

# North Star®

World Leader in Ice Technology

## Flake Ice Makers





# North Star Flake Ice Makers

**S**ince 1950, North Star Ice Equipment has led the world in the design and manufacture of high-capacity industrial flake ice makers. Often copied but never equaled, North Star's simple, vertical drum design and expert construction results in a low stress, low wear and low maintenance ice maker that is simple to install and operate. The compact, economical units produce totally subcooled flake ice with efficiency and reliability unmatched by other ice machines.

## The North Star Flake Ice Advantage

### Versatile

- Makes ice from fresh water, seawater and other liquids.
- Uses ammonia or ozone-friendly refrigerants.
- Install on land or onboard vessels with a broad range of power options.
- Choose from three product lines – carbon steel, stainless steel or Elite.

### Dependable

- Built for industrial use with high quality heavy-duty parts.
- Constructed to ASME code for 150 PSIG working pressure in compliance with CE and PED regulations.
- Designed with a stationary double-walled evaporator **1** and no refrigerant seals to eliminate leaks.
- Includes important safety features, such as a see-through inspection hatch with safety switch, **2** mechanical load limit switch, emergency stop switch, jog switch, and drive belt guard.
- Covered by a lifetime evaporator warranty and North Star's performance guarantee.

### Flexible

- Ice thickness can be varied in the field by changing the speed of the rotor.

## North Star Makes Better Ice

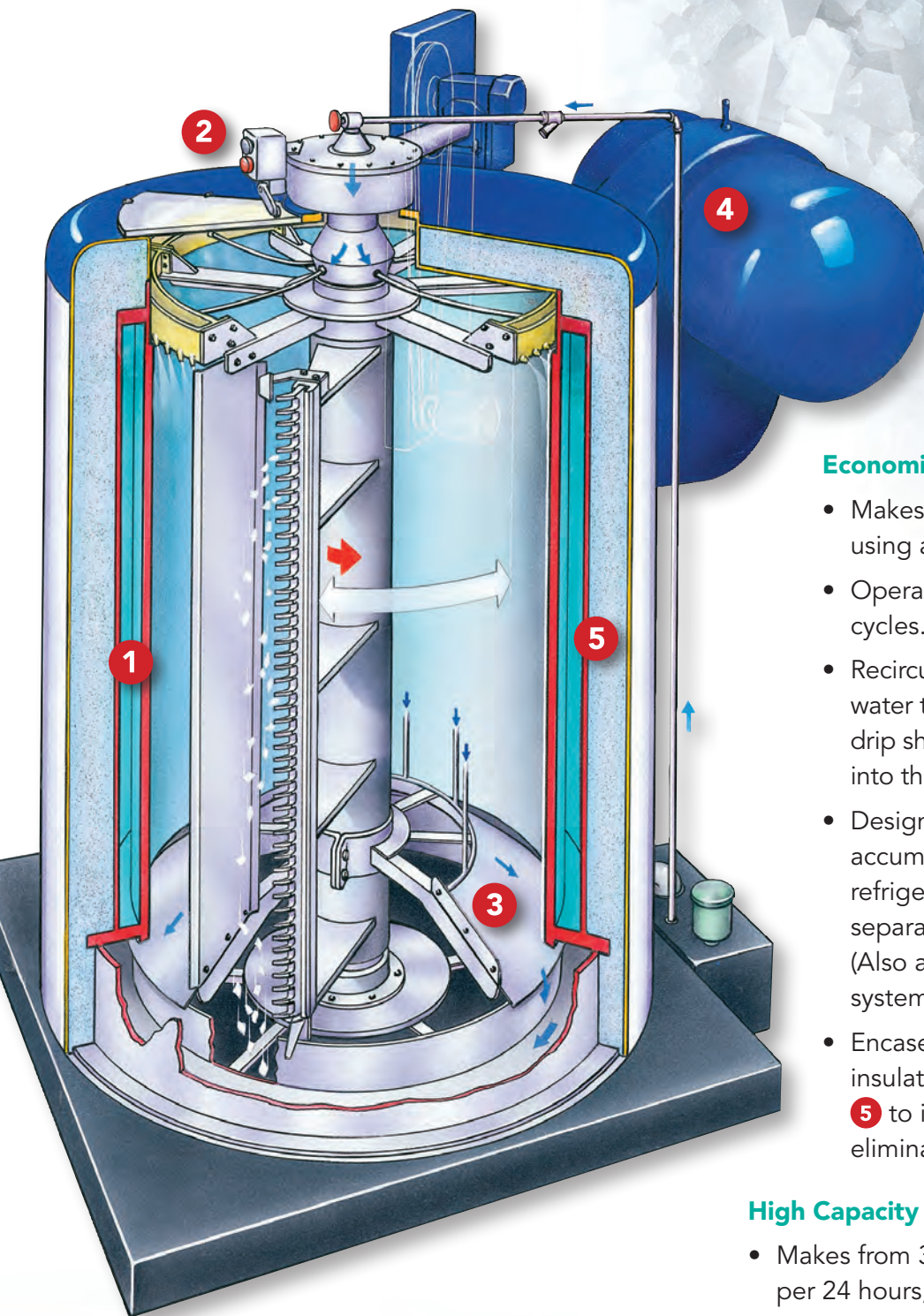
### Faster cooling and mixing

North Star flake ice has more than 17,000 square feet of cooling surface area per ton (1741 m<sup>2</sup> per MT) of ice for the greatest cooling efficiency. Other types of ice (tube, shell and plate) offer only 4,260 to 11,050 square feet per ton (435 to 1383 m<sup>2</sup> per MT) of cooling surface area.

### Easier storage and distribution

North Star flake ice is subcooled prior to harvest, eliminating the need for mechanical devices to wipe the ice dry. It remains free-flowing in low-temperature storage bins and will not clog screw or pneumatic conveyors.





### Economical

- Makes more ice than any other ice maker using an equally rated compressor.
- Operates continuously with no defrost cycles. All energy used goes to making ice.
- Recirculates any water overflow back to the water tank so no water is lost. The patented drip shield **3** ensures that no water falls into the ice storage bin.
- Designed with an attached insulated accumulator **4** to ensure accurate refrigerant level control and complete separation of liquid and gas refrigerant. (Also available as a forced recirculation system with no accumulator).
- Encased in high R-value polyurethane insulation with a molded fiberglass cover **5** to increase energy efficiency and eliminate corrosion.

### High Capacity

- Makes from 3 to 54 tons (2.7 to 48.5 MT) of ice per 24 hours, depending on the model.
- Combine two or more models for greater ice making capacity.

### Compact

- Offers the smallest footprint with the largest ice capacity in the business.

### Better product coverage and protection

North Star ice flakes pack well and cushion products against damage. Their flat shape provides excellent surface contact that will not create indentations in perishable products.



# Introducing

**ELITE  
STAINLESS  
STEEL**

North Star  
FLAKE ICE MAKERS

**ELITE  
STAINLESS STEEL**

## Product Features

- Designed with a solid stainless steel freezing surface and stainless steel interior components throughout the water path and rotor assembly.
- Meets international food safety requirements.
- Available in four models ranging from 11 to 41 tons (10.3 to 37.2 MT) of flake ice per day.
- Additional stainless steel exterior components available.
- Backed by a lifetime warranty on the evaporator and North Star's performance guarantee.



# North Star Elite Flake Ice Makers

## Elite Stainless Steel – The Best Choice for Food Processing

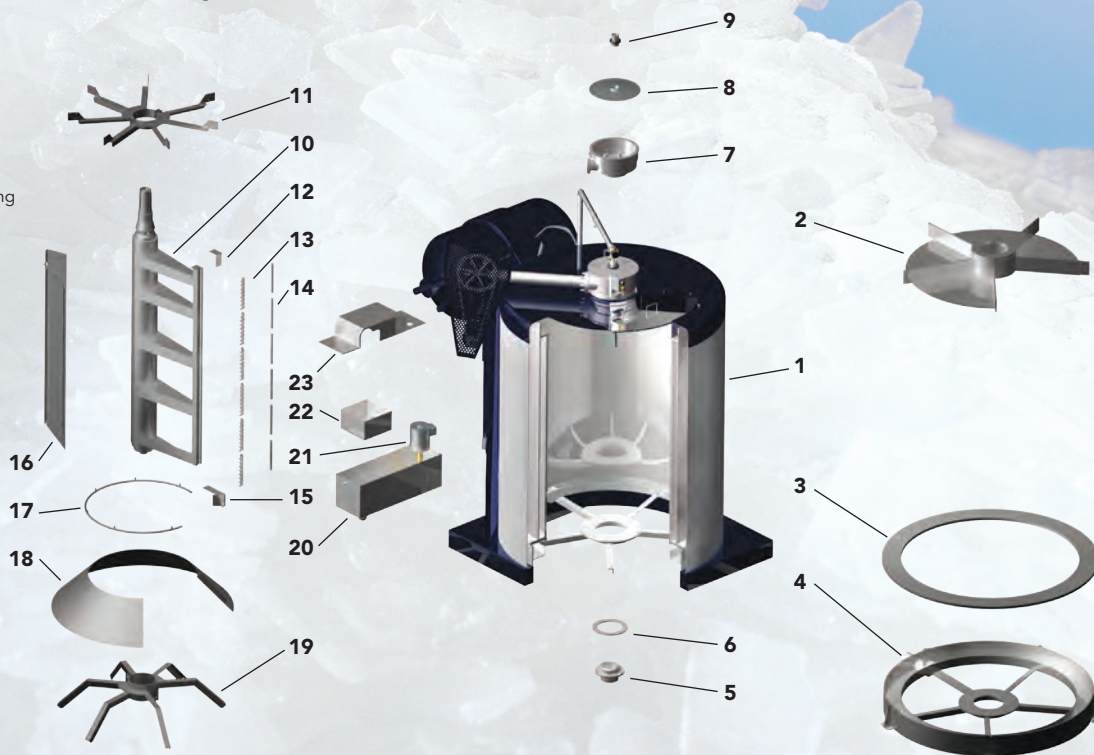
North Star Elite stainless steel flake ice makers are designed to meet the safety and sanitation standards of the worldwide food processing industry. These regulations consider ice used in food manufacturing as an ingredient, so ice making equipment must meet the same requirements as any other piece of food processing machinery. Stainless steel has long been considered the best material for food processing equipment.

North Star Elite ice makers feature a solid stainless steel freezing surface and stainless steel interior components throughout the water path and rotor assembly. The stainless steel freezing surface will not contaminate food because it will not chip, peel, crack, pit or rust, as chrome plated surfaces are known to do. The stainless steel and other approved interior components ensure that water and ice come into contact only with surfaces that are smooth, corrosion resistant, non-toxic, stable and non-absorbent.

*North Star*®

## Elite Stainless Steel Components

1. Evaporator freezing surface
2. Evaporator top closure assembly
3. Evaporator bottom closure plate
4. Water receiving pan and support arms
5. Bottom bearing housing
6. Bottom bearing housing attachment ring
7. Top gear housing
8. Top gear housing cover
9. Water inlet splash tube
10. Rotor assembly
11. Water ring support arms
12. Top ice plow
13. Ice removal tool
14. Ice removal tool locking bar
15. Bottom ice plow
16. Vertical ice deflector
17. Drip shield spray tube
18. Drip shield
19. Drip shield support arms
20. Water tank
21. Water pump motor (TENV)
22. Salt tank
23. Water tank cover





# North Star Flake Ice Makers

## Three Options to Meet Any Ice Requirement

### 1 **Elite Stainless Steel**

Designed to meet the rigorous requirements of the food processing industry, North Star Elite Stainless Steel ice makers are perfect for those applications where ice is added to a mixture as an ingredient, such as in the manufacture of bakery products, sausage and other processed meats and poultry products. The Elite ice maker design incorporates a stainless steel freezing surface with additional stainless steel components throughout the water path and rotor assembly.

#### **Standard Stainless Steel Components**

Freezing surface  
Bottom water pan with closure-plate and support arms  
Bottom bearing housing with attachment ring  
Drip shield with support arms  
Drip shield spray tube  
Ice removal tools  
Locking bars  
Rotor  
Salt feed and water tank with cover  
Top and bottom ice plow  
Top evaporator plate with support arms  
Top gear housing  
Vertical ice deflector  
Water ring support arms  
Water pump motor (TENV)

#### **Other Standard Equipment**

(See standard equipment for North Star Carbon Steel ice makers)

#### **Options\***

Electrical control panel  
Seawater design  
Shipboard design  
Additional stainless steel exterior components

### 2 **Stainless Steel**

North Star Stainless Steel ice makers feature a stainless steel freezing surface and additional stainless steel components for food applications which require a sanitary ice making surface. The solid stainless steel freezing surface is easier to clean and requires less maintenance than carbon steel. All component materials are approved by the USDA.

#### **Standard Equipment**

(See standard equipment for North Star Carbon Steel ice makers)

#### **Stainless Steel Components**

Freezing surface  
Ice removal tools  
Drip shield  
Vertical ice deflector  
Water tank (Model 5 has a polymeric water tank)  
Bottom closure ring  
Top rotor stem

#### **Options\***

Electrical control panel  
(standard on Model 5)  
Seawater design  
Shipboard design

### 3 **Carbon Steel**

North Star Carbon Steel ice makers are the best choice for non-food applications requiring large ice-making capacities, such as concrete cooling, dye and chemical manufacturing, and snow-making and other recreational uses.

#### **Standard Equipment**

Accumulator (flooded systems only)  
Belt guard  
Complete drive unit  
Emergency stop switch  
Gauge shut-off valve  
Inspection hatch guard  
Jog switch  
Load-limit device  
Low pressure gauge  
Oil drain valve  
Pressure relief valve  
Refrigerant level control  
Salt feeder device  
Water float valve  
Water flow control valve  
Water make-up tank  
Complete water pump

#### **Stainless Steel Components**

Ice removal tools  
Drip shield  
Vertical ice deflector  
Water tank  
Salt feed tank

#### **Options\***

Electrical control panel



\*Contact North Star for more information.

## Ice Maker Specifications

Product Specifications					Dimensions			Shipping Information		
Model	Motor Drive	Pump	Capacity*		Height**	Width	Length	Domestic Wt.	Export Wt.	Volume***
			Carbon Steel	Stainless Steel/Elite						
<b>5</b>	¼ hp .20 kW	1/30 hp .03 kW	—	3.0 T 2.7 MT Stainless only	45 in 1143 mm	25 in 635 mm	35 in 889 mm	708 lbs 321 kg	760 lbs 345 kg	61.8 ft <sup>3</sup> 1.75 m <sup>3</sup>
<b>10</b>	1/3 hp .25 kW	1/20 hp .04 kW	6.0 T 5.4 MT	4.7 T 4.3 MT Stainless only	46 in 1168 mm	32 in 813 mm	48 in 1219 mm	1,030 lbs 467 kgs	1,310 lbs 594 kgs	70.6 ft <sup>3</sup> 2 m <sup>3</sup>
<b>20</b>	½ hp .38 kW	½ hp .38 kW	14.0 T 12.7 MT	11.4 T 10.3 MT SS or Elite	51 in 1,295 mm	56 in 1,422 mm	83 in 2,108 mm	3,200 lbs 1,452 kg	3,444 lbs 1,562 kg	244 ft <sup>3</sup> 6.9 m <sup>3</sup>
<b>40</b>	¾ hp .56 kW	½ hp .38 kW	22.8 T 20.7 MT	19.7 T 17.9 MT SS or Elite	75 in 1,905 mm	56 in 1,422 mm	83 in 2,108 mm	4,320 lbs 1,960 kg	5,700 lbs 2,586 kg	332 ft <sup>3</sup> 9.4 m <sup>3</sup>
<b>60</b>	1.00 hp .75 kW	½ hp .38 kW	38.0 T 34.5 MT	29.8 T 27.0 MT SS or Elite	81 in 2,057 mm	76 in 1,930 mm	107 in 2,718 mm	7,000 lbs 3,175 kg	8,500 lbs 3,856 kg	576 ft <sup>3</sup> 16.3 m <sup>3</sup>
<b>90</b>	1½ hp 1.13 kW	½ hp .38 kW	53.5 T 48.5 MT	41.0 T 37.2 MT SS or Elite	105 in 2,667 mm	76 in 1,930 mm	109 in 2,769 mm	9,800 lbs 4,445 kg	11,200 lbs 5,080 kg	678 ft <sup>3</sup> 19.2 m <sup>3</sup>

\*Capacity in US tons (T) and metric tons (MT) of ice per 24 hours based on -25° F (-32° C) evaporator and 60° F (16° C) water supply temperatures.

For other requirements and conditions consult North Star. Specifications subject to change without notice.

\*\*Overall height requirements vary upon installation. Contact North Star for more information.

\*\*\*Volume is given for export crating.

**Note:** All ice makers are designed to operate as part of a complete refrigeration system that includes refrigerant, condenser, compressor, and piping to be supplied by others.

## The Best Warranty in the Business

At North Star, we believe in the quality and durability of our products. Our commitment is so strong that we offer the best ice maker warranty you can get anywhere in the world – a lifetime warranty on all North Star evaporators. We also stand behind our capacities. All North Star ice makers are guaranteed to make the amount of ice indicated on our capacity charts. So you can be assured you will have the ice you need each and every day.



## **The World Leader in Ice Technology**

Since 1950, North Star Ice Equipment has been known the world over for its line of high capacity, industrial ice makers and ice handling equipment. The North Star product line includes flake ice makers, liquid ice systems, ice handling and storage systems, screw conveyor and pneumatic ice delivery systems, containerized ice plants, and auxiliary equipment. North Star ice systems are now operating in over 120 countries around the world.

### **Industries**

#### **Seafood**

Fishing, at-sea and land-based processing, aquaculture harvesting and processing, seafood holding, transportation and display.

#### **Produce**

Perishable cooling and transport.

#### **Meat & Poultry**

Processing and value-added products.

#### **Bakery**

Dough cooling.

#### **Chemical**

Dye and chemical manufacturing.

#### **Concrete Cooling**

Hydroelectric dams and ready-mix plants.

#### **Recreation**

Ski resort snow making, recreational and educational venues.

#### **Grocery**

Perishable food holding and display.



**North Star Ice Equipment Corporation**

8151 Occidental Avenue South  
P.O. Box 80227  
Seattle, WA 98108 USA  
[www.northstarice.com](http://www.northstarice.com)

Tel: 206-763-7300  
Toll-free in USA: 1-800-321-1381  
Fax: 206-763-7323  
Email: [info@northstarice.com](mailto:info@northstarice.com)

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