HEATAWAY

ASSEMBLY INSTALLATION

PLATE ICE MACHINE



1. Preparation of the Area for Machine Installation

Positioning for Installation

- Should be installed as close as possible to the ice usage point to prevent the ice from melting before reaching the usage point. If it is necessary to install far from the usage point, there should be a screw conveyor or belt conveyor for ice transport.
- Install close to the condensing unit (Condensing unit) to reduce energy loss.
- Should be installed in a location where refrigerant pipes and electrical cables from the power source or condensing unit can be connected conveniently.
- Must be installed in an area with sufficient service space (Service Area).
- Should be in a shaded area, avoid direct sunlight exposure, and have good air circulation.
- The machine should not be located in areas with high salt content in the air (coastal areas) as this may cause rust easily.
- Avoid areas with corrosive atmospheres such as near chemical factories, cement plants, or activities that affect air quality with corrosive conditions.



Figure 1 Example of Machine Placement

Single Unit Installation

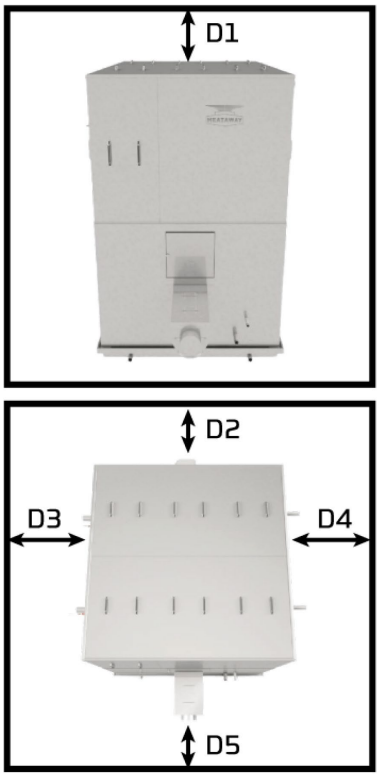


Figure 2 Single Unit Installation

Model	Distance from the Machine and Obstructions (m.)				
	D1	D2	D3	D4	D5
PI4-005D-240	1.0	1.0	1.0	1.0	1.0
PI4-010D-240	1.0	1.0	1.0	1.0	1.0
PI4-020D-240	1.0	1.0	1.0	1.0	1.0
PI4-030D-240	1.0	1.0	1.0	1.0	1.0
PI4-040F-240	1.0	1.0	1.5	1.0	1.0
PI4-060F-240	1.0	1.0	1.5	1.0	1.0
PI4-080F-240	1.0	1.0	1.5	1.0	1.0

Multi-Unit Installation

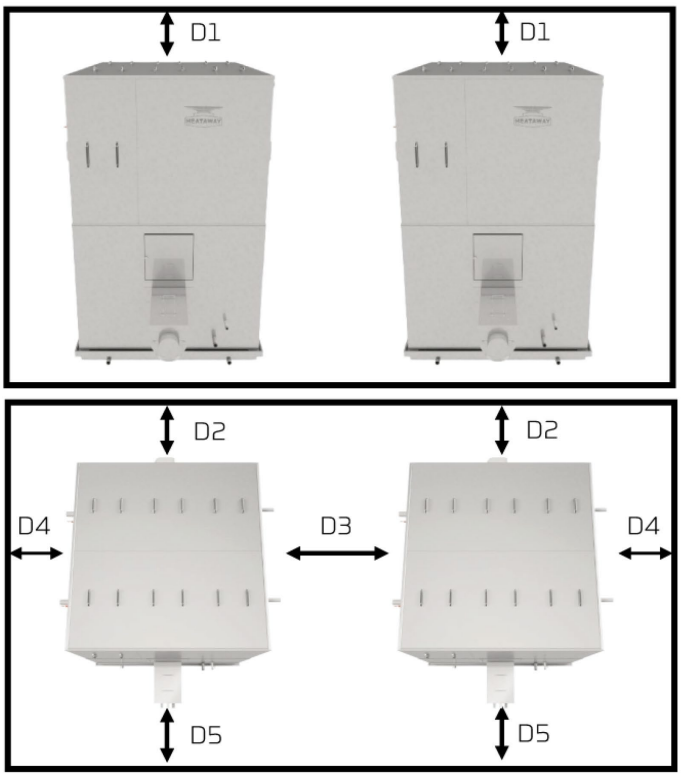


Figure 3 Multi-Unit Installation

Model	Distance from the Machine and Obstructions (m.)				
	D1	D2	D3	D4	D5
PI4-005D-240	1.0	1.0	2.0	1.0	1.0
PI4-010D-240	1.0	1.0	2.0	1.0	1.0
PI4-020D-240	1.0	1.0	2.0	1.0	1.0
PI4-030D-240	1.0	1.0	2.0	1.0	1.0
PI4-040F-240	1.0	1.0	2.5	1.0	1.0
PI4-060F-240	1.0	1.0	2.5	1.0	1.0
PI4-080F-240	1.0	1.0	2.5	1.0	1.0

2. Machine Assembly

1) The installer should prepare a steel support structure or a concrete foundation for the machine to ensure the floor is strong enough to support the machine's weight. Additionally, space around the machine must be provided for maintenance.

2) When lifting the machine, be careful not to attach the sling to the machine cover or machine walls, as this may cause damage as shown in the figure. Only use designated lifting equipment.

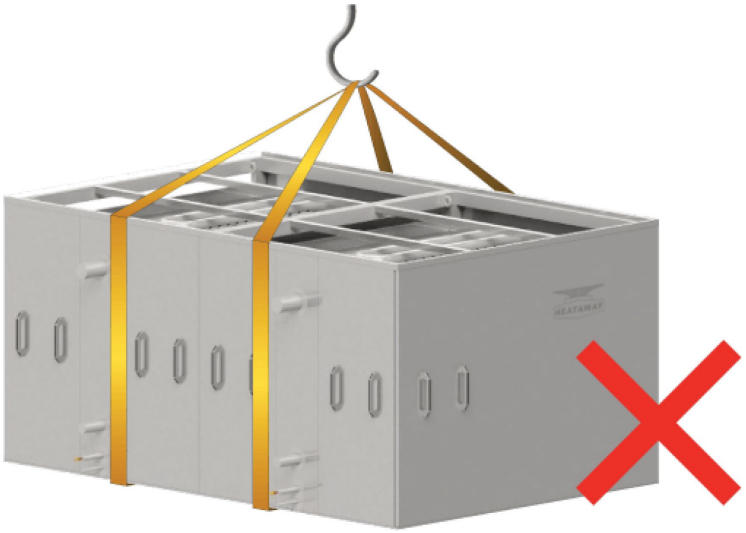


Figure 4 Incorrect Machine Lifting

3) When assembling the Pack unit to the lower water tank, there are 4 locking points located at the lower water tank as shown.

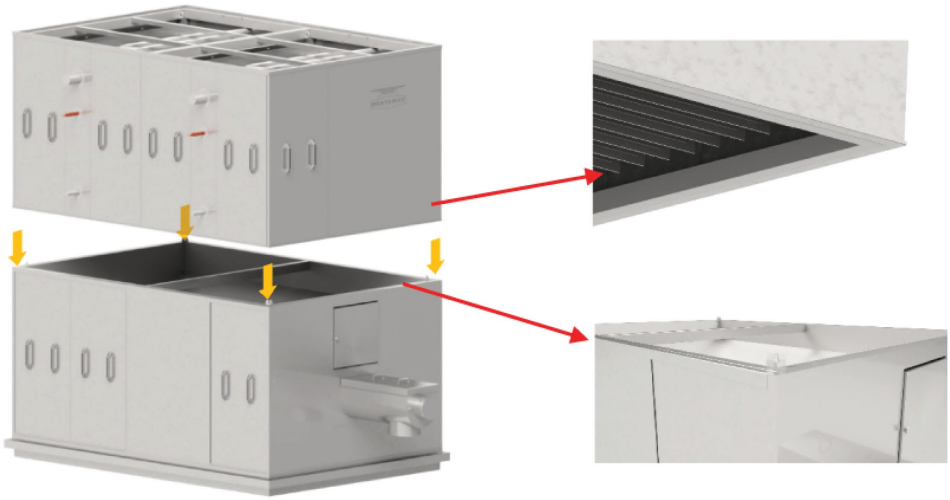


Figure 5 4 Locking Points Located at the Lower Water Tank

4) level tool should be used to check the machine level so that it is properly aligned and not tilted to one side.

5) In the case that the machine has more than 2 Packs installed, assemble the machine together as shown in Figure 4 and lift the machine as shown in Figure 5.



Figure 6 Correct Machine Lifting

Model	Weight (kg)	
	Empty	Operating
PI4-005D-240	540	580
PI4-010D-240	850	920
PI4-020D-240	1630	1770
PI4-030D-240	2190	2390
PI4-040F-240	2190	2620
PI4-060F-240	3240	3880
PI4-080F-240	4300	5160

6) Connect the refrigerant piping system, including both the suction line (Suction) and the liquid line (Liquid), to the connection points on the machine as shown. If the refrigerant pipes are long, pipe supports must be installed according to the recommended support spacing table for refrigerant pipes to prevent vibration of the pipes which may cause damage.

7) Connect the water inlet, water outlet, and drain pipes according to the connection point positions as shown. The drainpipe must be installed with a downward slope (1/100 or more).

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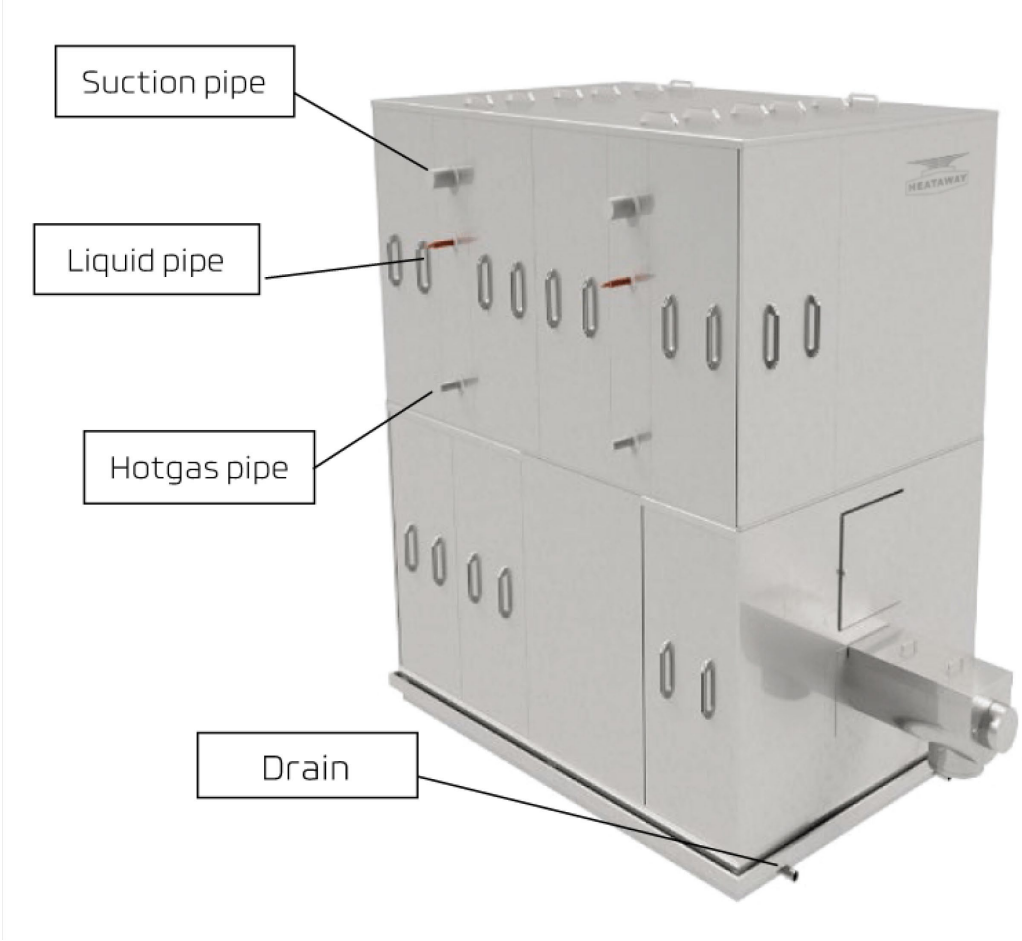


Figure 7 Machine Connection Points of Plate Ice

8) Use thermal insulation to cover the refrigerant pipes and water outlet pipes to prevent condensation and reduce energy loss within the system. The insulation thickness can be selected according to the insulation thickness table.

3. Operating Principle of Plate Ice Machine

The plate ice machine includes of evaporator plates water upper tray water lower tank and water pump. During ice production, water is pumped from the lower tank to the upper tray located above the evaporator plates, which distributes water to flow over the entire surface of each plate. Refrigerant flows inside the plates, causing the ice to begin forming as a film with a thickness of 3–10 mm.

When the ice reaches the required thickness, hot gas is sent into evaporator plates, causing the inner side of the ice to melt and the ice to fall off as sheets onto the internal ice slide. It then flows into the conveyor and ice crusher producing small-sized ice for further use.

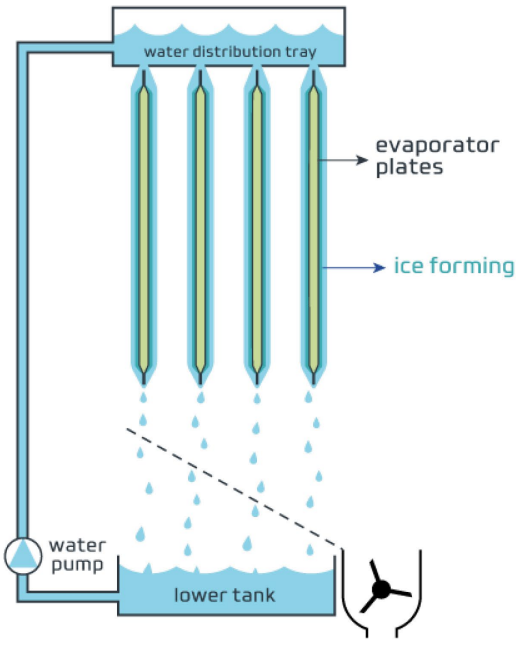


Figure Showing Ice Making Process (Freezing)

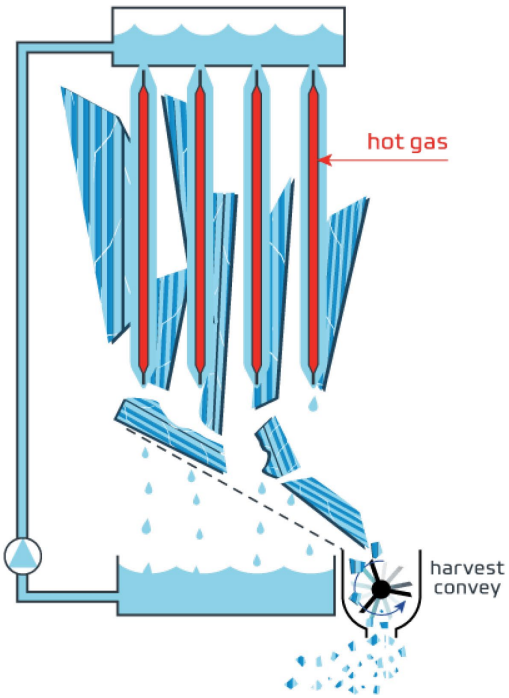
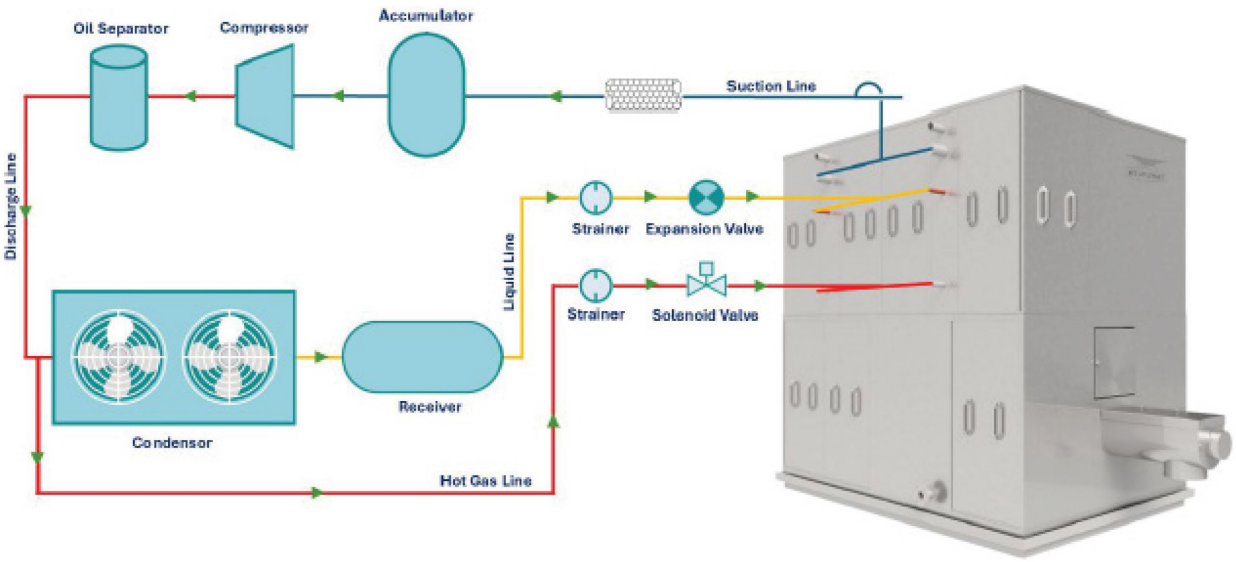


Figure Showing Ice Melting Process (Defrost)

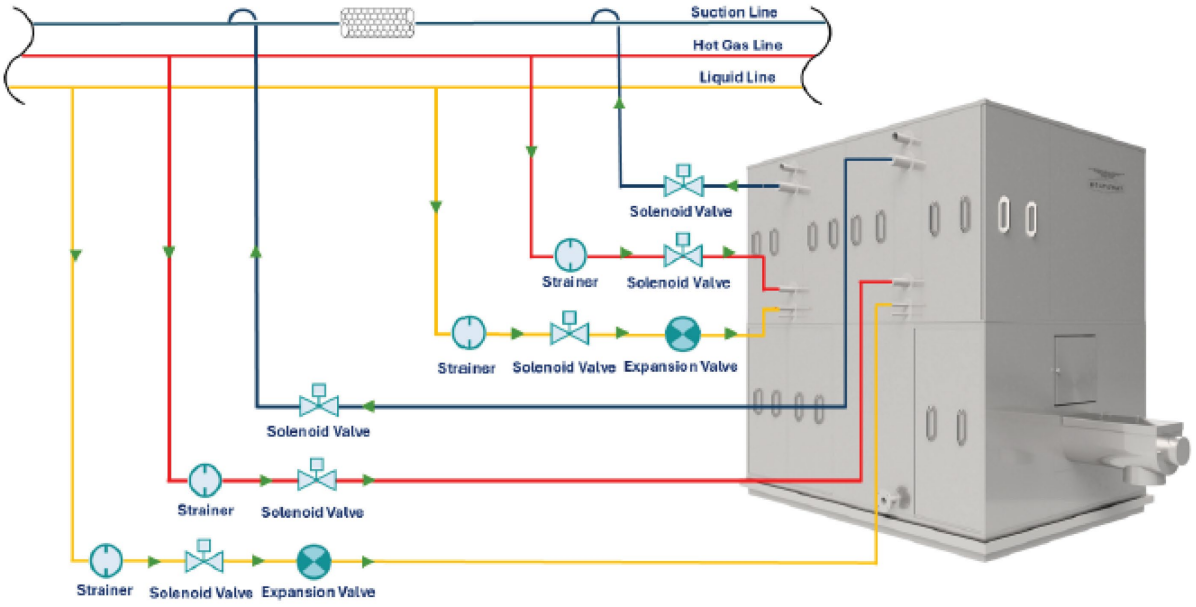
4. Refrigerant Piping Connection

Refrigeration System Installation

4.1 Direct Expansion (DX) System



4.2 Flooded (FF) System



5. Accessories for Plate Ice Machine

5.1 Water Tank and Conveyor Screw

Used for receiving ice after the defrost process (Defrost) of the plate ice machine.

The Water Tank consists of:

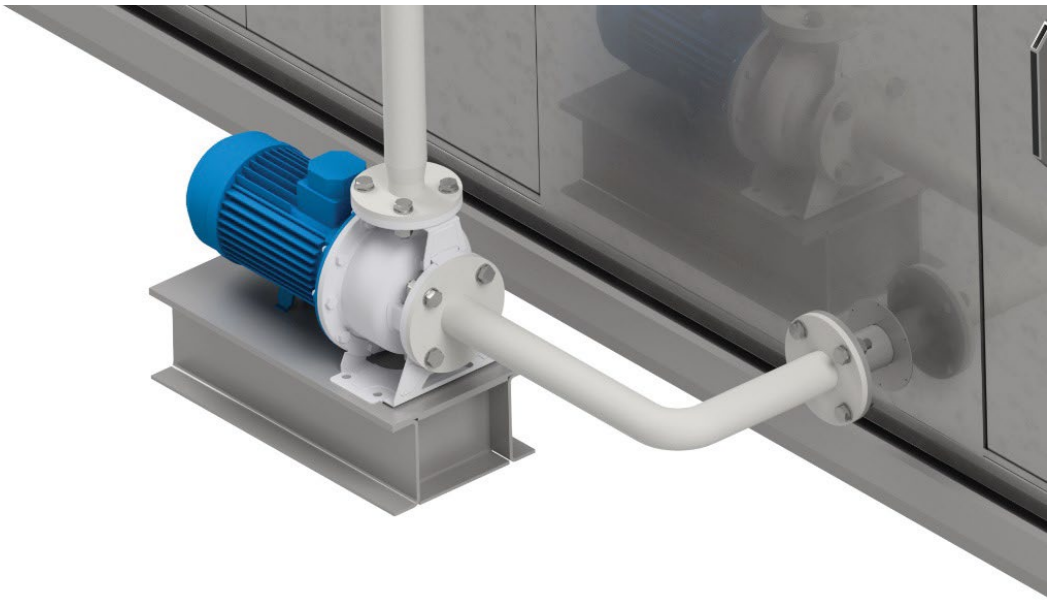
- Conveyor Screw: functions to conveyor ice to the customer's next process.
- Service Door: functions as a channel for inspecting various issues within the ice system and is used as an access point for cleaning inside the machine.
- Lower water tank: functions to store water within the plate ice machine for use inside the machine.



5.2 Electrode functions to prevent the water pump from running without water due to low water level. The water pump is equipped with a mechanical seal installed at the pump to prevent leakage. If the pump runs without water, the mechanical seal will not be in contact with water, causing heat and resulting in damage to the mechanical seal.



5.3 Water Pump functions to pump water into the operating system of the plate ice machine, working together with the electrode to control the water level.



5.4 PLC Control System: functions to control the automatic operation of the plate ice machine, helping customers achieve convenience and reduce maintenance and inspection workload.



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WORLD CLASS QUALITY

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