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INSTALLATION & MAINTENANCE MANUAL

EcO₃Ice

ANTIMICROBIAL PROTECTION FOR COMMERCIAL ICE MACHINES

MODEL:	X1	X4	X8	X16
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Model X4 Shown

MAKE IT WONDERFUL



IMPORTANT SAFETY INFORMATION

EXPLANATION OF SAFETY AND NOTICE SYMBOLS



DANGER

DANGER indicates a hazardous situation which, if not avoided, **WILL** result in death or serious injury.



WARNING

WARNING indicates a hazardous situation which, if not avoided, **COULD** result in death or serious injury.



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **COULD** result in minor or moderate injury.



NOTICE

NOTICE is used to address practices not related to physical injury.

READ AND SAVE THESE INSTRUCTIONS



DANGER

Energized electrical circuits present a life-threatening hazard of electric shock, explosion, or arc flash.

- NEVER hose down or clean with water jet.
- ALWAYS disconnect device from power IMMEDIATELY if bare wires or other electrical conductors are exposed.
- ALWAYS ensure all electrical circuits are disconnected and discharged, with an appropriately rated voltage detecting device, before performing service, maintenance, or installation work.
- ALWAYS follow all national and local standards, laws, and codes, as well as all applicable safe electrical work practices.

Failure to follow these safety instructions WILL result in death or serious injury.



WARNING

Unauthorized modifications, repairs, or use poses a hazard in the form of an improperly functioning device.

- ONLY for commercial use.
- NEVER make ANY modifications that are not authorized in writing by *Franke*.

- NEVER remove any labels from the device.
- ALWAYS replace ANY labels that have been removed or damaged IMMEDIATELY.
- ONLY use original equipment manufacturer (OEM) parts when performing service, maintenance, or installation work.
- NEVER operate with factory installed parts or components removed.
- NEVER use for other than intended use.

Failure to follow these safety instructions COULD result in death or serious injury, as well as property damage or void of warranty.

These instructions are intended for qualified persons ONLY. Use by others creates an unsafe condition.

- ONLY persons who are certified technicians or trades persons with the requisite knowledge, skills, ability, and training, MUST perform service or installation work.
- ALWAYS keep out of the reach of children.
- ONLY allow access to device by trained personnel who have read this manual.

Failure to follow these safety instructions COULD result in death or serious injury, as well as property damage or void of warranty.

IMPORTANT SAFETY INFORMATION

This device generates ozone (O₃) in the form of gas, which poses a hazard in excess quantities. O₃ gas is toxic and corrosive. It accelerates burning, is heavier than air and oxygen, has an acrid odor, and is unstable.

- ONLY operate in well ventilated areas.
- ALWAYS disconnect device from power IMMEDIATELY if an unusually strong acrid odor is detected.
- ALWAYS seek fresh air IMMEDIATELY if respiratory irritation is experienced. Seek medical attention if necessary. Disconnect device from power IMMEDIATELY.
- ALWAYS ensure all electrical circuits are disconnected before performing service, maintenance, or installation work, to avoid accidental generation of ozone gas.
- ALWAYS follow all national and local standards, laws, and codes, as well as all applicable, safe O₃ work practices.

- ALWAYS ensure all factory installed parts and components are re-installed properly and are in good condition after performing service, maintenance, or installation work.

Failure to follow these safety instructions COULD result in death or serious injury.

NOTICE

NEVER use inappropriate tools, processes, or procedures. Damage to components of device can occur.

- Follow these instructions EXACTLY to avoid property damage or void of warranty.

NEVER discard any loose parts received with device. They may be required for proper and safe installation and operation.

EcO₃Ice SPECIFIC SAFETY INFORMATION

⚠ WARNING

Installation of the device on unapproved ice machines could result in damage to the machine, creating a hazard of small parts entering the ice during or after formation.

- NEVER install device on, or in line with, unapproved ice machines or equipment.
- ALWAYS ensure model compatibility of device and ice machine before installing.
- ALWAYS contact *Franke* to verify approved usage and model compatibility, if unsure (refer to **Contact Information**, Page 16).

Failure to follow these safety instructions COULD result in death or serious injury, as well as property damage or void of warranty.

⚠ CAUTION

Improper installation presents a risk of respiratory and/or digestive irritation from ozone (O₃) gas.

- NEVER install device on an ice machine without a dedicated water supply line.
- ALWAYS ensure device does NOT feed drinking water dispensers. Some are built into, or are attached to, some ice machines.
- ALWAYS ensure the flow rate of the model of the device is appropriate for the ice machine to which it is being installed.

Failure to follow these safety instructions COULD result in mild or moderate injury, as well as property damage or void of warranty.

EcO₃Ice SPECIFIC SAFETY INFORMATION

NOTICE

Dissolved ozone (O₃) is generated by the device from water. Under normal conditions, insufficient quantities of ozone gas are generated to create a hazardous condition.

- O₃ gas can be detected by humans (by smell) at a level as low as 0.003 parts-per-million (ppm), the odor threshold.
- It is normal and expected to be able to detect a very mild acrid odor emanating from the areas around the connected ice machine's distribution tubes, reservoir, evaporator plates, and ice bin.
- Occupational Safety and Health Administration (OSHA) exposure limits for O₃ are as follows:
 - * Long term = 0.10 ppm for 8 hours
 - * Mid term = 0.20 ppm for 2 hours
 - * Short term = 0.30 ppm for 15 minutes

The device is designed to generate O₃ gas below the listed limits when installed, used, and maintained properly.

O₃ could diminish the effectiveness of some chemical products used during cleaning, sanitizing, or descaling cycles.

- ALWAYS unplug device before performing maintenance work.
-

Iron and manganese in the water supply may cause harmless discoloration of internal plastic parts in ice machines under certain conditions when ozone (O₃) is introduced.

- If this condition arises, additional water filtration may be required.
-

NEVER expose device to extreme heat or open flame.

NEVER immerse device in water.

Clean exterior of device with soft cloth. Do not use harsh or abrasive cleaners.

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KEY COMPONENTS

Head - All Models

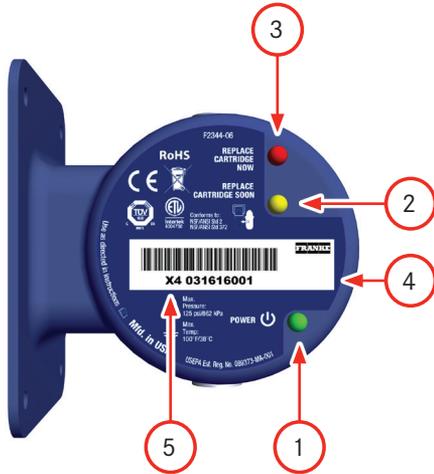


Fig. 1

ITEM #	PART NAME
1	Green LED - Power
2	Yellow LED - Replace Soon
3	Red LED - Replace Now
4	Serial Number Label
5	Model Number (Prefix)

Table 1

X1/ X4

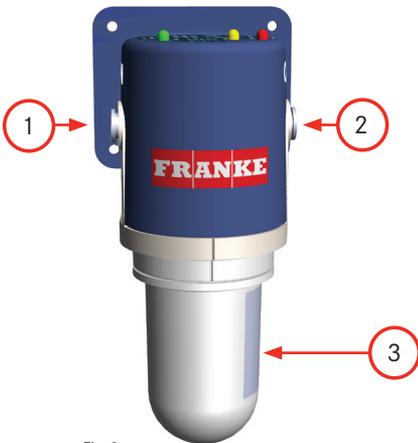


Fig. 2

ITEM #	PART NAME
1	3/8" Water Line Inlet *
2	3/8" Water Line Outlet *
3	Replaceable Cartridge

Table 2

* Some models include optional fittings

KEY COMPONENTS

X16

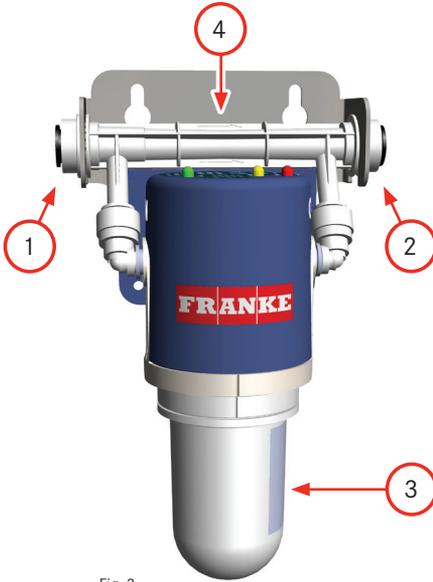


Fig. 3

ITEM #	PART NAME
1	1/2" Water Line Inlet *
2	1/2" Water Line Outlet *
3	Replaceable Cartridge
4	1/2" Water Bypass

Table 3

* Some models include optional fittings

X8

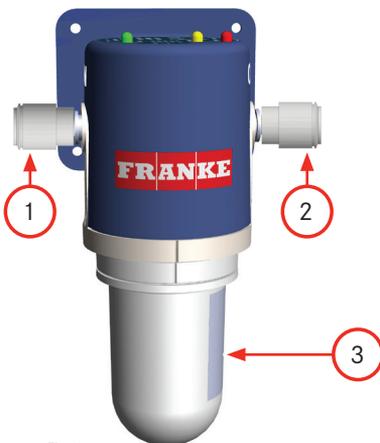


Fig. 4

ITEM #	PART NAME
1	1/2" Water Line Inlet *
2	1/2" Water Line Outlet *
3	Replaceable Cartridge

Table 4

* Some models include optional fittings

SPECIFICATIONS

Specification	Model X1	Model X4	Model X8	Model X16
Application	Most flaker ice machines	Most cube ice machines	Most high <u>volume</u> cube ice machines	Most high <u>flow</u> cube ice machines
Water Flow	0.03 gpm to 0.34 gpm	0.34 gpm to 1.30 gpm	0.34 gpm to 1.30 gpm	1.30 gpm to 4.20 gpm
	0.10 Lpm to 1.30 Lpm	1.30 Lpm to 4.90 Lpm	1.30 Lpm to 4.90 Lpm	4.90 Lpm to 16.00 Lpm
Water Supply	Clean, potable water ONLY Recommended hardness ≤ 300 ppm CaCO_3			
	Minimum 20 psi / Maximum 125 psi Minimum 1.37 bar / Maximum 8.62 bar			
	Minimum 40°F / Maximum 86°F Minimum 4°C / Maximum 30°C			
Electrical	100-240 Volts, 50/60 Hertz, 1 Phase			
	24 Volts, 1.25 Amps integrated transformer & power cord included			
	— — —	1.25 Amps	— — —	1.67 Amps
	— — —	(Maximum by Phase)		— — —
	30 Watts	30 Watts	30 Watts	40 Watts
— — —	(Maximum by Phase)		— — —	
Ambient Air	Minimum 40°F / Maximum 100°F Minimum 4°C / Maximum 38°C			

Table 5

CERTIFICATIONS



RoHS



Sanitation (to NSF 2 & 61 & 372), CE, TUV, ETL, RoHS, WEEE

WRAS approved for cold water use only in UK. (4°C - 23°C)

US EPA EST. NO. 089373-MA-001

Table 6

INSTALLATION

Before Installing

⚠ WARNING

Installation of the device on unapproved ice machines could result in damage to the machine, creating a hazard of small parts entering the ice during or after formation.

- NEVER install device on, or in line with, unapproved ice machines or equipment.
- ALWAYS ensure model compatibility of

device and ice machine before installing.
- ALWAYS contact *Franke* to verify approved usage and model compatibility, if unsure (refer to *Contact Information*, Page 16).

Failure to follow these safety instructions COULD result in death or serious injury, as well as property damage or void of warranty.

Observe these guidelines to ensure the device functions and performs optimally.

1. Select a location for device so:
 - It will be in an upright position.
 - It will be within 3 ft (1 m) of the ice machine water inlet.
 - LED lights and cartridge are visible and accessible.
 - Equipment or objects will not press against the device.
2. ONLY use one (1) *EcO₃Ice* device per ice machine.
3. DO NOT connect to water lines which feed more than one ice machine.
4. DO NOT connect to water lines which feed beverage or water dispensers.
5. DO NOT connect to water lines which feed condenser cooling systems of water-cooled ice machines.

INSTALLATION

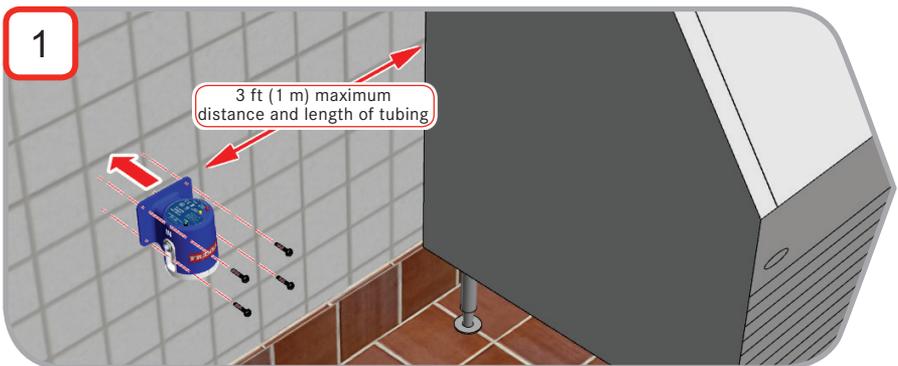
Before Installing (continued)

6. Ensure adequate back-flow protection is provided (by others) to comply with all national and local standards, laws, and codes.
7. Ensure *EcO₃/Ice* will be the last water treatment device installed on the water line before the ice machine water inlet.
8. It is highly recommended that a water shut-off valve be installed before and near the device.
9. For best results, clean ice machine, ice bins, and ice dispensers thoroughly before installing.

Installing the Device

The step numbers below correspond to the image step numbers on the next page.

1. Mount device on wall, or other suitable surface, within 3 ft (1 m) of ice machine water inlet. Use appropriate hardware (not provided).
2. Insert appropriate size of beverage-grade tubing into the fittings on the 'IN' and 'OUT' sides of device. Do NOT use more than 3 ft (1 m) of tubing on the 'OUT' side. Some models include optional fittings.
3. Attach the 'IMPORTANT' label inside ice machine, near the power switch, so it can be seen when cleaning, sanitizing, or descaling is initiated.
4. Install cartridge (refer to *Replacing the Cartridge*, Pages 12 –13).
5. Ensure all plumbing connections are secure and leak-free, from shut-off valve to ice machine water inlet.



2



3

IMPORTANT!

Always unplug the *Eco,Ice* device before ice machine cleaning, sanitizing, or descaling. Plug in the device when the cycle is complete.



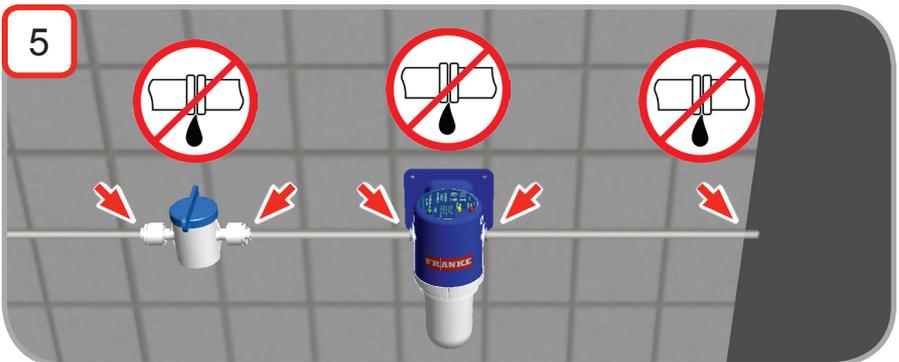
4



Refer to
Replacing the Cartridge,
Pages 12 – 13



5



MAINTENANCE

Expected Cartridge Life

The *EcO₃/ce* replaceable cartridge is designed to typically last:

- 2 years 100 to 300 lb
- 1 year 301 to 1000 lb
- 9 months 1001 to 1500 lb
- 6 months 1501 lb and larger

Hard water, or other factors, may shorten cartridge life. Two (2) 'Replace Cartridge' LED indicators are present on the head of the device to warn when the cartridge is nearing the end of its effective life cycle.

Yellow LED	Protection <u>DIMINISHED</u> Replace <u>SOON</u>
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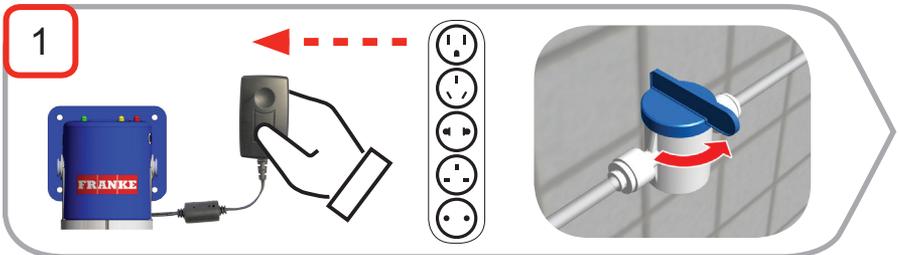
Red LED	Protection <u>EXPIRED</u> Replace <u>NOW</u>
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Replace cartridge at the expected life cycle intervals shown, or when the Yellow or Red LED indicators warn to do so, whichever comes first.

Replacing the Cartridge

The step numbers below correspond to image step numbers below and on the next page.

1. **IMPORTANT!** Unplug the device, and close the water shut-off valve.
2. Hold head of device steady, untwist the used cartridge, pull to remove, and dispose of appropriately.
3. Record date of installation on the label provided on new cartridge.
4. Remove and discard protective cap. Hold head of device steady, push cartridge into head, and twist. Line up notches on cartridge and head.
5. Plug device into outlet, open the water shut-off valve, and ensure the green LED on the head of the device is illuminated. If not, refer to *Troubleshooting*, Page 14.



2

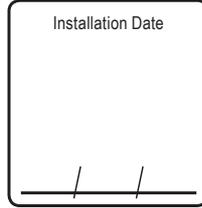


3



REPLACE CARTRIDGE

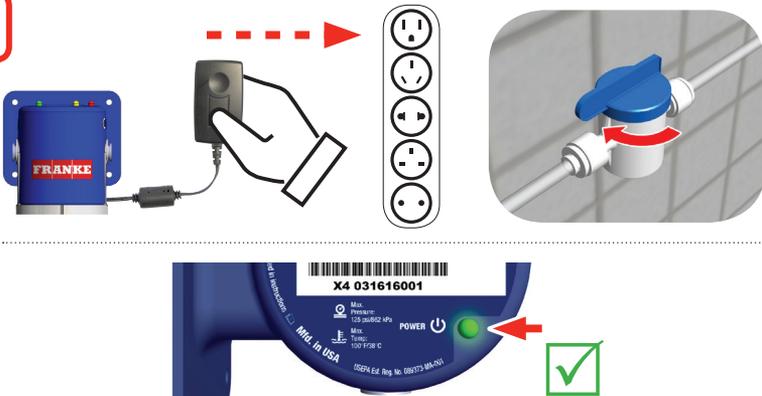
Installation Date



4



5



TROUBLESHOOTING

LED INDICATORS	STATUS	REMEDY
Green (solid)	Power ON	Device operating properly
Green (flashing)*	Ozone being generated	
Yellow (flashing)	Protection diminished	Replace cartridge soon
Red (solid)	Protection expired	Replace cartridge now
Yellow (solid) and Red (flashing)	No ozone being generated	Replace cartridge now
Yellow (flashing) and Red (solid)	No ozone being generated	Replace cartridge now
	Cartridge installation issue	If recently replaced, remove and reinstall
	No ozone being generated	Replace cartridge now
Yellow (flashing) and Red (flashing)	Cartridge installation issue	If recently replaced, remove and reinstall
	Leak in water supply line	Repair leak, unplug device, and plug in device again

If these steps do not resolve the issue, contact *Franke* for support.
(Refer to **Contact Information**, Page 16)

Please have the model number of the device available when calling.
(Refer to **Key Components, Head - All Models**, Page 6)

***NOTE:** Green flashing LED indicator is included only on devices manufactured after April 1, 2017. Previous versions do not include this feature.



Special regulations apply when disposing of electrical appliances.

The customer is responsible for proper disposal of the delivered product after the end of its service life at the customer's own expense, in accordance with all legal regulations for the given region, state, or country.

This does not apply to the replacement cartridges for the device.

WARRANTY INFORMATION

Franke Foodservice Solutions ("Franke") warrants new equipment manufactured in *Franke* designated facilities to be free of defects due to poor materials or workmanship for the period of time listed below (following the date of purchase):

- *EcO₃Ice* head - One (1) year parts only.
- *EcO₃Ice* cartridge - Thirty (30) days parts only.

Exclusions: Certain *Franke* parts that are expendable by nature and that need to be replaced frequently may not be covered. *Franke* is not liable under these warranties for repairs or damages due to improper operation, attempted repairs or installation by unauthorized persons, alterations, abuse, fire, flood, or acts of nature.

Additionally, this warranty may be voided in the case of:

- Failure to follow *Franke* instructions for use, care, or maintenance.
- Removal, alteration, or defacing of *Franke*-affixed serial number and other labels.
- Mechanical damage.
- Use of fluids other than clean, potable water.
- Use with unapproved ice machines or equipment.

This warranty is conditional upon *Franke* receiving notice of any defect subject to this warranty within thirty (30) days of its original discovery by the Buyer.

CONTACT INFORMATION

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