

# INLINE

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## 3000 SERIES SQUARE REFRIGERATED



WIDTHS: 600mm, 900mm, 1200mm, 1500mm  
FIXED FRONT, SLIDING REAR DOORS  
IN-COUNTER, ON-COUNTER or FREESTANDING

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## Warnings

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**Operational  
Safety**

This appliance is not intended for use by young children or infirm persons, unless they have been adequately supervised by a responsible person, to ensure that they can use the appliance safely.

Young children should be supervised, to ensure that they do not play with the appliance.

---

**Water**

THIS UNIT IS NOT WATERPROOF. DO NOT USE A WATER JET SPRAY TO CLEAN THE INTERIOR OR EXTERIOR OF THIS CABINET.

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**Caution**

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

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**Mains Supply  
Cord**

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons, in order to avoid a hazard.

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**Specialist  
Disposal**

Specialist disposal procedures are required for the safe removal of refrigerant gasses and potentially flammable foam materials.

Pentane, Dimethyl Ether, Isobutene, Butane and Propane may be present.

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**Hazardous  
Substances**

The cabinet does not contain any of the following, in its construction:

Asbestos

PCBs (Oils containing polychlorinated biphenyl)

Mercury

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## Table of Contents

|   |           |
|---|-----------|
| <b>WARNINGS.....</b>                    | <b>3</b>  |
| Operational Safety .....                | 3         |
| Water .....                             | 3         |
| Caution .....                           | 3         |
| Mains Supply Cord .....                 | 3         |
| Specialist Disposal .....               | 3         |
| Hazardous Substances .....              | 3         |
| <b>INTRODUCTION .....</b>               | <b>8</b>  |
| <b>Welcome .....</b>                    | <b>8</b>  |
| Future Products Group (FPG) .....       | 8         |
| Guidance and Help .....                 | 8         |
| <b>Warranty .....</b>                   | <b>8</b>  |
| Warranty Period.....                    | 8         |
| Liability Exceptions .....              | 9         |
| Specific Exclusions.....                | 9         |
| Assessment .....                        | 9         |
| Time Limit .....                        | 9         |
| Caution .....                           | 9         |
| <b>OPERATION .....</b>                  | <b>10</b> |
| <b>Cabinet Layout.....</b>              | <b>10</b> |
| 3000 Square Series Cabinets .....       | 10        |
| Door Configuration .....                | 10        |
| Shelf Lighting.....                     | 10        |
| Condenser Unit.....                     | 10        |
| <b>Controls .....</b>                   | <b>11</b> |
| Control Panel.....                      | 11        |
| Power and Refrigeration.....            | 11        |
| Lights .....                            | 11        |
| Temperature Controller .....            | 11        |
| Temperature Controller Adjustment ..... | 11        |
| <b>Preparation .....</b>                | <b>12</b> |
| Shelf Location and Ticketing .....      | 12        |
| Shelf Adjustment .....                  | 12        |
| Turn on Refrigeration.....              | 12        |
| Fumes and Odours.....                   | 12        |
| Defrost Cycle .....                     | 13        |
| Load Cabinet .....                      | 13        |
| Loading Restrictions .....              | 13        |
| Close all Doors .....                   | 13        |
| Turn on Lights.....                     | 13        |
| <b>Routines .....</b>                   | <b>14</b> |
| After Hours .....                       | 14        |
| Cleaning .....                          | 14        |
| De-frost Cycle.....                     | 14        |
| Door Opening .....                      | 14        |

|   |           |
|---|-----------|
| <b>TROUBLE SHOOTING .....</b>                                 | <b>15</b> |
| <b>CLEANING .....</b>   | <b>16</b> |
| <b>Cautions .....</b>   | <b>16</b> |
| Power .....   | 16        |
| Water .....   | 16        |
| <b>Exterior .....</b>   | <b>16</b> |
| Metal Surfaces.....   | 16        |
| Glass .....   | 16        |
| Sliding Doors .....   | 16        |
| Louvers .....   | 17        |
| <b>Interior.....</b>  | <b>17</b> |
| Access to the Cabinet Base Cavity .....                       | 17        |
| Cleaning the Base Cavity .....                                | 18        |
| Cooling Fins.....   | 18        |
| Temperature Probes.....                                       | 18        |
| Condensate Container .....                                    | 18        |
| Trays, Shelves & Air Grilles.....                             | 18        |
| Re-assembly.....  | 18        |
| <b>Routines .....</b>   | <b>19</b> |
| Schedules .....   | 19        |
| Condenser Assembly .....                                      | 19        |
| Condensate .....  | 19        |
| Inspection .....  | 19        |
| Fault Correction .....  | 19        |
| <b>INSTALLATION .....</b>                                     | <b>20</b> |
| <b>Regulations .....</b>                                      | <b>20</b> |
| Compliance with Local Requirements .....                      | 20        |
| <b>Setting Up .....</b>                                       | <b>20</b> |
| Unpacking.....  | 20        |
| Site Preparation.....   | 20        |
| Cabinet Preparation.....                                      | 20        |
| Shelf Trays .....   | 20        |
| Grounding.....  | 21        |
| Power Supply .....  | 21        |
| Isolation .....   | 21        |
| <b>Location.....</b>  | <b>22</b> |
| Ventilation.....  | 22        |
| Air Flow Requirements .....                                   | 22        |
| Air Duct.....   | 22        |
| Access .....  | 22        |
| <b>Condenser Unit, remote installation .....</b>              | <b>23</b> |
| Types of Installation.....                                    | 23        |
| Type 1 Refrigerant Connections (Refrigeration Engineer) ..... | 23        |
| Type 1 Temperature Probe (Electrician) .....                  | 23        |
| Type 1 Power Connections (Electrician) .....                  | 23        |
| Type 2 Refrigerant Connections (Refrigeration Engineer) ..... | 23        |
| Type 2 Temperature Probe .....                                | 23        |

|   |           |
|---|-----------|
| <b>SERVICING .....</b>                            | <b>24</b> |
| <b>Control Gear .....</b>                         | <b>24</b> |
| Location .....                                    | 24        |
| <b>Lighting.....</b>                              | <b>24</b> |
| Caution .....                                     | 24        |
| Shelf Lights.....                                 | 24        |
| Test Lighting Components .....                    | 24        |
| Access to LED Strips.....                         | 24        |
| LED Strip Replacement.....                        | 25        |
| <b>Refrigeration .....</b>                        | <b>25</b> |
| Caution .....                                     | 25        |
| Condenser Assembly .....                          | 25        |
| Ventilation Panels.....                           | 25        |
| Cabinet Air Circulation Fan .....                 | 26        |
| Temperature Regulator XR40CX .....                | 27        |
| XR40CX Compressor Control .....                   | 27        |
| XR40CX Defrost Control .....                      | 27        |
| XR40CX Key Functions.....                         | 28        |
| XR40CX LED Functions.....                         | 28        |
| FPG Settings .....                                | 31        |
| Dixell Default Settings .....                     | 31        |
| XR40CX Hot Key.....                               | 32        |
| XR40CX Alarm Signals .....                        | 33        |
| XR40CX Connections .....                          | 33        |
| <b>Door Seals .....</b>                           | <b>34</b> |
| Seal Replacement .....                            | 34        |
| Sliding Doors .....                               | 34        |
| <b>SPECIFICATIONS.....</b>                        | <b>35</b> |
| <b>Mechanical .....</b>                           | <b>35</b> |
| <b>Electrical .....</b>                           | <b>35</b> |
| <b>Controller Settings .....</b>                  | <b>36</b> |
| Dixell XR40CX Settings.....                       | 36        |
| Dixell XR35CX Settings.....                       | 36        |
| <b>Compliance .....</b>                           | <b>37</b> |
| Standards .....                                   | 37        |
| Performance Aspects of Refrigerated Cabinets..... | 37        |
| <b>Improvements .....</b>                         | <b>37</b> |
| Ongoing Development.....                          | 37        |
| <b>ELECTRICAL CIRCUIT DIAGRAMS .....</b>          | <b>38</b> |
| Model: IN 3C06-SQ .....                           | 38        |
| Model: IN 3C09-SQ .....                           | 38        |
| Model: IN 3C12-SQ .....                           | 38        |
| Model: IN 3C15-SQ .....                           | 39        |

|                                      |               |
|--------------------------------------|---------------|
| <b>SPARE PARTS .....</b>             | <b>40</b>     |
| Cabinet Serial Number .....          | 40            |
| Location of Glass Parts .....        | 41            |
| <br><b>MECHANICAL DRAWINGS .....</b> | <br><b>42</b> |
| <b>Dimensions .....</b>              | <b>42</b>     |
| Cabinet Variants .....               | 42            |
| IN-3C06S In counter mounting .....   | 42            |
| IN-3C09S In counter mounting .....   | 43            |
| IN-3C12S In counter mounting .....   | 44            |
| IN-3C15S In counter mounting .....   | 45            |
| IN-3C06S Counter top mounting .....  | 46            |
| IN-3C09S Counter top mounting .....  | 47            |
| IN-3C12S Counter top mounting .....  | 48            |
| IN-3C15S Counter top mounting .....  | 49            |
| IN-3C06S Free Standing .....         | 50            |
| IN-3C09S Free Standing .....         | 51            |
| IN-3C12S Free Standing .....         | 52            |
| <b>Ventilation .....</b>             | <b>53</b>     |
| Under-bench Enclosure .....          | 53            |
| Air Flow Baffles .....               | 53            |
| Service Access .....                 | 53            |
| Grille Dimensions .....              | 53            |

## INTRODUCTION

### Welcome

REFRIGERATED CABINETS - INTRODUCTION

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#### Future Products Group (FPG)

Welcome to the world of FPG! Our products are designed and engineered to give you the optimal performance that you deserve with innovative visual merchandising appeal.

We are confident that you will be delighted with your state of the art inline food service cabinet, and that it will become a valued appliance in your store.

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#### Guidance and Help

Any new appliance can seem very complex and confusing at first glance. To ensure you receive the utmost benefit from your new inline cabinet, there are two things you can do.

- Before operating the cabinet, please read the instruction book carefully and follow its recommendations. The time taken will be well spent. These instructions both general and technical tell you how to install, operate and look after your inline food service cabinet so that you can receive the full benefits that this cabinet has to offer.
  - These instructions cannot, however, cover all eventualities. If you are unsure of any aspect of the installation, instructions or performance of your cabinet, contact your dealer promptly or contact us via email to [support@fpgworld.com](mailto:support@fpgworld.com).
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### Warranty

REFRIGERATED CABINETS - INTRODUCTION

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#### Warranty Period

Future Products Group Limited warrants, to the original purchaser of an FPG manufactured food service cabinet, that for ONE YEAR (12 months) from the date of purchase, any defect in workmanship or material resulting in the product malfunctioning while under correct use will be rectified.

For refrigerated cabinets with integral or near-remote refrigeration the warranty is extended to THREE YEARS (36 months), for refrigeration condenser units. Conditions apply, see Liability Exceptions.

Liability under this warranty is limited to replacing or repairing a part, without charge.

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*Continued on next page*

## Warranty cont.

### REFRIGERATED CABINETS - INTRODUCTION

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#### Liability Exceptions

Liability under this warranty does not include:

- Any loss, damage, or expenses directly or indirectly arising from the use of, or inability to use, the product or from any other cause.
  - Any part of the cabinet which has been subject to misuse, neglect, alteration, incorrect installation, accident, or damage caused by transportation, use of abrasive or caustic chemicals, flood, fire or acts of God.
  - Damage, resulting from failure to have the cabinet regularly serviced by a refrigeration engineer:
    - For cabinets with integral or near-remote refrigeration, every three months. NB: You will be required to provide copies of service records in the event of condenser failure.
    - For cabinets with remote refrigeration, annually.
  - Any damage or malfunction, resulting from the use of non-FPG supplied spare parts.
- 

#### Specific Exclusions

The following are specifically excluded from warranty:

- Breakage of glass or plastic components, or the replacement of LED lighting assemblies or gaskets.
  - Maladjustment of the electronic refrigeration controller, by an unqualified person.
  - For cabinets with integral or near-remote refrigeration, failure resulting from a lack of routine condenser / radiator cleaning.
  - Failure to re-assemble the cabinet correctly after cleaning.
  - Fair wear and tear.
- 

#### Assessment

The liability under this warranty is dependent on an assessment by FPG, to determine the defect in workmanship or materials.

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#### Time Limit

FPG does not guarantee that any service to be performed under this warranty will be carried out within any particular time limit.

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#### Caution

**FPG will not be held responsible for any servicing costs incurred prior to FPG's acceptance of a warranty claim.**

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## OPERATION

### Cabinet Layout

REFRIGERATED CABINETS - OPERATION

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|                                    |   |
|------------------------------------|---|
| <b>3000 Square Series Cabinets</b> | <p>The 3000 Square Series cabinets include Ambient, Heated and Refrigerated models.</p> <p>On Counter, In Counter and Free Standing models are available.</p> <p>In the case of the refrigerated cabinets, the condenser unit can be supplied separately, for mounting either under the bench or remotely.</p> <p>Condensate is piped to a removable container.</p> |
| <b>Door Configuration</b>          | <p>Sliding doors can be fitted to the front and back of the cabinets.</p> <p>Fixed glass can be fitted in place of doors at the front.</p>  |
| <b>Shelf Lighting</b>              | <p>Cabinets are fitted with a top light as standard. Lights below each shelf are available as an optional extra, at the time of ordering.</p> <p>Cabinets are fitted with high efficiency LED lighting.</p>   |
| <b>Condenser Unit</b>              | <p>If mounted below the bench, ventilation must be provided to ensure adequate air flow for efficient operation of the refrigeration condenser.</p> <p>See:- <b>Installation</b>-Location</p>   |

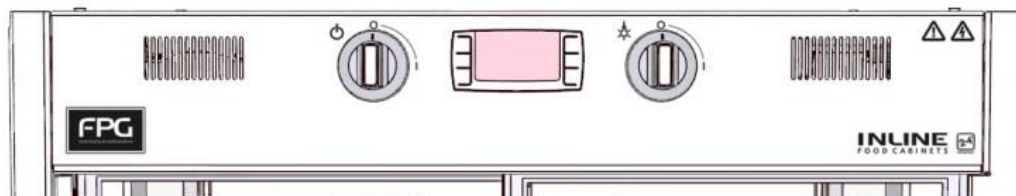
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## Controls

### REFRIGERATED CABINETS - OPERATION

#### Control Panel

The controls are mounted on the back of the cabinet, at the top. There is a power switch, a refrigeration controller and a light switch.



#### Power and Refrigeration

To turn the power and refrigeration on, rotate the main switch.



#### Lights



To turn the lights on, rotate the switch, with the LIGHT symbol.

#### Temperature Controller



The controller regulates the cabinet temperature and controls the automatic defrost cycles.

The display indicates the cabinet air temperature.

#### Temperature Controller Adjustment

**Caution:**  
This controller should only be adjusted by a qualified service technician.

The controller is set up during manufacture of the cabinet, and should not require further adjustment.

The indicated temperature is sensed by a probe in the return air, entering the cooling coil. This is used to control the refrigeration condenser operation, and will be marginally higher than the internal cabinet temperature.

Incorrect adjustment can cause the fins to ice up, resulting in reduced airflow and poor performance.

The temperature of the condenser is also monitored, to protect the compressor from damage resulting from blocked radiators etc.

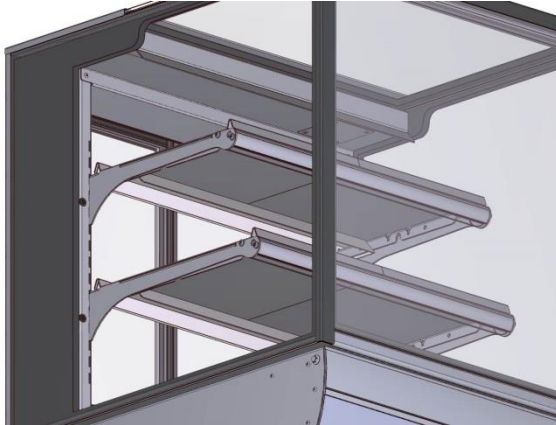
The controller also governs the de-frost cycles, and incorrect adjustment can again lead to poor temperature control or possible overflow of condensate.

If you think an adjustment may be needed, call the service technician.

## Preparation

REFRIGERATED CABINETS - OPERATION

### Shelf Location and Ticketing

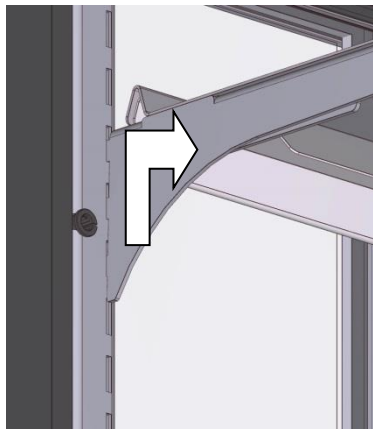


The shelves are adjustable in height and can easily be moved up or down, to match product size.

The movement is restricted to 50mm, because of the electric cables to the lights. For greater movement contact the manufacturer or supplier for advice, as electrical modifications may be required.

The front and rear edges of the shelves are profiled to carry ticketing/labels.

### Shelf Adjustment



To move the shelf brackets, first remove the shelf trays.

Lift the brackets straight up firmly and then pull the brackets forward, to disengage them from the slots in the support posts.

Insert the brackets into their new position, and push bracket down firmly.

The brackets may be positioned to give two different degrees of slope to the shelves.

Refit all shelf trays and doors.

**N.B.** Make sure brackets are pushed down as far as they can go. Failure to do this may result in shelf collapse, when loaded with product.

### Turn on Refrigeration

The refrigeration condenser will run as soon as the cabinet main switch is turned ON, and the cabinet temperature will begin to fall.

The temperature controller is pre-set to maintain the cabinet temperature at 2° - 4° C, and should not need adjustment.

### Fumes and Odours

Before first use, operate the cabinet for 1-2 hours to remove any fumes or odours, which may be present. This will avoid possible tainting of food.

*Continued on next page*

## Preparation cont.

### REFRIGERATED CABINETS - OPERATION

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|                             |   |
|-----------------------------|---|
| <b>Defrost Cycle</b>        | <p>Note that the defrost times are set from when the cabinet is first turned on. If they are required at a particular time, you must turn on the cabinet four hours before the first defrost required. The cycles will then occur every four hours, provided that the cabinet is not switched off.</p> <p>Each defrost cycle terminates as soon as the temperature of the evaporator fins rises to a level indicating that all ice has melted.</p> <p>This active defrost system improves the energy efficiency of the cabinet, and minimises temperature fluctuations.</p> |
| <b>Load Cabinet</b>         | <p>Load the cabinet with <u>pre-chilled</u> product, from either the front or rear doors.</p> <p>The cabinet is designed to maintain the temperature of pre-chilled product at between 2° and 4°C. It is not a refrigerator, and consequently, if warm product is introduced, there could be some delay before the operating temperature falls to the normal operating level.</p>   |
| <b>Loading Restrictions</b> | <p>It is important to leave adequate free space for the refrigerated air to circulate within the cabinet.</p> <p>A minimum clearance of 40 mm over the products should be maintained below the shelves and the top of the cabinet.</p> <p>The air grilles at the front and rear of the cabinet must not be covered at all.</p>  |
| <b>Close all Doors</b>      | <p>It is important to keep the cabinet doors closed. If doors are not fully closed, an even temperature will not be maintained within the cabinet.</p>  |
| <b>Turn on Lights</b>       | <p>When ready for service, turn on the cabinet lights.</p>  |

## Routines

### REFRIGERATED CABINETS - OPERATION

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**After Hours** Ideally, cabinets should not be turned off after hours or at night. Products can either be left in the cabinet or placed in night storage. Shut the cabinet doors and turn off the lights. The cabinet will then operate on minimum load, and stay cold, ready for instant operation when next required.

If the cabinet is turned off, allow it to run for about half an hour before replacing the pre-chilled products.

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**Cleaning** Since the cabinet needs to be switched off during cleaning operations, it is best to clean it at the end of the working day. The cabinet will then have time to recover its normal operating temperature, before replacing the products.

Once the cleaning is finished, turn the cabinet on again, turn off the lights and shut the doors. The cabinet will cool down under minimum load and be ready for the next day's use.

---

**De-frost Cycle** The cabinet will de-frost automatically six times per day. The cabinet should NOT be temperature tested within ½ hour of a de-frost programme being completed.

The first defrost cycle will occur four hours after the cabinet is first switched on.

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**Door Opening** The cabinet is designed to maintain food at a temperature of 2° to 4°C. The refrigeration system is designed to maintain this temperature with the doors being opened and closed up to 60 times per hour.

If the doors are left open for an extended period the temperature will rise. Once the doors are shut the temperature will take some time to fall to the normal operating level. The longer the doors are open the longer the time to restore normal operating temperature.

---

## TROUBLE SHOOTING

| FAULT                              | POSSIBLE CAUSE  | REMEDY  |
|------------------------------------|---|---|
| Cabinet does not operate/start     | The mains isolating switch on the wall, circuit breaker or fuses are off at the power board | Turn isolating switch circuit breaker or fuses on                 |
|                                    | Internal fuse has blown   | <b><i>Have wiring checked and replace fuse (5A Slow Blow)</i></b> |
|                                    | The main switch on the cabinet is OFF   | Turn the main switch ON   |
| Cabinet does not reach temperature | One or more doors is open   | Close doors and re-test temperature after 30 minutes              |
|                                    | Too much product in cabinet   | Remove some product   |
|                                    | Ventilation grilles are blocked   | Vacuum or remove blockage   |
|                                    | Product blocking air grille   | Place product on shelves  |
|                                    | Evaporator coil fins blocked  | Clean coil fins of food etc.                                      |
|                                    | Trays obstructing air flow  | Re-position trays on shelves                                      |
|                                    | Thermostat needs adjustment   | <b><i>Adjust controller</i></b>                                   |
|                                    | Ambient temperature > 25°C  | Adjust store air conditioning                                     |
|                                    | Damaged or missing door seal  | <b><i>Replace door seal</i></b>                                   |
|                                    | Evaporator coil iced up   | <b><i>De-ice coil</i></b>   |
|                                    | Condenser radiator blocked  | <b><i>Remove dust and debris</i></b>                              |
|                                    | Thermostat faulty   | <b><i>Replace controller</i></b>                                  |
|                                    | Temperature probe damaged   | <b><i>Replace temperature probe</i></b>                           |
|                                    | Defrost cycle not suitable  | <b><i>Adjust to match environment</i></b>                         |
|                                    | Fans not operating  | <b><i>Have fans checked/replaced</i></b>                          |
| Cabinet lights not working         | The light switch is OFF   | Turn light switch ON  |
|                                    | LED Power supply has failed   | <b><i>Replace LED power supply</i></b>                            |
|                                    | LED strip has failed  | <b><i>Replace the LED assembly</i></b>                            |
|                                    | Fuse has blown  | <b><i>Check wiring and replace fuse (5A Slow Blow)</i></b>        |
| Doors are not sliding smoothly     | Door not in track   | Install door correctly in track                                   |
|                                    | Debris in track   | Clean door tracks (see cleaning)                                  |
|                                    | Lack of lubricant   | Apply food grade lubricant to door track                          |
| Aluminium parts corroded           | Caustic detergent damage  | Order replacement parts   |

**Service Personnel Only** The table entries in ***italics*** indicate actions to be taken only by qualified Service Personnel.

## CLEANING

### Cautions

REFRIGERATED CABINETS - CLEANING

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|              |  |
|--------------|--|
| <b>Power</b> | <b>ALWAYS TURN THE POWER SUPPLY OFF BEFORE CLEANING.</b> |
|--------------|--|

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|              |  |
|--------------|--|
| <b>Water</b> | THIS UNIT IS NOT WATERPROOF. DO NOT USE A WATER JET SPRAY TO CLEAN THE INTERIOR OR EXTERIOR OF THIS CABINET. |
|--------------|--|

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### Exterior

REFRIGERATED CABINETS - CLEANING

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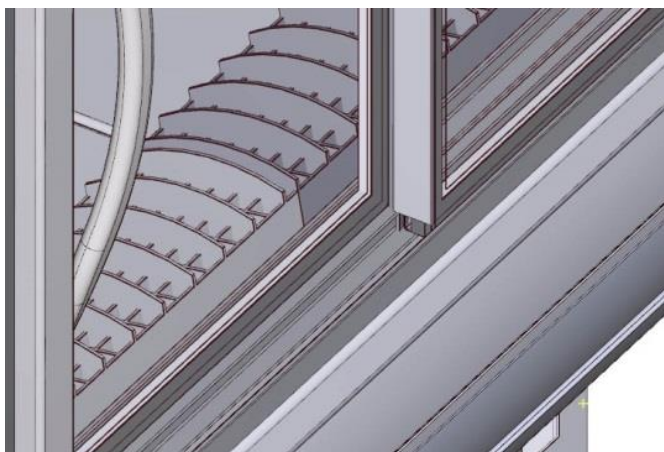
|                       |  |
|-----------------------|--|
| <b>Metal Surfaces</b> | Stainless steel or aluminium surfaces should be cleaned with hot soapy water or a good quality metal cleaning compound. DO NOT clean surfaces with abrasive pads or cleaners, as stainless steel and aluminium surfaces will be damaged. |
|-----------------------|--|

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|              |  |
|--------------|--|
| <b>Glass</b> | All glass should be cleaned using a good quality glass cleaner and a clean cloth.<br><b>DO NOT</b> use abrasive pads or cleaners, because they will damage the surface of the glass. |
|--------------|--|

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### Sliding Doors



Sliding glass doors are located by plastic guides at the top and bottom.

The doors can be removed for cleaning by sliding the door to a central position, placing hands either side of the door, lifting it up and then swinging it out at the bottom.

When replacing doors, make sure that they are located in the correct slots,

top and bottom. The left door should be in the inner slots, and the right door in the outer slots.

Sliding door tracks should be vacuumed out regularly to keep doors sliding freely.

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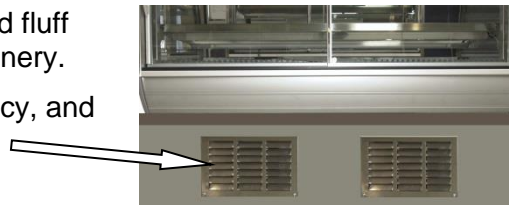
## Exterior<sup>cont.</sup>

### REFRIGERATED CABINETS - CLEANING

#### Louvers

Use a vacuum cleaner to remove dust and fluff from all of the ventilation louvers in the joinery.

This will maintain the refrigeration efficiency, and prevent overheating.

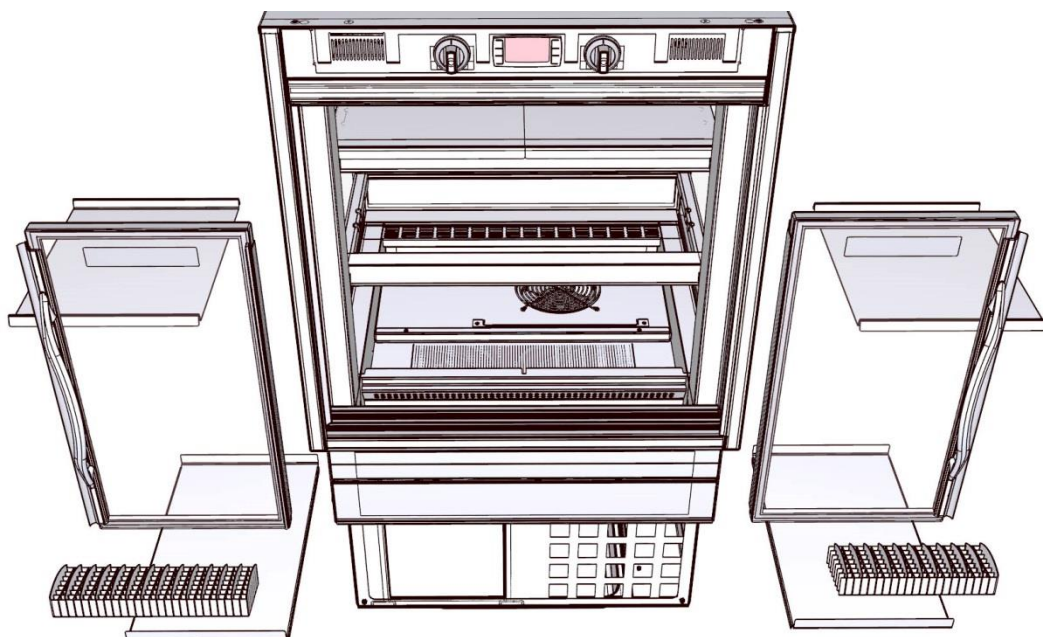


## Interior

### REFRIGERATED CABINETS - CLEANING

#### Access to the Cabinet Base Cavity

Remove the doors, by sliding them to the centre and lifting, to disengage them from the door tracks.



Lift out the deck trays.

Remove the two screws, securing the fan deck, and stand it upright on the base. It cannot be removed.

Lift out the plastic air louvers.

Lift the cover plate off the evaporator coil and disengage it from the chassis, to reveal the complete inside of the cabinet base cavity.

The whole of the cabinet interior can now be cleaned.

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## Interior cont.

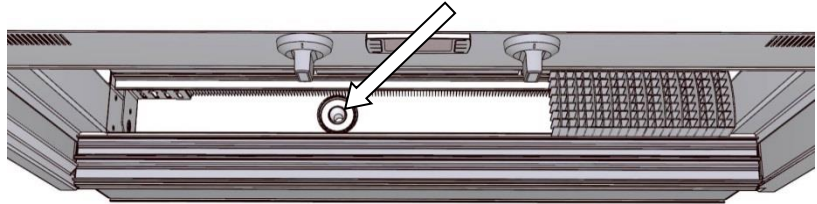
### REFRIGERATED CABINETS - CLEANING

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#### Cleaning the Base Cavity

Sweep out, or use a vacuum cleaner, to remove any debris from the cabinet base cavity. **Make sure that the condensate drain hole is clean.**

A Wet-and-Dry vacuum cleaner should be used, since there is likely to be some water in the bottom. Finally, wipe out the bottom with a damp sanitized cloth.



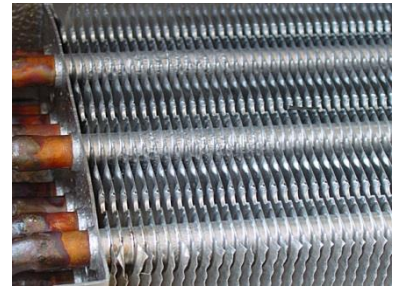
**Do not pour water into the base, or the condensate container will overflow.**

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#### Cooling Fins

If there is food lodged in the cooling fins, it is best to use a wet and dry vacuum cleaner to suck out the food. **DO NOT** attempt to hose food parts from fins.

**Caution:** The fins are very sharp. Take extra care when cleaning this area. Do not bend the fins over, as this would restrict the air flow and degrade cabinet performance.



#### Temperature Probes

Take care not to damage or move the temperature probes, when cleaning the cooling fins.

One probe is located on the fan side of the cooling coil, in free air. A second probe is inserted between the fins of the cooling coil on the air exit side.

**Do NOT move the probes.**

---

#### Condensate Container

The condensate container is only designed to handle cooling-coil defrosting liquid that drains from the well.

**DO NOT fill the well with liquid, or attempt to hose out as condensate container will overflow and leak onto floor.**

---

#### Trays, Shelves & Air Grilles

Stainless steel trays, shelves, grilles etc. should be cleaned with hot soapy water. Do not use abrasive pads or cleaners, as these may damage surfaces.

**Warning:** Dishwasher detergents will damage any anodised aluminium parts.

---

#### Re-assembly

**Take care to re-assemble panels and covers correctly, as any air gaps can adversely affect air circulation and the cabinet temperature.**

---

## Routines

### REFRIGERATED CABINETS - CLEANING

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#### Schedules

To maintain optimum performance, regular cleaning schedules should be established.

**Failure to carry out routine cleaning/servicing schedules will void the warranty on the refrigeration equipment.**

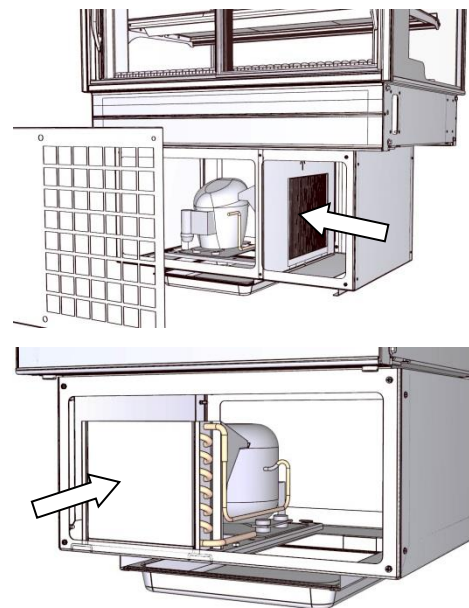
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#### Condenser Assembly

For efficient refrigeration performance, the condenser radiator must be kept clean. Failure to do this will lead to a build-up of dust, and restricted airflow will prevent the unit from working properly. The compressor may overheat and the cabinet temperature may rise.

**Regular vacuuming will prevent a build-up of dust and fluff, however, three monthly service checks by a refrigeration engineer, which include cleaning the condenser with compressed air, are mandatory.**

Be very careful not to bend or damage the soft aluminium fins when vacuuming the radiator. If the fins are flattened, airflow will be restricted and overheating will result. The orientation of the condenser depends on the cabinet size.

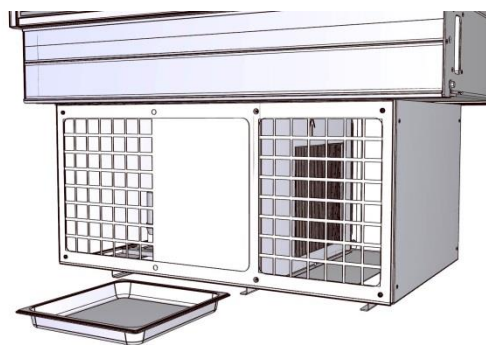


#### Condensate

The condensate container should be checked each time the cabinet is cleaned.

The quantity of water will depend on the relative humidity and cabinet contents. Natural evaporation can be sufficient to keep the container empty, but if water has accumulated, it should be removed and emptied regularly.

If preferred, particularly in high humidity situations, the condensate can be plumbed to a drain.



#### Inspection

As part of the cleaning routine, the controls, mechanical parts and electrical wiring should be inspected for damage, deterioration or need of adjustment.

---

#### Fault Correction

If any small faults are found, have them attended to promptly by a competent serviceman. Don't wait until they cause a complete breakdown.

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## INSTALLATION

### Regulations

REFRIGERATED CABINETS - INSTALLATION

#### Compliance with Local Requirements

It is very important that your inline food cabinet is installed correctly and that the operation is correct before use. Installation must comply with local electrical, health & safety and hygiene requirements.

### Setting Up

REFRIGERATED CABINETS - INSTALLATION

#### Unpacking

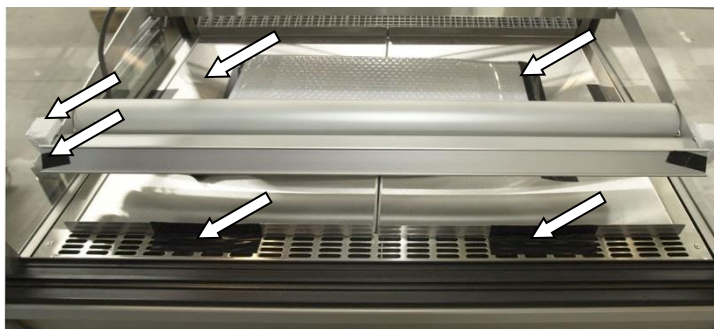
Unpack and check unit for damage and report any damage to the carrier and supplier. Report any deficiencies to your supplier.

The display cabinet is supplied fully assembled, but the compressor unit and shelf trays are packed separately.

#### Site Preparation

Ensure the cabinet location and any bench cut outs are made to the precise measurements shown in the Mechanical Drawings. Position the cabinet in its allocated working position. Use a spirit level to ensure the cabinet is level from side to side and front to back. (If this is not carried out, water may accumulate in the cabinet well, and uneven temperature distribution could also occur).

#### Cabinet Preparation



Remove all protective plastic film, tapes, ties and packers, used to prevent movement during transit.

Lift out the deck trays to gain access to the cabinet well. Be sure to replace them as shown.

#### Shelf Trays

Remove the shelf trays from their packing, peel off the protective plastic coating and assemble them on the support members.

Fit the correct size trays for each shelf level.

*Continued on next page*

## Setting Up cont.

### REFRIGERATED CABINETS - INSTALLATION

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#### Grounding

##### **WARNING: THIS APPLIANCE MUST BE GROUNDED TO EARTH**

The grounding lead, in the mains cable, must always be connected to ground.

A binding post is also provided adjacent to the control gear chassis, to allow the cabinet to be bonded to a surge grounding conductor or to adjacent equipment, should this be required.

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#### Power Supply

Before connecting to the power supply, check that the local supply is correct to that shown on the rating plate, located on the rear of the cabinet.

---

#### Isolation

If the cabinet is not connected by a plug and socket, but is hard wired to the mains supply, a means of isolation must be provided.

If a plug and socket are used, they should still be accessible after the cabinet is installed.

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## Location

### REFRIGERATED CABINETS - INSTALLATION

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#### Ventilation

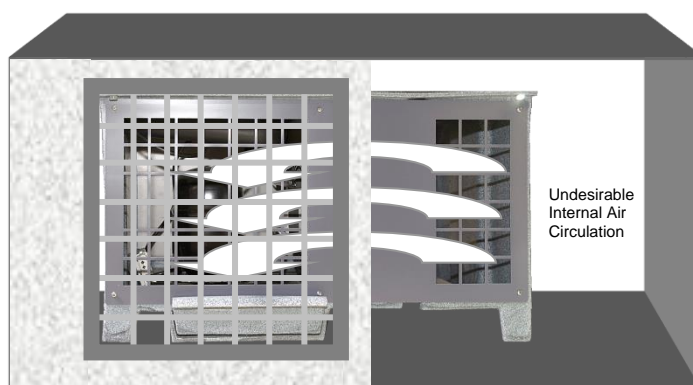
Adequate ventilation must be provided for the condenser unit.

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#### Air Flow Requirements

If the condenser is in an enclosed space, grilles must be provided to allow cool air to enter and warm air to exit.

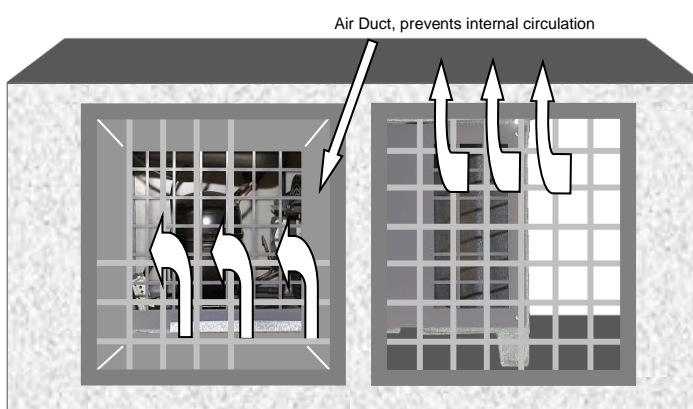
It is not sufficient to provide just one or two grilles, as the air will tend to re-circulate within the enclosure, resulting in poor refrigeration performance.



#### Air Duct

A duct must be constructed to separate the inlet side of the condenser radiator from the exhausted warm air.

This will prevent internal re-circulation of warm air.



#### Access

Access to the back of the cabinet is required for loading, cleaning, re-positioning of shelves and operation of the control panel. Access to the condensate drainage tray is also required, (see above).

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## Condenser Unit, remote installation

### REFRIGERATED CABINETS - INSTALLATION

#### Types of Installation

There are two types of installation associated with cabinets without factory installed condenser units.

1. Using a dedicated condenser unit, supplied with the cabinet, but mounted separately in the joinery.
2. Using a central, machine room condenser, supplying refrigerant to the cabinet via a solenoid valve, within the cabinet.

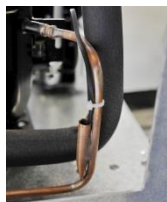
#### Type 1 Refrigerant Connections (Refrigeration Engineer)

Refrigeration pipes must be brazed between the cabinet stubs and the condenser unit. After the pipes have been fitted, the refrigeration engineer will have to charge the system with R134A refrigerant.

The charge indicated on the Rating Label may be used as a starting charge, but the final charge will depend on the distance between the cabinet and the condensing unit.



#### Type 1 Temperature Probe (Electrician)



The condenser temperature probe is pre-connected to the refrigeration controller, and must be inserted in the mounting pocket on the discharge pipe of the compressor.

#### Type 1 Power Connections (Electrician)

Cable, for connection to the condenser unit, is already connected to the display cabinet. Sufficient length is provided for spacing up to five metres.

The three-core lead without a plug should be connected to the condenser assembly, phase, neutral and earth terminals. If the lead is not long enough to reach the condenser location, a terminal box should be fitted close to the cabinet, and the power feed extended to the condenser via fixed wiring.

#### Type 2 Refrigerant Connections (Refrigeration Engineer)

Refrigeration pipes must be brazed between the cabinet stubs and the condenser unit.

A TX valve and refrigerant control solenoid are pre-installed in the cabinet, and must be connected to the Liquid In line from the condenser.

#### Type 2 Temperature Probe

No connections for condenser temperature monitoring are required for Type 2 installations.

## SERVICING

### Control Gear

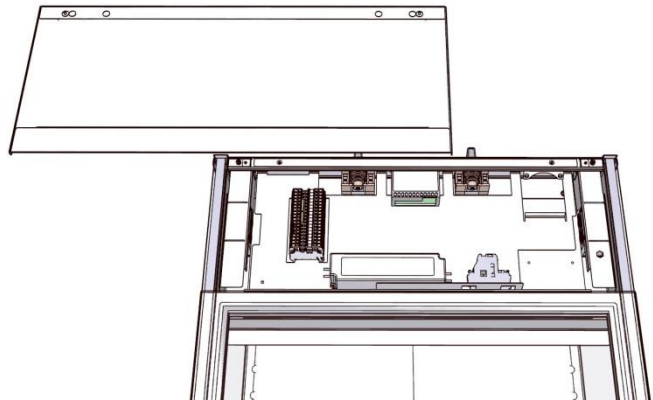
REFRIGERATED CABINETS - SERVICING

#### Location

The electrical control gear is located in the top of the cabinet.

Remove the top plate to access the control gear.

The chassis has power supplies for the lights and evaporator fan, a fan speed control module, the refrigeration controller and a protective fuse.



### Lighting

REFRIGERATED CABINETS - SERVICING

#### Caution

**Do not service lights without isolating the cabinet from the mains supply.**

#### Shelf Lights

Shelf lights are an optional extra, which can be fitted during manufacture.

#### Test Lighting Components

Before replacing an LED strip, check that the power supply is working.

If there is no dc voltage at the output, the power supply should be replaced.

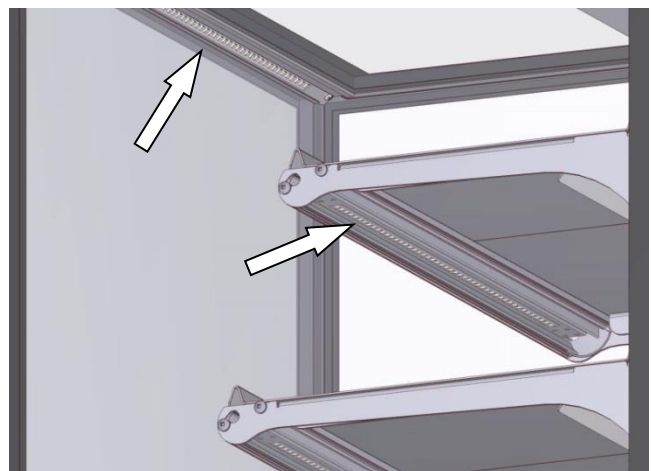
If there is a dc output, the LED assembly must be replaced.

#### Access to LED Strips

The LED strips are protected with plastic covers. These clip into grooves in the aluminium extrusion.

Remove the plastic cover to access the LED strip.

The top light assembly is different from the shelf lights, so the correct replacement unit must be used.



*Continued on next page*

## Lighting cont.

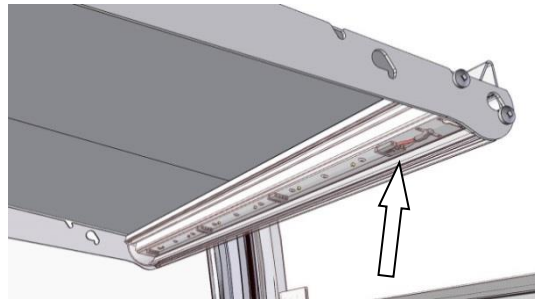
### REFRIGERATED CABINETS - SERVICING

#### LED Strip Replacement

Individual LED modules cannot be replaced. A complete light unit must be used.

Connection is made with a plug and socket. Disengage the supply lead from the metalwork, and re-assemble it to the replacement unit.

Replace the plastic cover.



## Refrigeration

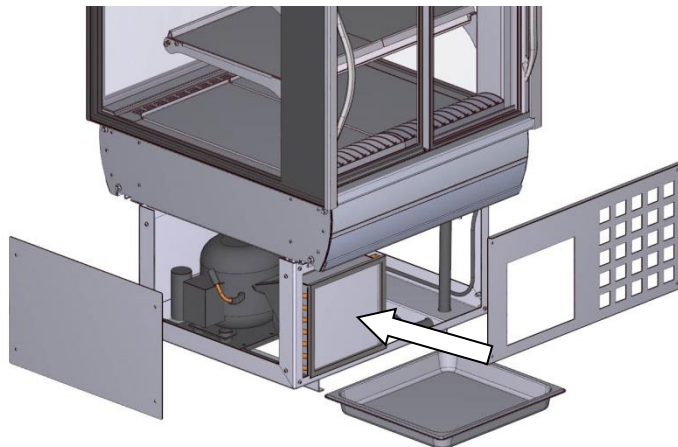
### REFRIGERATED CABINETS - SERVICING

#### Caution

**DO NOT attempt to service the refrigeration equipment without isolating the cabinet at the supply switch or by unplugging it from the supply.**

#### Condenser Assembly

For efficient refrigeration performance, the condenser radiator must be kept clean. Failure to do this will lead to a build-up of dust, and the restricted airflow will prevent the unit from working properly. The compressor may overheat and the cabinet temperature may rise.



**Regular vacuuming will prevent a build-up of dust and fluff, however, three monthly service checks by a refrigeration engineer, which include cleaning the condenser with compressed air, are mandatory.**

Be very careful not to bend or damage the soft aluminium fins when vacuuming the radiator. If the fins are flattened, airflow will be restricted and overheating will result.

The orientation of the condenser depends on the cabinet size.

#### Ventilation Panels

All ventilation panels should be kept free of dust by regular vacuuming, so that air flow is not restricted.

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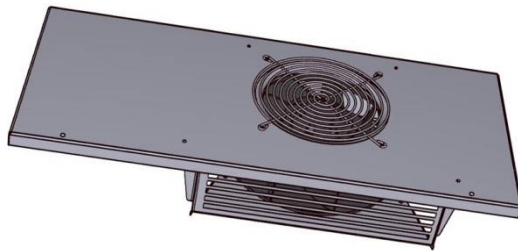
## Refrigeration cont.

REFRIGERATED CABINETS - SERVICING

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### **Cabinet Air Circulation Fan**

The cabinet air circulation fan is located in the base of the cabinet. Access is gained by removing the deck trays.



The fan-deck is connected to the cabinet with a plug and socket, so may be easily removed for cleaning.

The 24V dc fan has its speed set by a control module in the control gear chassis.

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*Continued on next page*

## Refrigeration cont.

REFRIGERATED CABINETS - SERVICING

### Temperature Regulator XR40CX



Model XR40CX is a microprocessor based controller.

It has three NTC probe inputs, the first one for temperature control, the second one, located on the evaporator, to control the defrost termination temperature, the third one, located on the condenser discharge pipe, to signal a condenser temperature alarm.

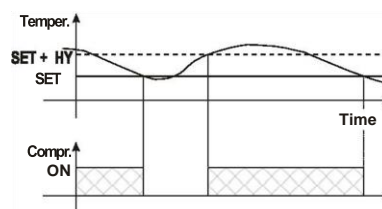
Since the temperature control probe is located on the return air side of the coil, (Air On), the measured temperature will be higher than the average air temperature inside the cabinet.

The HOT KEY output allows one to programme the controller by means the HOT KEY programming keyboard.

The instrument is fully configurable through special parameters that can be easily programmed through the keyboard.

### XR40CX Compressor Control

The regulation is performed according to the temperature measured by the thermostat probe with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.



In case of a fault in the thermostat probe the start and stop of the compressor are timed through parameters **CO<sub>n</sub>** and **CO<sub>F</sub>**.

### XR40CX Defrost Control

Parameters are used to control the interval between defrost cycles (IdF), its maximum length (MdF) and two defrost modes: timed or controlled by the evaporator's probe (P2P).

In this cabinet, the start of the defrost cycle is timed, but the cycle will be terminated as soon as the defrost probe reaches the pre-determined temperature.








At the end of defrost dripping time is started, its length is set in the FSt parameter. With FSt =0 the dripping time is disabled

*Continued on next page*








## Refrigeration cont.

REFRIGERATED CABINETS - SERVICING

### XR40CX Key Functions

| KEY  | FUNCTION   |
|--|--|
| <b>SET</b>   | To display target set point; in programming mode it selects a parameter or confirm an operation                                |
|                 | (DEF) To start a manual defrost  |
|                 | (UP): To see the max. stored temperature; in programming mode it browses the parameter codes or increases the displayed value  |
|                 | (DOWN): To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value |
|                 | To switch the instrument off, if onF = oFF. Not enabled  |
|                 | To lock & unlock the keyboard  |
| <b>SET</b> +  | To enter into programming mode   |
| <b>SET</b> +  | To return to the temperature display mode  |

### XR40CX LED Functions














| LED   | MODE     | FUNCTION                       |
|---|----------|--------------------------------|
|  | ON       | Compressor enabled             |
|  | Flashing | Anti-short cycle delay enabled |
|  | ON       | Defrost enabled                |
|  | Flashing | Drip time in progress          |
|  | ON       | An alarm is occurring          |
|  | ON       | Continuous cycle is running    |
|  | ON       | Energy saving enabled          |
| <b>°C/°F</b>  | ON       | Measurement unit               |
| <b>°C/°F</b>  | Flashing | Programming phase              |

*Continued on next page*

## Refrigeration cont.

### REFRIGERATED CABINETS - SERVICING

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|  |   |
|--|---|
| <b>XR40CX<br/>Min &amp; Max<br/>Recorded<br/>Temperature</b> | <p>Press and release the  key.</p> <p><b>Lo</b> will be displayed followed by the minimum temperature recorded.</p> <p>Press the  key again or wait 5s to restore the normal display.</p> <p>Press and release the  key.</p> <p><b>Hi</b> will be displayed followed by the maximum temperature recorded.</p> <p>Press the  key again or wait 5s to restore the normal display.</p>   |
| <b>XR40CX<br/>Reset Max/Min<br/>Temperature<br/>Memory</b>   | <p>Press the <b>SET</b> key for more than 3s, while the max. or min. temperature is displayed. (<b>rSt</b> message will be displayed)</p> <p>To confirm the operation the <b>rSt</b> message starts blinking and the normal temperature will be displayed.</p>  |
| <b>XR40CX<br/>Display the Set-<br/>point</b>                 | <p>To show the set-point value, press and immediately release the <b>SET</b> key.</p> <p>Press and immediately release the <b>SET</b> key or wait for 5 seconds to display the probe temperature again.</p>   |
| <b>XR40CX<br/>Change the<br/>Set-point</b>                   | <p>To change the set-point value, press the <b>SET</b> key for more than 2 seconds; The value of the set-point will be displayed and the °C or °F LED starts blinking;</p> <p>To change the set value push the  or  arrows within 10s.</p> <p>To memorise the new set-point value push the <b>SET</b> key again or wait 10s.</p>  |
| <b>XR40CX<br/>Start a Manual<br/>Defrost</b>                 | <p>To start a manual defrost, press the  (DEF) key for more than 2 seconds.</p>  |
| <b>XR40CX<br/>Programming<br/>Mode</b>                       | <p>Enter the Programming mode by pressing the <b>SET</b>+ keys for 3s (the °C or °F LED starts blinking).</p> <ul style="list-style-type: none"><li>• Use the  or  keys to select the required parameter.</li><li>• Press the <b>SET</b> key to display its value.</li><li>• Use the  or  keys to change its value.</li><li>• Press <b>SET</b> to store the new value and move to the following parameter.</li></ul> <p>To exit Programming mode, press <b>SET</b>+ or wait 15s without pressing a key.</p> <p>NOTE: the set value is stored even when the procedure is exited by waiting for the time-out to expire.</p> |

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
## Refrigeration cont.

REFRIGERATED CABINETS - SERVICING




### XR40CX The Hidden Menu

The hidden menu includes all the parameters of the instrument.

#### TO ENTER THE HIDDEN MENU

- Enter the Programming mode by pressing the **SET** +  keys for 3s, (the °C or °F LED starts blinking).
- Release the keys, then press the **SET** +  keys again, for more than 7s. The **Pr2** label will be displayed immediately followed from the **Hy** parameter.


#### NOW YOU ARE IN THE HIDDEN MENU.

- Select the required parameter.
- Press the **SET** key to display its value
- Use  or  to change its value.
- Press **SET** to store the new value and move to the following parameter.
- To exit: Press **SET** +  or wait 15s without pressing a key.

NOTE 1: If no parameter is present in **Pr1**, after 3s the **noP** message is displayed. Keep the keys pushed till the **Pr2** message is displayed.

NOTE 2: The set value is stored even when the procedure is exited by waiting for the time-out period to expire.

#### TO MOVE A PARAMETER FROM THE HIDDEN MENU TO THE FIRST LEVEL AND VICEVERSA.

Each parameter present in the HIDDEN MENU can be removed or put into "THE FIRST LEVEL" (user level) by pressing **SET** + 

In HIDDEN MENU when a parameter is present in the First Level the decimal point is shown.

### XR40CX Locking and Unlocking the Keyboard

To lock the keyboard, press the  +  keys for more than 3 s.

The **POF** message will be displayed, followed by the previous temperature display.

If a key is pressed more than 3s the **POF** message will be displayed.

To unlock the keyboard, press the  +  keys for more than 3s, till the **Pon** message is displayed.

*Continued on next page*

## Refrigeration cont.

REFRIGERATED CABINETS - SERVICING

### FPG Settings

Note that the following settings are Dixell factory defaults. Refer to the Specification section for the correct FPG settings for your cabinet.

### Dixell Default Settings

| Label           | Name                                    | Range                             | Default Setting |
|-----------------|---|-----------------------------------|-----------------|
| Set             | Set point                               | LS÷ US                            | -5.0            |
| Hy              | Differential                            | 0,1÷25.5°C/ 1÷ 255°F              | 2.0             |
| LS              | Minimum set point                       | -50°C÷SET/-58°F÷SET               | -50.0           |
| US              | Maximum set point                       | SET÷110°C/ SET ÷ 230°F            | 110             |
| Ot              | Thermostat probe calibration            | -12÷12°C /-120÷120°F              | 0.0             |
| P2P             | Evaporator probe presence               | n=not present; Y=pres.            | Y               |
| OE              | Evaporator probe calibration            | -12÷12°C /-120÷120°F              | 0.0             |
| P3P             | Third probe presence                    | n=not present; Y=pres.            | n               |
| O3              | Third probe calibration                 | -12÷12°C /-120÷120°F              | 0               |
| P4P             | Fourth probe presence                   | n=not present; Y=pres.            | n               |
| O4              | Fourth probe calibration                | -12÷12°C /-120÷120°F              | 0               |
| OdS             | Outputs delay at start up               | 0÷255 min                         | 0               |
| AC              | Anti-short cycle delay                  | 0 ÷ 50 min                        | 1               |
| rtr             | P1-P2 percentage for regulation         | 0 ÷ 100 (100=P1 , 0=P2)           | 100             |
| CCt             | Continuous cycle duration               | 0.0÷24.0h                         | 0.0             |
| CCS             | Set point for continuous cycle          | (-55.0÷150.0°C) (-67÷302°F)       | -5              |
| CO <sub>n</sub> | Compressor ON time with faulty probe    | 0 ÷ 255 min                       | 15              |
| CO <sub>F</sub> | Compressor OFF time with faulty probe   | 0 ÷ 255 min                       | 30              |
| CF              | Temperature measurement unit            | °C ÷ °F                           | °C              |
| rES             | Resolution                              | in=integer; dE= dec.point         | dE              |
| Lod             | Probe displayed                         | P1;P2                             | P1              |
| rEd2            | X-REP display                           | P1 - P2 - P3 - P4 - SEt - dtr     | P1              |
| dLy             | Display temperature delay               | 0 ÷ 20.0 min (10 sec.)            | 0               |
| dtr             | P1-P2 percentage for display            | 1 ÷ 99                            | 50              |
| tdF             | Defrost type                            | EL=el. heater; in= hot gas        | EL              |
| dFP             | Probe selection for defrost termination | nP; P1; P2; P3; P4                | P2              |
| dtE             | Defrost termination temperature         | -50 ÷ 50 °C                       | 8               |
| ldF             | Interval between defrost cycles         | 1 ÷ 120 ore                       | 6               |
| MdF             | (Maximum) length for defrost            | 0 ÷ 255 min                       | 30              |
| dSd             | Start defrost delay                     | 0÷99min                           | 0               |
| dFd             | Displaying during defrost               | rt, it, SEt, DEF                  | it              |
| dAd             | MAX display delay after defrost         | 0 ÷ 255 min                       | 30              |
| Fdt             | Draining time                           | 0÷120 min                         | 0               |
| dPo             | First defrost after start-up            | n=after ldF; y=immed.             | n               |
| dAF             | Defrost delay after fast freezing       | 0 ÷ 23h e 50'                     | 0.0             |
| ALc             | Temperature alarms configuration        | rE= related to set; Ab = absolute | Ab              |
| ALU             | MAXIMUM temperature alarm               | Set÷110.0°C; Set÷230°F            | 110             |
| ALL             | Minimum temperature alarm               | -50.0°C÷Set/ -58°F÷Set            | -50.0           |

*Continued on next page*

**Refrigeration cont.**  
 REFRIGERATED CABINETS - SERVICING

**Dixell Default Settings cont.**

| Label | Name  | Range                             | Default Setting |
|-------|---|-----------------------------------|-----------------|
| AFH   | Differential for temperat. alarm recovery           | (0,1 °C÷25,5°C) (1 °F÷45°F)       | 1               |
| ALd   | Temperature alarm delay                             | 0 ÷ 255 min                       | 15              |
| dAO   | Delay of temperature alarm at start up              | 0 ÷ 23h e 50'                     | 1.3             |
| AP2   | Probe for temperat. alarm of condenser              | nP; P1; P2; P3; P4                | P4              |
| AL2   | Condenser for low temperat. alarm                   | (-55 ÷ 150°C) (-67÷ 302°F)        | -40             |
| AU2   | Condenser for high temperat. alarm                  | (-55 ÷ 150°C) (-67÷ 302°F)        | 110             |
| AH2   | Differ. for condenser temp. alar. recovery          | [0,1 °C ÷ 25,5°C] [1 °F ÷ 45°F]   | 5               |
| Ad2   | Condenser temperature alarm delay                   | 0 ÷ 254 (min.) , 255=nU           | 15              |
| dA2   | Delay of cond. temper. alarm at start up            | 0.0 ÷ 23h 50'                     | 1,3             |
| bLL   | Compressor OFF for condenser low temperature alarm  | n(0) - Y(1)                       | n               |
| AC2   | Compressor OFF for condenser high temperature alarm | n(0) - Y(1)                       | n               |
| i1P   | Digital input polarity                              | oP=opening; CL=closing            | cL              |
| i1F   | Digital input configuration                         | EAL, bAL, PAL, dor; dEF; Htr, AUS | EAL             |
| did   | Digital input alarm delay                           | 0÷255min                          | 5               |
| Nps   | Number of activation of pressure switch             | 0 ÷15                             | 15              |
| odc   | Compress status when open door                      | no; Fan; CPR; F_C                 | no              |
| rrd   | Regulation restart with door open alarm             | n – Y                             | y               |
| HES   | Differential for Energy Saving                      | (-30°C÷ 30°C) (-54°F÷ 54°F)       | 0               |
| Adr   | Serial address                                      | 0÷247                             | 1               |
| PbC   | Kind of probe                                       | Ptc; ntc                          | ntc             |
| onF   | on/off key enabling                                 | nu, oFF; ES                       | nu              |
| dP1   | Room probe display                                  | --                                | --              |
| dP2   | Evaporator probe display                            | --                                | --              |
| dP3   | Third probe display                                 | --                                | --              |
| dP4   | Fourth probe display                                | --                                | --              |
| rSE   | Set operating value                                 | actual set                        | --              |
| rEL   | Software release                                    | --                                | --              |
| Ptb   | Map code  | --                                | --              |

**XR40CX**  
**Hot Key**

To program the controller from a Hot Key:

- Turn OFF the instrument.
- Insert a programmed Hot Key into the 5 PIN socket and then turn the Controller ON.
- The parameter list of the Hot Key is automatically downloaded into the Controller memory, the **doL** will blink, followed a by a flashing **End**.
- After 10 seconds the instrument will restart working with the new parameters.
- Remove the Hot Key.

NOTE the message **Err** is displayed if programming fails. In this case turn the unit off and then on again, if you want to restart the download again, or remove the Hot Key to abort the operation.

*Continued on next page*

## Refrigeration cont.

REFRIGERATED CABINETS - SERVICING

### XR40CX Alarm Signals

| Message | Cause                             | Outputs  |
|---------|-----------------------------------|--|
| P1      | Room probe failure                | Compressor output acc. to par. <b>Con</b> and <b>COF</b> |
| P2      | Evaporator probe failure          | Defrost end is timed                                     |
| P3      | Third probe failure               | Outputs unchanged  |
| P4      | Fourth probe failure              | Outputs unchanged  |
| HA      | Maximum temperature alarm         | Outputs unchanged.                                       |
| LA      | Minimum temperature alarm         | Outputs unchanged.                                       |
| HA2     | Condenser high temperature        | It depends on the <b>Ac2</b> parameter                   |
| LA2     | Condenser low temperature         | It depends on the <b>bLL</b> parameter                   |
| dA      | Door open                         | Compressor according to rrd                              |
| EA      | External alarm                    | Output unchanged.  |
| CA      | Serious external alarm (i1 F=bAL) | All outputs OFF.   |
| CA      | Pressure switch alarm (i1 F=PAL)  | All outputs OFF  |

### XR40CX Alarm Recovery

Probe alarms P1, P2, P3 and P4 start some seconds after the fault in the related probe; they automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the probe.

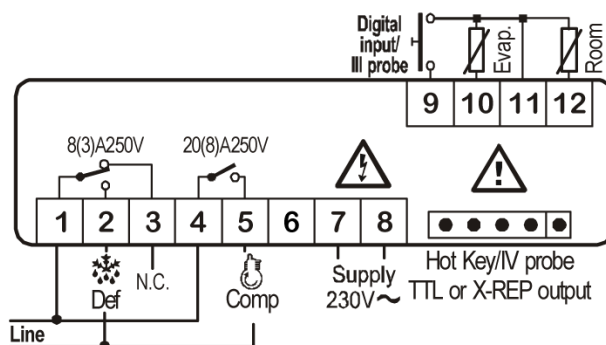
Temperature alarms HA, LA, HA2 and LA2 automatically stop as soon as the temperature returns to normal values.

Alarms EA and CA (with i1 F=bAL) recover as soon as the digital input is disabled. Alarm CA (with i1 F=PAL) recovers only by switching off and on the instrument.

### XR40CX Other Messages

| Message | Cause  |
|---------|--|
| Pon     | Keyboard unlocked.   |
| PoF     | Keyboard locked  |
| noP     | <b>In programming mode:</b> none parameter is present in Pr1<br><b>On the display</b> or in dP2, dP3, dP4: the selected probe is not enabled |
| noA     | No alarm is recorded.  |

### XR40CX Connections



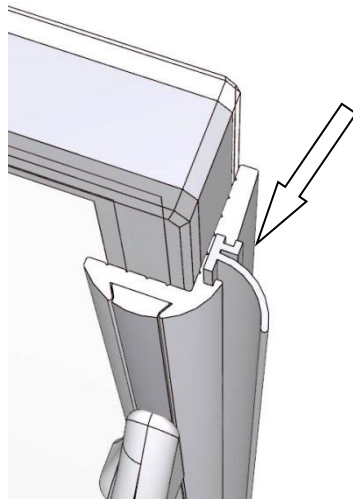
## Door Seals

REFRIGERATED CABINETS - SERVICING

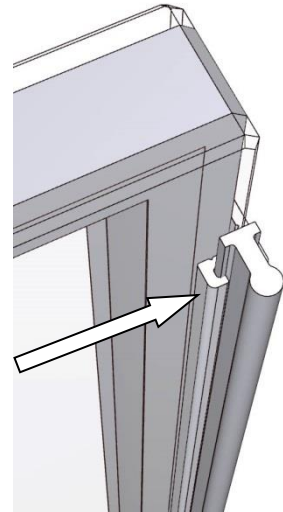
### Seal Replacement

The doors should be removed to allow the old seals to be removed and the new ones fitted. See the Cleaning section for details.

### Sliding Doors



Each sliding door has a rubber seal between the door and the cabinet end panel. The seal slides into a groove in the door extrusion, and can be withdrawn and replaced, if damaged. A centre seal is fitted between the inner and outer doors. The Qlon seal is located in a slot in the aluminium extrusion, and can be replaced if damaged.



## SPECIFICATIONS

### Mechanical

#### REFRIGERATED CABINETS - SPECIFICATIONS

|                        | CABINET MODEL   |                     |                    |                    |
|------------------------|---|---------------------|--------------------|--------------------|
|                        | IN 3C06S  | IN 3C09S            | IN 3C12S           | IN 3C15S           |
| Height (Counter Top)   | 781 (+321) mm   | 781 (+393) mm       | 781 (+393) mm      | 781 (+393) mm      |
| Height (In Counter)    | 621 (+481) mm   | 621 (+553) mm       | 621 (+553) mm      | 621 (+553) mm      |
| Height (Free Standing) | 1272 (-0+30) mm   | 1272 (-0+30) mm     | 1272 (-0+30) mm    | 1272 (-0+30) mm    |
| Width                  | 600 mm  | 900 mm              | 1200 mm            | 1500 mm            |
| Depth                  | 662 mm  | 662 mm              | 662 mm             | 662 mm             |
| Dry Weight (Integral)  |   |                     | 100 kg             | 130 kg             |
| Dry Weight (Remote)    |   |                     | 77 kg              | 107 kg             |
| Cabinet Well Material  | Stainless steel   |                     |                    |                    |
| Cabinet Colour         | Grey and natural anodised aluminium.  |                     |                    |                    |
| Top Lighting           | Standard  |                     |                    |                    |
| Shelf Lighting         | Standard  |                     |                    |                    |
| Glass Type             | Double glazed   |                     |                    |                    |
| Front Doors            | Fixed glass   |                     |                    |                    |
| Number of Shelves      | Two plus base   |                     |                    |                    |
| Display Area           | 0.51 m <sup>2</sup>   | 0.85 m <sup>2</sup> | 1.3 m <sup>2</sup> | 1.8 m <sup>2</sup> |
| Refrigerant            | R-134a  | R-134a              | R-134a             | R-134a             |
| Refrigerant charge     | see Rating Label  |                     |                    |                    |
| Condensate capacity    | 2.5 litres  |                     |                    |                    |
| Climatic Class & IP    | Cabinets are tested under Climate Class 3 conditions and have IP 20 ratings |                     |                    |                    |

### Electrical

#### REFRIGERATED CABINETS - SPECIFICATIONS

|                            | CABINET MODEL   |                |                |                |
|----------------------------|---|----------------|----------------|----------------|
|                            | IN 3C06S  | IN 3C09S       | IN 3C12S       | IN 3C15S       |
| Voltage                    | 220 - 240 V 50 Hz 1 $\phi$                            |                |                |                |
| Power (integral condenser) | 322 W   | 644 W          | 690 W          | 851 W          |
| Current (integral cond.)   | 1.4 A   | 2.8 A          | 3.0 A          | 3.7 A          |
| Energy Consumption         | 0.18 kWh/h  | 0.22 kWh/h     | 0.26 kWh/h     | 0.31 kWh/h     |
| Connection                 | 3 pin plug, 10 A lead                                 |                |                |                |
| Temperature Range          | Refrigerated 2° - 4° C Controlled Ambient 16° - 18° C |                |                |                |
| Top Lights                 | 1 x LED strip   | 1 x LED strip  | 1 x LED strip  | 1 x LED strip  |
| Optional Shelf Lights      | 2 x LED strips  | 2 x LED strips | 2 x LED strips | 2 x LED strips |

## Controller Settings

REFRIGERATED CABINETS - SPECIFICATIONS

### Dixell XR40CX Settings

|                                 | Parameter | Cold Models        |                  | Controlled Ambient Models |                  |
|---------------------------------|-----------|--------------------|------------------|---------------------------|------------------|
|                                 |           | Integral Condenser | Remote Condenser | Integral Condenser        | Remote Condenser |
| Set Point                       | Set       | 2                  | 2                | 16                        | 16               |
| Differential                    | Hy        | 2                  | 2                | 2                         | 2                |
| Third Probe Used                | P3P       | Y                  | <i>n</i>         | Y                         | <i>n</i>         |
| Anti Short Cycle Delay          | AC        | 0                  | 0                | 0                         | 0                |
| Comp On Time - Faulty Probe     | COn       | 4                  | 4                | 4                         | 4                |
| Comp Off Time - Faulty Probe    | COf       | 6                  | 6                | 6                         | 6                |
| Defrost Terminate Temp          | dtE       | 3                  | 3                | 3                         | 3                |
| Interval Between Defrosts       | IdF       | 4                  | 4                | 4                         | 4                |
| Display During Defrost          | dFd       | DEF                | DEF              | DEF                       | DEF              |
| Maximum Temperature Alarm       | ALU       | 12                 | 12               | <i>110</i>                | <i>110</i>       |
| Differential For Temp Alarm     | AFH       | 8                  | 8                | <i>1</i>                  | <i>1</i>         |
| Temperature Alarm Delay         | Ald       | 60                 | 60               | <i>15</i>                 | <i>15</i>        |
| Probe For High Temp Alarm       | AP2       | P3                 | <i>nP</i>        | P3                        | <i>nP</i>        |
| High Temp Alarm Set Point       | AU2       | 100                | <i>110</i>       | 100                       | <i>110</i>       |
| High Discharge Temp Alarm Diff  | AH2       | 25                 | <i>5</i>         | 25                        | <i>5</i>         |
| High Discharge Temp Alarm delay | Ad2       | 0                  | <i>15</i>        | 0                         | <i>15</i>        |
| High Alarm Delay At Start       | dA2       | 0                  | <i>1.3</i>       | 0                         | <i>1.3</i>       |
| Comp Off For High Temp Alarm    | AC2       | Y                  | <i>n</i>         | Y                         | <i>n</i>         |

### Dixell XR35CX Settings

|                                  | Parameter | Cold Models        |                  | Controlled Ambient Models |                  |
|----------------------------------|-----------|--------------------|------------------|---------------------------|------------------|
|                                  |           | Integral Condenser | Remote Condenser | Integral Condenser        | Remote Condenser |
| Set Point                        | Set       | 2                  | 2                | 16                        | 16               |
| Differential                     | Hy        | 2                  | 2                | 2                         | 2                |
| Fourth Probe Used                | P4P       | Y                  | <i>n</i>         | Y                         | <i>n</i>         |
| Anti Short Cycle delay           | AC        | 0                  | 0                | 0                         | 0                |
| Comp On Time - Faulty Probe      | COn       | 4                  | 4                | 4                         | 4                |
| Comp Off Time - Faulty Probe     | COF       | 6                  | 6                | 6                         | 6                |
| Kind Of Interval For Defrost     | EdF*      | in                 | in               | in                        | in               |
| Defrost Terminate Temp           | dtE       | 3                  | 3                | 3                         | 3                |
| Interval Between Defrost         | IdF       | 4                  | 4                | 4                         | 4                |
| Display During Defrost           | dFd       | DEF                | DEF              | DEF                       | DEF              |
| Probe For High Temp Alarm        | AP2       | P4                 | <i>nP</i>        | P4                        | <i>nP</i>        |
| High Temp Alarm Set Point        | AU2       | 100                | <i>110</i>       | 100                       | <i>110</i>       |
| Differential For High Temp Alarm | AH2       | 25                 | <i>5</i>         | 25                        | <i>5</i>         |
| High Discharge Temp Alarm delay  | Ad2       | 0                  | <i>15</i>        | 0                         | <i>15</i>        |
| High Alarm Delay At Start        | dA2       | 0                  | <i>1.3</i>       | 0                         | <i>1.3</i>       |
| Comp Off For High Temp Alarm     | AC2       | Y                  | <i>n</i>         | Y                         | <i>n</i>         |
| Current Hour                     | Hur       | ?                  | ?                | ?                         | ?                |
| Current Minute                   | Min       | ?                  | ?                | ?                         | ?                |
| Current Day                      | dAY       | ?                  | ?                | ?                         | ?                |
| Modbus Address                   | Adr       | ?                  | ?                | ?                         | ?                |

*Parameters shown thus are Dixell default settings*

## Compliance

### REFRIGERATED CABINETS - SPECIFICATIONS

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#### Standards

FPG refrigerated, controlled ambient and ambient food display cabinets are designed to meet and exceed:

- International safety standards for electrical appliances: IEC 60335-1, IEC 60335-2-89, and the equivalent country-specific standards including AS/NZS, BS EN and UL 471.
- International standards for electromagnetic compatibility/emissions: CISPR 14-1, and the equivalent country-specific standards including AS/NZS CISPR and BS EN 55014-1.
- Essential safety requirements: AS/NZS 3820 and AS/NZS 4417
- Energy efficiency for refrigerated appliances: MEPS (Australia/New Zealand)

Please contact FPG to discuss your requirements for meeting country-specific standards.

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#### Performance Aspects of Refrigerated Cabinets

The cabinet is HACCP compliant, with the following performance:

| Cabinet Operating Temperature | Average Internal Humidity | Test Conditions          |
|-------------------------------|---------------------------|--------------------------|
| +2° to +4°C                   | 70% RH                    | 25°C Ambient with 60% RH |

## Improvements

### REFRIGERATED CABINETS - SPECIFICATIONS

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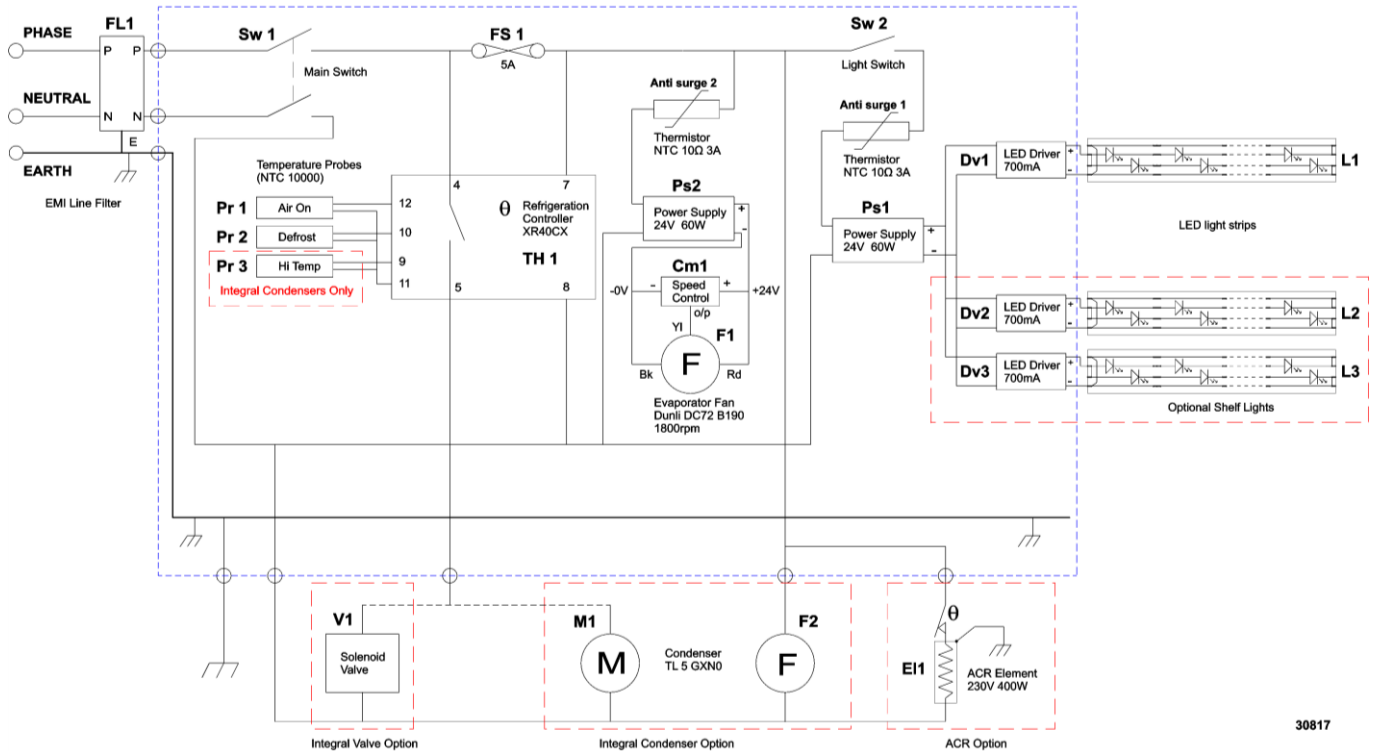
#### Ongoing Development

FPG reserves the right to change specifications and construction, as part of ongoing product improvement.

## ELECTRICAL CIRCUIT DIAGRAMS

Model: IN 3C06-SQ

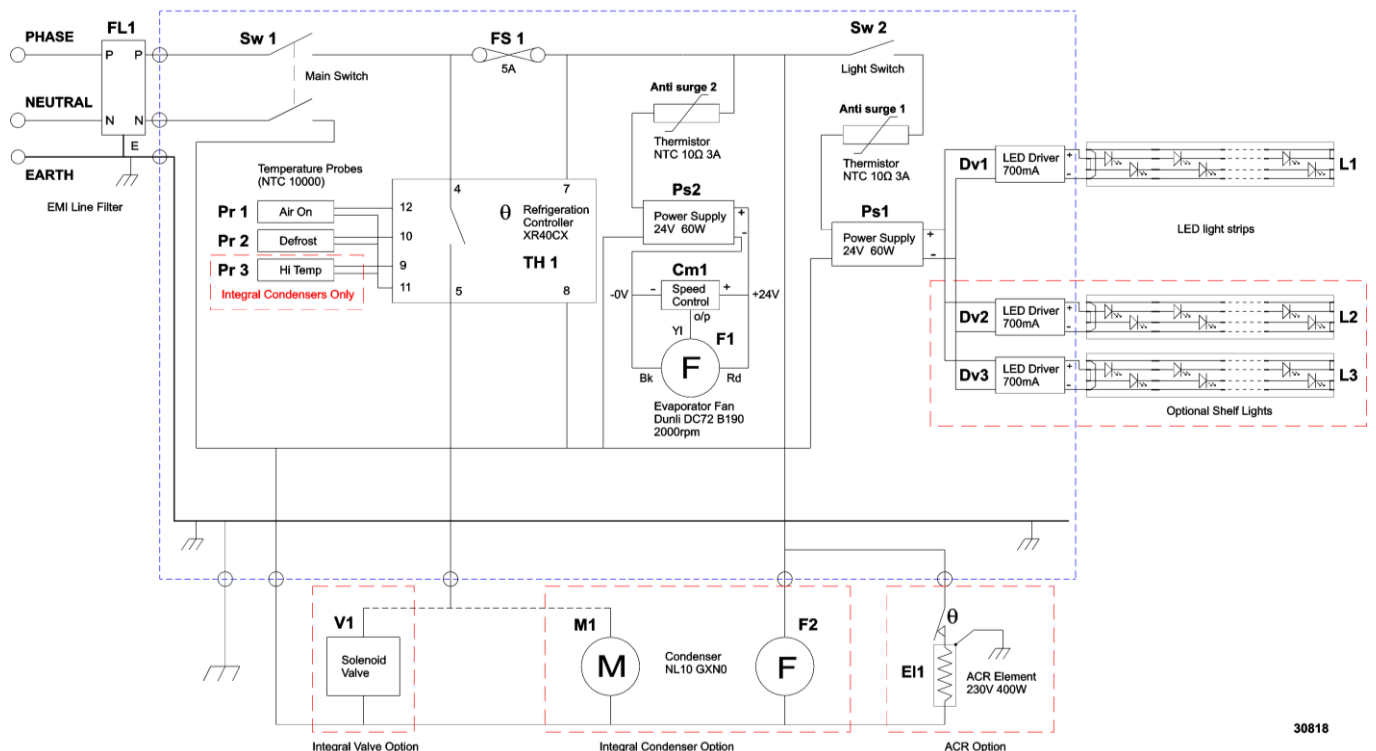
Inline 3000 Square Series, 600mm Refrigerated Cabinet



30817

Model: IN 3C09-SQ

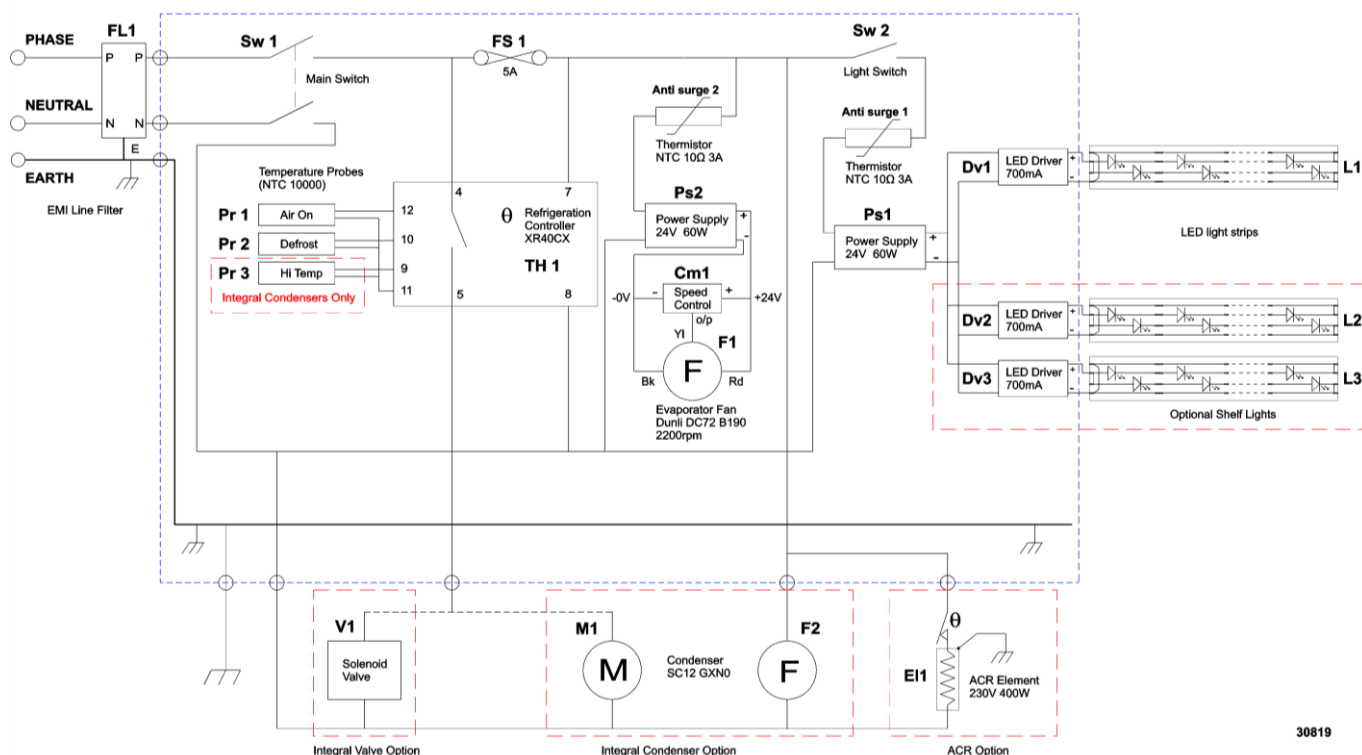
Inline 3000 Square Series, 900mm Refrigerated Cabinet



30818

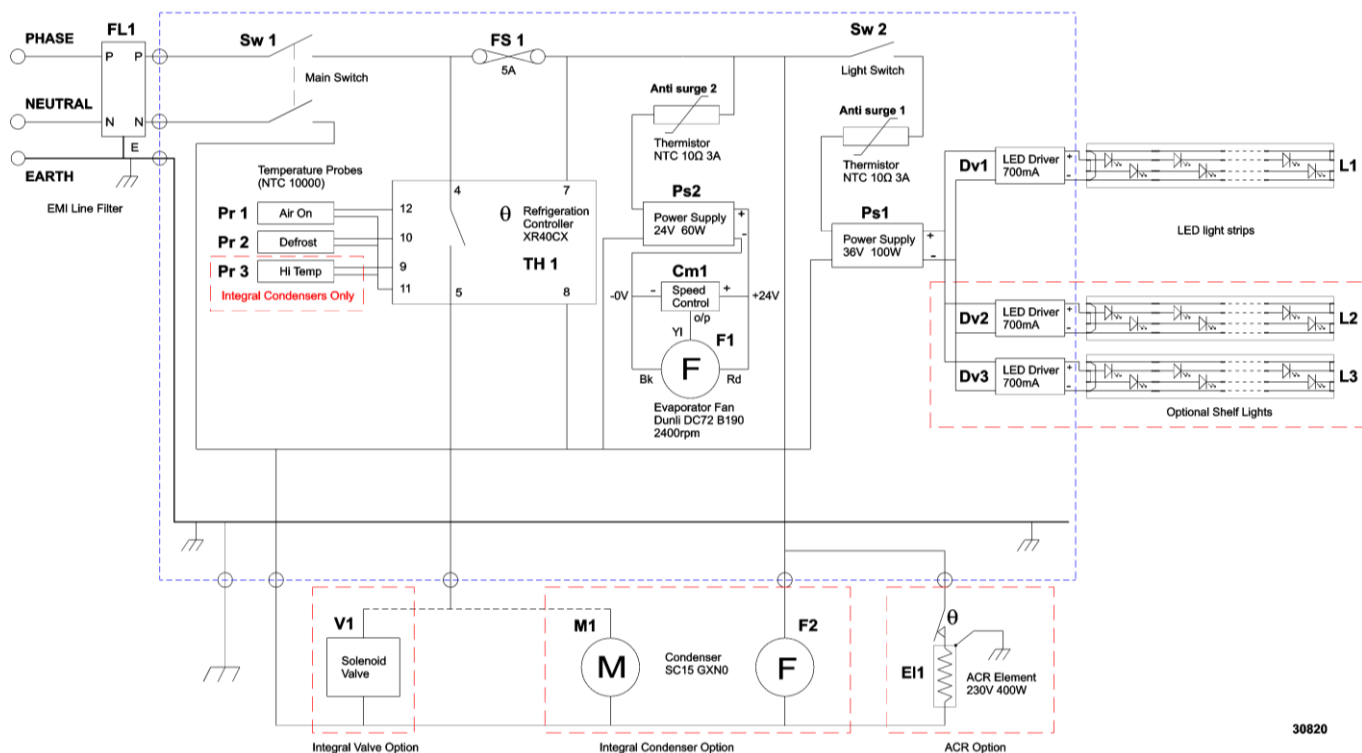
Model: IN 3C12-SQ

Inline 3000 Square Series, 1200mm Refrigerated Cabinet



Model: IN 3C15-SQ

Inline 3000 Square Series, 1500mm Refrigerated Cabinet



## SPARE PARTS

**Cabinet Serial Number**

When ordering spare parts, it is important to quote the Serial Number printed on the label fixed to the control panel. This will enable FPG to trace details of the build specification of your particular cabinet, and hence ensure that spare parts are fully compatible.

**To satisfy warranty conditions, and ensure optimum performance, use only FPG supplied spare parts.**

| Part Description  | FPG Part No.  |
|---|---------------|
| Main & Light Switch, EGO  | 14372         |
| Mains EMI Line Filter 10A 250V                                  | 29360         |
| Fuse Link (5A, 250V, Slow Blow)                                 | 13330         |
| Knob (light switch)   | 14374         |
| Ant-surge Thermistor 10 Ohm 3A                                  | 22354         |
| 24V 60W LED power supply  | 21613         |
| 36V 100W LED power supply                                       | 25922         |
| LED Driver 700mA  | 25762         |
| Polycarbonate Light Cover 1120mm                                | 18113         |
| Polycarbonate Light Cover 720mm                                 | 18114         |
| Top Light Replacement Kit for 3C06 (Sliding Door / Fixed Front) | 69964 / 69862 |
| Shelf Light Replacement Kit for 3C06                            | 70321         |
| Top Light Replacement Kit for 3C09 (Sliding Door / Fixed Front) | 70357 / 69861 |
| Shelf Light Replacement Kit for 3C09                            | 69402         |
| Top Light Replacement Kit for 3C12                              | 70378         |
| Shelf Light Replacement Kit for 3C12                            | 70380         |
| Top Light Replacement Kit for 3C15 (Sliding Door / Fixed Front) | 70382 / 70381 |
| Shelf Light Replacement Kit for 3C15                            | 70383         |
| Dixell XR40CX digital refrigeration controller                  | 21219         |
| Dixell XR35CX digital refrigeration controller                  | 24933         |
| NTC temperature probe (3 metre)                                 | 25621         |
| Evaporator Fan Dunli DC72 B190                                  | 27658         |
| Speed Control Module 1800rpm                                    | 75744         |
| Speed Control Module 2000rpm                                    | 75753         |
| Speed Control Module 2200rpm                                    | 75754         |
| Speed Control Module 2400rpm                                    | 75755         |
| Condenser Unit TL5GXN0 (600 cabinet)                            | 24842         |
| Condenser Unit NL10GXN0 (900 cabinet)                           | 21734         |
| Condenser Unit SC12GXN0 (1200 cabinet)                          | 12612         |
| Condenser Unit SC15GXN0 (1500 cabinet)                          | 12613         |
| Solenoid Valve Body   | 23412         |
| Solenoid Valve Coil 230V 9W                                     | 23413         |
| ACR Element 400W, with thermostat                               | 18274         |

**Spare Parts** Continued

**Location of  
Glass Parts**

In the following table, handed glass parts are labelled as viewed from the REAR of the cabinet.

| Part Description   | FPG Part No. |
|--|--------------|
| <b><i>All glass parts are double glazed</i></b>                    |              |
| LH Square DG End Glass Replacement Kit                             | 70367        |
| RH Square DG End Glass Replacement Kit                             | 75992        |
| 600 Square DG Fixed Front Glass Replacement Kit                    | 75986        |
| 600 Square DG Top Glass Replacement Kit                            | 75941        |
| Rear Inner Sliding Door (600)                                      | 69165        |
| Rear Outer Sliding Door (600)                                      | 69166        |
| Front Inner Sliding Door (600)                                     | 69167        |
| Front Outer Sliding Door (600)                                     | 69168        |
| 900 Square DG Fixed Front Glass Replacement Kit                    | 75988        |
| 900 Square DG Top Glass Replacement Kit                            | 75983        |
| Rear Inner Sliding Door (900)                                      | 69407        |
| Rear Outer Sliding Door (900)                                      | 69408        |
| Front Inner Sliding Door (900)                                     | 69844        |
| Front Outer Sliding Door (900)                                     | 69032        |
| 1200 Square DG Fixed Front Glass Replacement Kit                   | 75989        |
| 1200 Square DG Top Glass Replacement Kit                           | 75984        |
| Rear Inner Sliding Door (1200)                                     | 69018        |
| Rear Outer Sliding Door (1200)                                     | 69019        |
| Front Inner Sliding Door (1200)                                    | 73488        |
| Front Outer Sliding Door (1200)                                    | 73489        |
| 1500 Square DG Fixed Front Glass Replacement Kit                   | 75990        |
| 1500 Square DG Top Glass Replacement Kit                           | 75985        |
| Rear Inner Sliding Door (1500)                                     | 73494        |
| Rear Outer Sliding Door (1500)                                     | 73495        |
| Front Inner Sliding Door (1500)                                    | 73492        |
| Front Outer Sliding Door (1500)                                    | 73493        |
| Slide-in rubber door seal  | 11424        |
| Qlon door seal   | 12922        |
| Plastic Air Grille   | 12480        |
| Gastro Dish 2/3 65mm deep (condensate removal)                     | 11025        |
| Joinery ventilation grille 340mm x 340mm                           | 56090        |
|  |              |
| Product Manual for Inline 3000 Square Series Refrigerated Cabinets | 26112        |

## MECHANICAL DRAWINGS

### Dimensions

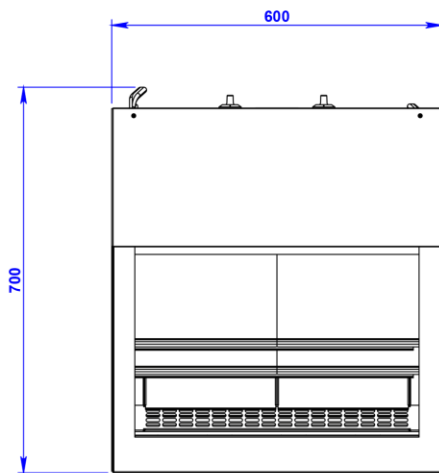
REFRIGERATED CABINETS - MECHANICAL DRAWINGS

#### Cabinet Variants

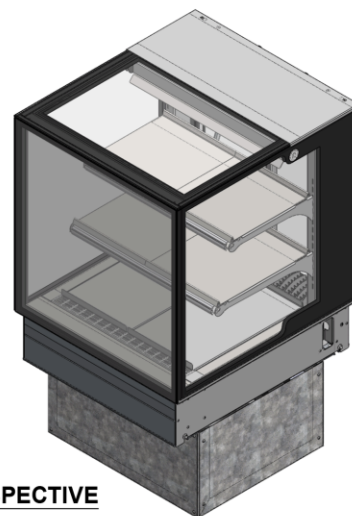
Sliding doors can be fitted to the front and back of the cabinets.

Fixed glass can be fitted in place of doors at the front.

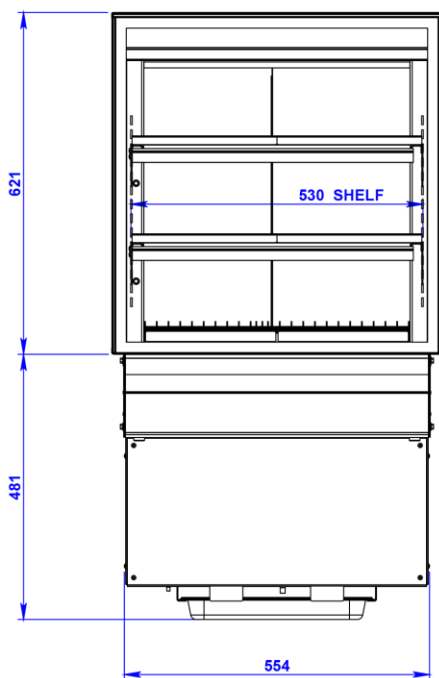
#### IN-3C06S In counter mounting



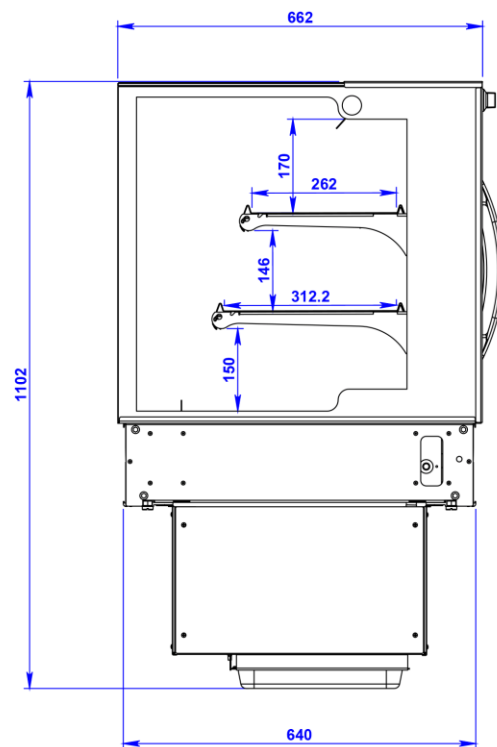
**PLAN**



**PERSPECTIVE**

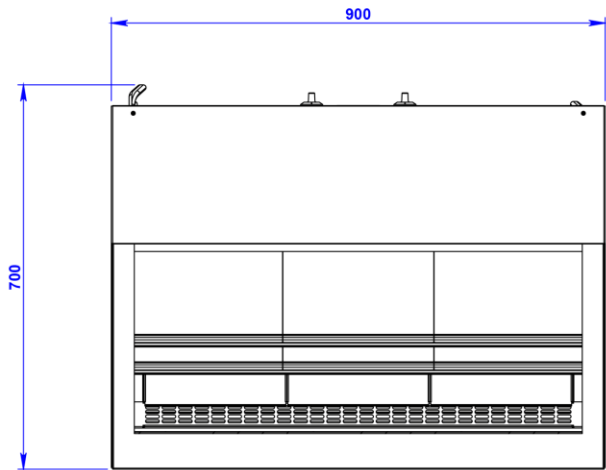


**FRONT ELEVATION**

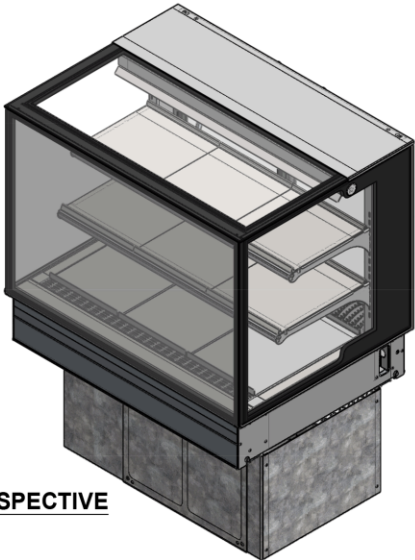


**SIDE ELEVATION**

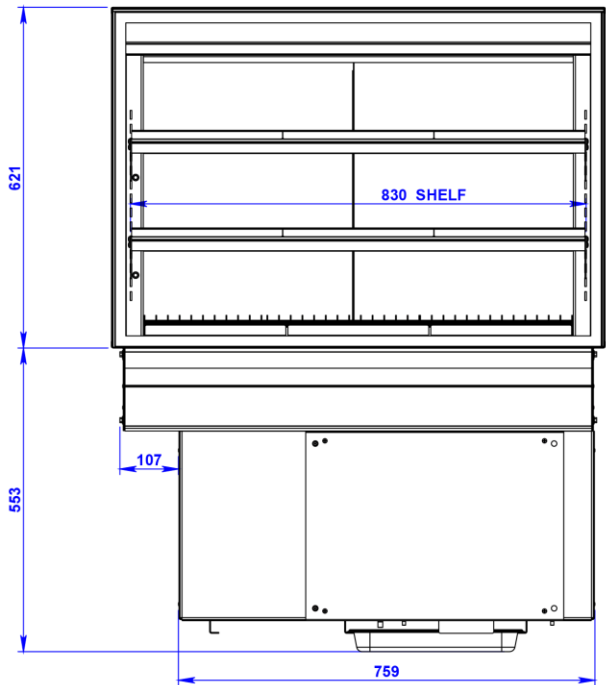
IN-3C09S In counter mounting



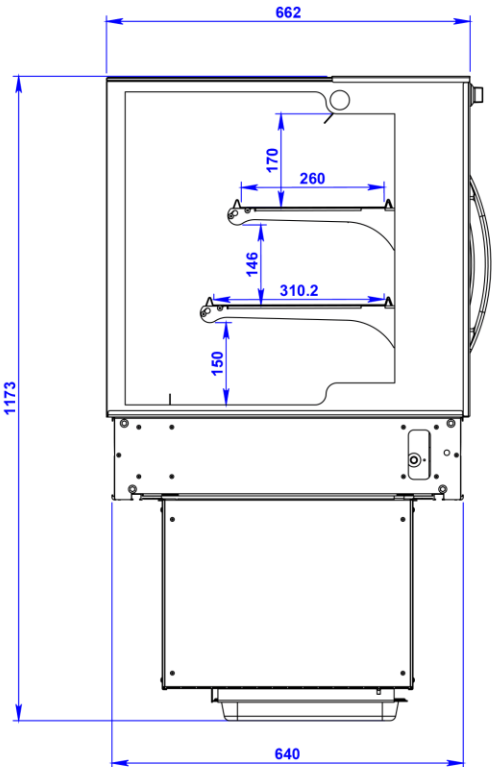
PLAN



PERSPECTIVE

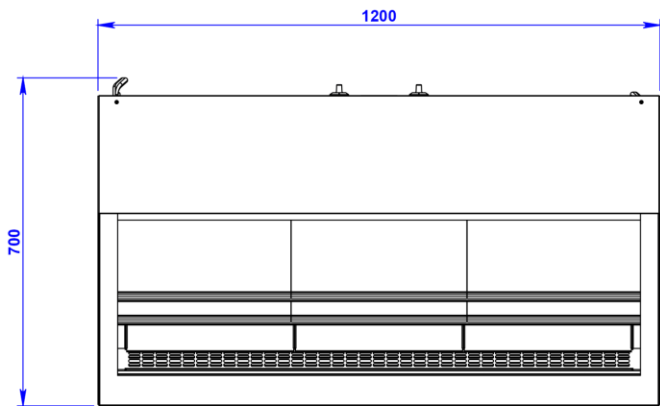


FRONT ELEVATION

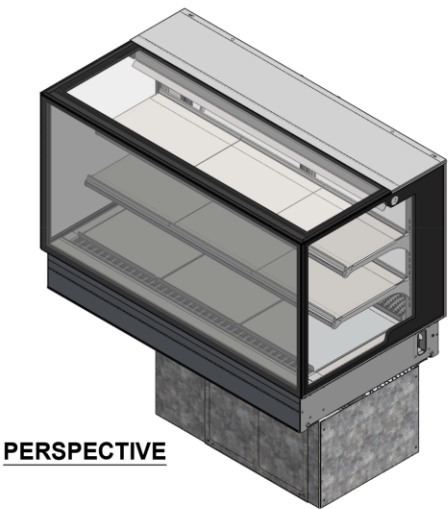


SIDE ELEVATION

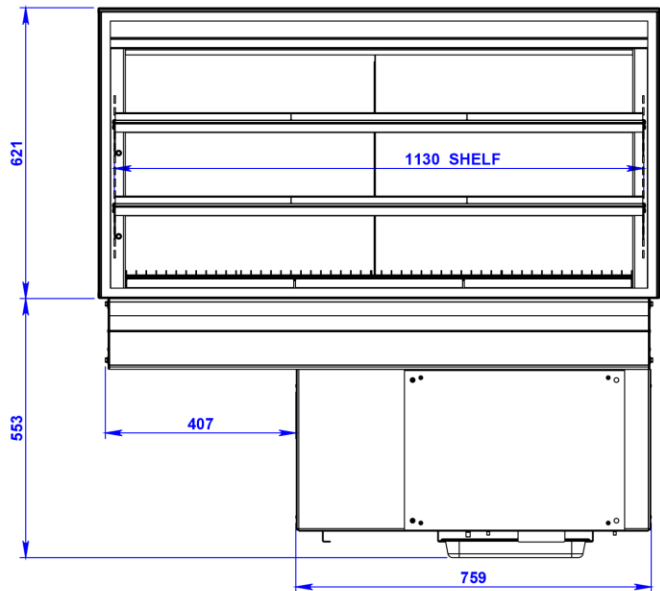
**IN-3C12S In counter mounting**



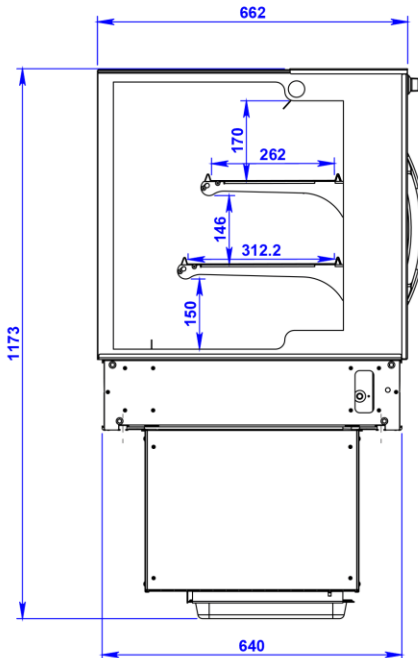
**PLAN**



**PERSPECTIVE**

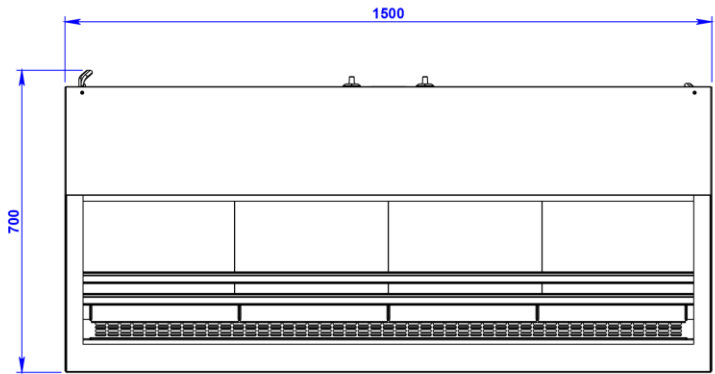


**FRONT ELEVATION**



**SIDE ELEVATION**

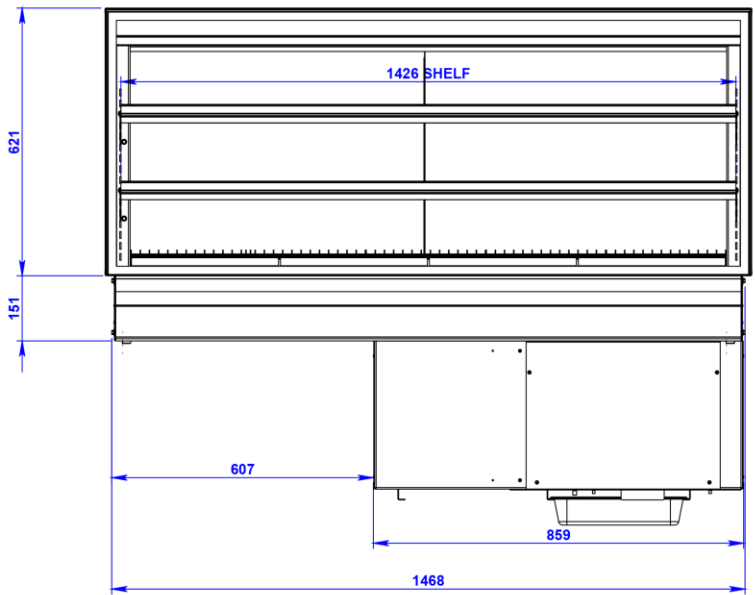
IN-3C15S In counter mounting



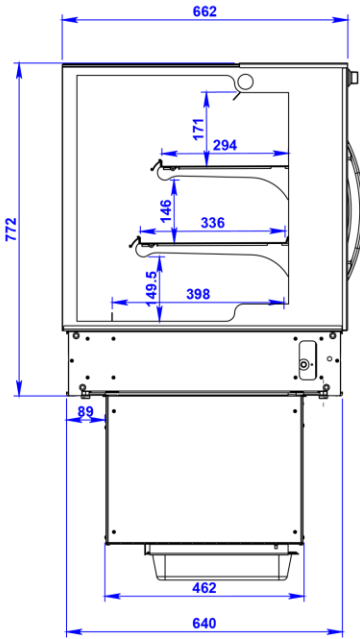
PLAN



PERSPECTIVE

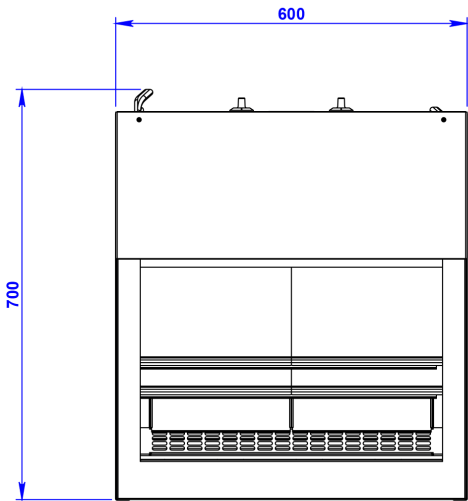


FRONT ELEVATION

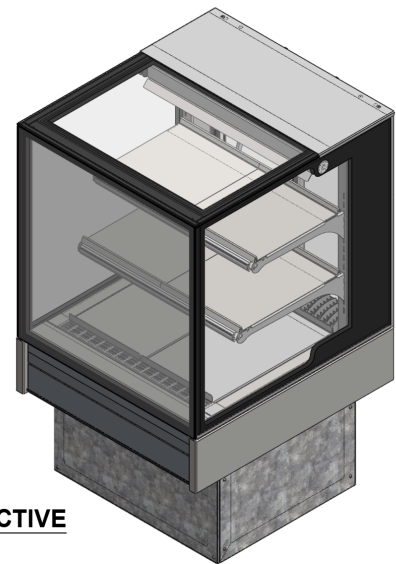


SIDE ELEVATION

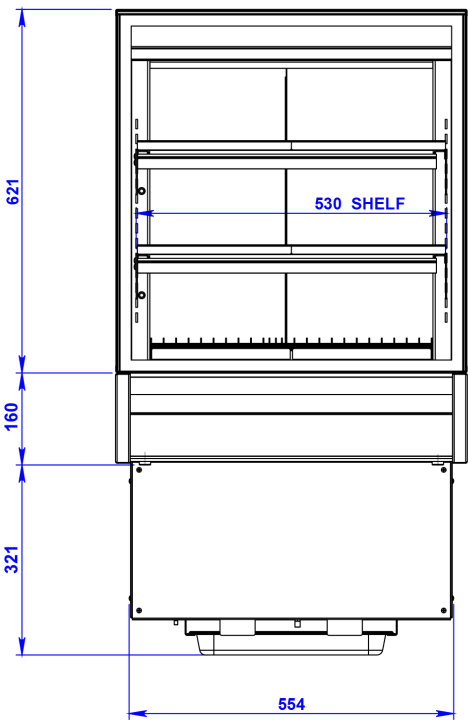
**IN-3C06S Counter top mounting**



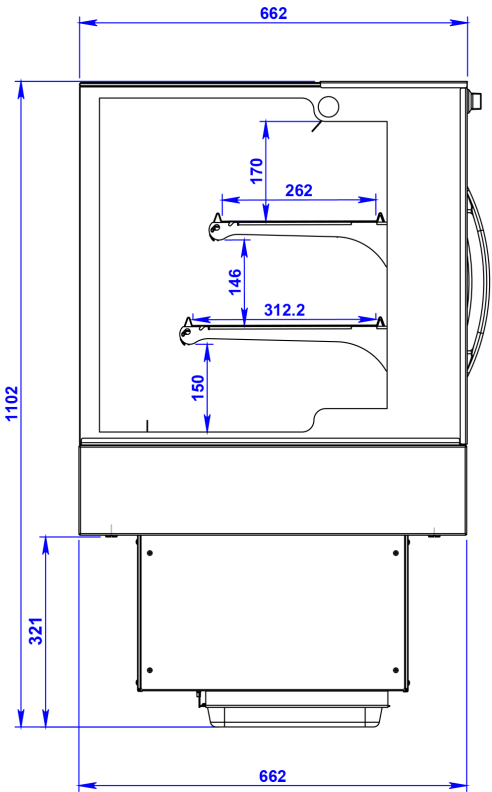
**PLAN**



**PERSPECTIVE**

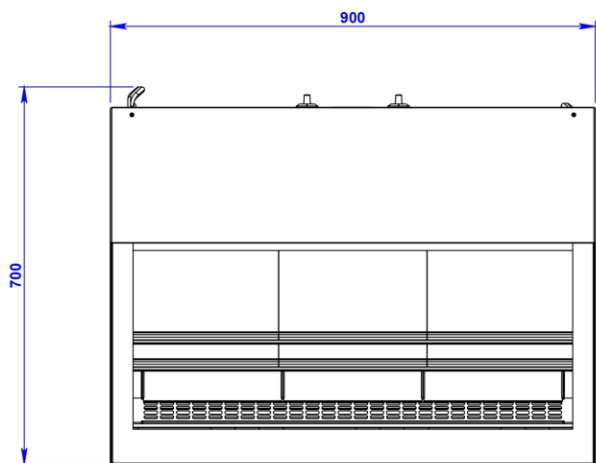


**FRONT ELEVATION**

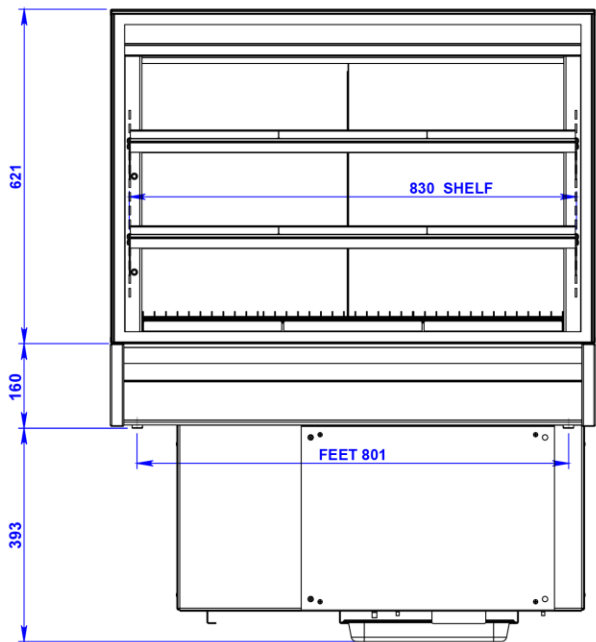


**SIDE ELEVATION**

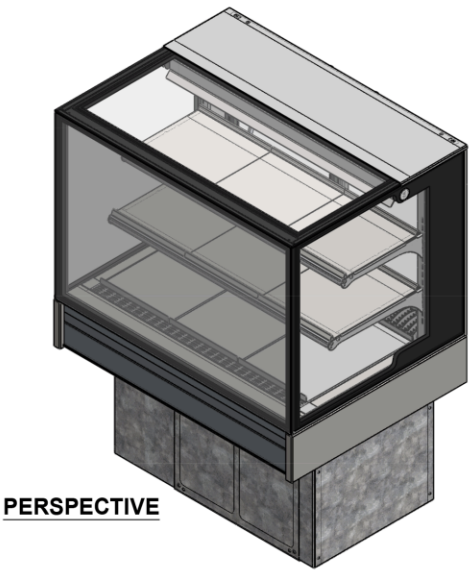
IN-3C09S Counter top mounting



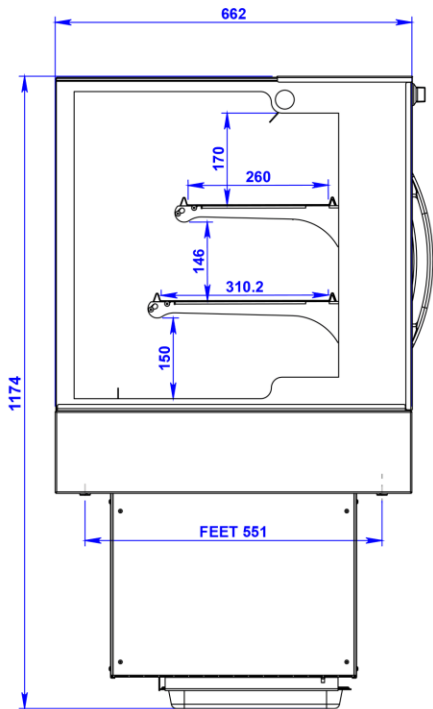
PLAN



FRONT ELEVATION

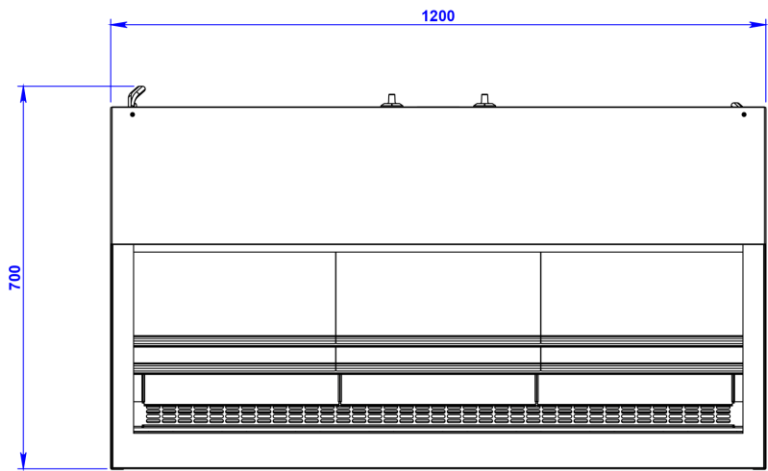


PERSPECTIVE

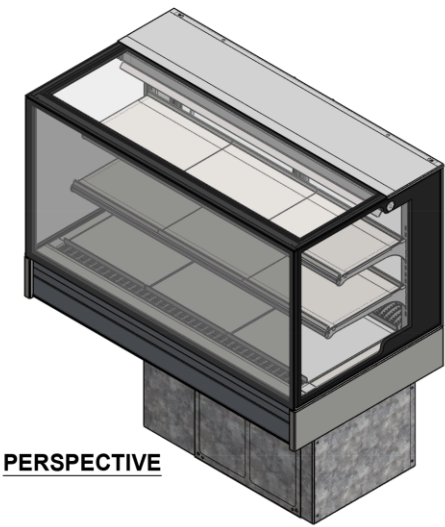


SIDE ELEVATION

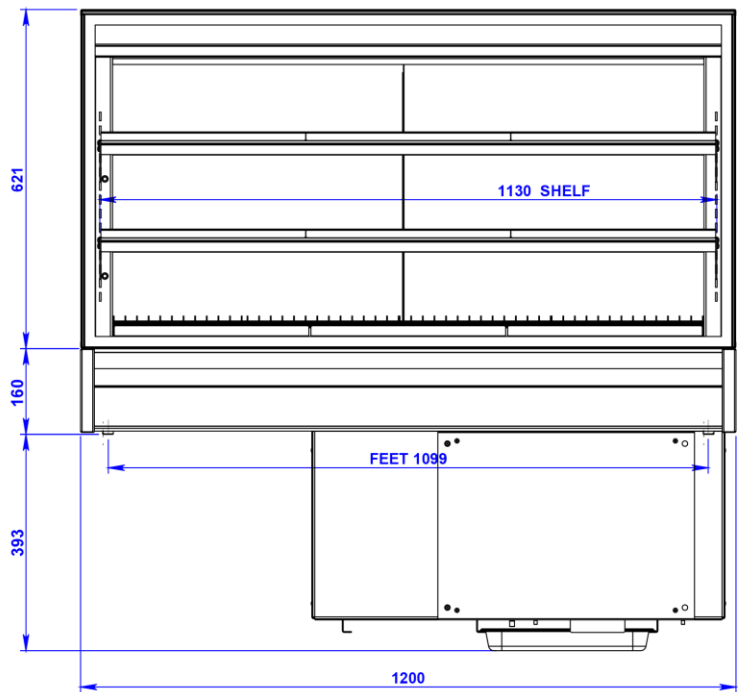
**IN-3C12S Counter top mounting**



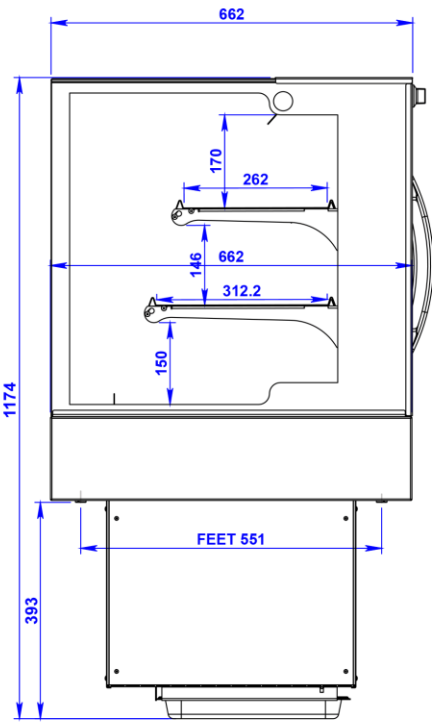
**PLAN**



**PERSPECTIVE**

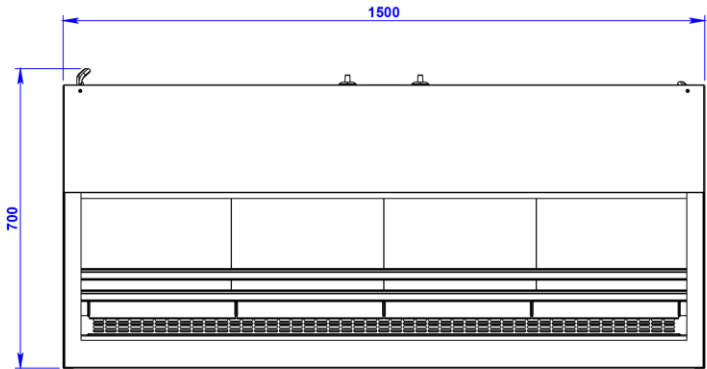


**FRONT ELEVATION**

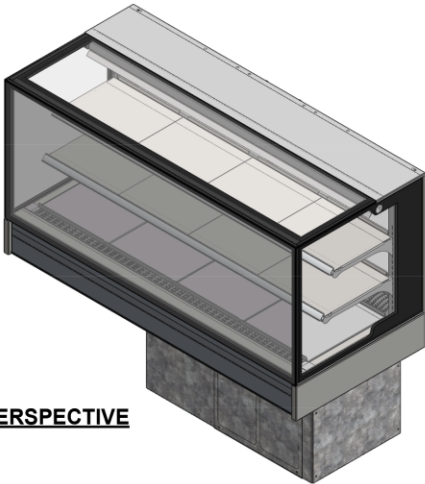


**SIDE ELEVATION**

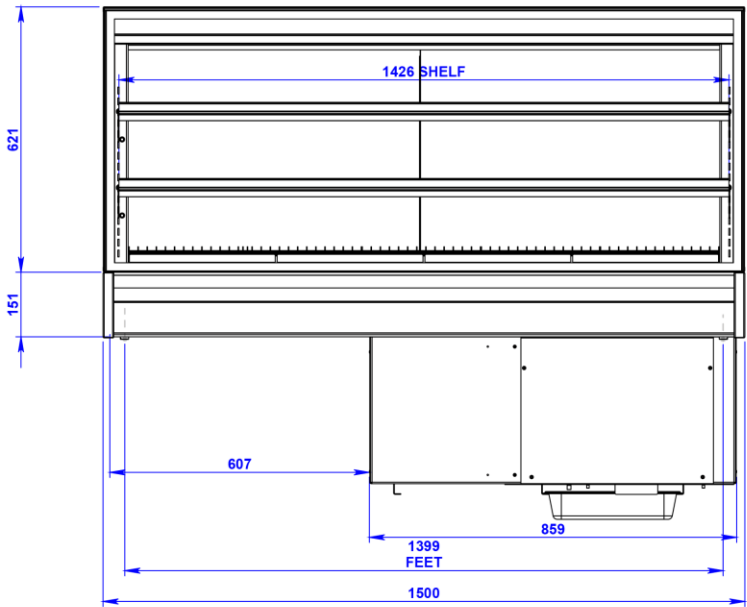
IN-3C15S Counter top mounting



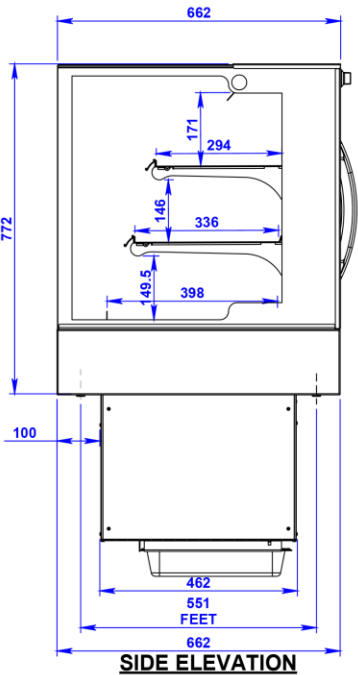
PLAN



PERSPECTIVE

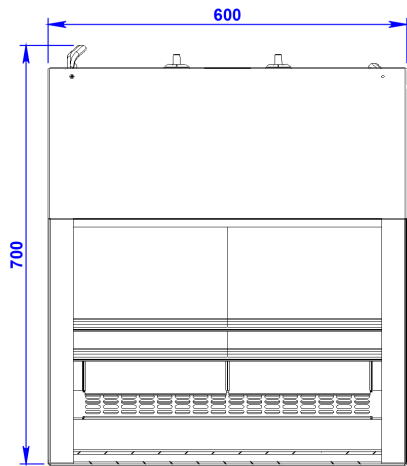


FRONT ELEVATION

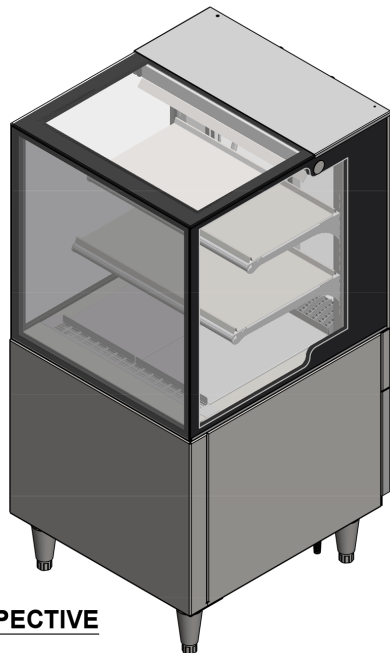


SIDE ELEVATION

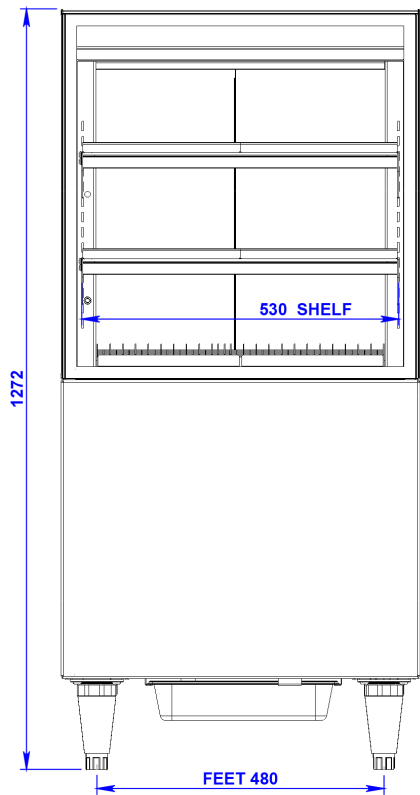
**IN-3C06S Free Standing**



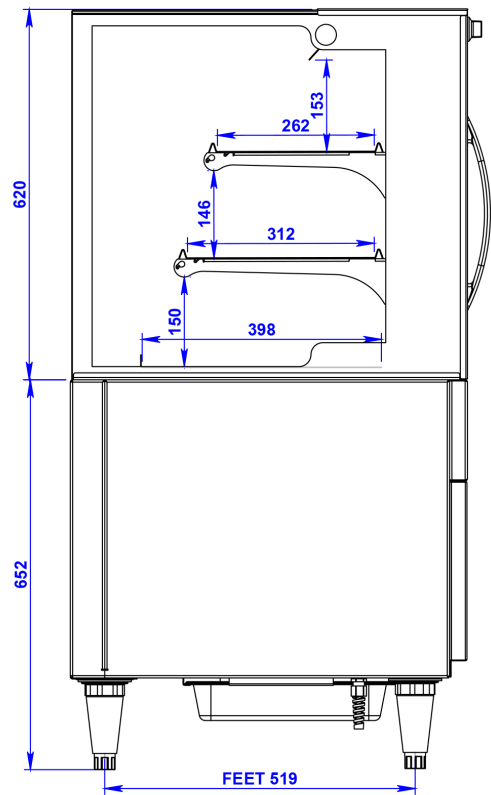
**PLAN**



**PERSPECTIVE**

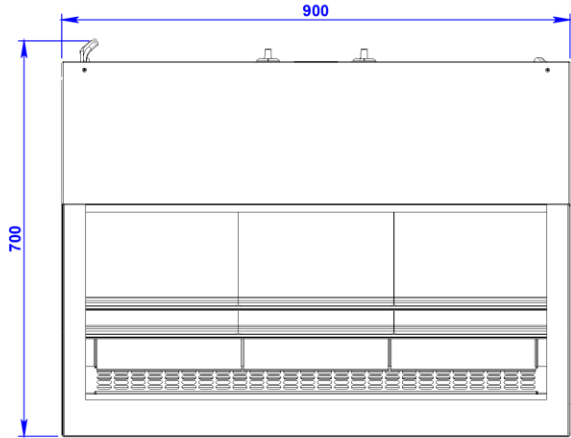


**FRONT ELEVATION**



**SIDE ELEVATION**

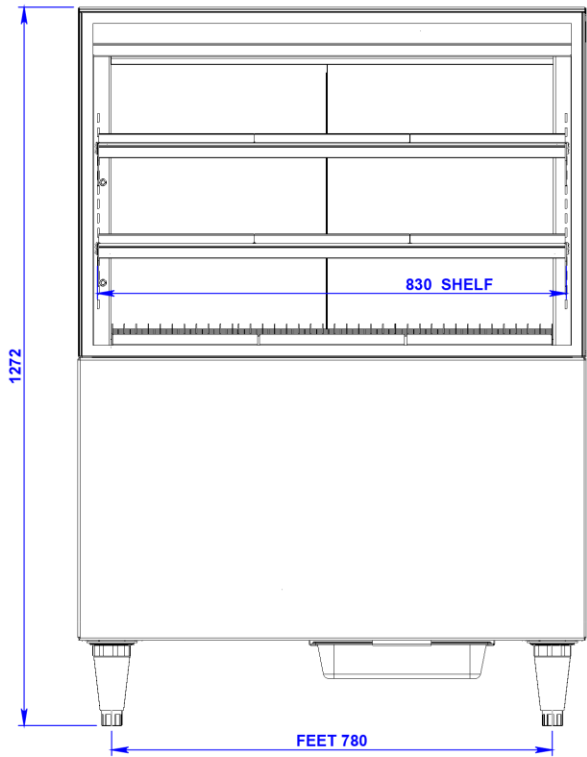
**IN-3C09S Free Standing**



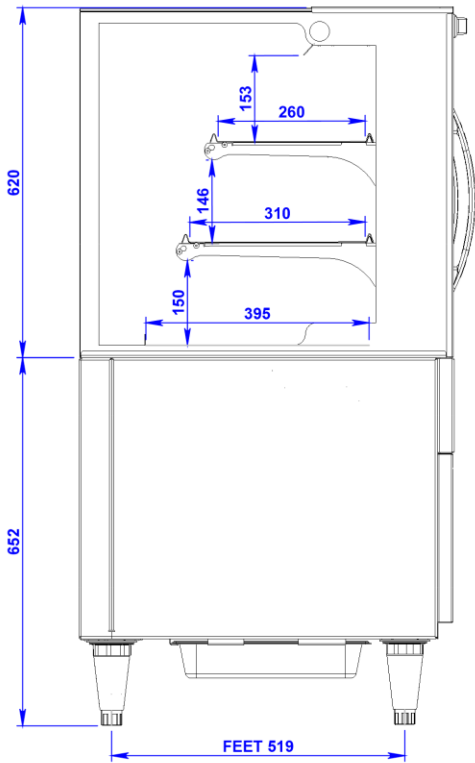
**PLAN**



**PERSPECTIVE**

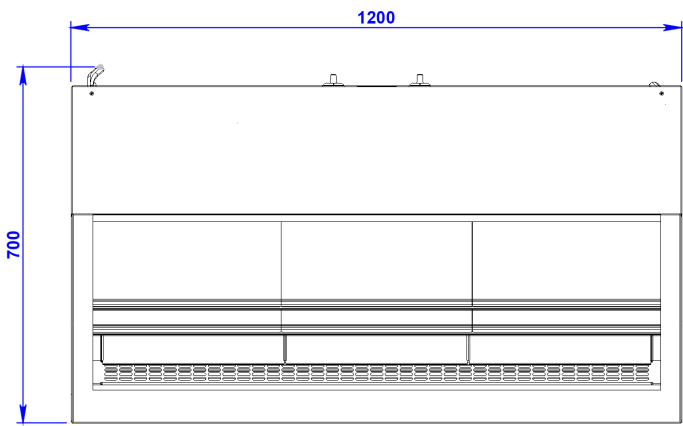


**FRONT ELEVATION**



**SIDE ELEVATION**

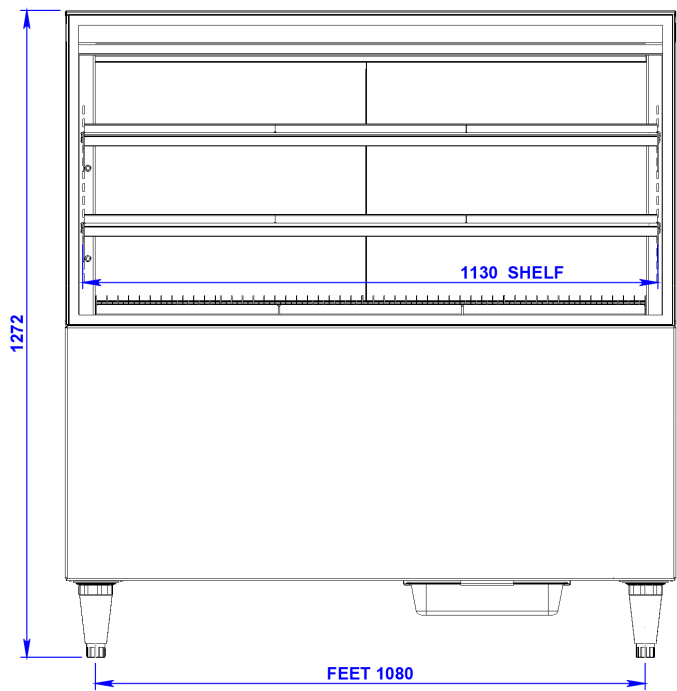
**IN-3C12S Free Standing**



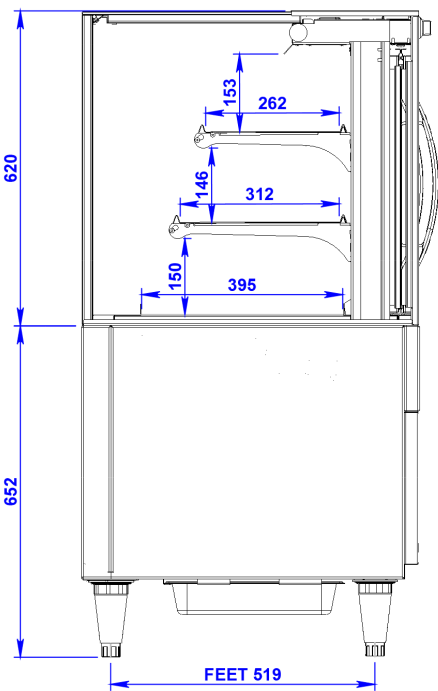
**PLAN**



**PERSPECTIVE**



**FRONT ELEVATION**



**SIDE ELEVATION**

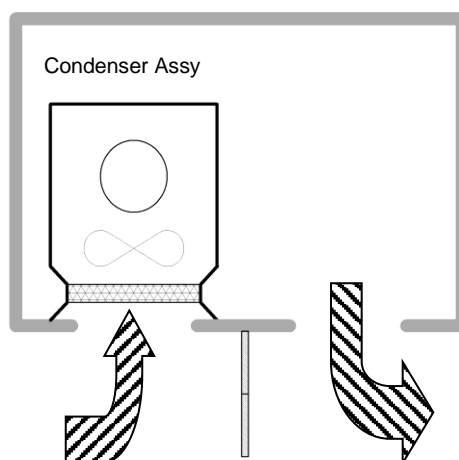
## Ventilation

### REFRIGERATED CABINETS - MECHANICAL DRAWINGS

**Under-bench Enclosure** As detailed under Location in the Installation section, adequate ventilation must be provided for the refrigeration condenser unit.

If the back of the bench is to be enclosed, suitable ventilation grilles and baffles must be fitted into the joinery panels.

**Air Flow Baffles** To prevent warm air re-circulating inside the enclosure, baffles must be constructed to separate the inlet and exit air.



**Service Access** **Note that baffles must be designed and constructed to be removable, allowing access to the refrigeration equipment for servicing.**

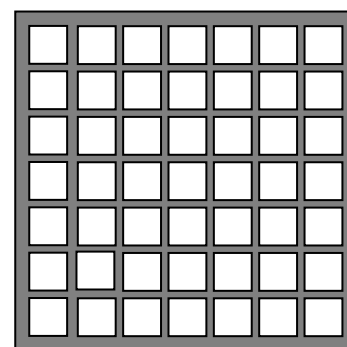
**Grille Dimensions**

Each grille, in and out, should have a minimum open area of 730 cm<sup>2</sup>.

A suitable sheet metal grille may be made by punching a pattern of 49 rectangular holes, each 40mm x 40mm. The holes may be spaced by 5mm.

Suitable grilles can be supplied by FPG, as an optional extra.

It is not recommended to use louver panels, as they would have to be very large to achieve the required open area, and be more prone to becoming blocked with fluff and dust.





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