



# ASTRAL ICE GENERATOR

**TECHNICAL MANUAL. START-UP AND OPERATION  
MANUAL TÉCNICO. PUESTA EN MARCHA Y FUNCIONAMIENTO  
MANUEL TECHNIQUE. MISE EN ROUTE ET FONCTIONNEMENT  
TECHNISCHES HANDBUCH. INBETRIEBNAHME UND BETRIEBSWEISE  
MANUALE TECNICO. AVVIAMENTO E FUNZIONAMENTO  
MANUAL TÉCNICO. ARRANQUE E FUNCIONAMENTO**

## 1 INTRODUCTION

Thank you for putting your trust in our ice-generating products. Our company has over 25 years of experience in the field of climate control, expertise that is made available to you through this product and also includes technical developments that make your ice-generating unit the perfect piece of equipment to obtain the highest thermal contrast during spa cycles.



### IMPORTANT

Please take a few minutes to read this manual so that you may find out the potential of this product and to take into account everything necessary for its correct and long-lasting operation.

#### WE RECOMMEND THAT YOU MAKE A NOTE OF THE FOLLOWING

DEVICE			
REFERENCE NO.		MODEL	

#### FITTER

NAME		TOWN/CITY	
ADDRESS			
TELEPHONE		START-UP DATE	

#### USER

NAME		TOWN/CITY	
ADDRESS			
TELEPHONE		START-UP DATE	

(To be filled in by the fitter)

FITTER'S STAMP:

*Your must fill in and send this warranty card for all units in order for it to become effective*

Table 1: Product details and fitter's details.

## 1.1 CHECKING THE PACKAGING

This equipment comes with recyclable packaging that can withstand rough transport conditions. However, you should examine the device during installation to ensure there is no damage, thus avoiding any subsequent malfunction.

The manufacturer will not be held liable in this event.



### IMPORTANT

It is very important not to tilt the packaging, as it was conveniently designed not to be tilted. It must always be kept upright.

If the unit is damaged or if the shipment is incomplete, write it down on the delivery note and send an immediate complaint to the company that forwarded the shipment.

Inside the parcel you will find the following elements:

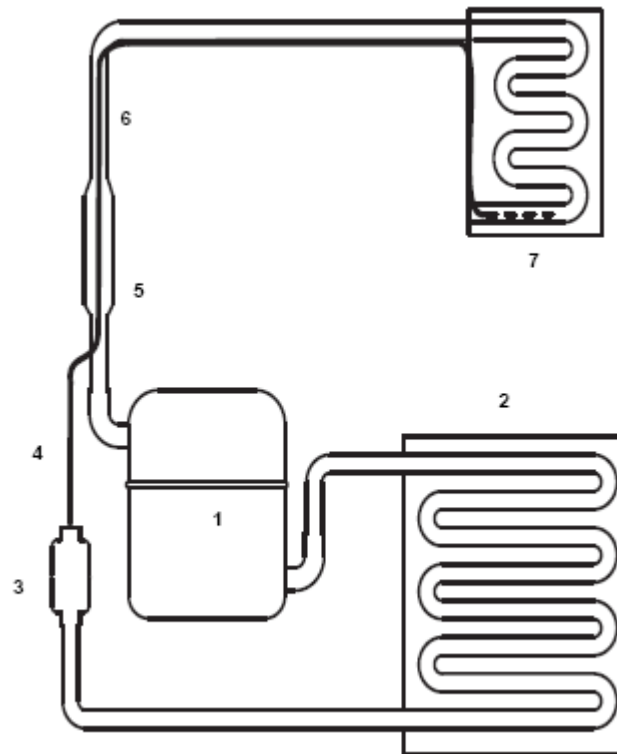
- Ice-generating unit.
- Installation manual.
- Warranty.

## 2 MACHINE SPECIFICATIONS

### *ICE-GENERATING UNIT*

Generating equipment built on a light metal frame, painted, anti-corrosion and resistant to solar radiation. Equipped with the following parts:

- ☑ Compressor.
- ☑ Water or air condenser (depending on model).
- ☑ Ice generator.
- ☑ Geared motor.
- ☑ Water reservoir.
- ☑ Condensing pressostatic valve (water-condensing model).
- ☑ Safety level in discharge hopper.
- ☑ Safety thermostat in dispensing trough.



1	Compressor
2	Condenser
3	Liquid Line Drier
4	Capillary tube
5	Accumulator
6	Heat Exchanger
7	Evaporator

## 2.1 SIZE

The following diagram shows the equipment's general dimensions:

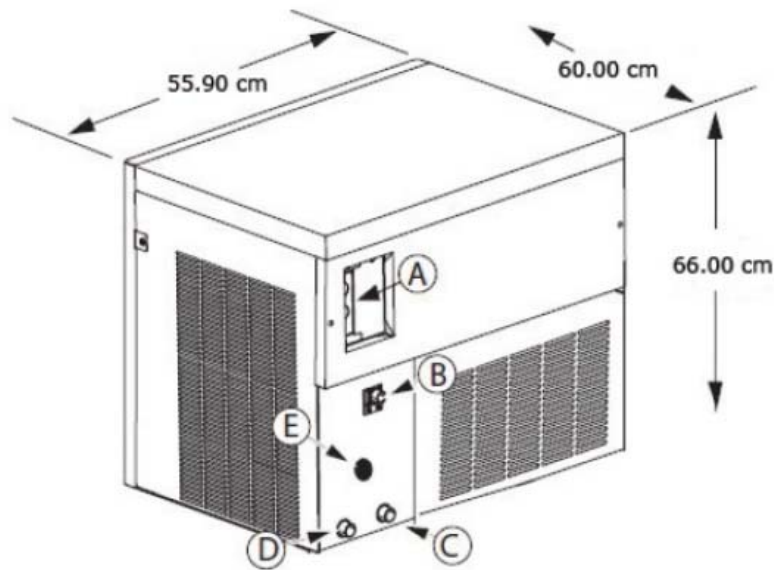


Figure 1: Equipment's dimensions.

## 2.2 SPECIFICATIONS TABLE

PRODUCCION (Kg/24h)	REFRIGERACION	Consumo de agua (l/24h)	CONEXIÓN ELECTRICA
PRODUCTION (Kg/24h)	REFRIGERATION	Water consumption (l/24h)	POWER SUPPLY
174*	AIRE	174	230/l /50 Hz 115V/l/60Hz
174*	AGUA	174 + 810 (condens)	230/l /50 Hz
332*	AIRE	332	230/l /50-60 Hz
332*	AGUA	332 + 1.400 (condes)	230/l /50-60 Hz

## 2.3 Table 2: Technical specifications

MAXIMUM OPERATING PARAMETERS	MIN	MAX
Room temperature	10°C	43°C
Water temperature	3° C	32°C
Water pressure	1 bar	6 bars



### NOTE

Daily production capacity varies depending on room temperature and water feed, as well as the area surrounding the equipment.

## 4 WARNINGS AND CONDITIONS OF USE

### 4.1 SAFETY INSTRUCTIONS

Please read the safety instructions before using the machine:



#### IMPORTANT

Incorrect handling of the equipment may result in serious risk of damaging the device and serious risk of harming the user, including risk of death.

Do not pull, damage, heat, change or place heavy objects on top of the power cable. This would damage the cable and produce electric shock and risk of fire.	<b>IMPORTANT:</b> Please clean the plug properly. Any dirt or incorrect connection may lead to fire or electric shock.
Never put sticks, your fingers or any other object into the ice dispenser outlet.	<b>KEEP OUT OF THE REACH OF CHILDREN.</b>
Do not connect/disconnect the machine to the mains whilst in use. This may carry the risk of fire due to sparks, etc.	If the unit is not working properly, this may cause fire or damage. Seek advice from your fitter.
In case of any anomaly (such as a burning smell, etc.), stop the unit and pull the plug or shut down the electricity supply.	The client must not repair or install the unit themselves.
The machine must not be sprayed by water or mud.	
Do not pull the power supply cable. To disconnect, please firmly hold the plug in your hand. There is a risk of fire if you pull off the cable.	Do not place animals or indoor plants directly exposed to the condenser's air outlet as this may harm the animals and damage the plants.
If a maintenance check is going to be performed, please turn off the unit and disconnect it or shut it down from the power supply.	If it is likely that the machine may not be used for a long time, please disconnect the plug or shut it down from the power supply. There may be an accumulation of leaves and dust that could lead to a fire.
Do not handle the plug with wet hands as this may cause an electric shock. In the event of a storm, turn off the unit to avoid any damage caused by lightning.	Do not spray insecticides or any other flammable sprays towards the unit. This may cause a fire.

Do not install the unit near a flammable gas source as there may be a gas leak and this would cause an explosion.

Depending on where the machine is installed (damp place, etc.), please install electrical protection in the form of a 30mA cut-out switch. Otherwise, electric shock may occur.

### WARNING

Do not leave the installation damaged.  
The unit may cause an accident.

Do not leave or install anything on top of this unit.  
This may cause an accident due to the object's or unit's fall.

Check compatibility with the mains given the details above before commencing the installation of the ice-generating unit.

**SPECIFIC INSTRUCTIONS:** The user must always contact a specialist company with experience in installation and repair of ice-generating units. The user must not install or repair the ice-generating unit by themselves or with the help of another person.

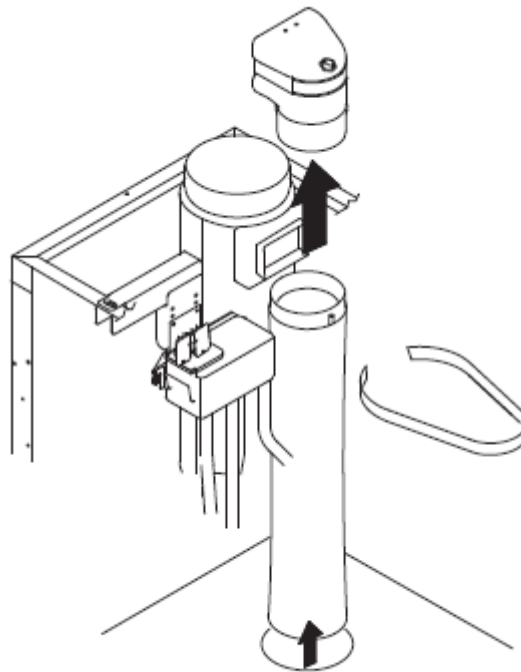
## 5 UNIT'S INSTALLATION

### 5.1 INSTALLATION

ASTRALPOOL's ice-generating equipment must be installed in an enclosure adhering to the following:

1. A dry, well-ventilated enclosure where there are no chemical or corrosive products such as chlorine, acids, etc. and where it will always be protected from the elements and from water.
2. The enclosure must have a smooth and solid surface (such as concrete or hard steel frame) and must be protected from the risk of flooding.
3. The enclosure must be wide enough to have some free space around the device of approximately 0.6m at the front, sufficient for maintenance, and 0.5m on each side.
4. It is recommended to design and build a dispensing trough with any material closest to the installation's look and feel.
5. The ice height must be between 90 and 100cm so that it is convenient to collect.

6. The approximate size of the ice dispenser must be: 60 width x 60 depth x 20cm height and it must be equipped with a drain to remove the defrosted water.
7. Once unpacked, please check that the pipes from the refrigeration circuit are not touching each other and are not in contact with other pipes or elements. Ensure the fan rotates freely.
8. Check the compressor is free to oscillate on its own shock absorbers.
9. Check the details on the technical data tag and check that the available power supply's voltage corresponds with the unit's.
10. The machine must be perfectly levelled for installation and for that it has adjustable legs.
11. To allow the ice outlet in one side instead of the bottom replace the ice piping trying to maintain the more inclination available, and avoid using PVC (use stainless steel).



## 5.2 REGULATION

This model doesn't include regulation so an external switch must be installed.

To stop the unit:

The bin thermostat sensing bulb is located in the ice chute on modular models and in the bin thermostat holder on the right side of the bin on self storage models. The bin thermostat turns the ice machine on and off as the level of ice in the bin changes. Use the indicator on the ice machine label as the initial setting and adjust as required.





## ATTENTION

This unit has been designed to be installed in premises where room temperature does not exceed a maximum of 43°C or a minimum of 10°C. Prolonged operational periods at temperatures beyond or below said range constitute misuse of the unit pursuant to the supplier's warranty and entails automatic cancellation of your right to warranty.

### 5.3 ELECTRICAL CONNECTION

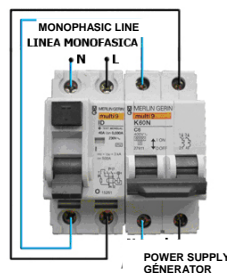


## ATTENTION

Incorrect voltage of the power supply will automatically cancel your right to warranty. Voltage variation regarding that shown on the tag is of  $\pm 10\%$ .

The power supply for the ice-generating unit must preferably come from an exclusive circuit with statutory protective components.

- Electrical connection must follow current regulations (NF C 15 100, EC 1 364) Channelling for those connections must be fixed.



**Figure 2: Monophasic electrical connection.**

- The electrical installation must be carried out by a qualified professional (such as an electrician) in accordance with rules and regulations applicable in the country of installation.
- The ice-generating circuit must be attached to a safety earth circuit at the Terminal block level.
- The cables must be installed correctly so that they do not cause any interference (through the wire guides).
- The ice-generating unit is prepared to be connected to a general power supply of 230/2/50Hz with earth connection.
- The cross-section of cables to be installed must comply with current legislation that prevent overheating and a voltage decrease.
- Acceptable voltage variation tolerance is of  $\pm 10\%$  during operation.

## 5.3.1 Electrical data

The electrical connection must be carried out by the fitter taking the following points into account:

1. Please perform the connection according to the circuit diagram included in this manual.
2. Before connecting the equipment, you must check that the electrical installation is disconnected and that there is no voltage between the power supply phases.
3. Connect the lead-in wires to the machine's input terminal.
4. Connet the ground wire to the relevant terminal.

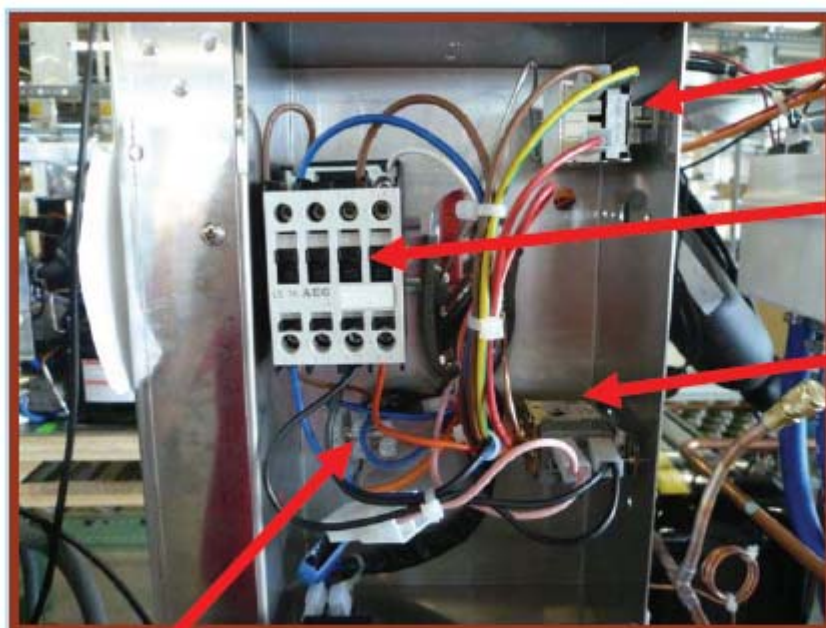
The provision of any legislation in force with respect to any electric lines against direct or indirect faults and contacts must be followed at all times.

Verify the tightness of all electrical connections.

You must check that the electrical resistance between the ground and any electrical terminal is over 1 megaohm. If not, the equipment cannot be started up until the electrical loss may be located and repaired.

If there are fluctuations of the input voltage, it is recommended to install a voltage stabilising system to prevent damaging the equipment.

## 5.3.2 Photo



**Thermostat**

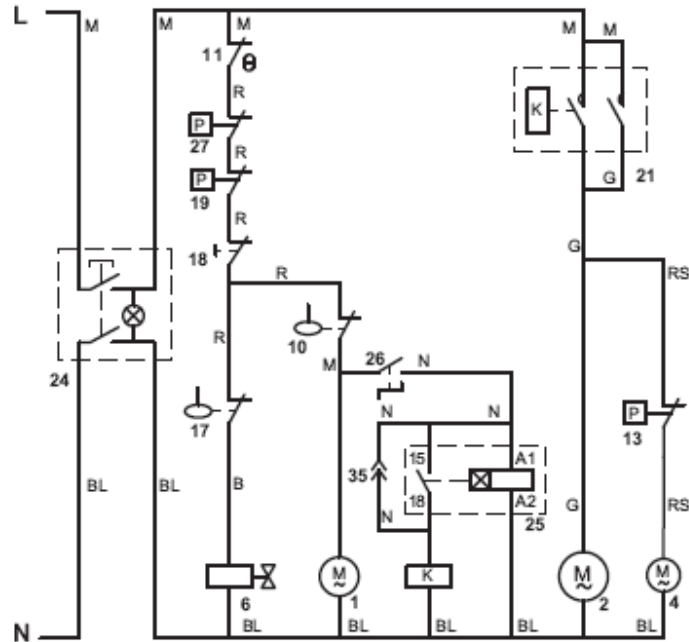
**Contactor**

**Condenser presostat**

**electrical terminals in  
rotation sensor**

## 5.3.3 Circuit Diagrams

Refer to Nameplate for Voltage Rating



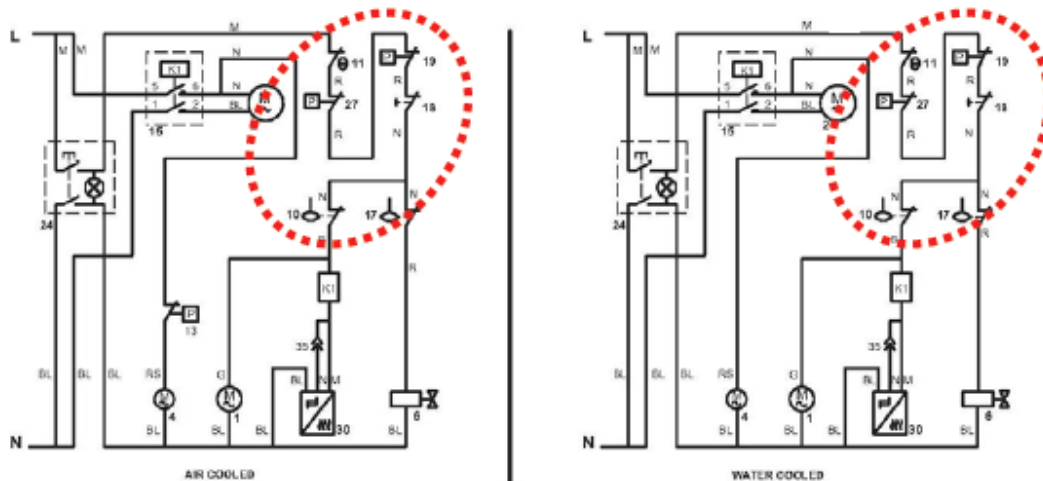
1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
17	Water level switch
18	Ice chute safety switch
19	High Pressure Safety Switch
21	Compressor relay
24	On/Off switch
25	Compressor time delay
26	Gear motor centrifugal switch
27	Low Pressure Safety Switch
35	Compressor time delay by-pass
<b>Wire Color Designation</b>	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

## Working system

When the toggle switch is placed in the “ON” position the following controls must be in the closed position before the ice machine will start:

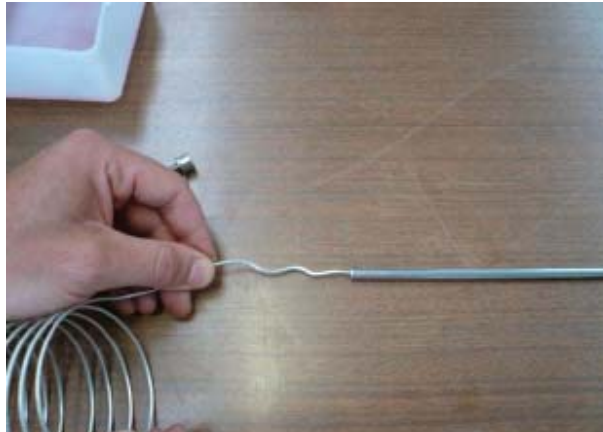
- A. Bin Thermostat
- B. Ice Chute Safety Switch
- C. Low Water Level Switch
- D. High Pressure Cut-out Switch
- E. Low Pressure Cut-Out Switch

Placing the toggle switch in the ON position starts the gear motor and a 10 minute compressor time delay. The compressor starts and the float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.



1. GEAR MOTOR	11. BIN THERMOSTAT	19. HIGH PRESSURE SAFETY SWITCH
2. COMPRESSOR	13. FAN CYCLE CONTROL	24. ON/OFF SWITCH
4. FAN MOTOR	15. CONTACTOR	27. LOW PRESSURE SAFETY SWITCH
6. WATER INLET VALVE	17. WATER LEVEL SWITCH	30. ROTATION SENSOR
16. LOW WATER LEVEL SWITCH	18. CHUTE SAFETY SWITCH	35. COMPRESSOR TIME DELAY BY-PASS (SERVICE STAFF ONLY)

G = GREY  
 B = WHITE  
 BL = BLUE  
 M = BROWN  
 N = BLACK  
 R = RED  
 RS = PINK



Bin thermostat.

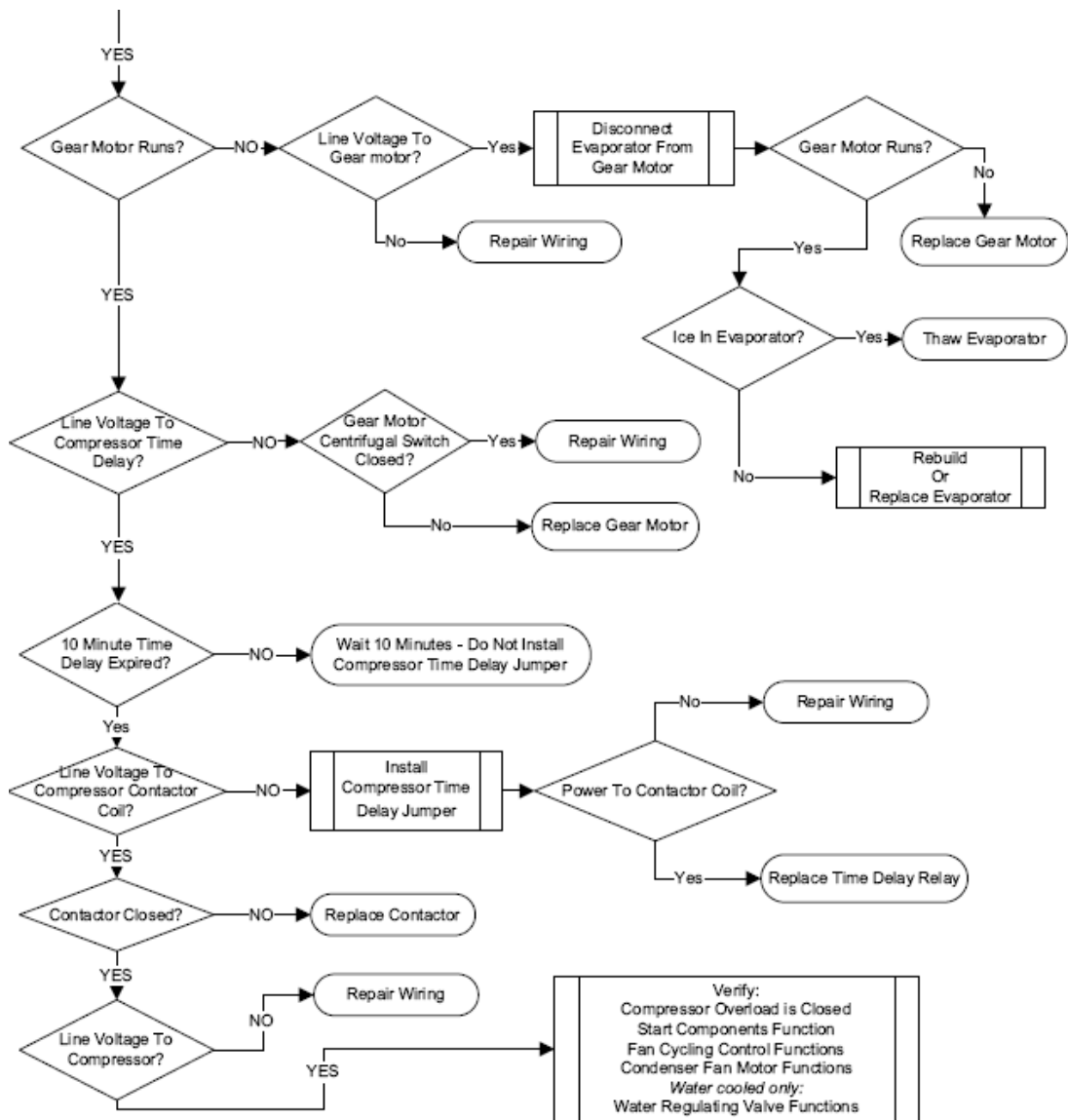
## Troubleshooting

When the toggle switch is placed in the “ON” position the following controls must be in the closed position before the ice machine will start:

- A. Bin Thermostat
- B. Ice Chute Safety Switch
- C. Low Water Level Switch
- D. High Pressure Cut-out Switch
- E. Low Pressure Cut-Out Switch

Placing the toggle switch in the ON position starts the gear motor and a 10 minute compressor time delay. The compressor starts and the float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.





## 5.4 WATER INTAKE AND OUTLET

### GENERAL

To choose the water line you must think of the following:

- Length of line
- Purity and clearness of water
- Pressure of the water supply

The operation of this equipment is based on water and this is why the above points are very important. Water pressure below 1 bar causes operational problems for the equipment.

Water with high content of chlorine or ferruginous water can be partially improved with activated carbon filters.

### WATER INTAKE (Air-condensing model)

Connect the ice-generating unit's water inlet with a  $\frac{3}{4}$ " gas male coupling, using a plastic pipe reinforced with non-toxic material used for food or with a copper pipe.

You must install a shut-off valve at the water inlet line in an accessible place close to the unit. If the water contains high levels of impurities then it is recommended to install a filter or purifier.

### WATER INTAKE (Water-condensing model)

This model requires two separate water inlet lines. One for the level reservoir (ice generator feeder) and another one to cool the condensation from the refrigerating circuit (water condenser)

You also have to use a  $\frac{3}{4}$ " gas male coupling for the condenser's water connection, by means of a reinforced plastic pipe or a copper pipe and a separate shut-off valve.

### DRAIN OUTLET (Air-condensing model)

The drain pipe must be made of stiff plastic and be of 18mm internal diameter and a constant fall of 3cm per metre. Drainage happens through gravity and for this flow to be regular it is essential that the drain outlet has a vertical air intake close to the coupling and that only one trap is open.

### DRAIN OUTLET (Water-condensing model)

Those systems refrigerated by water need a separate and independent drain line. You also have to use a  $\frac{3}{4}$ " gas male coupling for the connection of the condenser's drain, by means of a reinforced plastic pipe or a copper pipe and a separate shut-off valve.

## 5.5 START-UP

When the toggle switch is placed in the "ON" position the following controls must be in the closed position before the ice machine will start:

A.Bin Thermostat



B.Ice Chute Safety Switch

C.Low Water Level Switch

D.High Pressure Cut-out Switch

E.Low Pressure Cut-Out Switch

Placing the toggle switch in the ON position starts the gear motor and a 10 minute compressor time delay. The compressor starts and the float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

When all the security elements are closed the motor star up and the rotation sensor LED turns flashing light orange. After 8 minutes the compressor start up and the the LED will be orange continuously.



## IMPORTANT

The first ice granules show poor texture due to the fact that the evaporator's temperature takes 10 minutes to reach standard running values.

If after 10 minutes with the unit on, the evaporator's temperature has not reached values below  $-1^{\circ}\text{C}$  due to insufficient cooler, the evaporation temperature sensor will stop the machine.

1. Check that the unit's operation whilst it is running. Take off the front cover and, if necessary, place the high and low gauges in their corresponding valve cores in order to check condensation and evaporation pressures.



## NOTE

In air-cooled models, the condensation pressure remains regulated by a probe located on the condenser's blades. If it reaches  $50^{\circ}\text{C}$ , then it will stop the unit.



## NOTE

In water-cooled models, the condensation pressure is regulated by the quantity of water passing through the condenser, the flow of which is regulated by the pressostatic valve, which is connected by a capillary to the fluid line of the cooling circuit. As soon as the pressure rises, the valve opens to increase the flow of water cooling the condenser.

For these models, the condensation pressure is regulated by a probe located in the condenser. If this reaches  $70^{\circ}\text{C}$ , the unit will stop.

2. Check the correct operation of the water-level sensor by closing the shut-off valve. After a few seconds, when the water level decreases and activates the sensor, the unit stops immediately.

Opening the shut-off valve after that, fill the reservoir and activate the water-level sensor and the unit will commence to time the geared motor to 300 seconds and the compressor to 360 seconds.

3. Check the correct running of the thermostat of the discharge hopper and dispenser (once the distance of application has been adjusted).

Restore the light beam and after 6 seconds, the unit will start running again timing the geared motor to 300 seconds and the compressor to 360 seconds.

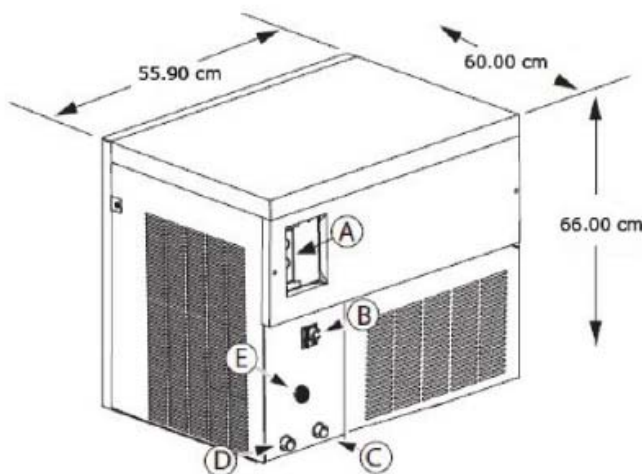
4. Once these checks have been completed, remove the gauges and put back the front cover.
5. Explain to the owner or person responsible for the unit's maintenance how to operate the ice-generating unit, as well as to the maintenance, cleaning and drainage procedures.



## NOTE

If the machine stops, the geared motor has a timing of 5 minutes in order to allow you to take out any ice inside the evaporator.

## 5.6 HYDRAULIC CONNECTIONS



- A: POWER SUPPLY
- B: INLET WATER FOR ICE GENERATING. 3/8" FEMALE THREAD.
- C: OUTLET CONDENSING WATER. 1/2" MALE THREAD.
- D: DRAIN. 1/2" MALE THREAD.
- E: INLET CONDENSING WATER. 1/2" FEMALE THREAD.



## IMPORTANT

In order to protect the equipment a filter and pressure reducer must be installed.

If the water coming into the machine has limescale, you must install a water softener.

## 6 INSTRUCTIONS FOR MAINTENANCE

Maintenance must be carried out by a qualified professional. In particular, cleaning depends mostly on environmental conditions and the water used, as well as the quantity of ice produced. It should be done at least twice a year and it entails several steps:

1. Checking and cleaning the grating of the filter placed before the machine (during installation).
2. Check that the machine is level in both directions. Otherwise, level the unit using the adjustment nuts provided for that purpose.
3. Remove the top of the reservoir and press the float, making sure that the water is reaching the reservoir properly. Check that the water level in the reservoir is the correct one.
4. Make sure that the water level in the reservoir is lower than the buffer and sufficient to ensure the correct functioning of the machine.
5. With the ice machine turned off, for models cooled by air, clean the condenser by means of a Hoover or a non-metallic brush, paying special attention not to damage the room temperature sensors and the condenser.
6. Check if there are any leaks in the water circuit. Pour water into the ice dispenser to ensure that the discharge pipe is free of obstructions.
7. Check the ice-level optical control's operation by placing the hand between the infrared light beam. This way the machine switches off. After the necessary timings, the unit will start-up again.
8. Finally check for cooler leaks and that the aspiration line is frozen up to 20cm from the compressor. In case of doubt regarding the cooler load, connect the gauges and check that the pressures are the same as those indicated.
9. Check that the fan rotates freely.
10. Check the lubricant status (grease) of the evaporator's top bearing. If there is some water or it is partially solidified, check the bearing inside the ice chopper.



### NOTE

Only use food fat or water repellent for the evaporator's top bearing.



### NOTE

It is quite normal that with the ice you have a little water coming out. The ice comes out of the opening a little damp but, waiting for it to be deposited in the dispenser, it will lose the excess water.

2. Put a bucket or container under the ice discharge opening to collect the ice mixed with the anti-scale solution in order to avoid that the stored ice is contaminated by the anti-scale solution.
3. Close the water's shut-off valve at the water supply line.
4. Access the water reservoir removing the side covers.
5. Disconnect the lower end of the pipe that connects the water reservoir with the evaporator and collect the water from both evaporator and reservoir in a container. Next reconnect the pipe.
6. In a clean bucket prepare the anti-scale solution by diluting 0.2 to 0.3 of the solution in 2 to 3 litres of hot drinking water (48-50° C).



## ATTENTION

**The anti-scale solution for ice machines contains a phosphoric hydroxyacetic acids solution. Said solution is corrosive and, if ingested, could produce intestinal disorders. Do not induce vomiting. Drink large quantities of water or milk and seek immediate medical attention. If the contact is external, wash the effected area with water. KEEP OUT OF THE REACH OF CHILDREN.**

7. Slowly pour the anti-scale solution in the float reservoir and next turn the machine back on at the external switch.
8. Wait until the unit has started running before continuing to slowly pour the rest of the anti-scale solution into the reservoir, whils trying to keep the level under the drain pipe.



## NOTE

Any ice made with the anti-scale solution is yellowish and soft. During this phase you may hear loud screeching from the evaporator due to the friction between the ice rising and the evaporator's surface. In this event, stop the unit so that the anti-scale solution may dissolve the limescale deposits.

9. Upon finishing with the anti-scale solution, open the shut-off valve in order that the machine continues to work until the ice becomes compact and clean again.
10. Stop the unit again and dissolve the recently made ice, by pouring hot water inside the container. With a sponge soaked in an anti-bacterial substance, clean the inside of the container.



## ATTENTION

**Do no use the ice made with the cleaning solution. Please make sure that none remains inside the container.**

**Remember than in order to avoid bacterial accumulation you must clean and sanitise the internal surfaces of the dispenser every week with a solution of water mixed with an anti-bacterial substance.**

## PREVENTIVE MAINTENANCE:

You must keep a record of each component maintained as well as the actions or repairs undertaken.

The surfaces of the outer casings may be cleaned with a cloth and a non-abrasive material.

Any maintenance must be carried out only after the machine has been disconnected from the power supply.

## THINGS TO TAKE INTO ACCOUNT:

### *ELECTRICAL BOARDPANEL*

Check all electrical connections.

Check there is no overheating of the electrical terminals.

Check that the safety systems are working correctly.

Check that the controller works correctly and that it is calibrated, reading against an approved and calibrated ambient thermometer.



## IMPORTANT

Maintenance must be carried out by a qualified professional. Maintenance should be carried out at least once a year.

## 7 BREAKDOWNS: CAUSE AND SOLUTION.

### Refrigeration Troubleshooting

#### CAPILLARY TUBE MODELS

If the gear motor and/or compressor are not energized refer to Electrical Troubleshooting Refer to Operational Pressure Charts for normal pressures and temperatures				
	Low on Refrigerant	Overcharge of Refrigerant	Non Condensable in System	Restricted Capillary Tube
Discharge Pressure	Low	High	High	Low
Suction Pressure	Low	High	High	Low
Evaporator Inlet Temperature	Normal	Low	High	Low
Evaporator Outlet Temperature	High	Normal	High	Low
Compressor Discharge Line Temperature Normal Range = > 165° @ 70° - 210° @ 110° > 74°C @ 21°C - 99°C @ 43°C)	High Increases with run time	Normal	High Increases with run time	High Increases with run time

#### THERMOSTATIC EXPANSION VALVE MODELS

If the gear motor and/or compressor are not energized refer to Electrical Troubleshooting Refer to Operational Pressure Charts for normal pressures and temperatures					
	Low on Refrigerant	Overcharge of Refrigerant	Non Condensable In System	Liquid Line Restriction, Suction Line Restriction, Or Expansion Valve Starving	Flooding Expansion Valve or Loose Sensing Bulb (when used)
Discharge Pressure	Low	High	High	Low	High
Suction Pressure	Low	High	High	Low	High
Evaporator Inlet Temperature	Normal	Normal or Low	High	Normal	Normal or High
Evaporator Outlet Temperature	High	Normal	High	High > 12° Differential between Inlet and Outlet	< 10° Differential between Inlet and Outlet
Discharge Line Temperature	High	Normal	High Increases With Run Time	High Increases With Run Time	Low Decreases With Run Time

## PRODUCT RECYCLING INSTRUCTIONS

*This machine has electrical and electronic components. When the ice generating unit concludes its useful life, it should be dismantled by a specialist company or you may take it to your local authority's disposal facility.*



*In order to reduce the amount of electric and electronic waste, the danger of its components, to promote the reuse of the equipment, waste reclamation and to establish an adequate waste management that may improve the efficiency of environmental protection, a number of regulations applicable to the manufacture of the product and others related to an adequate environmental management once the product has become waste are set out.*

*Furthermore, it is intended to improve the environmental behaviour of all stakeholders involved in the lifecycle of electric and electronic devices such as manufacturers, distributors, users and, in particular, those directly involved in managing the waste from such equipment.*

*From 13th of August 2005, whenever you want to discard this equipment, you have two possible return options:*

- If you buy a new one that is of equivalent type or has the same functions, you may hand it back to the distributor, at no cost to you, when buying the new one.*
- Or you may take it to your local authority's disposal facilities.*

*The equipment is tagged with a symbol that has been cross-over (rubbish bin), and this symbol means that it must be separated from other urban waste and collected separately.*

*Potential effects on the environment or human health of the hazardous elements it may contain.*

### **PVC**

*The most widely used plasticising agent in applications of PVC is DEHP (Diethylhexyl phthalate). Trials carried out in several laboratories show that it does not pose a risk to human health in the concentrated levels used in finished products, according to reports from BUA in Germany (Advisory Committee on Existing Chemicals of Environmental Relevance) and the BGA (Health German Authority), amongst others. The results from such trials, together with data obtained from biodegradation studies, confirm that DEHP cannot be considered hazardous for the environment. All additives used in PVC formulations and, thus, in food applications are fully regulated both at European and Spanish level.*

*In Europe, there is the EU 90/128/EEC Commission Directive subsequently amended by EU 95/3/EEC. In Spain, there is the Spanish Royal Decree 1125/1982 of 30th of April, ratified by the Spanish Royal Decree 1042/1997 of 27th of June of that same year.*

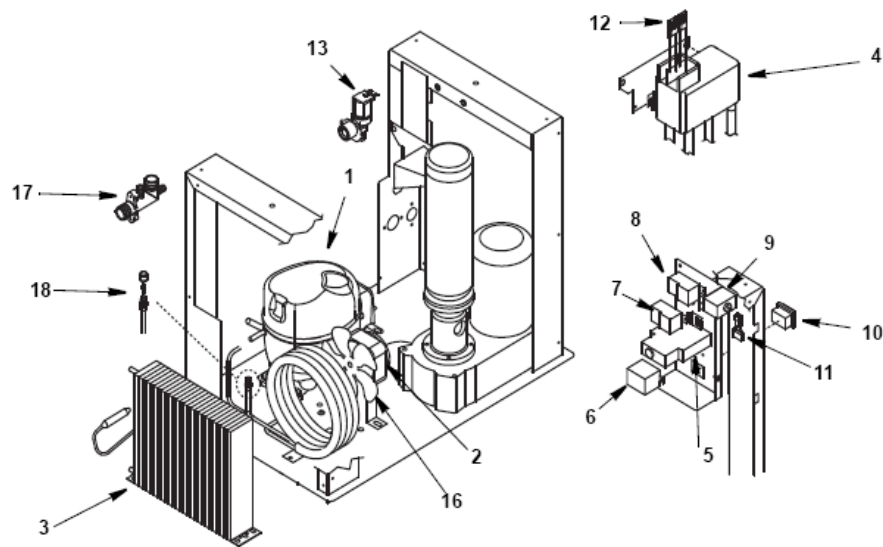
*Modern technology applied to PVC production plants for some years allows us to declare that such plants do not pose a threat to the environment, the Life Cycle Analyses (LCA) show that the environmental impact of PVC is equivalent to that of other materials or even more favourable.*

### **Copper (Cu)**

*Copper is one of the few materials that do not degrade or lose their chemical properties or physical properties during the recycling process. It can be recycled countless times without losing its properties and thus making it impossible to distinguish if an object of copper is made from primary or recycled sources.*

*In the European Union, the community directive 2002/96/EEC on electric and electronic devices waste favours a policy of minimisation of waste, including a mandatory and drastic reduction of industrial and household waste, and incentives to manufacturers who produce less waste.*

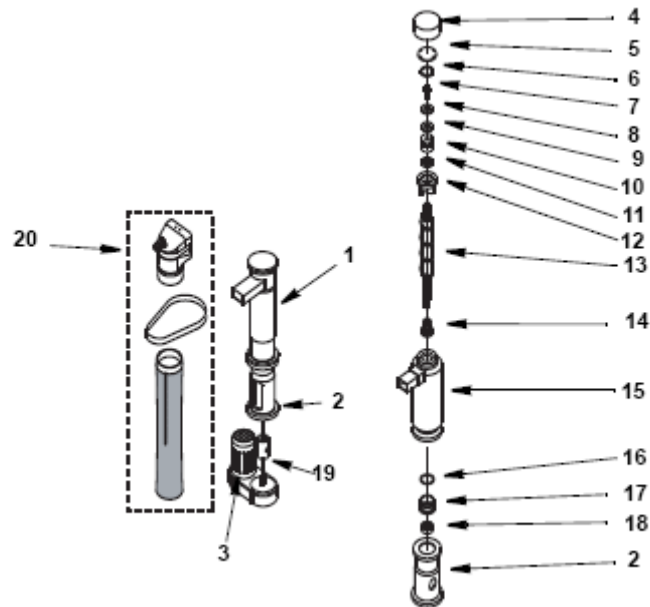
## 8 SPARE PARTS



**DESCRIPTION**

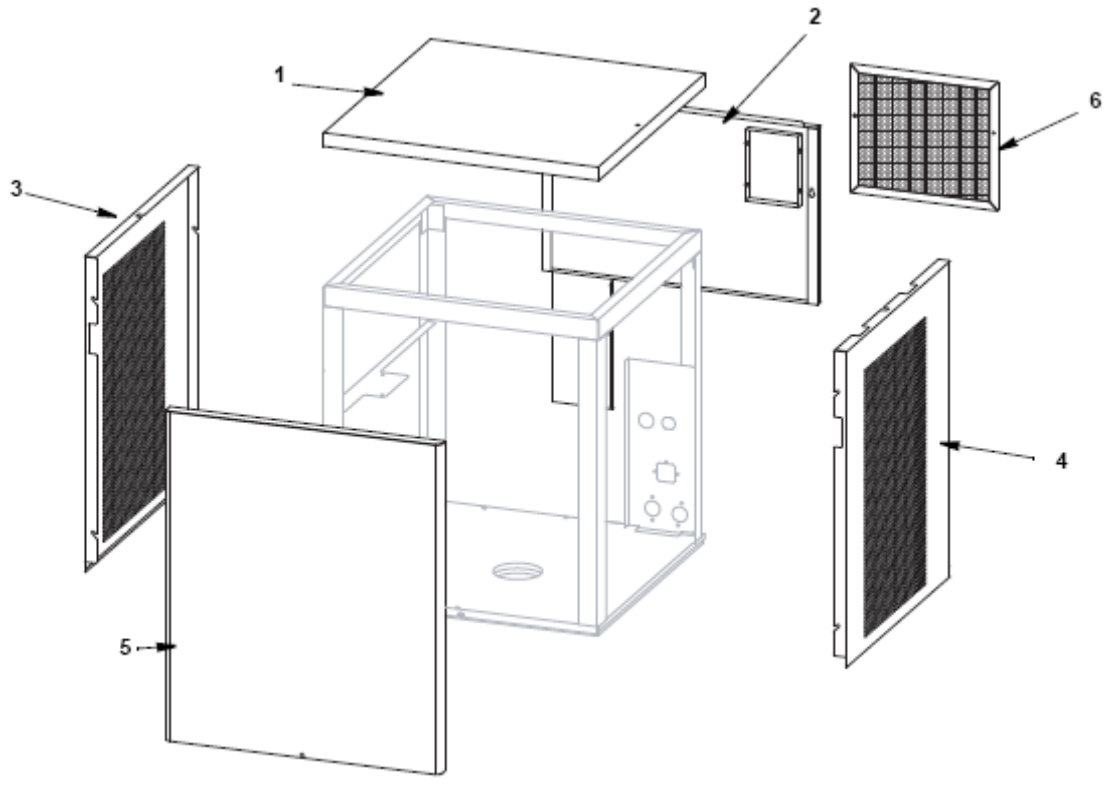
	<b>PART NO.</b>
<b>1 Compressor</b>	
a. 115/60/1 .....	000008833
b. 220/60/1 .....	
c. 230/50/1 .....	000005627
<b>2 Condenser Fan Motor</b>	
a. 115/60/1 .....	000008835
b. 220/60/1 or 230/50/1 .....	000009256
<b>3 Air Cooled Condenser</b>	000005632
<b>4 Water Reservoir Assembly (Includes Hoses)</b>	000008834
a. Water Reservoir Only .....	000005747
<b>5 Electronic Compressor Delay Timer</b>	000005769
<b>6 Compressor Relay</b>	
a. 115/60/1 .....	000005746
b. 220/60/1 or 230/50/1 .....	000005745
<b>7 Evaporator Safety Thermostat</b>	000005768
<b>8 Bin Thermostat</b>	000005765
<b>9 Fan Cycle Control</b>	
a. 115/60/1 .....	000006060
b. 220/60/1 .....	000006191
c. 230/50/1 .....	000006191
<b>10 ON/OFF Rocker Switch</b>	000005763
<b>11 Electronic Noise Reducer (Radio Interference Filter)</b>	
a. 220/60/1 .....	000005680
b. 230/50/1 .....	000005678
<b>12 Float Micro switch</b>	000005760
<b>13 Water Inlet Valve</b>	
a. 115/60/1 .....	000006063
b. 220/60/1 .....	000005770
c. 230/50/1 .....	000005770
<b>14 Liquid Line Drier</b>	000005674
<b>15 Expansion Valve</b>	000008838
<b>Miscellaneous – Brackets, Screws, Etc.</b>	
<b>16 Condenser Fan Blade</b>	000005686
<b>17 Drain Manifold</b>	
a. 115/60/1 .....	000006162
b. 220/60/1 .....	000005575
c. 230/50/1 .....	000005673
<b>18 Access Valve</b>	
a. Fitting .....	000006408
b. Core .....	000006409
c. Cap .....	000006410
<b>19 Screws</b>	
a. M5 x 10TC .....	000009040
b. 3.9 x 13TC .....	000009041
<b>20 Backflow Preventer</b>	
a. 60 Hz - 3/8" .....	000009971
b. 50 Hz - 3/4" .....	000009972





**DESCRIPTION**

	<b>DESCRIPTION</b>	<b>PART NO.</b>
1	Evaporator Assembly .....	000005685
2	Foundation .....	000005693
3	<b>Gear Motor Assembly</b>	
	a. 115/60/1 .....	000005698
	b. 220/60/1 or 230/50/1 .....	000005697
4	Insulating Cap .....	000005734
5	Bearing Cap .....	000005608
6	Snap Ring .....	000005757
7	Auger Bolt .....	000005599
8	Bearing Shim .....	000005609
9	Self Lubricating Disc .....	000005650
10	Upper Bearing .....	000005607
11	Upper O-Ring .....	000005735
12	Cutter Head .....	000005647
13	Auger .....	000005598
14	Water Seal .....	000005778
15	Evaporator .....	000005681
16	Lower O-Ring .....	000005583
17	Water Seal Retainer .....	000005782
18	Lower Bearing .....	000005605
19	Coupling .....	000005642
20	<b>Ice Chute Kit</b> .....	000007911
	a. Ice Exhaust with Micro switch .....	000007906
	b. Locking Strip .....	000007907
	c. Bulb Holder .....	000007908
	d. Ice Outlet Pipe Assembly .....	000007909
	e. Cross Bar .....	000007910



DESCRIPTION	PART NO.
1 Top Panel .....	000008759
2 Back Panel .....	000008836
a. 115-220/60/1 .....	000009255
b. 230/50/1 .....	000009104
Air .....	000008768
Water .....	000008757
3 Left Side Panel .....	000008755
4 Right Side Panel .....	000008837
5 Front Panel Assembly .....	
6 Air Filter .....	

## 9 WARRANTY

The warranty is valid for 2 years for all parts.

This warranty becomes null and void:

- In the event of an installation error due to not having respected the instructions of this manual will render this warranty null and void.



### **IMPORTANT**

The warranty is only effective if the voucher is duly filled in and sent, stamped and signed by all interested parties.

**WARRANTY CERTIFICATE**

**1. GENERALITIES**

- 1.1 In accordance with these provisions, the seller guarantees that the product under this warranty (the "Product") does not show any non-compliance at the time of sale.
- 1.2 The warranty period covers the Product for 2 years from the moment it is given to the buyer.
- 1.3 In the event of non-compliance of the Product, and if the buyer notifies the seller during the Warranty Period, the seller must repair or replace the Product (bearing this cost) wherever it may be deemed appropriate, unless it may not be possible or disproportionate.
- 1.4 Whenever the Product is not repairable or may not be replaceable, the buyer may request a proportional reduction in price or, if the non-compliance is significant, the termination of the sale agreement.
- 1.5 Those parts replaced or repaired pursuant to this warranty will not extend the original Warranty Period, although they will have their own warranty.
- 1.6 For this warranty to be effective, the buyer will have to prove date of purchase and the delivery of Product.
- 1.7 If six months have passed since the delivery of the Product to the buyer and the buyer claims non-compliance of the Product, the buyer must show proof of origin and existence of the alleged malfunction or defect.
- 1.8 This Warranty Certificate does not limit or prejudice the rights of the consumer afforded to the consumer by national statutory law.

**2. SPECIFIC PROVISIONS**

- 2.1 This warranty covers any product referred to in this manual.
- 2.3 For this warranty to be effective, the buyer will have to strictly follow the manufacturer's instructions included in the documentation accompanying the Product, whenever such documentation is applicable by Product range and model.
- 2.4 Whenever a time schedule is set for replacement, maintenance or cleaning of Product parts or components, the Warranty will only be valid when such schedule has been duly followed.

**3. LIMITATIONS**

- 3.1 This warranty is only applicable to those sales made to consumers, "consumer" being the person who acquires the Product not for professional purposes.
- 3.2 No guarantees are made regarding normal wear and tear of the Product. With regards to parts, components and/or perishable or consumables such as batteries, bulbs, etc., the documentation accompanying the Product will be followed, where necessary.
- 3.3 The warranty does not cover those events where the Product: (I) has been subject to abuse; (II) repaired, maintained or handled by non-authorized persons or (III) repaired or maintained with non-original parts.
- 3.4 Whenever the non-compliance of the Product may be the result of incorrect installation or start-up, this warranty will only be valid whenever such installation or start-up is included in the Product's purchase-sale agreement and has been carried out by the seller or under the seller's responsibility.

<b>Machine</b> _____	
<b>Reference no.</b> _____	<b>Model</b> _____
<b>FITTER</b>	
<b>Name</b> _____	<b>Town/city</b> _____
<b>Address</b> _____	
<b>Telephone</b> _____	<b>Start-up date</b> _____
<b>USER</b>	
<b>Name</b> _____	<b>Town/city</b> _____
<b>Address</b> _____	
<b>Telephone</b> _____	<b>Start-up date</b> _____
<b>(To be filled-in by fitter)</b>	<b>FITTER'S STAMP:</b>
<b>Your must fill in and send this warranty card for all units in order for it to become effective</b>	

W E L L M A

**ASTRALPOOL**



**Declares under their own responsibility that all the equipment: ASTRAL ICE GENERATOR  
Manufactured since 12/01/2015, independent of the serial number, are in compliance with:**

Machine safety directive 2006/42/EC.

Electromagnetic compatibility directive 2004/108/EC and its modifications.

Low-voltage equipment directive 2006/95/EC.

Directive 2000/14/CE concerning noise produced by equipment for outdoors use, as amended by Directive 2005/88/EC.

Restrictions in the use of certain risky substances in the electrical and electronic instruments 2011/65/EU (RoHS).

Relative to the electrical and electronic waste products 2012/19/UE.

Relative to the electrical and electronic instruments and the management of their waste products Spanish R.D. 208/2005 and 219/2013.  
The registration, the evaluation, the authorization and the restriction of the chemical substances EC N° 1907/2006 and the modification 126/2013 (REACH).

**Declara bajo su única responsabilidad que todos los equipos: ASTRAL ICE GENERATOR  
Producidas a partir del 12/01/2015, independientemente del número de serie, son conformes con:**

Directiva de seguridad de máquinas 2006/42/CE.

Directiva de compatibilidad electromagnética 2004/108/CE, y sus modificaciones.

Directiva de equipos de baja tensión 2006/95/CE.

Directiva sobre el ruido producido por máquinas para uso exterior 2000/14/CE y su corrección con la Directiva 2005/88/CE.

Directiva sobre restricciones a la utilización de determinadas sustancias peligrosas en aparatos eléctricos y electrónicos 2011/65/EU (RoHS).

Directiva sobre residuos de aparatos eléctricos y electrónicos 2012/19/UE.

Real Decreto 208/2005 y 219/2013 sobre aparatos eléctricos y electrónicos y la gestión de sus residuos.

Reglamento relativo al registro, la evaluación, la autorización y la restricción de las sustancias y preparados químicos CE N° 1907/2006 y su modificación 126/2013 (REACH).

**Déclare sous sa seule responsabilité que toutes les équipement: ASTRAL ICE GENERATOR  
Fabriquées a partir du 12/01/2015, indépendamment du numéro de série, sont conformes avec:**

Directive de sécurité de machines 2006/42/CE.

Directive de compatibilité électromagnétique 2004/108/CE, et ses modifications.

Directive d'appareils de basse tension 2006/95/CE.

Directive 2000/14/CE sur les émissions sonores du matériel destiné à l'extérieur, et sa correction à la directive 2005/88/CE.

Directive relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques 2011/65/EU (RoHS).

Directive relative aux déchets d'équipements électriques et électroniques 2012/19/UE.

Espagnol Décret Royal 208/2005 et 219/2013 sur les équipements électriques et électroniques et la gestion de leurs déchets.

Règlement concernant l'enregistrement, l'évaluation et l'autorisation des substances chimiques, ainsi que les restrictions applicables à ces substances (CE) n° 1907/2006 et la modification 126/2013 (REACH).

**Bescheinigt in alleiniger Verantwortung, dass alle Geräte: ASTRAL ICE GENERATOR  
Ab 12/01/2015 produziert wurden, unabhängig von der Seriennummer, konform sind mit:**

Richtlinie über Maschinensicherheit 2006/42/EG.  
Richtlinie über elektromagnetische Verträglichkeit 2004/108/EG und ihren Änderungen  
Richtlinie über Geräte mit Niederspannung 2006/95/EG.  
Richtlinie 2000/14/EG über umweltbelastende Geräuschemissionen von zur Verwendung im Freien vorgesehenen Geräten und Maschinen,  
und zuletzt geändert durch die Richtlinie 2005/88/EG.  
Richtlinie 2011/65/EG zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten (RoHS)  
Richtlinie 2012/19/EG über Elektro- und Elektronik-Altgeräte.  
Spanisch Königliches Dekret 208/2005 und 219/2013 über die Elektro- und Elektronik-Altgeräte und die Bewältigung ihrer Abfälle.  
Verordnung (EG) Nr. 1907/2006 und 126/2013 zur Registrierung, Bewertung, Zulassung und Beschränkung chemischer Stoffe (REACH).

Directiva sobre restricciones a la utilización de determinadas sustancias peligrosas en aparatos eléctricos y electrónicos 2011/65/EU  
(RoHS).  
Directiva sobre residuos de aparatos eléctricos y electrónicos 2012/19/UE.  
Real Decreto 208/2005 y 219/2013 sobre aparatos eléctricos y electrónicos y la gestión de sus residuos.  
Reglamento relativo al registro, la evaluación, la autorización y la restricción de las sustancias y preparados químicos CE N° 1907/2006 y  
su modificación 126/2013 (REACH).

**Dichiara sotto la sua diretta responsabilità che tutte le apparecchiature: ASTRAL ICE GENERATOR  
Prodotte a partire dal 12/01/2015, indipendentemente dal numero di serie, sono conformi a:**

Direttiva sulla sicurezza macchine 2006/42/CE.  
Direttiva sulla compatibilità elettromagnetica 2004/108/CE, e relative modifiche.  
Direttiva sui dispositivi a bassa tensione 2006/95/CE.  
Direttiva 2000/14/CE sulle emissioni acustica ambientale delle macchine ed attrezzature destinate a funzionare all'aperto e la sua  
correzione con la direttiva 2005/88/CE.  
Direttiva 2011/65/CE sulla restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche (RoHS).  
Direttiva 2012/19/CE sui rifiuti di apparecchiature elettriche ed elettroniche (RAEE).  
Spagnolo Regio Decreto 208/2005 e 219/2013 sulle apparecchiature elettriche ed elettroniche e la gestione dei loro rifiuti.  
Regolamento (CE) N° 1907/2006 e 126/2013 concernente la registrazione, la valutazione, l'autorizzazione delle sostanze chimiche  
(REACH).

**Declara sob sua única responsabilidade que todos os equipamentos: ASTRAL ICE GENERATOR  
Produzidas a partir de 12/01/2015, independentemente do número de séria são conformes com:**

A Directiva de segurança de máquinas 2006/42/CE.  
A Directiva de compatibilidade electromagnética 2004/108/CE, e suas modificações.  
Directiva de equipamentos de baixa tensão 2006/95/CE.  
Directive 2000/14/CE relativa à Emissões sonoras para o ambiente dos equipamentos para utilização no exterior, alterada pela Directiva  
2005/88/CE.  
Directiva 2011/65/CE relativa à restrição do uso de determinadas substâncias perigosas em equipamentos eléctricos e electrónicos  
(RoHS).  
Directiva 2012/19/CE relativa aos resíduos de equipamentos eléctricos e electrónicos (REEE).  
Espanhol Real Decreto 208/2005 e 219/2013, em equipamentos eléctricos e electrónicos e gestão dos seus resíduos.  
Regulamento (CE) N.º 1907/2006 e 126/2013 relativo ao registo, avaliação, autorização e restrição dos produtos químicos (REACH).

**Signed the present conformity evidence / Signe la présente déclaration / Firma la presente declaración /  
Firma la seguente dichiarazione/ Unterzeichnet diese Erklärung / Assina a presente declaração:**

Los Corrales de Buelna 07/04/2015

Signature / Firma/ Unterschrift / Assinatura

Sr. Antoni Prats. Chief Executive Officer of B-39390968

W E L L M A

**ASTRALPOOL**



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