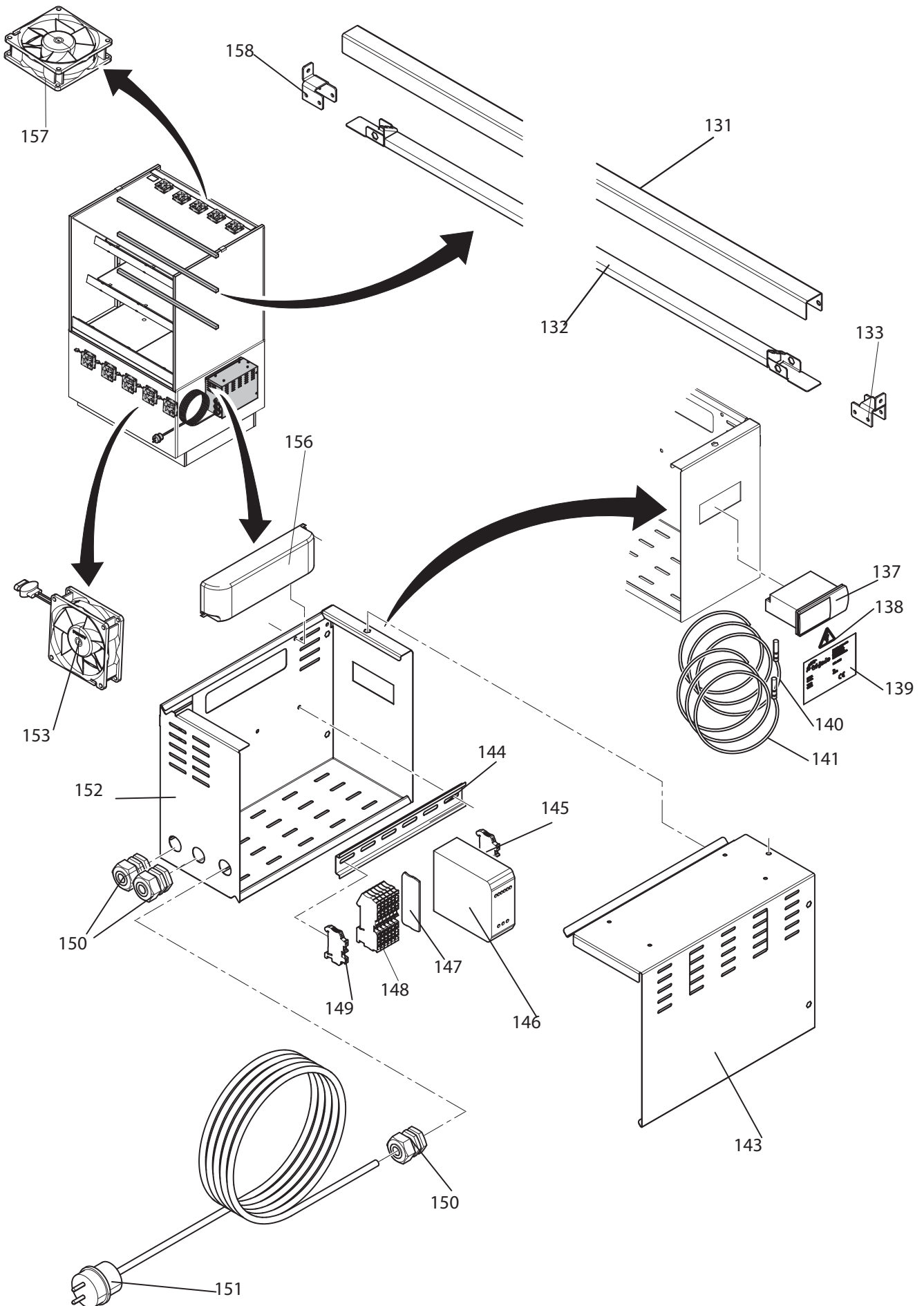
13.0 Exploded view MCC Cold Electrical (Self Serve)

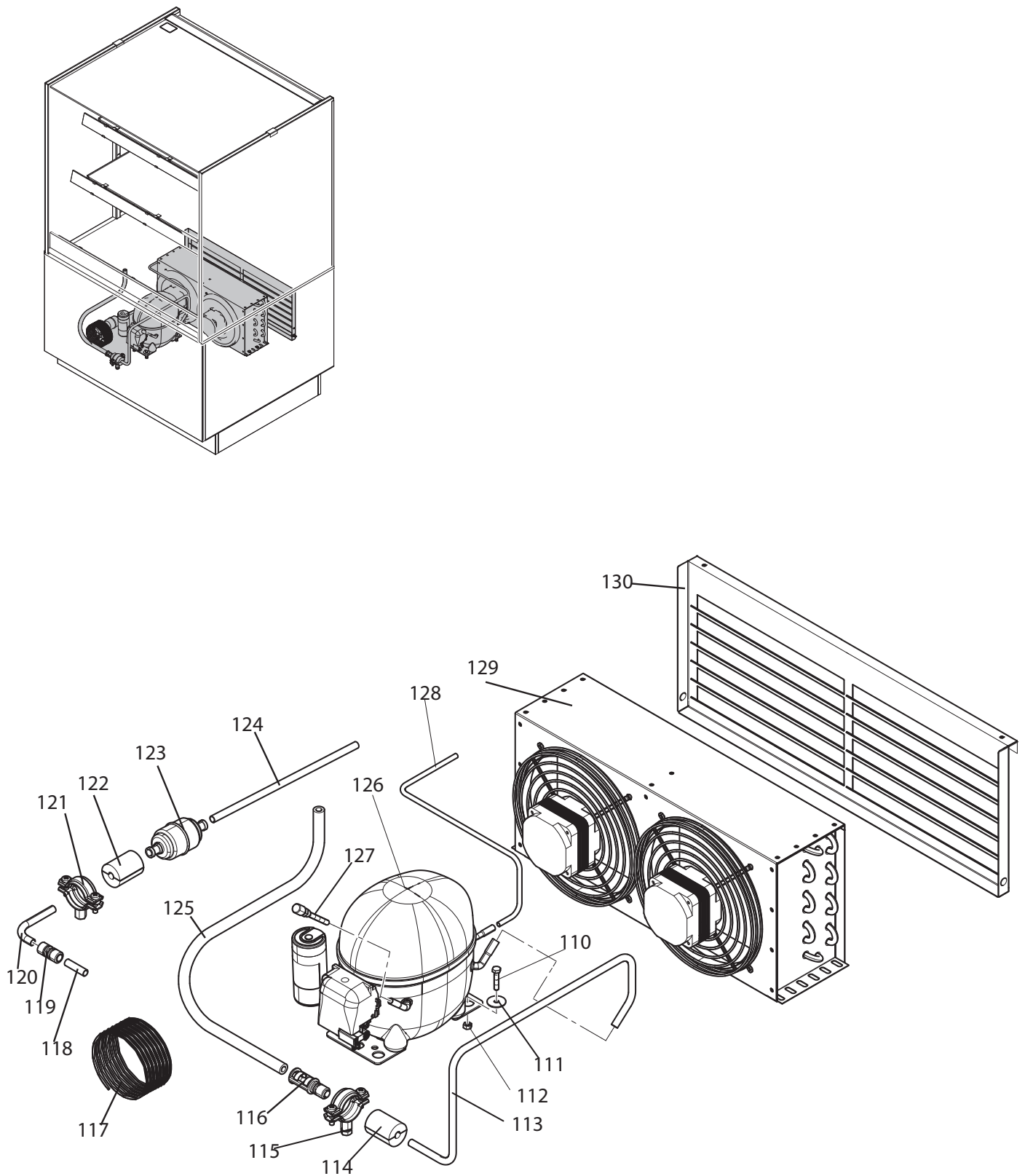| Number	Description	Article number	Quantity
131	Led Armature MCC 90 Led Armature MCC 120 Led Armature MCC 150	9384090 9384111 9384288	3 3
132	Led 3000k 12V 700mm MCC 90 Led 3000k 12V 1000mm MCC 120 Led 3000k 12V 1300mm MCC150	9382067 9382068 9382105	3 3 3
133	Led Armature support bracket	9384091	
134	Switch dummy	30002730	1
135	Switch dummy	30002730	1
136	Switch dummy	30002730	1
137	Eliwell EWplus 974 EO	9381018	1
137	*Eliwell Next*	*9381053*	*1*
138	Sticker Black Elect. Sign triangle	3500105	1
139	Data plate	9110810	1
140	Sensor NTC	9381017	
141	Sensor NTC	9381017	
143	Cover electronics box	9384095	1
144	Din Rail1	9293057	
145	End Clamp Clip-fix 35-5 PHX	9191222	1
146	Power supply 24VDC 40W	9381012	1
147	End cover D=PT 4 PHX	9191223	1
148	Terminal PT 4 (GN/YE) Terminal PT 4 (GY)	9191239 9191240	
149	End Clamp Clip-fix 35-5 PHX	9191222	1
150	Strain relief Nut Cable gland	9222076 9222077	3 3
151	Power cable	9091383	1
152	Box electronics	9384094	1
153	Compact fan 614 NN	30001330	5 - 9
155	Nut M4	0142307	
156	Led driver EDXe 160/12.054	30007730	1
157	Compact fan 8414 NLU	9381015	5 - 9
158	Led Armature support bracket	9384091	

![fri-jado logo]

13.1 Exploded view MCC Cold Cooling engine (Self Serve)

13.1 Exploded view MCC Cold Cooling engine (Self Serve)

Number	Description	Article number	Quantity
113	Connection tube	9383017	
114	Pipe support Armafix	2650252	
115	Clamp 31/37	2650216	
116	LOK clip AL NK9, 53-06	30005926	
119	LOK ring 9, 53 NK MS 50	30005928	
120	Connection tube	9383015	
121	Clamp 31/37	2650216	
122	Pipe support Armafix	2650252	
123	Fluid dryer Danfoss	7650204	1
124	Connection tube	9383014	
126	Compressor	9381003	1
127	Valve Schrader	0185216	
128	Connection tube	9383016	
129	Condenser MCC 90 SS / MCC 120 FS Condenser MCC 150 SS Condenser MCC 120 SS / MCC 150 FS Condenser MCC 90 FS	9381004s 9381008s 9381010s 9381021s	Check by serial number required
130	Air flow cover	Depending on version	Check by serial number required

13.2 Exploded view MCC Cold Cooling (Self Serve)

105
106
109
104
103
102
107
101
108
100
99
98
97
96
83
84
92
85
91
95
86
90
94
93
87
89
88

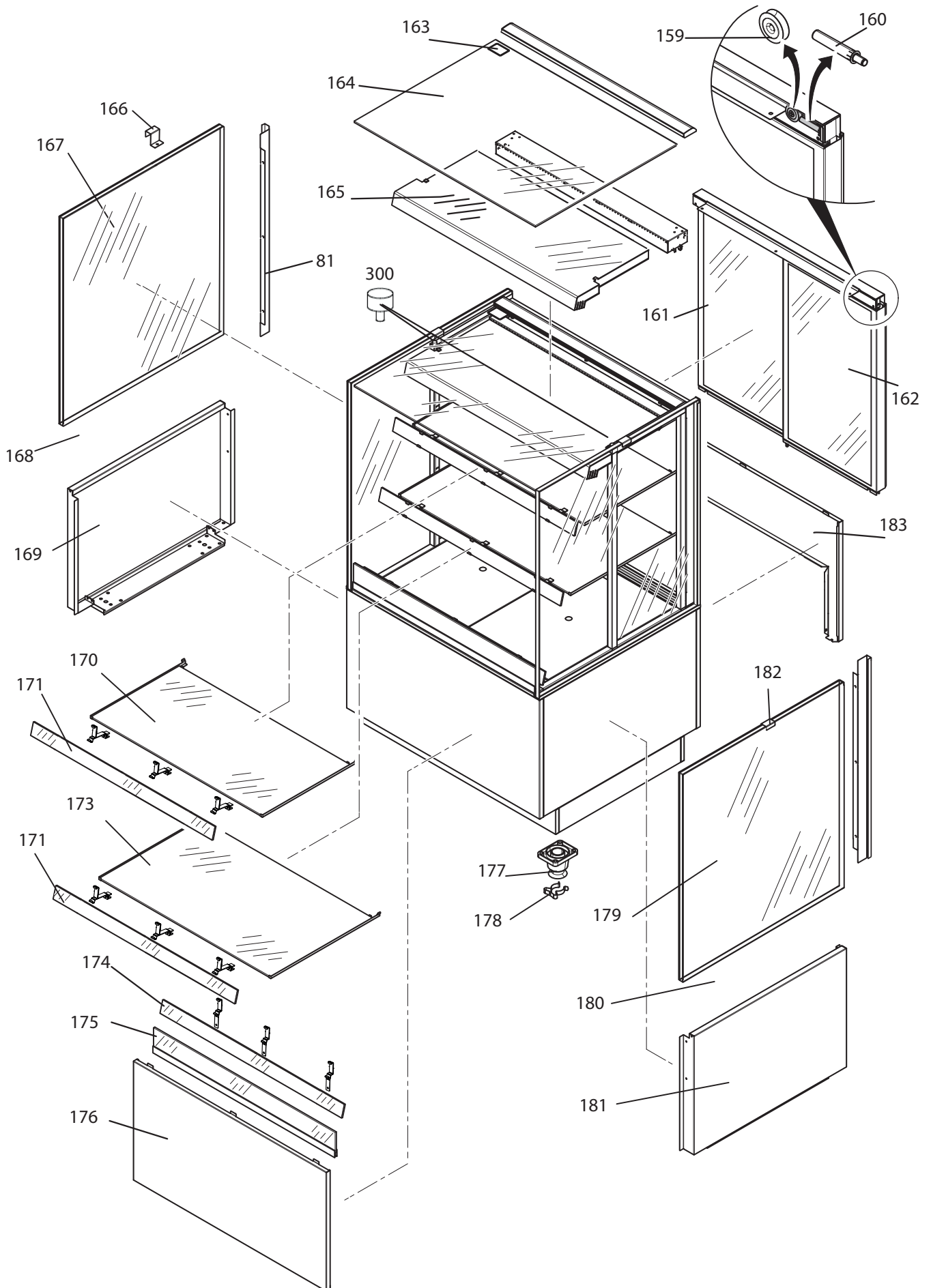| Number	Description	Article number	Quantity
83	Product plateau support MCC 90 Product plateau support MCC 120 Product plateau support MCC 150	9384082 9384125 9384290	1
84	Inner air guide MCC 90 Inner air guide MCC 120 Inner air guide MCC 150	9384076 9384291 9384292	
85	Insulation back MCC 90 Insulation back MCC 120 Insulation back MCC 150	9382170 9382172 9382173	1
86	Insulation side cold set of two	9382078	set of 2
87	See 86		
88	Drain with siphon	9381002	1
89	Base outer frame MCC 90 Base outer frame MCC 120 Base outer frame MCC 150	9384023 9384024 9384025	
90	Insulation bottom MCC 90 Insulation bottom MCC 120 Insulation bottom MCC 150	9382076 9382083 9382119	
91	Insulation front	9382077	1
92	Inner shell MCC 90 Inner shell MCC 120 Inner shell MCC 150	9384096 9384142 9384219	
94	Product plateau support MCC 90 Product plateau support MCC 120 Product plateau support MCC 150	9384082 9384125 9384290	1
95	Assy evaporator PT MCC 90 SS Assy evaporator PT MCC 120 SS Assy evaporator PT MCC 150 SS Assy evaporator SB MCC 90 SS Assy evaporator SB MCC 120 SS Assy evaporator SB MCC 150 SS	9380159s 9380160s 9380161s 9380155s 9380189s 9380191s	Check by serial number required
96	See 86		
97	See 86		
98	Rosette type 220 1 1/4"	2104020	
99	Protective tube	2104012	1
100	Lokclip AL NK9, 53-06	30005926	
101	Connection tube evaporator	9383013	
102	Rosette type 240 1 1/4"	9381001	
106	Product plateau MCC 90 400 mm Product plateau MCC 120 mm Product plateau MCC 150 mm	9384082 9384125 9384290	2
107	Fan plate MCC 90 Fan plate MCC 120 Fan plate MCC 150	9384080 9384283 9384284	1

13.3 Exploded view MCC Cold 2 Level

159
160
164
166
165
182
300
167
161
162
300
250
182
179
306
177
178
301
302
170
171
174
175
303
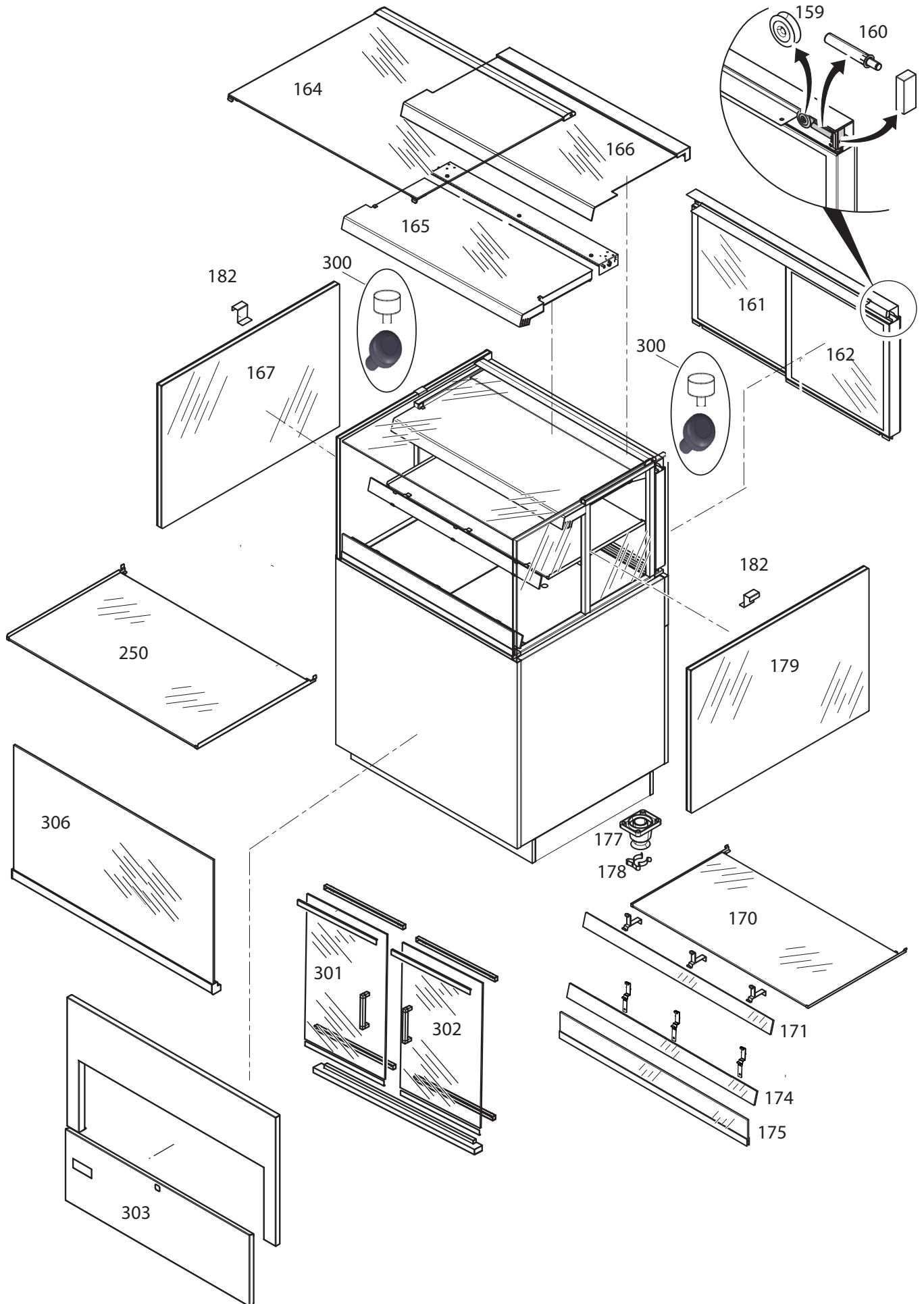
13.3 Exploded view MCC Cold 2 Level

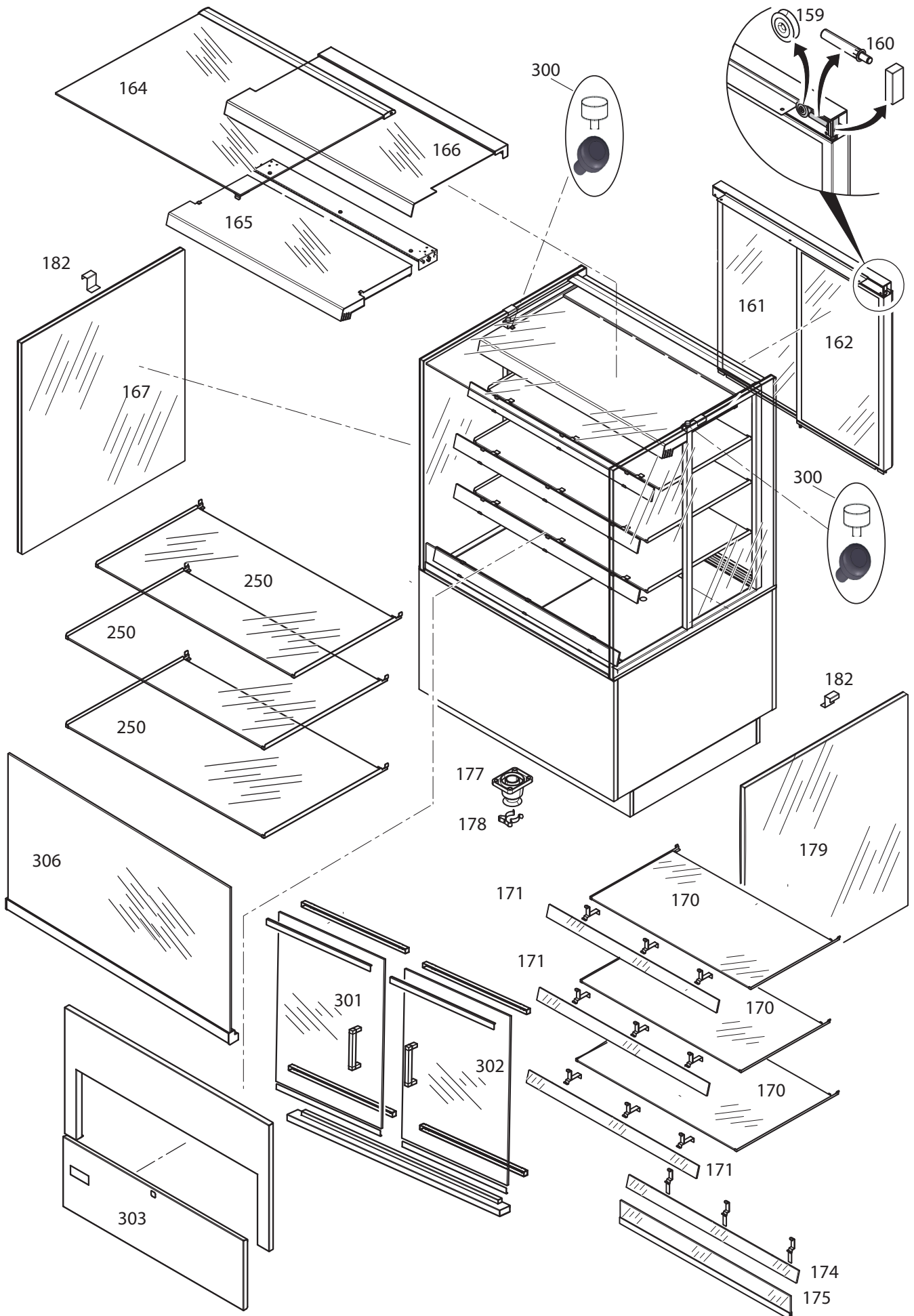| Number	Description	Article number	Quantity
159	Steel-roller bearing	9382100	4
160	Soft close damper 3N	9281078	4
161	Assy Glass sliding door 90 Right Assy Glass sliding door 120 Right Assy Glass sliding door 150 Right	9380764 9380766 9380768	1 1
162	Assy Glass sliding door 90 Left Assy Glass sliding door 120 Left Assy Glass sliding door 150 Left	9380765 9380767 9380769	1 1 1
164	Top Glass Square MCC 90 Top Glass Square MCC 120 Top Glass Square MCC 150	9382164s 9382166s 9382167s	1 1 1
165	Assy. Air box MCC 90 SS Assy. Air box MCC 120 SS Assy. Air box MCC 150 SS	9380047 9380076 9380113	1 1 1
166	Assy. air guide MCC 90 FS Assy. air guide MCC 120 FS Assy. air guide MCC 150 FS	9380055s 9380057s 9380046s	1 1 1
167	Side glass MCC 2 level	9382750s	1
170	Glass Shelf 410 mm MCC 90 SS Glass Shelf 410 mm MCC 120 SS Glass Shelf 410mm MCC 150 SS	9382052s 9382056s 9382109s	1 1 1
171	Assy price rail glass shelf MCC 90 Assy price rail glass shelf MCC 120 Assy price rail glass shelf MCC 150	9380052s 9380073s 9380117s	2 2 2
174	Assy price rail glass Bottom shelf MCC 90 Assy price rail glass Bottom shelf MCC 120 Assy price rail glass Bottom shelf MCC 150	9380053s 9380040s 9380116s	1 1 1
175	Child guard assy MCC 90 Child guard assy MCC 120 Child guard assy MCC 150	9380018 9380019 9380020	1 1 1
177	Adjustable leg	9291162	1
178	Tool clamp	8071090	1
179	Side glass MCC 2 level	9382750s	1
182	Side glass topside bracket	9384201	2 (see 166)
250	Glass Shelf 475 mm MCC 90 SS Glass Shelf 475 mm MCC 120 SS Glass Shelf 475 mm MCC 150 SS	9380051s 9380069s 9380119s	1 1 1
300	Plug top glass-pane White Plug top glass black	9263022 9381046	2 2
301	Assy. front door left MCC 90 Assy. front door left MCC 120 Assy. front door left MCC 150 seen from customer side	9380585s 9380586s 9380584s	1 1 2
302	Assy. front door right MCC 90 Assy. front door right MCC 120 Assy. front door right MCC 150 seen from customer side	9380582s 9380583s 9380587s	1 1 1
	Set Hinge screws for one door	30135910	1 per door
303	Front panel turnable MCC 90 Front panel turnable MCC 120 Front panel turnable MCC 150	9380133 9380133 9380133	1 1 1
306	Assy. glass tiled forward MCC 90 Assy. glass tiled forward MCC 120 Assy. glass tiled forward MCC 150	9382752s 9382753s 9382754s	1 1 1

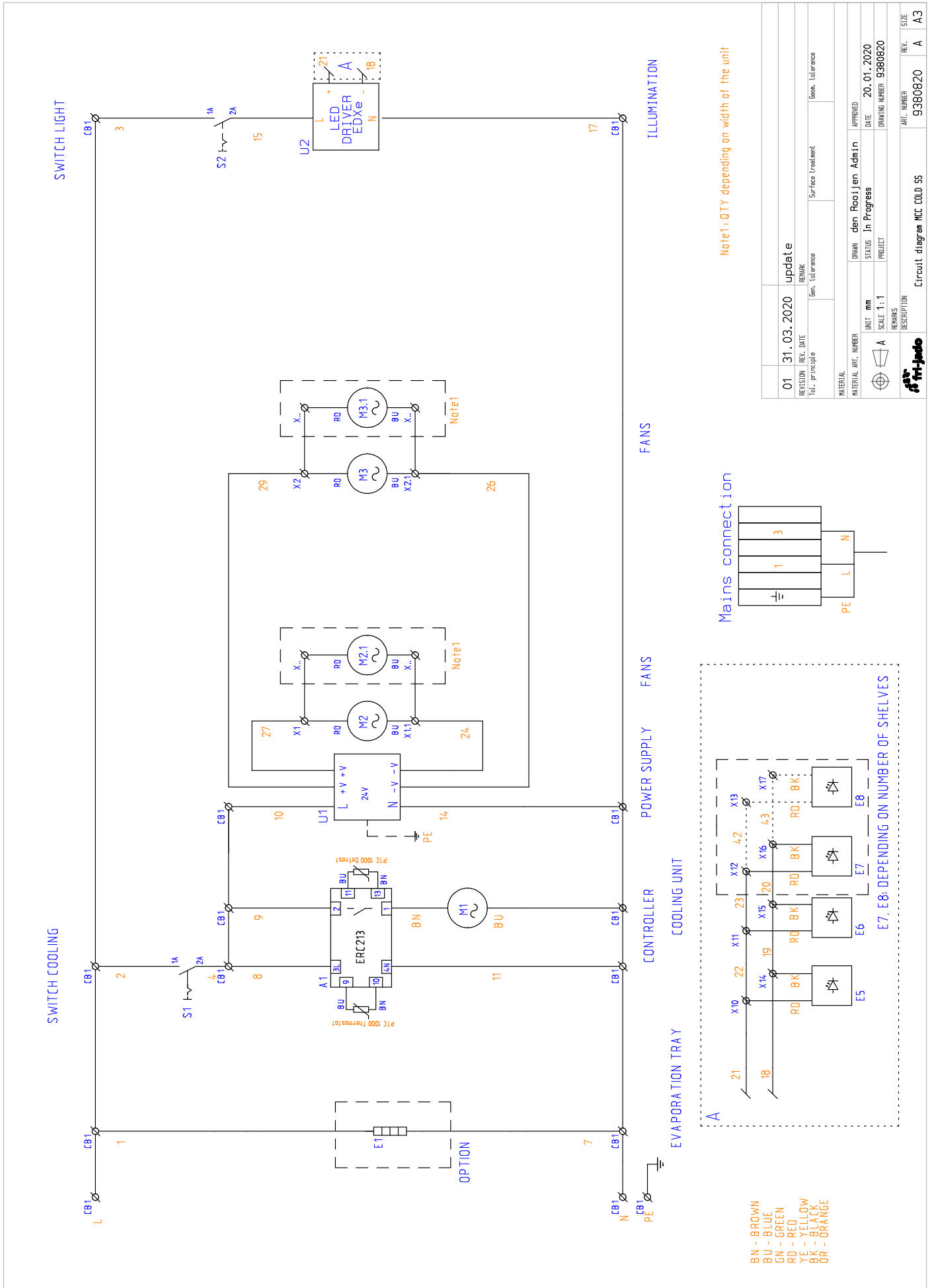| Number	Description	Article number	Quantity
159	Steel-roller bearing	9382100	4
160	Soft close damper 3N	9281078	4
161	Assy Glass sliding door 90 Right V0 Assy Glass sliding door 90 Right V1 Assy Glass sliding door 120 Right V0 Assy Glass sliding door 120 Right V1 Assy Glass sliding door 150 Right V0 Assy Glass sliding door 150 Right V1	9380220s 9380210s 9380222s 9380212s 9380224s 9380214s	1 1 1 1 1 1
162	Assy Glass sliding door 90 Left Assy Glass sliding door 120 Left Assy Glass sliding door 150 Left	9380211s 9380213s 9380215s	1 1 1
163	Label max load 10kg	9123759	1
164	Top Glass Square MCC 90 Top Glass Square MCC 120 Top Glass Square MCC 150	9382164s 9382166s 9382167s	1 1 1
165 see also 157 (single fan)	Assy. Air box MCC 90 SS Assy. Air box MCC 120 SS Assy. Air box MCC 150 SS	9380002 9380098 9380137	1 1 1
166	Side glass topside bracket	9384201	2 (see 182)
167	Side glass MCC	9382030	1
168	Base end cover panel	9384021	1
170	Glass Top Shelf 410 mm MCC 90 Glass Top Shelf 410 mm MCC 120 Glass Top Shelf 410mm MCC 150	9382052s 9382056s 9382109s	1 1 1
171	Assy price rail glass shelf MCC 90 Assy price rail glass shelf MCC 120 Assy price rail glass shelf MCC 150	9380052s 9380073s 9380117s	2 2 2
173	Glass Middle Shelf 475mm MCC 90 Glass Middle Shelf 475mm MCC 120 Glass Middle Shelf 475mm MCC 150	9382051s 9382055s 9382108s	1 1 1
174	Assy price rail glass Bottom shelf MCC 90 Assy price rail glass Bottom shelf MCC 120 Assy price rail glass Bottom shelf MCC 150	9380053s 9380040s 9380116s	1 1 1
175	Child guard assy MCC 90 Child guard assy MCC 120 Child guard assy MCC 150	9380018 9380019 9380020	1 1 1
176	Front panel MCC 90 Front panel MCC 120 Front panel MCC 150	9384002 9384003 9384004	1 1 1
177	Adjustable leg	9291162	1
178	Tool clamp	8071090	1
179	Side glass MCC	9382030	1
180	Base end cover panel	9384021	1
182	Side glass topside bracket	9384201	2 (see 166)
183	Back panel 90 Back panel 120 Back panel 150	9384007 9384008 9384009	1 1 1
300	Plug top glass-pane (White) Plug top glass-pane (Black)	9263022 9381046	2 2
801	Screw top hinge, Screws countersunk M4x6	0141335	3 per hinge

13.5 Exploded view MCC Cold 4 Level

159
160
300
164
166
165
182
161
162
167
300
250
250
250
182
306
179
177
170
178
171
171
170
301
302
170
303
174
175
171

13.5 Exploded view MCC Cold 4 Level

Number	Description	Article number	Quantity
159	Steel-roller bearing	9382100	4
160	Soft close damper 3N	9281078	4
161	Assy Glass sliding door 90 Right V1 Assy Glass sliding door 120 Right V1 Assy Glass sliding door 150 Right V1	9380210s 9380212s 9380214s	1 1 1
162	Assy Glass sliding door 90 Left Assy Glass sliding door 120 Left Assy Glass sliding door 150 Left	9380211s 9380213s 9380215s	1 1 1
164	Top Glass Square MCC 90 Top Glass Square MCC 120 Top Glass Square MCC 150	9382164s 9382166s 9382167s	1 1 1
165	Assy. Air box MCC 90 SS Assy. Air box MCC 120 SS Assy. Air box MCC 150 SS	9380002 9380098 9380137	1 1 1
166	Assy. air guide MCC 90 FS Assy. air guide MCC 120 FS Assy. air guide MCC 150 FS	9380055 9380057 9380046	1 1 1
167	Side glass MCC 3/4 level	9382030s	1
170	Glass Shelf 410 mm MCC 90 SS Glass Shelf 410 mm MCC 120 SS Glass Shelf 410mm MCC 150 SS	9382052s 9382056s 9382109s	1 1 1
171	Assy price rail glass shelf MCC 90 Assy price rail glass shelf MCC 120 Assy price rail glass shelf MCC 150	9380052s 9380073s 9380117s	2 2 2
174	Assy price rail glass Bottom shelf MCC 90 Assy price rail glass Bottom shelf MCC 120 Assy price rail glass Bottom shelf MCC 150	9380053s 9380040s 9380116s	1 1 1
175	Child guard assy MCC 90 Child guard assy MCC 120 Child guard assy MCC 150	9380018 9380019 9380020	1 1 1
177	Adjustable leg	9291162	1
178	Tool clamp	8071090	1
179	Side glass MCC 3/4 level	9382030s	1
182	Side glass topside bracket	9384201	2 (see 166)
250	Glass Shelf 410 mm MCC 90 SS Glass Shelf 410mm MCC 120 SS Glass Shelf 410 mm MCC 150 SS Glass Shelf 475 mm MCC 90 SS Glass Shelf 475 mm MCC 120 SS Glass Shelf 475 mm MCC 150 SS	9380050s 9380068s 9380118s 9380051s 9380069s 9380119s	1 1 1 2 2 2
300	Plug top glass-pane (White) Plug top glass-pane (Black)	9263022 9381046	2 2
301	Assy. glass front door Left MCC 90 Assy. glass front door Left MCC 120 Assy. glass front door Left MCC 150	9380382s 9380383s 9380384s	1 1 2
302	Assy. glass front door Right MCC 90 Assy. glass front door Right MCC 120 Assy. glass front door Right MCC 150	9380385s 9380386s 9380387s	1 1 1
	Set Hinge screws for one door 	30135910	1 per door
303	Assy front panel turnable MCC 90 Assy front panel turnable MCC 120 Assy front panel turnable MCC 150	9380133 9380133 9380133	1 1 1
306	Assy. Glass till-ted forward MCC 90 Assy. Glass till-ted forward MCC 120 Assy. Glass till-ted forward MCC 150	9382029s 9382034s 9382123s	1 1 1

Circuit diagram MCC COLD SS

Schematics till production week 42 2021

NTC1000 Thermostat "S2"

NTC1000 Defrost "S1"

EW Plus 974

A1

RD/RD

WH WH
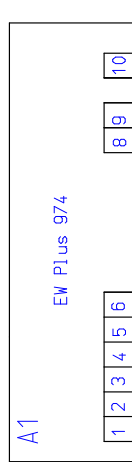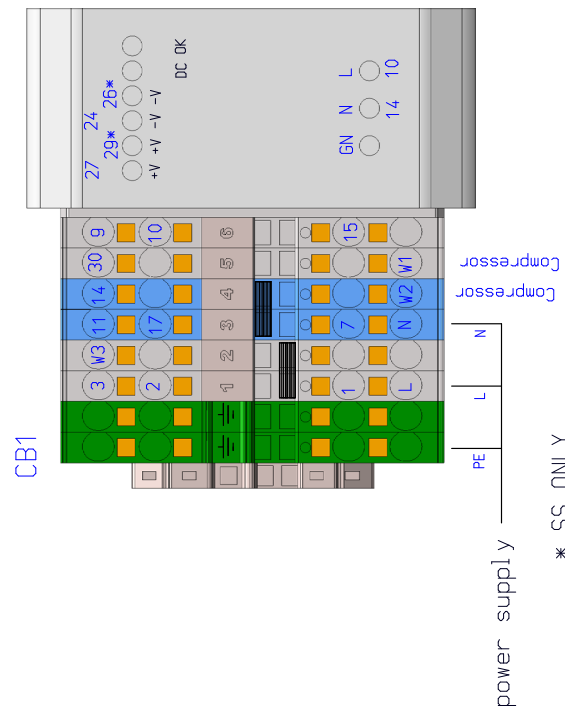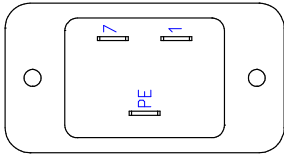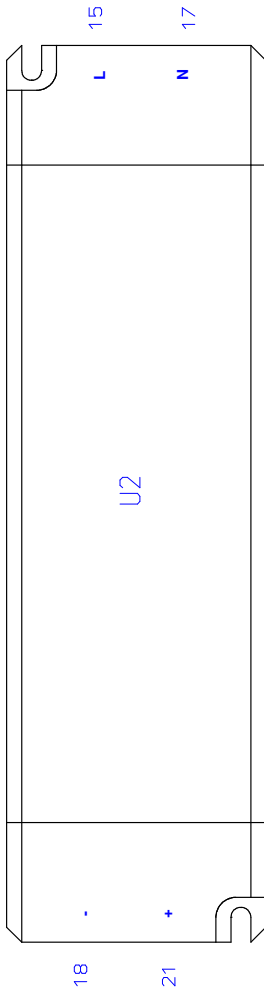
Sticker "S2" (red) = Thermostat / Omgeving

Sticker "S1" (blue) = Defrost / Verdamper

U2

power supply

* SS ONLY

Compressor

Compressor

CB1

DC OK

GN N L
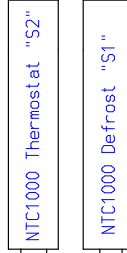
REVISION					
07	27.05.2021	connections U1			
06	05.01.2021	PTCs switched			
REVISION	REV. DATE	REMARK			

Tol. principle | Gen. Tolerance | Surface treatment | Gen. tolerance

MATERIAL
MATERIAL, ART. NUMBER

UNIT mm
SCALE 1:2

DRAWN den Rooijen Admin
STATUS In Progress
PROJECT

APPROVED
DATE 06.02.2020
DRAWING NUMBER 9380821

DESCRIPTION
Wiring diagram COLD SS/FS

ART. NUMBER 9380821 | REV. G | SIZE A3

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