

The world of MAJA Ice Machines

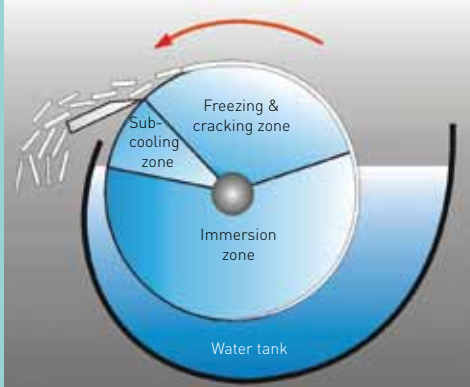
NUGGET ICE

FLAKE ICE



MAJA[®]

A deep-frozen metal cylinder, rotating in a water reservoir, guarantees constant ice quality. With each rotation, water freezes on the evaporation drum and then flakes off, leaving the machine as dry-frozen ice. This system of ice production was developed by MAJA and has proven its reliability for more than five decades. It is efficient, cost-saving and does not require special maintenance.



Flake Ice Technology by MAJA:

Simple, but ingenious- for more than 50 years!



MAJA-Flake Ice for versatile applications:

- Mincer process for boiled sausage production
- Production of baking and pastry products
- Refrigeration of fish and seafood
- Filling of fresh food displays in supermarkets
- Decorative refrigeration of buffets (in hotels, restaurants, event catering...)
- Cryotherapy in human and veterinary medicine
- Health spas & leisure swimming baths
- Artificial snow tracks for sports and leisure

Efficient refrigeration - ice temperature approx. -7°C

- Quick product cooling
- Long freshness

Dry-frozen flake ice

- Dry surface, virtually no water from melting
- Easy storage, easy handling
- Attractive appearance

Light weight (density 0,42 kg / dm³)

- Up to 30% lighter than other types of ice, thus less ice requirements for display filling and reduced costs for transportation.

Thin ice flakes (1-2 mm)

- Very good product covering
- Big surface, thus good heat exchange
- Little mechanical resistance, thus good mixing behaviour; no damage to the product and to the tools, such as mincer blades, dough hooks...

Reduced production costs

- High efficiency
- 100% of the water becomes ice, therefore no waste of water

High reliability - low maintenance

- Reduced operating and maintenance costs
- No additional efforts for water treatment, such as softening, filtration...



All about sanitary
MAJA Flake Ice

HY-GEN Flake Ice Machines from MAJA are designed to allow the production of flake ice under excellent sanitary conditions. The core piece is the evaporator tank in plastic material, which can easily be removed for cleaning.

The HY-GEN sanitation principle by MAJA: Ideal conditions for efficient cleaning, by hand and also fully automatically!

The MAJA Label „HY-GEN Protected“ stands for:

- Evaporator can be opened without the use of tools for cleaning purposes and is accessible from all sides.
- Easily removable hygiene evaporator tank in plastic material (insulation and no corrosion).
- Round-shaped, cleaning-friendly evaporator tank; if necessary it is even replaceable.
- Evaporator tank free of built-in parts without angles and edges, for easy and efficient cleaning.
- Automatic water pipe rinsing when the machine was out of operation for more than 24 hours.
- Special hygiene advantages in conformity with the current German drinking water regulations issued by the DVGW (German association for water & gaz), for example: water supply with back-flow protection, special drinking water hoses for protection from biofilm.



Option MAJA-SCS:

MAJA Flake Ice Machines can also be cleaned fully automatically. Thanks to the patented evaporator self-cleaning system MAJA-SCS, the ice producing unit can be regularly cleaned without investing additional working time or labour.

The cleaning cycle is started manually by ON/OFF push-buttons or fully automatically by programmable control panel (option). A mixture of water and special cleaning agent flows around all machine parts that contact water, thus cleaning, deliming and reduction of germs in one and the same operation.



Evaporator tank removal at the side
for SAH 250 + SAH 500.



Evaporator tank removal at the top for
SAH 800 to 3000 and all RVH-types.

MAJA[®]

Compact and space saving:
The smallest MAJA Flake Ice
Machines **SAH 85 L / SAH 170 L**
with condensing unit and mobile
ice storage system EV 50.
Ice output 85 and 170 kg / 24 h.



Video evaporation
tank removal at
SAH 85/170

Flake ice machines with integrated condensing unit and ice storage system

SAH



SAH 85 / SAH 170 with EV 50

Equipment & features

- Cleaning-friendly machine design according to the HY-GEN sanitation principle with removable evaporation tank.
- Frame and housing in stainless steel.
- Condensing unit in air-cooled execution.
- Easy operation by ON/OFF pushbuttons (see page 12):
With function and error code indication, start/stop function of optional self-cleaning system.
- Reliable SPS control unit.
- With integrated heat exchanger for optimum energy efficiency.
- Refrigerant stop valve and refrigerant pump-down when the machine stops.
- With mobile ice storage system **EV 50** for storage and transport of approximately 50 kg of flake ice:
 - Inner and outer surface in robust polypropylene.
 - Foamed PU insulation for ideal storage conditions.
 - Cleaning-friendly surfaces.
 - Drainage plate to avoid melting water in the ice.
 - Easy emptying by water drain with outlet valve.
 - Wheeled base in stainless steel for easy mobility.
 - Stackable thus space-saving.



Removal of the evaporation
tank for cleaning purposes



Stackable ice storage bins
EV 50 on wheeled base

85 / 170 L



Options

- Patented fully automatic self-cleaning system MAJA-SCS for time savings and optimum sanitation safety by automating the cleaning process (standard for SAH 170 L, optional equipment for SAH 85 L).
- Additional ice storage systems EV 50 for more flexibility by alternating use.
- Cover for EV 50 for hygienic transportation and storage.
- Control Panel Timer with timer function (see page 12): free programmable production and cleaning cycles.
- External UV-disinfection system in the water supply.
- External water pre-heater for water/ambient temperatures between +2°C and +5°C.



Technical details

Type	Ice output *) kg / 24 h	Water consumption m ³ /24 h	Electrical connection 1AC/50Hz/230V/PE kW	Width mm	Depth mm	Height mm	Ice storage kg	Weight kg
SAH 85 L	85	0,085	0,58	705	700	1380	approx. 50	155
SAH 170 L	170	0,170	0,99	705	700	1380	approx. 50	175

Refrigerant R404A

Water temperature: +16°C

Ambient temperature: +20°C

*) Higher temperatures may lead to reduced ice output.

Water supply: 3/4" external thread

Drain water: 2 x 3/4" hose clip

MAJA®

MAJA Flake Ice Machines **SAH**:
Compact machine structure,
including condensing unit.
Ice output 250 - 3000 kg / 24 h



The whole range
of MAJA Flake Ice
Machines



SAH 250 / 500



SAH 800 - 3000

Flake ice machines with integrated condensing unit

SAH

Equipment & features

- Cleaning-friendly machine design according to the principle of HY-GEN sanitation with removable evaporation tank.
- Frame and housing in stainless steel.
- Condensing unit in air, water or brine cooled execution.
- Reliable SPS control unit.
- With integrated heat exchanger for optimum energy efficiency.
- Refrigerant stop valve and refrigerant pump-down when the machine stops.
- Easy operation by a big variety of control panels with or without program function (see page 12).



Examples of installation SAH 250/500 :
On subframe for ice cart EVA 75 or on silo EN1

Technical details

Type	Ice output *) kg / 24 h	Water consumption m ³ /24 h	Electrical connection 1AC/50Hz/230V/PE kW	Width mm	Depth mm	Height mm	Weight kg
SAH 250 L	250	0,25	1,26	776	581	996	145

Type	Ice output *) kg / 24 h	Water consumption m ³ /24 h	Electrical connection 3AC/50Hz/400V/PE kW	Width mm	Depth mm	Height mm	Weight kg
SAH 500 L	500	0,50	2,29	776	581	996	180

Type	Ice output *) kg / 24 h	Water consumption m ³ /24 h	Electrical connection 3AC/50Hz/400V/PE kW	Width mm	Depth mm	Height mm	Weight kg
SAH 800 L	800	0,80	2,72	1170	760	1150	280
SAH 1500 L	1500	1,50	4,79	1430	780	1230	355
SAH 3000 L	3000	3,00	9,20	1700	980	1420	600

Refrigerant R404A, others on demand. Special voltage on demand.

Water temperature: +16°C, ambient temperature: +20°C.

Higher temperatures may lead to reduced ice output.

Water supply: 3/4" external thread, drain water: 1" hose clip. (SAH 250/500: 3/4" hose clip)

Installation of SAH 250/500 with minimum wall distance at the left and rear side of the machine.

Flake ice producing unit **RVH** (rotating evaporator), compact, space-saving structure, without condensing unit. For connection to an external refrigeration system.
Ice output 400 - 12000 kg / 24 h



RVH 1500

RVH 12000

Flake ice machines without condensing unit

RVH

Equipment & features

- For connection to (separate) external refrigeration units or multicompressor refrigeration systems.
- Cleaning-friendly machine design according to the principle of HY-GEN sanitation with removable evaporation tank.
- Easy operation by a big variety of control panels with or without program function (see page 12).
- The types RVH 9000 & RVH 12000 consist of two separately operated rotating evaporator units. Advantages: high operation safety and individual control of ice output according to varying needs.



RVH 12000

Technical details

Type	Ice output *) kg / 24 h	Water consumption m ³ /24 h	Refrigeration capacity required kW	Electrical connection 3AC/50Hz/400V/PE kW	Width mm	Depth mm	Height mm	Weight kg
RVH 400 **)	400	0,40	t ₀ -20,5°C, 2,2	0,28	1185	512	525	85
RVH 800	800	0,80	t ₀ -21,5°C, 4,0	0,28	1345	512	525	125
RVH 1000	1000	1,00	t ₀ -18,5°C, 5,6	0,28	1545	512	525	145
RVH 1500	1500	1,50	t ₀ -18,5°C, 8,4	0,28	1695	512	525	160
RVH 2000	2000	2,00	t ₀ -21,5°C, 11,5	0,28	1695	512	525	160
RVH 2500	2500	2,50	t ₀ -21,5°C, 13,5	0,28	1695	512	525	160
RVH 3000	3000	3,00	t ₀ -21,0°C, 16,2	0,34	1730	675	525	220
RVH 6000	6000	6,00	t ₀ -22,0°C, 33,0	0,52	1860	1450	586	320
RVH 9000	9000	9,00	t ₀ -22,0°C, 33,0 t ₀ -21,0°C, 16,2	0,52 0,34	1863	1456	1572	600
RVH 12000	12000	12,00	t ₀ -22,0°C, 33,0 t ₀ -22,0°C, 33,0	0,52 0,52	1863	1456	1572	700

Refrigerant R404A, others on demand. Special voltage on demand.

Water temperature: +16°C, ambient temperature: +20°C. *) Higher temperatures may lead to reduced ice output.

**) Ice capacity 200 kg/24 h on demand.

Water supply: 3/4" external thread, drain water: 1" hose clip

For optimized working conditions concerning ice capacity and ice quality a suction line heat exchanger is necessary.

MAJA[®]

Flake ice machines with separate condensing unit designed to provide individual solutions for separate installation of ice producing unit (rotating evaporator) and condensing unit. Two different machine lines, for standard ambient temperatures and for higher temperatures.
Ice output 400 - 12000 kg / 24 h

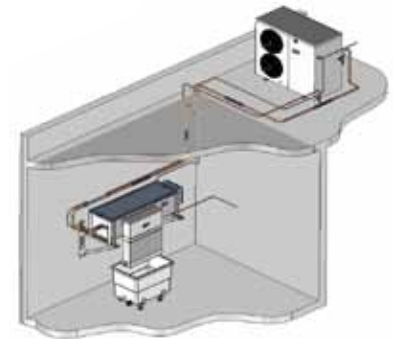


RVH 1500 L

Flake ice machines with separate condensing unit

Equipment & features

- Cleaning-friendly machine design according to the principle of HY-GEN sanitation with removable evaporation tank.
- Separate condensing unit in weather protection housing in galvanized steel. Silent solution, service-friendly thanks to good access for maintenance.
- Execution RVH-L for standard ambient temperatures up to approx. +32°C.
Execution RVH-LT for higher temperature up to approx. +45°C.
- The types RVH 9000 & RVH 12000 L/LT consist of two separately operated rotating evaporator units. Advantages: high operation safety and individual control of ice output according to varying needs.
- Electronic condenser fan speed regulator for automatic adaptation to variable ambient temperatures
- Easy operation by a big variety of control panels with or without program function (see page 12).
- With suction line heat exchanger for optimized working conditions concerning ice capacity and ice quality.
- Option: Winter mode for ambient temperatures below -15°C.



Examples of condensing units:



L1000



L1500 - L3000



LT2500 - LT3000



L6000 / LT6000

Flake ice machines with separate condensing unit (up to approx. +32°C)

RVH-L

Technical details

Type	Ice output *) kg / 24 h	Water consumption m ³ /24h	Electrical connection 3AC/50Hz/400V/PE kW	Width mm	Depth mm	Height mm	Weight kg	Condensing unit dimensions WxDxH mm Electrical connection kW Weight kg
RVH 400 L **)	400	0,40	0,28	1185	512	525	85	1032x462x751 1,91 90
RVH 800 L	800	0,80	0,28	1345	512	525	125	1352x732x891 2,54 167
RVH 1000 L	1000	1,00	0,28	1545	512	525	145	1352x732x891 3,25 168
RVH 1500 L	1500	1,50	0,28	1695	512	525	160	1352x732x1201 4,58 262
RVH 2000 L	2000	2,00	0,28	1695	512	525	160	1700x946x1536 7,68 330
RVH 2500 L	2500	2,50	0,28	1695	512	525	160	1700x946x1536 8,84 344
RVH 3000 L	3000	3,00	0,34	1730	675	525	220	1700x946x1536 8,84 344
RVH 6000 L	6000	6,00	0,52	1860	1450	586	320	2200x1300x1810 17,74 1000
RVH 9000 L	9000	9,00	0,52 0,34	1863	1456	1572	600	2200x1300x1810 17,74 1000 1700x946x1536 8,84 344
RVH 12000 L	12000	12,00	0,52 0,52	1863	1456	1572	700	2200x1300x1810 17,74 1000 2200x1300x1810 17,74 1000

Flake ice machines with separate condensing unit (up to approx. +45°C)

RVH-LT

Technical details

Type	Ice output *) kg / 24 h	Water consumption m ³ /24h	Electrical connection 3AC/50Hz/400V/PE kW	Width mm	Depth mm	Height mm	Weight kg	Condensing unit dimensions WxDxH mm Electrical connection kW Weight kg
RVH 400 LT **)	400	0,40	0,28	1185	512	525	85	1032x462x751 2,39 90
RVH 800 LT	800	0,80	0,28	1345	512	525	125	1352x732x891 3,06 170
RVH 1000 LT	1000	1,00	0,28	1545	512	525	145	1352x732x1201 4,58 262
RVH 1500 LT	1500	1,50	0,28	1695	512	525	160	1352x732x1201 6,56 262
RVH 2000 LT	2000	2,00	0,28	1695	512	525	160	1700x946x1536 8,84 344
RVH 2500 LT	2500	2,50	0,28	1695	512	525	160	1900x882x1561 10,40 480
RVH 3000 LT	3000	3,00	0,34	1730	675	525	220	1900x882x1561 10,40 480
RVH 6000 LT	6000	6,00	0,52	1860	1450	586	320	2800x1300x2275 24,96 1200
RVH 9000 LT	9000	9,00	0,52 0,34	1863	1456	1572	600	2800x1300x2275 24,96 1200 1900x882x1561 10,40 480
RVH 12000 LT	12000	12,00	0,52 0,52	1863	1456	1572	700	2800x1300x2275 24,96 1200 2800x1300x2275 24,96 1200

Refrigerant R404A, others on demand. Supplied without refrigerant filling. Special voltage on demand.

Water temperature: +16°C, ambient temperature: +20°C. *) Higher temperatures may lead to reduced ice output. **) Ice capacity 200 kg/24 h on demand.

Water supply: 3/4" external thread, drain water: 1" hose clip

Suction line heat exchanger enclosed separately.

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Flake ice producing unit (rotating evaporator) **RVH CO2-D** without condensing unit, for direct carbon dioxide operation with a R744 multicompressor refrigeration unit. For integration into refrigeration projects targeting sustainability and environmental safety. Ice output 500 - 3800 kg / 24 h



RVH 1500 CO2-D

Flake ice machines for direct carbon dioxide operation CO₂ (R744)

RVH CO2-D

Equipment & features

Optimum energy efficiency - increased power density:

- Compared to other usual refrigerants (e. g. R404A), the direct carbon dioxide operation brings more power density, thus increase of ice capacity up to 30 % compared with the same machine scale.
- Electronic expansion valve for optimum evaporation efficiency.

Eco-friendly flake ice production:

- Excellent ecological impact by the use of the natural refrigerant R744 (carbon dioxide / CO₂) for flake ice production.
- R744 consists of the elements carbon and oxygen, which are natural parts of the earth atmosphere.
- Almost no influence on the destruction of the ozone layer and on the global warming effect:
Ozone depletion potential ODP = 0
Global warming potential GWP = 1

Easy operation by Control Panel Touch (control unit with touch display):

- Individual placing of the control unit with touch display.
- Timer function for free programmable production and cleaning cycles: For having the right quantity of fresh MAJA Flake Ice at your disposal exactly in time.

Conditions for installation

for operation with R744:

- Subcritical CO₂ circuit.
- Evaporation pressure regulator to adapt the evaporation temperature of the RVH to t₀ approx. -25°C.
- Stop valve liquid line and suction line.
- Pressure relief valve with interchangeable valve for maintenance. Maximum pressure liquid side 42 bar, suction side 28 bar.
- If necessary, CO₂ gas detector (depending on the local situation at the place of installation).

Technical details

Type	Ice output*) kg/24h	Water consumption m ³ /24h	Refrigeration capacity required	Electrical connection 3AC/50Hz/400V/PE kW	Width mm	Depth mm	Height mm	Weight kg
RVH 400 CO2-D	approx. 500	approx. 0,5	t ₀ -25,0°C, 2,8 kW	0,28	1185	512	525	85
RVH 800 CO2-D	approx. 1000	approx. 1,00	t ₀ -25,0°C, 5,5 kW	0,28	1345	512	525	125
RVH 1000 CO2-D	approx. 1300	approx. 1,30	t ₀ -25,0°C, 7,3 kW	0,28	1545	512	525	145
RVH 1500 CO2-D	approx. 1900	approx. 1,90	t ₀ -25,0°C, 10,7 kW	0,28	1695	512	525	160
RVH 2000 CO2-D	approx. 2500	approx. 2,50	t ₀ -25,0°C, 14,4 kW	0,28	1695	512	525	160
RVH 2500 CO2-D	approx. 3000	approx. 3,00	t ₀ -25,0°C, 16,2 kW	0,28	1695	512	525	160
RVH 3000 CO2-D	approx. 3800	approx. 3,80	t ₀ -25,0°C, 20,5 kW	0,34	1735	675	525	220

Water supply temperature: +16°C, ambient temperature: +20°C. *) Higher temperatures may lead to reduced ice output.
Water supply: 3/4" external thread; drain water: 1" hose clip.
Special voltage on demand.

Flake ice producing unit (rotating evaporator) **RVH NH3-D** without condensing unit, for direct ammonia operation with a R717 multi-compressor refrigeration unit. For integration into refrigeration projects targeting sustainability and environmental safety. Ice output 7000 and 14000 kg / 24 h



RVH 12000 NH3-D

Flake ice machine for direct ammonia operation NH₃ (R717)

RVH NH3-D

Equipment & features

Optimum energy efficiency - increased power density:

- Compared to other usual refrigerants (e.g. R404A), the direct ammonia operation brings more power density, thus increased ice capacity with the same machine scale.
- Electronic evaporation pressure regulation for optimum evaporation efficiency.

Eco-friendly flake ice production:

- Excellent ecological impact by the use of the natural refrigerant R717.
- R717 consists of the elements nitrogen and hydrogen, gases which are natural parts of the earth atmosphere.
- No influence on the destruction of the ozone layer and the greenhouse effect, which is the case for the current HFC-containing refrigerants:
Ozone depletion potential ODP = 0
Global warming potential GWP = 0

High safety standard:

- Integrated safety system with gas detector and automatic cutoff and blockage in case of leakage.

Easy operation by Control Panel Touch (control unit with touch display):

- Individual placing of the control unit with touch display.
- Timer function for free programmable production and cleaning cycles: For having the right quantity of fresh MAJA Flake Ice at your disposal exactly in time.

Conditions for installation

for operation with R717:

- Existing R717 multicompressor refrigeration unit working in pump operation, that means the refrigerant becomes liquid and circulates.
- Ammonia temperature approx. -30°C
- Pump pressure 2 – 4 bar

Technical details

Type	Ice output*) kg/24h	Water consumption m ³ /24h	Refrigeration capacity required	Electrical connection 3AC/50Hz/400V/PE kW	Width mm	Depth mm	Height mm	Weight kg
RVH 6000 NH3-D	7000	7,0	t ₀ -30,0°C, 42 kW	0,96	1863	1456	586	330
RVH 12000 NH3-D	14000	14,0	t ₀ -30,0°C, 84 kW	1,92	1863	1456	1572	720

Water supply temperature: +16°C, ambient temperature: +20°C. *) Higher temperatures may lead to reduced ice output.
Water supply: 3/4" external thread; drain water: 1" hose clip.
Special voltage on demand.

MAJA[®]

MAJA Flake Ice Machines:

Individual configuration for meeting with any special requirements.

Different types of control units

Type	ON/OFF pushbuttons illuminated, integrated into machine frame	Control Panel ON/OFF with wall support and 5 m cable for remote operation	Control Panel Timer with timer function	Control Panel Standard	Control Panel Touch
SAH 85 / 170	Standard	Optional	Optional	---	---
SAH 250 / 500	Standard	Optional	Optional	---	---
SAH 800 - 3000	---	---	---	Standard	Optional
RVH-L / RVH-LT	---	---	---	Standard	Optional
RVH	---	---	---	Standard	Optional
RVH CO2-D	---	---	---	---	Standard
RVH NH3-D	---	---	---	---	Standard



ON/OFF button



Control Panel ON/OFF



Control Panel Timer



Control Panel Standard



Control Panel Touch

Control Panel Touch

- Well-arranged presentation of the control and display elements
- Easy operation, input directly on the display
- Programming of automatic start and stop times
- Programming of automatic cleaning cycles (only with option MAJA-SCS self-cleaning system)
- Fast and easy change of language
- Display of additional information
- Manual residue water outlet (manual)
- Automatic restart of the machine after electricity / water cutoff
- Visualization of state of sanitation
- Checkup after manual cleaning "All components correctly placed?"
- Error code indication on the display in clear text
- Display error memory
- Degree of protection IP 65
- Optionally available: protective cover for touch display



Accessory for Control Panel Touch: protective cover for touch display

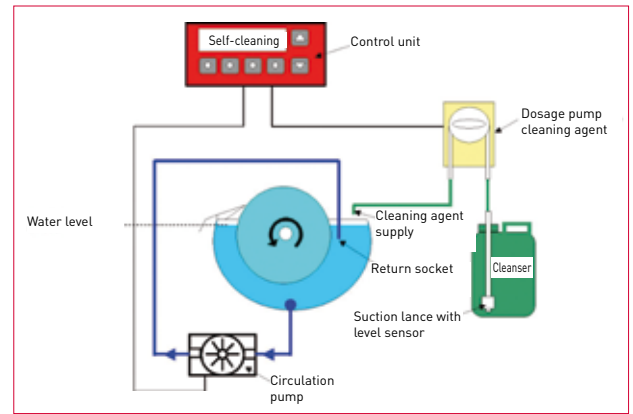
Refrigeration & refrigerants

- **Condensing units:**
Standard air-cooled execution; water or brine cooling on demand.
- **Refrigerant:**
Standard R404A; others e.g. R507, R407A, R407F, R410... on demand.
- **Alternative refrigerants** (see pages 10 and 11):
MAJA Flake Ice Machines of the HY-GEN range RVH are also available for the direct operation with ecological (natural) refrigerants:
 - NH₃ / R717: 2 models with ice capacities of 7.000 and 14.000 kg/24 h
 - CO₂ / R744: 7 models with ice capacities ranging between 500 and 3.800 kg/24 h

R404A
R507
R407A
R407F
R410
R744
R717

Sanitation options

- Patented evaporator self-cleaning system MAJA-SCS**
 (see page 3):
 For sanitation safety at the push of a button; fully automatic cleaning, deliming and reduction of germs of all machine parts that contact water.
- External UV-disinfection system in the water supply:**
 For making sure that only hygienically perfect water is used for flake ice production.

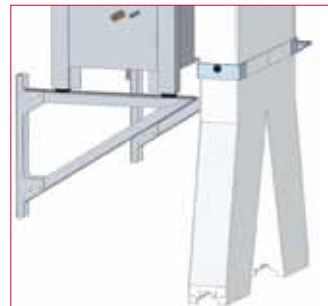
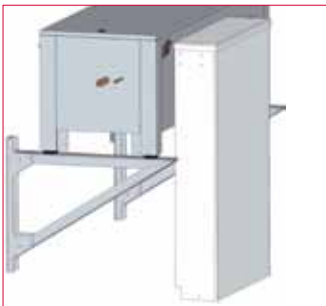


A big variety of installation options allow tailor-made solutions.

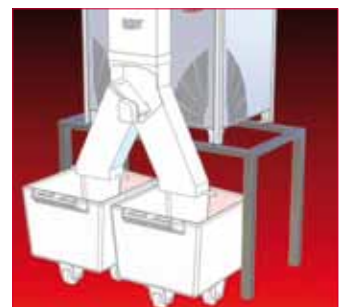
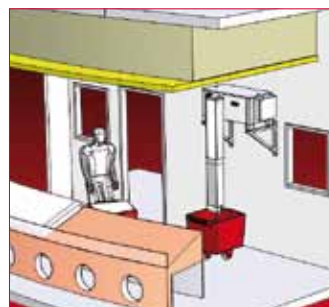
- Different types of chute systems:**

Modular chute systems allow many installation options for MAJA Ice Machines, starting from a simple chute extension with photoelectric barrier until an automatic Y-chute system with blocking device and recognition of ice transport carts.

Further accessories: wall holding device for chutes, photoelectric barriers, reflection light sensors for ice level control in the reservoir, transport cart etc.



- Examples of installation:**



■ Carts for ice transport and storage:

Different types of mobile ice reservoirs allow the convenient transport and the ideal storage of MAJA Ice (with or without thermal insulation).



SAH 85/170
with EV 50



SAH 250/500 with
subframe for EVA 75



SAH 250/500
on silo EN 1



RVH on silo ITS 1350-60
with 2 EVF 201



EVL 250/440
(without insulation)

Carts for ice transport & storage

Type	Maximum ice capacity kg	Width mm	Depth mm	Height mm	Weight kg	Suitable for
EV 50	50	615	650	660	19 (incl. wheeled base)	SAH 85/170
EVA 75	75	680	800 (with handle)	680	21	Subframes + ITS-K silos, instead of standard mincer carts
EVF 201	90	649	1055 (with handle)	712 (889 with handle)	26	ITS silos
EVL 250	105	624	884	753	25	Subframes
EVL 440	185	780	1100	841	36	Subframes

Silo EN1

Type	Maximum ice capacity kg (l)	Width mm	Depth mm	Depth with door mm	Height mm	Weight kg
EN 1	185 (430)	762	788	991 - 1258	1093	94

ITS silos with ice storage cart EVF

Type	Maximum silo capacity kg	Max. capacity incl. ice cart EVF 201 kg	Width mm	Depth mm	Depth with door/s mm	Height mm	Weight (without ice cart) kg	Number of ice carts (included in delivery)
ITS 500-31	227	317	788	1016	---	1524	186	1
ITS 700-31	318	408	788	1016	1220 - 1486	1905	217	1
ITS 1350-60	612	792	1524	1016	1220 - 1486	1905	378	2
ITS 2250-60	955	1135	1524	1016	1220 - 1486	2464	421	2
ITS 3250-90	1474	1744	2286	1016	1220 - 1486	2464	642	3

ITS silos for mincer carts

Type	Maximum silo capacity kg	Width mm	Depth mm	Depth with door/s mm	Height mm	Weight kg	Number of mincer carts (not included in delivery)
ITS 500-31 K	227	863	1016	---	1587	210	1
ITS 700-31 K	318	863	1016	1220 - 1486	1949	270	1
ITS 1350-60 K	612	1673	1016	1220 - 1486	1949	425	2
ITS 2250-60 K	955	1673	1016	1220 - 1486	2626	471	2
ITS 3250-90 K	1474	2483	1016	1220 - 1486	2626	692	3

Wherever big quantities of flake ice must be handled, the use of automatic silo systems, types **AS** or **VS**, are recommended. The time-consuming and labor-intensive manual shovelling of tons of flake ice is no longer necessary.



Flake ice storage systems with automatic dispensation: Highly economical and sanitary.

Equipment & features

- The ice charges are extracted by the means of spiral conveyors at the push of a button, if necessary even with portion-controlled weight.
- The silo frame, internal/external housing as well as the spiral conveyor/s are completely made from stainless steel, thus ideal sanitary conditions.
- Different optional accessories are available for offering for each special application the optimum solution, allowing economical process optimization.
- Interface for floor balance.



Automatic flake ice silos type AS

Type	Storage capacity approx. m ³ (kg)	Number of spiral conveyors	Width mm	Depth mm	Height mm	Silo weight (unloaded) kg	Allowed floor load per foot kg	Max. silo cover load kg	Electrical connection kW 3AC/50Hz/400V
AS 21	2,1 (800)	2	1451	3811	2473	1400	700	1000	2,0
AS 30	3,0 (1200)	2	1451	3811	2973	1500	900	1000	2,0
AS 45	4,5 (1800)	2	1451	3811	3723	1750	1200	1000	2,0
AS 50	5,0 (2000)	3	1642	4342	3229	2350	1400	1500	3,8
AS 63	6,3 (2600)	3	1642	4342	3729	2500	1600	1500	3,8
AS 72	7,2 (3000)	3	1796	4824	3282	2950	1900	1500	3,8
AS 77	7,7 (3200)	3	1642	4342	4229	2700	1900	1500	3,8
AS 92	9,2 (3800)	3	1796	4824	3782	3150	2200	1500	3,8
AS 112	11,2 (4600)	3	1796	4824	4282	3300	2500	1500	3,8

Examples for options & accessories

- Digital ice level indication (exactitude approx. 1 %)
- Internal silo cooling system for ambient temperatures above +12°C.
- Further options on demand.



Ice is important for the refrigeration, the presentation and the production of foodstuff. If you prefer either the fine, mat-white flake ice or the granular nugget ice - at MAJA it's up to you which ice will suit you best for your individual requirements!

Nugget ice from MAJA:

Thanks to its special characteristics, this type of ice is very interesting for the food business!



Versatile applications for MAJA Nugget Ice:

- **Food trade / retail**
Refrigeration and presentation of fish and fresh food in supermarkets.
- **Catering, hotels, restaurants, roadhouses, petrol stations, events...**
Refrigeration of foodstuff and drinks, eyecatcher for the appetizing presentation of different food.
- **Bars & clubs**
Refrigeration and mixing of drinks and cocktails.
- **Baking business**
Dough production of baking and pastry products.
- **Fish business**
Refrigeration of fish and seafood during transport and sales.
- **Vegetables**
Refrigeration of vegetables after the crop, during transportation, in the distribution and retail.



An evaporator screw rotates in an evaporation drum, which is filled with water and refrigerated from outside. The water freezes on the inner drum surface to small ice particles, which are scraped off by the rotating evaporator screw and conveyed upwards. The ice passes through an extrusion die and gets like that its characteristic nugget shape.

MAJA Nugget Ice offers a lot of advantages:
Long freshness, attractive appearance and easy handling!

Special characteristics of MAJA Nugget Ice:

- **Ice temperature**
Approx. $-0,5^{\circ}\text{C}$, thus ideal cooling for versatile application fields of MAJA Nugget Ice.
- **Characteristics**
Density approx. $0,5 \text{ kg} / \text{dm}^3$, shiny, unregularly shaped nuggets, granular structure. That's why MAJA Nugget Ice has a very appetizing appearance.
- **Storage properties**
MAJA Nugget Ice can be stocked in insulated storage bins. It can be stored in a cold-room at low temperatures above 0°C for several days, remaining loose and easy to dose.



MAJA NUGGET ICE
THE OTHER KIND OF ICE!

MAJA[®]

MAJA Nugget Ice Machines **NA**
Compact machines, ready for
plug&play with condensing unit.
Ice output 300 - 970 kg / 24 h



NA 300 L



NA 970 L

MAJA Nugget Ice Machines with integrated condensing unit

NA

Equipment & features

- Compact nugget ice machine with condensing unit, air-cooled execution.
- Front and side panels, top cover and ice chute made from stainless steel.
Ground plate in galvanized steel.
- Easy operation by ON/OFF pushbutton.
- LED-display for indication of operation modes (pict. 1).
- MAJA recommends to use a water filter system to protect the machine from sediment and limescale deposit for better hygiene (suitable systems available from MAJA).



Pict. 1

Technical details

Type	Ice output *) kg / 24 h	Water consumption m ³ /24 h	Electrical connection 1AC/50Hz/230V/PE kW	Width mm	Depth mm	Height mm	Weight kg approx.
NA 300 L	300	0,30	1,15	750	561	698	105
NA 530 L	530	0,53	1,90	750	561	698	112

Type	Ice output *) kg / 24 h	Water consumption m ³ /24 h	Electrical connection 3AC/50Hz/400V/PE kW	Width mm	Depth mm	Height mm	Weight kg approx.
NA 970 L	970	0,97	3,6	900	626	874	168

Refrigerant R404A, others on demand.

Water temperature: +10°C, ambient temperature: +10°C

*) Higher temperatures may lead to reduced ice output. Detailed information available on demand.

Water supply: 3/4" external thread, drain water: 3/4" hose clip

Examples of installation

- Installation on wall consoles or subframes

e.g. in connection with ice storage cart EV 50.

- Installation on ice storage silo type ES

Thermally insulated storage reservoirs with a door for easy ice removal allow ideal storage conditions so that MAJA Nugget Ice stays fresh and loose for a long time.



Type	Storage capacity kg	Suitable for	Width mm	Depth mm	Height mm	Weight kg
Subframe for EV 50	---	NA 300 L / NA 530 L	750	678	669	24
Mobile ice storage system EV 50	50	Subframe	615	650	661	20
Silo ES 150	150	NA 300 L / NA 530 L	762	801 - 1065	1016	74
Silo ES 300	300	NA 530 L / NA 970 L	1220	801 - 1065	1270	105



NA 300/500 L
with subframe for
ice storage cart EV 50



NA 300 L
on silo ES 150



NA 530 L
on silo ES 150



NA 530 L
on silo ES 300



NA 970 L
on silo ES 300

Please ask for further options:

- Hygiene equipment
- Integration into multicompressor refrigeration systems
- Special voltages

MAJA ICE MACHINES

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TECHNOLOGY FOR THE FUTURE

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