



# "North Star" Liquid Ice Maker





North Star Ice Equipment, the world leader in flake ice technology, now offers a liquid ice system that produces a mixture of seawater or freshwater ice and water for faster cooling of highly perishable products. When installed in a land-based plant or onboard a vessel, the North Star liquid ice system produces and pumps liquid ice to multiple use points. The system combines a reliable North Star liquid ice machine, a condensing unit, transfer pump or collection screw with pump, mixing tank, and custom designed options to meet your specific application requirements.

### Liquid Ice Maker



At the heart of the system is a North Star liquid ice maker. Seawater liquid ice is produced directly on its solid stainless steel freezing surface and can be discharged directly into a collector screw, slurry pump or mixing tank. For freshwater liquid ice, both stainlesssteel and carbon steel evaporators are available. Evaporator temperature can be as low as -40 °F or °C for maximum production without danger of freeze-up. North Star offers six models of industrial liquid ice makers with individual capacities from 2.5 to 50 tons of ice per day. Two or more units can also be combined for greater capacity. North Star liquid ice systems require an appropriately sized heavy-duty condensing unit.

### Mixing Tank



The liquid ice is pumped from the ice maker to a mixing tank, where it is stored until it is needed. Mixing tanks can be located remotely, and can be combined to increase storage capacity.

### Liquid Ice Delivery



From the mixing tank, liquid ice can be pumped to multiple use points throughout the boat or plant. Liquid ice can be delivered automatically by hose or spray jets as required for icing incoming product, for use in processing, and for product holding. A water injector valve in the supply line is used to vary the ice/water ratio during delivery.



## The Best Liquid Ice

North Star liquid ice offers a number of advantages over other brands of slurry ice :

### Faster Cooling

North Star liquid ice provides rapid product cooling for highly perishable products. When applied, liquid ice immediately fills all voids in the tote or container, surrounding the product entirely with ice for maximum cooling. Rapid cooling extends the shelf life, maintaining the value of the product. The soft texture of liquid ice also cushions the product and protects it from damage.

### Easy Draining

The water drains quickly and completely from North Star liquid ice leaving only ice and product. This is of particular benefit with saltwater liquid ice, because draining the saltwater away quickly almost eliminates the concentration of salt in the ice (to less than 0.5%). This greatly reduces the absorption of salt into the product and keeps the product from freezing - both common problems with other brands of slurry ice.

### The Right Temperature

With saltwater liquid ice, users can achieve the optimal temperature and density for their application by varying the ratio of ice to water. By controlling the temperature, the product can be cooled quickly and still maintain its fresh appearance.

### Pumpable

North Star liquid ice is easily pumpable. This makes it ideal for applications with multiple use points.

### Product Features

North Star liquid ice systems can be configured to meet your requirements. The most common components are listed below. Please contact North Star for other options.

- Ammonia or freon refrigerant
- Gravity - fed North Star liquid ice makers (for either flooded or pump recirculation refrigeration systems)
- Heavy - duty condensing unit (by others)
- Mixing tank of various capacities
- All valves and controls for refrigeration and oil return
- All flow meters, valves and solenoids for water circuit to easily adjust ice/water ratio
- Ice delivery pump and screw conveyors
- Electrical controls and software for the system

## Liquid Ice Catalog Data

Liquid Ice Generator Model	Liquid Ice Production Rate		Required Cooling Load (kW) at -25 °C Evap. Temp.	Able to cooled Down and Store Fish (MT/Day)	Basic Unit Dimension(mm)			Operating Wt. Kgs
	Total Flow (MT/Day)	30% Ice Content (MT/Day)			Length	Width	Height	
M-10-SS	11	3.3	18	4.1	1,300	1,000	1,700	500
M-20-SS	26	7.8	42	9.7	2,200	1,500	2,700	1,500
M-40-SS	41.6	12.5	68	15.5	2,200	1,500	3,300	2,100
M-60-SS	61.9	18.6	100	23.2	2,800	2,000	3,500	3,500
M-90-SS	87.5	26.3	142	32.7	2,800	2,000	4,000	4,900

Note : 1.) Based on 4 °C chilled sea water infeed temperature.

2.) Based on 28 °C fish temperature.

3.) Other capacity and dimension are available, please contact manufacturer.

4.) Specifications subject to change without notice.

