Scotsman®

SERVICE MANUAL

FLAKE ICE
MXF SERIES

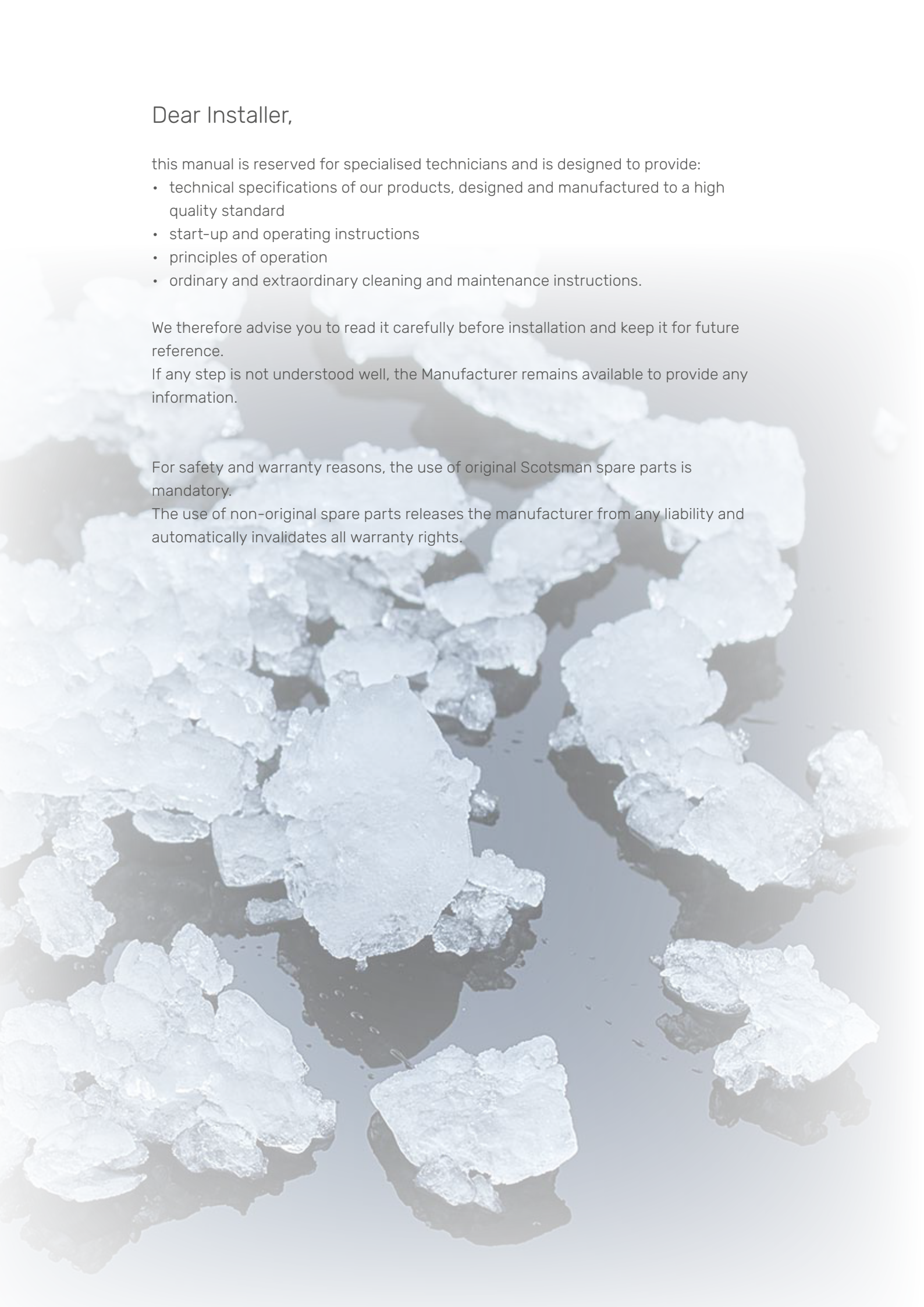
Dear Installer,

this manual is reserved for specialised technicians and is designed to provide:

- technical specifications of our products, designed and manufactured to a high quality standard
- start-up and operating instructions
- principles of operation
- ordinary and extraordinary cleaning and maintenance instructions.

We therefore advise you to read it carefully before installation and keep it for future reference.
If any step is not understood well, the Manufacturer remains available to provide any information.

For safety and warranty reasons, the use of original Scotsman spare parts is mandatory.
The use of non-original spare parts releases the manufacturer from any liability and automatically invalidates all warranty rights.



SERVICE MANUAL

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For any information, always state:

- product model
- serial number
- data in the purchase invoice

SAFETY

Pictogram explanation

In order to make reading clearer and more pleasant, symbols have been used within this manual to convey to the reader the meaning or importance of the information provided by the statements alongside them.

Indicates that caution is required when performing an operation described in a paragraph that bears this symbol. The symbol also indicates that maximum operator awareness is required in order to avoid unwanted or dangerous consequences.

Indicates important information to be read and complied with.

Indicates requirements relating to actions that must be avoided.

This symbol placed on the appliance or used in the manual identifies the areas with an electrical hazard.

Indicates grounding

Identifies the terminals which, when connected together, bring the various parts of an appliance or system to the same potential (not necessarily the earth potential)

Indicates that the paragraph marked with this symbol must be read carefully before the installation, use and maintenance of the product

Given the continuous progress in the design sector, the Manufacturer reserves the right to make changes to the production and instructions, without this entailing the obligation to update the production and previous instructions. If necessary, further copies or updates of these instructions must be requested from the Manufacturer.

Who is this manual for?

These instructions are primarily intended for the installer and maintenance personnel, who should read them carefully before working on the appliance. If you do not understand all the contents of the manual contact your local Scotsman distributor before working on the appliance.

Intended use and classification

This appliance is an ice maker and must only be used for making ice (not as a container for bottles, cans, etc.)

The appliance is designed to be used in domestic and similar applications such as:

- the kitchen area for staff in shops, offices and other work environments;
- companies and by customers in hotels, motels and other residential-type environments;
- bed and breakfasts;
- catering services and similar applications, not for retail.

General warnings

Partial or total failure to observe these instructions and the following prescriptions, an installation, use, ordinary or extraordinary maintenance other than those indicated in the manual, improper use, tampering with or modification of the appliance or some of its parts (unless expressly authorised), use of non-original spare parts or spare parts not specific to the model, may:

- cause damage, injury or fatal accidents;

- void the warranty
- reduce or compromise the quality and safety characteristics of the appliance;

release the Manufacturer from any liability.

Installation must be performed by authorized and specialized personnel, complying with the instructions in this manual.
Personnel must be adequately trained and instructed on how to assemble the machine and how to operate on electrical and refrigeration systems.
Under no circumstances may the customer perform the operations described in this manual.

Before installation:

- check the compliance of the systems with the regulations in force in the country of use and with what is stated on the serial plate;
- check that you are familiar with all the safety and fire prevention regulations in force in the country of use;
- check that a high sensitivity (30 mA) differential magnetothermic switch to which the machine must be connected and a power socket with ground connection of the type used in the country of use have already been prepared in the vicinity of the appliance.

Do not transport, install or carry out maintenance work on the appliance without using the personal protective equipment prescribed in this manual.

Keep all ventilation openings in the casing of the appliance free of obstructions.

Do not place objects that cause poor ventilation on and around the appliance.

Ensure that the installation location offers adequate clearance around the machine, so that the required periodical maintenance work may be carried out in full safety.

If the machine is being repaired, display appropriate signals in visible locations indicating that the machine MUST NOT be used.

Before working on the machine, make sure that any hot parts have returned to room temperature.

Disconnect the appliance from the power supply before carrying out any installation or maintenance work, ordinary or extraordinary.

During the installation of the appliance, persons not involved in the installation activities are not permitted to pass or remain in the vicinity of the work area.

The appliance is NOT designed to be installed:

- in explosive atmospheres;
- outdoors, in places exposed to salt-laden sea air or direct sunlight and weather elements (rain, humidity, etc.).

The appliance must be easily moved for any extraordinary maintenance: pay attention that any masonry work subsequent to installation (e.g. construction of walls, replacement of doors with narrower ones, renovations, etc.) do not hinder movement.

The appliance must be transported by means suitable for its weight and size and wearing appropriate personal protective equipment. When moved, even for very small distances, the appliance should always be lifted, NEVER pushed or pulled across the floor.

If the appliance is on wheels, make sure to be gentle when moving it around, to prevent it from tipping over and being damaged. Also pay attention to any roughness of the sliding surface.
The appliance equipped with wheels cannot be levelled, so make sure that the support

surface is perfectly horizontal, flat and free from roughness.

Do not overturn or lay the appliance on its side for maintenance.

Unauthorised interventions, tampering or modifications not in accordance with this manual will invalidate the warranty.

The rating plate provides important technical information that is vital in case of a request for maintenance or repair of the appliance: please do not remove, damage or modify it.

It is absolutely forbidden to tamper with or remove the adopted safety devices (protective grids, danger stickers, etc.).

The Manufacturer declines all responsibility if the above instructions are not complied with.

Packaging material is potentially dangerous and must be kept out of the reach of children or animals, and properly disposed of according to local regulations.

The appliance must be periodically checked by an authorised service centre. In order to ensure the best conditions of use and safety, such checks should be carried out in accordance with current national regulations or, preferably, every year.

The stationary state of the appliance, detected by visual inspection, does not guarantee with certainty that it is switched off. In order to protect his own safety, the operator must check that the machine is not powered, that is, that its plug is disconnected or that the switch of the panel to which it is connected is in the “OFF” position.

When installing the machine ALWAYS replace any pre-existing water supply pipes with the new ones supplied with it.

WARNING: If the power cable is damaged, have it replaced ONLY by QUALIFIED PERSONNEL in order to prevent any risks.

We recommend the installation of a water softener filter on the water line upstream the machine.

Refrigerant gas safety warnings

The appliance contains fluorinated greenhouse gases governed by the Kyoto protocol, in the quantities indicated on the serial plate.

The GWP (Global Warming Potential) of the gases is as follows: HFC R404A = 3750; HFC R452A = 2140; HFC R134a = 1430; R290 = 3.

Propane is a highly flammable gas. It is heavier than air, which means that in the event of a refrigerant leak it migrates to the ground.

Propane used in refrigeration systems is odourless. The system is hermetically sealed.

Safety instructions for UV lamps (only for XSafe models)

⚠ This machine contains an apparatus that emits UV and generates O_3 dissolved in the air. In some circumstances and if not properly managed, O_3 can generate risks to human health. The XSafe appliance is designed to produce O_3 below the legal limits when properly installed, used and maintained.

⚠ Improper use of the appliance or damage to the container can lead to the release of dangerous UV radiation. UV radiation can, even in small doses, cause damage to the eyes and skin. Appliances which are obviously damaged must not be used.

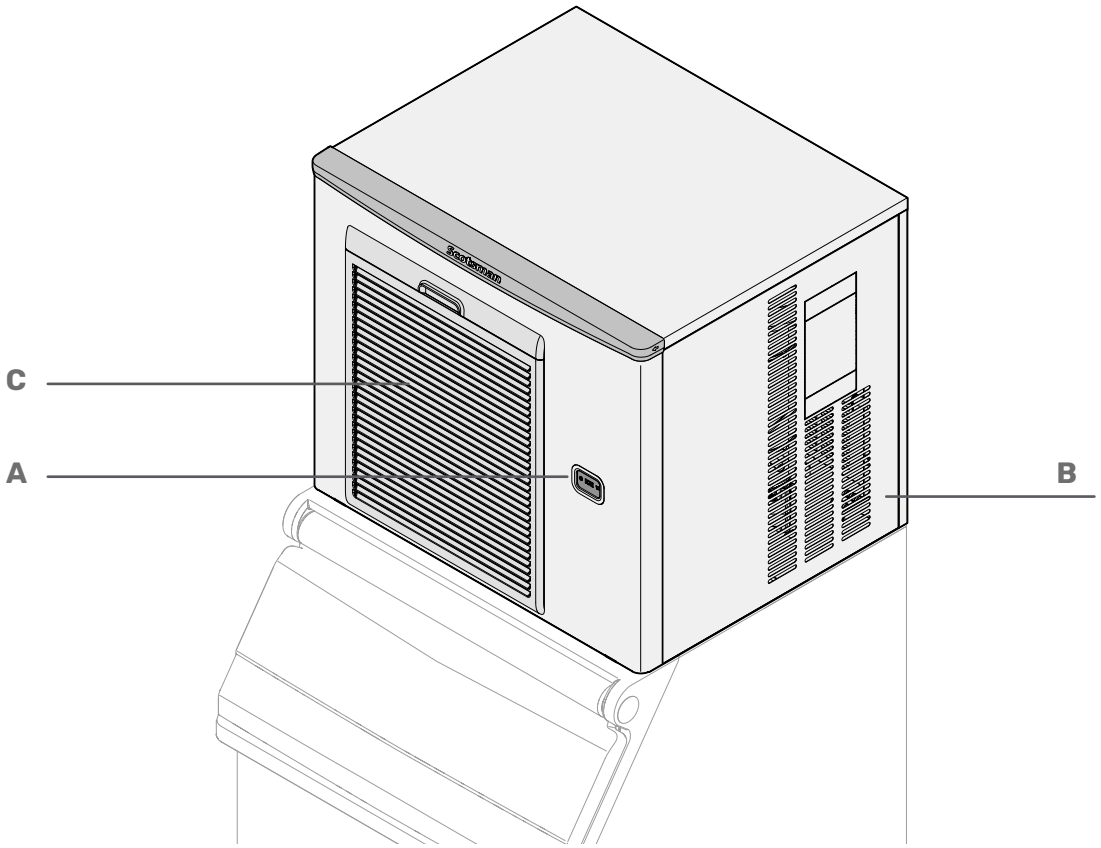
⚠ The replacement of the UV lamp CANNOT be carried out by the user, contact a specialized technician.

⚠ Please contact your local Scotsman dealer for the annual maintenance plan.

TECHNICAL DATA

Operating limits

Parameters	Minimum	Maximum
Ambient temperature	10 °C	43 °C
Water temperature	5 °C	38 °C
Water pressure	0.1 MPa (1 bar)	0.5 MPa (5 bar)
Water hardness	7 °f (French degrees) 4°dH (German degrees)	18 °f (French degrees) 10°dH (German degrees)
Water conductivity	50 µS/cm	nd
Voltage tolerance with respect to the data indicated on the plate	-10 %	+10 %
Sound level produced by the operation of the appliance	<70 dB(A)	



KEY

A Display
B Side vents
C Removable filter

For more technical information regarding the appliance, scan the QR code

AIR COOLING					
MODEL	**MXF 327**	**MXF 427**	**MXF 627**	**MXF 1027**	**MXF 1237**
VOLTAGE	230/50/1	230/50/1	230/50/1	230/50/1	230/50/1
Charge **R290** (g)	90 g	120 g	125 g	135 g	150 g
SUCTION PRESSURE (bar)	1.5	1.8	1.8	1.75	1.6
DELIVERY PRESSURE (bar)	14.3	16.6	17.1	15.8	17.5

WATER COOLING				
MODEL	**MXF 327**	**MXF 427**	**MXF 627**	**MXF 1027**
VOLTAGE	230/50/1	230/50/1	230/50/1	230/50/1
Charge **R290** (g)	80 g	120 g	110 g	130 g
SUCTION PRESSURE (bar)	1.65	1.7	1.5	1.7
DELIVERY PRESSURE (bar)	12.2	12.8	13.8	14.1

INSTALLATION

PRELIMINARY CHECKS

F01 After unpacking and before taking the appliance to the installation site:

(1) remove the front and rear panels (if present) and visually check that it has not been damaged during transport; if damage or anomalies are noted, do not proceed with the installation but inform the carrier or the manufacturer accordingly without delay;

(2) remove all internal supports used for shipping and protective adhesive tapes.

(3) check that:

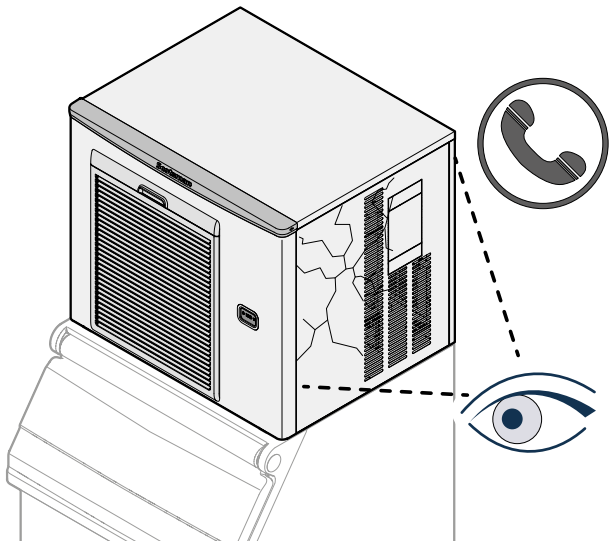
- the refrigerant circuit pipes do not touch other pipes or surfaces;
- that the fan turns freely;
- that the compressor is free to swing on its mounting brackets;

(4) also check that all components and accessories required for the model to be installed are present.

If any components are missing or damaged, contact the manufacturer;

(5) clean all internal and external surfaces of the appliance with a clean cloth dampened with water.

Before proceeding with the installation, dispose of the packaging in accordance with the regulations in force



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F01

in the country of installation. This prevents it from being in the way when the appliance is being moved to the installation site, or children or animals from playing with it, with the risk of suffocation.

Materials used for packaging:
Pallet: wood
Corners: cardboard
Outer box: cardboard
Straps, films, bags: plastic
Clips: metal
Note: depending on the packaging, all or only some of the materials indicated may have been used.

TRANSPORT

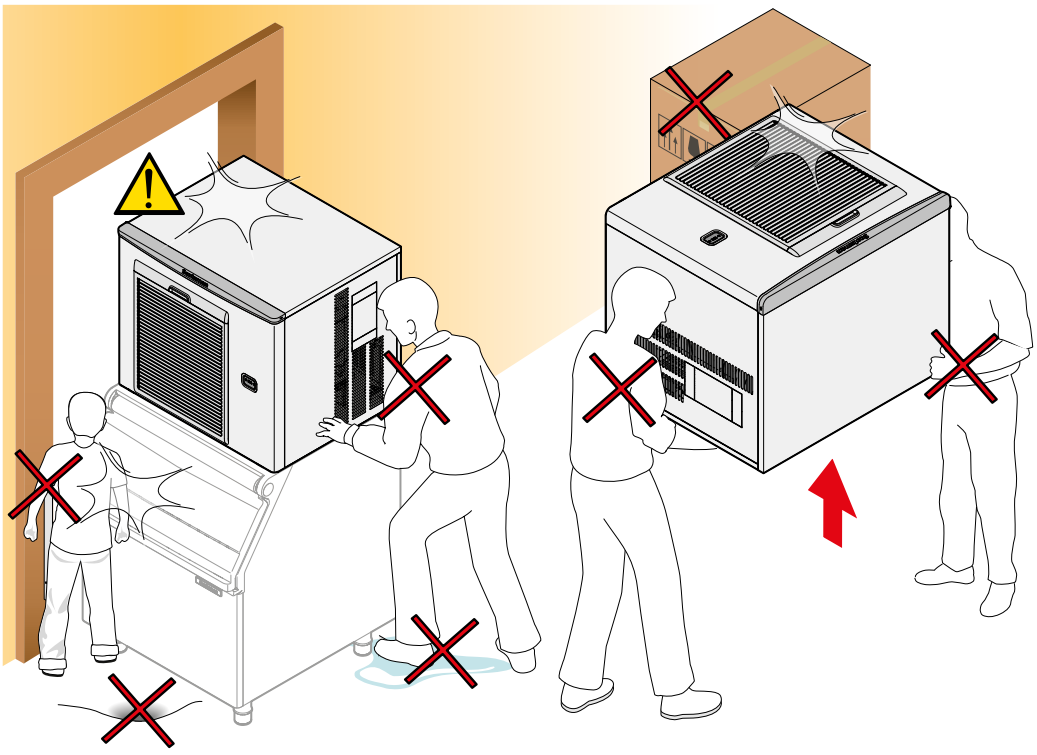
The manufacturer is not liable for any inconvenience caused by transport under conditions other than those specified in this chapter.
Transport and lifting of the appliance must take place:

- in **full compliance with the accident prevention regulations** and current laws, and with the utmost caution;
- by professionally qualified personnel, authorised and trained for the performance of these tasks and in **full possession of their physical and mental capacities**;
- **wearing all the appropriate PPE** - **Personal protective equipment**;
- **keeping the appliance in the vertical position**. If this is not possible, wait **24 hours** before putting it into operation;
- after ensuring that **no persons or objects** that may prevent the activities from being carried out in full safety are present in the working area;
- after ensuring that the **floor is smooth**, perfectly level, free of bumps and obstacles, and not slippery.

F02 Appliances must NOT be moved:

- manually;
- with straps;
- pulling or pushing them.

To find out the weight of the appliance being transported, please refer to the model data sheet, which can be downloaded using the QR code.

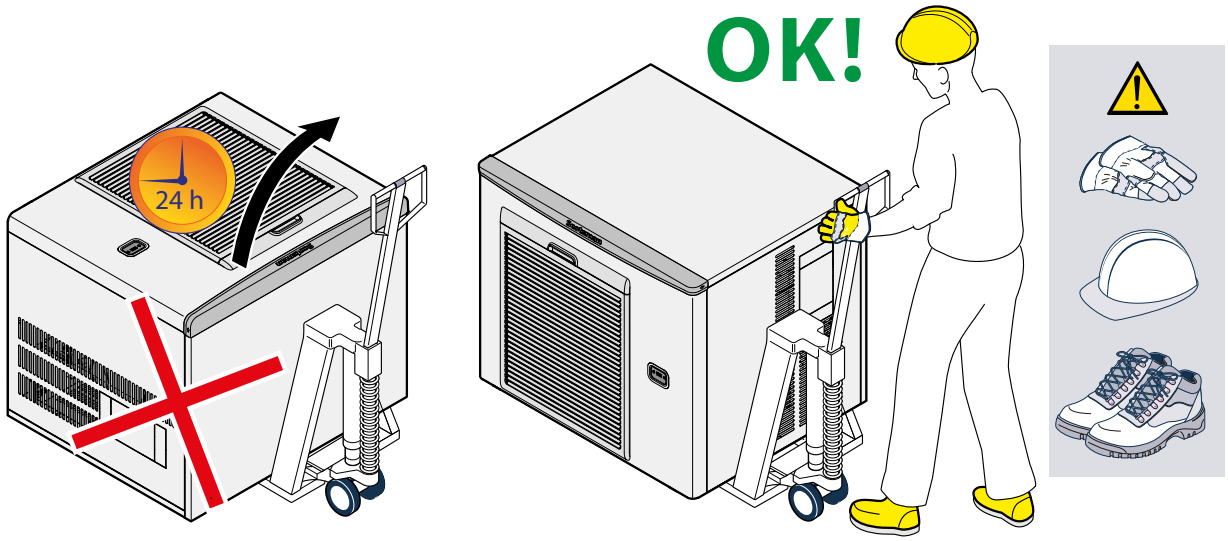


F02

Correct transport of the appliance

F03 Insert the forks of a **pallet truck** suitable for the weight of the appliance under the **sides** of the same, taking care not to damage the bottom.
Raise the appliance high enough so that it can be moved easily and take special care to balance the weight, as the centre of gravity does not coincide with the geometric centre of the appliance. Pay attention to the inclination when moving; **always keep the appliance in the vertical position**. If this is not possible, wait **24 hours** before putting it into operation.
When handling the appliance using a **pallet truck or forklift truck**, insert the forks on the inside of the feet (if present).
In case of mistake, do not try to counteract the load but drop it.

- Lifting equipment (pallet trucks, forklift trucks, etc.) must be suitable for the masses, dimensions and movements to be carried out.
- When lifting each part, make sure to use lifting equipment with a lifting capacity that is at least 20% greater than the weight of the part.
- It is forbidden to make modifications on one's own initiative or to use makeshift means to secure and lift machine parts.
- The use of lifting equipment other than that specified in these instructions is prohibited.
- No person should be in the vicinity of the machine during transport, except the person transporting it.



F03

POSITIONING

Installation warnings

The installation of the machine must ONLY be carried out by authorised and qualified personnel.

This manual discusses the assembly instructions for various appliances, although only some of the currently available models are indicated.
Unless expressly otherwise specified, **the instructions are valid for all models**.
Appropriate personal protective equipment must be worn during the installation operations.
The installation location must meet the minimum installation requirements indicated by the manufacturer.
The machine must be installed following the methods and meeting the requirements described in these instructions, as well as allowing for the required free surrounding spaces.
The installer must assess the installation position of the machine and equipment in such a way as to ensure that the assembly and disassembly of its various components is simple and convenient, and guarantee the necessary clearance and access to the machine for maintenance purposes.

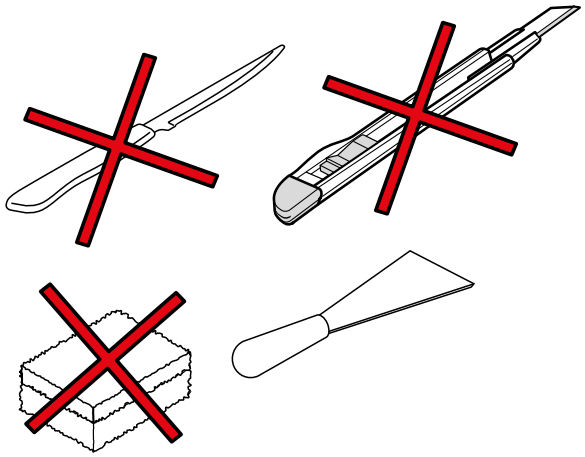
Preliminary operations

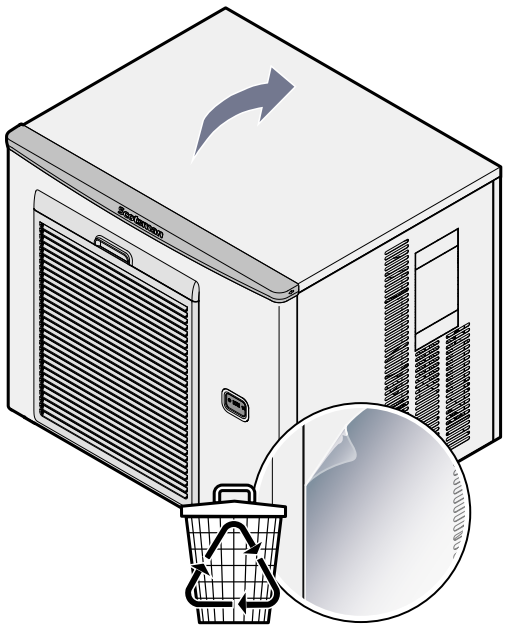
CHECK OF THE SUPPLIED COMPONENTS

Check that all the components required for the installation have been received and are in good condition.
If any are missing, do not proceed with the installation but promptly inform the manufacturer or dealer.

REMOVAL OF THE PROTECTIVE FILMS

F04 Slowly peel off the protective films from the appliance. Clean any glue residues with a suitable solvent without using tools or abrasive or acid detergents, which could damage the surfaces.
Once removed, protective films must be kept out of the reach of children or animals, as they are potentially dangerous, and properly disposed of according to local regulations.





F04

Positioning in the installation room

ROOM CHARACTERISTICS

F05 WARNING. This ice maker is designed to be installed **inside** rooms solely dedicated to the **storage of foodstuffs** and which **comply with the current regulations** in terms of work safety, installations and fire prevention.

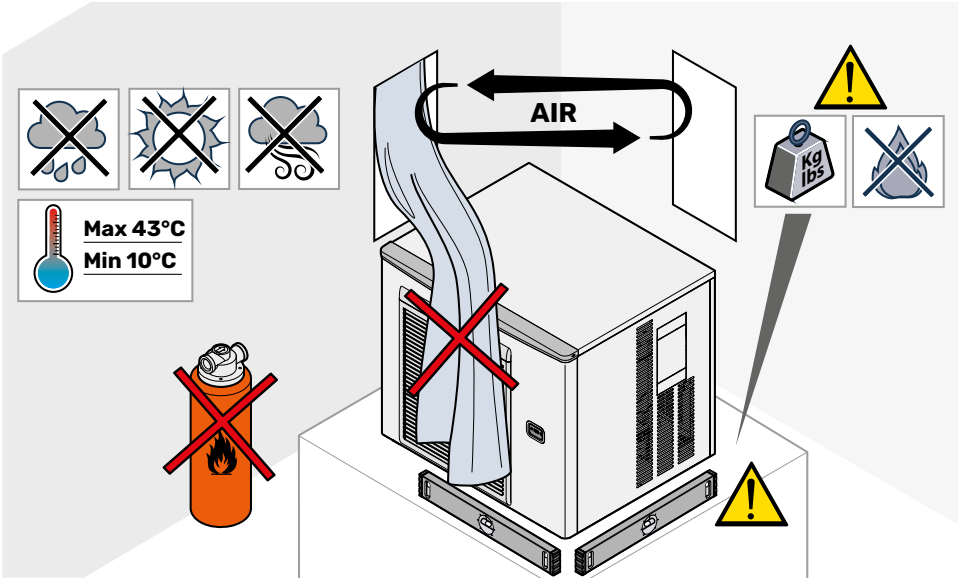
The installation rooms must always have temperatures above 10 °C, even during the winter months.

Prolonged periods of operation at temperatures outside the following limits constitute misuse according to the SCOTSMAN warranty terms and automatically void the warranty.

The manufacturer's warranty does not cover oxidation due to installation in marine environments or in the presence of salt air.

The appliance must not be exposed to vibrations, high-frequency noise, dust or foreign materials, as such exposure may lead to deterioration or mechanical failure. It must also not be exposed to the elements (rain, hailstones, fog, snow, etc.).

The appliance must be easy to move for any extraordinary maintenance that may be required. Pay attention that any masonry works subsequent to the installation (for example construction of walls, replacement of doors with narrower ones, renovations, etc.) do not hinder movement.



MODELS	Heat rejection W	Air flow rate m³/h
MXF 327	1130	450
MXF 427	1750	450
MXF 627	2350	800
MXF 1027	3850	1050
MXF 1237	4300	1050

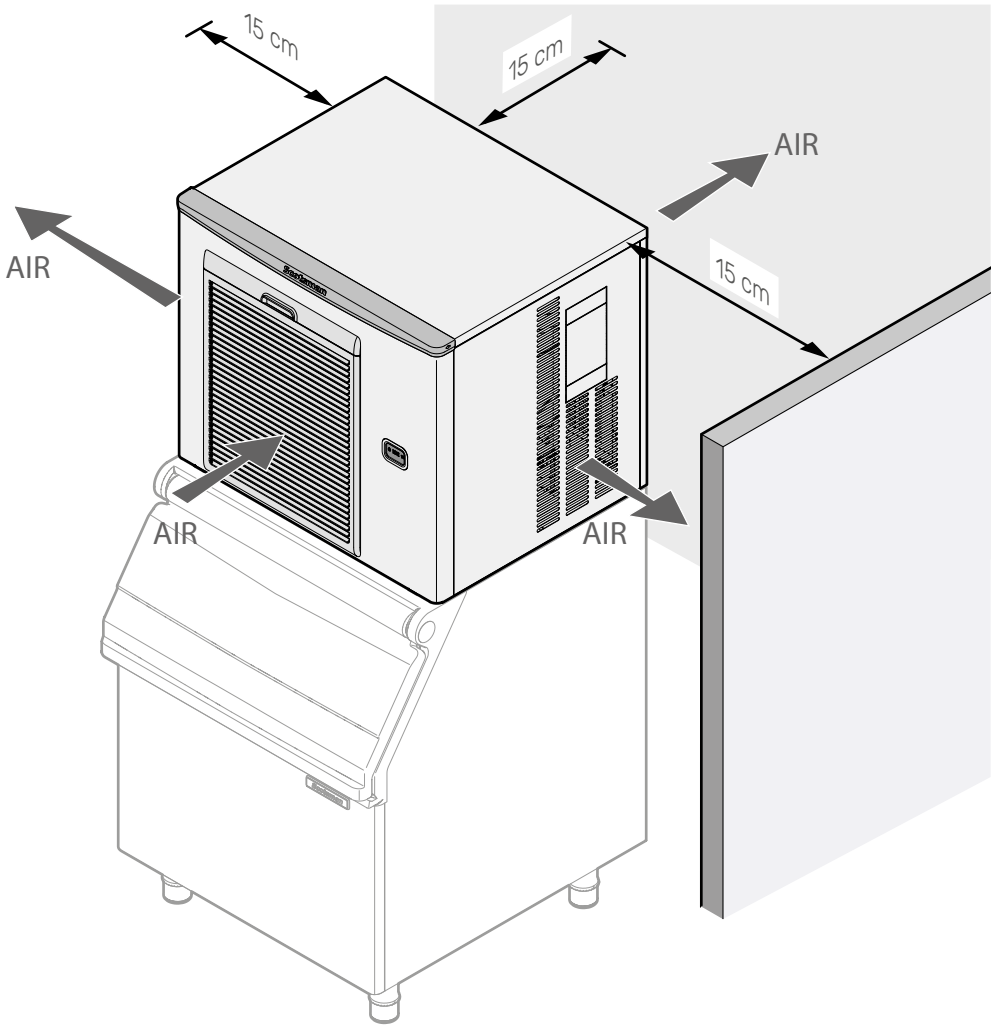
MINIMUM DISTANCES TO BE RESPECTED

F06 Install the appliance:

- so that the electricity and water connection points are at easy reach;
- leaving the spaces indicated in the figure from any walls or other neutral appliances;
- at a distance of about **15 cm** from hot appliances (for example fryers, ovens, hotplates, etc.).

Always ensure that the position chosen for the installation allows for the convenient and easy removal of the ice and that there is sufficient space for daily cleaning and extraordinary maintenance (for example repairs).

Also check that there are NO curtains or obstacles in the vicinity of the appliance that could obstruct or prevent proper air circulation through the ventilation slots.



F06

CONNECTIONS

Connection warnings

The appliance requires the following connections to the systems inside the room:

- **water** connection (1 or 2 water ports depending on the machine install);
- **electricity** connection.

All connections must be completed by qualified personnel, wearing personal protective equipment (for example gloves, safety shoes, etc.), in accordance with the regulations in force in the country of use and in compliance with the regulations on installations and safety at work.

Consult the rating plate

F07 Before completing the connections, it is necessary to **check the details** of the appliance to ensure that they match those of the system; all data can be found on the rating plate **located on the back of the equipment**.
The rating plate provides important technical information, which are also indispensable in the event of a request for maintenance or repair of the appliance. It is therefore recommended not to remove, damage or modify it.

Machine: MXF series ice maker
Manufacturer:

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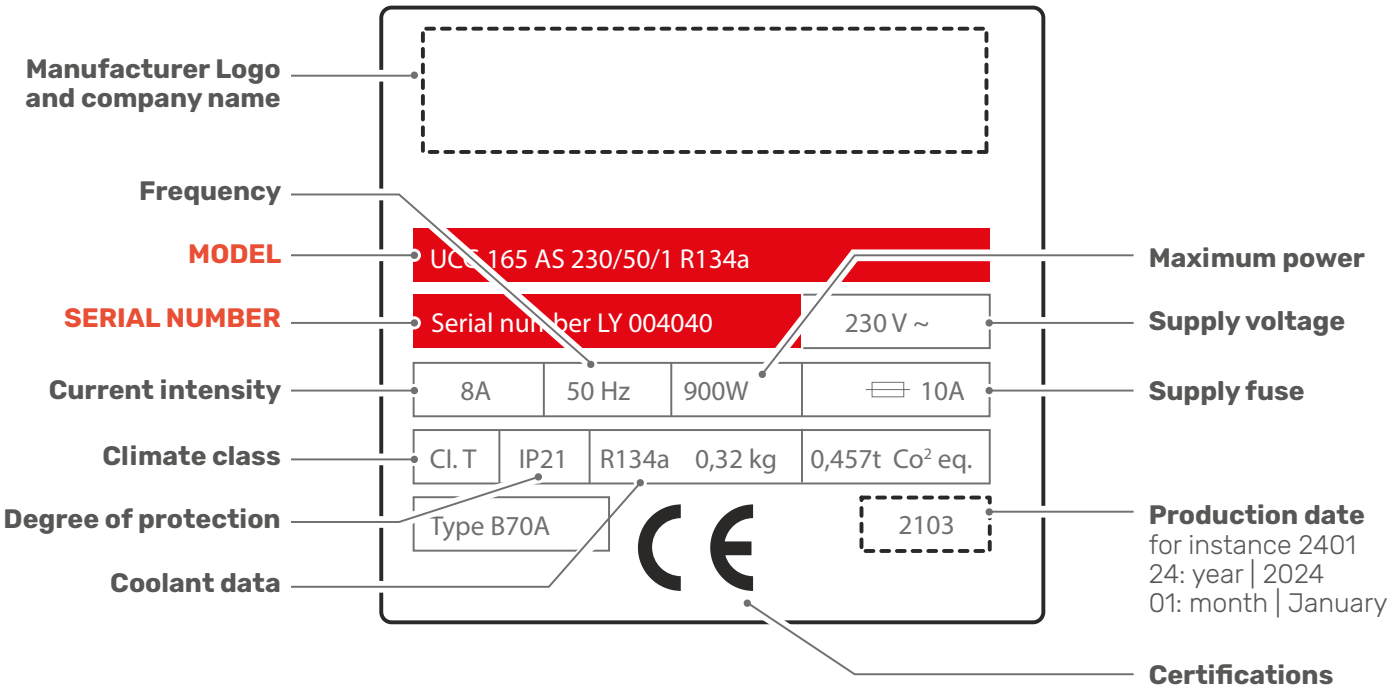


F07

Water connection

Before connecting the appliance to the water mains, it is mandatory to carefully read the safety instructions on page **4** of this manual.
The following are supplied with the appliance:
Air models
- 1 reinforced plastic hose with 3/4" female fitting
- 1 X 20 mm diameter water outlet pipe, not threaded

Water models
- 2 or 3 reinforced plastic hoses with 3/4" female fitting;
- 1 or 2 20 mm diameter water outlet pipe, not threaded;
- 1 "Y" fitting (if present).

CONNECTION TO THE WATER MAINS

The position of the inlet ports is different depending on the model. Refer to the data sheet of the appliance to be installed.

Air-cooled models

The appliance requires the following water connections:
- 1 3/4" connection to the water mains in order to fill the machine with the drinking water required for making ice cubes.

Water-cooled models

The appliance requires the following water connections:
- 1 3/4" connection to the water mains in order to fill the machine with the drinking water required for making ice;
- 1 3/4" connection to the water mains to load the water (not necessarily of drinking quality) required for the water condenser.

In both cases, install a shut-off tap (not supplied) at the water ports, so that the appliance can be isolated when necessary.

CHARACTERISTIC OF INLET WATER

Water is the only ingredient for making ice; therefore, the characteristics of the incoming water must not be neglected. For example, a supply water pressure of less than 1 bar can cause malfunctions in the appliance.

The incoming water must have the following characteristics:
- be **potable** (only the water used to create the ice cubes);
- have a **temperature** between 5 °C and 38 °C;
- have a **minimum conductivity** of 50 µ S/cm
- have a **maximum hardness** of 18 °f (French degrees) | 10°dH (German degrees) and a minimum hardness of 7 °f (French degrees) | 4°dH (German degrees); if the water hardness is higher, use a water softener (not supplied). The choice of the type of softener is the responsibility of the installer. Damage to components due to limescale deposits is not covered by the warranty;
- have a **pressure** value between 1 Bar and 5 Bar. If the inlet pressure is lower than the indicated value, use a pump with a suitable flow rate (minimum flow rate 300 l/h); if it is higher, use a pressure reducer.

CONNECTION TO THE DRAIN

The position of the drains differs depending on the model. Refer to the data sheet of the appliance to be installed.

F08 Connect to the **ø 20mm "A" fitting** a **"T" drain pipe** made of rigid plastic and with a 18 mm internal diameter as extension (not supplied).
The discharge of excess water takes place by gravity; to ensure a regular outflow, it is essential that the drain has an air vent and goes into an open siphon. The choice of the type and the fixing method is the responsibility of the installer; it is advisable to have a length and slope such to allow the proper drainage of condensate and to install a siphon.
An air gap of 2.5 cm must be maintained between the exhaust pipe and the evacuation area (grating or other receiving pipe). This ensures that potentially dangerous bacteria are NOT able to travel up the drain and contaminate the appliance.

A: ø 20 mm tray water drain

B: 3/4" gas drinking water inlet

C: 3/4" gas or 20 mm depending on model - water drain (water-cooled models only)

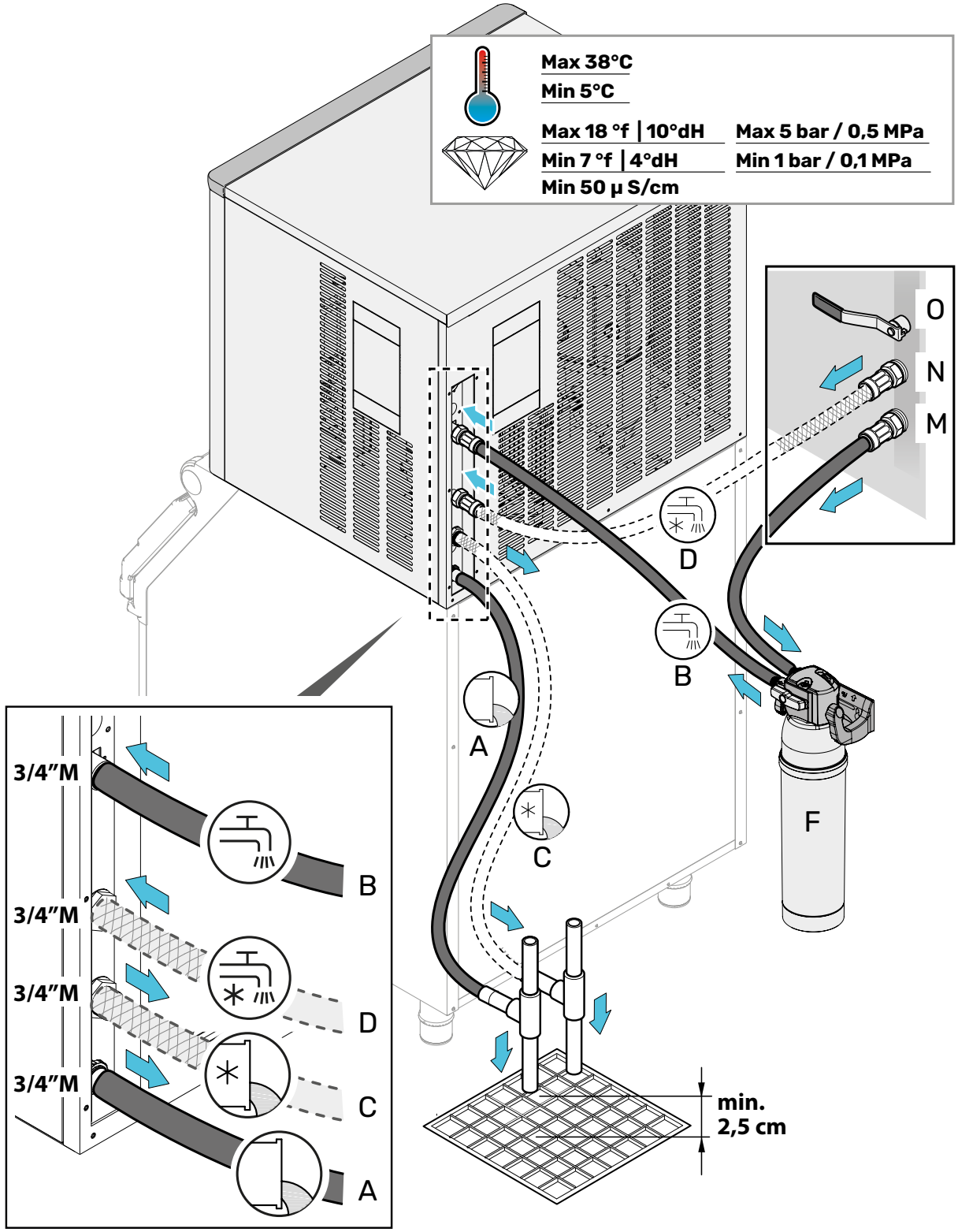
D: 3/4" gas inlet (water-cooled models only)

F: softener filter recommended (not supplied)

M: 3/4" drinking water connection

N: 3/4" water connection (water-cooled models only)

O: shut-off tap



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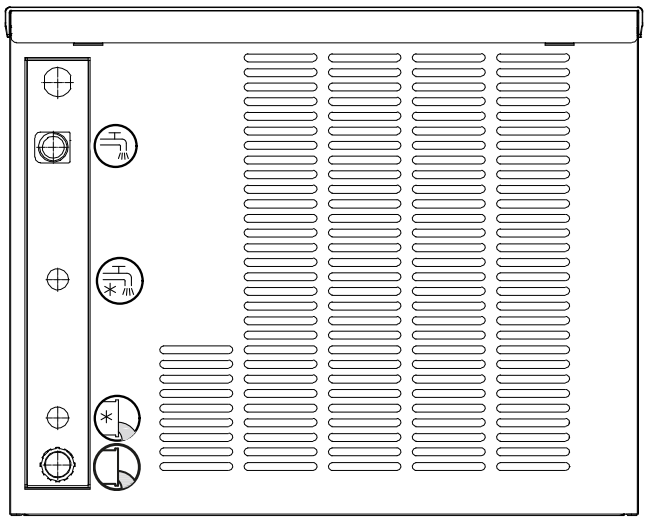

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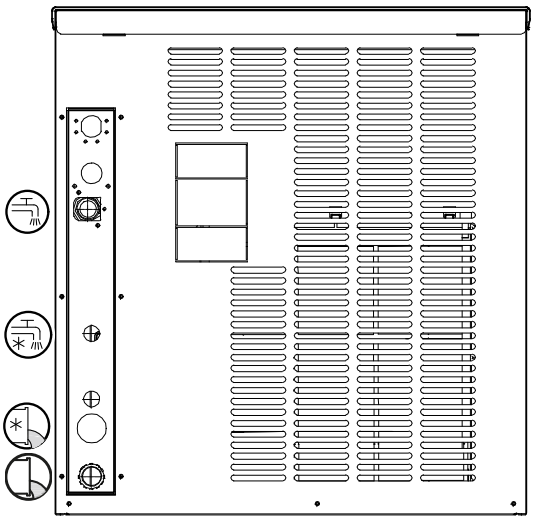

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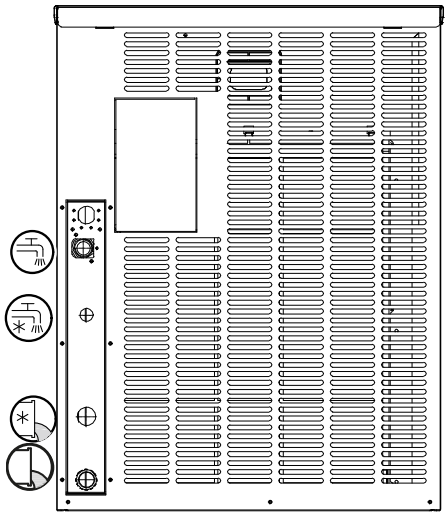

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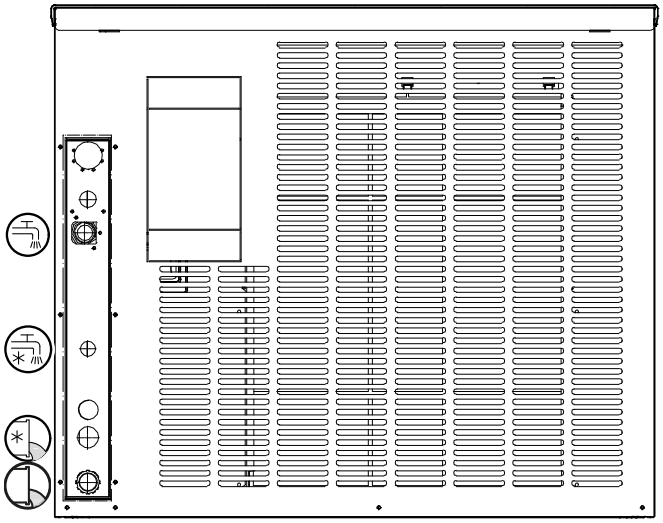


Electrical connection

SAFETY WARNINGS

Before making any electrical connections, it is mandatory to carefully read the safety instructions on page **4** of this manual and always compare the system data with the data on the rating plate.

The connection to the power supply network must comply with the regulations in force in the country where the appliance is installed and must be carried out by **qualified personnel authorised by the manufacturer**. Failure to comply with these requirements may result in damage and injury, invalidates the warranty and releases the Manufacturer from all liability.

For the connection **do not use adapters or multiple sockets**. **It is not possible to lengthen or join** the power cable in any way. **Do not roll up** the cable on itself if it is too long, and take care that it is not pinched, crushed or in the way of people passing by.

The connection system must:

- have a **maximum voltage variation** of +/-10% from what indicated on the rating plate (low voltage can cause abnormal operation and can result in serious damage to protections and electrical windings);
- have suitable **earth connection** using a single seamless cable, not even interrupted by the circuit breaker. The yellow/green earth conductor must be at least 10 mm longer than the other conductors;
- have an easily accessible **thermal-magnetic ON/OFF switch**, with appropriate fuses (see rating plate) and with a contact opening distance such as to ensure complete disconnection in case of category III overvoltage conditions. Disconnection devices must be incorporated into the power supply in compliance with the installation rules. This switch is necessary to cut off the power supply to the machine if it is directly connected to an electrical panel or if its plug is positioned in a place that is difficult to access.

Each appliance must also be part of an efficient **equipotential system** that complies with the regulations in force in the country of installation.

Replacement of the power cable, if necessary, should only be carried out by a qualified and authorised technician. The cable may only be replaced with one of similar characteristics.

CONNECTION TO THE POWER GRID

The appliances can be supplied:

- with power cable and plug or
- with power cable without plug.

APPLIANCE WITH POWER CABLE AND SCHÜKO PLUG ALREADY FITTED

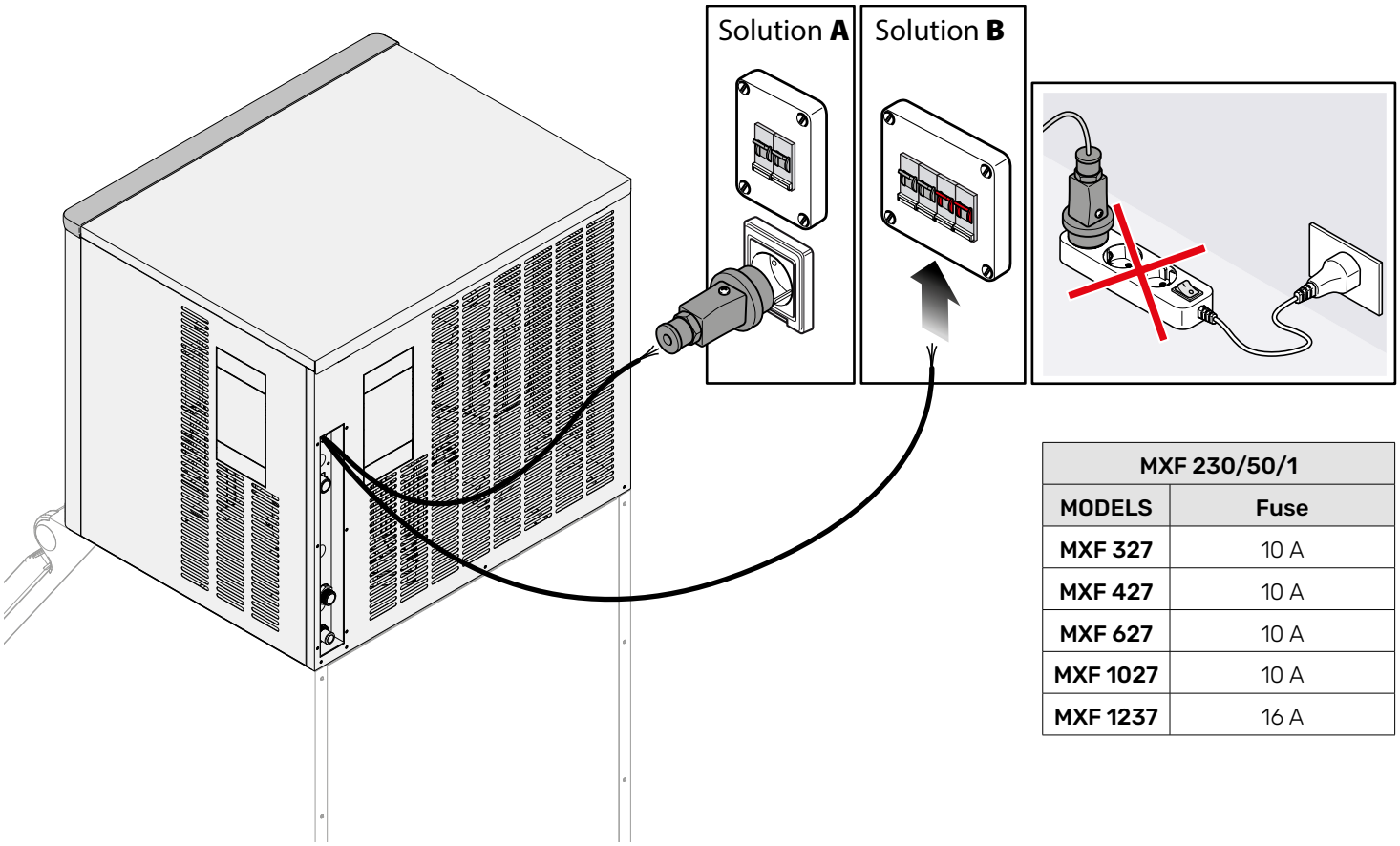
F09 To connect appliances **with power cable** and **schüko plug already fitted**, simply insert the plug into a socket with a capacity appropriate for the electrical characteristics of the machine, which can be found on the rating plate.

APPLIANCE WITHOUT A PLUG FITTED

The connection must be carried out by qualified personnel in one of two ways:

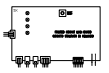
- by fitting a **plug** appropriate for the electrical characteristics of the machine;
- by connecting to an **electrical panel** that complies with the regulations in force in the country where the appliance is installed.

All electrical data can be found in the data sheet of the appliance to be installed.



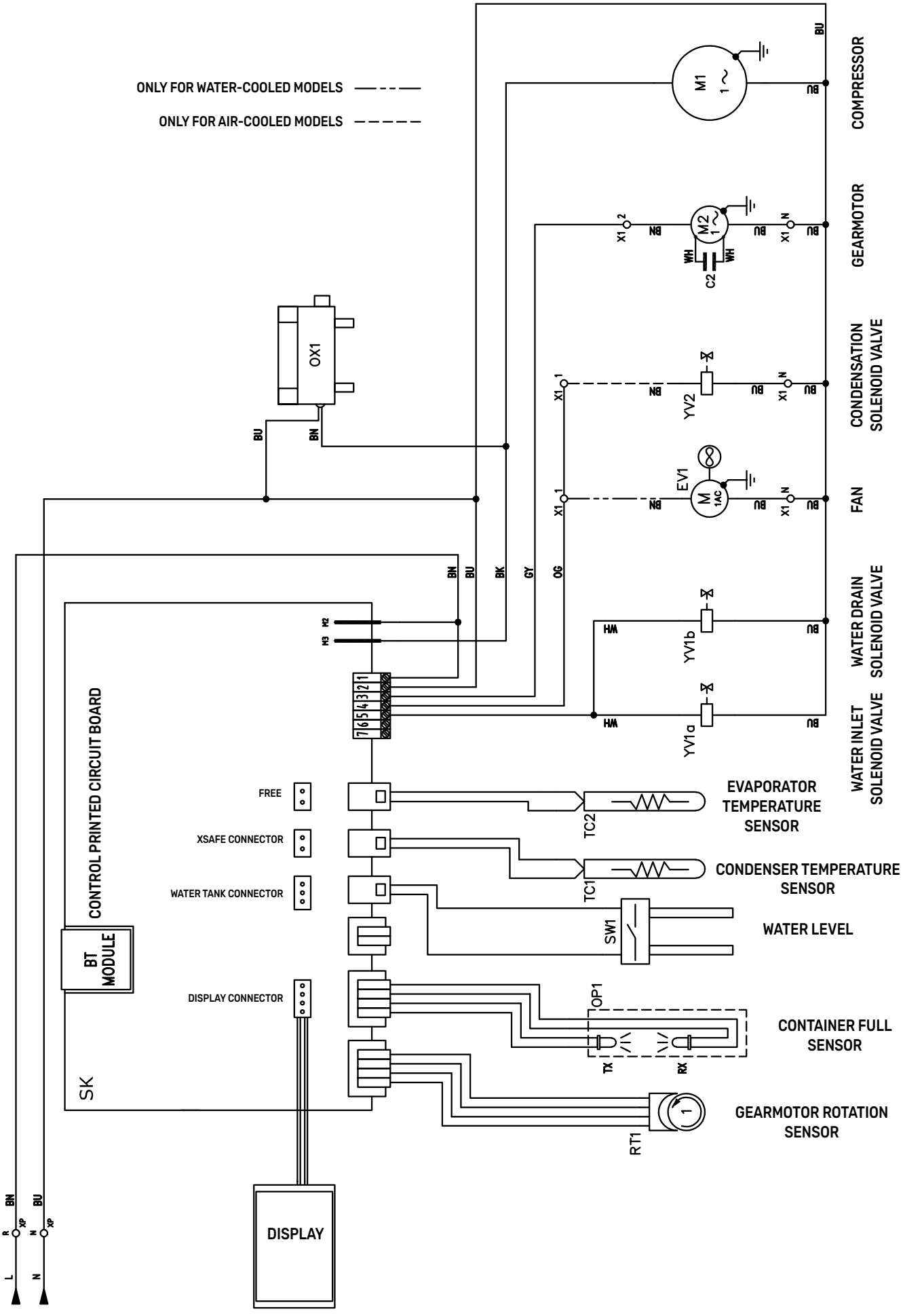
MXF 230/50/1	
MODELS	**Fuse**
MXF 327	10 A
MXF 427	10 A
MXF 627	10 A
MXF 1027	10 A
MXF 1237	16 A

F09

	C2	Operation condenser
	EV1	Fan
	M2	Gearmotor
	KM1	Compressor contactor
	M1	Compressor
	OX1	XSafe device
	SCK1	Control printed circuit board
	TC1	Condenser temperature sensor
	TC2	Evaporator temperature sensor
	SW1	Water level sensor
	YV2	Condensation solenoid valve
	YV1a	Water inlet solenoid valve
	YV1b	Water drain solenoid valve
	RT1	Gearmotor rotation sensor
	X1	Connector
	OP1	Container full sensor

BN	brown
BK	black
BU	Blue
GY	grey
GNYE	yellow-green
GN	green

YE	yellow
OG	orange
PK	pink
RD	red
WH	white


ONLY FOR WATER-COOLED MODELS
ONLY FOR AIR-COOLED MODELS
COMPRESSOR
GEARMOTOR
CONDENSATION SOLENOID VALVE
FAN
WATER DRAIN SOLENOID VALVE
WATER INLET SOLENOID VALVE
EVAPORATOR TEMPERATURE SENSOR
CONDENSER TEMPERATURE SENSOR
WATER LEVEL
CONTAINER FULL SENSOR
GEARMOTOR ROTATION SENSOR
CONTROL PRINTED CIRCUIT BOARD
BT MODULE
FREE
XSAFE CONNECTOR
WATER TANK CONNECTOR
DISPLAY CONNECTOR
SK
DISPLAY
M1
M2
C2
OX1
YV2
EV1
YV1b
YV1a
TC2
TC1
SW1
OP1
TX
RX
RT1
L
N

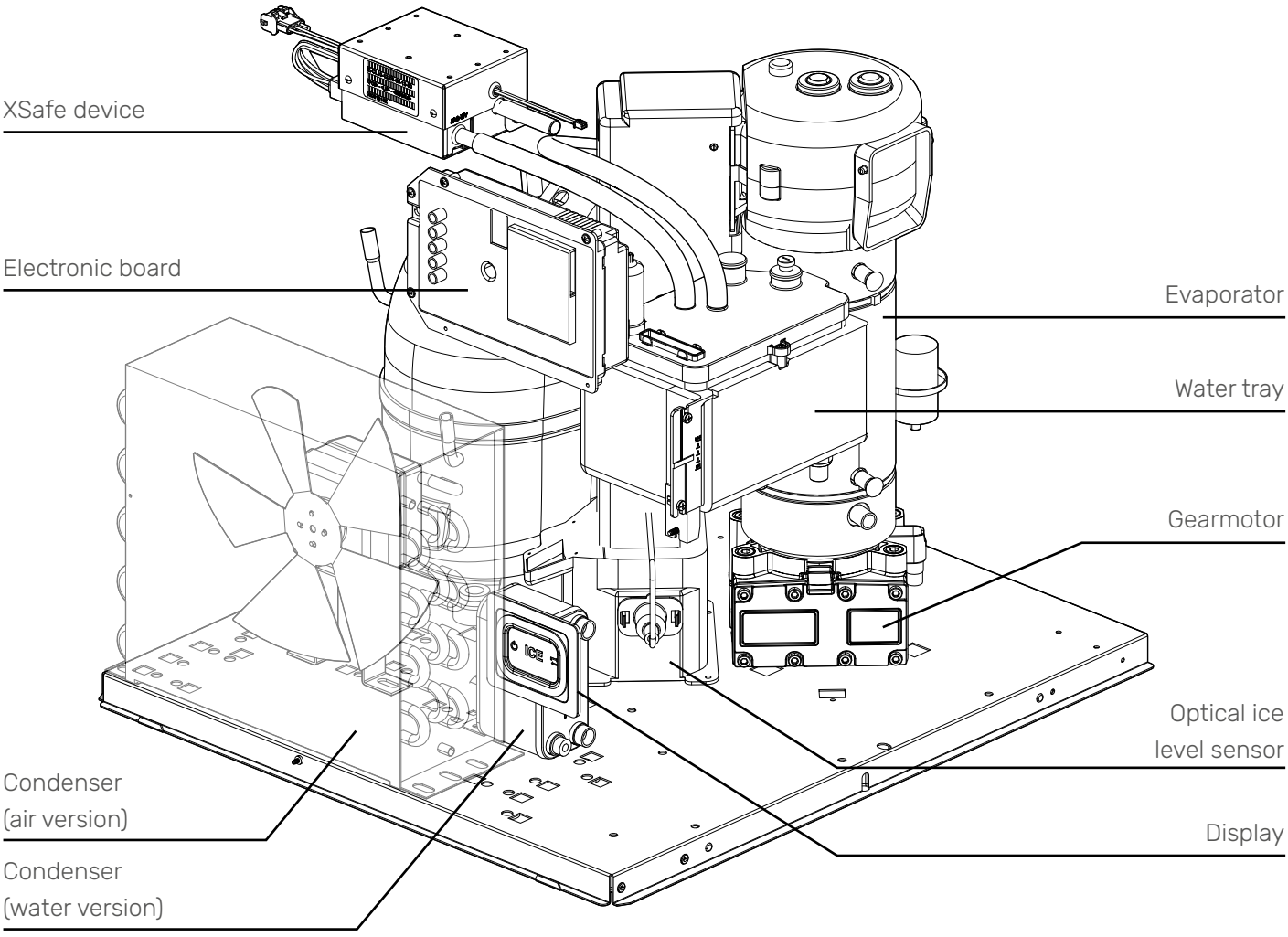
RUNNING TEST

After positioning and connecting the appliance, check that:

	it is level and that all specified clearances are as required	page **15**
	room temperatures never fall below 10°C, even during the winter months	page **14**
	all required electrical and plumbing connections have been completed	page **17**
	the water shut-off valve(s) is/are in the ON position (open)	page **17**
	the inlet pressure of the water circuit is at least 1 Bar	page **17**
	the refrigerant circuit and water circuit piping do not emit vibrations	page **17**
	the voltage of the power supply line is the same as that specified on the rating plate	page **20**
	the inside walls of the ice container have been cleaned and disinfected	user manual supplied with the appliance
	the compressor anchor bolts allow the compressor to swing on the supports	
	all the documentation relating to the appliance and the details of the authorised service centre have been handed over to the user	

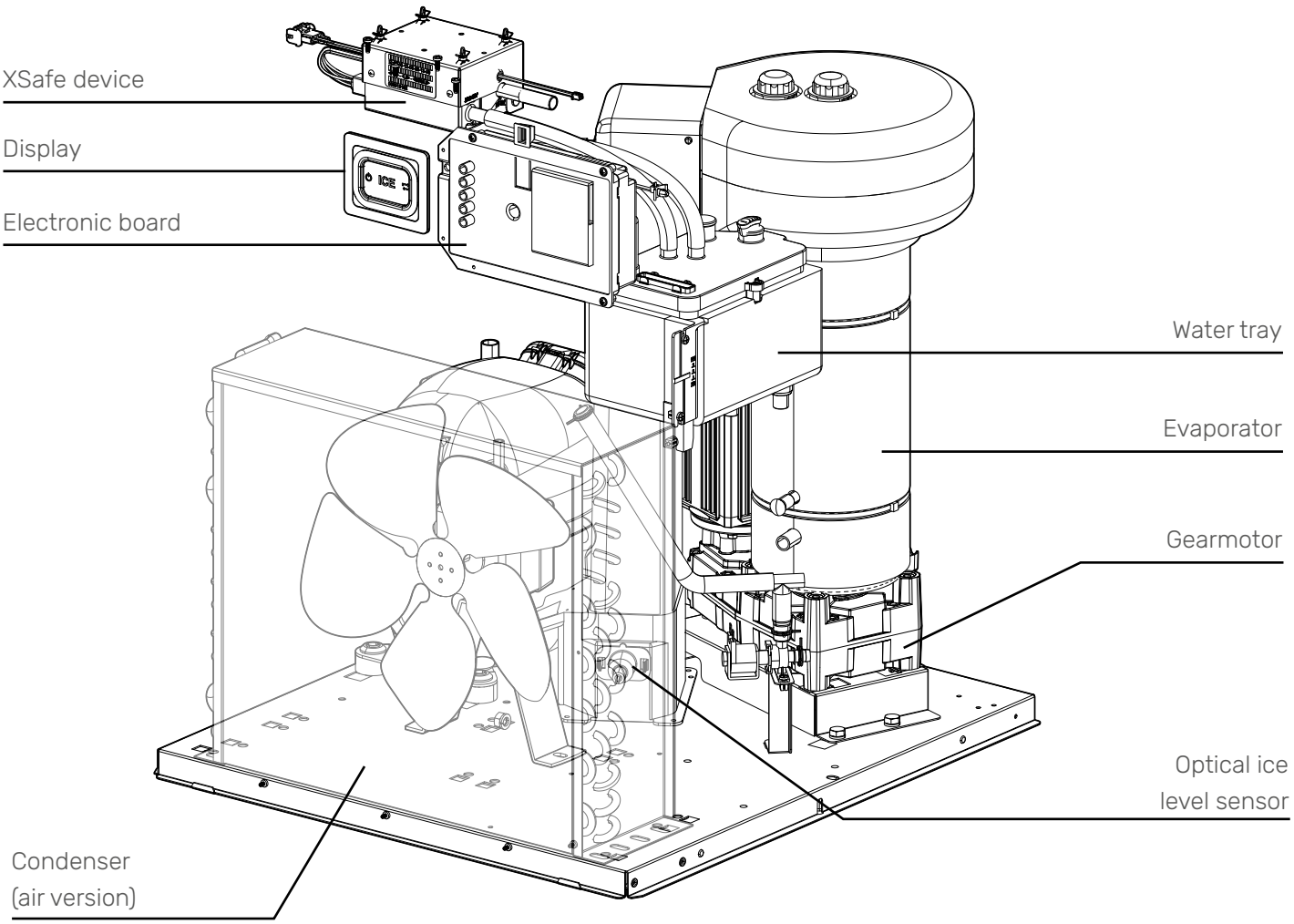
NOTES

MXF 327-427-627 series (small models)



F10

MXF 1027-1237 series (large models)



F11

DESCRIPTION OF THE COMPONENTS

UV lamp and ozone (XSafe models only)

This natural sanitation system based on the **UV lamp** is integrated inside the machine and guarantees absolute purity and hygiene.
The XSafe system requires quarterly or annual maintenance.

Caution! When handling the UV lamp, avoid touching the glass element with bare hands as oil and skin residues can adversely affect the performance of the lamp. Once removed, clean it with a very soft cloth freshly soaked in a specific detergent compatible with quartz glass (for example denatured alcohol). Wait until the lamp is perfectly dry and replace it in its position.

ANNUAL MAINTENANCE | UV LAMP REPLACEMENT

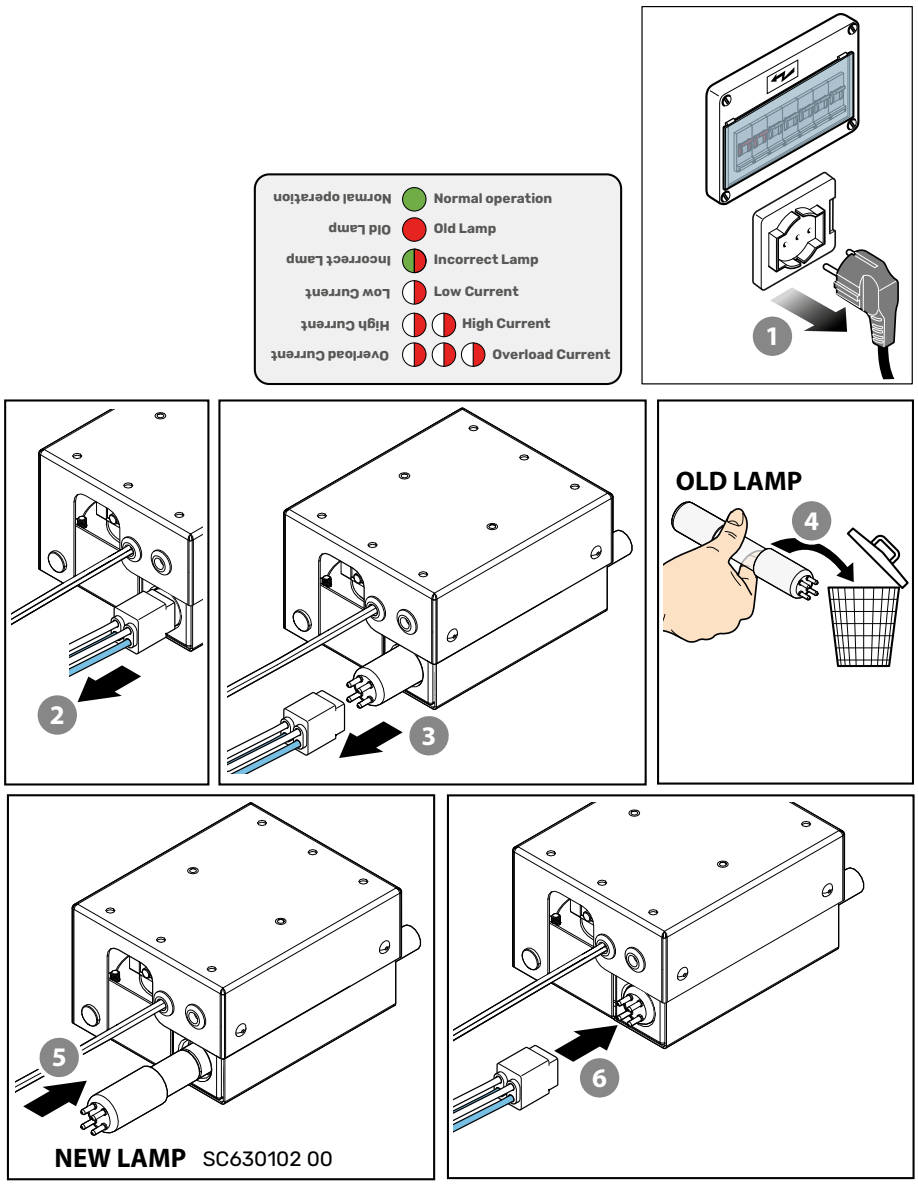
The **switching on of the RED LED** indicates that the UV lamp needs to be replaced. However, regardless of the LED light, the lamp must always be replaced every twelve months to ensure maximum functionality and efficiency.

F12 HOW TO REMOVE THE UV LAMP

- **1. Disconnect the power supply from the ice machine**, remove its covers and access panels to access the XSafe device (see figures **F10** and **F11** on the previous pages for its position inside the machine).

Meaning of the LEDs:

- Normal operation
- Lamp needs replacing
- Incorrect Lamp ID
- Low voltage
- High voltage
- Overvoltage



F12

- **2. Make sure that the entire XSafe device is cold.** Wear protective gloves.
- **3. Gently pull the lamp holder to disconnect it from the lamp.** Important: Do not detach the lamp holder by pulling on the connecting wires, this will damage it and may result in electrocution when reconnecting it. The 4 connection pins of the UV lamp will be exposed.
- **4. Remove the lamp from its housing.**
- **5. Dispose of the old UV lamp** in accordance with hazardous waste disposal regulations (these UV lamps contain small traces of mercury).
- **6. Insert the new UV lamp**, making sure that its 4 connection pins are exposed so that the lamp holder can be reconnected. Only use **SCOTSMAN SC630102 00** UV lamps. The use of different types of lamps invalidates the warranty. **Caution!** When handling the new UV lamp, avoid touching the glass element with bare hands as oil and skin residues can adversely affect the performance of the lamp.
- **7. Replace all the covers and panels** removed from the ice machine and reconnect it to the power supply.

FREQUENTLY ASKED QUESTIONS

What is Scotsman XSafe?
XSafe is a natural sanitising system that relies on a UV lamp. It is integrated inside the appliance and guarantees absolute purity and hygiene:
- treats the air with ozone technology in the food area of the ice maker;
- keeps the ice maker and the container clean, reduces mould, viruses and other microorganisms;
- it is fully automated and chemical free.

How does it work?
The XSafe process replicates the positive effects of UV sunlight. The UV lamp generates a mixture of free oxygen atoms (O), hydroxyl radicals (HO), ozone (O_3) and super oxide ions (O_2); this mixture is highly active against mould, viruses and other microorganisms.

Is XSafe dangerous to humans?
The XSafe appliance is designed to produce O_3 below the legal limits when properly installed, used and maintained.

Does the XSafe system contaminate or change the taste of ice?
No. The XSafe system works without the use of chemicals and the reactive oxygen mixture does not transfer any taste or odour to the ice.

Can XSafe be installed on any Scotsman machine?
Yes, the XSafe XR-30 kit can also be installed externally on all SCOTSMAN ice machines.

Why is XSafe better than devices that add ozone to water?
Because all the internal parts of the machine not in direct contact with water would not be sanitised and because the taste and appearance of ice could change.

Is any intervention required on the part of the operator?
The XSafe system requires no operator intervention.
It works automatically during the machine ice production phase

Is XSafe effective against Covid-19?
XSafe was tested with the influenza A virus (bird flu virus), which is a type of virus similar to Covid-19 (they belong to the same family). The result was 99.99% inactivation efficiency.

Does XSafe also sanitise the ice scoop?
Yes, if the scoop is kept inside the ice tray.

Does XSafe sanitise incoming water?
XSafe was developed for the treatment of the internal areas of the ice machine (ice compartment).
It will certainly have a slight disinfectant effect on the incoming water, but if the water is not drinking quality, it must be purified and filtered by other suitable means before use.

Will the ice machine still need a water filter?
To ensure that the ice machine produces clear and pure ice, it is always recommended to install a suitable filter system. The XSafe system has no beneficial effect on the formation of fouling; if hard water is used, a water filter is definitively necessary.

Does XSafe also reduce the descaling frequency?
No, XSafe only has an effect on organic microorganisms, not on inorganic materials such as limestone, salts, sand, etc.

Is XSafe noisy?
No, XSafe does not produce noise.

With XSafe fitted, is it still necessary to empty and clean the ice machine?
Yes. The ice machine must still be switched off and emptied periodically to remove physical contaminants and dirt that may have entered the machine.

How can one make sure that XSafe is working properly?
On XSafe there are LEDs that indicate the status of the machine, the blue LED light indicates normal operation.

How often should the internal UV bulb be replaced?
The UV lamp must be replaced every year by Technical Support with an original SCOTSMAN lamp. This guarantees the perfect effectiveness of the system. If the lamp is not replaced every year, in addition to the loss of efficiency, the manufacturer warranty is also invalidated.

Can the UV bulb be replaced by the end user?
The replacement of the UV lamp CANNOT be carried out by the user, contact a specialized technician.

Personal notes

Display

The display is located on the front panel, inside a plastic frame designed to protect it from electromagnetic interferences. It consists of:

- An OLED screen that allows the user to view information regarding the status of the machine, such as the current phase (PURGE, ice production, ice compartment full, etc.) and any alarms or warnings.
- An on/off button.
- A navigation button, that the user can use to scroll through the available menus.

Machine on standby

With the machine in standby, the display screen is off and the power button flashes slowly. Pressing the button starts the machine and its operation.

Machine in operation

With the machine in normal operation, the display screen is off and both buttons are on.

Pressing the off button for five seconds switches the machine to standby.

Briefly pressing the navigation button displays the current phase of the machine, identified by a specific code (F00, F01, ICE, etc.)

Machine in alarm

If the machine has a fault, the relevant code (A01, A02, etc.) flashes on the display. Depending on the type of alarm, the machine can restart automatically, or it must be restarted manually.

Active alerts

The electronic board communicates two types of notifications to the user:

- XSafe lamp replacement, after 8000 hours of component operation.
- Regular machine cleaning, after 12 months of operation.

In both cases, the relevant notification flashes on the screen. When the notification is displayed on the screen, the machine will still function correctly.

Evaporator temperature sensor

The evaporator temperature sensor is located inside a metal tube. It reads the temperature at the exit of the latter and forwards it on the evaporator output tube to the circuit board via a low-voltage signal.

Based on the temperature read, the board decides whether to continue normal operation or to stop the machine.

Evaporator temperature sensor failure

If the sensor is absent, disconnected from the board or damaged, the machine stops and alarm A02 is displayed.

Evaporator high temperature alarm

If after ten minutes of ice production the board records a temperature of more than 5 °C, the machine is stopped and alarm A04 appears on the display. After one hour, the machine restarts automatically.

Evaporator low temperature alarm

If the board records a temperature below -30 °C, the machine stops and alarm A05 appears on the display. After one hour, the machine restarts automatically.

Condenser temperature sensor

The condenser temperature sensor is between the fins of the air condenser. It detects the condensation temperature and transmits it to the condenser output near the dehydration filter; in case of water cooling, to the circuit board via a low-voltage connection.

Based on the recorded temperature, the board decides whether to continue normal operation or to stop the machine.

Cooling fan control

In the case of air-cooled machines, the condensing temperature is used to control the cooling fan. The board turns the fan on if the recorded temperature is above 35 °C and turns it off otherwise.

Condenser temperature sensor failure

If the sensor is absent, disconnected from the board or damaged, the machine stops and alarm A03 is displayed.

High condenser temperature alarm

If the board records a temperature higher than 70 °C (air cooling) or 60 °C (water cooling) during normal operation - **with the compressor running** - the machine stops and alarm A06 is displayed. When the temperature drops below 70 °C (air-cooled) or 60 °C (water-cooled),

the machine restarts automatically after one hour. If the machine goes into an alarm conditions three times in a row, it stops permanently.

High condenser temperature alarm at start-up
If the board records a temperature at start-up higher than 70 °C (air-cooled) or 60 °C (water-cooled) - **with the compressor NOT running** -, the machine stops and alarm A09 is displayed. If at start-up the temperature falls below 70 °C (air-cooled) or 60 °C (water-cooled), the machine starts automatically after one hour. If the machine goes into an alarm conditions three times in a row, it stops permanently.

Low condenser temperature alarm at start-up
If the board records a temperature below 3 °C at start-up, the machine stops and alarm A07 appears on the display. After one hour, if the temperature has risen above 3 °C, the machine restarts automatically.

Water conductivity sensor / minimum water level

The water conductivity sensor is located on the lid of the water inlet tray. It consists of three stainless steel pins of different lengths:

- The two outer longer pins are used to measure the electrical conductivity of the water in the tray. Based on the value read, the board decides how often to perform a PURGE cycle.
- The shorter pin at the centre is used in conjunction with one of the two outer pins to check the presence of water in the tray.

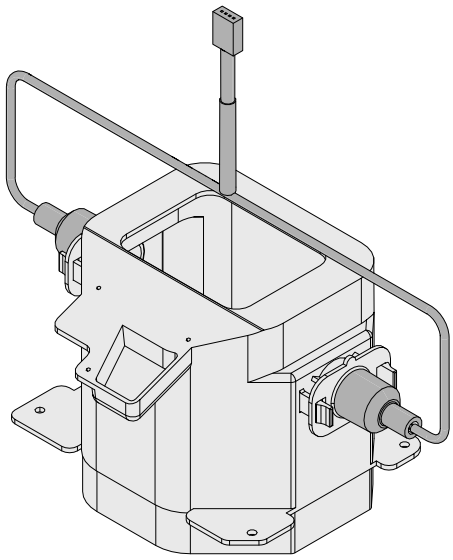
In order to detect the presence of water in the tray and to read its electrical conductivity, the pins must be immersed in water. The values read are communicated to the circuit board via a low-voltage connection.

No water in tank alarm
If the sensor does not detect water in the tank through the central pin, or if the electrical conductivity is less than 50 µS/cm, the board stops the machine and the display shows alarm A01. After three minutes, if water is detected in the tray, the machine restarts automatically.

PURGE cycle programming
The board periodically performs PURGE cycles (water draining and loading) to keep the hydraulic circuit clean. The frequency of the PURGE cycle depends on the electric conductivity of water:

- With conductivity above 300 µS/cm, a PURGE cycle is performed every 12 hours.
- With conductivity between 100 and 300 µS/cm, a PURGE cycle is performed every 24 hours.
- With conductivity below 100 µS/cm, a PURGE cycle is performed every 48 hours.

Optical ice level control sensor



The optical ice level control system is located at the base of the ice drain. It consists of three components:

- A fixing base with two holes, where the sensors are housed.
- An infrared transmitter, which generates a light beam that passes through the fixing base, and which if interrupted notifies the presence of ice in the duct.
- A receiver, which detects the presence or absence of the light beam and communicates to the electronic board the presence or absence of ice.

The light beam must be interrupted for a minimum of 10 seconds before presence of ice in the drain is notified. This is to prevent the machine from being stopped by the detection of individual ice granules falling through the duct.
When the beam is restored, the board waits 30 seconds before restarting the machine.

Gearmotor speed and direction sensor

The gearmotor speed and direction sensor is found in its housing on the top of the motor. Using a magnetic signal, the sensor detects the rotation of the motor and communicates it to the circuit board via a low-voltage connections.
Based on the values read, the board decides whether to continue normal operation or to stop the machine.

Gearmotor failure
If the board detects a rotation speed value of less than 6 Hz (360rpm), or if the direction of rotation detected is incorrect, the board stops the machine and the display shows alarm A08. After one hour, the machine restarts automatically.

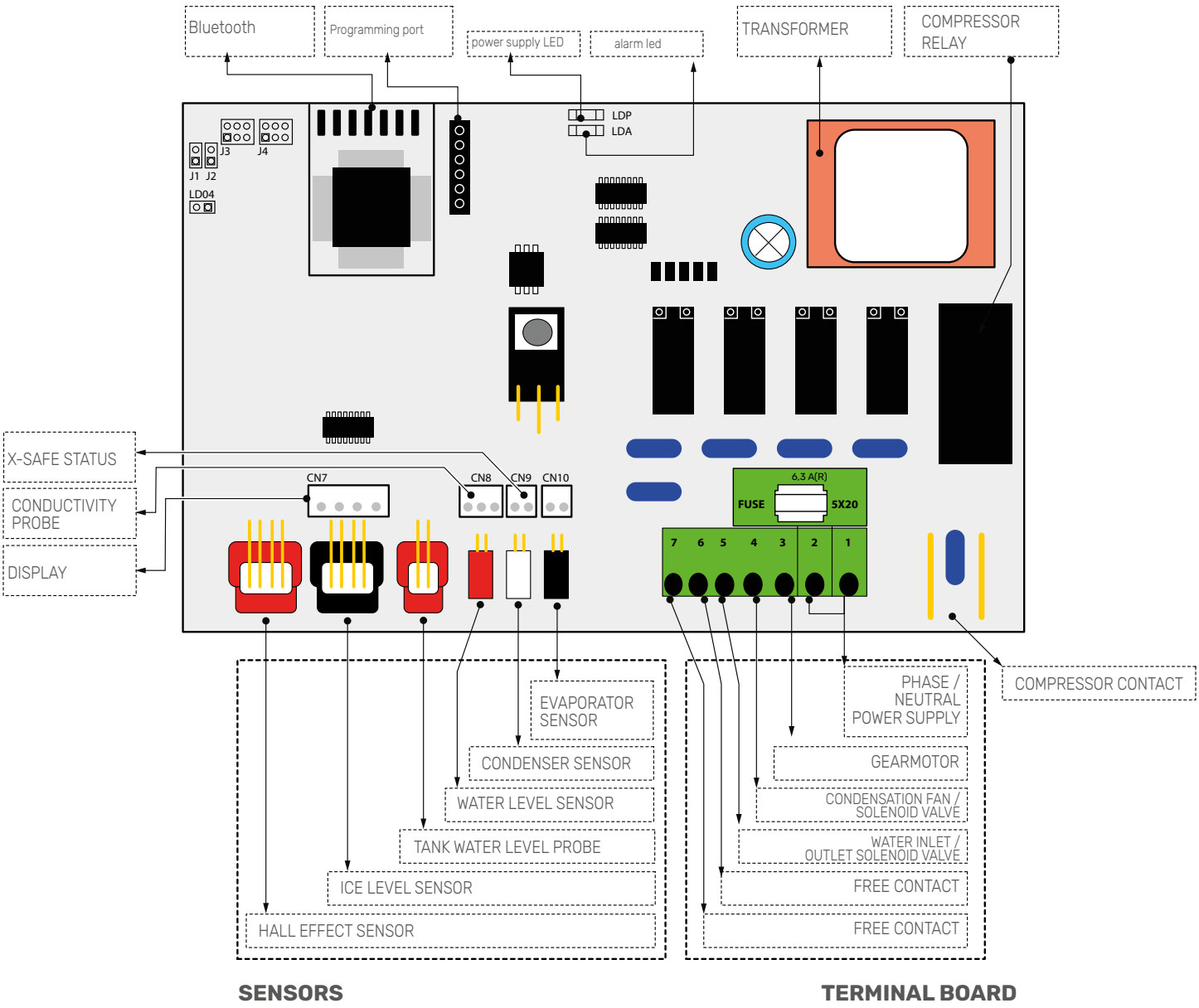
Electronic board (microprocessor)

The electronic board is the brain of the system: it receives the input signals from the sensors installed on the machine, processes them and controls the electrical loads (compressor, gearmotor, etc.). The sensors are connected to the circuit board via low-voltage wiring, while the electrical loads are connected via high-voltage power connections. The two sections of the circuit, low voltage and high voltage, are separated and protected by fuses. In addition to controlling the operation of the machine, the electronic board communicates with the outside world by means of two separate channels:

- A touch display on the front panel, which allows the user to know the status of the machine (operating phase, alarms and warnings that may be present) and to send on/off commands.
- Bluetooth connection, which allows the user to interact with the board through a dedicated mobile app.

If the machine stops due to an alarm, or if the ice store is found to be full, the board keeps the gearmotor running for three minutes, to completely discharge the ice contained in the evaporator cylinder. The gearmotor only stops immediately in two cases:

- In the event of a motor failure, signalled by the speed and direction sensor of the gearmotor.
- If the machine is switched off from the display.


Bluetooth
Programming port
power supply LED
alarm led
TRANSFORMER
COMPRESSOR RELAY
LDP
LDA
J1 J2
J3
J4
LD04
X-SAFE STATUS
CONDUCTIVITY PROBE
DISPLAY
CN7
CN8
CN9
CN10
6,3 A(R)
FUSE
5X20
7 6 5 4 3 2 1
COMPRESSOR CONTACT
EVAPORATOR SENSOR
CONDENSER SENSOR
WATER LEVEL SENSOR
TANK WATER LEVEL PROBE
ICE LEVEL SENSOR
HALL EFFECT SENSOR
PHASE / NEUTRAL POWER SUPPLY
GEARMOTOR
CONDENSATION FAN / SOLENOID VALVE
WATER INLET / OUTLET SOLENOID VALVE
FREE CONTACT
FREE CONTACT
SENSORS
TERMINAL BOARD

F13

Evaporator freezer

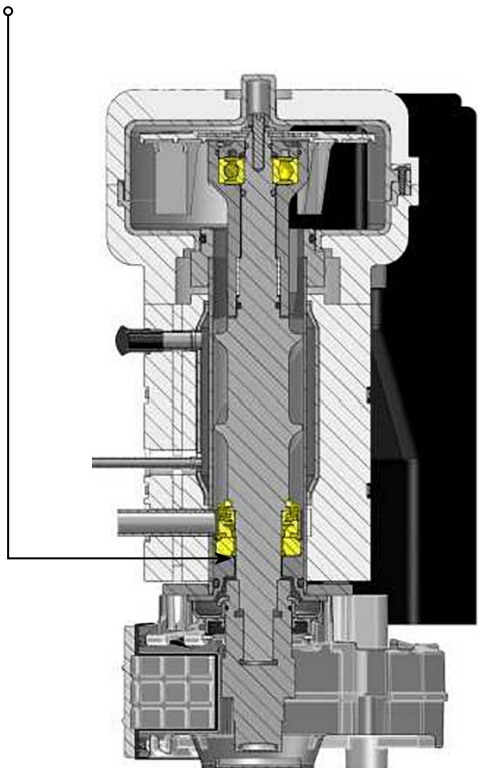
It consists of two coaxial cylinders. Ice formation takes place in the inner section of the small cylinder, in which there is water coming from the tray and an axially rotating auger. The liquid coolant circulates in the area between the outer surface of the small cylinder and the inner surface of the large cylinder. The coolant evaporates and cools the inner jacket and removes heat from the water, which gradually solidifies and is pushed upwards by the action of the screw.

At the top end of the evaporator is the ice breaker, whose job is to extrude the ice pushed by the auger and give it the shape and consistency of granular ice.

Inside the ice breaker are:

- a radial bearing, to keep the auger in the correct axial position during rotation
- a sealing ring, to prevent condensation from entering the bearing

For MXF 1027 and 1237 models, the auger is kept in position by both the bearing in the ice breaker and an additional radial bearing at the base of the cylinder



Gearmotor

Consisting of a single-phase asynchronous motor with a permanent condenser coupled to a gear and pinion gearbox, the gearmotor assembly drives, through direct transmission, the ice lifting worm screw or auger located inside the evaporator or vertical freezer. The motor rotor, supported by two permanently lubricated ball bearings, transmits motion to the gears in the gearbox. The entire gearbox is sealed by two oil seals inserted in the rotor and output shaft bores. The axial load of the auger is supported directly by the slow-running gear in the gearbox, through a special oil-bath bearing

Motor fan

(Air-cooled models)

The **motor fan**, electrically connected to the TRIAC of the electronic board, operates during the freezing cycle, circulating air through the condenser fins. During the freezing cycle, the fan can run intermittently to keep the temperature and thus the condensing pressure within two preset values.

Pressostatic valve

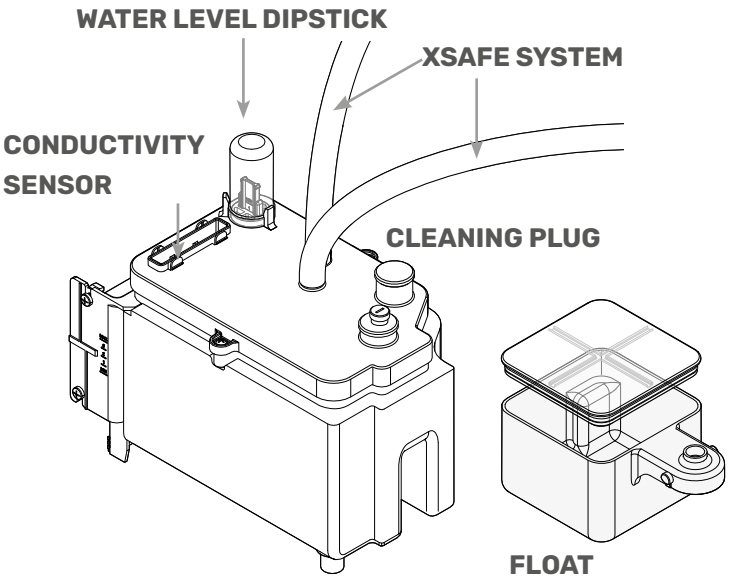
(Water-cooled models)

The pressostatic valve maintains the condensing pressure (delivery/high pressure) in the refrigerant circuit at a constant value by varying the condenser cooling water flow. As the pressure rises, the pressostatic valve opens further to increase the flow of cooling water to the condenser.

Compressor

The **hermetic compressor** is the heart of the system. It forces the refrigerant to circulate within the refrigeration circuit by sucking it from the evaporator - at the outlet of which it is in a vapour condition at low pressure and temperature - and compressing it towards the condenser, where it enters as a vapour at high pressure and temperature and exits in a sub-cooled liquid condition.
At the output of the condenser, the liquid enters the capillary, where it undergoes a drop in pressure and then enters the evaporator as a low-saturated vapour and exits it as a dry saturated vapour.

Float tray



The tray assembly consists of a plastic bowl, at the top of which is a float with an adjusting screw that maintains a constant water level inside the bowl, and for the communicating vessels inside the evaporator cylinder. Vertically attached to the cover are the three minimum water level control sensors, which indicate the presence or absence of water in the tray to the electronic board.

NOTE: It is very important to ensure the correct positioning of the lid on the tray, so that the sensors are submerged and can transmit the electric signal confirming the presence of water to the electronic board, therefore preventing the ice maker from stopping.

Personal notes

OPERATING PHASES

Getting to know the display

Operating phases, notifications and alarms

The user interface manages the following phases of the machine operation:

Machine Status	Description
F01	checks at startup
F02	ice level probe calibration
F00	waiting phase
PUR	PURGE phase
ICE	steady-state operation phase
BF	ice store full notification
TST	testing phase
CLE	cleaning request notification
XS	lamp replacement request signal

F14 Navigating using the Touch Panel

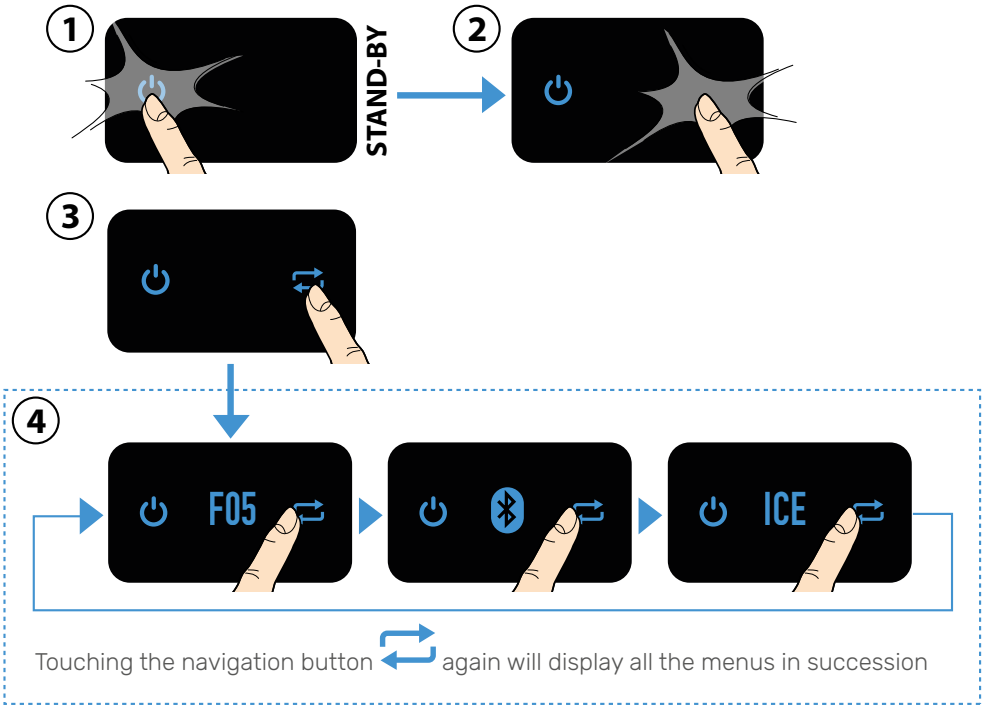
1. When the machine is first turned on, the touch panel is in stand-by mode with the ⏻ symbol flashing.

   Touch the ⏻ button to activate the Touch panel.

2. Touch the right of the display: the navigation button appears 🔁.

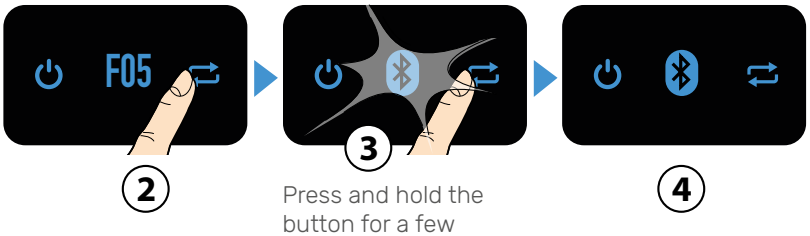
3. Touch the navigation button 🔁 repeatedly to display all the menus in sequence:

- **F0x**: Service dedicated menus
- **Bluetooth**: connect the machine to your device (e.g. Smartphone). See the next chapter for more information
- **ICE**: indicates that ice production is in progress



F15 Bluetooth connection between device and machine

1. Enter the store of the device to connect to the machine (Play Store on Android or App Store on iOS). Search for the **X-Wave App** and download it.
2. Press the navigation button until the symbol appears on the display.
3. Press and hold the navigation button for a few seconds: the symbol starts flashing.
4. When it stops flashing, release the navigation button.



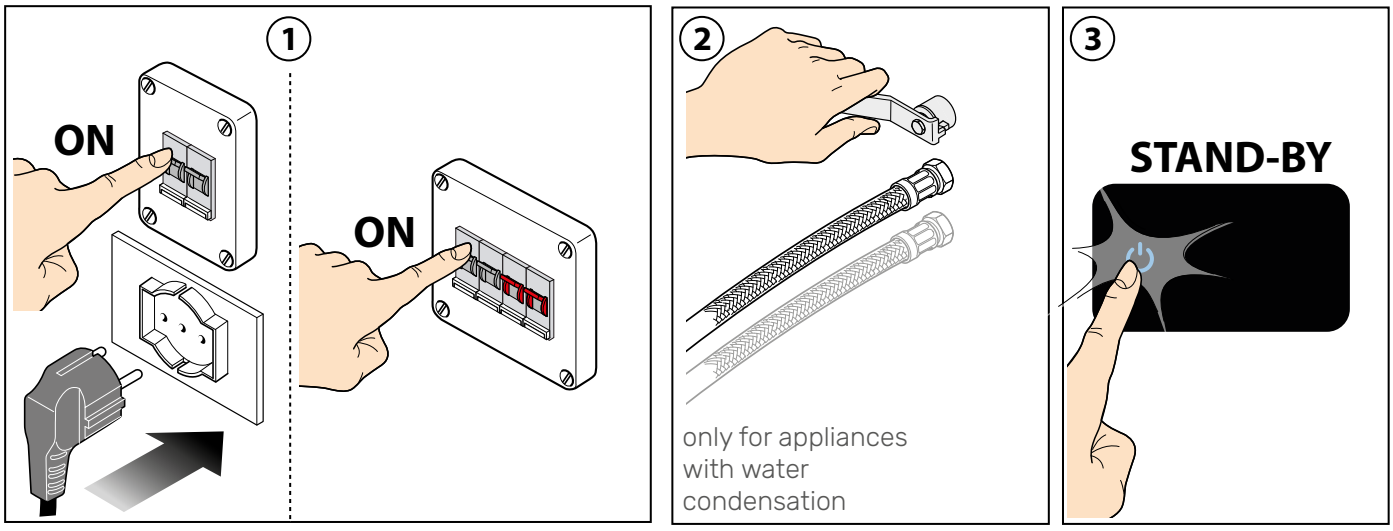
F15

Using the appliance

This appliance can be used by children aged 8 and over and by people with reduced physical, sensory or mental abilities or with a lack of experience and knowledge only if they have been adequately instructed and supervised in the safe use of the appliance and have learned the possible dangers derived from its use.

F16 Switching on the appliance and the Touch panel

1. **Power the appliance** by inserting its plug into a socket of suitable capacity and turning the switch that supplies the socket ON or, if the appliance has been connected to an electrical panel,
2. Open the **water supply tap** so that it can be filled from the appliance.
3. **Touch the button** to activate the Touch panel.

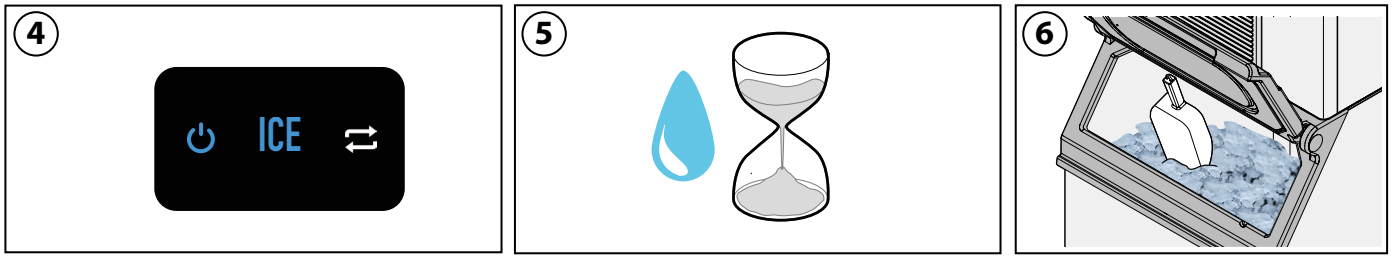


F16

F17 Ice production start

4. ICE appears on the display and the appliance automatically starts drawing the water required to produce ice.
5. Once the correct amount of water has been loaded, the ice-making process begins automatically.

After approximately **15 minutes** the first ice will be released in the cell below the appliance. Remove the ice using PPE and tools suitable for food contact.
After that, more ice will be released without the need for any action.



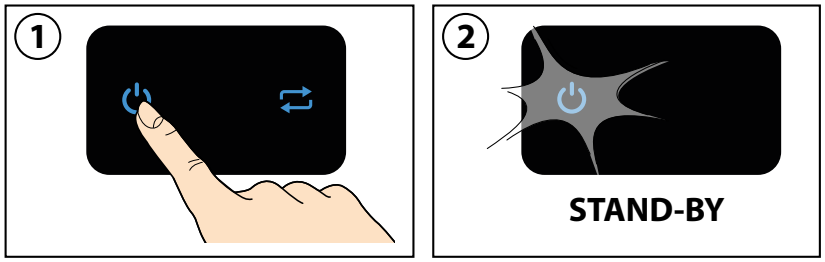
F17

F18 Stopping the ice production (machine stand-by)

1. Press and hold for about 3 seconds the ⏻ button on the Touch panel.
2. The touch panel goes into stand-by mode and ice production stops.

⚠ **Even if the Touch panel is in stand-by mode, the appliance is still powered.**

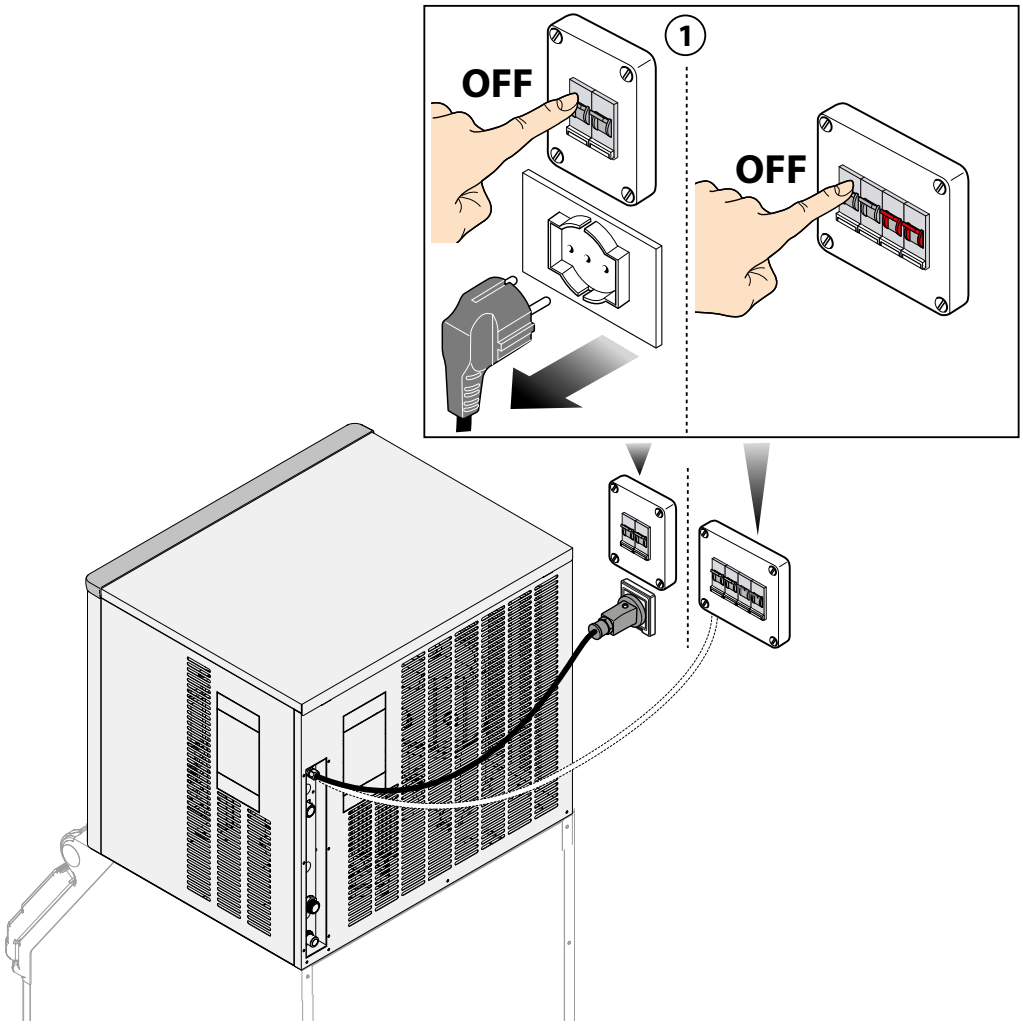
⚠ **If power is removed from the machine without first putting it on standby or in the event of a sudden power failure, the machine immediately starts ice production when power is restored (no need to switch it on manually using the Touch control panel).**



F18

F19 Turning the appliance off

To turn the appliance off, for example to carry out cleaning or at the end of the working day, unplug the appliance or turn off the switch that powers the socket or the electrical panel to which the appliance is connected.



F19

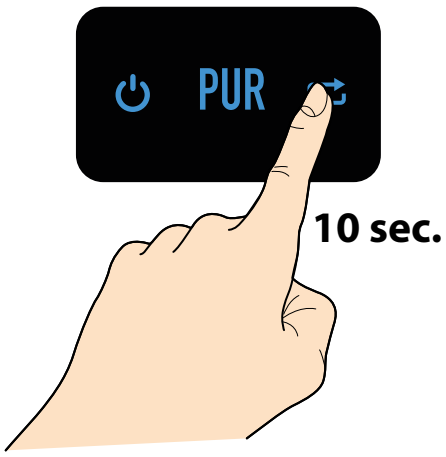
Purge phase

The **purge phase** is a crucial process that **removes residual water** and **impurities** in the system before the next production cycle begins. During this phase, the water used is discharged to remove minerals, sediments and other impurities accumulated within the circuit.
This process is essential to prevent the formation of limescale deposits and preserve the high quality of the ice produced, as well as contributing to the longevity and efficiency of the machine.

THREE PURGE CONDITIONS:

- At machine start-up - purge phase duration: 11m 30s
- When the store is full - Purge phase duration: 3 m
- During ice production - purge phase duration: 15m, and at intervals defined by the conductivity level of the water.

The first two cases take place because the machine may have been idle for a long time.



F20

F20 To by-pass the purge phase, hold down the **loop** button for 10 seconds.

PRINCIPLE OF OPERATION

WATER CIRCUIT

The water enters the appliance through the inlet port, which has a small mesh filter at the rear, and from there it reaches the water tray through a nozzle with the flow regulated by a float.

NOTE: The presence of water inside the tank is detected by a three-sensor system that operates in conjunction with the electronic board by sending a low-voltage current using the conductivity of the water itself; lack of water or particularly pure water, i.e. with an electrical conductivity of less than 30 µS/cm *(demineralised water), can cause the device to stop, triggering the A01 "No water" alarm.*

The water tray is positioned at the side of the cylinder of the evaporator or freezer, at a height that allows, thanks to the principle of communicating vessels, a correct and constant water level to be maintained inside the freezer. Through a connecting pipe, the water from the tray reaches the inside of the freezer, where it is frozen and turned into ice; the process is constantly kept in motion by a worm screw or auger that rotates inside the freezer.

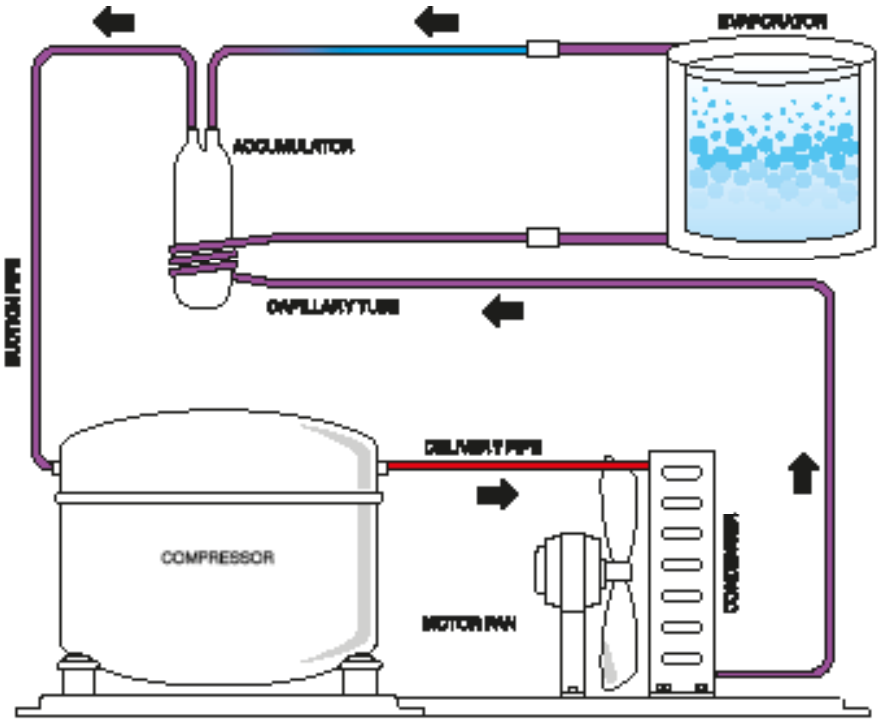
The auger, immersed in the water inside the cylinder, is kept rotating counter-clockwise by a gearmotor, so as to push upwards the layer of ice that gradually forms along the refrigerated inner walls of the freezer. As it is pushed upwards by the auger, the ice becomes thicker and thicker, and when it comes into contact with the ice breaking ring is compressed and shattered into granules, which then reach a special conveyor (outlet), from which opening they fall into the ice collection container. Switching on the appliance starts the **continuous and constant ice making process**, which will continue until the container in which the ice is deposited is filled to the level determined by the optical probes at the sides of the ice discharge outlet. When ice interrupts the infrared light beam running between the two optical readers, the device stops, and **BF appears** on the display.

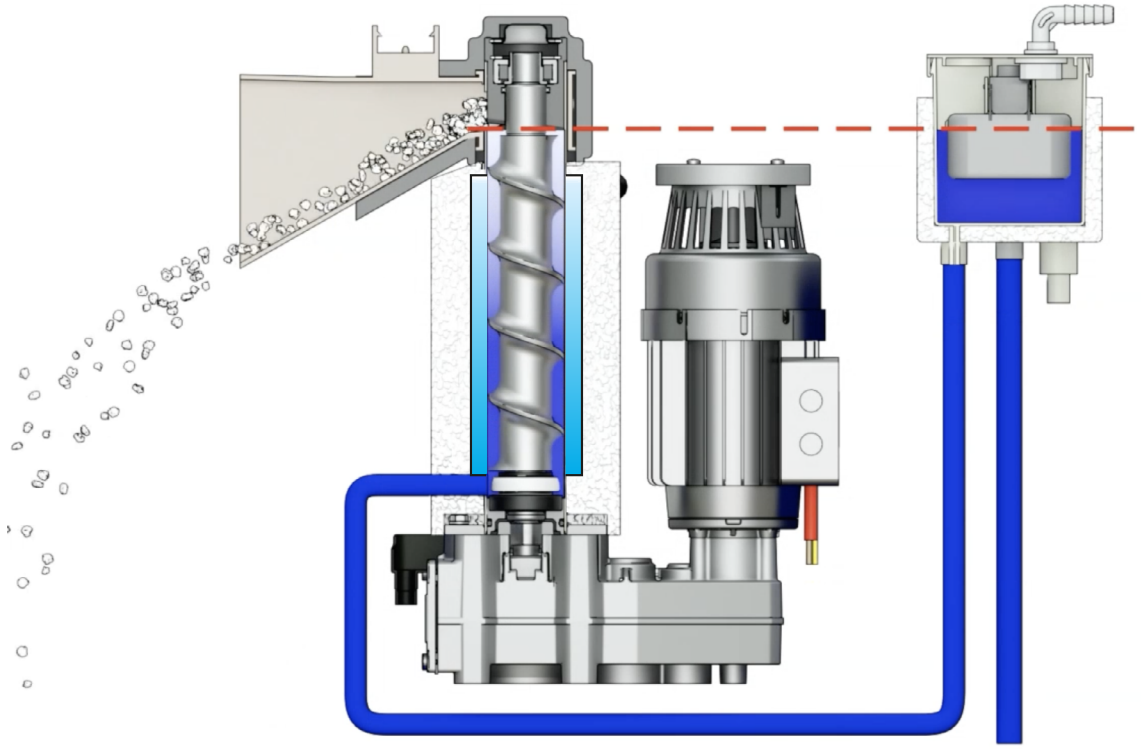
The probe detects whether the ice store is full or empty. How the status is detected depends on the type of probe used. The store full notification is only processed by the board after a time of 10 seconds from the moment when the full condition is detected by the probe. Similarly, the emptying of the store is processed with a delay of 30 seconds.

REFRIGERANT CIRCUIT

Refrigerant in its gaseous state and at high temperature is pumped by the compressor into the refrigerant circuit, passing through the condenser, where it is turned into liquid refrigerant. The liquid line takes the refrigerant from the condenser to the capillary tube, through the dehumidifier filter. As it passes through the capillary tube, the refrigerant in its liquid state gradually loses some of its pressure. Water, in contact with the refrigerated wall of the evaporator, releases heat to the refrigerant, causing it to evaporate. After going through the accumulator, the gaseous refrigerant is sucked back into the compressor via the suction line. The delivery pressure of the refrigerant system (high pressure) is maintained between two preset values by means of the condenser temperature sensor (in air-cooled models), which is positioned between the condenser fins - at a set value - of the same. In water-cooled condensers, the pressure is managed by means of the pressure relief valve, while the probe positioned in contact with the liquid line of the refrigerant only acts as high condensation pressure safety device.

On air-cooled appliances, as soon as the temperature of the condenser exceeds a certain value, the sensor changes its electric potential, transmitting low-voltage current to the MICROPROCESSOR of the electronic board, which processes the signal received and electrically powers (intermittently ON - OFF) THE FAN MOTOR via a TRIAC. On water models, the high pressure is controlled by the pressostatic valve which, connected by a capillary tube to the liquid line of the refrigerant circuit, automatically regulates the flow of water to the condenser, so as to maintain a constant refrigerant delivery pressure.





DIAGNOSTICS

Alarms

In the event of an alarm, its identification code will flash on the display.

Alarm	Description	Possible remedies
A01*	Insufficient water in the float tray	• Check the water pipeline / open the water supply • Sensors clogged by limescale • Remove limescale with descaler
A02	Evaporator probe fault	• Check the probe connections
A03	Condenser probe fault	• Check the probe connections
A04*	Evaporator temperature too high	• Check the probe for correct positioning and insulation • Check the refrigerant charge • Check that the probe reads the temperature correctly
A05*	Evaporator temperature too low	• Check the probe for correct positioning and insulation • Check the refrigerant charge • Check the water level in the tray and inside the evaporator (there may be no exchange) • Presence of air bubbles in the pipeline
A06*	Condenser temperature too high	• Check the probe for correct positioning and insulation • Condenser dirty. Clean • Motor fan burned. Replace (AIR) • Check the water tap (WATER)
A07*	Condenser temperature too low	• Check the installation room temperature
A08*	Gearmotor failure	• Check the capacity of the motor condenser • Check the rotor and auger bearings as well as the inner surfaces of the freezer • Descale the system
A09*	Condenser temperature too high at startup	• Condenser dirty. Clean • Motor fan burned. Replace (AIR) • Check the water tap (WATER)
A10	Ice level probe failure	• Dismantle the receiver and transmitter and clean them of possible residues
A12	Test phase time-out	• It is possible to remain in the test area for a maximum of 3 minutes. To exit the alarm state, it will be necessary to exit test mode.
A14*	XSafe lamp failure	• Replace the lamp

* Alarms A01, A04, A05, A06, A07, A08, A09 and A14 automatically reset after the cause of the alarm has been resolved. To reset other alarms, resolve the cause that created it and switch the appliance off and on again from the display, or switch off the power supply.

SYMPTOMS	POSSIBLE CAUSE	SUGGESTED REMEDIES
The unit does not work	• Main switch off • Electronic board not working • Electric cables disconnected	• Set the switch to “on” • Replace the electronic board • Check the wiring
The compressor cycles intermittently	• Low voltage • Contactor with oxidised contacts • Non-condensing gases in the system • Compressor cables partially disconnected	• Check the circuit for overload • Check the power supply voltage • Download, empty and reload • Check the various terminals
Poor ice production	• Capillary tube partially clogged • Moisture in the system • Insufficient water in the evaporator • Partial lack of refrigerant • Refrigerant overload • Float tray level too low • Rough/worn auger/evaporator	• Check the operating pressures • Drain and replace the dehumidifier filter • Empty and reload • Check for leaks and reload • Adjust the water tray • Replace the auger/evaporator
Ice too wet	• High ambient temperature • Too little or too much refrigerant • Float tray level too high • Inefficient compressor • Worn auger profile	• Place the appliance in a cooler environment • Check the operating pressures • Lower the water level in the tray • Replace • Replace
The appliance works but does not produce ice	• No water is reaching the freezer • Moisture in the system	• Air bubble in the freezer water supply pipe. Unclog the freezer water supply pipe. Clean the water system • Download, empty and reload
Water leak	• Water ring not holding • Freezer supply pipe not holding • Float not closing	• Replace • Check the straps • Adjust the float screw

SYMPTOMS	POSSIBLE CAUSE	SUGGESTED REMEDIES
Excessive noise or screeching	• Deposits of limescale or minerals on the interior surfaces of the freezer/auger • Suction pressure too low • Freezer water supply pipe partially obstructed • Float tray level too low • Worn freezer bearings	• Remove and clean the auger. Use emery cloth to clean the inside walls of the freezer, swiping it vertically. • Check the pressures and add refrigerant to the system if necessary • Check and clean. Remove any air bubbles • Raise the water level in the tray • Check and replace
Gearmotor noise	• Gearbox not lubricated • Gearbox bearing or gears in poor condition	• Check for lubricant leaks • Replace the gearbox
Insufficient water	• Water inlet filter clogged • Float tray nozzle clogged • Freezer water supply pipe partially obstructed	• Clean the filter • Clean the nozzle after removing float • Check and clean. Remove any air bubbles

MAINTENANCE

FOREWORD

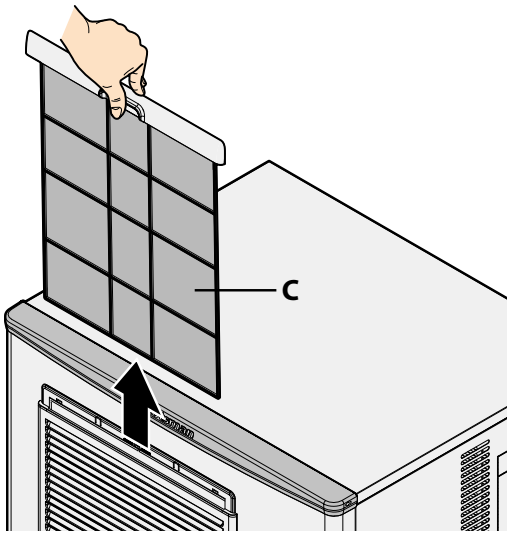
Maintenance and cleaning intervals and procedures are only indicated as a guide. In particular, cleaning requirements are strongly affected by the environmental and water conditions, and the amount of ice produced.

When the X-Wave board sends a flushing request, CLE is indicated on the interface. The alarm is set to trigger every 12 months and can be reset by pressing the HOLD button for 5 seconds.

Cleaning-replacement of the condenser air filter

Some models are equipped with a condenser air filter and a function that reminds the end user of the need to clean the air filter and the hydraulic circuit.

- **F22** Pull air filter "C" through the opening in the front panel.
- Blow compressed air in the opposite direction of the condenser air flow to remove accumulated dust.
- If compressed air is not available, use clean water from the water mains, always running it in the opposite direction to the direction of the air flow. Once cleaned, shake the filter to remove any accumulated water and then dry it using a hair dryer. If damaged, the air filter must be replaced with a new one. Refit the air filter by pushing it through the front panel opening.



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F23

Cleaning the water circuit

Procedure to be carried out every 6 months

EQUIPMENT REQUIRED

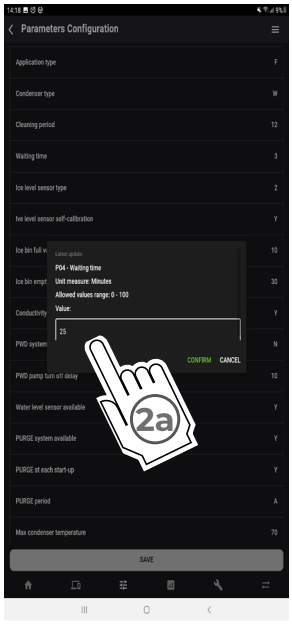
- (1) Power the device. A PURGE phase of 11 minutes starts automatically.

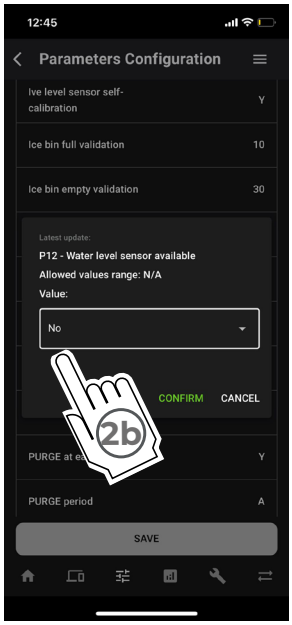
F24

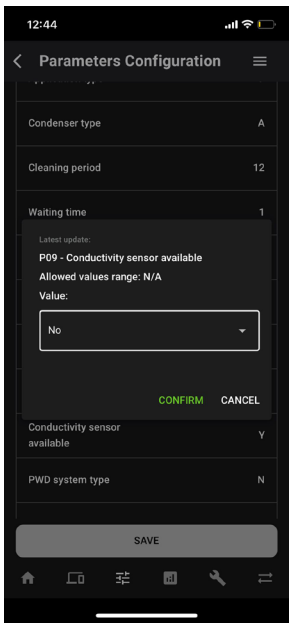
- (2) Change the parameters via the Xwave App:
  - (2a) Disable the water level sensor
  - (2b) Extend the waiting time from 3 to **25 minutes**
- (3) Close the water tap on the supply line.
- (4) Remove all the ice stored in the container so that it does not become contaminated with descaling solution.
- (5) Power the device. A PURGE phase of 11 minutes starts automatically.

F25

- (6) Remove the top panel to access the float tray and remove the float tray plug.
- (7) In a clean container, prepare the descaling solution by diluting 0.2-0.3 litres of SCOTSMAN CLEANER in 2-3 litres of warm (45-50 °C) drinking water.
- (8) Slowly pour the descaling solution into the float tray.
- (9) After 25 minutes, the descaling solution will run out and the unit will start working automatically again.







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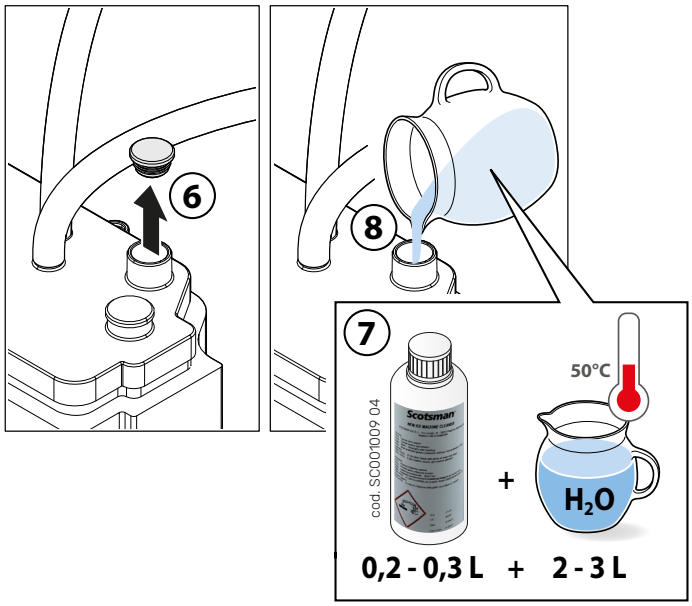

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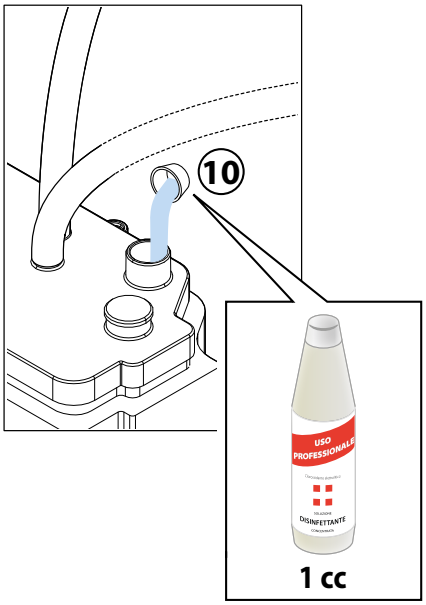
- *NOTE: The ice produced with the descaling solution is yellowish and mushy. At this stage, loud squeaking may be heard coming from the freezer due to friction between the rising ice and the walls of the evaporator. If this is the case, it is advisable to stop the operation of the appliance for a few minutes to allow the descaling solution to dissolve the limescale deposits inside the freezer.*

F26

- (10) Pour 1 cc (about 20 drops) of SCOTSMAN sanitiser in the water tray and then start the machine)
- (11) Leave the appliance running for about 10 minutes, and then correctly replace the water tray plug and the top panel.
- *NOTE: DO NOT USE the ice produce using the sanitising solution.*
- (12) Stop the operation of the appliance again. Open the shut-off tap.

F27

- (13) Reset the DEFAULT parameters using the Xwave App.
- (14) Let the appliance run until the ice produced is compact and clean again.
- *WARNING. Do not use the ice produced with the cleaning solution. Make sure there is none left in the container.*
- (15) Using a sponge soaked in a sanitising solution to clean the inside walls of the container.
- *NOTE: Remember that to prevent the accumulation of unwanted bacteria it is necessary to clean and sanitise the inside walls of the container every 3 months with a solution of water mixed with a bactericidal substance.*



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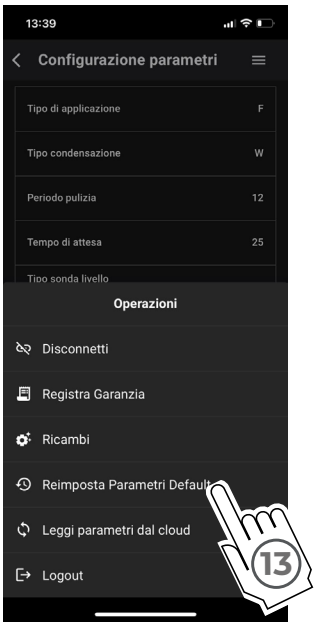

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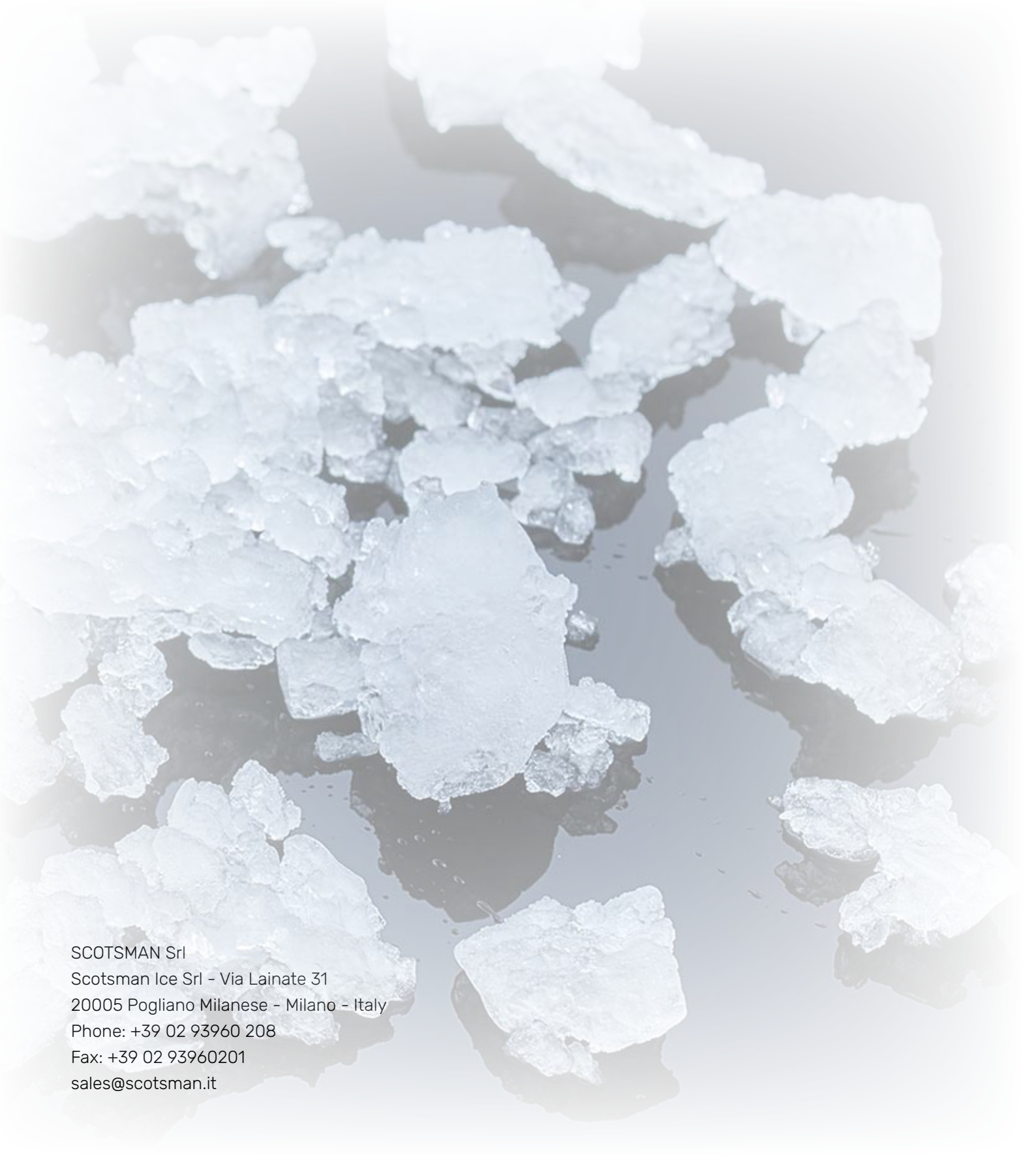

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