



SPECIALTY CASE FACILITY



Combination Service Cabinet Range

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Manual 152

October 2017

Rev A



CONTENTS

Receiving Cabinets	<hr/>	2
Pre Installation	<hr/>	
	Cabinet Cross section	3
	Cabinet Footprint	4
	Technical Data Sheets	5
	Receiving Cabinets	7
	Operating Environment	8
	Installed Position	8
	Key Operation Points	9
Installation	<hr/>	
	Joining Cabinets	10
	Electrical installation	10
	Drain Installation	11
	Pre Start Checklist	11
Cabinet Operation	<hr/>	
	Loading Limits	12
	Fittings and Accessories	12
	Temperature Checking	12
	Temperature adjustment	13
Maintenance	<hr/>	
	Cleaning	14
	Regular Inspection	16
	Disposal of the Cabinet	16
	Replacement Parts	17
Risk Analyses	<hr/>	18

Receiving Cabinets

Cabinets will always be dispatched in good condition. Always inspect the cabinet and packaged accessories for damage. Note any damage on the carrier’s consignment note prior to signing.

For concealed damage that is found later, notify Hussmann in the relevant country within 3 working days. Any issues will be addressed and rectified as applicable.

Australia: Hussmann Australia Pty Ltd
Email: warranty_au@hussmann.com
Phone: +61 2 805 0400

New Zealand: McAlpine Hussmann Ltd
Email: taurangasales@hussmann.com
Phone: +64 7 578 0965



NOTE

Please provide a photographic record of any damage found along with the cabinet serial number and a brief description of the damage.

A check should also be made to ensure that all loose parts listed on the outside packaging are present and undamaged.



NOTE

Any shortages will follow the same procedure as concealed damage.

Moving Cabinets to Installed Position

To ensure any risk of damage to cabinets while moving to their installed location is minimised, it is strongly recommended that the following instructions are followed.

Equipment Required:

1 x Fork hoist with minimum 1200mm long tines (forks)

2 x Dollies with 4 swivel wheels 900mm apart front to back, and minimum 400mm apart side to side.

Once cabinets have been moved into the store with the shipping pallets still attached, the following methods should be used to move cabinets to their final installed position:

Method 1: For 2448mm and 3672mm long cabinets.

1. Carefully lift the cabinet off the pallet with a fork hoist, taking care to position the forks in the centre of the cabinet and directly under the skid rails. **
2. Place two dollies under either end of the cabinet, just inside the end foot bolts. Gently lower the cabinet on the dollies.
3. Ensure the floor where the cabinet is to be manoeuvred, is swept and free from debris, as this could otherwise result in a dolly wheel coming to an abrupt stop and destabilise the cabinet.



NOTE

The long axis (900mm apart) wheels should locate as close to directly under the Skid rails as possible to ensure stable support.

Method 2: For 1224mm Platter case.

1. Keep the cabinet in its crate
2. Deliver the cabinet to just in front of its final position with the forklift
3. Remove crating
4. Gently lift the cabinet into its final position with the forklift

NOTE



This is the preferred method for this case as it is top heavy and would be very unstable on dollies. If any other method of moving the case is employed, take extreme care and ensure the case is supported adequately at all times.

Method 3: For 1224mm Sushi case:

1. Keep the cabinet on its pallet
2. Deliver the cabinet to just in front of its final position with the forklift
3. Remove the cabinet from its pallet
4. Gently lift the cabinet into its final position with the forklift



NOTE

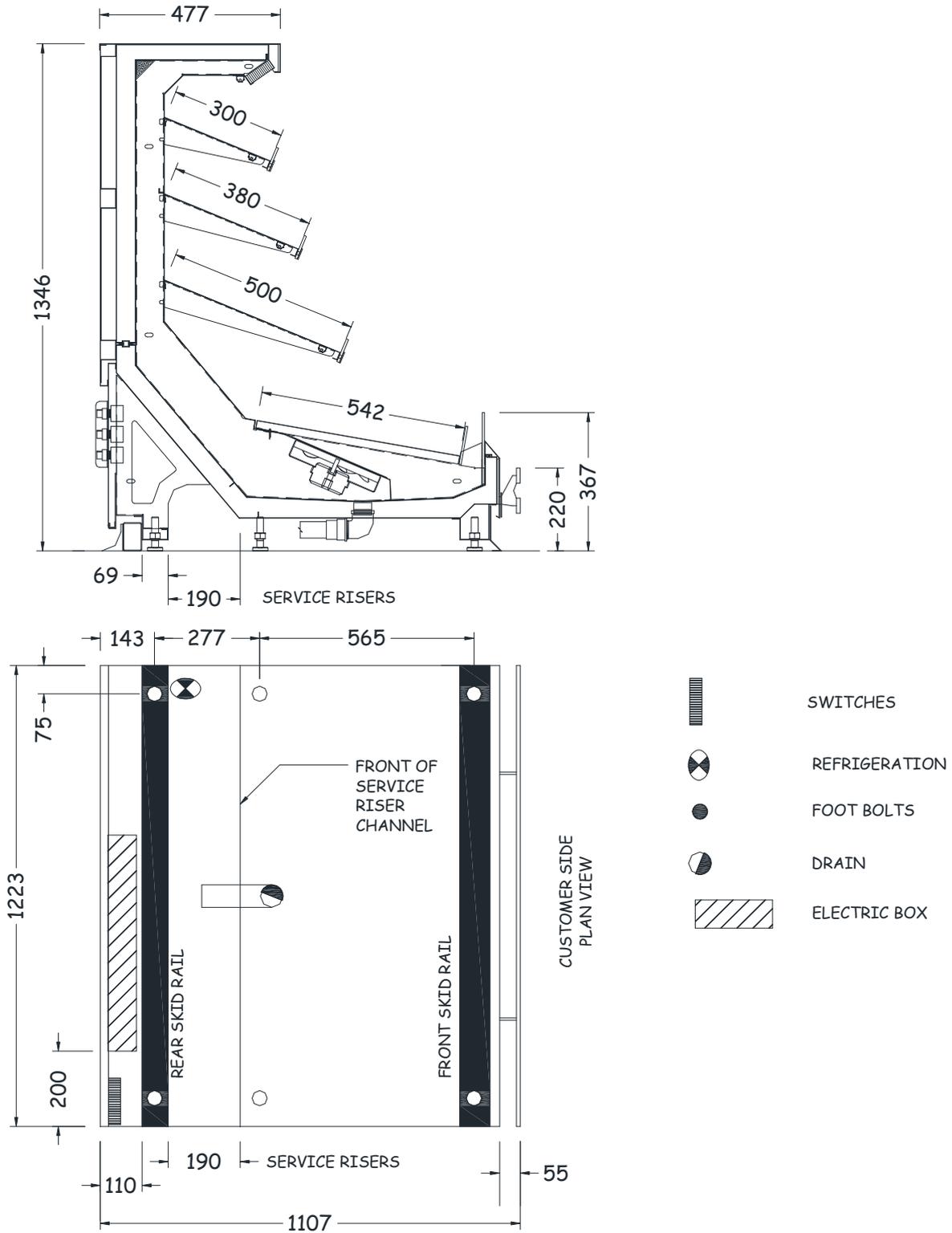
Moving this case using Method 1 is possible as long as the case is supported at all times by at least 2 people when removing the cabinet from its pallet and placing it on the dollies, moving it through the store and removing it from the dollies.



****Timber used on shipping pallets is heat treated only and can be recycled**

Cross Sections, Footprints and Data Sheets

CSS13-2SV-1W - Semi Vertical Sushi Display



CSS13-nSV-1W

Semi Vertical Sushi Case (3M1 Model)

Refrigeration	Product temp. °C		Return Air temp. °C		Supply Air temp. °C		Evap. Temp °C	Refrig. Load (watts) Rack Duty	Refrig. Load (watts) Cond. Unit Duty	Suction Line Connection	Liquid Line Connection
	Min	Max	Min	Max	Min	Max					
CSS13-2SV-1W ,1223mm	-1	+5C	+1.0	+4.0C	-1.0	-3.3C	-6.0	1158	1277	5/8"	3/8"

Electrical Load (240V - 50Hz)	Lights		Trim Heat		Evaporator Fans		XM678D Controller	
	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps
CSS13-2SV-1W ,1223mm	59	0.26	38	0.16	22	0.18	30	0.39

Set Point Parameters	Defrost Frequency	Defrost Termination Temperature (Bottom)	Fail Safe	Thermostat Set Point (Cut Out)	XM678D Differential

AS 1731	Climate Class	3M1 (+5C to -1C)	25C Ambient 60% RH
---------	---------------	------------------	--------------------

Operational Notes

For Cabinets supplied with Case Controller (Dixell XM678) and Electronic Expansion Valve (Carel E2V).

The Settings in the controller take precedence over this document.

Appropriate adjustments may be required to suit actual store conditions differing from AS1731 Climate Class (+25°CDB/60%RH).



Effective : 25th October 2017 :Version 2B.4



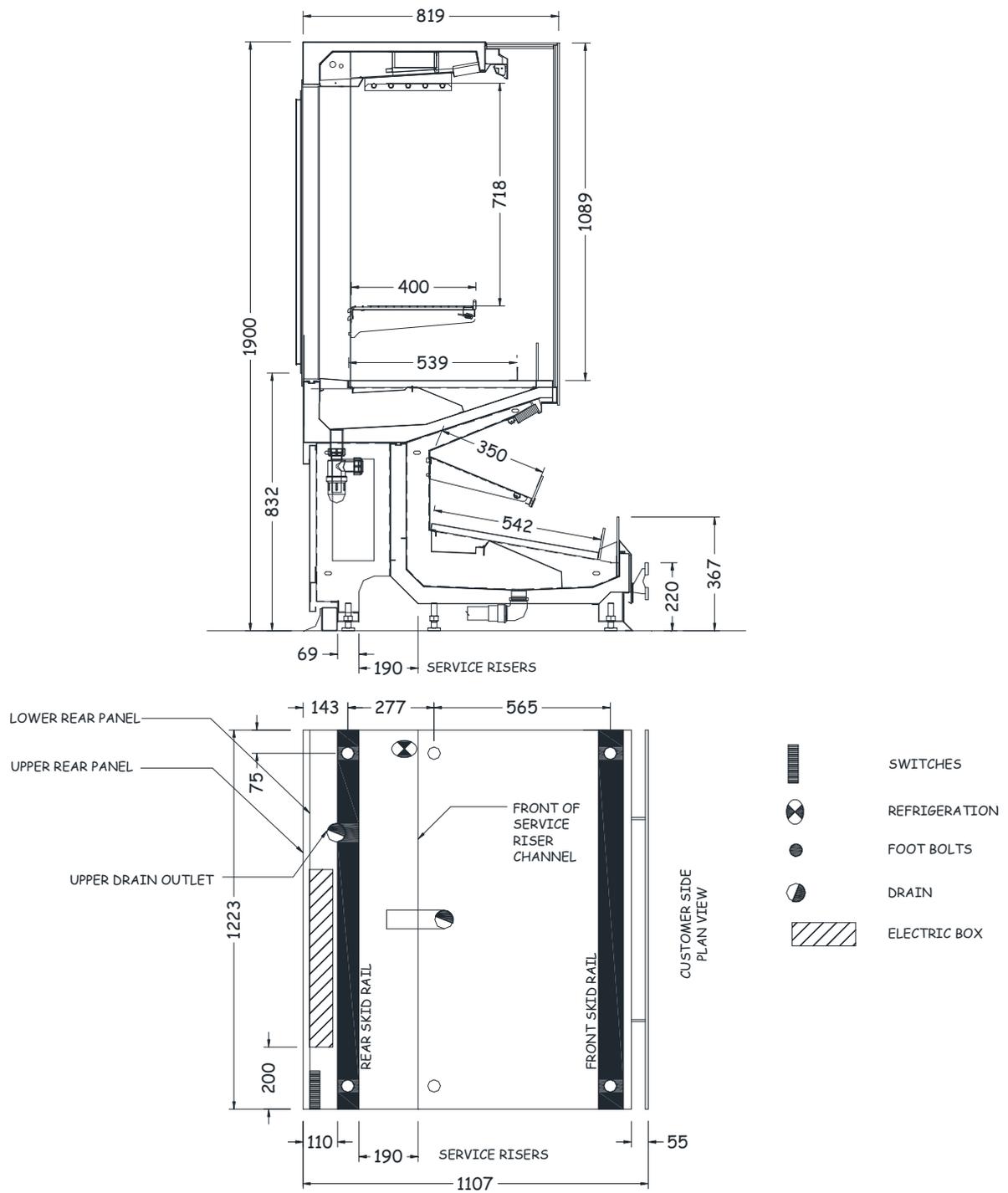
McAlpine Hussmann reserves the right to change the document contained herein and any revisions without prior notice. This document contains information that is of a confidential nature and is only for its intended recipients. If you are not the intended recipient, you must not peruse, use, disseminate or copy this document or any attachment. Ratings are affected if air flow pattern is altered by aisle draught exceeding 0.2m/s or shelving layout altered from standard layout.



CSS13-nSV-1W

Semi Vertical Sushi Case (3M1 Model)

CSS19-2PL-1W – Salami cabinet



CSP19-nPL-1W

Combination Platter (Tower) Case (3M1 Model)

Refrigeration	CSP19-2PL-1W ,1223mm																				
	Product temp. °C	-1/+5C	Return Air temp. °C	+1.0/+4.0C	Supply Air temp. °C	-1.0/-2.5C	Evap. Temp °C	-6.0	Refrig. Load (watts) Rack Top	411	Refrig. Load (watts) Rack Duty Botto	516	Refrig. Load (watts) Cond. Top	475	Unit Duty Refriger. Load (watts) Cond. Botto	580	Suction Line Connection Top	1/2"	Suction Line Connection Botto	1/2"	Liquid Line Connection All

Electrical Load (240V - 50Hz)	CSP19-2PL-1W ,1223mm																												
	Lights Top	Watts	30	Amps	0.14	Lights Bottom	Watts	30	Amps	0.14	Evaporator Fans Top	Watts	103	Amps	0.62	Evaporator Fans Bottom	Watts	7.5	Amps	0.07	Trim Heat (Top)	Watts	30	Amps	0.14	Trim Heat (Bottom)	Watts	17	Amps
XM678D Controller = 30 Watts 0.39 Amps																													

Set Point Parameters	CSP19-2PL-1W ,1223mm																
	Defrost Frequency	8 X 24hrs	Defrost Termination Temperature Top	+5.4C	Defrost Termination Temperature Bottom	+6.5C	Fail Safe Top	40 mins	Fail Safe Bottom	40 mins	Thermostat Set Point (Cut Out) Top	-2.2C	Thermostat Set Point (Cut Out) Bottom	-2.3C	XM678D Differential Top	8K	XM678D Differential Bottom

AS 1731 Climate Class 3M1 (+5C to -1C) 25C Ambient 60% RH

Operational Notes

For Cabinets supplied with Case Controller (Dixell XM678) and Electronic Expansion Valve (Carel E2V).

The Settings in the controller take precedence over this document.

Appropriate adjustments may be required to suit actual store conditions differing from AS1731 Climate Class (+25°CDB/60%RH).



Effective : 2nd November 2017 :Version 2B.4



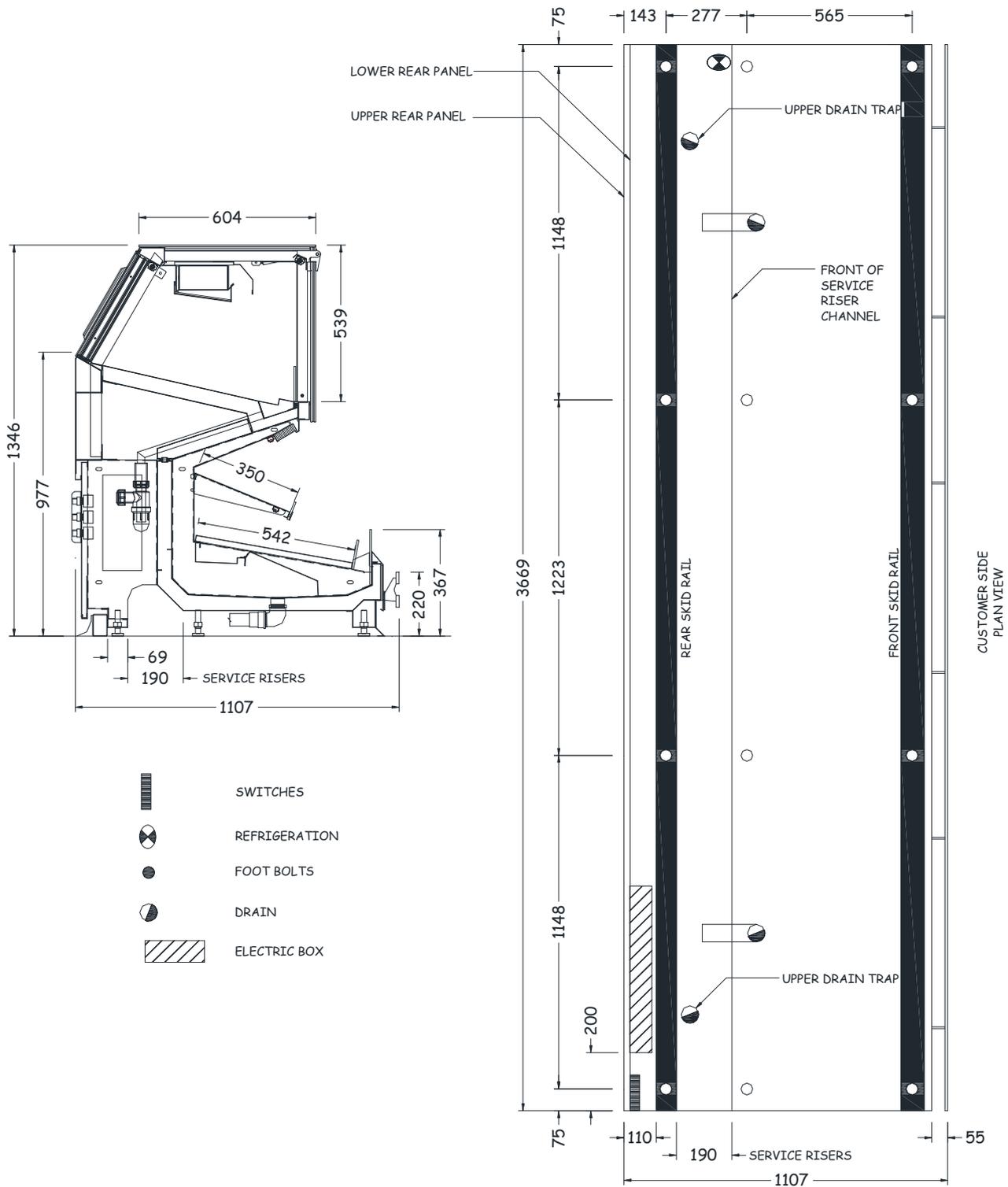
McAlpine Hussmann reserves the right to change the document contained herein and any revisions without prior notice. This document contains information that is of a confidential nature and is only for its intended recipients. If you are not the intended recipient, you must not peruse, use, disseminate or copy this document or any attachment. Ratings are affected if air flow pattern is altered by aisle draught exceeding 0.2m/s or shelving layout altered from standard layout.



CSP19-nPL-1W

Combination Platter (Tower) Case (3M1 Model)

CSC13-6M-1W – Meat Cabinet



CSC13-nM-1W

Combination Serve Over Meat Case (3M0 Model)

Refrigeration	Product temp. °C			Return Air temp. °C	Supply Air temp. °C	Evap. Temp °C	Refrig. Load (watts) Rack Duty		Refrig. Load (watts) Cond. Unit Duty		Suction Line Connection		Liquid Line Connection
	Top	Bottom	Top				Bottom	Top	Bottom	Top	Bottom	All	
CSC13-2M-1W ,1223mm	-1	+4C	+1.0	+4.0C	-6.0	200	516	222	580	1/2"	1/2"	3/8"	
CSC13-3M-1W ,1835mm	-1	+4C	+1.0	+4.0C	-6.0	300	774	333	869	1/2"	5/8"	3/8"	
CSC13-4M-1W ,2447mm	-1	+4C	+1.0	+4.0C	-6.0	400	1032	444	1160	1/2"	5/8"	3/8"	
CSC13-6M-1W ,3670mm	-1	+4C	+1.0	+4.0C	-6.0	600	1548	666	1738	1/2"	5/8"	3/8"	

Electrical Load (240V - 50Hz)	Lights Top		Lights Bottom		Trim Heat (Top)		Trim Heat (Bottom)		Evaporator Fans (Bottom)		XM678D Controller	
	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps
CSC13-2M-1W ,1223mm	30	0.14	30	0.14	30	0.12	17	0.07	7.5	0.07	30	0.39
CSC13-3M-1W ,1835mm	45	0.21	45	0.21	43	0.18	25	0.11	11	0.11	30	0.39
CSC13-4M-1W ,2447mm	60	0.28	60	0.28	60	0.24	35	0.15	15	0.14	30	0.39
CSC13-6M-1W ,3670mm	90	0.42	90	0.42	85	0.36	50	0.21	22	0.21	30	0.39

Set Point Parameters	Defrost Frequency	Defrost Termination Temperature Top	Defrost Termination Temperature Bottom	Fail Safe Top	Fail Safe Bottom	Thermostat Set Point (Cut Out) Bottom	Thermostat Set Point (Cut Out) Top	XM678D Differential Top	XM678D Differential Bottom
	CSC13-2M-1W ,1223mm CSC13-3M-1W ,1835mm CSC13-4M-1W ,2447mm CSC13-6M-1W ,3670mm	6 X 24hrs	+7.0C	+6.5C	40 mins	40 mins	-2.3C	0.0C	8K

AS 1731	Climate Class	3M0 (+4C to -1C)	25C Ambient 60% RH
---------	---------------	------------------	--------------------

Operational Notes

For Cabinets supplied with Case Controller (Dixell XM678) and Electronic Expansion Valve (Carel E2V).

The Settings in the controller take precedence over this document.

Appropriate adjustments may be required to suit actual store conditions differing from AS1731 Climate Class (+25°CDB/60%RH).



Effective : 25th October 2017 :Version 2B.4



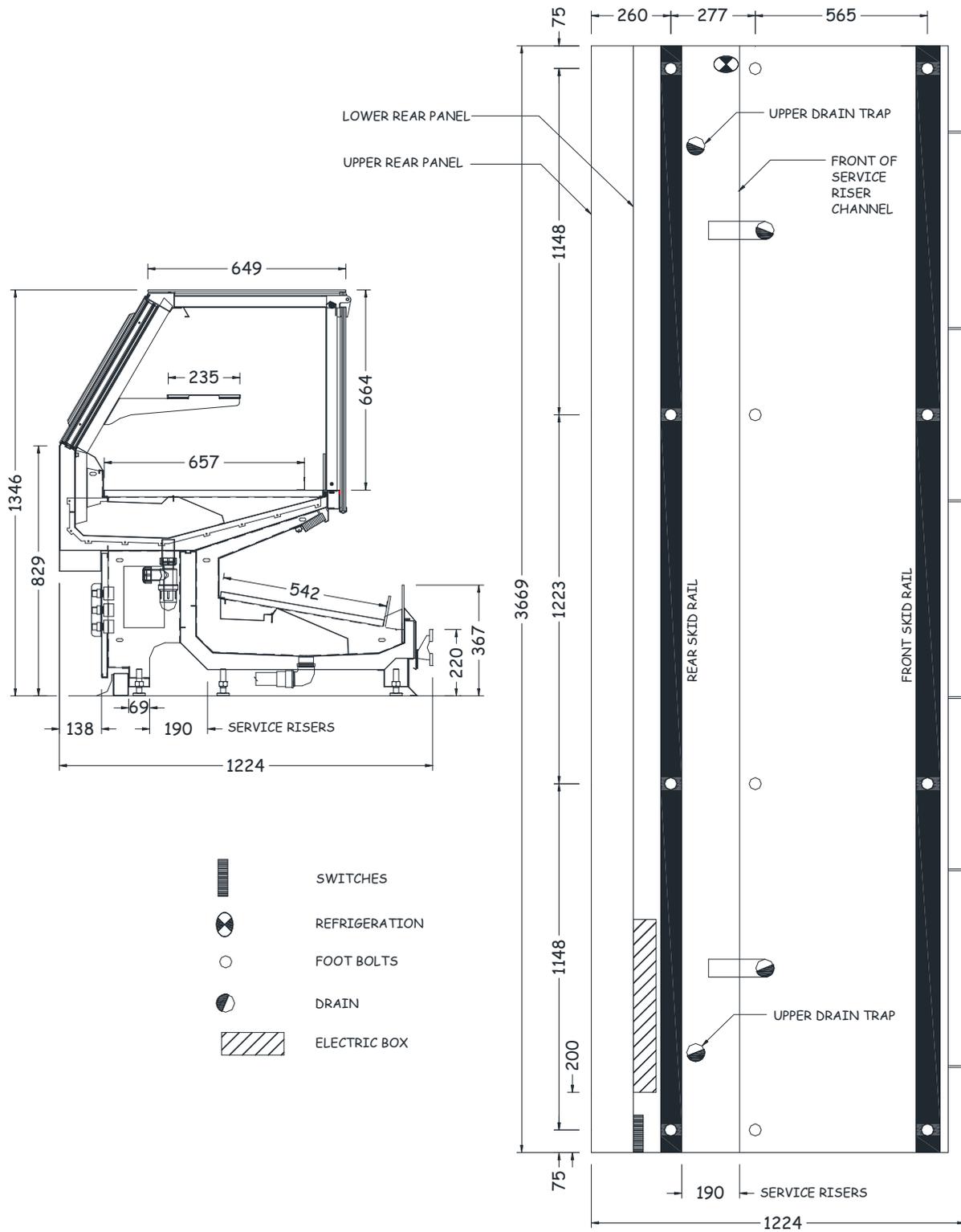
McAlpine Hussmann reserves the right to change the document contained herein and any revisions without prior notice. This document contains information that is of a confidential nature and is only for its intended recipients. If you are not the intended recipient, you must not peruse, use, disseminate or copy this document or any attachment. Ratings are affected if air flow pattern is altered by aisle draught exceeding 0.2m/s or shelving layout altered from standard layout.



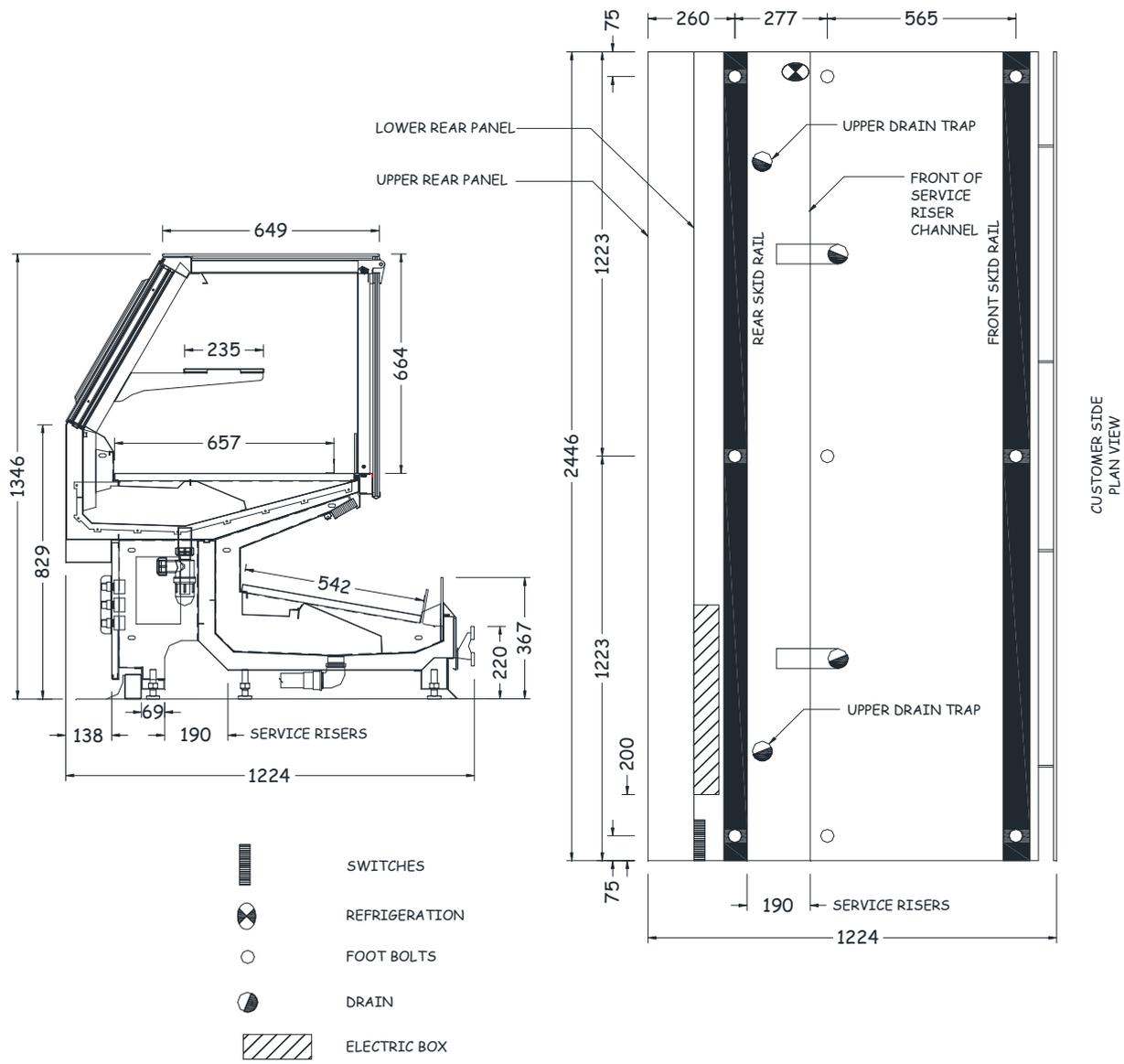
CSC13-nM-1W

Combination Serve Over Meat Case (3M0 Model)

CSD13-6DE-1W – Deli Cabinet



CSD13-4DE-1W – Deli Cabinet



CSC13-nDE-1W

Combination Forced Draught Deli Case (3M1 Model)

Refrigeration	Product temp. °C		Return Air temp. °C		Supply Air temp. °C		Evap. Temp °C		Refrig. Load (watts) Rack	Duty (watts) Rack	Refrig. Load (watts) Rack	Duty (watts) Rack	Refrig. Load (watts) Cond.	Unit Duty (watts) Cond.	Suction Line Connection	Suction Line Connection	Liquid Line Connection
	Top	Botto	Top	Botto	Top	Botto	Top	Botto	Top	Botto	Top	Botto	Top	Botto	Top	Botto	All
CSD13-2DE-1W ,1223mm	-1	+5C	+1.0	+4.0C	-0.9	-2.3C	-6.0	-6.0	287	516	318	580	1/2"	1/2"	1/2"	1/2"	3/8"
CSD13-3DE-1W ,1835mm	-1	+5C	+1.0	+4.0C	-0.9	-2.3C	-6.0	-6.0	431	774	477	869	1/2"	1/2"	1/2"	1/2"	3/8"
CSD13-4DE-1W ,2447mm	-1	+5C	+1.0	+4.0C	-0.9	-2.3C	-6.0	-6.0	574	1032	762	1160	1/2"	1/2"	1/2"	1/2"	3/8"
CSD13-6DE-1W ,3670mm	-1	+5C	+1.0	+4.0C	-0.9	-2.3C	-6.0	-6.0	861	1548	953	1738	1/2"	1/2"	1/2"	1/2"	3/8"

Electrical Load (240V - 50Hz)	Lights Top		Lights Bottom		Trim Heat (Top & Bottom)		Evaporator Fans (Top)		Evaporator Fans		XM678D Controller	
	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps
CSD13-2DE-1W ,1223mm	30	0.14	30	0.14	47	0.19	49	0.28	7.5	0.07	30	0.39
CSD13-3DE-1W ,1835mm	45	0.21	45	0.21	68	0.29	73	0.42	11	0.11	30	0.39
CSD13-4DE-1W ,2447mm	60	0.28	60	0.28	95	0.39	98	0.56	15	0.14	30	0.39
CSD13-6DE-1W ,3670mm	90	0.42	90	0.42	135	0.57	146	0.83	22	0.21	30	0.39

Set Point Parameters	Defrost Frequency	Defrost Termination Temperature (Top)	Defrost Termination Temperature (Bottom)	Fail Safe Top	Fail Safe Bottom	Thermostat Set Point (Cut Out) Bottom	Thermostat Set Point (Cut Out) Top	XM678D Differential Top	XM678D Differential Bottom
	CSD13-2DE-1W ,1223mm	6 X 24hrs	+6.5C	+6.5C	40 mins	40 mins	-2.3C	-0.9C	8K
CSD13-3DE-1W ,1835mm	6 X 24hrs	+6.5C	+6.5C	40 mins	40 mins	-2.3C	-0.9C	8K	8K
CSD13-4DE-1W ,2447mm	6 X 24hrs	+6.5C	+6.5C	40 mins	40 mins	-2.3C	-0.9C	8K	8K
CSD13-6DE-1W ,3670mm	6 X 24hrs	+6.5C	+6.5C	40 mins	40 mins	-2.3C	-0.9C	8K	8K

AS 1731	Climate Class	3M1 (+5C to -1C)	25C Ambient 60% RH
---------	---------------	------------------	--------------------

Operational Notes

For Cabinets supplied with Case Controller (Dixell XM678) and Electronic Expansion Valve (Carel E2V).

The Settings in the controller take precedence over this document.

Appropriate adjustments may be required to suit actual store conditions differing from AS1731 Climate Class (+25°CDB/60%RH).



Effective : 25th October 2017 :Version 2B.4



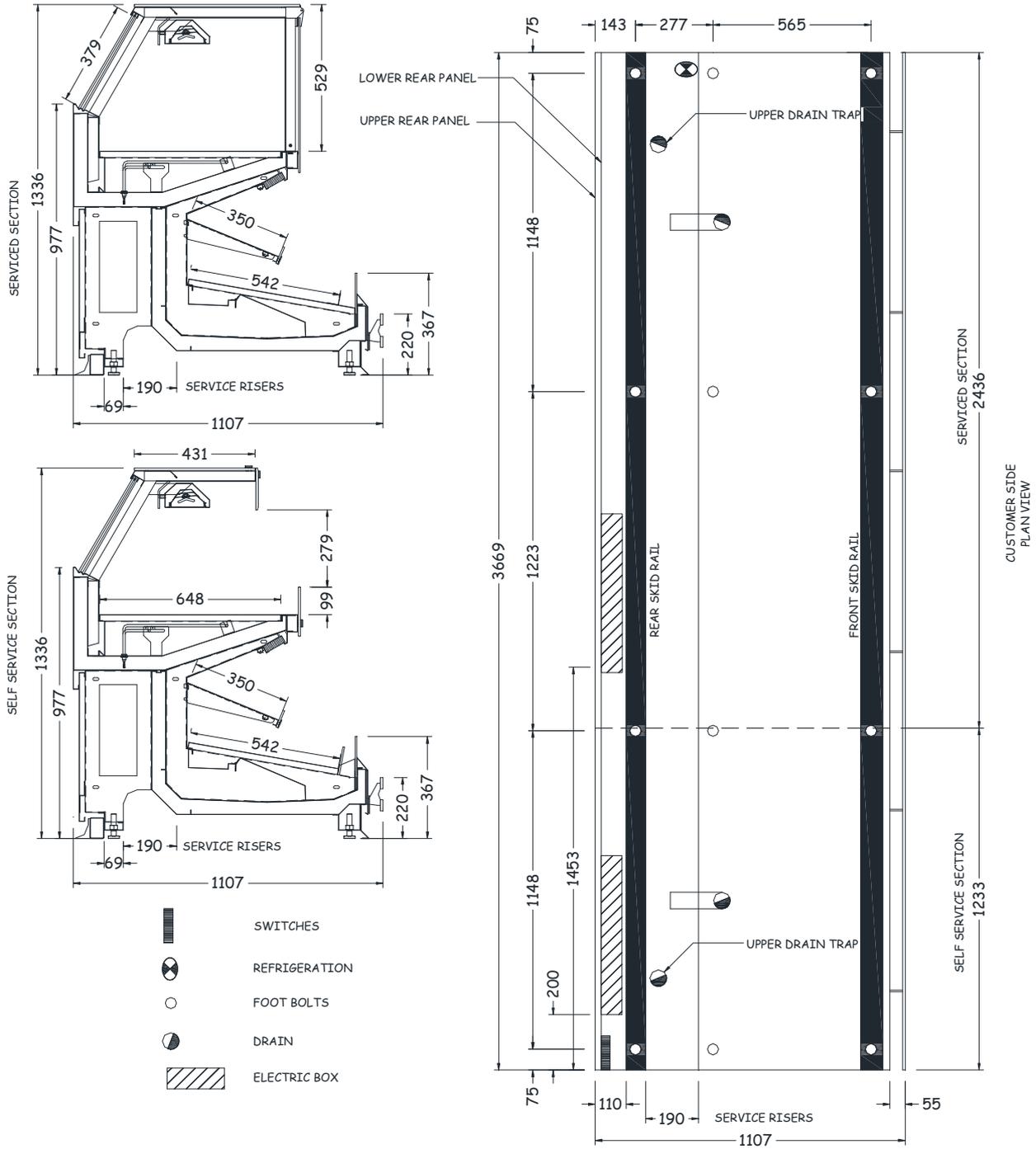
McAlpine Hussmann reserves the right to change the document contained herein and any revisions without prior notice. This document contains information that is of a confidential nature and is only for its intended recipients. If you are not the intended recipient, you must not peruse, use, disseminate or copy this document or any attachment. Ratings are affected if air flow pattern is altered by aisle draught exceeding 0.2m/s or shelving layout altered from standard layout.



CSC13-nDE-1W

Combination Forced Draught Deli Case (3M1 Model)

CSH13-6H-R4S – Hot Cabinet



CSH13-nH-R4S

Combination Self Service / Serve Over Hot/Cold Case

Product Data	Product temp. °C	Return Air temp. °C	Supply Air temp. °C	Evap. Temp °C	Refrig. Load (watts) Rack Duty	Refrig. Load (watts) Cond. Unit Duty	Suction Line Connection	Liquid Line Connection
	CSH13-6H-R4S, 3670mm Cold Bottom	-1 / +5°C	+1.0 /+5.0C	-1.0 /-2.0C	-6	1548	1738	5/8"
CSH13-6H-R4S, 3670mm Hot Top Sections	+65 / +80°C							

Electrical Load (240V - 50Hz)	Lights		Evaporator Fans		Heating		Supply Phases	Current Draw/Phas
	Watts	Amps	Watts	Amps	Watts	Amps		Amps
CSH13-6H-R4S, 3670mm Cold Bottom	90	0.42	22	0.21	50	0.21	1	0.84
CSH13-6H-R4S, 3670mm Self-Service Section (1223mm)	264	1.1			3346	14.4	1	15.5
CSH13-6H-R4S, 3670mm Serviced Section (2446mm)	660	2.8			4012	16.7	1	19.5

NOTE: When sizing the supply cable for the Hot Cabinet Sections, allow for voltage drop over long runs.

Set Point Parameters	Frequency	Evaporator Termination Temperature	Evaporator Termination Pressure (R404a)	Fail Safe	Thermostat Set Point	Set Point Differential
	CSH13-6H-R4S, 3670mm Cold (Bottom)	8 X 24hrs	+6C	94psi	50 mins	-2.0C
CSH13-6H-R4S, 3670mm Self-Service Section (1223mm)					73C	3.0C
CSH13-6H-R4S, 3670mm Serviced Section (2446mm)					77C	3.0C

AS 1731 Climate Class 3M1 (+5C to -1C) 25C Ambient 60% RH

Operational Notes:

Cold Lower Section
 For the lower section with a Case Controller (Dixell XM678) and Electronic Expansion Valve (Carel E2V).
 The Settings in the controller take precedence over this document.
 Appropriate adjustments may be required to suit actual store conditions differing from AS1731 Climate Class (+25°CDB/60%RH).

Hot Upper Sections
 Case Controller set points should only be adjusted by a qualified person.
 Adjustment may be required due to local ambient conditions.



Effective : 2nd November 2017 : Version 2.1



McAlpine Hussmann reserves the right to change the document contained herein and any revisions without prior notice. This document contains information that is of a confidential nature and is only for its intended recipients. If you are not the intended recipient, you must not peruse, use, disseminate or copy this document or any attachment. Ratings are affected if air flow pattern is altered by aisle draught exceeding 0.2m/s or shelving layout altered from standard layout.



CSH13-nH-R4S

Combination Self Service / Serve Over Hot/Cold Case

Operating Environment

Refrigerated WW 3.0 Display Cabinets have been designed to operate in the following conditions:

Class 3M1

Ambient temperature	25°C
Relative humidity	60%
Max cross draft	0.2 m/sec
Product Temperature	-1°C to +5°C

Class 3M0

Ambient temperature	25°C
Relative humidity	60%
Max cross draft	0.2 m/sec
Product Temperature	-1°C to +4°C

Ambient conditions greater than those stated may result in poorer performance of the cabinet and higher running costs.

Hot Food WW 3.0 Display Cabinets have been designed to operate in the following conditions:

Ambient temperature	20°C to 28°C
Max cross draft	0.2 m/sec
Product Temperature	+60°C to +80°C

Ambient conditions greater than those stated may result in poorer performance of the cabinet and higher running costs.

Installed Position

Refrigerated WW 3.0 Display Cabinets should be sited so that external influences are minimized.

Situations to avoid are:

Air draughts from:

- Air conditioning,
- Ventilation,
- Heating outlets,
- Entranceways,

Heat sources:

- Sunlight,
- Spotlights,
- Hot cabinets
- Concentrated external lighting,
- Non-insulated roofs and walls,

Mechanical damage:

- Shopping trolleys,
- Forklift trucks,
- Pallet jacks,
- Floor polishers,

Hot Food WW 3.0 Display Cabinets should be sited so that external influences are minimized.

Situations to avoid are:

Air draughts from:

- Air conditioning,
- Ventilation,
- Entranceways,
- Mechanical damage:
- Shopping trolleys,
- Forklift trucks,
- Pallet jacks,



CAUTION

Any of these situations could prevent these cabinets from performing correctly.

Extra protection may be required to minimize the risk of damage.

Refrigerated Cabinet Key Operation Points

- Always keep rear doors closed when not using the cabinet
- Do not overload the cabinet with product. Product layer should be no higher than 50mm on any display level
- Do not block air delivery or air return vents
- Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.
- Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer.
- Always clean cabinets as described in the cleaning section of this manual



NOTE

If a liquid spill should occur, the spill should be cleaned as soon as practicable. Some liquids can be acetic, and if left will risk damage to some components in the cabinet.



CAUTION

Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.



CAUTION

Do not use electrical appliances inside the food storage compartments of the appliance, unless they are recommended by the manufacturer.

Hot Food Cabinet Key Operation Points

- Preheat the cabinet for thirty minutes before loading and product
- Only load product that is above 75°C
- Do not overload the cabinet with product. No more than a single layer on each level
- Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of a type recommended by the manufacturer
- Always clean cabinets as described in the cleaning section of this manual and on the cleaning instruction label on the cabinet.
- Rotate stock so that it does not sit in the cabinet for more than 4 hours.
- **The Thermometer is reading air temperature not product temperature. Do not adjust the cabinet settings based on the thermometer reading. Always measure product temperatures on all display levels before commencing any adjustment.**

CAUTION



Location of this cabinet should also take into account the effect it will have on its surrounding environment.

Keep away from storage equipment and products that may be affected by a rise in ambient temperatures



NOTE

If a liquid spill should occur, the spill should be cleaned as soon as practicable. Some liquids can be acetic, and if left will risk damage to some components in the cabinet.

Installation



NOTE

Information in this manual is to be followed in conjunction with specifications, work practices and regulations of the customer, installing company and relevant industry



CAUTION

There is a 150 psig Dry Nitrogen (+/- 10psig) holding charge in the evaporator coil, please check the pressure before safely releasing the holding charge. If Dry Nitrogen holding charge is found to be below 140 psig, please undertake additional leak checks of the evaporator coil.

Set Out When Installing Line-Up

Always identify the highest point on the floor where the cabinets are to be installed. Cabinets will need to be levelled from this point.

1. Mark a line on the floor that shows the position of the rear skid rail for the line-up.
2. Fit the foot bolt caps provided and position the first cabinet, level end to end and front to back. Ensure the foot bolts are adjusted (50mm nominal adjustment range) to accommodate the highest point in the floor. All foot bolts must be adjusted to touch the floor. This will ensure hinged glass maintains its position over time as the cabinet settles.
3. Apply a non-hardening, flexible sealant to the end of the cabinet to ensure a seal between the refrigerated area of the cabinet and the ambient environment.
4. It is advisable to apply masking tape to any visible joints to be sealed later, before butting up the adjacent cabinet.
5. Place the next cabinet as close as possible to first cabinet and set the height of the second cabinet to roughly match the first following the procedures in steps 3, 4, and 5.
6. Push the cases together and insert joining bolts. Make any minor adjustments to exactly align the two cabinets and tighten the joining bolts.
7. Check cabinet is level from end to end and front to back at both ends.



NOTE

Cabinets shall be installed level front to back and side to side to allow correct operation of lifting glass, and allow condensate to drain freely.

8. Repeat procedures until all cabinets are aligned.
9. Apply finishing sealants and any jointer items. Remove masking tape from sealed joins. Tidying up any excess sealant.
10. Check all glass gaps. Adjust as required to have an even gap between each glass.
11. After all services have been installed and completed, fit coving angles and dress panels.
12. Clean the condensate deck of any filings and rubbish that may have accumulated during installation. These may block drains or cause rust damage to panels over time.
13. Fit any internal panels that have been removed for installation.
14. Fit all supplied accessories. A list of separately wrapped loose items should be in the cabinet

Fitting End Walls

1. Apply a suitable flexible sealant to the cabinet between the refrigerated area and the ambient environment.
2. Apply masking tape to the cabinet where a tidy finish is required for the finishing sealant once the end is fitted.
3. Hold the end against the cabinet and insert the fixing bolts supplied. Do not completely tighten.
4. Align the end with the cabinet so the end trim is parallel with adjacent panels on the cabinet. Fully tighten the fixing bolts.
5. Apply sealant to neatly finish the join between cabinet and end.

Adjusting Front Glass

Due to the need to have a robust arm support system, the front glass should not require adjustment when the cabinets are installed level from front to back and end to end. If there are any issues with glass alignment the problem may lay elsewhere. In this instance, contact Hussmann notified for assistance.

Replacement Gas Struts

Replacement gas struts are available from Hussmann along with fitting instructions for the cabinet type. Please supply serial number of the cabinet to ensure correct replacement parts

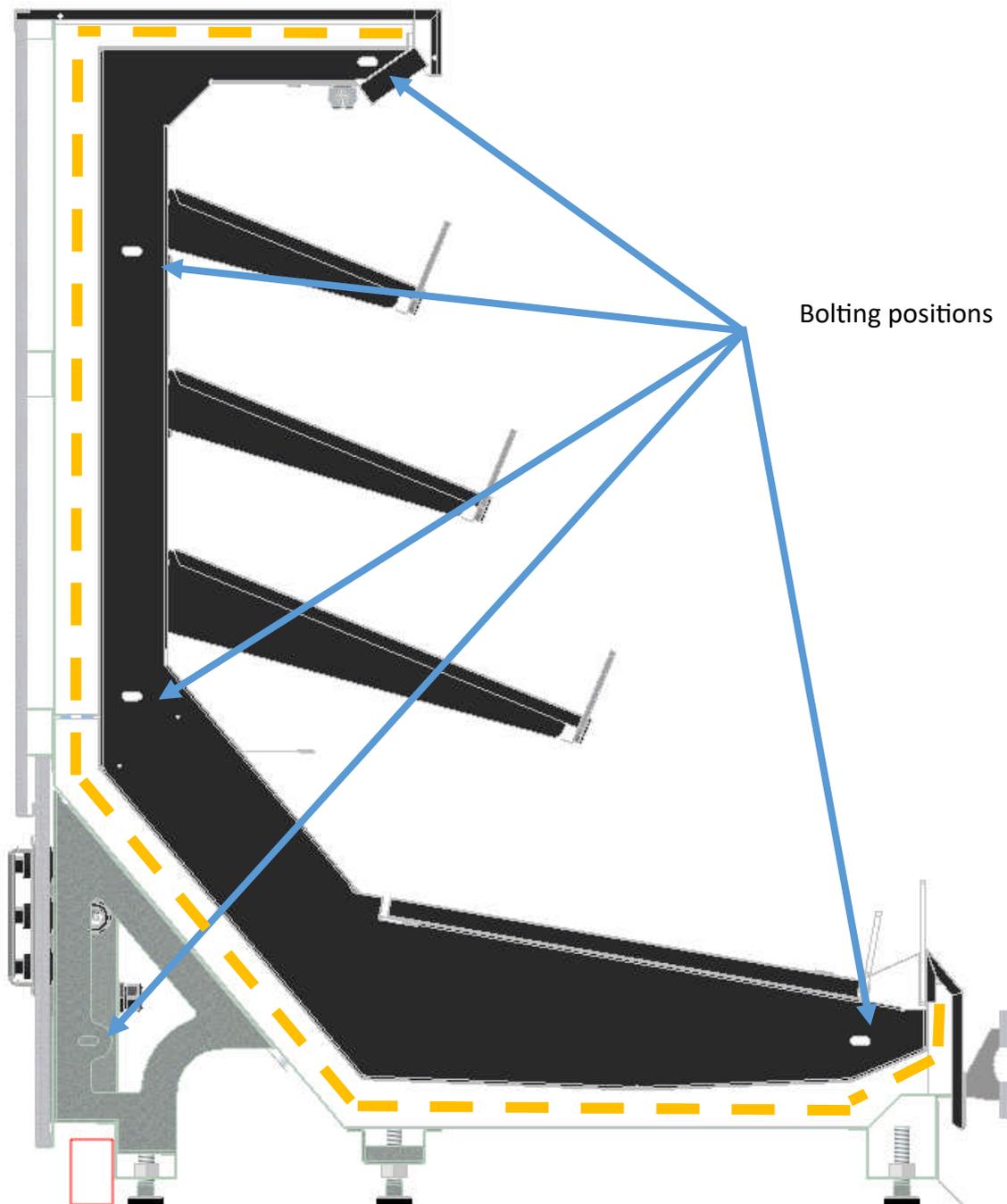


CAUTION

When working on gas struts or any of the glass hardware, 2 people are required to make this a safe operation.

Joining Cabinets

CSS13-2SV-1W - Semi Vertical Sushi Display Joining Detail



-  The dashed line shows where the non-hardening flexible sealant should be applied
- Please use all fixing points when joining cabinets and fitting end walls.
- Use silicone sealant for a finish seal on internal joints

NOTE

To access internal fixing positions in the frame, the inner rear panel and honeycomb will need to be removed.



The rear and top of the end coving will require trimming to size.

It has been made to suit both left and right hand ends and be able to allow for full height adjustment of the cabinet.



NOTE

Trimming of end covings will apply to all cabinets

CSS19-2PL-1W – Salami cabinet installation detail

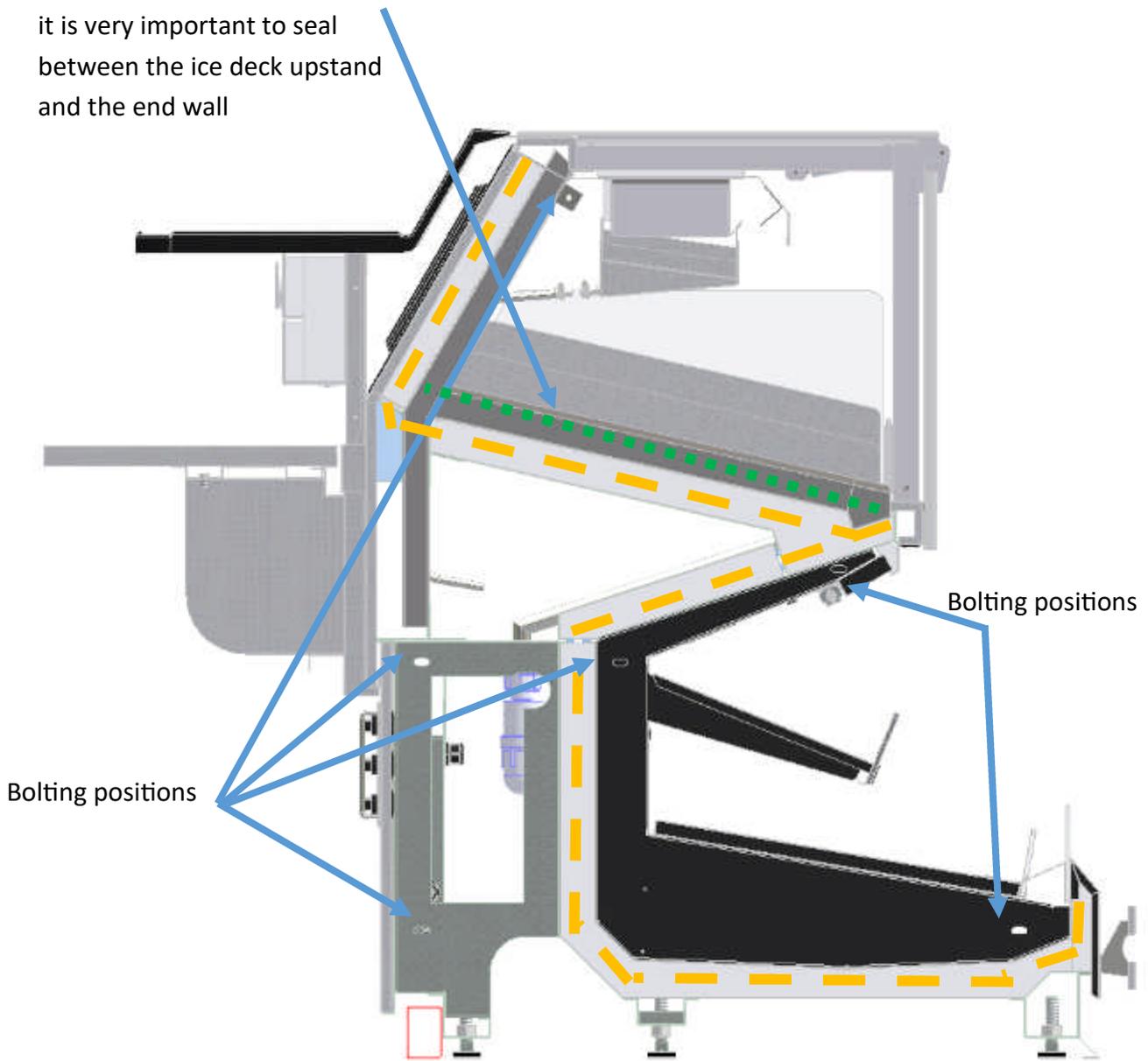
The Salami cabinet will typically arrive with end walls fitted. Any joining requirements should be taken from the adjacent cabinet.

**NOTE**

End covings will require fitting on site – See fitting requirements on previous page.

CSC13-6M-1W – Meat Cabinet Joining Detail

To ensure a effective water seal, it is very important to seal between the ice deck upstand and the end wall



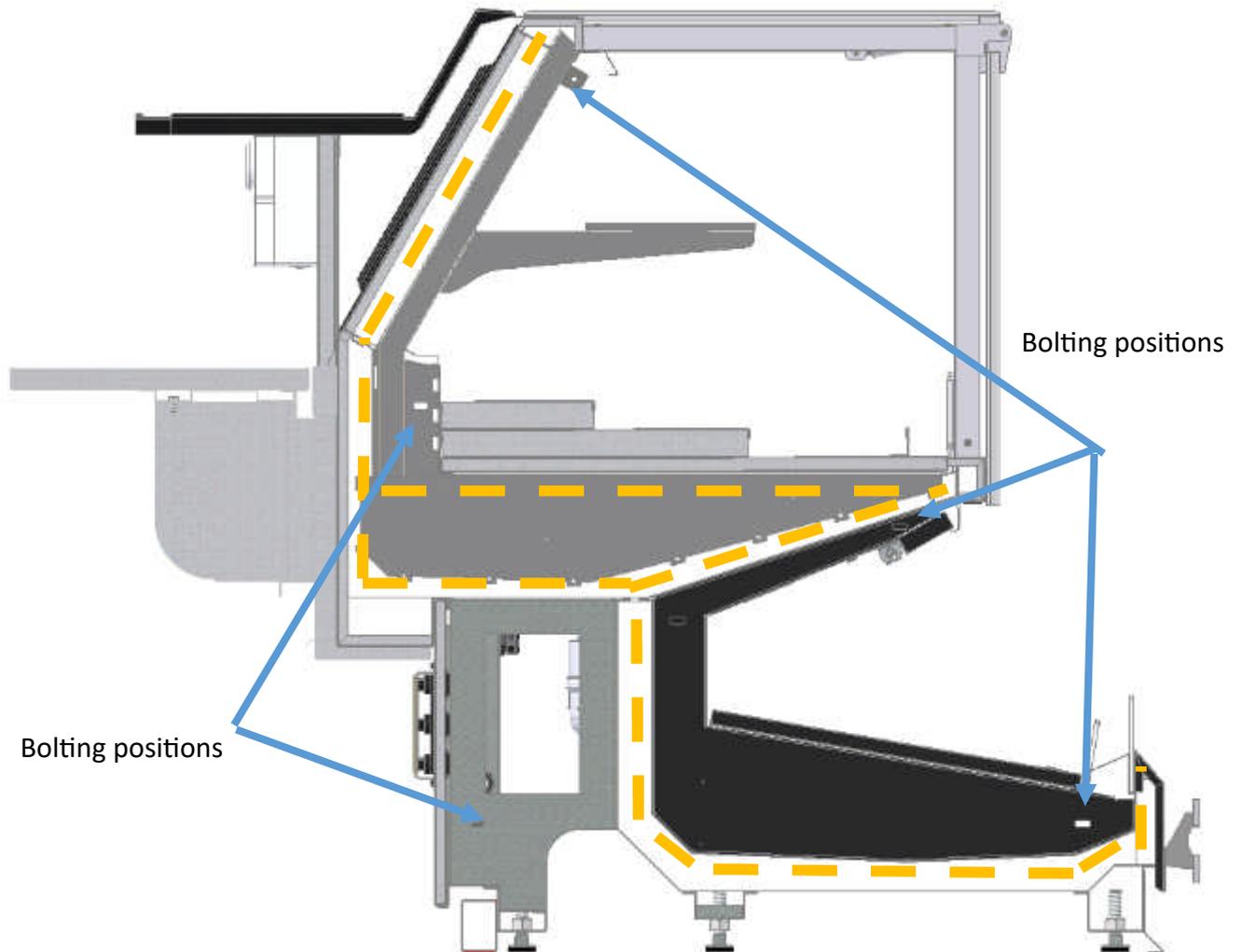
-  The dashed line shows where non-hardening flexible sealant should be applied
- Please use all fixing points when joining cabinets and fitting end walls.
- Use silicone sealant to seal internal joints
-  Use silicone sealant between the end wall and the ice deck upstand as shown by the dotted line



NOTE

To access internal fixing positions in the frame, the inner rear panel and honeycomb will need to be removed.

CSD13-nDE-1W – Deli Cabinet Joining Detail



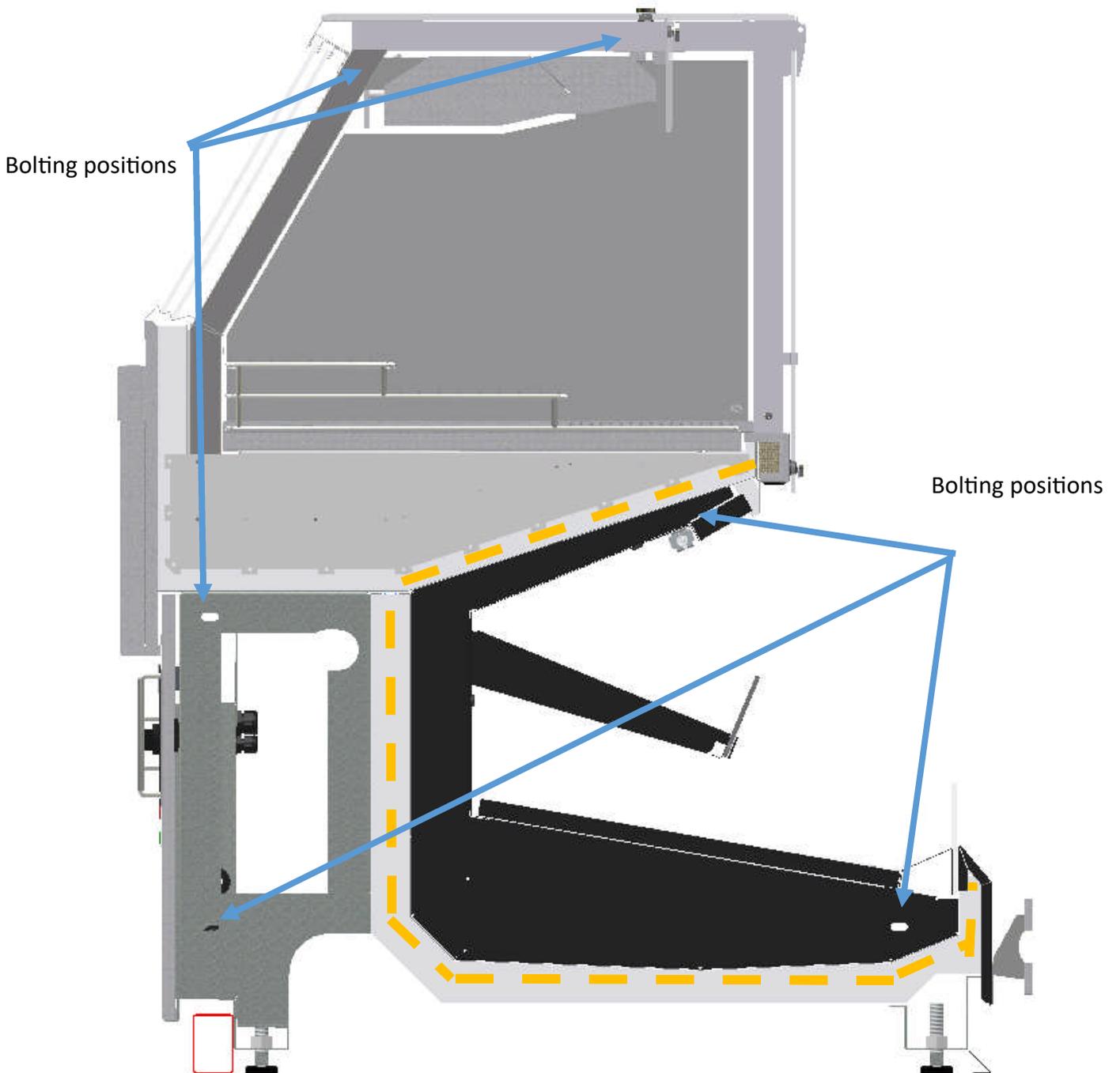
-  The dashed line shows where non-hardening flexible sealant should be applied
- Please use all fixing points when joining cabinets and fitting end walls.
- Use silicone sealant to seal internal joints



NOTE

To access internal fixing positions in the frame, the inner rear panel and honeycomb will need to be removed.

CSH13-6H-1W – Hot Cabinet – Self Service Section



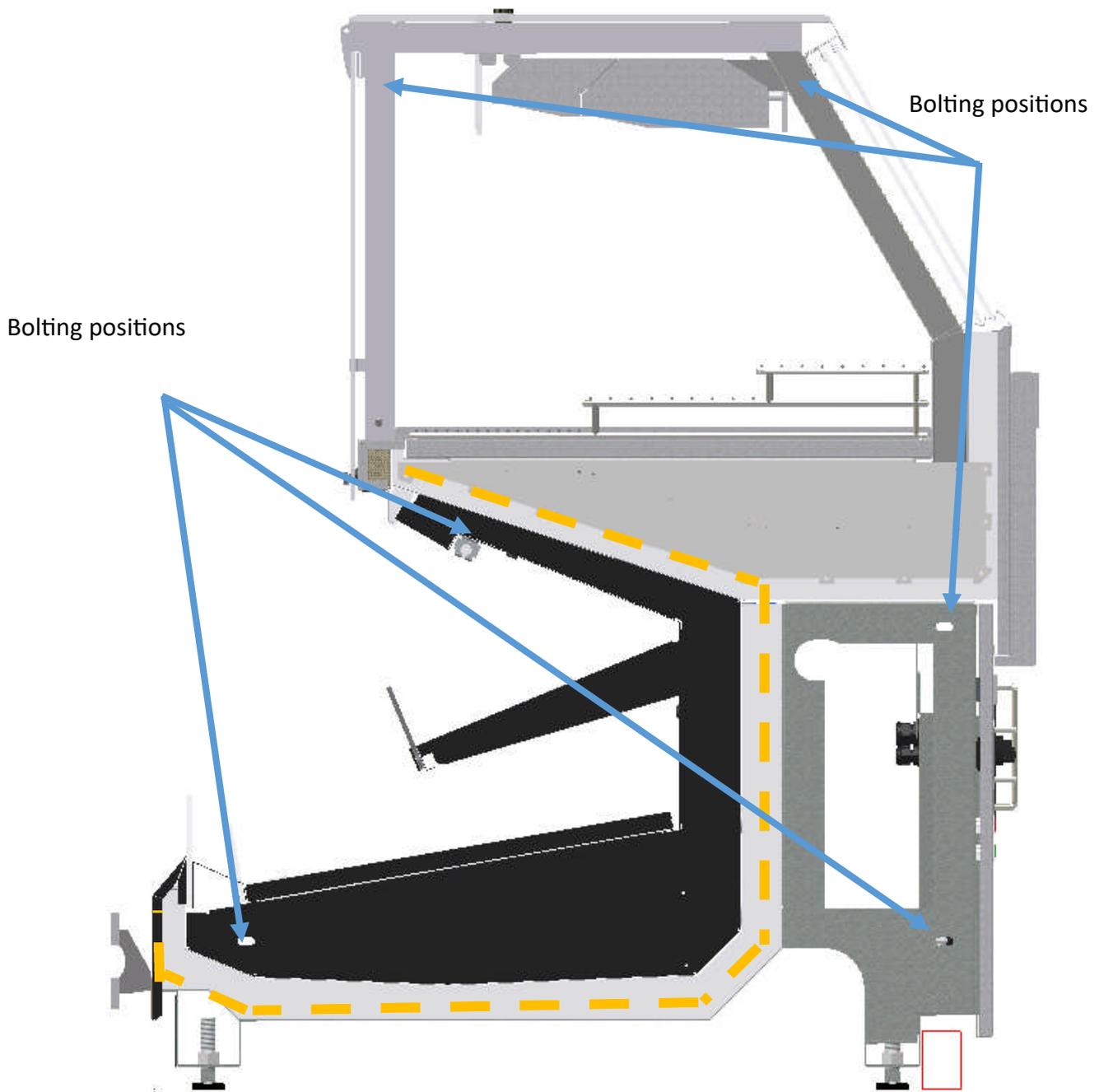
-  The dashed line shows where non-hardening flexible sealant should be applied
- Please use all fixing points when joining cabinets and fitting end walls.
- Use silicone sealant to seal internal joints



NOTE

To access internal fixing positions in the frame, the inner rear panel and honeycomb will need to be removed.

CSH13-6H-1W – Hot Cabinet – Serviced Section



-  The dashed line shows where non-hardening flexible sealant should be applied
- Please use all fixing points when joining cabinets and fitting end walls.
- Use silicone sealant to seal internal joints



NOTE

To access internal fixing positions in the frame, the inner rear panel and honeycomb will need to be removed.

Electrical Installation

The electrical installation shall:

- Meet existing regulations and safety codes,
- Have an electrical supply to the cabinet that is independent of other supplies,
- Be individually isolated,
- An electrical diagram will be attached to the electrical enclosure on every cabinet.



NOTE

**If you require a replacement electrical diagram, please contact the
Husmann help desk.**

Please supply the cabinet serial number with the request.



NOTE

**It is recommended that hot sections of this cabinet are connected to
dedicated circuits that is not controlled by a Residual Current Device (RCD).
Bar elements installed in this cabinet may cause nuisance tripping of the RCD.**

Drain Installation

Points to be aware of for cabinet drain installation:

- The cabinet should be correctly levelled,
- Water traps are provided for every drain outlet on the cabinet, traps should be fitted as soon as practicable after the waste outlet.
- The installer should ensure that the drain then slopes to any drainage point.
- Drains may need insulating due to local conditions to prevent condensation dripping onto the floor.



NOTE

All drains should be 40mm or bushed to 40mm as soon as practicable after the water trap



NOTE

Any condensate and waste drains must be installed to local regulation requirements

Pre-Start Checklist

It is suggested that the following items be included but not limited to any pre-start check of this cabinet.

- All electrical connections are secure and electrical tests completed.
 - Refrigeration system has been pressure tested.
 - Drain traps have been primed with water to seal and drain screens are fitted where provided.
 - Any loose material created during installation has been cleaned from the cabinet. Pay attention to filings that may be caught under the evaporator and fan panel seal. These could cause rust spots and pitting that could permanently damage the stainless steel.
 - All electrical, refrigeration and sensor penetrations have been sealed inside and outside the cabinet. Including any penetrations through baffles or other internal panels
 - All safety guards are correctly fitted.
 - Fan panels seal correctly.
 - Any components removed for installation have been refitted.
-

Cabinet Operation

To ensure this range of cabinets maintain food products at the correct temperature, the following information should be followed.

Loading Limits

These cabinets have a load limit that ensures food products stored within these load limits are properly refrigerated. Food products stored outside these load limits may not be properly refrigerated, and disturb the airflow with the result that cabinet performance is compromised and food products may be damaged.

Loading Limit Details by Cabinet

CSS13-nSV-1W - All display levels - 100mm product height above the display surface.

CSS19-nPL-1W - Upper section hanging bars -

- Upper section Shelf -
- Upper section Deck -
- Lower Section Shelf - 100mm above the shelf display surface.
- Lower Section Deck - 50mm above the deck display surface.

CSC13-nM-1W - Top Section Display Deck - 50mm above the display surface.

- Lower Section Shelf - 100mm above the shelf display surface.
- Lower Section Deck - 50mm above the deck display surface.

CSC13-nDE-1W - Upper section Shelf – 50mm above the display surface

- Upper section Deck - 100mm above any stepped display surface as long as it is not 150mm above the lowest display deck surface.
- Lower Section Shelf - 100mm above the shelf display surface.
- Lower Section Deck - 50mm above the deck display surface.

CSH13-nH-R4S – All display levels - A single layer of product only.

Internal Fittings and Accessories

Only fittings and accessories approved by the manufacturer should be used. Any other additions may cause the cabinet to not work in its intended fashion.



WARNING

Keep the air return vent clear of any obstruction



WARNING

Do Not use electrical appliances inside the storage compartment of the cabinet unless they are of a type recommended by the manufacturer



WARNING

Do Not use mechanical devices or other means to accelerate the defrosting process, other than those that may be recommended by the manufacturer

External Fittings and Accessories

Rear sliding shelves and scale platforms are available for:

- CSC13
- CSD13
- CSH13

Fitting instructions can be provided if required

Temperature Checking

The temperature in these cabinets should be checked at least once a day. The checking should be done systematically and the temperature recorded.

Hot Food products are required to be maintained above 60°C to meet food Safety Standards. This case should hold product above 65°C, if temperatures fall below this, some cabinet adjustments could be required.

If store policy requires more frequent checking, check as required

Temperature Adjustment

Factory settings are shown beside the simmerstats.

Before adjusting settings, check:

- That simmerstats are set to factory settings
- That all heating elements and heat lamps are working
- That actual product is being measured. **The thermometer only reads air temperature**

1. The simmerstats for adjusting the temperature of the product are accessed behind panels at the rear of the cabinet.
2. To adjust the temperature of product on any level adjust the simmerstat setting of the level above. Therefore, for the top shelf adjust the setting on the canopy simmerstat.
3. Adjusting a shelf setting will mainly effect the level below, but will have a small impact on product temperatures on that shelf.
4. Adjust deck simmerstats if product on the lowest level (deck) is not correct.

that the case is sited.



CAUTION

Only Service Technicians or staff that have had suitable training should adjust settings.

MAINTENANCE

Cleaning

To maximize efficiency and durability, It is suggested that your cleaning and maintenance program include a deep clean weekly and a maintenance clean daily

- Deep cleaning should include:
 - Removal of all food products and store in a refrigerated location.
 - Removal of all removable panels.
 - Remove all food scraps.
 - Sanitizing wash.
 - Rinsing with clean water
- Maintenance clean should include:
 - Removal of ice and all food products.
 - Wipe down of all exposed panels.

Stainless Steel

Stainless steel is used inside the cabinet to give a strong corrosion resistant finish that maximizes the cabinet's service life. **It is not rustproof**, particularly in the harsh environment of Food Display cabinets.

Chlorine and bromine, commonly used for sanitisation are highly caustic chemicals for stainless steel, In heat and humidity, the corrosiveness of these chemicals is enhanced.

Regular cleaning is the best way to prevent corrosion and add to the service life for your stainless-steel product. The goal of your cleaning and maintenance program should be to keep the stainless steel's protective chromium oxide layer intact. This is what prevents corrosion.

For internal cleaning use:

- Warm water (Less than 55°C)
- Water based cleaning solutions
- Soft cloths

Do not use:

- Abrasive products
- Solvent based products

When cleaning:

- Check drain trap is clear of obstructions.
- Do not flood the cold plate or well area as water may overflow onto the floor creating a slipping hazard.

WARNING

**Always isolate cabinet from the mains power supply before deep cleaning.
Turn main cabinet switch from "Normal Operation" to "Cleanout"**



WARNING

Keep water away from electrical components

Cleaning Acrylic

Clean with a non-abrasive soap (or detergent) and luke warm water, using a soft grit free cloth, sponge or chamois.

Wipe the Perspex dry with a clean damp chamois or clean soft cloth such as a cotton flannel. Do not use hard, rough cloths or paper towels, as they will scratch the acrylic

Waxing Acrylic

Once the perspex is clean, minor scratches can be removed using a good grade commercial wax. The wax should be applied in a thin coat, and brought to a high polish by rubbing lightly with a dry clean soft cloth, such as a cotton flannel. Do not rub excessively as this may build up a charge that will attract dust to the surface. Blotting with a clean damp cloth is recommended to remove charge.

Cleaning Glass Surfaces

- Use Domestic glass cleaning fluid, Ammonia based glass cleaner may be used.
- Spray fluid onto a cloth then wipe the glass in a circular motion.

Painted Surfaces

- Use a soft cloth.
- Do not use solvent based cleaning products.
- Always rinse internal surfaces with warm water and allow to dry before re-starting the refrigeration system.

Evaporator Coils

- Never use sharp objects around evaporator coils to de-ice them.
- If the coil has solid ice formed. This indicates the refrigeration and/or defrost cycle are not set correctly. Contact your refrigeration service provider to investigate.
- Use warm water to de-ice coil if required, but not so much as to flood the well.
- Use a soft brush or vacuum brush to clean coil.
- Do not bend fins

Halogen Lamps

- When cleaning hot foods cabinets, do not touch the lamps. This could add grease from finger prints that create hot spots on the lamps causing them to fail.

Hot Cabinets

- Always allow hot cabinets to cool before cleaning. There are indicator lights that show when cabinets are cool enough to clean

Regular Inspection

To ensure reliability of the cabinet and leak tightness of the refrigerant circuit, it is advisable that trained personnel carry out periodic maintenance.

It is recommended that a check be made 3 months after commissioning of the cabinet and then every 6 months.

The maintenance check should include:

Refrigerated Cabinets:

- Leak testing of the cabinet refrigerant circuit.
- Ensuring no damage has occurred to any electrical components.
- Cleaning the evaporator coil.
- Checking lift glass to ensure it has not moved in the glass clamp and that it operates correctly.
- **Attention should be given to the operation of any safety devices.**

Hot Cabinets:

- Checking all elements are working and in good order,
- Checking all halogen lamps are working and in good order
- Checking simmerstats are operating correctly and are set so product maintains required temperature
- Check that all heat guards are in place and secure.
- Check there is no build-up of food or grease residue on any part of the cabinet.
- Check the drain trap is clear of any build-up of residue or other objects.
- Check any electrical components have not been damaged.

These checks will ensure the best possible performance of the cabinet over its service life.

Disposal of the Cabinet

It is encouraged that the cabinet be refurbished if practical.

If disposal is necessary, please be aware that the foam-insulated panels incorporate cyclo-pentane as the blowing agent and will require the cabinet to be disposed of in accordance with local authority guidelines.



NOTE

Components could have high value as scrap, please recycle as many parts as possible

