HEATAWAY

OPERATION and MAINTENANCE

PLATE ICE MACHINE



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OPERATION AND MAINTENANCE
PLATE ICE (PI4)



Note: Water tank additional equipment

BEFORE AND DURING OPERATION:

- ☑ Ensure inlet water temperature and flow match the design specifications (*as per purchase agreement).
- ☑ Check water quality to meet required standards.
- ☑ Ice plates must be free of dirt or scaling.
- ☑ Water spray holes on the top tray must not be clogged.
- ☑ Close the cover around the machine.
- ☑ Bottom water tank must be free from sediment or foreign matter.
- ☑ Ensure proper functioning of water level controls, water pump, motor, and valves.

WHILE RUNNING:

- ☑ Ice thickness must be between 3–10 mm and consistent across all plates.
- ☑ Top water tray must not be clogged; ensure no ice debris or foreign substances in the water supply.
- ☑ Check water level in the tank; in case of irregularities such as overflow or pump noise, inspect the solenoid valve and water level controller.

OPERATION AND MAINTENANCE

MAINTENANCE

ICE PLATE MAINTENANCE

Sheet ice plate functions to exchange heat with water flowing over the plate to produce ice. However, dirt on the plate surface, scale and corrosion will hinder ice making and also cause more energy consumption of the cooling system compressor. Scale that is only **0.5 mm. thick will require approximately 18% more energy to drive the compressor.**



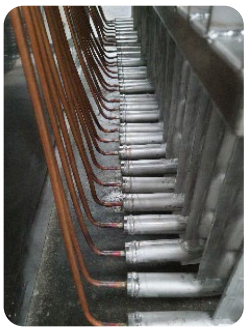
Normal condition

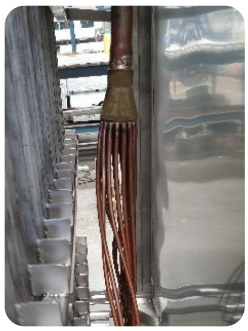


Abnormal condition

MAINTENANCE OF DISPENSING EQUIPMENT

The dispensing equipment can be washed but **avoid using detergents and washing agents, alkaline detergents.** Please see the section “prohibited disinfectants / recommended disinfectants ”.





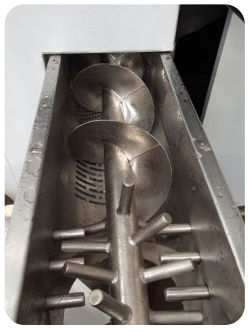
* Dispensing device is available only for direct expansion model.

ICE SCREW CONVEYOR MAINTENANCE

Before turning on and off the machine, check that all ice has been removed from the screw device. If there is still ice left, drain it completely. Because if ice remains over time, there is a risk of ice compaction. **When the screw device is turned on again, it will result in damaged screw blades, motor overload , or damage in other parts.**



Screw inside the machine



Ice plate outlet screw

MACHINE CLEANING INSTRUCTIONS

Cleaning should be done frequently to reduce the chance of dirt and germs building up that can be contaminated with cold water . You should use water of the same quality as water used in food production or soft water because soft water helps save on cleaning agents. The higher the hardness of the water, the less effective the disinfection will be. **Do not use hot water** in cleaning, because the machine has a coolant in the system, it will damage the machine. Use a brush that will not harm the stainless steel surface and **do not use a wire brush.** The wire will scratch the surface of the stainless steel. High-pressure water pumps can also be used to help wash the machinery in areas that are difficult to scrub by hand.

RECOMMENDED DISINFECTANTS

CHEMICAL NAME	MOLECULAR FORMULAS	CONCENTRATION % MASS	TEMP. °C
Hydrogen peroxide	H_2O_2	5	20
		10	23
		10	40
		15	22
		15	30 – 40
		30	27
Ethyl alcohol	C_2H_5OH	Con. All	20 – 40
Chloroxylenol	C_8H_9ClO	Con. All	20 – 40

PROHIBITED DISINFECTANTS

CHEMICAL NAME	MOLECULAR FORMULAS	CONCENTRATION % MASS	TEMP. °C
Sodium hypochlorite	NaOCl	5	20
Sodium chlorite	NaCl	Con. All	20 – BP
Povidone - iodine	Do not use in any case.		
Iodine in iodophor	Do not use in any case.		

*Bp = Boiling solution.

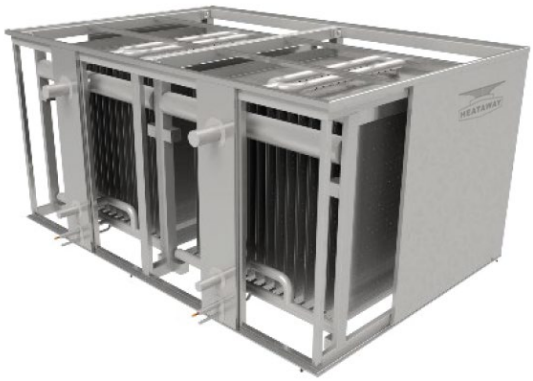
**Advice should be sought directly from the manufacturer of the disinfectant or cleaning agent.

HOW TO CLEAN

1. Open the machine cover and drain all water from the machine.



2. Rinse with water to remove dirt from the upper water tray, structural ice plate and lower water basin.





3. Washing with a cleaning solution. The type of solution, concentration, and duration depend on the type of stain, method, and tools used for cleaning.

MODEL	WATER VOLUME IN THE BASIN (LITERS)
LPI-005G-240	80
LPI-010G-240	140
LPI-020G-240	310
LPI-030G-240	430
LPI-060G-240	660
LPI-080G-240	890

Water volume table in the bath for calculating the amount of solution to be added.

4. After rinsing off the solution, rinse with water to remove any remaining cleaning agents.

5. Wash again with a disinfectant to help reduce the amount of microorganisms that may contaminate the surface of the machine.

6. Rinse with clean water for the last time and check for any residues in the machine, such as checking the color, smell, and pH value of the water, etc.

WATER IS THE MAIN FACTOR AFFECTING THE MACHINE.

Water components such as pH, total dissolved solids (TDS), hardness, if the amount is too high, it can easily cause crystallization on the metal surface. Chlorides cause metal corrosion, which can damage the machinery. In order for the cold water to come into contact with the food, the water used in production must be of quality or standard according to the ministry of public health announcement No.135 on drinking water in sealed containers.

LIST	MAXIMUM CRITERIA
Color	Must not exceed 20 hasen units.
Smell	There must be no odor, but not including the smell of chlorine.
Turbidity	Not more than 5.0 silica scale.
pH value	Must be between 6.5-8.5.

Physical properties

LIST	MAXIMUM CRITERIA (Milligrams per cubic decimeter)
Total dissolve substance (Total dissolved solids)	<500
Total hardness (Calculated as calcium carbonate)	<100
Arsenic	<0.05
Barium	<0.1
Cadmium	<0.01
Chloride (Calculated as chlorine)	< 250
Chromium	<0.05
Copper	<1.0
Iron	<0.3
Lead	<0.1
Manganese	<0.05

LIST	MAXIMUM CRITERIA (Milligrams per cubic decimeter)
Mercury	<0.002
Nitrate (Calculated as nitrogen)	<4
Phenol	<0.001
Selenium	<0.01
Silver	< 0.05
Zinc	<3
Fluoride as fluorine	<1.5
Aluminum	<0.2
ABS (Alkylbenzene sulfonate)	<0.2
Cyanide	<0.1

Chemical properties

MACHINE INSPECTION AND MAINTENANCE LIST

MACHINE INSPECTION AND MAINTENANCE LIST	INSPECTION AND MAINTENANCE PERIOD				
	START THE ENGINE	MONTHLY	6 MONTHS	ANNUAL	STOP THE MACHINE
Clean all parts of the ice maker.		✓	✓	✓	✓
Check the water level in the upper water tank.	✓				
Cleanliness of Ice plates.	✓	✓			✓
All drainage pipes must not be clogged.	✓				✓
Water Fill Valve / Drain Valve / Drain valve.	✓		✓		✓
The filling water temperature does not exceed the designed value. *	✓				
Check for any foreign objects, ice screw conveyor.	✓	✓			✓
Check the motor current and voltage. (Water pump motor and screw conveyor motor)	✓		✓		
Close the cover around the machine.	✓			✓	

* The inlet water temperature is as agreed upon in the sale. If there is a change in the inlet water temperature, the cold water temperature will not be as desired.

BASIC TROUBLESHOOTING

ABNORMALITY	POSSIBLE CAUSES	CORRECTION
Ice doesn't come out/ Ice remains on the sheet.	Low liquid, causing insufficient dissolving	Check the coolant level first. If the coolant is low, check for leaks and repair them before adding more coolant
	Hot Gas valve is clogged.	Disassemble for cleaning.
	The ice screw does not rotate.	Check the motor electrical system.
	Ice crusher at the screw head of the ice delivery machine.	Check the ice outlet.
	The ice maker is dirty.	To clean, see cleaning instructions.
	The water quality in the reservoir is below standard.	Adjust the water quality to match the recommendations. See the section on suitable water quality for ice making.
Little ice comes out / Low ice production rate.	Liquid pipe clogged.	Check filter drive, strainer, liquid solenoid valve.
	Water is not refilled in time.	Check the water pressure entering the machine. (Pressure should not be less than 1 bar)
	Low viscosity.	Check the fluid level. If the fluid is low, check for leaks and then repair before adding more liquid.
	Solenoid for water refill stuck open.	Check the water solenoid, floatless leg. Whether it is properly set up or not, if it is damaged, replace it.
Ice formed on the ice sheet.	Inlet water temperature is lower than design.	Adjust the water temperature to match the design value.
	The incoming water volume is lower than the design.	Adjust the water volume to match the design value.
	The upper water tray hole is clogged.	Clean the top water tray.
The water level on the top water tray is low or not enough.	The water inlet volume is not as designed.	Adjust the water volume to match the design value.
	Valve equipment is damaged.	Check the operation of the water solenoid valve. If damaged, repair or replace the device.
Water overflows from the top water tray.	Valve equipment is damaged.	Check the operation of the solenoid valve, water fill, water level, whether it is adjusted correctly or not. If it is broken, replace the device.
	The upper water tray hole is clogged.	Clean the top water tray.
The plate is stained or scale occurs.	The water quality in the reservoir is not up to standard.	Adjust the water quality to match the recommendations in the manual.
	The frequency of flushing is not enough.	Increase the frequency of cleaning.

HEATAWAY

WORLD CLASS QUALITY

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