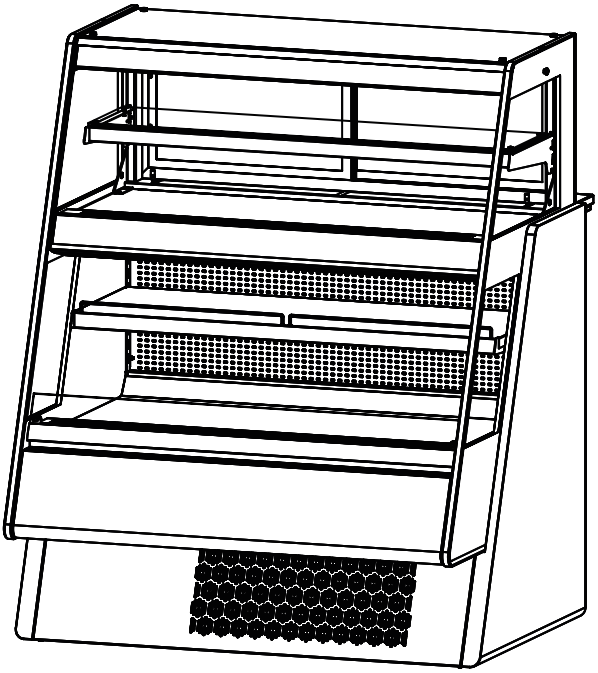
HYDRA KOOL



Intertek

Intertek

DOE Compliant

KGL OVERUNDER SERIES - INSTALLATION AND OPERATION MANUAL - V0

HYDRA KOOL

MVP GROUP

3560 NW 56th Street
Fort Lauderdale, FL 33309
Tel.: 786.600.4687 / Toll Free: 844.218.8477
Fax.: 786.661.4100

5659 Royalmount Avenue
Montreal, Qc, Canada H4P 2P9
Tel.: 514.737.9701 / Toll Free: 888.275.4538
Fax.: 514.342.3854 / Toll Free: 877.453.8832

INDEX

This page has been left blank intentionally.

1 General information

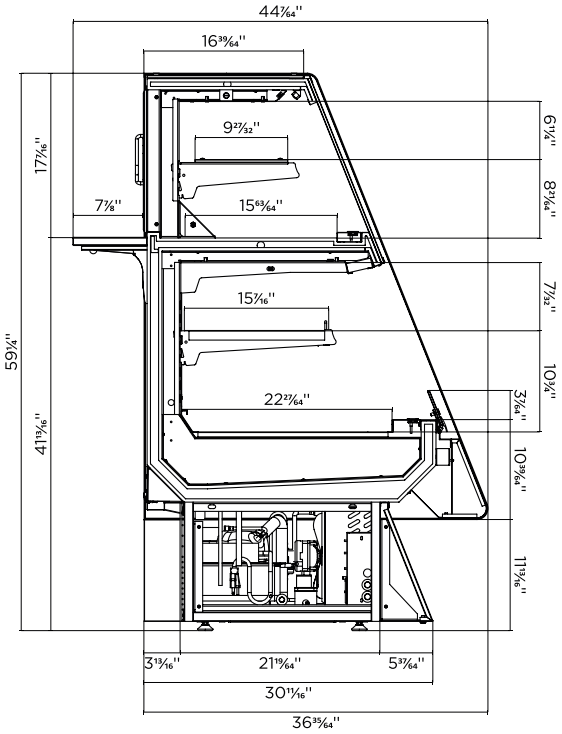
1.1 Case description

KGL Overunder series model (number) system.

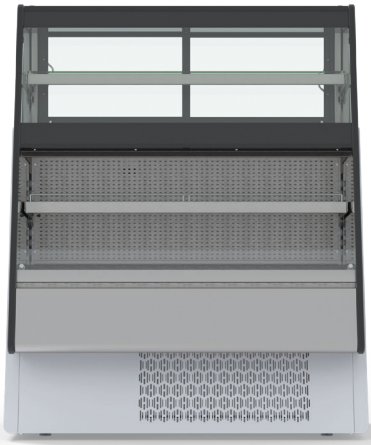
KGL OF 40 S
AAA BB CC D

AAA	BB	CC	D
Basic model	Model variation	Length	Type of Unit.
KGL	**OU**-Overunder	**40**"	**S**-Self Contained
		50"	
		60"	
		80"	

KGL Overunder Series



KGL-OU-S



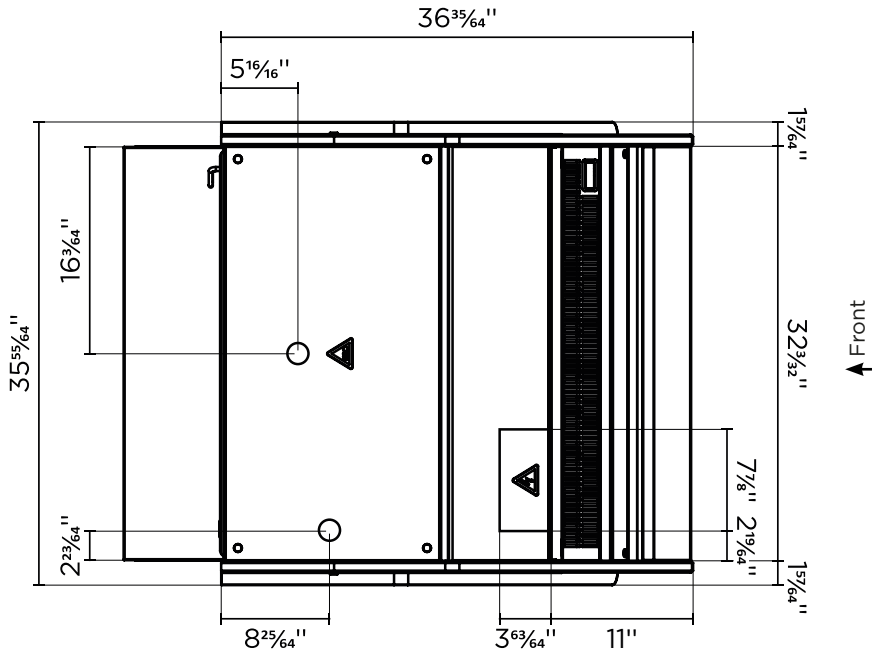
KGL-OU-S

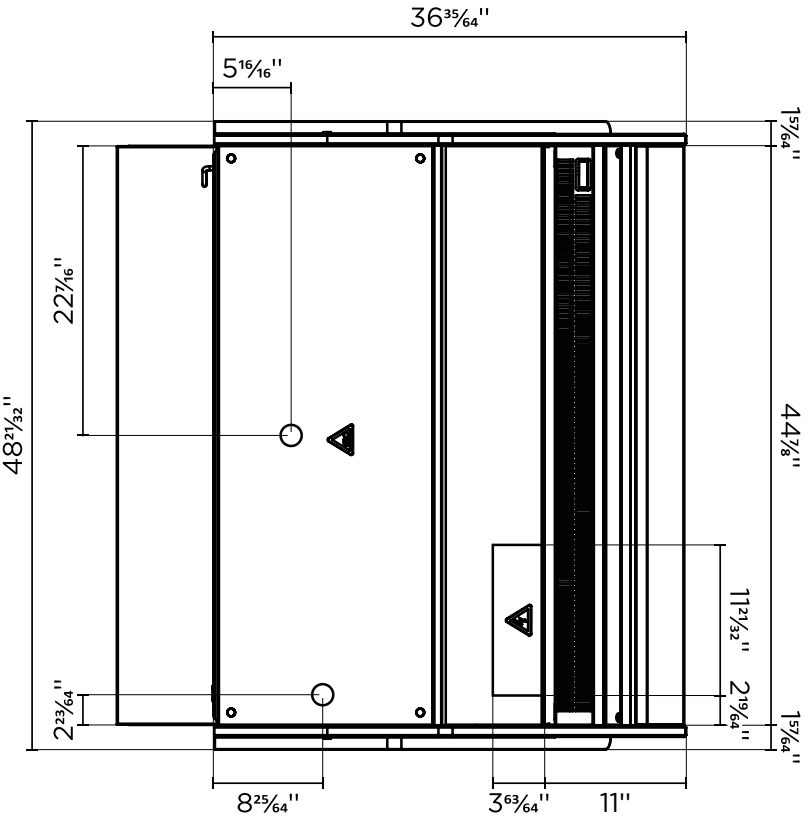
Implantation

Drain outlet

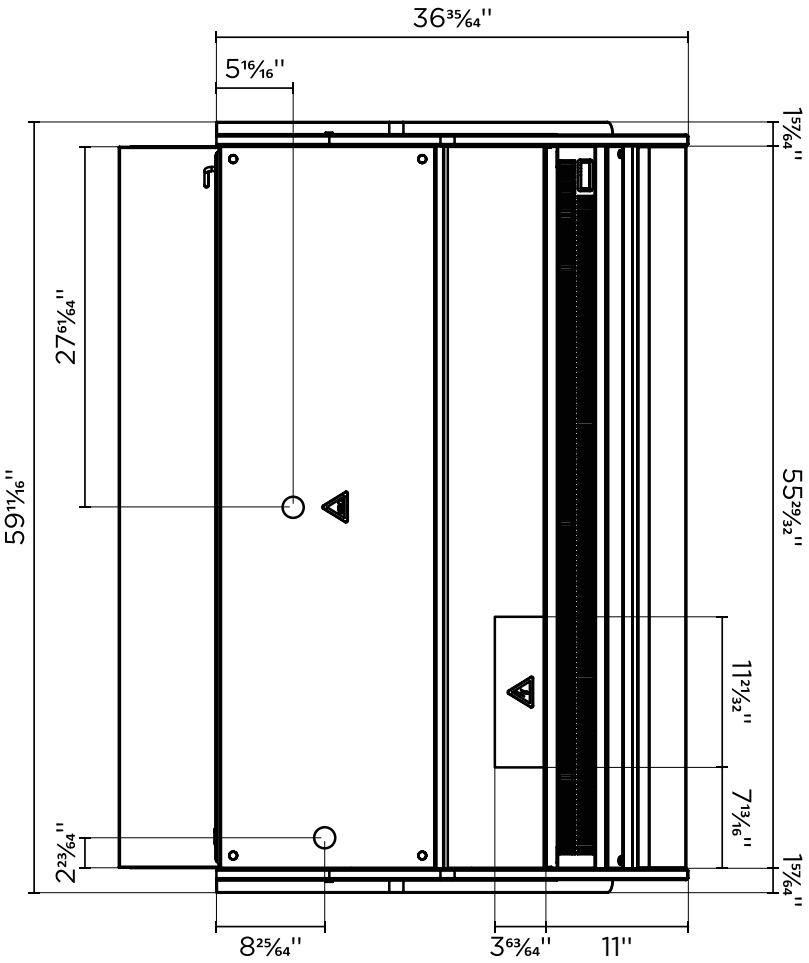
Electrical board

Refrigeration piping

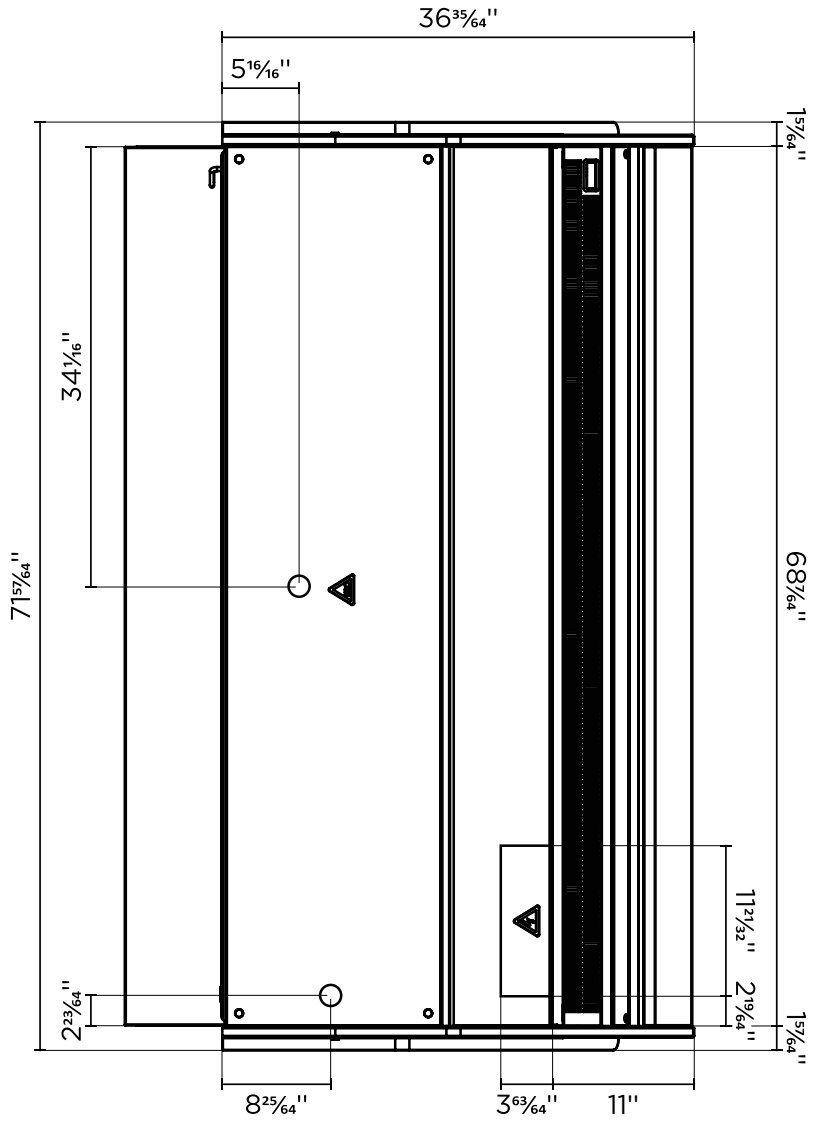



36 35/64''
5 16/16''
1 57/64''
22 7/16''
48 21/32''
44 7/8''
11 21/32''
2 19/64''
2 23/64''
1 57/64''
8 25/64''
3 63/64''
11''

KGL-OU-50-S


36 35/64''
5 1/16''
1 57/64''
27 61/64''
59 11/16''
55 29/32''
11 21/32''
7 13/16''
2 23/64''
1 57/64''
8 25/64''
3 63/64''
11''

KGL-OU-60-S


36 35/64''
5 16/16''
1 57/64''
34 1/16''
71 57/64''
68 7/64''
11 21/32''
2 19/64''
2 23/64''
1 57/64''
8 25/64''
3 63/64''
11''

KGL-OU-80-S

KGL Overunder series intended to multipurpose, are type 1 equipment - 75°F/55%RH.
Temperature for both compartments is set for 36°F, having has standard option the possibility during service to transform the upper compartment in dry mode.
The shelves on the upper compartment have a 5,5 lb/ft2 loading limit.
The shelves on the lower compartment have a 31 lb/ft2 loading limit.

Model	Dimensions (LxDxH in inches)	Service dimensions (LxDxH in inches)	Volume (ft^3)
KGL-OU-40-S	35⅞'' x 39⁹⁄₁₆'' x 59¼''	35⅞'' x 44¹⁄₁₆'' x 59¼''	
KGL-OU-50-S	48¹¹⁄₁₆'' x 39⁹⁄₁₆'' x 59¼''	48¹¹⁄₁₆'' x 44¹⁄₁₆'' x 59¼''	
KGL-OU-60-S	59¹¹⁄₁₆'' x 39⁹⁄₁₆'' x 59¼''	59¹¹⁄₁₆'' x 44¹⁄₁₆'' x 59¼''	
KGL-OU-80-S	71⅞'' x 39⁹⁄₁₆'' x 59¼''	71⅞'' x 44¹⁄₁₆'' x 59¼''	

2 Getting started with your KGL Overunder series

2.1 Location

To your new equipment perform well please respect the following warnings:

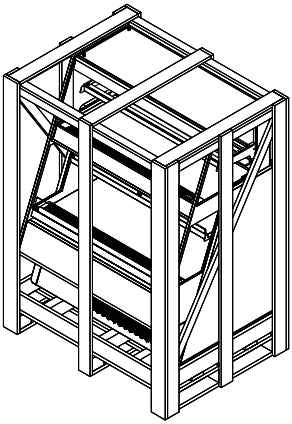
- ⚠ This is type 1 equipment, inte nded to work with 75°F / 55%RH.
- ⚠ This equipment is intended for maintaining temperature only.
- ⚠ Be sure products are not ambient temperature (must be cold)
- ⚠ This equipment must be located in an indoor environment.
- ⚠ Check for airdrafts and avoid them.
- ⚠ Air movement from ac units shouldn't be directed to the equipment.
- ⚠ The equipment must not be directly or indirectly exposed to the sun.
- ⚠ Check for rejected heat from another refrigeration units and avoid that.
- ⚠ Place the equipment in a levelled floor.
- ⚠ Do not obstruct the air way in front of the condenser.
- ⚠ Make sure there is a drain preparation (remotes and fish display cases only).
- ⚠ Models to be positioned against a wall keep a safe distance of 2³⁄₈''.
- ⚠ After servicing always close the doors.
- ⚠ Make sure you have a suitable electrical installation.
- ⚠ This equipment should be handled by a qualified technician.

2.2 Uncrating

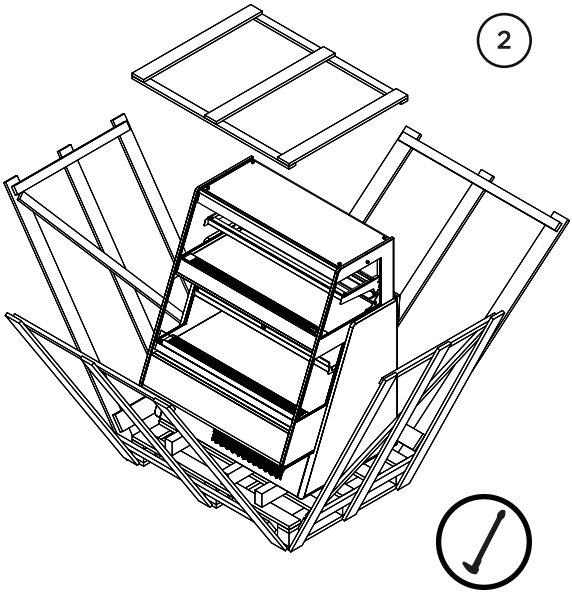
⚠ All operations must be done carefully.

⚠ All plastic protective films must be removed before using the equipment for the first time.

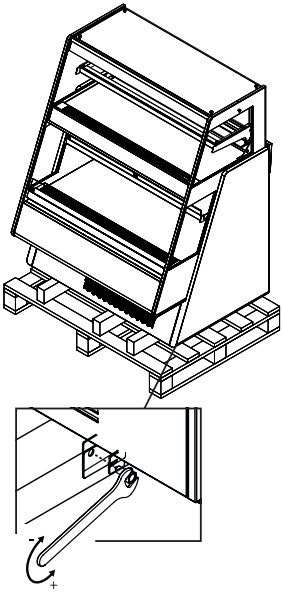
1



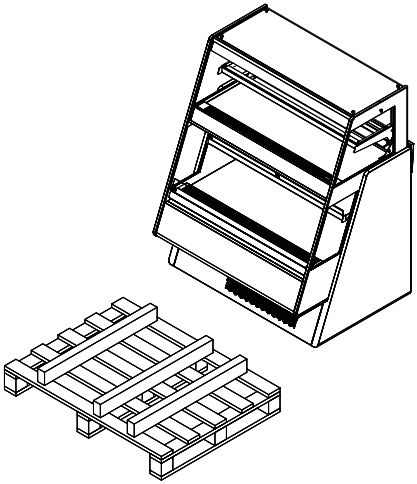
2



3



4



2.3 Check for damage

At the end of production HYDRA KOOL products are carefully inspected. No damaged units are sent out.
HYDRA KOOL doesn't take responsibility for damage between factory and client.

Possible damage on the unit must be checked to file a claim near the transportation company.

The unit must be checked in the following points:

Exterior panels

Doors

Shelves

Glasses

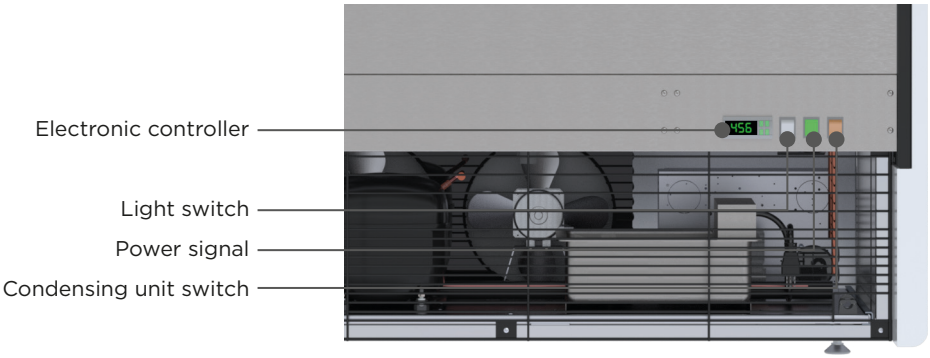
Paint job

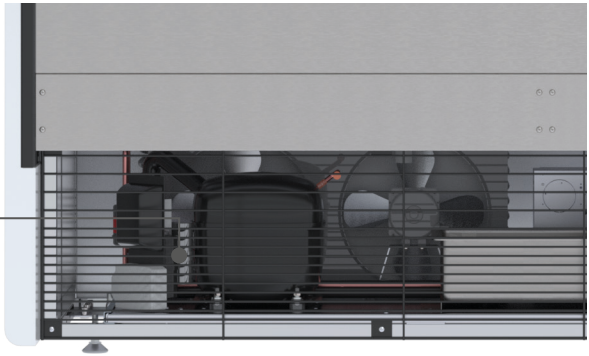
Door handles

Top structure

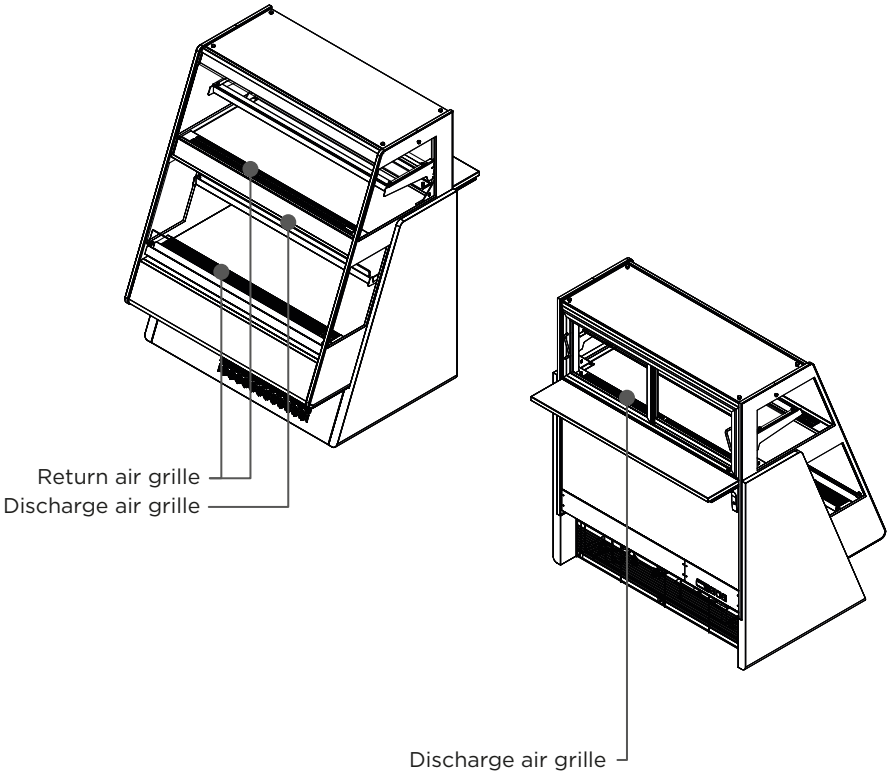
2.4 Control panel and main features

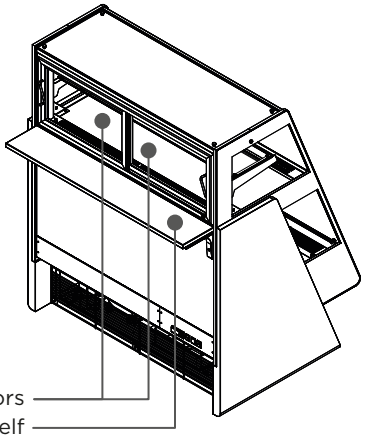
The pictures below, shows the main features and all necessary controls





Self contained control panel

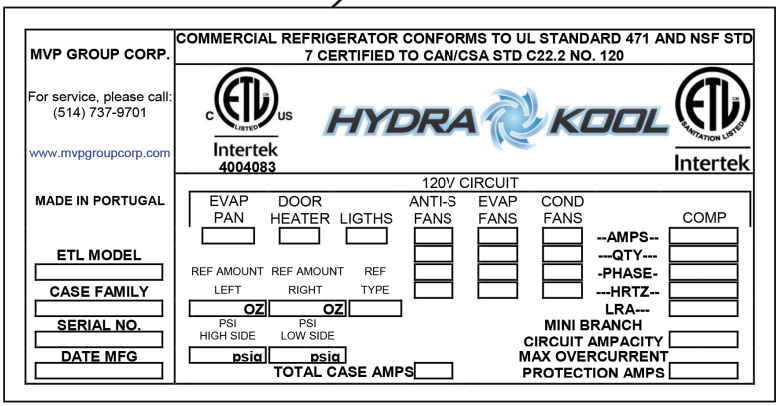




2.5 Check serial, model numbers and requested options

Before start your equipment, check the serial number, model numbers and requested options.
This inspection should be made visually in the following items:

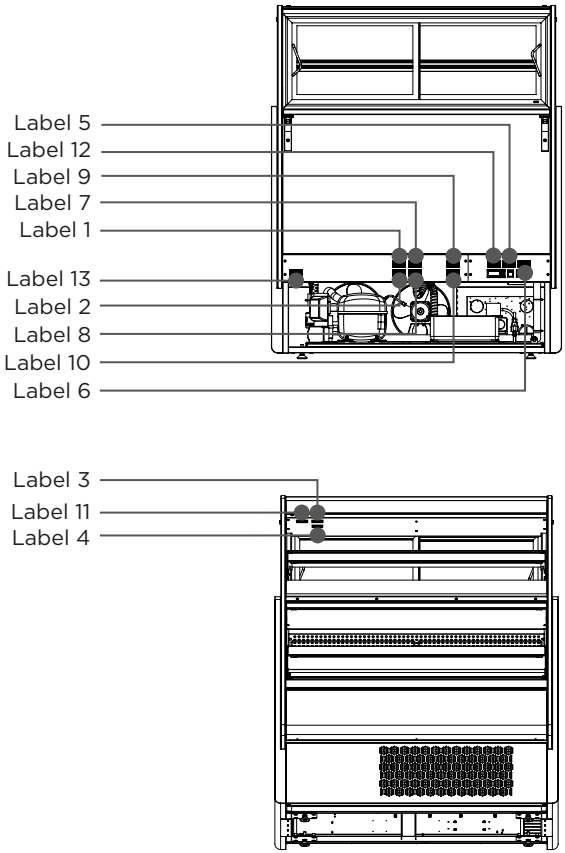
Self contained numbers

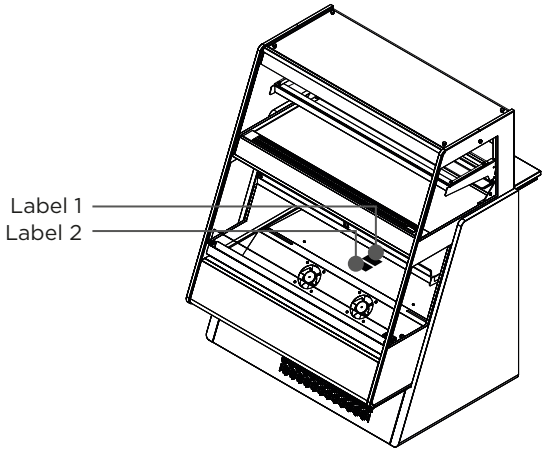


2.6 Warning/Caution labels

⚠ Before starting, HYDRA KOOL products have caution and warning labels to be respected.

Self contained labels





Label 1

CAUTION

MOVING PARTS.
DO NOT OPERATE UNIT
WITH (PART) REMOVED

Label 2

ATTENTION

PIÈCES MOBILES.
NE FAIRE PAS
FONCTIONNER AVEC
DES PIÈCES ENLEVER

Label 3

-NOTE-

TYPE 1 EQUIPMENT - AMBIENT LOCATION MUST NOT EXCEED 75 F AND 55% R.H.

Label 4

-NOTE-

CETTE VITRINE TYPE 1 EST CONÇUE POUR FONCTIONNER SELON LES CONDITIONS DU MAGASIN ET NE DOIT DÉPASSER
75 F AND 55% R.H.

Label 5

CAUTION

CONDENSING UNIT SWITCH ONLY

Label 6

ATTENTION

INTERRUPTEUR DE L'UNITÉ DE CONDENSATION UNIQUEMENT

Label 7

CAUTION

RISK OF ELECTRIC SHOK.
DISCONNECT ALL
POWER BEFORE
SERVICING UNIT

Label 8

ATTENTION

RISQUE DE CHOC
ELECTRIQUE.
AVANT TOUT TRAVAIL
COUPER LE COURANT

Label 9

CAUTION

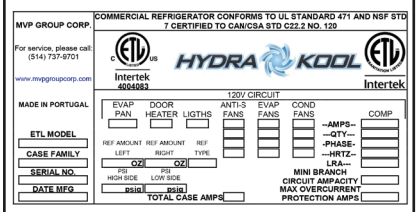
HOT PARTS.
DO NOT OPERATE UNIT
WITH (PART) REMOVED

Label 10

ATTENTION

PIÈCES BRULANTES.
NE FAIRE PAS
FONCTIONNER AVEC LES
PIÈCES ENLEVER

Label 11



Label 12

120V / 60Hz

Label 13

Warning

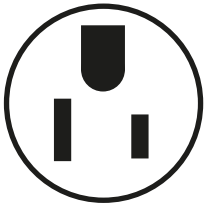
- This appliance requires a properly grounded dedicated circuit using a NEMA rated wall receptacle do not remove the grounding prong on the plug or the risk of an injury due to shock from the ungrounded electrical service may occur.

- This product can expose an individual to chemicals that have been identified by the state of California to possibly be dangerous leading to various diseases birth defects or other human reproductive system harm. For more information go to www.p65warnings.ca.gov.

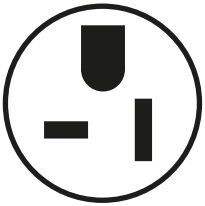
2.7 Check your electrical installation

⚠ This equipment is intended to be connected to an outlet with 115V/ 60Hz/ 1 phase.

⚠ For the wright connection check tension and frequency stated in the marking plate.



Nema-5-15P



Nema-5-20P

2.8 Plugging and start

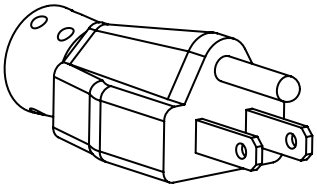
To start your equipment follow the steps:

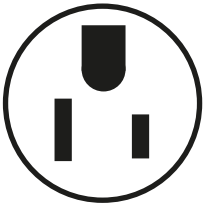
1 - Check for page with parameters inside the manual.

2 - After uncrating and placed the equipment respecting all warnings set in 2.1 chapter, and all switches are set to off position.

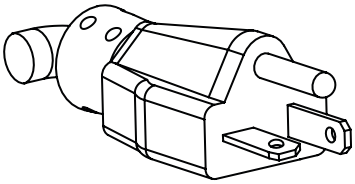
⚠ Connect the equipment.

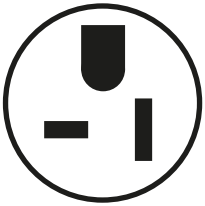
⚠ Make sure you have the correct outlet!





Nema-5-15P



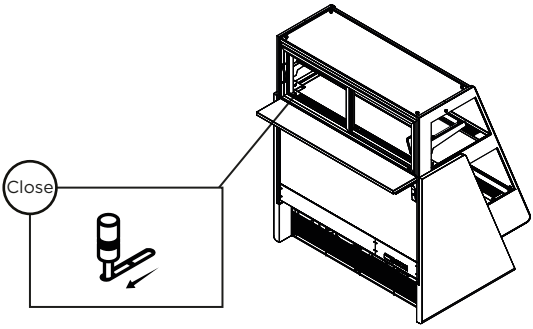


Nema-5-20P

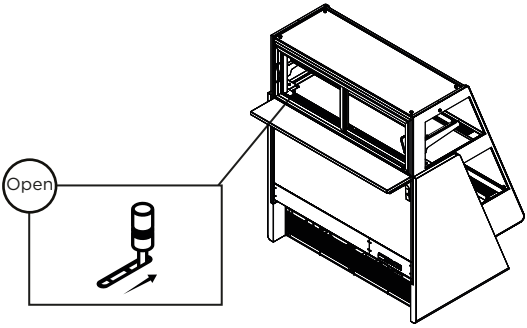
3 - Check lights, using button referenced on chapter 2.4. If not working consult the maintenance chapter.

4 - Select operation mode:

Dry/cooling : Upper compartment dry and lower compartment cooling.



Cooling/cooling: Upper compartment cooling and lower compartment cooling.

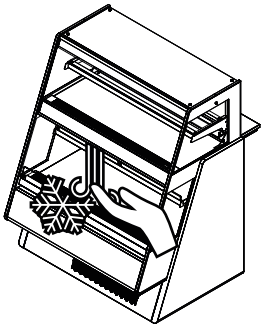


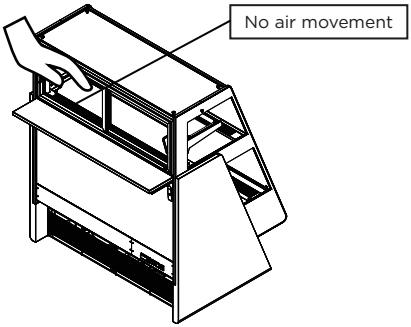
5 - Turn ON power button referenced in 2.6 chapter

⚠ Noise will be heard when compressor starts! If compressor doesn't start, call a technician!

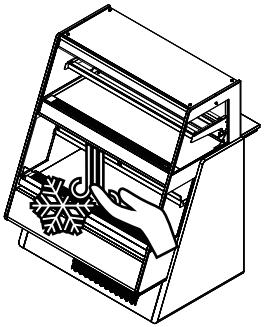
6 - Check for air movement in the discharge air grille.

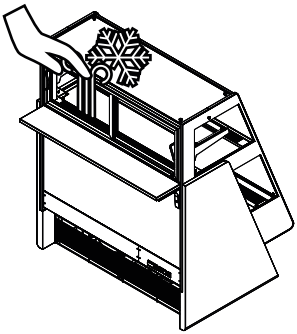
Dry/cooling:





Cooling/cooling:



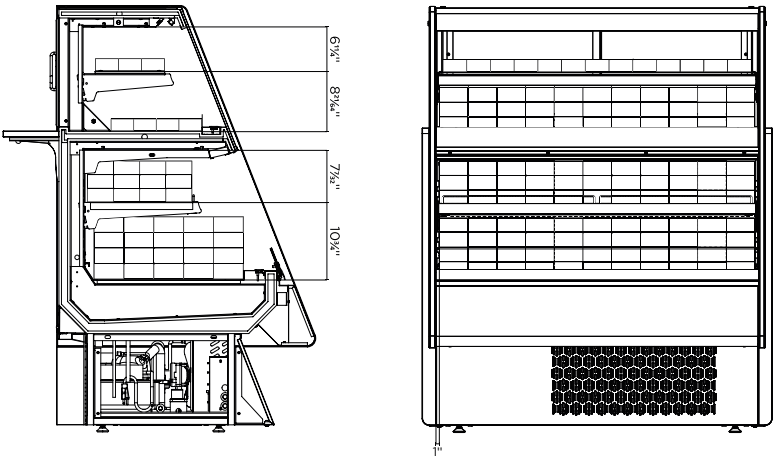


7 - Before loading, leave the equipment working for about 2h.

8 - Load your KGL-Overunder series.

⚠ Loading must be done respecting loading limits and weight per square foot mentioned in page xx. This equipment is intended for maintaining temperature, be sure the products are cold, and not ambient temperature.

⚠ Volumes inside must respect the refrigerated shelf area.

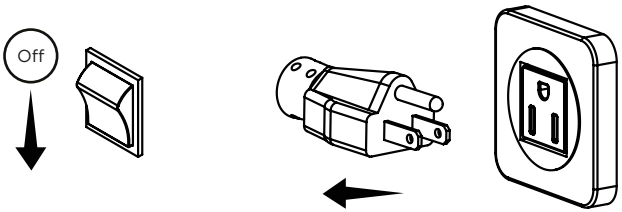


⚠ After loading check for any obstruction in the discharge and return air grilles.

⚠ Maintain doors closed after loading.

9 - If any problem encountered, see troubleshooting or call a qualified technician!

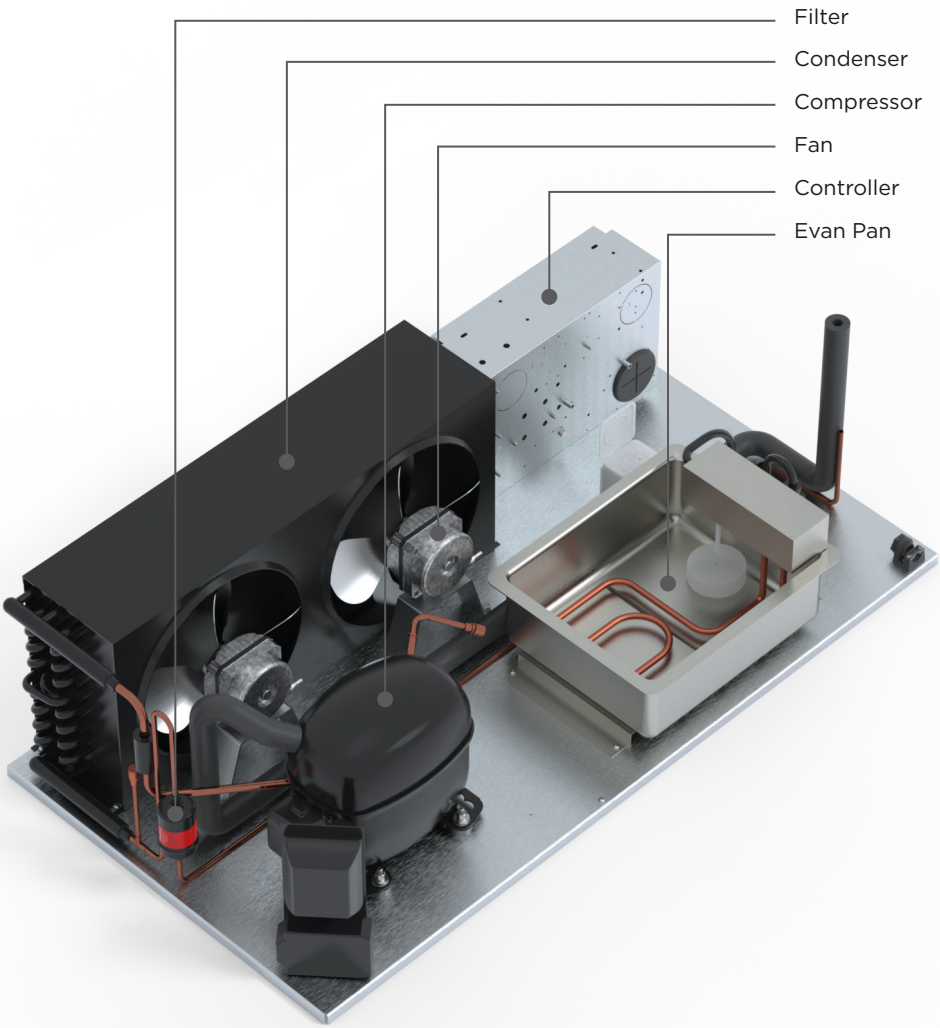
10- To fully disconnect the unit must pull the plug.



3 Refrigeration

3.1 Self contained refrigeration equipment and defrost

The refrigeration equipment it's laid out in the base of the equipment.


Filter
Condenser
Compressor
Fan
Controller
Evan Pan

All self contained KGL Overunder series use the following equipment: capillary tube, finned coil ventilated systems (condenser/evaporator), hermetic compressor, electrical water evaporation system.

Model	Circuit pressure (psig)		Refrigerant and charge (OZ)	Defrost
	High side	Low side		
KGL-OU-40-S	331	174	R 404A xx	Automatic 4/day
KGL-OU-50-S	331	174	R 404A xx	Automatic 4/day
KGL-OU-60-S	331	174	R 404A xx	Automatic 4/day
KGL-OU-80-S				

4 Electrical

4.1. Electrical specifications data

⚠ Electrical data can be found on the marking plate.

Standard equipment include led lighting.

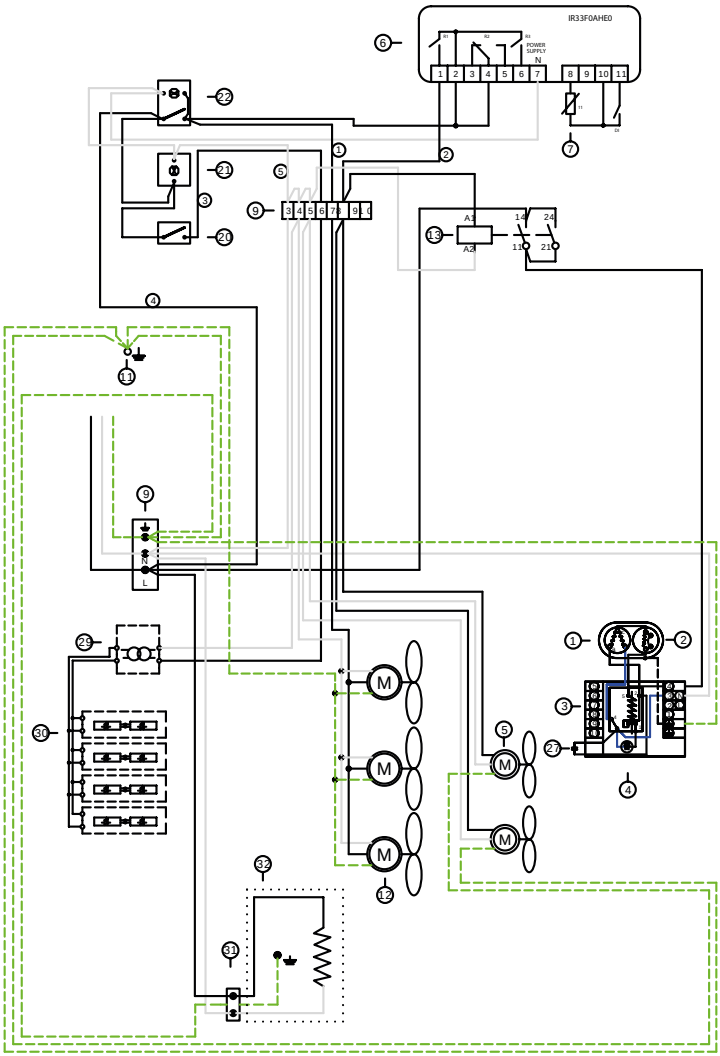
115V/60Hz/1 phase

Model	Compressor F.L.A./L.R.A.	Lights	Fans		Evap pan	Total amps (self contained)
			EVP	CND		
KGL-OU-40-S						
KGL-OU-50-S						
KGL-OU-60-S						
KGL-OU-80-S						

The data regards to standard options only.

4.3. Electrical diagrams

KGL-OU-50-S



Nº	Discription
1	Compressor
2	Overload
3	Relay
4	Start capacitor
5	Condenser fan
6	Controller
7	Temperature probe
9	Terminal block
11	Ground connection
12	Evaporator fan
13	Compressor relay
20	Light Switch
21	Pilot light
22	Switch
27	Run capacitor
29	Transformer
30	Led lighting
31	Socket
32	Evaporative condensate pan

4.4. Electronic controller

Carel - IR33F0AHE0

TECHNICAL SPECIFICATIONS

	Model	**Voltage**	**Power**
Power supply	*IRxxxxExxxx*	*230 V~, 50/60 Hz*	*3 VA, 25 mA~max.*
	IRxxxxAxxxx	*115V~, 50/60 Hz*	*3 VA, 50 mA~max.*
	IRxxxxHxxxx	*115 to 230 V~, 50/60 Hz*	*6 VA, 50 mA~max.*
	IRxxxxLxxxx *IRxxxx0xxxx*	*12 to 24V~, 50/60 Hz, 12 to 30 Vdc* *12V~, 50/60 Hz, 12 to 18 Vdc*	*3 VA, 300 mA~/mAdc max.* *Use only SELV power supply*
Insulation guaranteed by the power supply	*IRxxxxExxxx* *IRxxxxAxxxx* *IRxxxxHxxxx*	*insulation in reference to very low voltage parts*	*reinforced* *6mm clearance, 8 mm creepage* *3750 V insulation*
		insulation from relay outputs	*basic* *3mm clearance, 4 mm creepage* *1250V insulation*
	IRxxxxLxxxx *IRxxxx0xxxx*	*insulation in reference to very low voltage parts*	*externally guaranteed by safety transformer (SELV power supply)*
		insulation from relay outputs	*reinforced* *6mm clearance, 8 mm creepage* *3750 V insulation*
Inputs	*S1 (probe 1)*	*NTC (IRxxx0xxxxx) o NTC e PTC (IRxxx7xxxxx)*	
	S2 (probe 2)	*NTC (IRxxx0xxxxx) o NTC e PTC (IRxxx7xxxxx)*	
	DI 1 *S3 (probe 3)*	*free contact, contact resistance < 10 Ω, closing current 6 mA* *NTC (IRxxx0xxxxx) o NTC e PTC (IRxxx7xxxxx)*	
	DI 2 *S4 (probe 4)*	*free contact, contact resistance < 10 Ω, closing current 6 mA* *NTC (IRxxx0xxxxx) o NTC e PTC (IRxxx7xxxxx)*	
	Maximum ditance of probes and digital inputs less than 10 m. ***Note:** during installation keep the power and loads connection separate from probe cables, digital inputs, repeater display and supervisory system.*		
Probe type	*Std. CAREL NTC*	*10 kΩ at 25 °C, - 50T90 °C range*	
		measurement error:	*1 °C in the - 50T50 °C range*
			3 °C in the - 50T90 °C range
	NTC high temperature	*50 kΩ at 25 °C, - 40T150 °C range*	
		measurement error:	*1,5 °C in the - 20T115 °C range*
			4 °C in the - 20T115 °C range
	PTC std. CAREL (specific model)	*985 Ω a 25 °C, range da - 50T150 °C*	
		measurement error:	*2 °C in the - 50T50 °C range*
			4 °C in the - 50T150 °C range

Relay outputs	*depending on the model*					
		EN 60730-1			*UL 873*	
	model	*relay*	*250 V~*	*operating cycles*	*250 V~*	*operating cycles*
	IRxxxx(E,A) (P,Q,S,U,V,X,Y,Z)xxx	*R2 (*)*	*5(1)A*	*100000*	*5 A resistive 1FLA 6 LRA C 300*	*300000*
	IRxxxx(E,A) (N,R,C,B,A,M,L,T)xxx	*R3 (*)*	*5(1)A*	*100000*	*5 A resistive 1FLA 6 LRA C 300*	*300000*
	IRxxxx(E,A) (N,R,C,B,A,M,L,T)xxx IRxxxx(O,L,H) (N,R,C,B,A,M,L,T)xxx	*R1,R2 R2,R3 R4 (*)*	*8 (4)A N.O. 6 (4)A N.C. 2 (2)A N.O./N.C.*	*100000*	*8 A resistive 2FLA 12 LRA C300*	*300000*
	IRxxxx(E,A) (P,Q,S,U,V,X,Y,Z)xxx IRxxxx(O,L,H) (N,R,C,B,A,M,L,T)xxx	*R1 R1 (*)*	*12 (2)A N.O./N.C.*	*100000*	*12 A resistive 5FLA 30 LRA C300*	*300000*
	insulation from very low voltage parts			*reinforced*		
				6 mm clearance, 8 mm creepage		
				3750 V insulation		
	insulation between the relay outputs indipendent			*basic*		
				3 mm clearance, 4 mm creepage		
				1250 V insulation		
SSR outputs	Max output voltage : 12 Vdc, Output resistance: 600 Ω, Max output current: 20 mA					

(*): Relay not suitable for fluorescent loads (neon lights, ...) that use starters (ballasts) with phase-shift capacitors. Fluorescent lamps with electronic control devices or without phase-shift capacitors can be used, within the operating limits specified for each type of relay.

Connessioni		***Type of connection***			***Cross-section Max. current***
	Model	*Relay*	*P. Supply*	*Probes*	*for wires from 12 A*
	IRxxxxxx0xx	*screw*	*screw*	*screw*	*0.5 a 2.5 mm²*
	IRxxxx(E,A)x1xx	*faston*	*faston*	*removable*	
	IRxxxxxx2xx	*removable*	*removable*	*removable*	
	IRxxxx(E,A)x3xx	*faston*	*faston*	*screw*	
	IRxxxx(E,A)x5xx	*vertical screw*	*vertical screw*	*vertical screw*	

the installer has to provide the correct dimensioning of the power supply and cable connection between the instruments and the loads. Depending on the model, the maximum current in the common terminals 1, 3 or 5 is 12 A. When using the controller at maximum operating temperature and full load, use cables featuring a maximum operating temperature of 105 °C at least.

⚠ Controller must be handled by a qualified technician.

Signals on the display

The blinking status indicates a request for activatuin that cannot be implemented until the end of the corresponding delay times.

Icon	Function	ON	OFF	blink	Startup
	COMPRESS.	compressor ON	comp. OFF	compressor request	
	FAN	fan ON	fan OFF	fan request	
	DEFROST	defrost in progress	defrost not required	defrost request	
AUX	**AUX**	auxiliary output AUX active	auxiliary output AUX not active	anti-sweat heater function active	
	ALARM	delayed external alarm (before the expiry of the time "A7")	no alarm present	alarms in normal operation (eg. high/low temp.) or alarm from ext. digital input immediate or delayed	
sent	**CLOCK**	at least one timed defrost has been set	no timed defrost is present	clock alarm	ON if Real-Time Clock present
	LIGHT	auxiliary output LIGHT ACTIVE	auxiliary output LIGHT NOT ACTIVE	anti-sweat heater function active	
	SERVICE		no malfunction	malfunction (eg. EEPROM error or probe fault)	
HACCP	**HACCP**	HACCP function	HACCP function enabled	HACCP alarm (HA and/or HF) not enabled	
	CONTINUOUS CYCLE	enabled	not enabled	request	

Controller must be handled by a qualified technician.

Buttons on the keypad

Normal operation

Button	Press. the button alone	Pressing together with other buttons		
Prg / **mute**	· if pressed for more than 5 s accessed the menu for setting type "F" (frequent) parameters · **in the event of alarm:** silences the audible alarm (buzzer) and disables the alarm relay	· if pressed for more than 5 s together with the **SET** button, accesses the menu for setting the type "C" (configuration) or downloading the parameters · if pressed for more than 5 s together with the **UP/AUX** button resets any alarm with manual reset	**Start-up :** if pressed for more than 5 s at start-up, starts the default parameter setting	**Automatic address assignment:** if pressed for 1 s enters the automatic serial address assigning procedure
▲ / **aux**	if pressed for more than 1 s, enables/disables the auxiliary output	· if pressed for more than 5 s together with **DOWN/DEF** button, enables/disables the continuous cycle operation · if pressed for more than 5 s with **SET** button, starts the procedure for printing the reports (function available, with management to be implemented) · if pressed for more than 5 s together with **PRG/MUTE** button, resets any active alarm with manual reset		
def / ▼	if pressed for more than 5 s, enables/disables a manual defrost	· if pressed for more than 5 s together with **UP/AUX** button, enables/disables the continuous cycle operation · if pressed for more than 1 s together with **SET** button, displays a submenu with the **HACCP** alarm parameters (HA, HAn, HF, HFn)		
Set	if pressed for more than 1 s, displays and/or set the set point	· if pressed for more than 5 s together with **PRG/MUTE** button, accesses the menu for setting the type "C" parameters "C" (configuration) or downloading the parameters · if pressed for more than 1 s together with **DOWN/DEF** button, displays a submenu with the **HACCP** alarm parameters (HA, HAn, HF, HFn) · if pressed for more than 5 s together with **UP/AUX,** starts the procedure for printing the report (function available, with management to be implemented)		

Main parameters

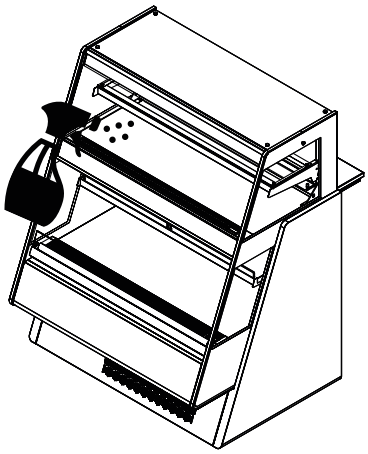
Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	/3	Probe display response	MSYF	-	C	0	15	0
	/5	Select °C or °F 0: °C 1: °F	MSYF	flag	C	0	1	0
	/A2	Configuration of probe 2 (S2) 0: Probe absent 1: Product probe (display only) 2: Defrost probe 3: Condenser probe 4: Antifreeze probe	YF MS	- -	C C	0 0	4 4	2 2
	/c1	Calibration of probe 1	MSYF	°C/°F	C	-20	20	0,0
	St	Temperature set point	MSYF	°C/°F	F	rl	r2	0,0
	rd	Control delta	SYF	°C/°F	F	0,1	20	2,0
	c2	Minimum compressor OFF time	SYF	min	C	0	15	0
	dI dP1	Interval between defrosts Maximum defrost duration, evaporator	SYF SYF	hours min	F F	0 1	250 250	8 30

5 Maintenance

5.1 Exterior cleaning

⚠ All operations must be done with the unit disconnected.

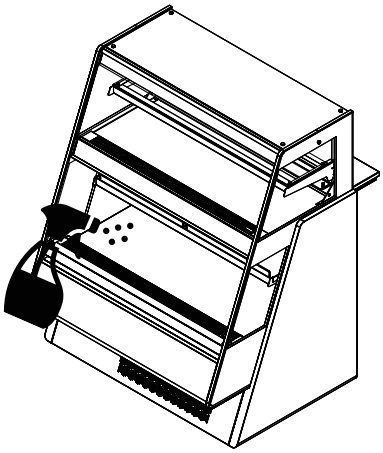
Clean surfaces (glass/metal/plastic) with soft detergents or warm water. Do not use abrasive cleanser.



5.2 Interior cleaning

⚠ All operations must be done with the unit disconnected.

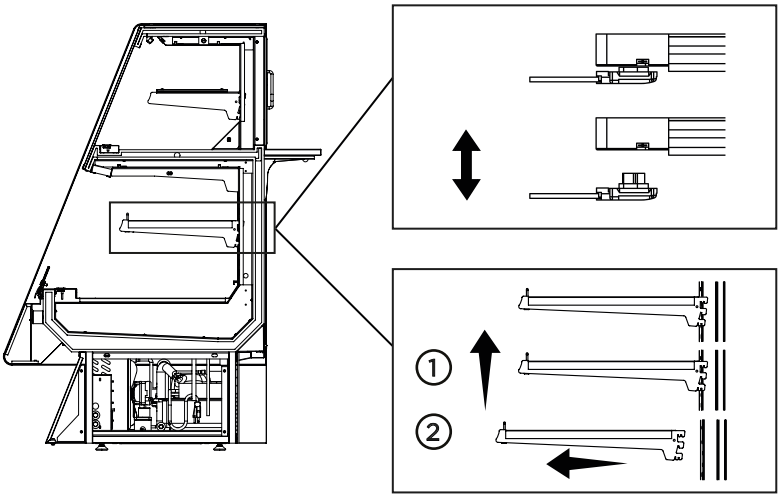
Clean surfaces (glass/metal/plastic) with soft detergent or warm water. Do not use abrasive cleanser.



5.3 Shelf removing/ adjustment

⚠ All operations must be done with the unit disconnected.

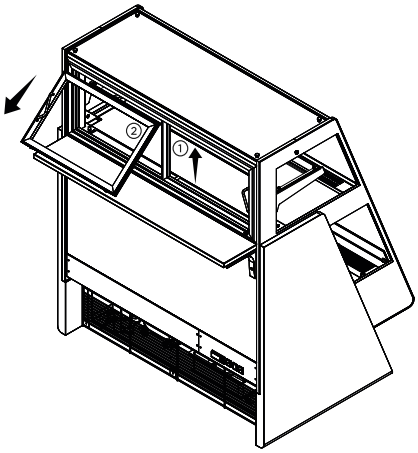
To remove or adjust shelves take care with light connections.



5.4 Sliding doors removal

Sliding doors are easy to take off.
- Grab door push up and then tilt the bottom towards you.

To put the door back on, just reverse the previous step.



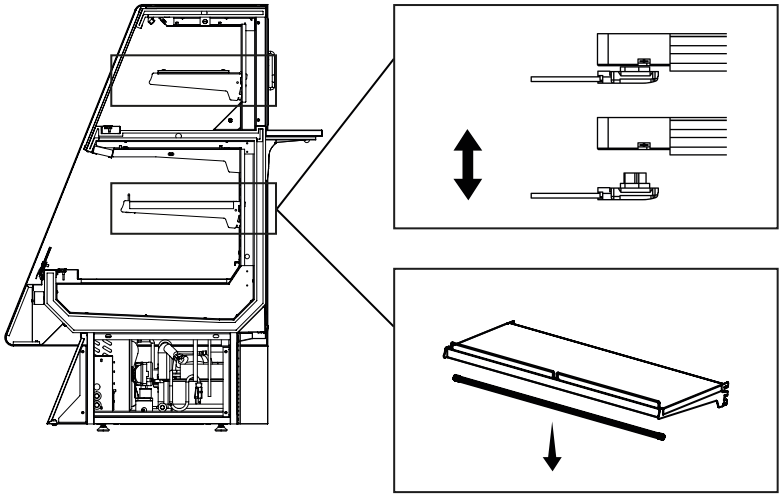
5.5 Light substitution

⚠ All operations must be performed by a qualified technician.

⚠ All operations must be done with the unit disconnected.

To replace lights follow the steps:

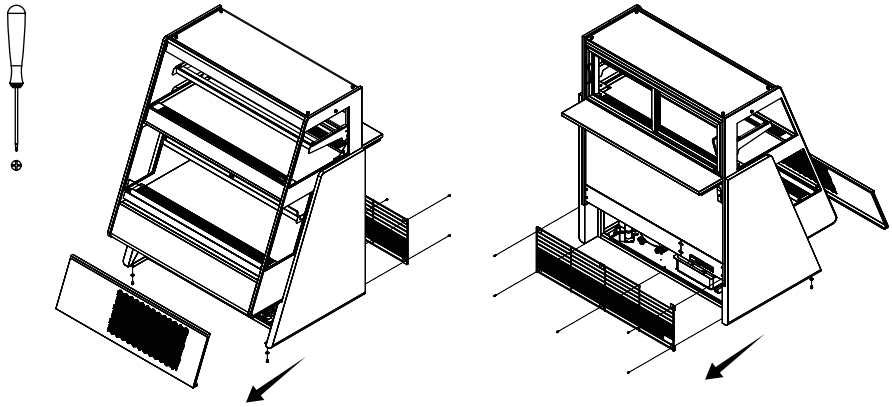
- Turn off power and unplug the equipment.
- Disconnect the light
- Unscrew the light holder and remove the light
- Insert a new light in the same place of the old one, screw the holder connect it
- Screw the holder and connect it
- Plug and turn on the light



5.6 Panels and protection grille removal

⚠ Th is operation must be performed by a qualified technician.

⚠ All operations must be done with the unit disconnected.

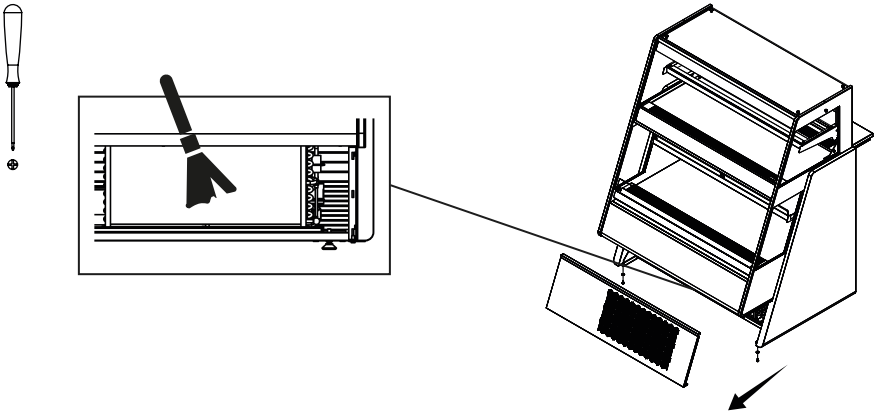


5.7 Condenser cleaning

⚠ All operations must be performed by a qualified technician.

⚠ All operations must be done with the unit disconnected.

Condenser must be regularly cleaned (every month). Use a brush or vacuum it.
To get to the condenser must remove frontal protection.



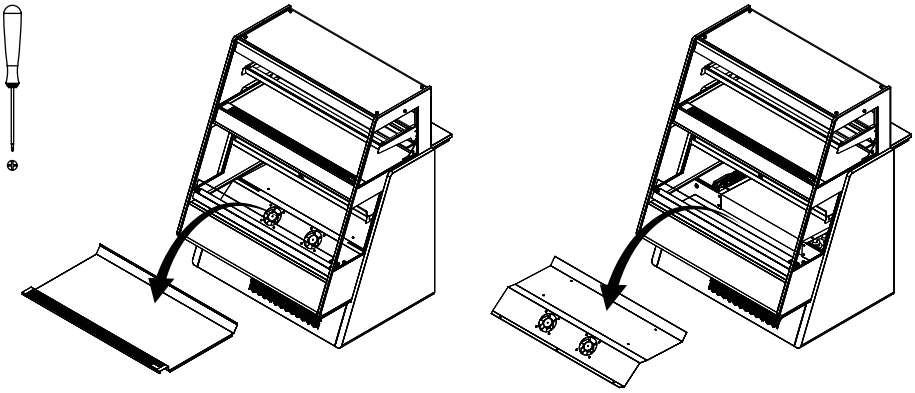
5.8 Evaporator cleaning

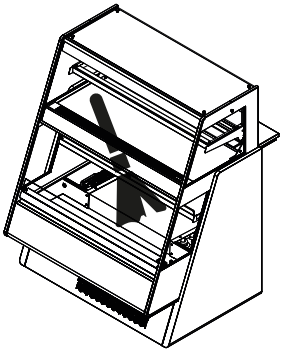
⚠ All operations must be performed by a qualified technician.

⚠ All operations must be done with the unit disconnected.

To access the evaporator:

- Open your unit
- Lift and remove exposition panels
- Use tool for the screws and clean





5.9 Evap Pan cleaning

⚠ This operation must be performed by a qualified technician.

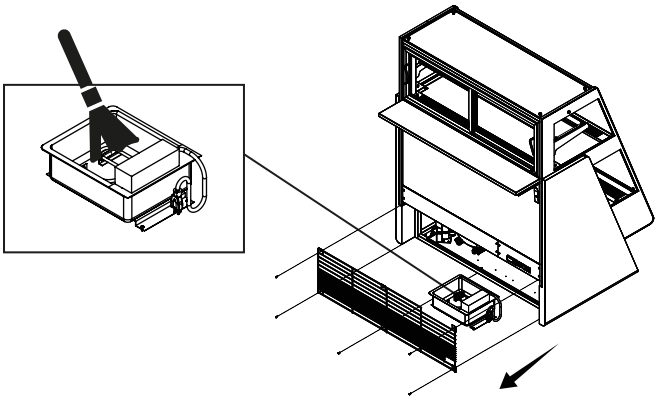
⚠ All operations must be done with the unit disconnected.

⚠ Pan can be hot!

⚠ This operation must be done weekly.

To access the evap pan:

- Remove protection grille.
- Unplug the evap pan.
- Relieve the screws and take the evap pan off.
- Clean with soft detergent or warm water.



6 Troubleshooting/Service

6.1 Troubleshooting

⚠ Service must be performed by a qualified technician.

Doors not closing:

Check for leveled floor.

Check for obstruction.

Remove doors and check the bearings.

Lights not working:

Check light switch position.

Check light connections.

Warm case temperature:

Check for air return grille obstruction.

Check for air drafts.

Check store temperature.

Check for condenser obstruction and cleaning.

Check for frozen evaporator.

Check set point.

Display area is over filled.

Fans not working:

Check electrical connections.

Check for any debris.

Case not aligning:

Check for leveled floor.

Check instructions for joining.

Display not working:

Check main power switch position..

Check electrical connections.

Compressor not starting:

Disconnect switch open.

Blown fuse.

Overload protective tripped.

Low charge of refrigerant.

Relay defective.

Equipment runs constantly:

- Condenser dirty.
- Condenser fan malfunction.
- Temperature and relative humidity too high.

Starting relay burns out:

- Low voltage.
- High voltage.
- Compressor short cycles.
- Incorrect running capacitor.
- Incorrect relay.

Head pressure too high:

- Unit overcharged.
- Air or other non condensable gases in the system.
- Clogged condenser.
- Defective condenser fan motor.
- Unit location too hot.
- Restriction in charge line.

Head pressure too low:

- Insufficient refrigerant charge.
- Leak in the system.
- Cold location.

Noisy unit:

- Compressor oil charge low.
- Fan blade causing vibrations.
- Tube rattle.
- Loose parts.
- Case not leveled.

6.2 Service

⚠ This operation must be performed by a qualified technician.

⚠ For spare parts, contact your distributor.

Service by	Type of action	Date	Serial number and model

7 Warranty

12 month warranty for all parts from the invoice date. A new part will be provided free of charge. Defective part must be returned to the manufacturer.

Warranty claims: All claims must include model number, serial number, date of purchase, date of installation and additional information about the supposed defect.

All service work must be authorized by MVP group.

MVP group reserves the right to select the service company.

Loss of food or other damages caused by faulty equipment aren't covered by this warranty.

Warranty does not cover damage when uncrating.

Work made necessary, by lack of maintenance or cleaning are not covered by this warranty.

Warranty does not cover damage or malfunction result of improper use or installation.

Warranty does not cover negligence, misuse and operation on wrong voltage.

Warranty does not apply if the serial number is altered or defaced.

Warranty does not cover any glass break.

Warranty doesn't cover any act of negligence.

Warranty doesn't cover defects on units with unoriginal parts.

Warranty doesn't cover acts of repair or maintenance by non fully authorized personel.

8 Notes

This page has been left blank intentionally.

This page has been left blank intentionally.

This page has been left blank intentionally.

MVP GROUP CORPORATION
www.mvpgroupcorp.com