FPG
food display = retail solutions

PRODUCT MANUAL

INLINE GN
FOOD CABINETS

Inline GN Series
Refrigerated Well

INSTALLATION - OPERATION - MAINTENANCE

Table of Contents

INTRODUCTION

Welcome

GN SERIES REFRIGERATED WELL - INTRODUCTION

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.

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.

Warranty

GN SERIES REFRIGERATED WELL - INTRODUCTION

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.

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

Continued on next page

Warranty cont.

GN SERIES REFRIGERATED WELL - INTRODUCTION

Liability Exceptions

Liability under this warranty does not include:

- Any loss, or damage or expenses directly or indirectly arising from use 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, flooding, fire or acts of God.
- Damage, resulting from failure to have the cabinet regularly serviced every three months by a refrigeration engineer. NB: You will be required to provide copies of service records in the event of compressor failure.
- Damage resulting from maladjustment of the electronic refrigeration controller, by an unqualified person.
- 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 lamps or gaskets.
- Failure resulting from incorrect assembly 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.

Time Limit

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

Caution

No warranty claim will be accepted unless authorised by FPG prior to commencement of service.

OPERATION

Configuration

GN SERIES REFRIGERATED WELL - OPERATION

Mechanical Features

The drop-in well consists of a main assembly, with integral refrigeration equipment, in which trays and gastronorm dishes of various sizes can be mounted.

The control panel is located on the main assembly, but since it is connected by a two metre cable, it can be easily re-located onto the joinery.

Food Display Options

This versatile refrigerated well can be configured to display food in a variety of ways:

- On adjustable height trays, using dishes or platters
- On trays of ice, for fresh fish or similar
- In gastronorm dishes of various sizes

Operating Temperature

The operating temperature of the well is governed by a digital controller. This is pre-set to maintain the correct chilled air temperature of 2°C to 4°C.

Care must be taken to load the well correctly, to ensure correct product temperature.

Condensate and Drain

Condensate water will be released during defrost cycles.

Ideally this should be routed to an external drain, but a removable container could be used.

An integral boil-off unit is available, as an optional extra, at the time of ordering. **However, unless really good forced ventilation is provided, integral boil-off trays are not recommended due to potential moisture damage to the joinery.**

Optional Lighting

An optional lighting gantry is available.

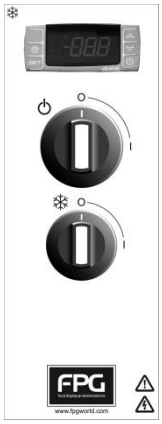
The well assembly has provision for easily mounting the gantry and is pre-wired to supply power for the overhead LED lighting.

The lighting switch is on the gantry.

Controls

GN SERIES REFRIGERATED WELL - OPERATION

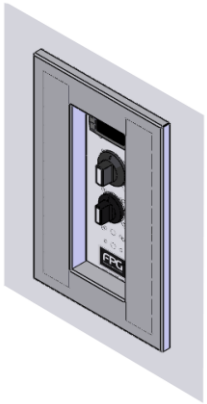
Control Panel



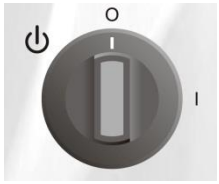
A control panel, mounted on the joinery, provides for all operational adjustments.

- The refrigeration Controller
- The Main Switch
- The Refrigeration Switch

If an overhead lighting gantry is fitted, the light switch is mounted on the gantry.



Power Switch



To turn the power on, rotate the switch in a clockwise direction.

Note that the cabinet and condenser fans will operate as soon as the power is turned on.

Refrigeration Switch

To start refrigeration, rotate the refrigeration switch in a clockwise direction.

Temperature Controller

Only to be adjusted by a qualified service technician.

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

The display indicates the exit air temperature from the cooling fins, below the deck trays.

The temperature of the condenser is also monitored, to protect the compressor from damage resulting from a blocked radiator or ventilation louvers.

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Display Mode

GN SERIES REFRIGERATED WELL - OPERATION

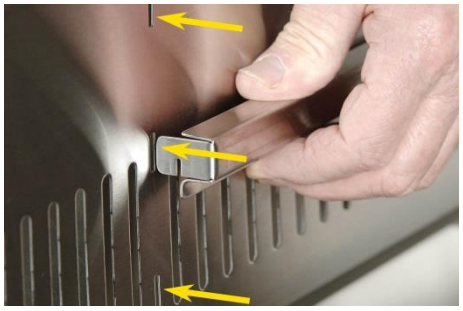
Choice of Mode

It is important to select an appropriate display mode, to suit the type of food and the type of dish.

The food should lie below the top lip of the well, and must not block the air vents.

The actual food temperature can be influenced by many variables, and it is important to regularly check actual food temperatures with a thermometer.

Display Trays



The display trays can be set to one of three heights.

Insert the tray support bearers into the chosen slots, pushing them down to fully engage the locating tabs.

All trays must be set horizontal and at the same height.

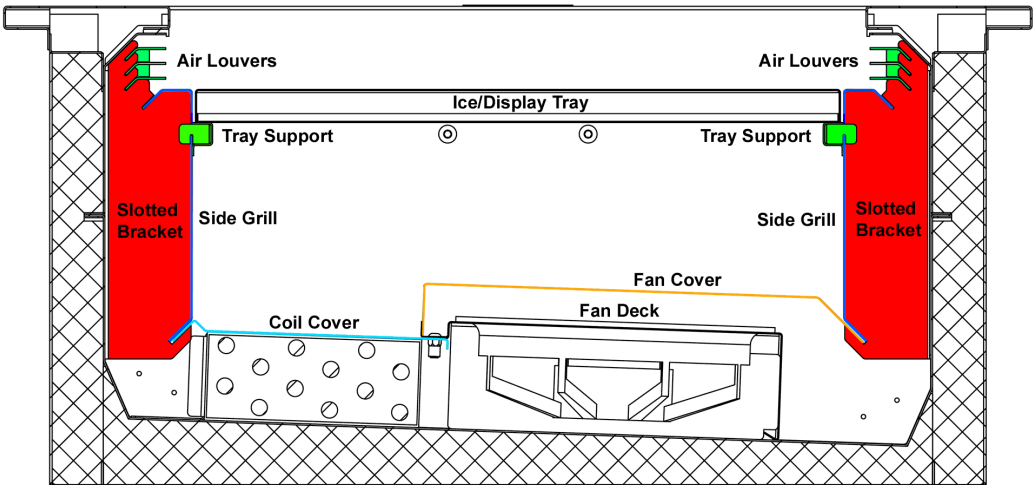
Choose either the flat side or dished side of the trays, whichever is appropriate.

Gastronorm Dishes

To use Gastronorm dishes, set the trays at their lowest level, and insert the dish support rails across the top of the well.

To use 150mm dishes, the unused display trays must be removed to gain extra depth.

Component Locations



Preparation

GN SERIES REFRIGERATED WELL - OPERATION

Power Supply

Ensure that power is connected to the cabinet.

Turn on the main power switch. The condenser and evaporator fans will run.

Turn on Refrigeration

Turn on the refrigeration switch. The compressor will run, and the well temperatures will begin to fall.

The temperature controller is pre-set to maintain the air temperatures at 2° - 4°C. It should not need adjustment.

Pre-chilled Food

Load the refrigerated well with pre-chilled product.

The well is designed to maintain the temperature of pre-chilled product below 4°C.

If warm product is introduced, there could be a considerable delay before the operating temperature falls to the normal operating level.

Loading Restrictions

To maintain the correct food temperature, it is important that the chilled air flow is not disturbed.

- Do not load food above the top lip of the well
- Do not block the air vents on either side of the well

Draughts

Strong draughts, blowing across the top of the well, can disturb the cold air flow and cause uneven cooling.

If the well must be located near a door or ventilation fan, screens may have to be used to deflect draughts.

Defrost Cycle

Note that the defrost times are set from when the refrigeration is first turned on.

If they are required at a particular time, you must turn on the refrigeration two hours before the first defrost required.

The cycles will then occur every two hours, provided that the refrigeration remains on.

Continued on next page

Operating Routines

GN SERIES REFRIGERATED WELL - OPERATION

Monitor Food Temperature

It is recommended that the temperature of displayed food be monitored at regular intervals during the day.

Each displayed dish should be checked.

In general, perishable food should be kept below 4°C.

After Hours

To conserve power, the refrigeration should be turned off after hours or at night.

Remove all food and place it in refrigerated night storage.

When the refrigeration is turned on again, allow it to run for about half an hour before replacing the pre-chilled products.

Cleaning

It is recommended that wells be cleaned at the end of the working day, since they need to be shut down for this. For **cleaning instructions** and maintenance see the information in this manual.

De-frost Cycle

The well will de-frost automatically twelve times per day. The well should NOT be temperature tested within ½ hour of a de-frost programme being completed.

The first defrost cycle will occur two hours after the refrigeration is first switched on.

Defrost cycles will start every two hours, and will be terminated as soon as the temperature probe signals that the cooling coil is free of ice. This form of control improves the overall efficiency of the equipment.

If you suspect that the defrost system is not working properly, have it checked by a qualified service person.

Operators must not attempt to adjust the refrigeration controller.

Storage and Display Basics

GN SERIES REFRIGERATED WELL - OPERATION

Food Temperature	In general, perishable food should be kept below 4°C. The well MUST have reached its working temperature, before food is loaded. Food MUST be pre-chilled to the required temperature, before it is placed in the display dishes. Alternatively a whole filled display dish can be pre-chilled, and exchanged for a dish in the well.
Display Time	The permissible display time will depend on the ambient conditions and food type. Assuming correct temperatures are maintained, the display times will largely depend on the humidity of the air. Use of ice, in the inverted display trays, will achieve maximum display times for fresh fish etc. Times can be greatly increased if lids are used.
Unsuitable Food Type	**The refrigerated well must not be used for the display of ice cream, or other products requiring a storage temperature below 4°C.**

TROUBLE SHOOTING

FAULT	POSSIBLE CAUSE	REMEDY
Well 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
	High condenser temperature	Clean condenser and radiator
	The power switch on the cabinet is OFF	Turn the power switch ON
	The power switch is faulty	***Have the switch replaced***
Well does not reach correct temperature	External draughts	Eliminate draughts
	Air grills not fitted correctly	Ensure vanes are horizontal
	Product blocking air grill	Place product on shelves
	Fan cover not fitted correctly	Make sure there are no air gaps
	Evaporator coil fins blocked	Clean coil fins of food etc.
	Trays obstructing air flow	Re-position trays on shelves
	Thermostat needs adjustment	***Adjust controller***
	Ambient temperature > 25°C	Adjust room air conditioning
	Evaporator coil iced up	***De-ice coil***
	Condenser radiator blocked	***Remove dust and debris***
	Thermostat faulty	***Replace controller***
	Temperature probe damaged	***Replace temperature probe***
	Auto defrost faulty	***Have defrost settings checked***
	Fans not operating	***Have fans checked/replaced***

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

CLEANING

Cautions

GN SERIES REFRIGERATED WELL - CLEANING

Power	**ALWAYS TURN THE POWER SUPPLY OFF BEFORE CLEANING.**
Water	Unless the well is connected to a drain, do not use a lot of water to clean the inside.

Exterior

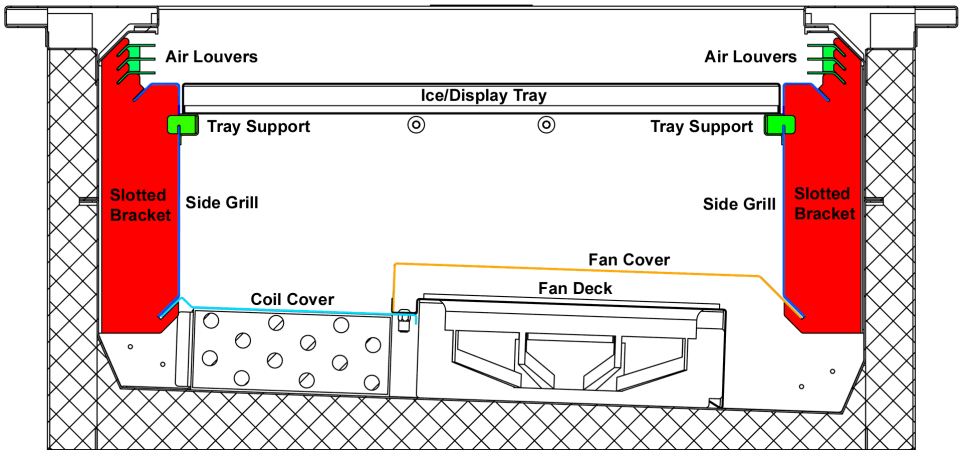
GN SERIES REFRIGERATED WELL - CLEANING

Metal Surfaces	Stainless steel surfaces should be cleaned with hot soapy water or a good quality metal cleaning compound. **DO NOT** use abrasive pads or cleaners, as surfaces will be damaged.
Glass (Optional Hood)	All glass should be cleaned using a good quality glass cleaner and a clean cloth. **DO NOT** use abrasive pads or cleaners, because they will damage the surface of the glass.
Louvers	Use a vacuum cleaner to remove dust and fluff from all of the ventilation louvers. This will maintain the refrigeration efficiency, and prevent overheating.

Interior

GN SERIES REFRIGERATED WELL - CLEANING

Cabinet Well Layout



Deck Trays and Dishes

First remove the gastronorm dishes, support rails and deck trays.

Air Louvers

Lift up the air louvers, at an angle, to disengage them from the slotted brackets.

When replacing the louvers, slide them into the slots, with the outer vanes horizontal.

Side Grills

The side grills can be lifted off the slotted brackets, and removed for cleaning.

The tray supports can be inserted upside down, to act as a lifting handles.

Fan Cover

Lift the fan cover, disengaging it from the slotted brackets.

Continued on next page

Interior cont.

GN SERIES REFRIGERATED WELL - CLEANING

Stainless Steel Items

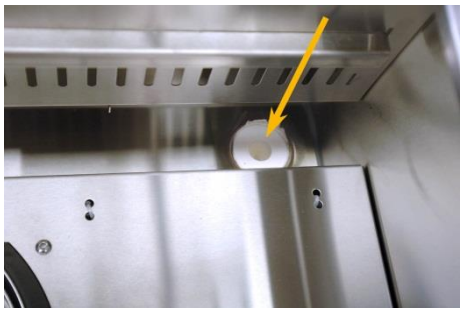
The well, supports, grills and stainless steel dishes should be cleaned with hot soapy water. Do not use abrasive pads or cleaners, as these may damage surfaces.

Small stainless steel parts may be cleaned in a dishwasher.

Well Cleaning

Sweep out, or use a vacuum cleaner, to remove any debris from the well.

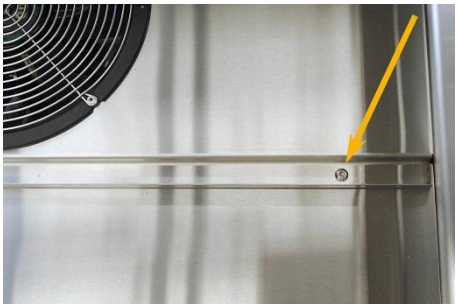
Be sure to check that there is no debris in the drain hole.



Cooling Coil

To access the cooling coil, remove the screws that secure the fan deck, and then lift the fan deck and remove the coil cover.

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.



Caution: The cooling 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.

Do not pour water into the base, unless the well is connected to a drain.

To avoid possible damage when replacing fan decks, be sure that cables are not trapped by metal parts.

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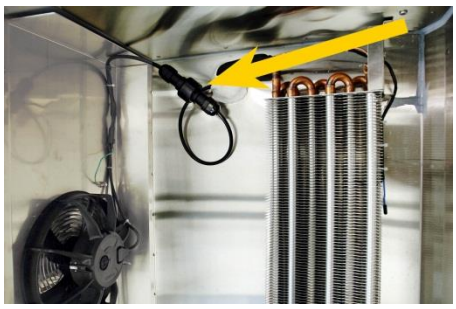
Interior cont.

GN SERIES REFRIGERATED WELL - CLEANING

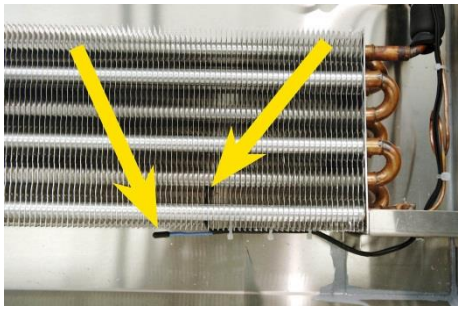
Removal of Fan Deck



If you wish to remove the fan deck, unplug the power supply connector.

The complete fan deck can then be lifted out.

Temperature Probes



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

There are two probes on the cooling coil. One in the air flow and the other inserted into the fins.

Cleaning Routines

GN SERIES REFRIGERATED WELL - CLEANING

Schedules

Regular cleaning schedules are required to maintain optimum performance.

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

Louvers

Use a vacuum cleaner to keep all ventilation louvers, in the joinery and the well base assembly, free of dust and fluff.

Condenser Radiator

For efficient refrigeration performance, the condenser radiator must be kept clean, (see Servicing, Condenser Radiator).

Regular vacuuming will prevent a build up of dust and fluff, but the fins must be cleaned with compressed air during scheduled servicing by a refrigeration engineer.

Inspection

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

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.

INSTALLATION

Regulations

GN SERIES REFRIGERATED WELL - INSTALLATION

Compliance with Local Requirements

It is very important that your drop-in refrigerated well assembly is installed correctly and that the operation is correct before use. Installation must comply with local electrical, health & safety and hygiene requirements.

Setting Up

GN SERIES REFRIGERATED WELL - INSTALLATION

Unpacking

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

The well is supplied fully assembled, with the control panel mounted on the main assembly.

Food dishes and supports may be packed separately.

Transport

After removal from the crate, the well assembly can be transported by fork-lift, with the forks either under the base unit or under the top flange.

Site Preparation

Ensure the well location and any joinery cut outs are made to the precise measurements shown in the Mechanical Drawings. Position the well in its allocated working position. Use a spirit level to ensure the well is level from side to side and front to back. (If this is not carried out, water will collect in the well).

Well Assembly Preparation

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

Lift out the food dishes, grills and divider bars.

Check that all plastic film protection has been removed from surfaces.

Grounding

WARNING: THIS APPLIANCE MUST BE GROUNDED TO EARTH

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

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

Continued on next page

Setting Up cont.

GN SERIES REFRIGERATED WELL - INSTALLATION

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 side of the well.

Isolation

If the well 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 well is installed.

Protection

For reasons of safety for personnel, it is strongly recommended to fit a Residual Current Device, (RCD), in the mains supply to the well.

An over-temperature probe is located on the condenser unit. This will interrupt the power supply, if the condenser overheats for any reason.

Drain

Ideally the well should be plumbed to a drain, to take away the condensate water.

A water lock (p-trap) must be included, to prevent foul air from entering the well.

If not plumbed in, and without a boil-off unit, a container will be required.

If a container is used, access must be provided for regular emptying.

The drain is compatible with standard 19mm irrigation components.

Vapour Extraction Warning

A vapour extraction fan must be fitted if a condensate boil-off unit is used in a remote condenser cabinet.

Control Panel

The control panel is connected to the main assembly by a two metre long umbilical cord.

This enables the panel to be readily located in the desired position on the joinery.

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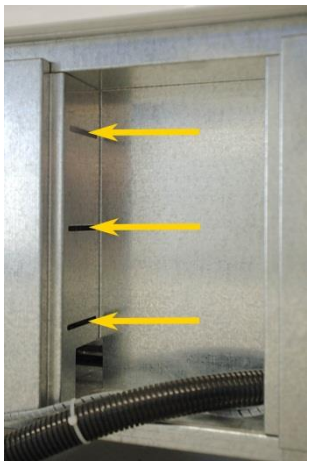
Setting Up cont.

GN SERIES REFRIGERATED WELL - INSTALLATION

Control Panel Mounting



When delivered, the panel is mounted on the base assembly.

It is secured by six screws, passing through slots in the base chassis.

If this location is suitable, loosen the screws and slide the panel forward to mate with the joinery cut-out.

If the panel is to be located elsewhere on the joinery, use the two slotted mounting brackets provided.

They will be found secured to the base chassis, by the six control panel mounting screws.

Location

GN SERIES REFRIGERATED WELL - INSTALLATION

Ventilation

The well is designed to meet the HACCP specifications with normal room air circulation.

The well should not be placed in a location where draughts could warm the displayed food, i.e. close to a door or air conditioning vent.

Air Louvers

Air louvers/grills in the joinery must not be blocked.

If air flow is restricted, refrigeration efficiency will decrease and the condenser will overheat.

If a boil-off unit is used, it is essential to ensure good ventilation.

Access

Access to the underside of the well is required for cleaning and servicing.

Fumes and Odours

Before use for the first time, operate the well for 4 hours, to remove any fumes or odours, which may be present. This will avoid possible tainting of food.

SERVICING

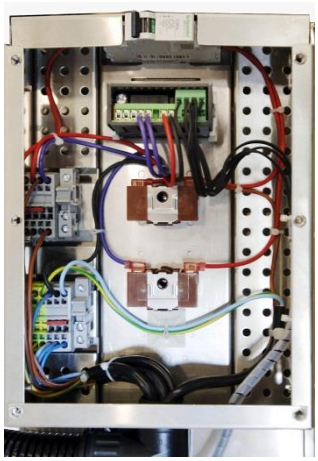
Control Gear

GN SERIES REFRIGERATED WELL - SERVICING

Location

The control gear is located inside the control panel assembly.

A miniature circuit breaker, MCB, protects the low power circuits and the power feed to the optional lighting gantry.



Mains Lead

GN SERIES REFRIGERATED WELL - SERVICING

Lead Replacement

If damaged, the mains lead must ONLY be replaced by a qualified service person.

Refrigeration

GN SERIES REFRIGERATED WELL - SERVICING

Caution

DO NOT attempt to service the refrigeration equipment without isolating the cabinet at the main switch or unplugging it from the wall.

Access to Compressor etc.

To gain access to the refrigeration compressor, condenser radiator etc., the access panels must first be removed from the joinery.

The metal grills should then be removed to reach the refrigeration equipment.

Continued on next page

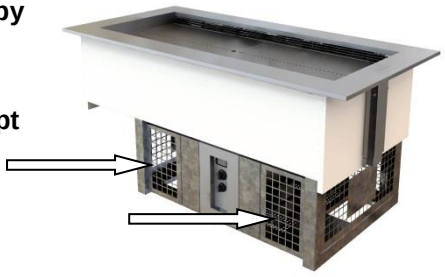
Refrigeration cont.

GN SERIES REFRIGERATED WELL - SERVICING

Louver Panels

All louvered panels should be kept free of dust by regular vacuuming, so that airflow is not restricted.

Similarly, louvers in the joinery must also be kept clean.

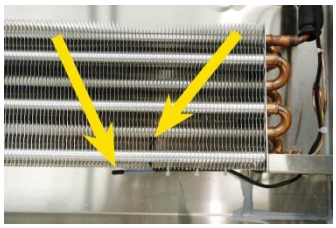


Condenser Radiator

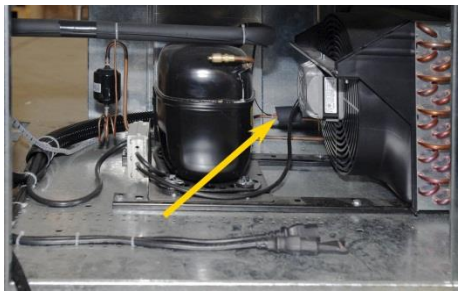
For efficient refrigeration performance, the condenser radiator must be kept clean. Failure to do this will lead to a build up of dust, and restricted airflow will prevent the unit from working properly. The compressor may overheat and the well temperature may rise. Be careful not to bend or damage the soft aluminium fins when vacuuming the radiator. If the fins are flattened, airflow will be restricted and overheating will result.

Regular vacuuming will prevent a build up of dust and fluff, but three monthly service checks, by a refrigeration engineer, are mandatory. These should include cleaning the condenser radiator using compressed air.

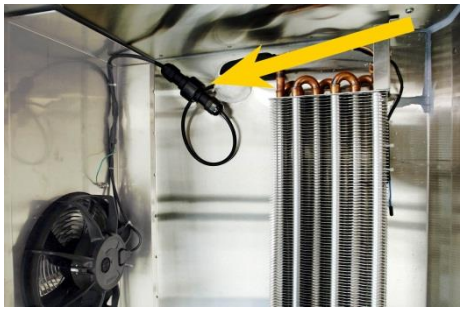
Temperature Probes



There are three temperature probes, two on the cooling coil and one on the discharge pipe of the compressor.



Fan Deck



The fan deck can be disconnected and removed from the well, when servicing the fans.

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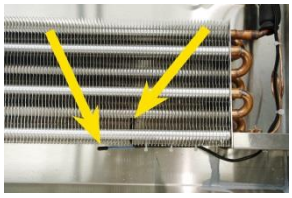
Refrigeration cont.

GN SERIES REFRIGERATED WELL - SERVICING

Temperature Regulator XR40CX

Model XR40CX is a microprocessor based controller.
It is provided with three NTC or PTC probe inputs, the first one for temperature control, the second one, to be located onto the evaporator, to control the defrost termination temperature, the third one, optional, to connect to the HOT KEY terminals to signal a condenser temperature alarm.



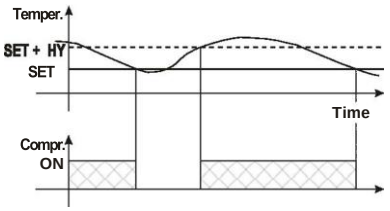
The indicated set-point temperature will be lower than the air temperature inside the cabinet, because the refrigeration compressor is controlled in response to the exit air temperature from the evaporator cooling coil.

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 **COn** and **COF**.

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

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Refrigeration cont.

GN SERIES REFRIGERATED WELL - SERVICING

XR40CX Key Functions

KEY	FUNCTION
SET	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
SET + ∨	To enter into programming mode
SET + ∧	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
°C/°F	ON	Measurement unit
°C/°F	Flashing	Programming phase

Continued on next page

Refrigeration cont.

GN SERIES REFRIGERATED WELL - SERVICING

XR40CX Min & Max Recorded Temperature	Press and release the ⩒ key. **Lo** will be displayed followed by the minimum temperature recorded. Press the ⩒ key again or wait 5s to restore the normal display. Press and release the ⩓ key. **Hi** will be displayed followed by the maximum temperature recorded. Press the ⩓ key again or wait 5s to restore the normal display.
XR40CX Reset Max/Min Temperature Memory	Press the **SET** key for more than 3s, while the max. or min. temperature is displayed. (**rSt** message will be displayed) To confirm the operation the **rSt** message starts blinking and the normal temperature will be displayed.
XR40CX Display the Set-point	To show the set-point value, press and immediately release the **SET** key. Press and immediately release the **SET** key or wait for 5 seconds to display the probe temperature again.
XR40CX Change the Set-point	To change the set-point value, press the **SET** key for more than 2 seconds; The value of the set-point will be displayed and the °C or °F LED starts blinking; To change the set value push the ⩓ or ⩒ arrows within 10s. To memorise the new set-point value push the **SET** key again or wait 10s.
XR40CX Start a Manual Defrost	To start a manual defrost, press the ❄ (DEF) key for more than 2 seconds.
XR40CX Programming Mode	Enter the Programming mode by pressing the SET + ⩒ keys for 3s (the °C or °F LED starts blinking). • Use the ⩓ or ⩒ keys to select the required parameter. • Press the SET key to display its value. • Use the ⩓ or ⩒ keys to change its value. • Press SET to store the new value and move to the following parameter. To exit Programming mode, press SET + ⩓ or wait 15s without pressing a key. NOTE: the set value is stored even when the procedure is exited by waiting for the time-out to expire.

Continued on next page

Refrigeration cont.

GN SERIES REFRIGERATED WELL - 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

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
COn	Compressor ON time with faulty probe	0 ÷ 255 min	15
COF	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
IdF	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 IdF; 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.

GN SERIES REFRIGERATED WELL - SERVICING

Dixell Default Settings cont.

Label	Name	Range	Default Setting
AFH	Differential for temperature 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 temperature alarm of condenser	nP; P1; P2; P3; P4	P4
AL2	Condenser for low temperature alarm	(-55 ÷ 150°C) (-67÷ 302°F)	-40
AU2	Condenser for high temperature alarm	(-55 ÷ 150°C) (-67÷ 302°F)	110
AH2	Differ. for condenser temp. alarm 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

XR40CX Alarm Signals

Message	Cause	Outputs
P1	Room probe failure	Compressor output acc. to par. **Con** and **COF**
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 **Ac2** parameter
LA2	Condenser low temperature	It depends on the **bLL** 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.

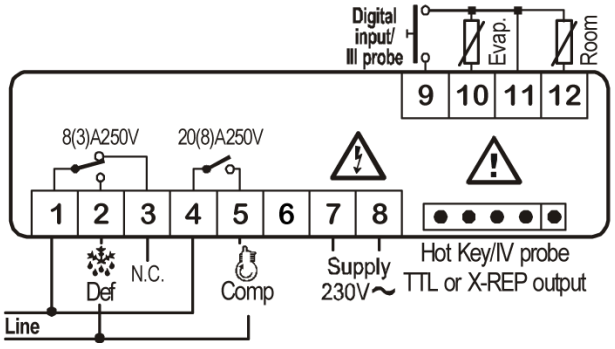
Temperature alarms HA, LA, HA2 and LA2 automatically stop as soon as the temperature returns to normal values.

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	**In programming mode**: none parameter is present in Pr1 **On the display** or in dP2, dP3, dP4: the selected probe is not enabled
noA	No alarm is recorded.

XR40CX Connections



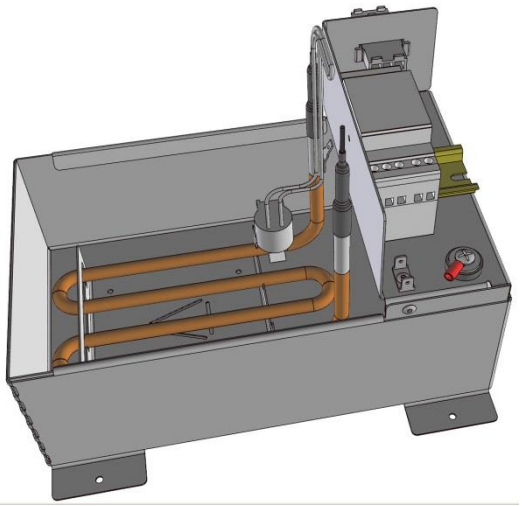
Optional ACR Assembly

GN SERIES REFRIGERATED WELL - SERVICING

Condensate Disposal

The automatic condensate removal, ACR system consists of a water tray, a water level detector and a boil-off element with an over temperature cut-out.

If the element fails, it may be replaced by springing it from the mounting bracket. Cut and splice the leads and protect with heat-shrink sleeves.



ACR Fault Finding Guide

First check if the condensate water level probe in the ACR tank is dirty and needs cleaning (a dirty probe may either fail to detect water, or give a false indication of water) clean if required.

Check the Finder Level Control sensitivity range adjustment is set to 75kΩ. If the sensitivity is set too low, the Level Control may not detect the condensate water and wont switch on the ACR element. If the sensitivity is set too high, the Level Control may get a false indication of the condensate water and switch on the ACR element without water present.

Fault: ACR element is on continuously when no condensate water is present.

Test: Check if the Finder Level Control unit is faulty by disconnecting the probe wire from terminal B1 on the Level Control unit. With cabinet power turned on and after waiting 10 seconds, check for 230V across terminals 11 and 14. If 230v is not present across terminals 11 & 14, replace the Finder Level Control unit.

Fault: ACR element does not heat even though condensate water is present and touching the water level probe.

Test: With cabinet power turned on and after waiting 10 seconds, check for 230V across the ACR element (terminals A1 & 11 on the Finder Level Control unit). If there is 230V across the element but it does not heat, replace the element.

If 230V is not present across terminals A1 & 11, check the Finder Level Control unit by short-circuiting across the level sensor terminals B1 & B3. With cabinet power turned on and after waiting 10 seconds, check for 230V across terminals A1 & 14. If 230V is not present across terminals A1 & 14, replace the Finder Level Control unit.

If 230V is now present across terminals A1 & 14, then the condensate water probe wiring needs to be checked for an open circuit, or the probe needs to be cleaned.

SPECIFICATIONS

Mechanical

GN SERIES REFRIGERATED WELL - SPECIFICATIONS

	CABINET MODEL			
	IN-GNC03	**IN-GNC04**	**IN-GNC05**	**IN-GNC06**
Height mm	768	768	768	768
Width mm	1320	1660	2000	2340
Depth mm	805	805	805	805
Dry Weight	130 kg	140 kg	160 kg	190 kg
Well Material	Stainless Steel			
Drain tube diameter	19 mm			
Display Area	0.53 m^2	0.70 m^2	0.87 m^2	1.04 m^2
Refrigerant	R134A	R134A	R134A	R134A
Refrigerant Charge	320 g	340 g	500 g	780 g
Climatic Class & IP	All wells are suitable for class N climates and have an IP 22 rating			

Electrical

GN SERIES REFRIGERATED WELL - SPECIFICATIONS

	CABINET MODEL			
	IN-GNC03	**IN-GNC04**	**IN-GNC05**	**IN-GNC06**
Voltage	230 - 240 V 50 Hz 1ϕ	230 - 240 V 50 Hz 1ϕ	230 - 240 V 50 Hz 1ϕ	230 - 240 V 50 Hz 1ϕ
Power (without gantry)	0.8 kW	1.0 kW	1.1 kW	1.2 kW
Extra boil-off power	1.0kW	1.0kW	1.0kW	1.0kW
Current (without gantry)	2.5 A	4.0 A	4.4 A	4.6 A
Extra boil-off current	4.0A	4.0A	4.0A	4.0A
Connection	3-core cable & 10A 3-pin plug			
Overhead Lights	Optional Gantry	Optional Gantry	Optional Gantry	Optional Gantry

Controller Settings

GN SERIES REFRIGERATED WELL - SPECIFICATIONS

Changes from Dixell Defaults

The following table specifies the controller settings which differ from the Dixell default values.

Parameters not listed in this table should remain at the default values specified in the **XR40CZ Parameters** listed in the **Servicing** section.

XR40CX Settings

Parameter	Description	Settings for Models					Units/Range
		IN-GNC03	IN-GNC04	IN-GNC05	IN-GNC06	Remote Versions	
Set	Set Point	-6	-6	-6	-6	See left	degC
Hy	Differential	6	6	6	6	See left	degC
P3P	Third Probe Used	Y	Y	Y	Y	N	n=no, Y=yes
AC	Anti Short Cycle Delay	2	2	2	2	See left	Min
C0n	Comp On Time - Faulty Probe	4	4	4	4	See left	Min
C0F	Comp Off Time - Faulty Probe	6	6	6	6	See left	Min
dtE	Defrost Terminate Temp	3	3	3	3	See left	degC
IdF	Interval Between Defrosts	2	2	2	2	See left	Hrs
dFd	Display During Defrost	DEF	DEF	DEF	DEF	See left	rt, it, Set, DEF
ALU	Maximum Temperature Alarm	12	12	12	12	See left	degC
AFH	Differential For Temp Alarm	8	8	8	8	See left	degC
AId	Temperature Alarm Delay	60	60	60	60	See left	Min
AP2	Probe For High Discharge Temp Alarm	P3	P3	P3	P3	nP	nP, P1, P2, P3, P4
AU2	High Discharge Temp Alarm Set Point	100	100	100	100	See left	degC
AH2	High Discharge Temp Alarm Diff	25	25	25	25	See left	degC
Ad2	High Discharge Temp Alarm delay	0	0	0	0	See left	Min
dA2	High Discharge Alarm Delay At Start	0	0	0	0	See left	Min
AC2	Comp Off For High Discharge Temp Alarm	Y(1)	Y(1)	Y(1)	Y(1)	See left	n(0)=no, Y(1)=yes

Compliance

GN SERIES REFRIGERATED WELL - SPECIFICATIONS

Safety Aspects

These cabinets have been designed to comply with the relevant requirements of the following specifications:

- AS/NZS 3100 General Requirements for Electrical Equipment
- AS/NZS 3182 Refrigerated Food Commercial Cabinets
- AS/NZS 3820 Essential Safety Requirements
- AS/NZS 4417 Marking of Electrical Products

CE

IEC 60335 Household and Similar Electrical Appliances – Safety
- Part 1: General Requirements
- Part 2-24: Particular Requirements for Refrigerating Appliances / Ice Cream Appliances and Ice Makers

EN 55014 Electromagnetic Compatibility Requirements for Household Appliances, Electric Tools and Similar Apparatus
- Part 1: Emissions
- Part 2: Immunity - Product Family Standard

EN 61000 Electromagnetic compatibility (EMC)
- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16A per phase)
- Part 3: Limits - Section 3: Limitations of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16A per phase and not subject to conditional connection

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.

Performance Aspects

The cabinet is HACCP compliant, with the following performance:

Cabinet Operating Temperature	Climate Class	
+2° to +4°C	N (16° - 32°C)	

Improvements

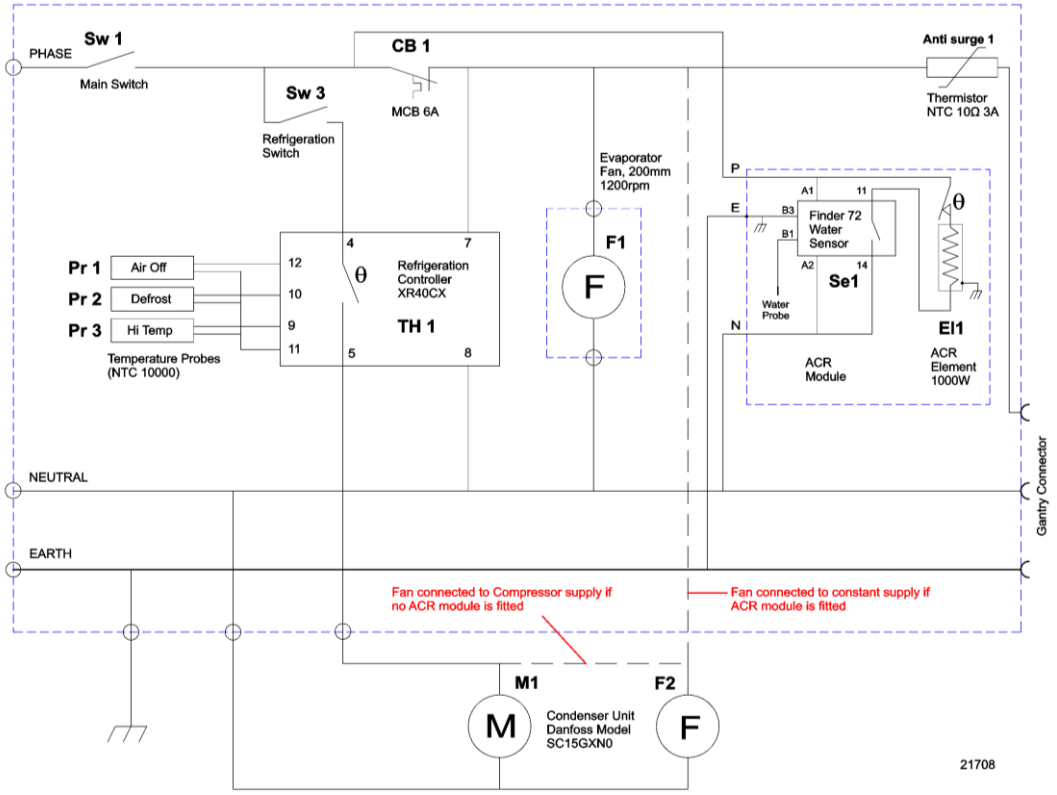
GN SERIES REFRIGERATED WELL - SPECIFICATIONS

Ongoing Development

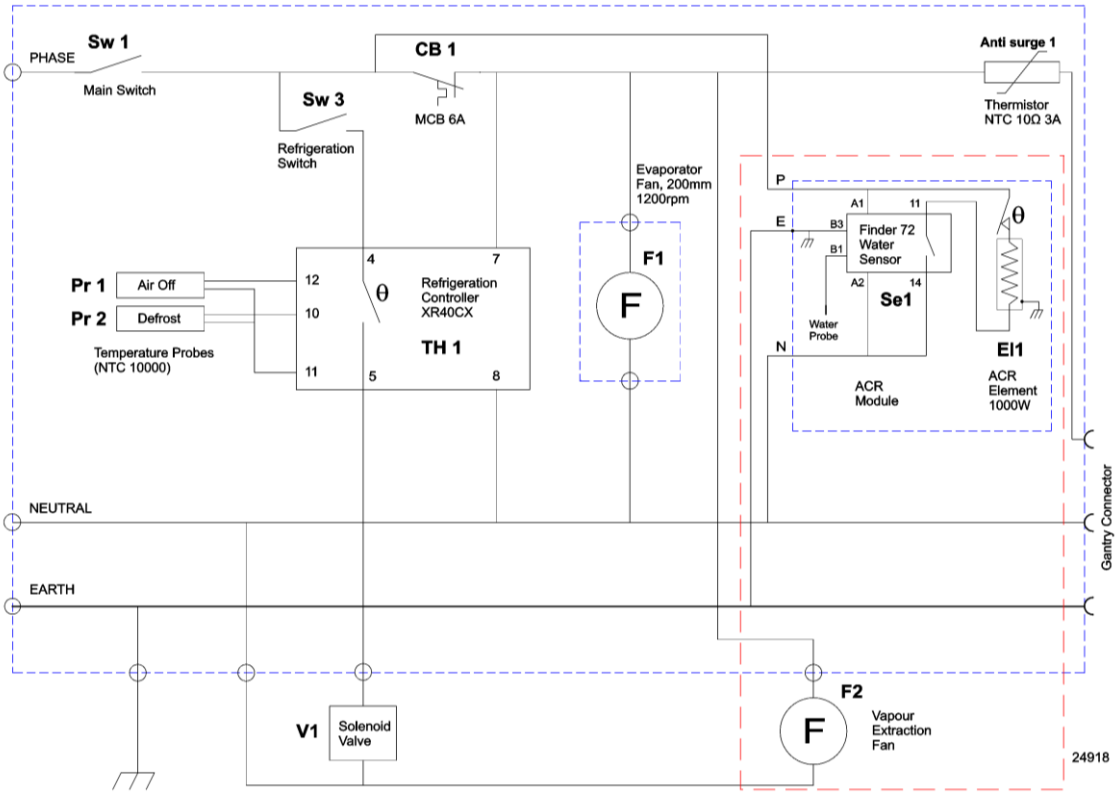
FPG reserves the right to change specifications and construction, as part of ongoing product improvement.

ELECTRICAL CIRCUIT DIAGRAMS

Model: IN-GNC03 **3 Bay Refrigerated Drop-in Well Assembly**

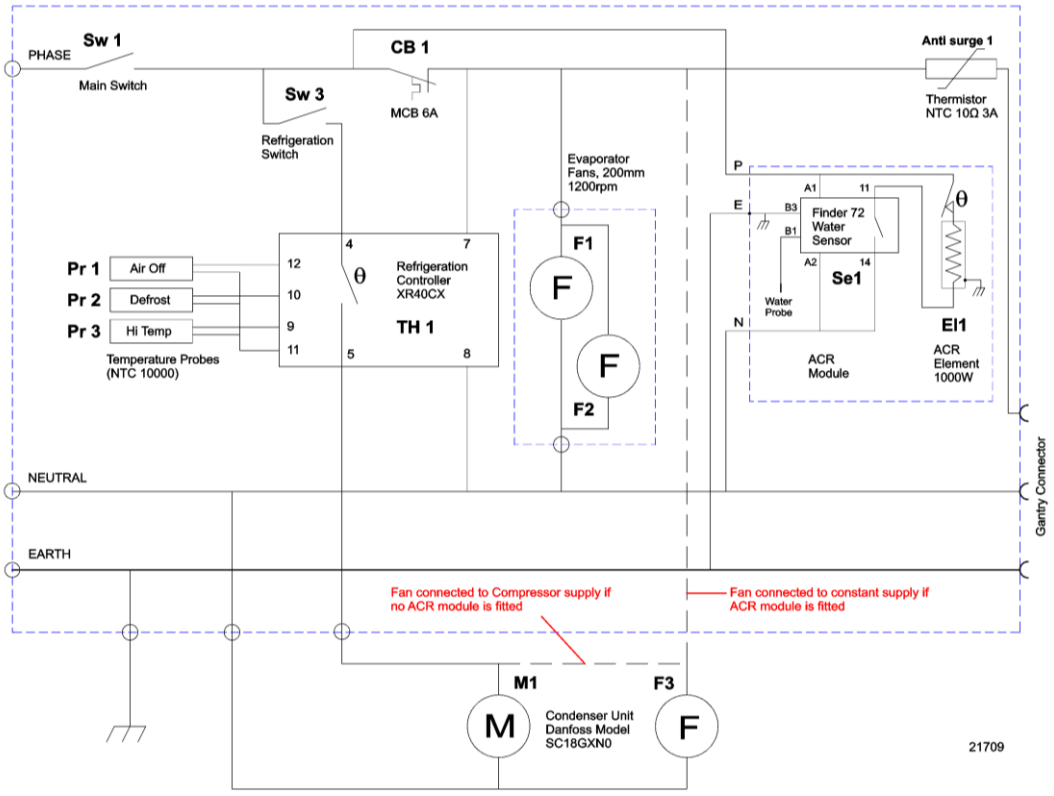


Model: IN-GNC03 (Remote) **3 Bay Refrigerated Drop-in Well Assembly**

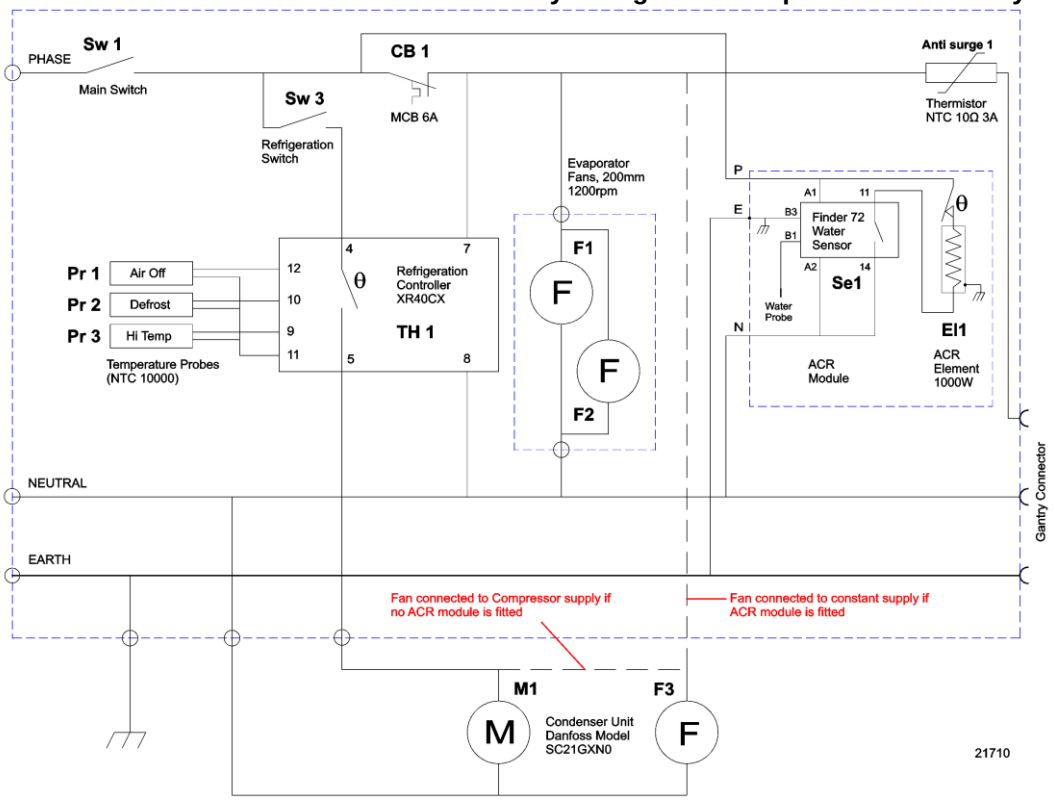


ELECTRICAL WIRING DIAGRAMS, Continued

Model: IN-GNC04 — 4 Bay Refrigerated Drop-in Well Assembly

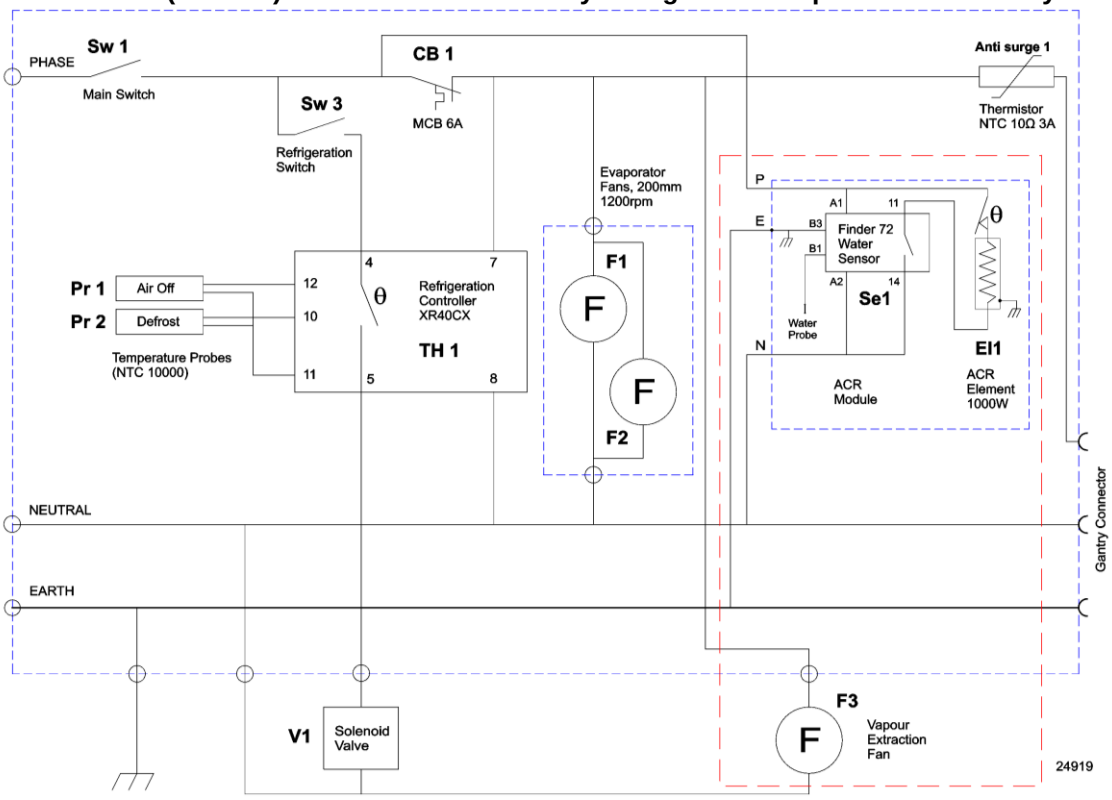


Model: IN-GNC05 — 5 Bay Refrigerated Drop-in Well Assembly

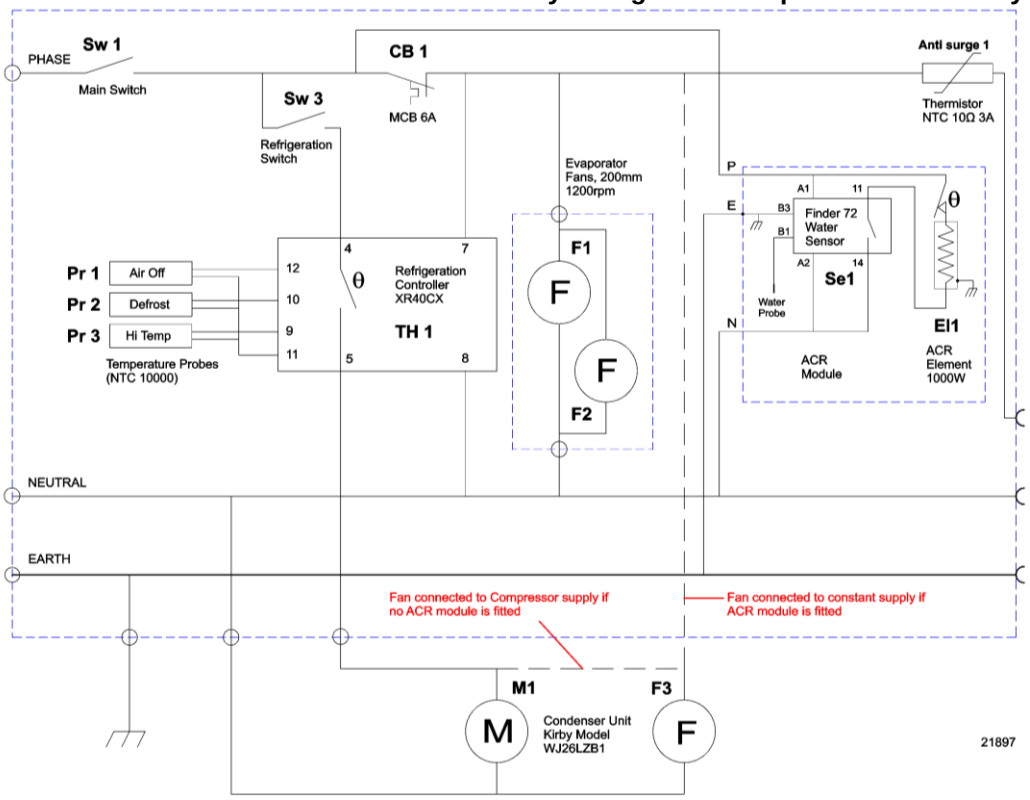


ELECTRICAL WIRING DIAGRAMS, Continued

Model: IN-GNC05 (Remote) — 5 Bay Refrigerated Drop-in Well Assembly



Model: IN-GNC06 — 6 Bay Refrigerated Drop-in Well Assembly



SPARE PARTS

Assembly Serial Number

When ordering spare parts, it is important to quote the Serial Number printed on the label fixed to the control panel.

This serial number will enable FPG to trace details of the build specification of your particular assembly, and hence ensure that spare parts are fully compatible.

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

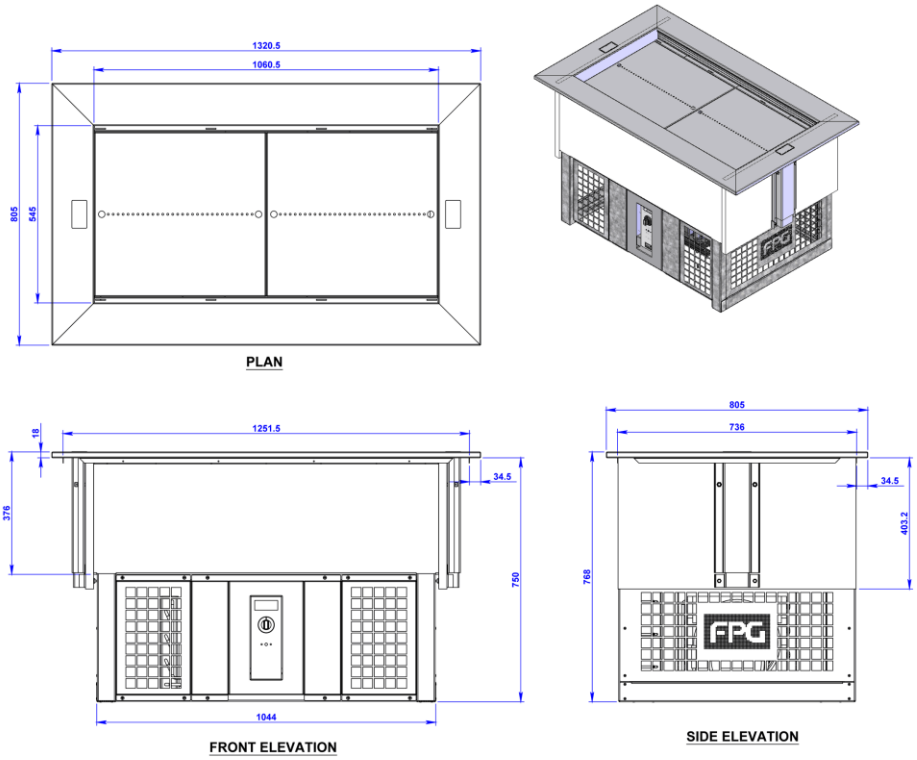
Part Description	FPG Part No.
Main Switch	14372
Refrigeration Switch	14372
Main Switch Knob	14373
Refrigeration Switch Knob	14374
Dixell XR40CX Digital Refrigeration Controller	21219
NTC Temperature Probe	15870
Circuit Breaker 6A	10522
Anti-surge thermistor 10 Ohm 3A	22354
Evap. Fan Unada 200mm (1200rpm)	72932
Vapour Extraction Fan 119mm 230V	21614
Condensate Water Sensor, Finder 72.01.8.240.0000	25309
1000 watt 230V condensate element	18051
Drain Tube 19mm (20M) (Black irrigation hose)	18627
Drain Elbow 19mm (Black irrigation hose)	18628
Drain Clip 19mm (Black irrigation hose)	18629
Danfoss SC15GXN0 Condenser Assembly	21708
Danfoss SC18GXN0 Condenser Assembly	21709
Danfoss SC21GXN0 Condenser Assembly	21710
Kirby WJ26LZB1 Condenser Assembly	21897
Condenser Fan for SC15/18/21	11004
Condenser Fan for WJ26	15912
Product Manual for Inline GN Series Refrigerated Wells	21967

MECHANICAL DRAWINGS

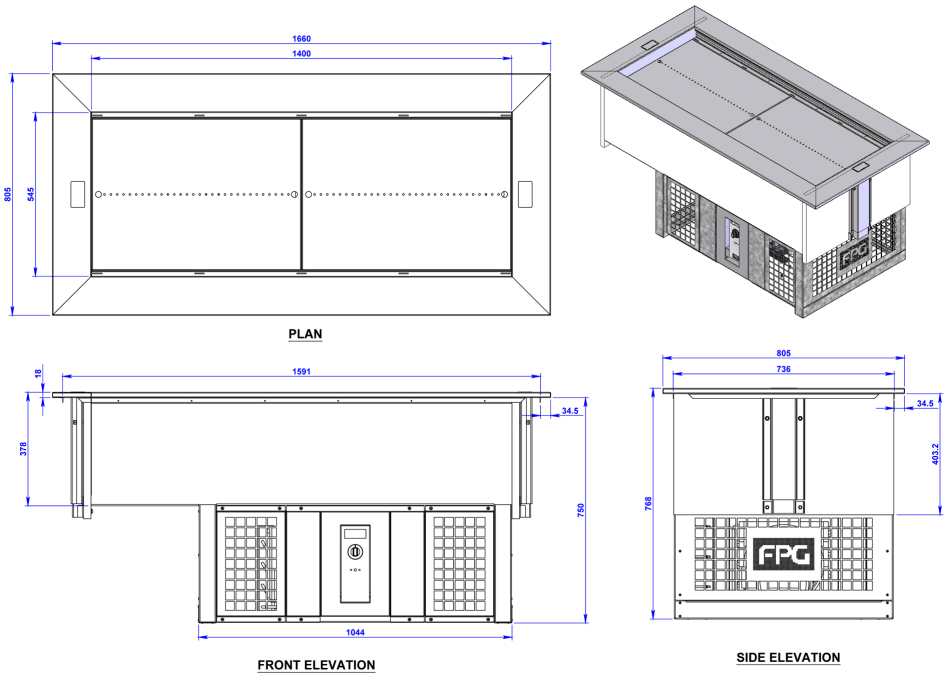
Dimensions

GN SERIES REFRIGERATED WELL - MECHANICAL DRAWINGS

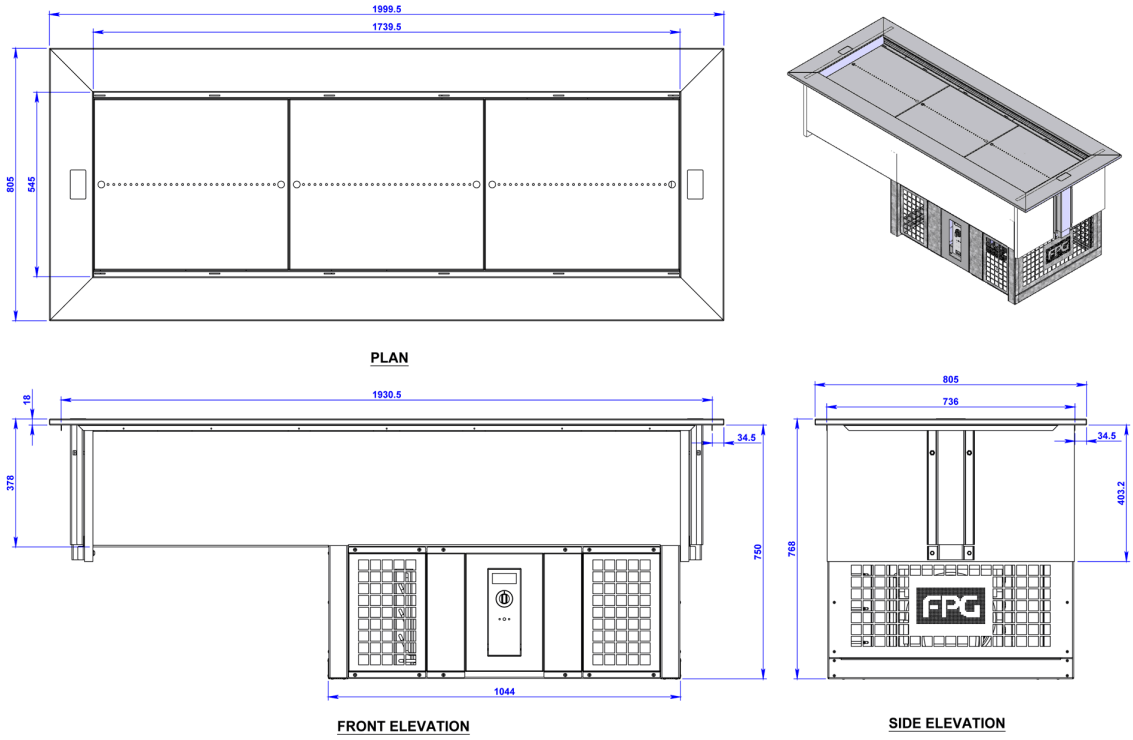
IN-GNC03



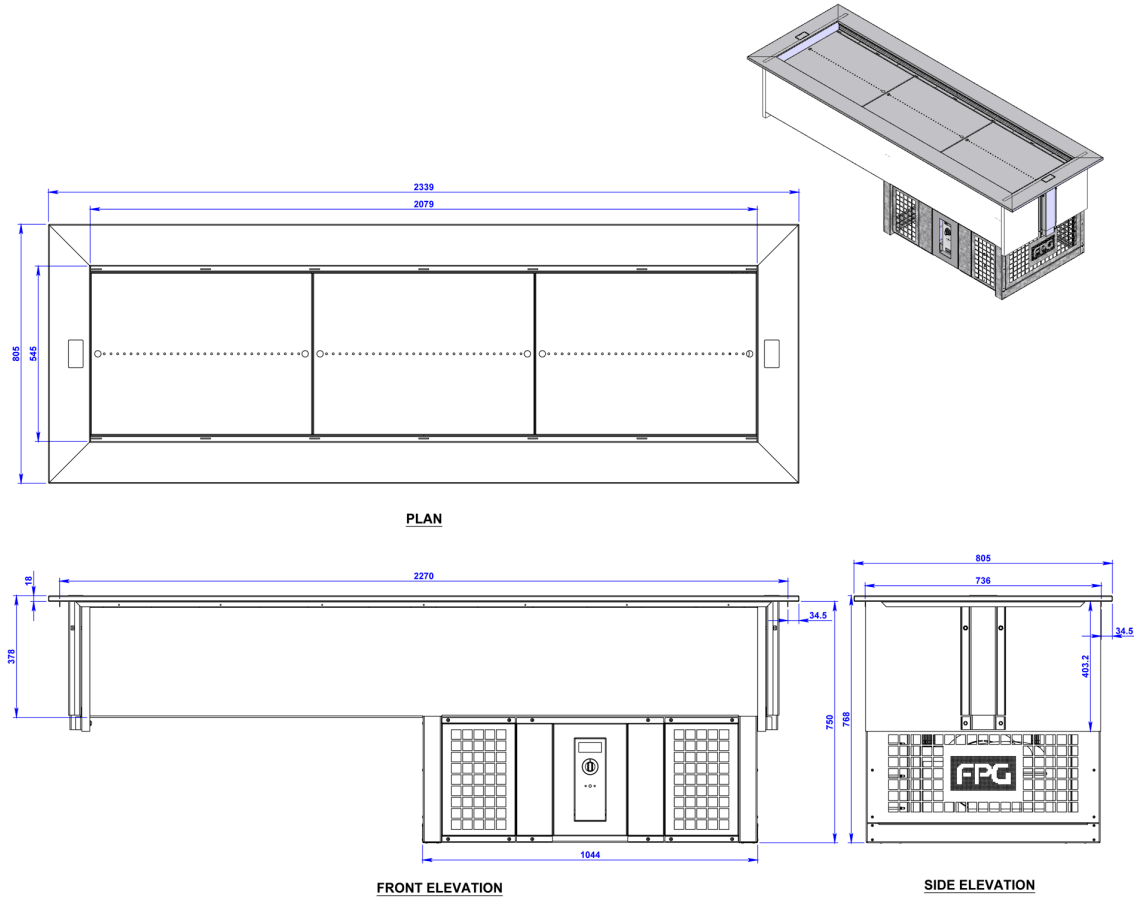
IN-GNC04



IN-GNC05



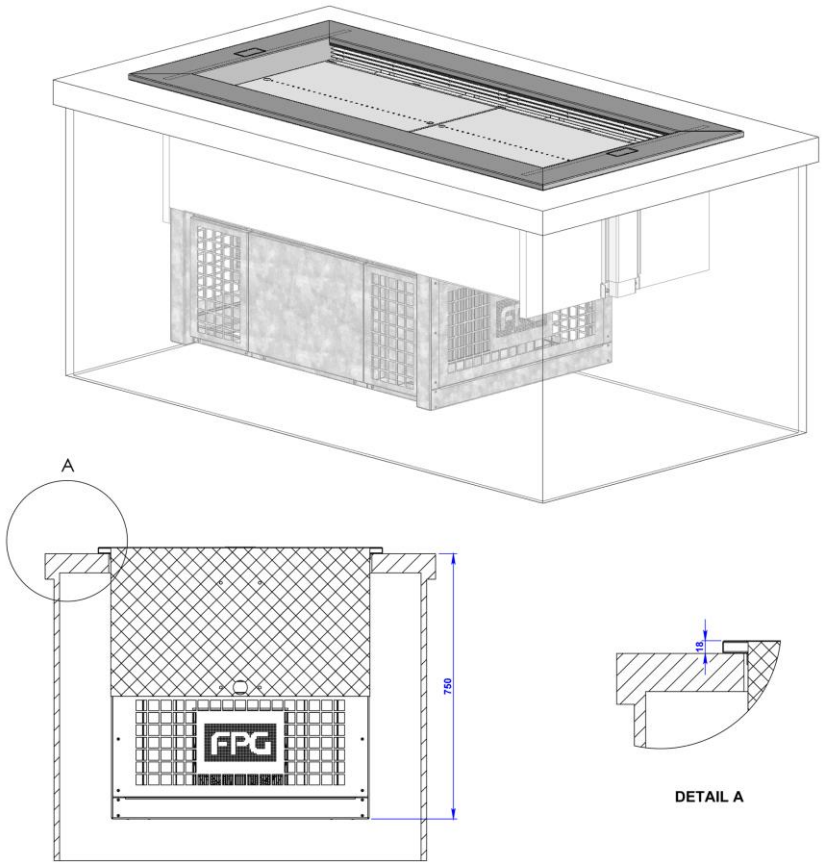
IN-GNC06

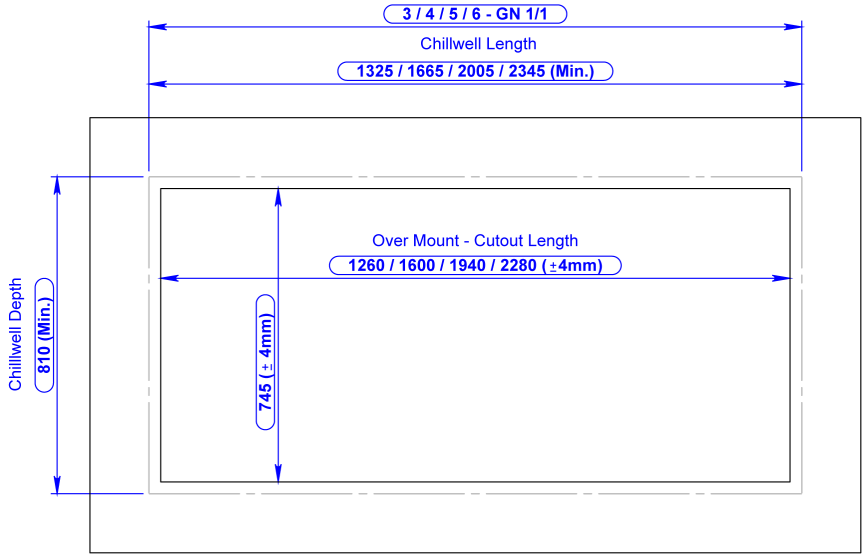


Bench Cut-outs

GN SERIES REFRIGERATED WELL - MECHANICAL DRAWINGS

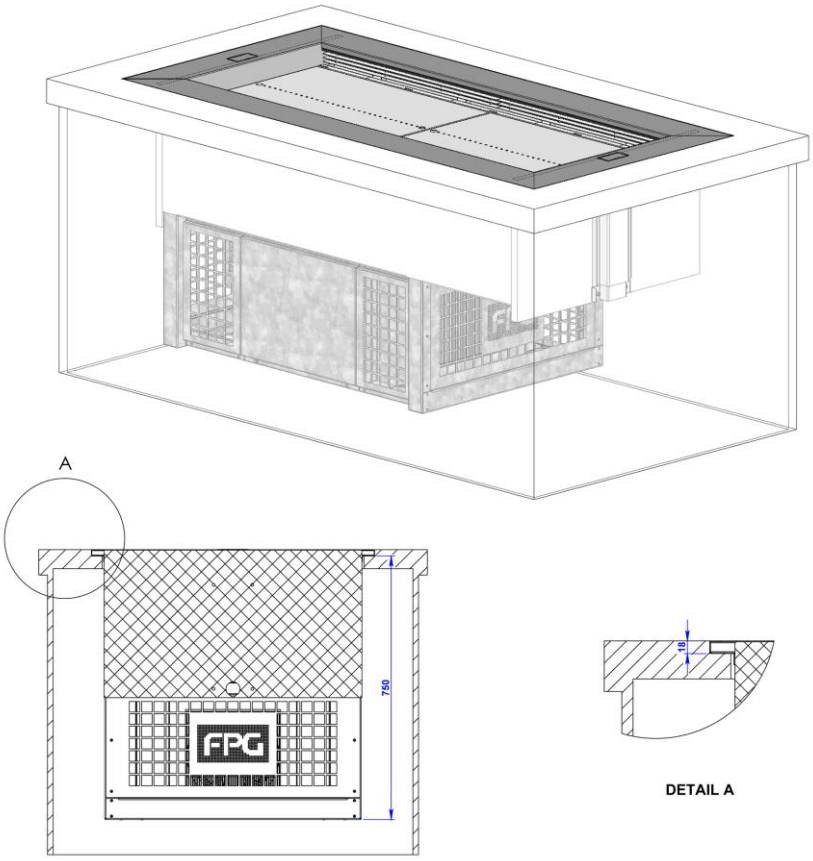
Over Mount **Installation**

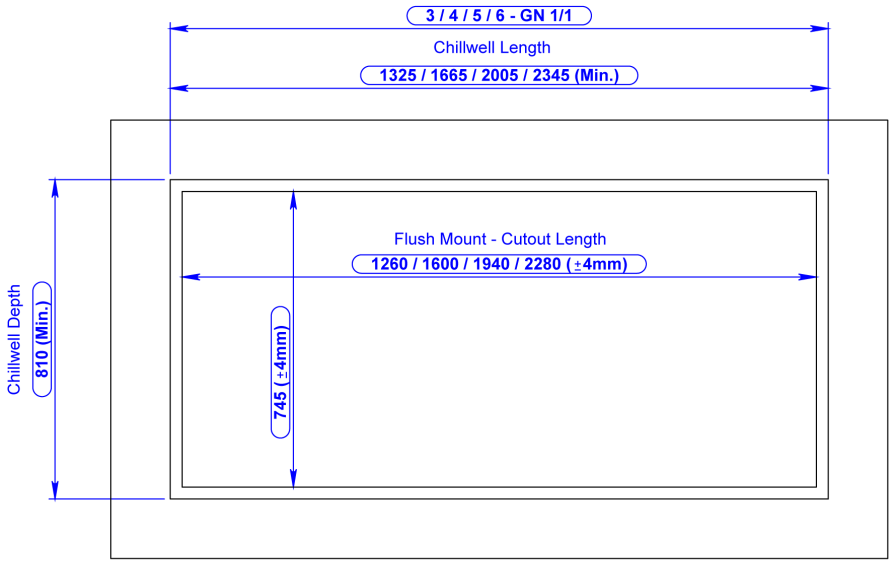




NOTE: Chillwell length and depth allows for a 2mm gap(approx) around the outside of the top surface flange.

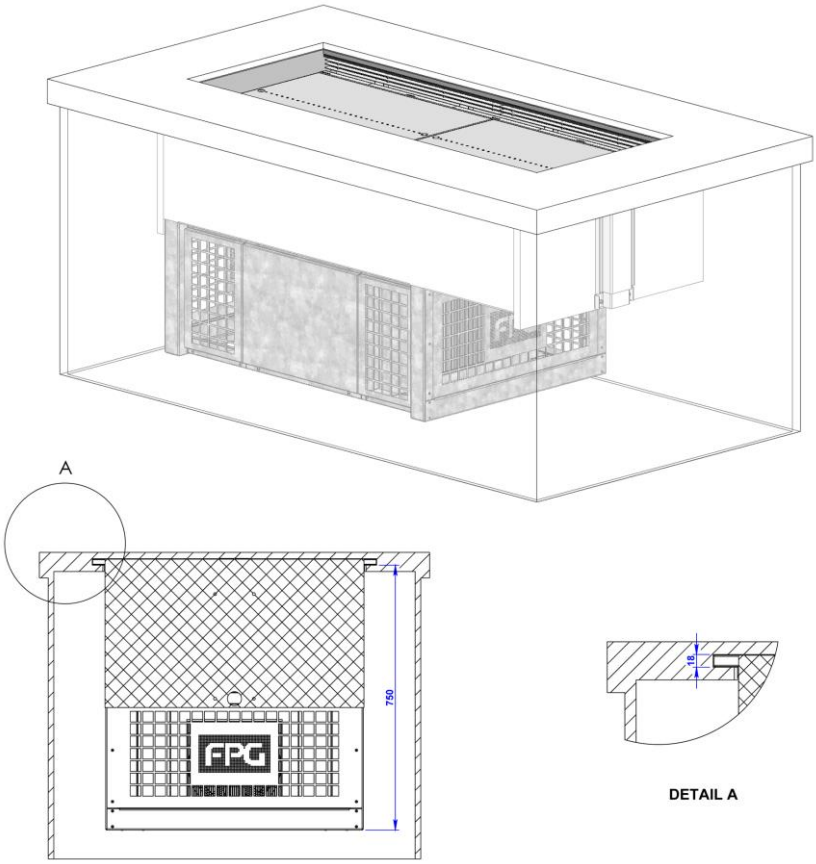
Flush Mount Installation

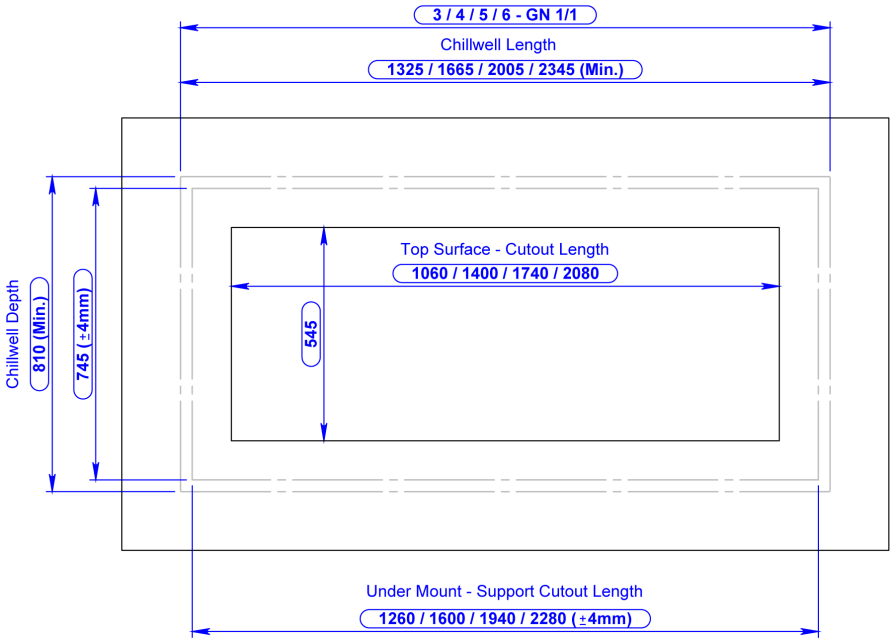




NOTE: Chillwell length and depth allows for a 2mm gap(approx) around the outside of the top surface flange.

Under Mount Installation



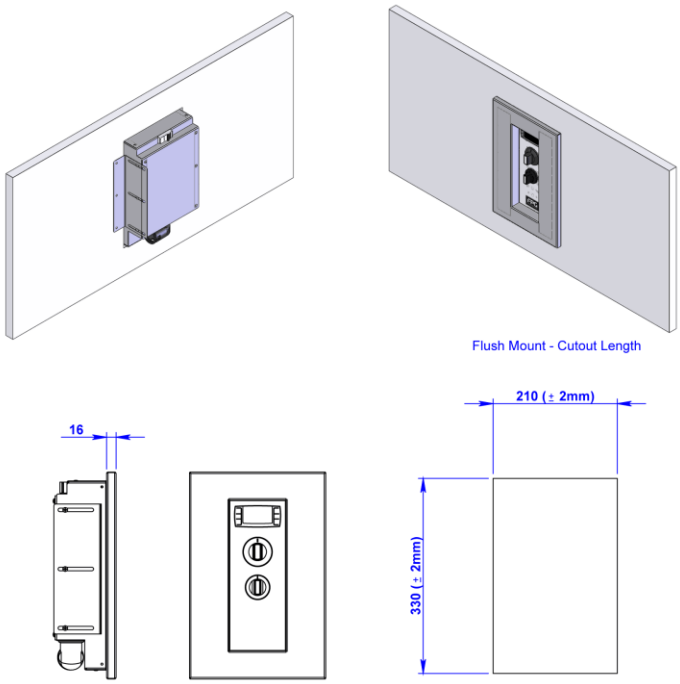


NOTE: Chillwell length and depth allows for a 2mm gap(approx) around the outside of the top surface flange.

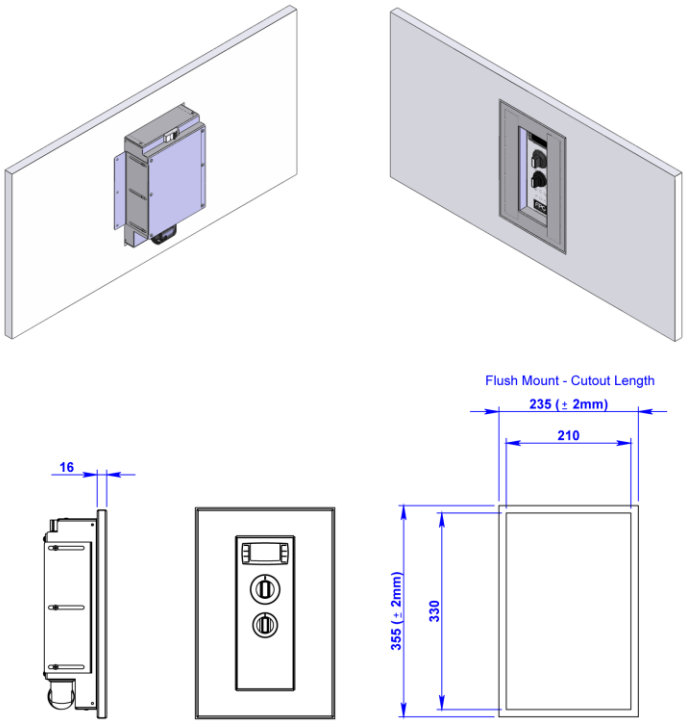
Control Panel Mounting

GN SERIES REFRIGERATED WELL - MECHANICAL DRAWINGS

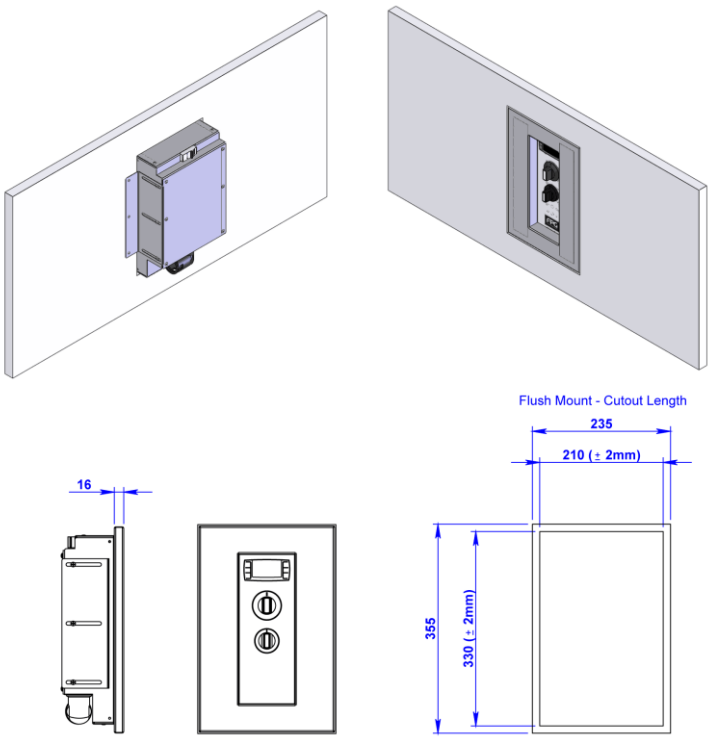
Over Mounting



Flush Mounting



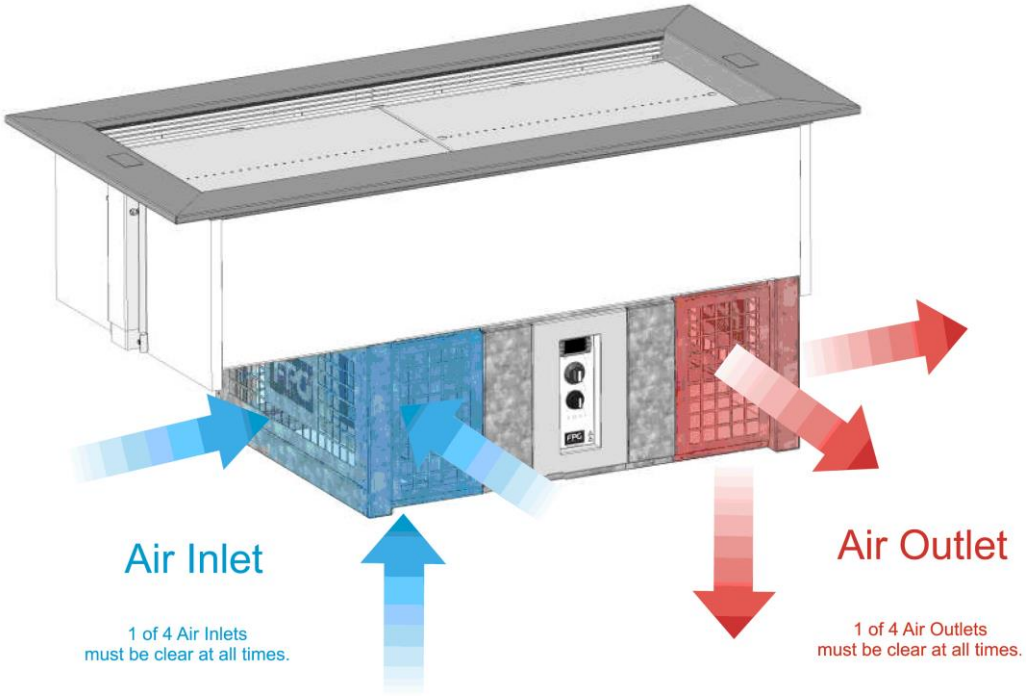
Under Mounting



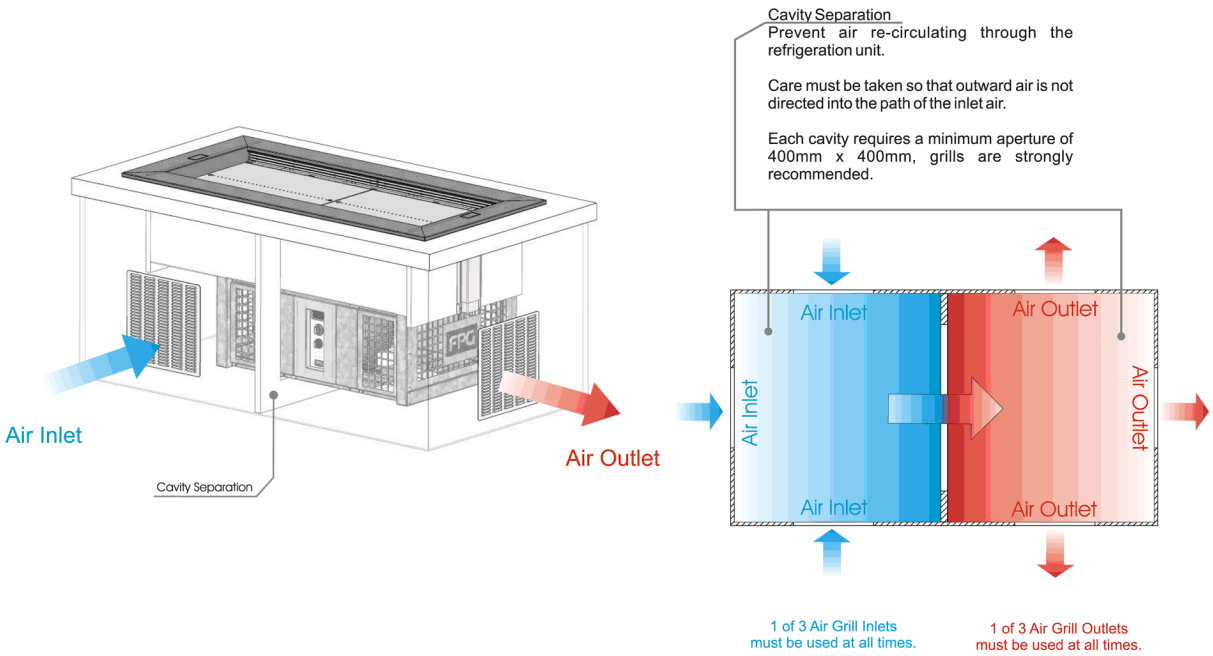
Ventilation Requirements

GN SERIES REFRIGERATED WELL - MECHANICAL DRAWINGS

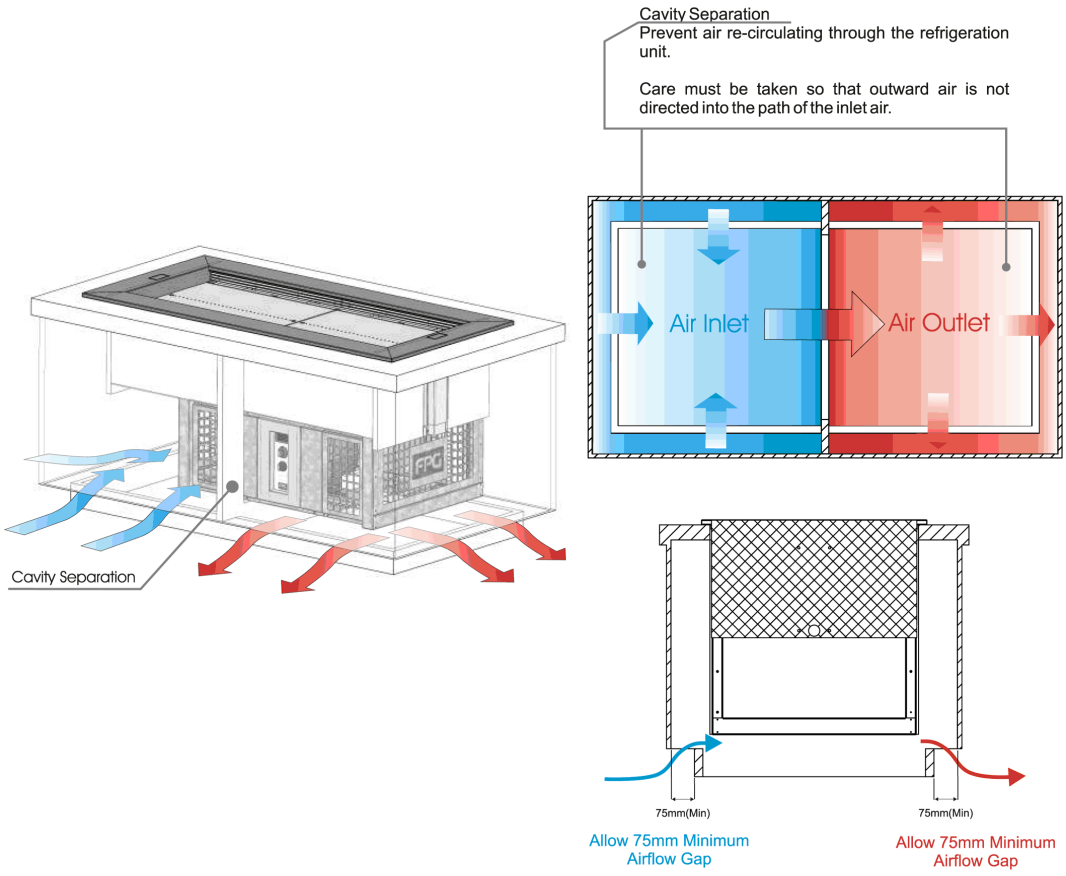
Basic Air Flow



Side Louver Option



Toe Kick Vent Option



Australia
T 1800 813 745
F 1800 813 746
E ausales@fpgworld.com
Suite 6, Level 1, 432 Chapel Road
Bankstown
NSW 2200
Australia

China | Asia
T +86 21 3351 3390
F +86 21 3952 2356
E asales@fpgworld.com
Rm 104,Building 8
No.31 KaiXuan Road (S)
Shanghai 200232
P R China

Europe
T +31 6 52 53 47 69
E info@feconcepts.eu
DeZonkade 5
5247 MP Rosmalen
The Netherlands

New Zealand
T +64 6 843 3249
F +64 6 843 2466
E nzsales@fpgworld.com
110 Austin Street
P O Box 3029
Napier, 4110
New Zealand

United Kingdom
T +44 845 485 9300
E uksales@fpgworld.com
Unit 6 Churchill House
114 Windmill Road
Brentford, Middlesex
TW8 9NB
United Kingdom