

Injection / Tenderising Red Meat

GAROS BRINE INJECTORS and TENDERISERS

- based on experience, knowledge, innovations and a very sensitive ear for customer wishes

What demands should you make of a brine injector?

In functional terms it must be able to inject and uniformly distribute the exact right quantity of brine or marinade into the selected meat product, regardless of the type and muscle composition. High capacity and highly efficient operation will give a proportional reduction in operating- and labour costs. These criterias may be met by many machines, when they are new! But will they still meet them after years of faithful service?

A machine that meets these requirements must have the "right" basic design as well as a suitably adapted flow system. Furthermore, to obtain maximum benefit from the machine requires accurate and consistent CONTROL REGULATION EQUIPMENT and accurate CONTROL DEVICES that will allow control and monitoring of the injection process, and monitoring of other machine functions.

The GSI generation of Injectors/Tenderisers are designed to be reliable, versatile and high performing machines, with a focus on high hygienic standard. Suitable for all kind of meat products, boneless and bone in.

All GSI models are available as single- or double head machines, with double needle heads or combined with tenderiser head. Capacities ranging from 7 – 13 tons per hour, number of needles from 48 up to 768 and injection rates from 5 % to over 100 %.

The liquid system is built according to current fluid-, and hygienic technical standards. It's designed to handle very viscous brines, containing large quantities of dry ingredients such as carageenan and starch.

The machine is equipped with an acid stainless steel centrifugal pump with a large capacity.

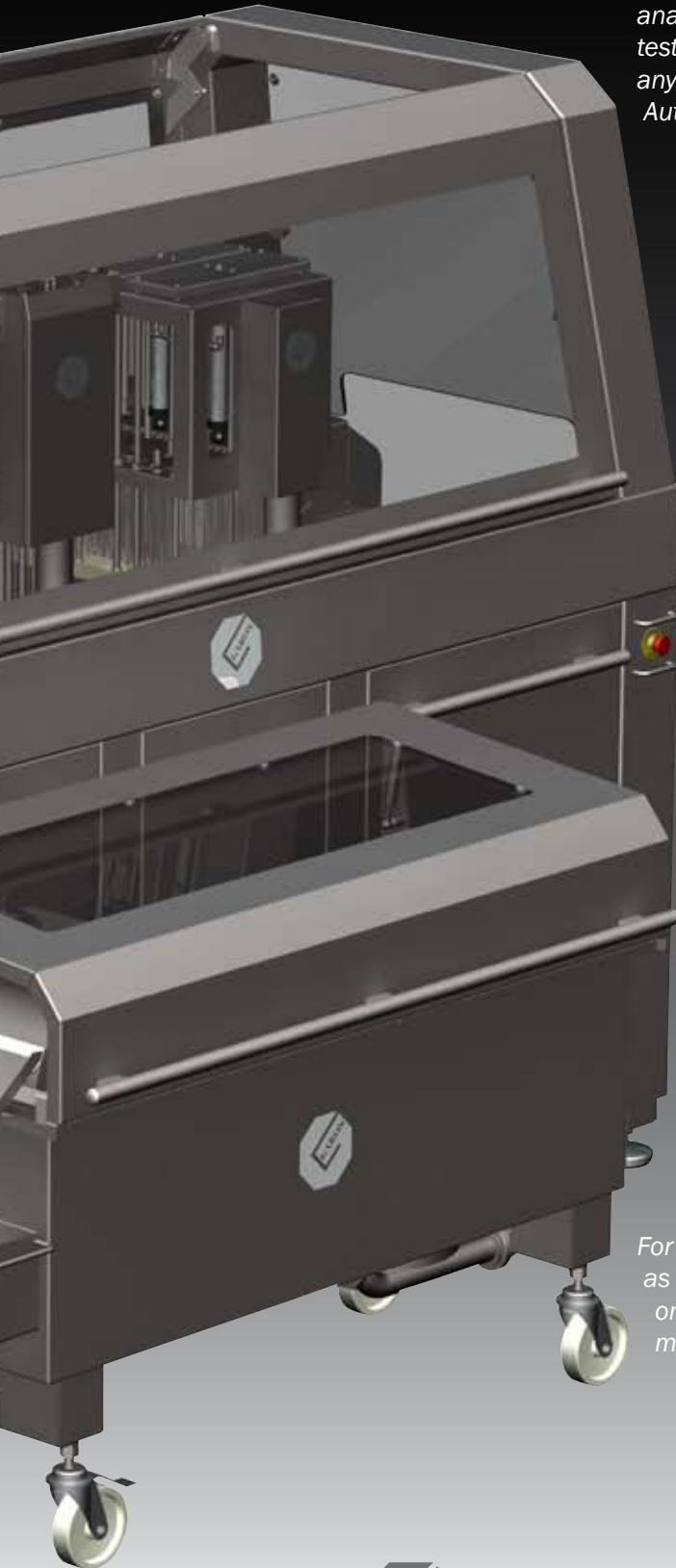


HYGIENIC PERFORMANCE. All hose fittings are in so called "food type" in order to simplify cleaning and to improve the hygienic standard.

LARGE WINDOWS for inspection are placed around the hood in order to give the operator full visual control during operation.

The entire **CONTROL PANEL** containing all regulating equipment and control functions is placed on an arm which is adjustable in order to simplify manoeuvre and control for the operator.

The **PLC DISPLAY** is a 15" four colour touch screen panel for easy and logical operation. The touch screen process data on brine pressure, injection speed, brine temperature, product feed distance, one-way injection, service settings, error analysis and unlocking. A special fluid check is programmed. With this test you can easily check that the entire fluid system is OK. It shows if any needles are blocked or if anything else gradually deteriorates. Automatic cleaning program is available.



EXCHANGE OF FORWARD FEED For extra high injection amounts, the forward feed can be changed from 60 mm/stroke to 30 mm/stroke, giving twice as close needle pattern. The exchange is manoeuvred from the display.

AUTOMATIC SEPARATION OF MEAT JUICE. In order to prevent the meat juice from mixing with the return brine it is automatically separated.

The liquid system is provided with an automatically self rinsing **INLINE FILTER** eliminating blocked needles.

The machine is equipped with an acid proof **STAINLESS STEEL CENTRIFUGAL PUMP** with a large capacity.

SEPARATE CIRCULATION PUMP. The machine is equipped with this extra pump to hold the brine in constant circulation to prevent additives to sediment on the bottom for brines with a high content of additives. It is also possible to use this pump circulate through a heat exchanger to keep the brine cold.

FULLY AUTOMATIC LUBRICATION SYSTEM of all lubrication points in the entire machine. It stops the machine and alarms with a light signal when the grease holder is empty.

ROTARY FILTER The return brine from the injector is filtrated at 3 different steps. First through a rotating filter drum, which is equipped with scraper removing all particles and then through another 2 different filter screens. The rotating drum is driven by a shaft and gear box which is built in, into the Brine Injector. This to prevent operation disturbances and ensure highest reliability because of the difficult environment.

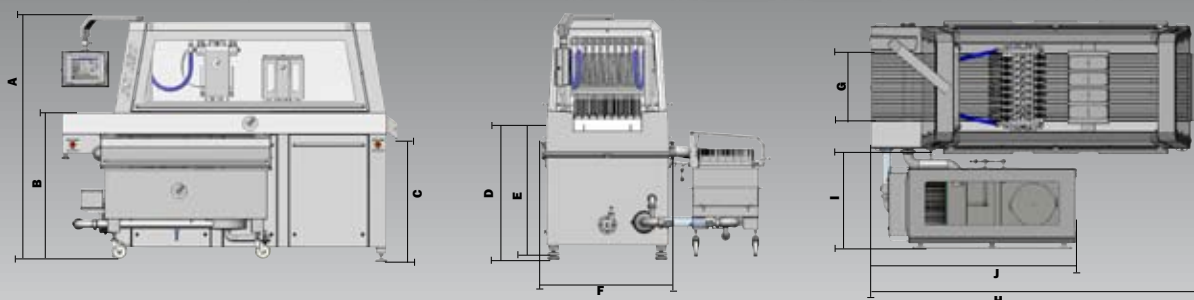
For all standard **PARTS** only the most common brands are used, such as SEW, Mitsubishi, Telemecanique, Siemens, Bosch Rexroth and so on. All standard parts is stated with type and technical data in the manual so they easily can be found locally.



TECHNICAL SPECIFICATIONS:

All GSI models are available as single or double head machines and with PLC or Manual operation	GSI 420 Single/Double	GSI 620 Single/Double	GSI 820 Single/Double
Capacity	Up to 7 ton/h depending on product and injection rate	Up to 11 ton/h depending on product and injection rate	Up to 13 ton/h depending on product and injection rate
Forward feed width	420 mm	620 mm	820 mm
Forward feed system	Walking beam or Intralox conveyor	Walking Beam or Intralox conveyor	Walking beam or Intralox conveyor
Forward feed	30 or 60 mm	30 or 60 mm	30 or 60 mm
Number of needles	48, 96 or 192 / 2x48, 2x96 or 2x192 singel, double or quadro	72, 144 or 288 / 2x72, 2x144 or 2x288 singel, double or quadro	96, 192 or 384 / 2x96, 2x192 or 2x384 singel/double or quadro
Number of knives	432	672	864
Stroke/min needle head	20-70 / 20-70	20-70 / 20-70	20-70 / 20-70
Stroke/min knife head	20-60	20-60	20-60
Stroke height	240 mm	240 mm	240 mm
Max product height	210 mm	210 mm	210 mm
Max product height knives head	150 mm	150 mm	150 mm
Pump capacity	500l/min - 1000l/min	500l/min - 1000l/min	500l/min - 1000l/min
Brine pressure	0,5-5 bar	0,5-5 bar	0,5-5 bar
Volume filter unit	400 l	400 l	700 l
Electrical connection	400V	400V	400V
Power supply drive unit	2,6kW/2,6kW+2,6kW	5,2kW/5,2kW+5,2kW	7,6kW/7,6kW+7,6kW
Power supply pump	5,5kW/5,5+5,5kW	5,5kW/5,5+5,5kW	5,5kW/5,5+5,5kW
Power supply brine circulation pump	0,37kW	0,37kW	0,37kW
Power supply inline filter	10W	10W	10W
Power supply filter drive	0,12kW	0,12kW	0,12kW
Rotary filter unit	PLC model	PLC model	PLC model
Screen filter unit	Manual model	Manual model	Manual model
Inline filter	PLC model	PLC model	PLC model
Brine circulation pump	PLC model	PLC model	PLC model
Differential injection	PLC & Manual model	PLC & Manual model	PLC & Manual model
1-way injection	PLC model	PLC model	PLC model
Fully automatic lubrication	PLC model	PLC model	PLC model
Semi automatic lubrication	Manual model	Manual model	Manual model
Pneumatic needle valves	PLC & Manual model	PLC & Manual model	PLC & Manual model
Pneumatic washing bar	PLC model	PLC model	PLC model
Meat juice separation	PLC & Manual model	PLC & Manual model	PLC & Manual model
Over flow brine separation	PLC & Manual model	PLC & Manual model	PLC & Manual model
Adjustable stroke height	Option: PLC model	Option: PLC model	Option: PLC model
Data processing interface	Option: PLC model	Option: PLC model	Option: PLC model
Injection weight control	Option: PLC model	Option: PLC model	Option: PLC model

Dimensions in mm	A	B	C	D	E	F	G	H	I	J
GSI 420 Single	2240	1345	1125	1198	1155	1050	424	2490	890	1927
GSI 420 Double	2240	1345	1125	1198	1155	1050	424	3100	890	1927
GSI 620 Single	2240	1345	1125	1198	1155	1250	624	2490	890	1927
GSI 620 Double	2240	1345	1125	1198	1155	1250	624	3100	890	1927
GSI 820 Single	2240	1345	1125	1198	1155	1450	824	2490	890	1927
GSI 820 Double	2240	1345	1125	1198	1155	1450	824	3100	890	2627



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