NATURAL
REFRIGERANTS

Powered by nature

SPLIT CO_2 R744 SERIES IN FOOD RETAIL

PLUG & PLAY
SPLIT CO_2

MODULAR FLAKE AND NUGGET ICE MAKERS

HOSHIZAKI

CO_2 IN FOOD RETAIL

OUR SOLUTIONS

Our solutions include split CO_2 flake and nugget ice makers that are connectable to both subcritical or transcritical systems. The condensing unit is not included.

We offer complementary refrigerated food retail equipment including ice makers, storage bins, ice carts and transport systems for customized system configuration.

FOR FOOD RETAIL ENVIRONMENTS, TRANSCRITICAL CO_2 BOOSTER SYSTEMS ARE BECOMING THE STANDARD, AS THEY ARE THE MOST ECONOMICAL AND ENERGY-EFFICIENT SOLUTION.

CO_2, THE NATURAL REFRIGERANT, COMES WITH MANY ADVANTAGES. COMPARED TO SYSTEMS USING CONVENTIONAL SYNTHETIC REFRIGERANTS, CO_2 TRANSCRITICAL BOOSTER SYSTEMS SHOW SIGNIFICANTLY HIGHER EFFICIENCY RATES, ESPECIALLY WHEN OPERATING IN MODERATE COOL CLIMATES.

FLAKE AND NUGGET ICE

The light texture of our Flake and Nugget ice has a quick cooling effect, creating an environment of uniform temperatures, without causing unpleasant freezer-burn. This is why Hoshizaki Flake and Nugget ice is highly popular and considered the ideal material to prepare and layer attractive food displays.

The ice maker's extruding head performs a higher compression to yield hard, dry and individual ice nuggets. For the softer Flake ice, the extruding head is equipped with wide channels and multi-blade cutters.

FLAKE ICE	NUGGET ICE
70% Ice / 30% Water	88% Ice / 12% Water

NEED REFRIGERATED STORAGE, BLAST CHILLERS OR FREEZERS?
For more information about Gram CO_2 solutions visit our website
www.hoshizaki-europe.com

SUPPORTING YOUR BUSINESS...AND THE ENVIRONMENT

MULTIPLE INSTALLATION CONFIGURATIONS

The series comes with various installation possibilities:

- **On top of fish display** for direct usage
- On **top of coldroom,** with receiving ice carts
- On **top of ice storage bin** or on frame above transport system

* See page 6 for more information on installations.

SCALABLE SOLUTIONS

Our "split" ice makers can be connected to both subcritical or transcritical systems, even for small-size CO_2 refrigeration solutions.

The operator can control the single/ multiple unit installation with any CO_2 rack or rack controller.

INTEGRATED SOLUTIONS

Our new CO_2 units are compatible with:

- Ice storage and transport systems, with various capacities
- Ice storage and dispensing systems
- Full range of upright ice storage bins: single or double door, with manual loading of ice carts

EASY CONNECTION TO CENTRAL REFRIGERATION UNIT

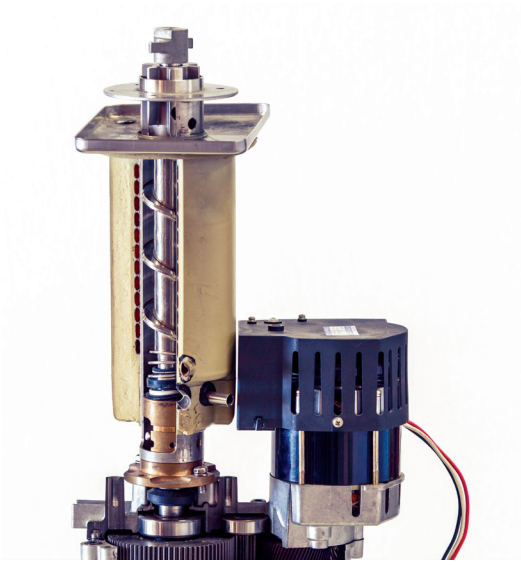
The pre-installed EEPR valve, EEV valve, transducer and controller allow a quick Plug & Play installation and simple start-up of our new CO_2 ice makers.

LOW TOTAL COST OF OWNERSHIP

Operators can reduce energy costs by producing ice at night, when energy rates and the workload of the central refrigeration system are significantly lower.

LOW CAPITAL EXPENDITURES

CO_2 machines share the central condensing unit with all other refrigeration appliances in the store, optimizing the capital spend per kW of refrigeration installed.



WHY CHOOSE HOSHIZAKI FLAKE AND NUGGET ICE MAKERS?

The Hoshizaki FM series uses water-lubricated carbon bushings, instead of grease-lubricated ball bearings.

Conventional systems using ball bearings and grease often break down, due to grease build-up. This build-up can eventually wear out the drive shaft in a way that the auger gets in contact with the cylinder walls. In the worst case, this can cause refrigerant leaks and a machine break-down. To avoid this, systems with ball bearings require a high level maintenance, connected to recurring investments.

In contrast, the Hoshizaki FM series has a worktime-based replacement system, which can be monitored with the intuitive control display for preventative maintenance. Hoshizaki was the first to introduce an automated water circuit rinse cycle, to avoid harmful mineral residues from clogging the hydraulic system and maintaining top sanitary conditions.

MODULAR FLAKE AND NUGGET ICE MAKERS

Models	FM-600ALKE-CO_2 (N) - SB	FM-1200ALKE-CO_2 (N) - SB	FM-1800ALKE-CO_2 (N) - SB
Dimensions (W x D x H)	560 x 700 x 780mm	762 x 700 x 780mm	1080 x 700 x 780mm
Ice production capacity (24h)	600kg / 530kg (N)	1200kg / 1060kg (N)	1800kg / 1590kg (N)
Water consumption m^3/24h @10°C/10°C (ice production)	0.63m^3 / 0.56m^3 (N)	1.21m^3 / 1.07m^3 (N)	1.81m^3 / 1.60m^3 (N)
Refrigeration capacity at -25°C evaporating temperatures	1410 Watt	2820 Watt	4230 Watt
Electric consumption (Gear Motor)	220W at Power factor 80% / 270W at Power factor 82% (N)	470W at Power factor 81% / 515W at Power factor 86% (N)	710W at Power factor 83% / 770W at Power factor 85% (N)
Electric connection	220-240 V, 50 Hz, 1ph	220-240 V, 50 Hz, 1ph	220-240 V, 50 Hz, 1ph
Net weight	60kg	99kg	141kg
Crated (Gross) weight	72kg	111kg	155kg
Drain outlet	R3/4 (Rear)	R3/4 (Rear)	R3/4 x 2 (Rear)
Accessories	Mounting bracket, Installation kit, Water supply tube, Water drain tube	Mounting bracket, Installation kit, Water supply tube, Water drain tube	Mounting bracket, Installation kit, Water supply tube, Water drain tube

Models	FM-600ALKE-CO_2 (N) - SB	FM-1200ALKE-CO_2 (N) - SB	FM-1800ALKE-CO_2 (N) - SB
Safety	IEC Conform to the standard	IEC Conform to the standard	IEC Conform to the standard
Certification standards	EC (IEC), FCM, HACCP	EC (IEC), FCM, HACCP	EC (IEC), FCM, HACCP
Carts	Ice storage and transport systems*	Ice storage and transport systems*	Ice storage and transport systems*

*Alternatively store ice in cold room or customer fitted solution

SOLUTIONS INCLUDE

Evaporator only (without compressor and condenser) *AISI 304 stainless steel evaporator developed for operating pressures up to 60 bar*	Yes
Electronic expansion valve controller	Yes
High pressure safety valve **Operates above 4.7MPa (47 bar)**	Yes
Evaporation pressure regulator	Yes
EEPR Electronic expansion valve model	Yes
Pressure transmitter	No
CO_2 alarm	No
Ice chute	No

OPERATING CONDITIONS LIMITATIONS

- Ambient temperature range: 5°C / 40°C
- Water temperature range: 5°C / 35°C
- Water supply pressure: 0.05 / 0.8 MPa (0.5 - 8 bar)
- Voltage range rated voltage: ±10%

GAS CONNECT REQUIREMENTS

R744 liquid inlet connection: Ø 8mm
R744 gas suction: Ø 9.5mm

RECOMMENDATIONS

It is recommended to perform an analysis of the water, to ensure proper water quality. When using water filters, it must be possible to bypass raw water. Osmosis systems are not recommended as demineralized water can damage the machine.

SELECT YOUR INSTALLATION CONFIGURATION

INSTALLATION ON TOP OF THE FISH COUNTER

The machine is suspended on top of display counters for easy maintenance. The ice drops directly into the display counter.

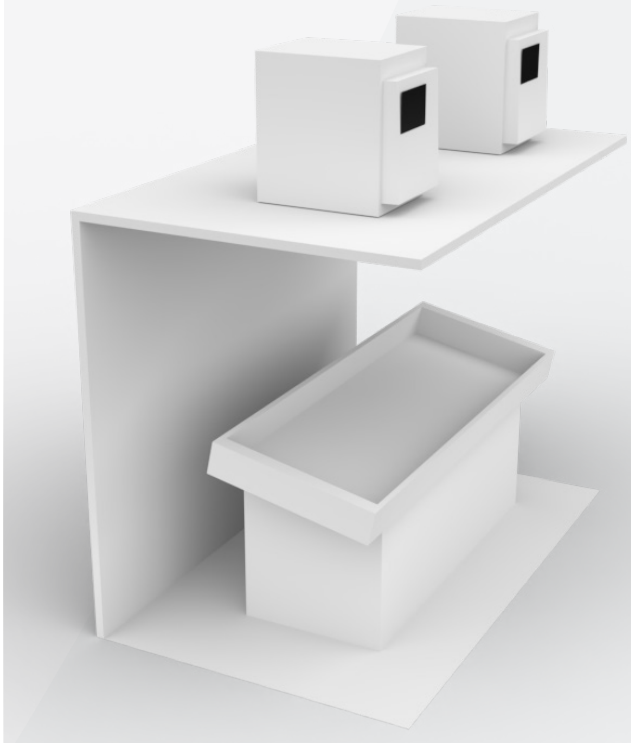
Floor space saving:
Installed above the display bench.

Capital investment savings:
No ice storage or transportation equipment needed.*

Energy saving:
Ice is only produced at night at reduced electricity rates.

Labour saving conditions:
Ice is made available right on the display counters, cutting times for labour.

Ice life-time:



*Split version, eg. the evaporator portion only and connected to the central LT refrigeration.

INSTALLATION ON TOP OF A COLDROOM

The ice is produced and dropped directly in food grade cart inside the coldroom.

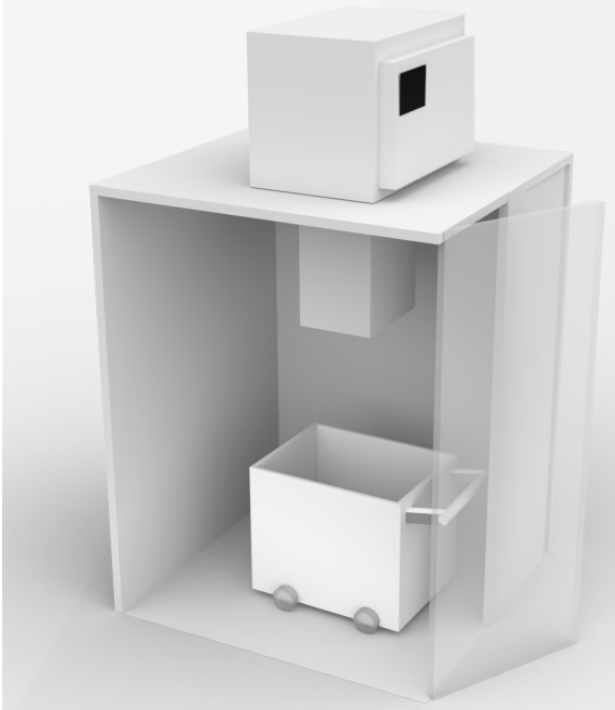
Floor space saving:
Using one cold room for storing the ice next to fresh products.

Capital investment savings:
Cold room to store and produce the ice required.

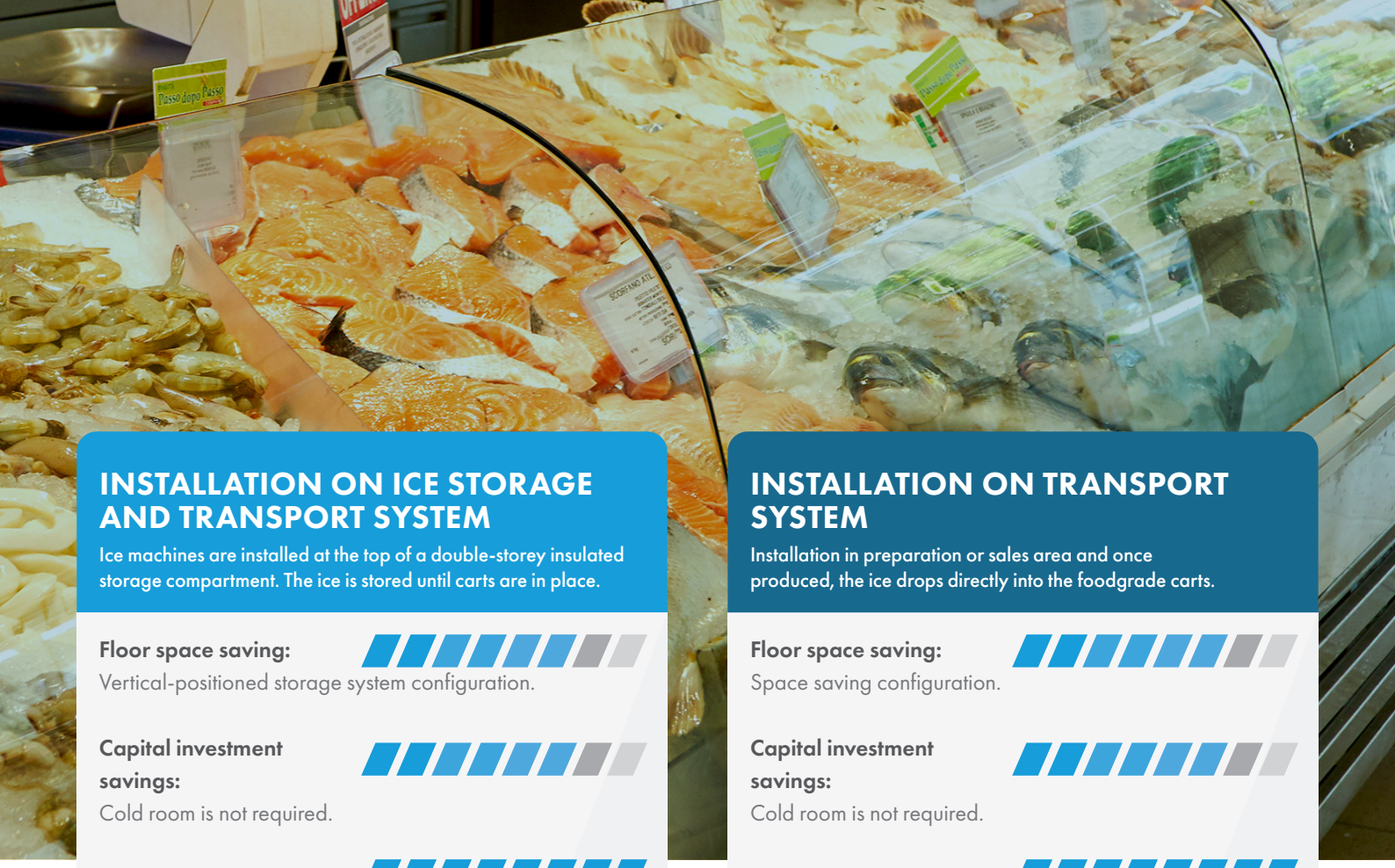
Energy saving:
Energy comsumption of the cold room.

Labour saving conditions:
Cart is loaded directly via the modular ice chutes and rolled to the food display benches.

Ice life-time:



** Ice chute not included



INSTALLATION ON ICE STORAGE AND TRANSPORT SYSTEM

Ice machines are installed at the top of a double-storey insulated storage compartment. The ice is stored until carts are in place.

Floor space saving:
Vertical-positioned storage system configuration.

Capital investment savings:
Cold room is not required.

Energy saving:
Non-refrigerated storage of ice.

Labour saving conditions:
Minimum loading time. Gravity fed ice carts require minimum effort from the operator. Ice is rolled to the food display benches.

Ice life-time:

INSTALLATION ON TRANSPORT SYSTEM

Installation in preparation or sales area and once produced, the ice drops directly into the foodgrade carts.

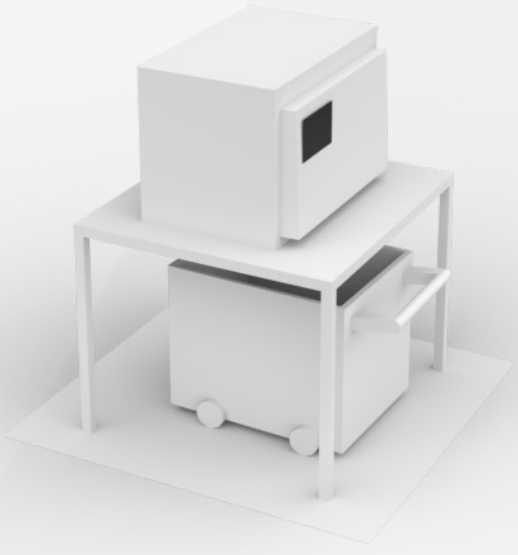
Floor space saving:
Space saving configuration.

Capital investment savings:
Cold room is not required.

Energy saving:
Non-refrigerated storage of ice.

Labour saving conditions:
Carts are loaded and level monitored with installation of ice level sensor (non-standard). Ice is rolled to the food display benches.

Ice life-time:



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Catering Insight Awards 2018 · FCSI Foodservice Consultants Society International · Good Design · Footprint Awards 2017 Winner Energy Efficiency · The Caterer PEAs 2019 Product Excellence Awards · Registered ISO 14001 · Energy Star Award 2018 Partner of the Year Sustained Excellence · Energy Star Partner · Pro Cold Winner 2017