

Instruction Manual

Meat/Deli/Fish/Salad Cases

Models: SAND series



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1 UNLOADING

The unit should be transported in the vertical position, and should be properly secured and packed.

2 PROPERTIES OF THE UNIT

2.1. Purpose

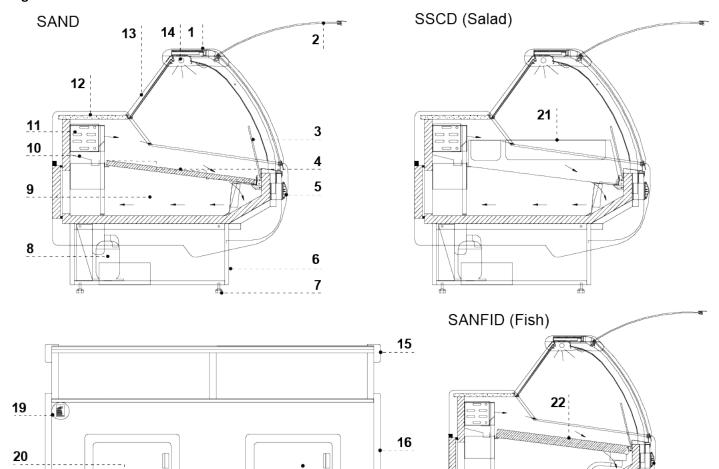
"SAND" series are universal cooling devices used for displaying a wide assortment of grocery products in singular packages, cooled to storage temperature. Apart from general display cases, we also offer display cases for salad ("SSCD" type) and fresh fish ("SANFID" type). Our display cases ensure universal and efficient display area for all types of commercial outlet. Temperature inside the display cabinet equals +1ºC/+4ºC with ambient temperature of +15°C/+25°C and relative air humidity of up to 55%, Depending on the location of the unit.

2.2. Description of the unit

"SAND" series display cases have dynamic or static cooling. The display cases are equipped with automatic defrosting and automatic condensate evaporation. Together with corner display cases ("SAN90-OUT" and "SAND90-IN" type) may be connected in sequences. The units can be ordered with self-contained and remote compressors. "SAND" series display cases are equipped with storage chamber. They are available in stationary or moving version. Our equipment is manufactured according to modern technologies and all have certificates required by law.

The description in this box signifies important information for user security and for proper operation of the device.

Figure 1 SAND Series



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- 1 Glass shelf
- 2 Telescopic front glass
- 3 Front screen
- 4 Flat or three-level steps display shelf
- 5 Front bumper
- 6 Base of the unit
- 7 Leveling legs
- 8 Compressor
- 9 Storage chamber
- 10 Rail (condensate outflow after defrosting the evaporator)
- 11 Evaporator coil

- 12 Granite top counter
- 13 Night screens made of plexiglass
- 14 LED lamp
- 15 ABS lamp hole plug
- 16 ABS sides
- 17 Storage chamber doors
- 18 Condenser cover (DO NOT block the air louver)
- 19 Serial plate
- 20 Control panel
- 21 Food containers ("SSCD" type)
- 22 Fish tank ("SANFID" type)

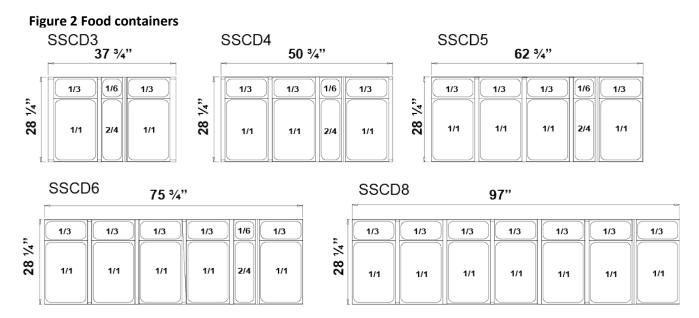


Table 1 Number of cross bars

Model	SSCD3	SSCD4	SSCD5	SSCD6	SSCD8
Number of cross bars	1	2	3	4	5

2.3. Technical data

Table 2 Technical data

Model	Voltage [V/Hz/Ph]	Rated Current [A]	Max shelf load [lbs/kg]	Weight [lbs/kg]
SAND3/SANFID3	115/60/1	8 (max.fuse:15)	110/50	320/145
SAND4/SANFID4	115/60/1	8 (max.fuse:15)	110/50	364/165
SAND5/SANFID5	115/60/1	8 (max.fuse:15)	110/50	430/195
SAND6/SANFID6	115/60/1	8 (max.fuse:15)	110/50	485/220
SANC8/SANFID8	115/60/1	8 (max.fuse:15)	110/50	850/295
SAND12/SANFID12	115/60/1	12 (max.fuse:15)	110/50	-
SSCD3	115/60/1	8 (max.fuse:15)	-	287/130
SSCD4	115/60/1	8 (max.fuse:15)	-	364/165
SSCD5	115/60/1	8 (max.fuse:15)	-	430/195
SSCD6	115/60/1	8 (max.fuse:15)	-	485/220
SSCD8	115/60/1	8 (max.fuse:15)	-	650/295
SAND90-OUT *	115/60/1	8 (max.fuse:15)	110/50	342/155
SAND90-IN*	115/60/1	8 (max.fuse:15)	110/50	397/180

^{*} Outside and inside corner display case

3. PREPARING THE DEVICE FOR START UP

The unit must be properly installed and located in accordance with the installation instructions before it is used.

3.1. Installation requirements

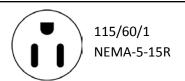
- Always use a dedicated circuit with the amperage stated on the unit.
- Plug into an outlet designed for the plug.
- Do not overload the circuit
- Do not use extension cords
- Never use adapters
- Never plug in more than one unit per electric circuit
- If in doubt, call an electrician.

IGLOO will not warranty any equipment that is connected to an extension cord or adapter plug.

The equipment may be turned on after confirmation of the fire protection efficiency with results of measures performed according to binding regulations!

■ NEMA Plugs

IGLOO refrigeration uses this type of plug. If you do not have the right outlet have a certified electrician install the correct power source



3.2. Unit Location

- Remove cardboard angles.
- Install the unit on a strong and leveled surface.
- To ensure proper operation the unit must be leveled from front to back and left to right with the leveling legs.
- Unit may malfunction if improperly leveled.
- Be sure there is sufficient ventilation around the entire unit
- Select a location a way from heat and moisture generating equipment.
- Avoid installation in a high ambient or humid location.
- High ambient temperatures will cause the compressor to overwork.
- Humidity may cause rust, condensation around the glass or stainless and decrease the efficiency of the unit

3.3. Connection and start-up

- Unpack the unit.
- Remove the protection foil from the elements of the unit (f. ex. from the inside of the unit, display shelves, front bumper).
- Unit should be placed on an even and on a sufficiently hard base and then level it with the help of levelling legs.

In the case of casters it is necessary to use wheel brake in order to immobilize the unit during operation

Figure 4

Figure 3 Leveling legs

A -Screw the leg in nuts

Figure 4 Caster wheels

A –Moving position

B -Brake



- If the user shall obtain a device partially disassembled to secure it during transportation, perform the following operations:
 - 1. Mount display shelves, hanging them on aluminum angle sections Figure 5/4,5
 - 2. Mount glass sides Figure 6/2

NOTE: In case of "SSCD" display cases, it is necessary to take out he universal salad tank from the display case before mounting the glass side Figure 5/1, in over to obtain free access to the ABS side and to easily screw the glass side with holding downs of the glass Figure 6/1

- 3. Mount ABS lamp hole plug according to Figure 6/3
- 4. (Concerns only "SSCD"), place universal salad tank in the display case. Place cross-bars under food containers in the module tank, and then place food containers according to Figure 2
- 5. Mount glass shelves according to Figure 6/5
- 6. Mount front screen Figure 6/7 and Figure 7
- 7. Mount night screens Figure 8
- 8. Place the condensate container on the basis of the equipment according to Figure 9
- The first cleaning of the equipment should be provided right after unpacking, and before turning it on. The unit should be cleaned with water at a temperature not exceeding 40°C with a neutral detergent. For washing and cleaning the equipment it is prohibited to use products containing chlorine and sodium varieties, which destroy the protective layer and components of the equipment! Any residue of adhesives or silicone on metal elements should be removed only with extraction naphtha (not applicable to items made of plastic!). Do not use other organic solvents

When cleaning the unit, do not use water jet. The unit should be cleaned with a moist cloth.

After installation of the equipment at the destination place it should be left to rest for at least 2 hours before turning it on (for devices with built in compressor) to set the level of refrigerant in order to prevent problems with startup of the unit.

WARNING: Keep the cooling circuit away from damage!

- Turn on the main switch (Figure 10/1)
- The temperature on thermostat control panel is Pre Set (Figure 10/3)
- Turn on the lighting switch (Figure 10/2)

Figure 5 Mounting salad tank in "SSCD" unit

- 1 Universal tank (for all lengths of display cases) used as an addition aiming to facilitate the disassembly salad tanks and the glass side (access to glass holding down- after pulling out the tank)
- 2 Module salad tank
- 3 Cross-bars for under food containers (placed only in tank (2), does not concern the universal tank (1))
- 4 Posterior aluminum angle section (at the back of the body)
- 5 Anterior aluminum angle section (at the front of the body)
- 6 Telescopic front glass system

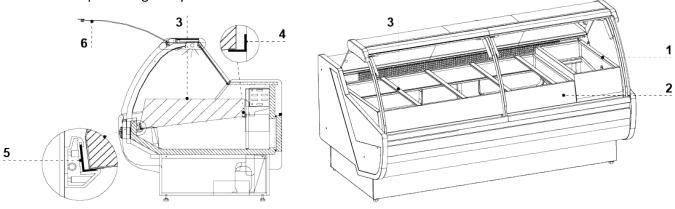


Figure 6 Assembly/ disassembly of glass elements

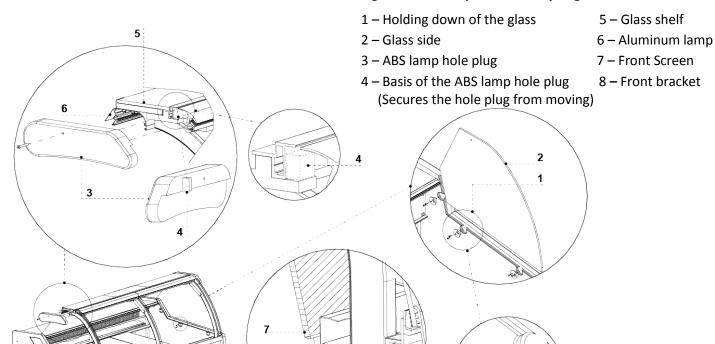
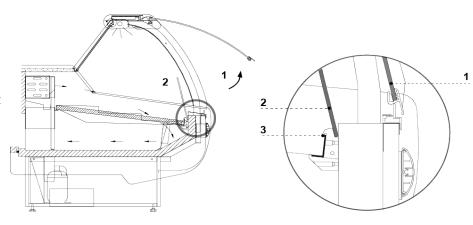


Figure 7 Assembly of front screens

- 1 Lift front glass
- 2 Place front screen on front bracket
- 3 Front bracket



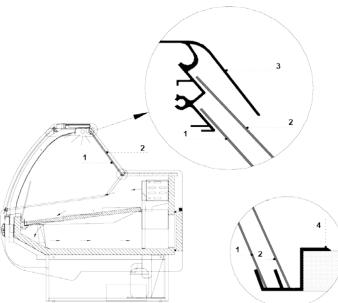


Figure 8 Assembly/disassembly of night screens

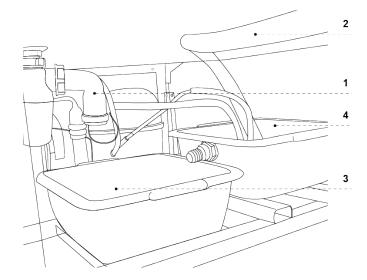
- 1 Lower night screen (shorter one) mounted as the first one
- 2 Upper night screen (longer one) –mounted as the second one
- 3 Aluminum lamp (hides and secures the night screens before falling out
- 4 Night screen guide (aluminum profile)

Figure 9 Overflow (version with evaporator)

- 1 Water outlet from the body of the nuit (water-sealed)
- 2 Rail water outlet hose (condensate outflow after defrosting the evaporator)
- 3 Overflow (it is necessary to empty the condensate, when water overflows the evaporator container!
- 4 Evaporator pan

Figure 10 Control panel

- 1 Main switch (turns on/off the unit)
- 2 Lighting switch
- 3 Thermostat (temperature regulator) panel (Service details in Chapter No. 4)





4. UNIT START UP

Temperature of the cooled space and aggregate operating cycle may fluctuate. They depend on numerous factors, such as the amount and temperature of products placed in the device and the temperature of the surroundings. The equipment should be placed in a dry and well-ventilated place, ensuring proper air exchange (distance between the wall and the equipment— min. 10cm), out of sunlight, kept far from heat sources and devices enforcing air flow (ceiling and portable ventilators, blow-in heaters). The equipment functions properly in a room, where temperature falls within appropriate climatic class. The operation of the equipment may worsen when the unit operates outside the stated temperature range.

Remarks and indications

- It is necessary to properly level the rack, which will prevent the equipment from noisy operation and will ensure proper outflow of the water (condensate) during defrosting.
- After transporting the equipment, wait about 2 hours before the start-up.
- Ensure even load of shelves and not to exceed the maximum load.
- The first filling of cooling space should be performed after its previous cooling to working temperature. This principle should also be observed after a longer pause in operation.
- Do not block any ventilation holes, which would hamper circulation of the cooled air (Do not place the products directly to the screen!). It is also necessary to ensure proper airflow around the equipment (Ventilation holes cannot be covered).
- Keep the condenser clean. Impurities may lead to overheating of the compressor and as a consequence may result in damage, which is not covered by warranty.
- Do not use electric devices inside the product storing chamber.
- After closing the door of the unit, it is not recommended to open it with force.
 Negative pressure created inside the unit is levelled within 1-2 minutes, which allows easy opening of the door
- Avoid unnecessary opening of doors and leaving them open for a longer period of time

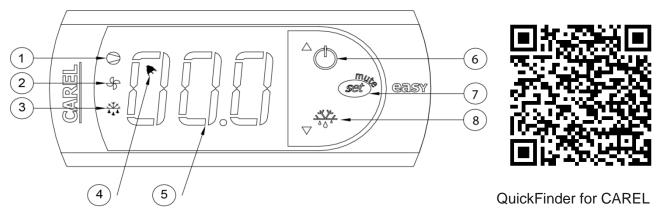
4.1. Temperature regulation

The basic aim of a thermostat is to control the cooling unit to obtain the set temperature within the equipment and maintain it within the determined temperature ranges. The producer enters all settings of temperature regulators required for normal functioning of the equipment. Before primary actuation the user should control and possibly set the required temperature inside the equipment on the control panel.

Digital display – displays the current temperature inside the equipment

It is forbidden to interfere with systemic parameters of the thermostat, as this can lead to serious consequences, including the damage of the cooling unit!

Figure 11 "Carel" themostat control panel



WHAT DO DIODES ON CONTROL PANEL SIGNIFY

Diode 1 is on - Compressor: the symbol is visible when the compressor is working. It is blinking when compressor actuation is delayed by security procedure. It blinks in the following cycle: two blinks – pause, when the constant working mode is activated.

Diode 2 is on - Ventilator: the symbol is visible when evaporator ventilators are turned on. It blinks when the actuation of the ventilators is delayed by external disengagement or when another procedure is in progress.

Diode 3 is on - Defrosting: the symbol is visible when the defrosting function is activated. It blinks when the actuation is delayed by external disengagement or when another procedure is in progress.

Diode 4 is on - Alarm: the symbol is visible when the alarm is activated.

Diode 5 - Current temperature inside the equipment is displayed (decimal places displayed after the comma).

Diode 6 – On/Off Switch: Pressing this button alone: for more than 3 sec. switch On/Off, **Pressing with other buttons:** pressed together with 8 activities/deactivates the continuous cycle.

Diode 7 – Set/ Mute: Pressing this button alone: 1 sec. displays /sets the set point, more than 3 sec. accesses the parameter setting menu (enter password 22), mutes the audible alarm (buzzer), **Start Up:** hold the set/mute button for 1 sec. RESET current EY set / Pressed together (7 and 8) activate parameter reset procedure.



Diode 8 – Defrost: Pressing this button alone: more than 3 sec. activates/deactivates the defrost. **Pressing with other buttons:** pressed together with 6 activates/deactivates the continuous cycle, **Start Up:** hold for 1 sec. displays firmware version.

SETTING THE DESIRED TEMPERATURE

- Press the set button for 1 second leading value shall be displayed on the screen
- Increase or decrease the leading value by means of ▼ and , until the desired value shall be obtained;
- Press the set button once again in order to confirm the new value of the setting point.

MANUAL INPUT OF THE DEFROSTING CYCLE

Defrosting shall be released in an automatic mode. It is possible to force defrosting at any moment by pressing and holding the defrost switch for minimum 5 seconds.

Table 3 Table of alarms and signals

alarm code	buzzer and alarm relay	LED	alarm description	reset
EO	active	ON	probe 1 error= control	automatic
E1	active	ON	probe 2 error= defrost	automatic
E2	active	ON	probe 3 error= condenser/product	automatic
EE	active	ON	unit parameter error	not possible
EF	active	ON	operating parameter error	manual
Ed	not active	ON	defrost ended by timeout	On first defrost ended correctly
CHt	active	ON	dirty condenser alarm	manual

MODIFYING THE PARAMETERS

Parameter navigation

The operating parameters, modifiable using the keypad, are divided into two types: frequent (type F) and configuration (type C). Access to the latter is protected by password (default= 22) to prevent accidental or unauthorized modifications.

Accessing the type F parameters:

-Press the SET button for more than 3 s (if there are active alarms, mute the buzzers). The display shows the parameter code 'PS' (password);

- Use the UP and DOWN buttons to scroll the parameters. The LED corresponding to the category of parameters will be on;
- Press SET to display the value associated with the parameter
- Increase or decrease the value using the UP or DOWN button respectively;
- Press SET to temporarily save the new value and display the parameter again;
- Repeat the procedure for any other parameters that need to be modified;
- Press the SET button for more than 3 s to permanently save the parameters and exit the parameter setting procedure.

Table 4 Table of easy compact parameters

Par.	Description	Def.	UOM.	Min	Max
St	set point	1	°C	r1	r2
PS	password	22	-	0	99
/2	probe measurement stability	4	-	1	15
/4	select probe displayed	1	-	1	3
/5	select °C/°F	0	-	0(°C)	1(°F)
/6	disable decimal point	0	-	0	1
/C1	probe 1 offset	0.0	°C	-50.0	50.0
/C2	probe 2 offset	0.0	°C	-50.0	50.0
/C3	probe 3 offset	0.0	°C	-50.0	50.0
rd	control differential	3.0	°C	0	19.0
r1	minimum set point value	0.0	°C	-50.0	r2
r2	maximum set point value	15.0	°C	r1	99
r3	select direct/reverse operation	0	-	0	2
r4	night-time set point delta	3.0	°C	-50	50
c0	compressor and fan start delay on power-up	1	min	0	100
c1	minimum time between consecutive compressor starts	1	min	0	100
c2	minimum compressor off time	1	min	0	100
c3	minimum compressor on time	0	min	0	100
c4	compressor on time with duty setting	50	min	0	100
СС	continuous cycle duration	2	2	0	15
с6	temperature alarm bypass after continuous cycle	2	h	0	15
d0	type of defrost	0	-	0	4
dI	interval between defrosts	8	h	0	199
dt	end defrost temperature set point	12.0	°C	-50	130
dP	maximum defrost duration	60	min	1	199
d4	defrost when switching the instrument on	0	-	0	1
d5	defrost delay on power-up or when enabled by digital input	0	min	0	199
d6	freeze control temperature display during defrost	1	-	0	1
dd	dripping time	2	min	0	15
d8	alarm bypass time after defrost	1	h	0	15
d9	defrost priority over compressor protectors	0	-	0	1

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d/	defrost probe reading (2)		°C	-	-
dC	time base		1	0	1
A0	alarm and fan temperature differential	2.0	°C	-20	+20
AL	absolute/relative temperature for low temperature alarm	0.0	°C	-50	+99
AH	absolute/relative temperature for high temperature alarm	0.0	°C	-50	+99
Ad	temperature alarm delay	0	min	0	199
A4	3rd input configuration	0	i	0	11
A7	digital input alarm delay	0	min	0	199
A8	enable alarm "Ed" (end defrost by timeout)	0	ı	0	1
Ac	set point dirty condenser alarm	60	°C	-50	250
AE	dirty condenser alarm differential temperature	3.0	°C	0.1	20
Acd	dirty condenser alarm delay	0	min	0	250
Н0	serial address	1	-	0	207
H1	AUX output configuration	0	ı	0	2
H2	enable keypad	1	ı	0	2
H4	disable buzzer			0	1
H5	ID code (read-only)	-1	-	1	+199
EZY	restore the Default settings	2	0	0	1

5. MAINTENANCE

- Do not use steel wool, abrasive cleaners, bleach or cleaners containing chlorine or sodium to clean the unit.
- Do not use pressure washer or water-jet to clean the unit.
- The first cleaning of the unit should be done right after unpacking and before turning it on.
- The unit should be cleaned with warm water and a mild soap.
- Make sure to cover the fan motor to prevent moisture damage.
- Door gaskets, shelves and supports should be cleaned on a regular basis.
- Fan blades and guards should be cleaned with a soft cloth.

5.1 Cleaning and maintenance

- All maintenance service needs to be performed after disconnecting the equipment from the power supply!
- Protect electric installation against any damages or water spillage.
- Do not use water stream to clean the equipment, only a moist cloth
- Do not use any sharp objects to remove Dirt!
- Devices with wheels cannot be used on uneven surfaces!

 In devices with the system of lifted panes, it is not allowed to lift both panes (within a single module) at the same time. It is also forbidden for both panes to be left in their lifted position at the same time Figure 11. This refers both to washing and operating the unit!

Figure 12 Front pane lifted improperly

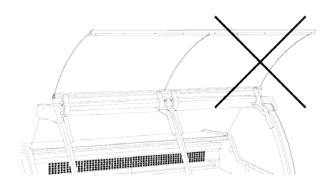




Figure 13 Temperature sensor inside the unit

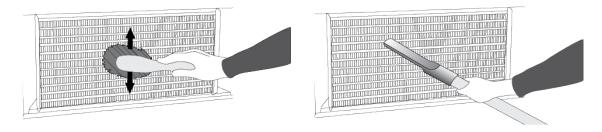
- 1 Temperature sensor
- 2 Evaporator screen
- 3 Evaporator drip rail

When using the display case, as well as during maintenance works, pay attention not to destroy the temperature sensor in the evaporator screen!

It is recommended to make a break in the operation <u>once a month</u> in order to clean it's interior, naturally defrost the evaporator and clean the condenser.

If the unit is not equipped with automatic condensate evaporation, it is essential to remove the condensate from the container when it's full. Frequency of removing condensate (number of removals) depends on device operating conditions (air humidity, door opening frequency, the amount and temperature of products entered for storage)

Figure 14 Cleaning the condenser



It is essential to keep the condenser of the device clean. Dirt may hinder the heat exchange, causing mainly increase in electric energy consumption and may cause damage of the compressor. In order to clean the condenser it is necessary to unscrew the sheet metal screws and pull the wind brace out of catch by lifting it up. Clean condenser lamellas with help of soft brush or paint brush. If the condenser is extremely dirty (blocking of

lamellas) it is indicated to use vacuum cleaner or compressed nitrogen to suck / blow the dirt from between lamellas.

The seller shall not be held responsible for damages of the condenser unit resulting from non-observance of condenser cleaning instructions

Do not use mechanical agents to quicken the defrosting process!

6. SERVICE

6.1. Fault identification and repair

In case of any difficulties during actuation of the equipment or during its operation, please return to these chapters in this manual, which explain the performed operation. This aims to ensure that the equipment is properly operated. If you still experience difficulties, the following hints might help you solve the problem.

The equipment is not working... - Make sure that:

- The equipment is connected to the supply network
- Voltage and frequency in the network are compliant with those recommended by the producer, 115V/60Hz
- · The main switch is turned on
- · Thermostat is turned on

The equipment is operating, but the lighting is off... – Make sure that:

- Light switch is turned on
- Lamp or starting switch of the unit is not burnt

Water leakage from under the device

- Check whether the equipment is properly levelled
- Empty the condensate container

The equipment does not reach the proper temperature, the lighting is on...- Make sure that:

- The main switch is on
- Temperature setting on the thermostat is properly set
- Thermostat works properly
- The condenser is clean, if necessary clean the condenser
- Ambient temperature does not exceed 25°C
- Enough time has passed for products to be cooled
- Ventilation holes are not blocked

The equipment is working too loud... – Make sure that:

- The equipment is standing stably and is properly levelled
- Furniture adjoining the equipment does not vibrate when self-contained compressor is working

A noise made by the operating device is normal. The units are equipped with ventilators, engines and compressors, which turn on and off automatically. Each compressor makes certain noises when operating. These sounds are made by the aggregate engine and by cooling agent flowing through the circuit. This phenomenon constitutes a technical feature of cooling devices and it does not signify their faulty work.

Steam precipitation on glass is normal in the case of high relative air humidity exceeding 55% and does not require calling the service.

6.2 Service

IGLOO Refrigeration service

Telephone number: 416-663-3051 or (toll free) 1-888-408-8819

E-mail: service@igloo400.com

If after checking points described in chapter 6.1 "Fault identification and repair" and the unit still does not work properly,

Please contact Technical Service @ IGLOO Refrigeration.