

# FROSTO AUTOMATIC – continuous freezer



ICE GROUP



completely new construction, conforming with high hygiene, safety and easy operation standards!

with capacity:

**350**  
**400**  
**600**  
**750**  
**800**  
**1200**  
**1600**

## FROSTO AUTOMATIC at a glance:

- fully automatic working mode with regard to production, diagnosing and cleaning
- two lobe pumps
- two flowmeters (for mix and for air)
- built-in semi-hermetic/hermetic compressor with a heat exchanger
- large cylinder = better overrun and ice cream stability
- wide range of ice cream capacities within each machine model
- excellent ice cream texture, even with low-overrun 'artisanal' ice cream
- reasonable and foreseeable spare parts' costs



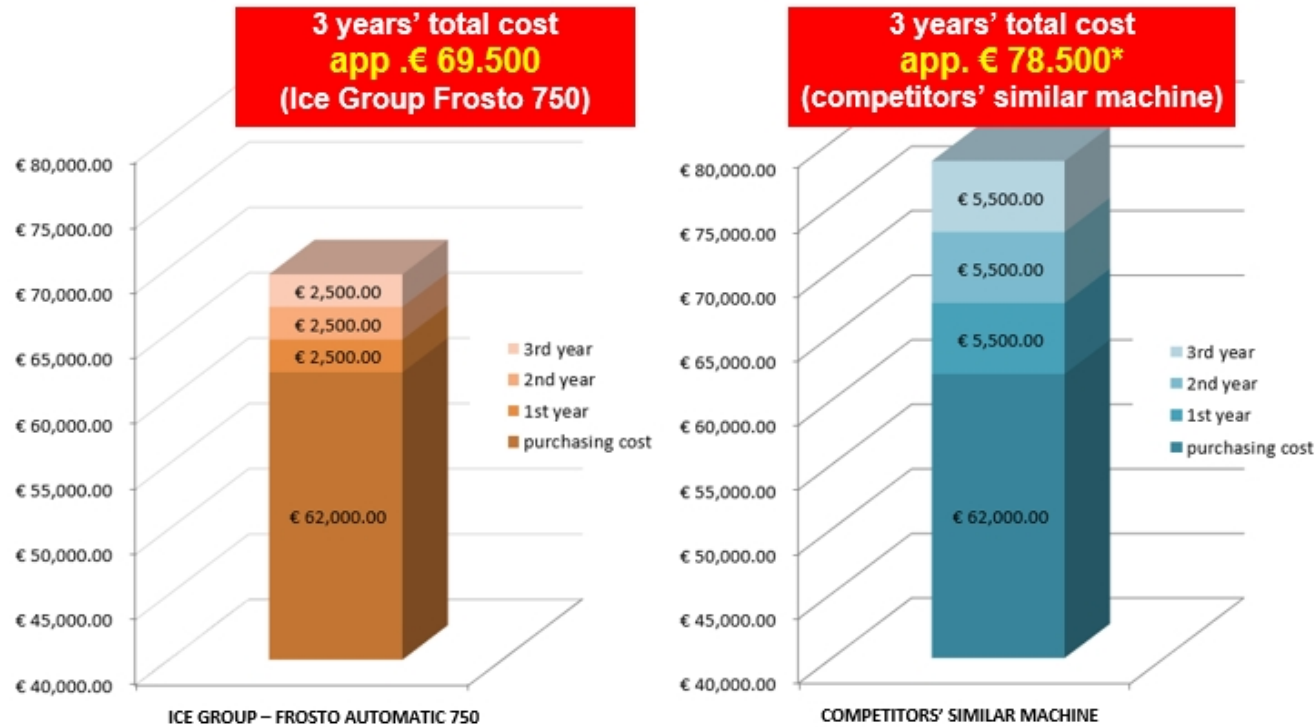
⇒ touch screen panel 10", full color,  
Allen Bradley make \* standard

REAL ALTERNATIVE TO EQUIPMENT OF TRADITIONAL MARKET LEADERS

# FROSTO AUTOMATIC – continuous freezer



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\* source: Ice Group's company materials and calculations

## 3 years' total cost

- cost of purchasing the machine
- installation and start-up cost
- cost of necessary exploitation parts for 3 years

**Additionally** - extraordinary costs, which will make an even bigger difference to the favor of Ice Group freezer (**ask for the extended spare parts price list!**):

- charged service and teleservice
- unexpected costs out of warranty, resulting e.g. from operators' errors
- cost of non-exploitation parts\*

\* for example dasher, touch screen (with eventual cost of programmer's visit), flowmeter, complete pump, etc.

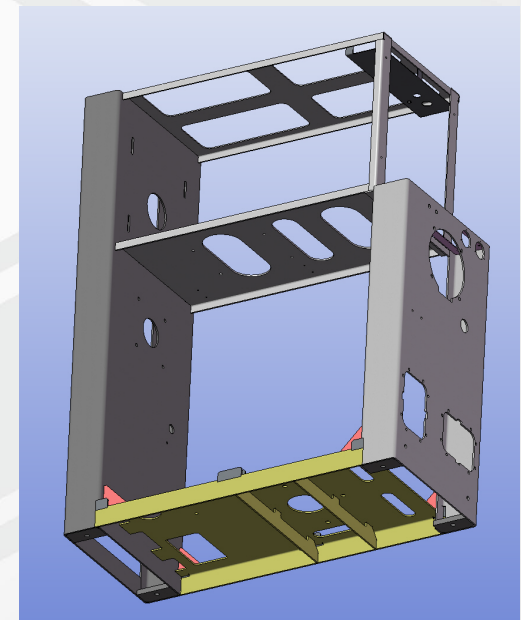
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**ALL STAINLESS STEEL  
/ NO ALUMINIUM**  
technology related to all  
machine metal elements



Extremely hygienic self-supporting frame is made entirely from stainless steel without slots, dead ends or covered construction elements

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⇒ control box built-in the frame

- safe location preventing damages and water flooding
- easy access for service purposes
- large dimensions with good ventilation parameters
- integrated control panel

⇒ removable side covers resulting in **space savings** in the production room

⇒ easy access to particular sub-assemblies for control and maintenance

⇒ width starting **from 700mm**  
(see: dimensions table on page 11)

starting from 700 mm





# FROSTO AUTOMATIC – continuous freezer



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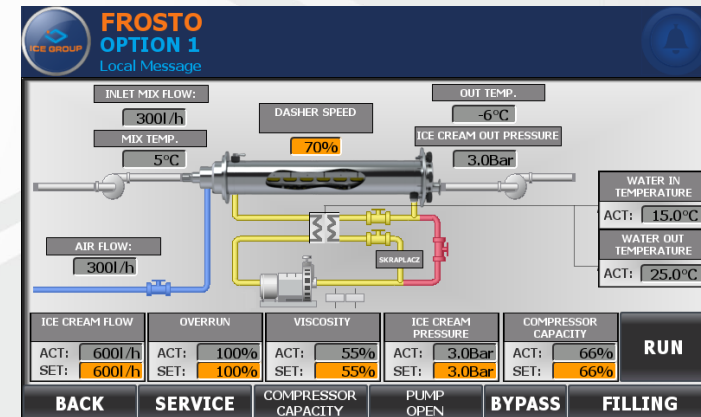
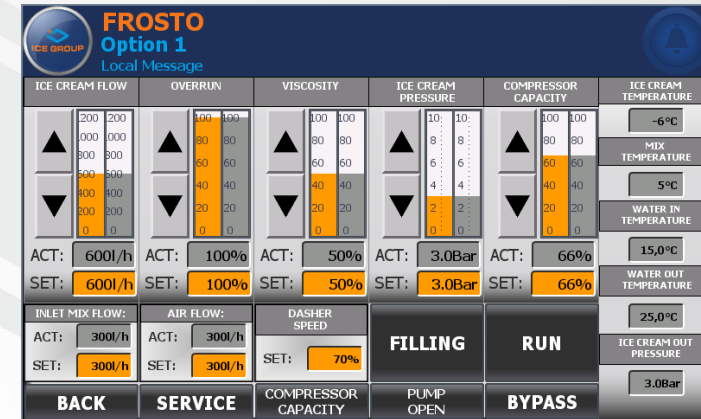
- ⇒ easy to operate – using a controller with touch screen panel makes operating very easy.
- ⇒ touch screen panel 10", full color, Allen Bradley make \* standard
- ⇒ touch screen for food industry applications, controller prepared for work with modem – possibility to diagnose and change parameters over the Internet (TELESERVICE)

## Functions displayed and controlled on the control panel:

- turn on / off cylinder filling (with ice cream);
- turn on / off automatic work;
- bypass valve switching;
- overrun control;
- capacity control;
- viscosity control;
- freezing level – function of automatic hot gas turning on and protection from dasher freezing;
- error and emergency messages;
- cleaning program – cyclic pump and dasher work during CIP cleaning;
- parameters connected with proper work of compressor, i.e. oil temperature, low and high freon pressure;
- detection of safety switches of the compressor and other drives, emergency switch;
- setting any number of work options – recipes with the possibility to enter the name of the particular product, containing any necessary information concerning work parameters – capacity, freezing, overrun, ice cream temperature.

## ⇒ Ethernet modem \* option

- ⇒ allowing remote diagnosis of the Device, bringing changes and upgrades to the software etc. without the necessity of a technician's visit.



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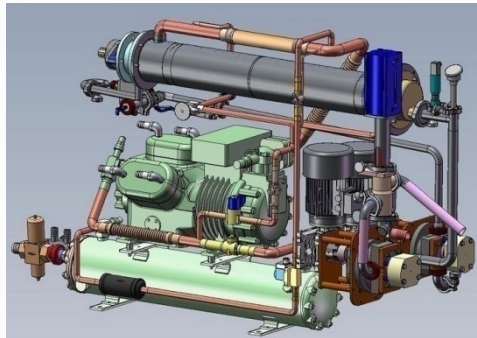
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⇒ **cooling unit with semi-hermetic compressor and water-freon of Bitzer make tubular heat exchanger**

⇒ cooling unit based on semi-hermetic compressor and tubular heat exchanger (condenser) of capacity allowing work on full capacity with cooling water temperature of even 25 °C

⇒ low sensitivity to mineralized water

⇒ high stability of cooling unit work even with cooling water with changing parameter



⇒ easy access to the tubular heat exchanger for servicing purposes

⇒ **cooling unit with hermetic compressor (scroll type) and plate heat exchanger water-freon**

⇒ economical solution regarding energy and freon consumption



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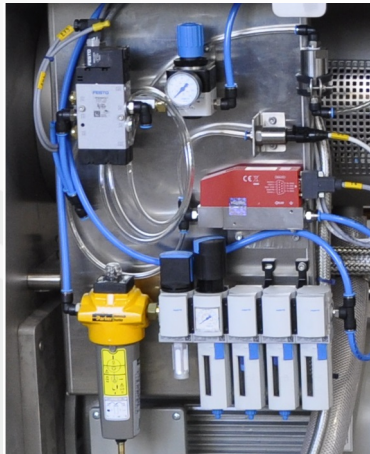
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⇒ **manometers of high and low freon pressure** \* standard

⇒ high and low freon pressure sensors in the machine front part, showing the basic parameters of the cooling unit, connected with cooling water flow and proper work of the expansion valve

⇒ **automatic overrun control** \* standard

⇒ based on air flowmeter  
⇒ air supplied through a double filter allowing its proper purity and better microbiology



Air flowmeter

⇒ **automatic capacity control** \* standard

⇒ based on **ice cream mix flowmeter**, ensuring precision of work up to 0,3% regardless of the way the ice cream mix is supplied (directly from tanks, or with the help of a centrifugal pump)



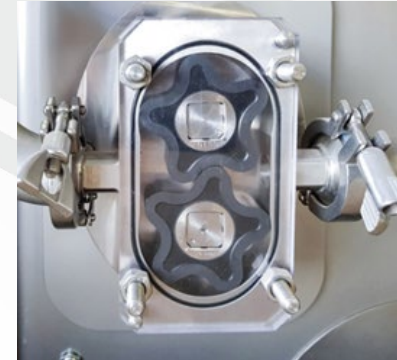
# FROSTO AUTOMATIC – continuous freezer



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## ⇒ **two lobe pumps with rotors covered with food grade rubber** \* standard

- ⇒ rotors' surface covered by a **layer of rubber**, ensuring self-tightening effect, even in case of slight wear
- ⇒ possibility of work with sorbet mixes based on natural fruits – **small strawberry or raspberry seeds are not a problem**
- ⇒ **easy to clean**
- ⇒ using frequency inverters of the ice cream pump drive allows **full control over the capacity and ice cream pressure inside cylinder**, as well as work with different kinds of ice cream mixes in a wide scope of overrun
- ⇒ reasonable exploitation costs, easy to service and exchange



## ⇒ **full-flow pump bypass (enables CIP cleaning)** \* standard

- ⇒ pneumatically operated bypass can be fitted on standard pump. A special front cover moves away from rotors allowing product and cleaning or sterilizing fluids to pass through the pump with a minimum pressure drop. Cleaning solution flows through and pump and dasher rotations are cyclically switched on for precise cleaning, at the same time preventing damage of the gaskets



## ⇒ **two lobe pumps with stainless steel rotors** \* option

- ⇒ dedicated for abrasive mixes or sorbets



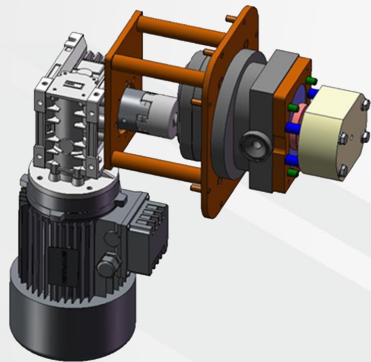


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- ⇒ **two independent drives for pumps \* standard** (for extremely different mixes and overrun parameters), automatic pressure control of ice cream in the cylinder
- ⇒ each pump has separate drive, consisting of engine with inverter



two inverters in a separate electric box

- ⇒ **automatic start and stop \* standard**
- ⇒ efficient system resulting in **very small ice cream losses** on start-up and while stopping production
- ⇒ quick restoring set parameters after temporary stoppage
- ⇒ **by-pass valve for clean and easy production start \* option**

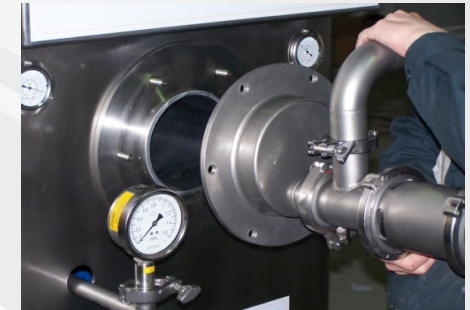


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- ⇒ **frequency inverter on dasher drive \* standard**
- ⇒ ensures dasher's proper work, fluent start and stop and changeable work speed, depending on capacity,
- ⇒ with small capacities the ice cream structure is not disintegrated
- ⇒ dasher driven by wedge belts and bearing shaft in separate part of the housing

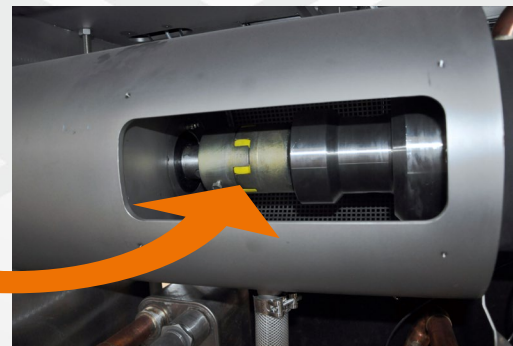


**standard belts – no surprise or hidden exploitation costs**



**safe dasher putting-in and taking-out**

**connection with dasher through metal-rubber clutch, very durable solution**





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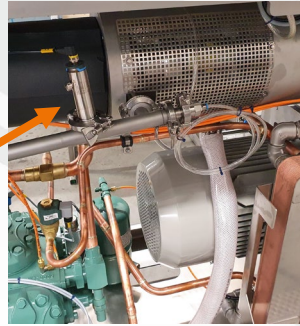


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## ⇒ automatic freezing control \* standard

⇒ based on dasher current measurement – very sensitive system, freezing sustained thanks to the **intelligent hot gas injection system**

⇒ **automatic pressure control** of the ice cream in the cylinder based on pressure sensor \* standard



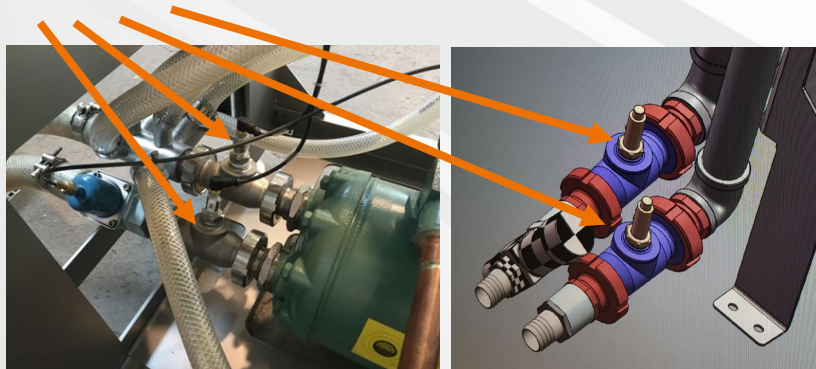
## ⇒ Premium version – upgrade \* option

⇒ Ice cream mix outlet temperature sensor

⇒ pressure control of the ice cream outlet based on pressure sensor

⇒ Ice cream mix inlet temperature sensor

⇒ Water temperature sensor on condenser inlet and outlet

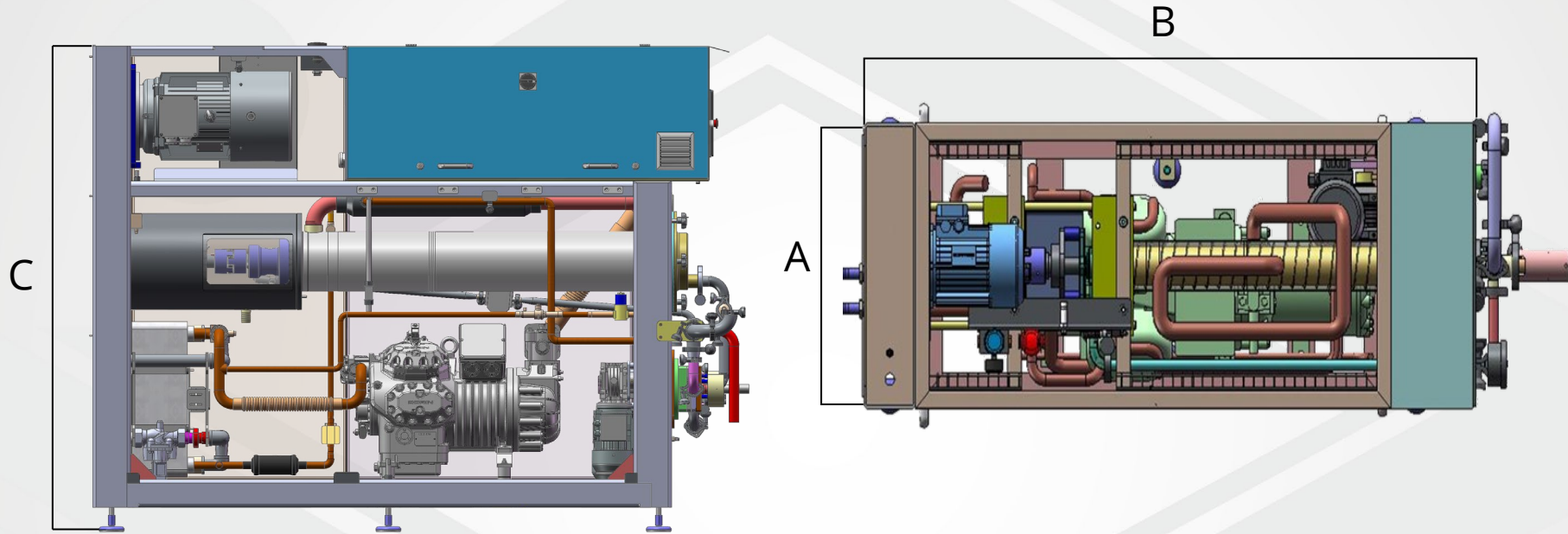




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TECHNICAL DATA	Frosto 350*	Frosto 400	Frosto 600	Frosto 750	Frosto 800	Frosto 1200	Frosto 1600
Output capacity [l/h]	350	400	600	750	800	1200	1600
Overrun	0-130%						
Supply voltage	3x400V~50Hz						
Power installed [Kw]	15	15	17	21	29	32	53
Tap water consumption at max 15°C [m <sup>3</sup> /h]	1	2	2	3,5	5,5	4,5	10
Water Tower consumption at max 25°C [m <sup>3</sup> /h]	3	4,5	5	8	11,5	11	17
Refrigerant	R404A, R507						
Width [mm] (A)	600	600	700	700	700	700	700
Length [mm] (B)	1800	1700	1800	2000	2150	2260	2530
Height [mm] (C)	1850	1900	1770	1670	2050	1850	1920
Net weight [kg]	820	820	880	1100	1250	1400	1800

\*(on special request)