



GSI INJECTORS



INJECTOR MODELS

GSI (Garos Salt Injector) is one of the most advanced injectors on the market and is at the forefront of technological solutions. As the fourth generation of Garos injectors, its design has been refined over the years to meet the extensive hygiene and performance requirements of the modern meat industry.

With several models in three sizes, there are various needle configurations and injector head options. The GSI is incredibly versatile - different models can be used for either red meat, poultry, and fish products, including bone-in products.

Depending on requirements, the GSI can be tailored to suit and manufactured with either one or two injection heads with the potential third head for tenderising (for models 620 and up). With the varying head options combined with proper needle configurations, the GSI's injection rate can be as low as 5% to above 100%.



- ▶ Developed to meet the requirements for uniform injection percentages and hygiene.
- ▶ PLC controlled via touchscreen or push-button manual control.
- ▶ Models suited for any type of meat - red meat, poultry, or fish.
- ▶ Equipped with one or two needle heads for both bone-in or boneless products.
- ▶ Additional tenderising head available also for either bone-in or boneless products.
- ▶ The needle configuration in the injector ranges from 48 up to 768 needles.
- ▶ Unique brine flow system - from the pump to the product.

BASIC GSI 350



For more information please see the Step-in Models Brochure.

ADVANCED GSI 420, 620, 820



- ▶ Used for small and medium-sized production requirements as well as testing facilities.
- ▶ PLC controlled via touch panel.
- ▶ Suitable for any type of meat - red meat, poultry, or fish.
- ▶ Equipped with one or two needle heads for both bone-in or boneless products.
- ▶ Injector needle configuration from 40 up to 160 needles.
- ▶ The capacity from 0,8 to 2,5 tons per hour Uniform brine distribution.
- ▶ All standard components are manufactured and utilised from well-known brands.

GSI 420, 620, 820



AUTOMATIC LUBRICATION

Fully automatic lubrication system ensures complete greasing. The machine stops when the grease tank is empty, triggering an alert.

SERVO DRIVE

Independent servo-drive system of the injection head, fully adjustable stroke movement.

IN-LINE WEIGHING SYSTEM

The integrated weighing system ensures precise injection, consistency, and real-time error correction.

FLOW SYSTEM

adapted for even the most complex and viscous brines

LARGE WINDOWS

to give full visual control of the process.

HYGIENIC PERFORMANCE

the entire injection area is easily accessible due to the design of the machine. The hood gables are welded to the machine body surfaces without any hidden gaps.

INTRALOX CONVEYOR

Conveyor either Walking beam or Intralox, depending on product and customer's requirements.

CONTROL PANEL

12-inch touch screen allowing for intuitive regulation of all injector functions, such as recipes control and others.

ROTARY FILTER

The rotary filter's 4-stage system ensures effective impurity removal, maintaining brine quality and injection consistency.

LOW-MAINTENANCE

pneumatic or mechanical valves.

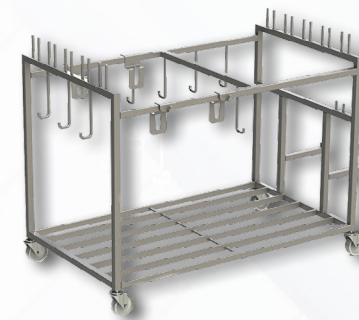
INLINE PROTEIN FILTER

automatic self - cleaning, eliminating blocked needles.

SEPARATE CIRCULATION PUMP

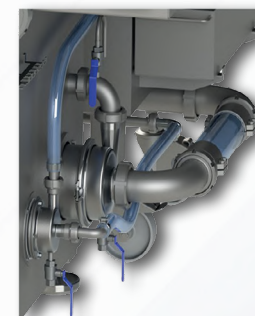
Keeps brine in suspension to prevent sedimentation, suitable for all brines, including high-additive solutions. Can also circulate brine through a heat exchanger for cooling.

FEATURES



GSI CLEANING TROLLEY

A trolley simplifies the cleaning of the injector. Allowing storage of all removable parts, during wash down of the injector safely, making it possible to clean the machine without any obstacles.



CIRCULATION PUMP

An additional pump for brine circulation manual or automatic control keeps the brine in suspension. This pump can be used to remove any left-over brine from the filter tank at the end of production or between recipes into small holding tanks to reduce waste.



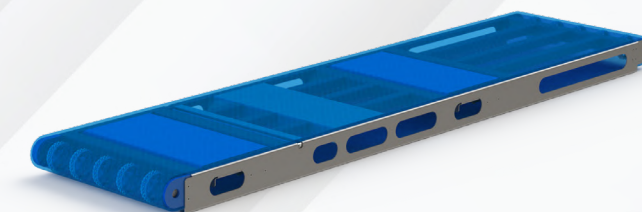
GBF FILTER

The self-cleaning GBF belt filter ensures high-level brine filtration with a large surface area and a bottom filter. Automatic scrapers and water jets remove debris for uninterrupted operation, driven by a gearbox within the injector. An optional cooling jacket is available.



INLINE FILTER

Standard on most GSI's optional on others, Inline filter - an additional filter removing particles larger than the needle holes from the brine in order to avoid blocking the needles. This filter self-cleaning cycle takes place at intervals set by the user, ejecting the debris.



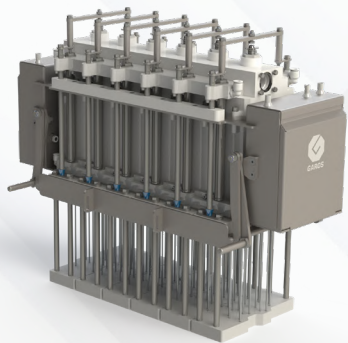
INLINE WEIGHING SYSTEM

The fully integrated weighing system in the injector transporter ensures exceptional accuracy, consistent injection levels, and stable production quality. It enables continuous monitoring to detect deviations and allows immediate corrections, ensuring full process control and minimizing errors.



GRF FILTER

Standard GRF filtration tanks (430L and 700L) have a sloped bottom to prevent sediment and maximize brine use. Brine passes through multiple filters, including an in-line filter for purity, with an optional cooling jacket for temperature control.

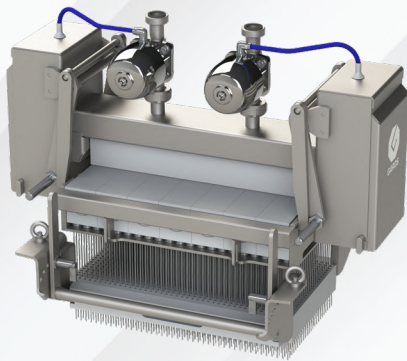


ADV. RED MEAT, POULTRY

Up to 576 needles, ideal for bone-in and boneless red meat and poultry. Adjustable air cylinders control stripper feet and needles, ensuring accurate injection. Stripper feet apply pressure on the upstroke, while spring-loaded needles enhance performance, even with bone-in products. Advanced pressure control and the unique needle pattern maximizes efficiency. The quick-release system allows easy needle cassette replacement for cleaning and inspection.

	GSI 420	GSI 620	GSI 820
Number of needles	96	144	192
Max product hight	210 ¹ / 130 ²	210 ¹ / 130 ²	210 ¹ / 130 ²

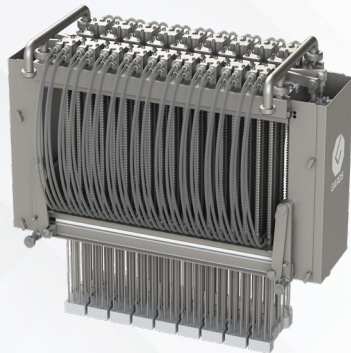
1 - Red Meat 2 - Poultry



ADV. FISH, POULTRY

Up to 1968 needles - Specially developed for delicate products such as fish fillets and boneless poultry. A unique needle system, distinguished by a very high number of needles, which allows for high efficiency while gently and evenly distributing the brine in the product at low pressure allowing better absorption. The design allows for quick and easy cleaning and inspection, with our cassette system all needles can easily be removed together.

	GSI 420	GSI 620	GSI 820
Number of needles	1008 pcs.	1488 pcs.	1968 pcs.
Max product hight	75 mm	75 mm	75 mm

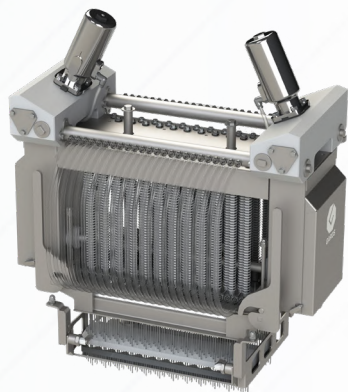


SD RED MEAT, POULTRY

Up to 384 needles. Suitable for products such as bone-in, boneless poultry, and red meat. The optimal solution for differentiated production, regardless of the product type. The brine flow valves are activated as soon as the needle foot touches the product, therefore only the needles in the meat are injecting, with no pressure drops across the head.

	GSI 420	GSI 620	GSI 820
Number of needles	96	144	192
Max product hight	210 ¹ / 130 ²	210 ¹ / 130 ²	210 ¹ / 130 ²

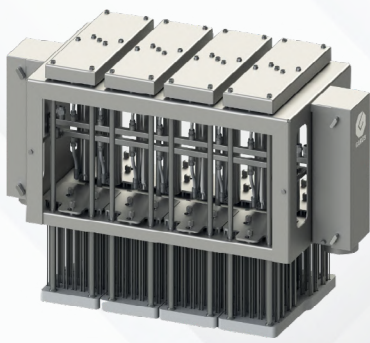
1 - Red Meat 2 - Poultry



SD FISH

Up to 384 needles – designed for whole fish and fish fillets, this injection head provides an ideal solution for diversified fish production. The needle pattern ensures continuous, homogenous injection while operating at low pressure, protecting the delicate structure of the product. It guarantees optimal brine distribution and absorption, regardless of fish type, as well as fast and easy cleaning and maintenance.

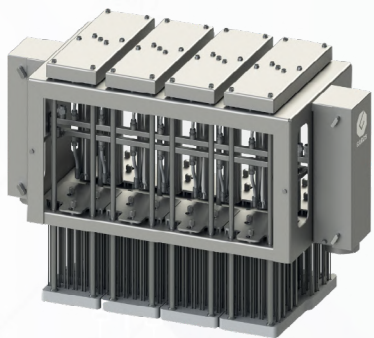
	GSI 420	GSI 620	GSI 820
Number of needles	192 pcs.	288 pcs.	384 pcs.
Max product hight	130 mm	130 mm	130 mm



BONE-IN TENDERIZER

Up to 128 especially wide knives with a sturdy design to prevent bending when tenderizing bone-in products. Moreover, the knives are spring loaded to allow for retraction if they come into contact with bones, allowing for processing of even the largest and toughest cuts of meat without compromising production methods.

	GSI 420	GSI 620	GSI 820
Number of knives	60 pcs.	96 pcs.	128 pcs.
Max product hight	150 mm	150 mm	150 mm



TENDERIZER

Up to 864 knives allows for tenderizing muscle fibers by severing the connective tissue. This improves the pliability of the meat and it increases the surface area, allowing for increased protein extraction during vacuum massaging, with higher moisture retention during the cooking process. Applicable to large and small pieces of meat. Bone-in model is also available.

	GSI 420	GSI 620	GSI 820
Number of knives	432 pcs.	672 pcs.	864 pcs.
Max product hight	150 mm	150 mm	150 mm



INJECTION LINES

GSI 620 CBP WITH GRT AND GAF



ROLLER TENDERIZER

GRT (Garos Roller Tenderizer) complements our injectors, with the GRT 620 matching their full processing capacity. Its adjustable frame fits 200 L trolleys, 800 L bins, and various vacuum filling hoppers, ensuring seamless integration into different production setups.

For more information, please check our GRT brochure.

AUTOMATIC FEEDER

GAF (Garos Automatic Feeder) distributes products in an even layer, with speed synced to the injector. Its 800 L capacity fits a full bin, ensuring continuous, efficient loading. A built-in collection tray captures product drip-off, which can be pumped to a filter tank, tumbler, or other destination.

For more information, please check our GAF brochure.

CONTINUOUS TUMBLER

GCT (Garos Continuous Tumblers) remove excess brine and seal needle punctures to improve binding and product appearance. Excess brine can be recirculated back to the injector's filter, reducing waste. Built from stainless steel, the tumbler is compact and space-efficient, fitting seamlessly into any production line.

For more information, please check our GCT brochure.



INTEGRATED SYSTEM

Full automation between the injector, GRT, GCT, and GAF enables smooth, efficient processing with reduced manual labor and downtime.



CONSISTENT QUALITY

Precise brine distribution, controlled tenderizing, and optimized tumbling deliver uniform products with superior absorption and structure.



FLEXIBLE PROCESSING

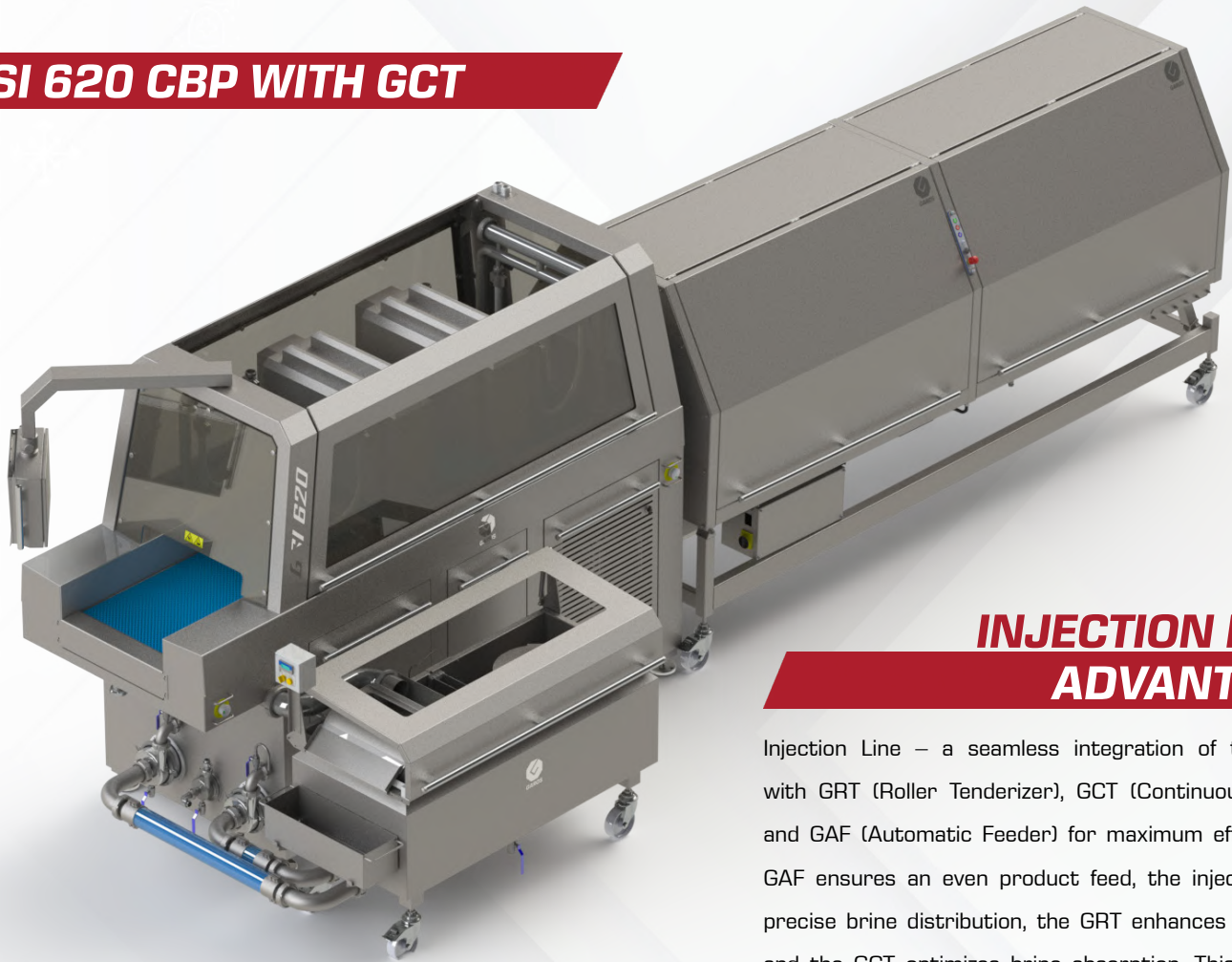
Adjustable settings across all steps—feeding, injection, tenderizing, and tumbling—allow fine-tuning for different product types and requirements.



EASY MAINTENANCE

Engineered for quick cleaning and accessibility, the system supports high hygiene standards while minimizing maintenance time.

GSI 620 CBP WITH GCT

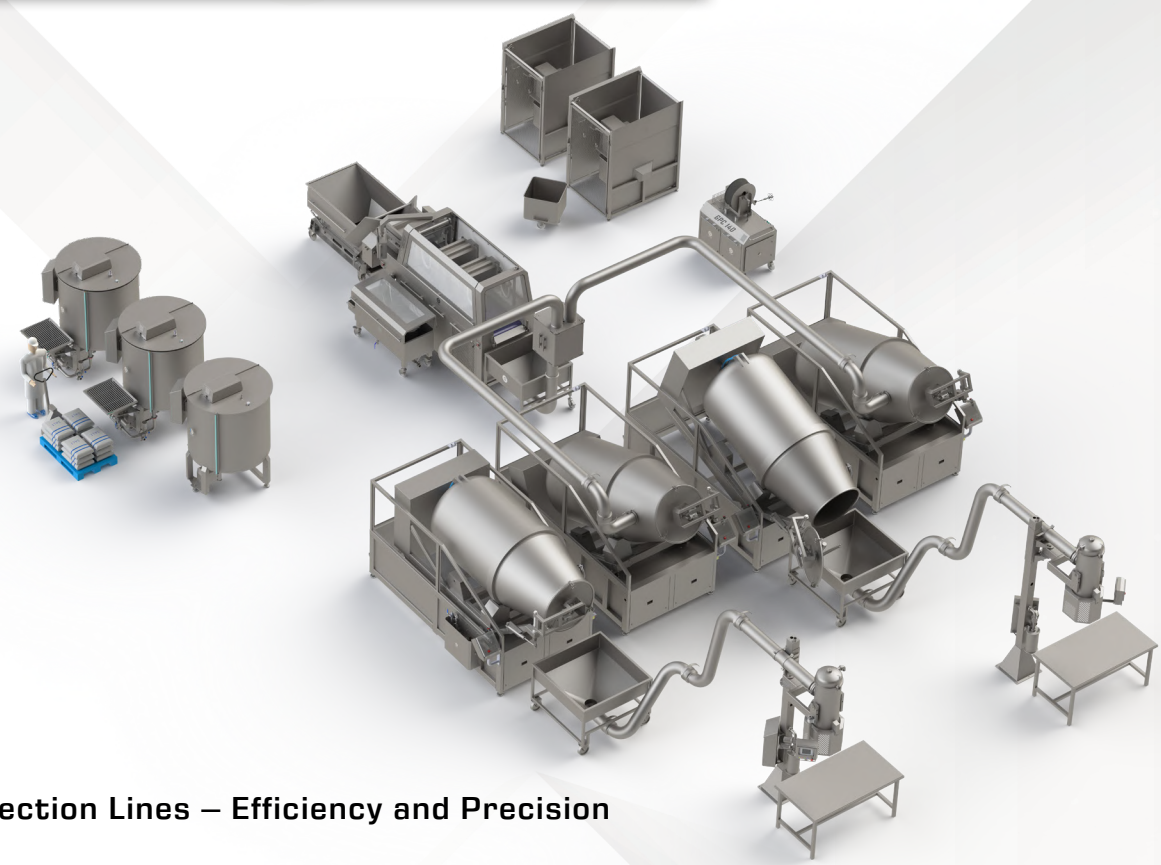


INJECTION LINES ADVANTAGES

Injection Line – a seamless integration of the injector with GRT (Roller Tenderizer), GCT (Continuous Tumbler), and GAF (Automatic Feeder) for maximum efficiency. The GAF ensures an even product feed, the injector delivers precise brine distribution, the GRT enhances tenderness, and the GCT optimizes brine absorption. This automated system boosts consistency, quality, and production speed.



AUTOMATED PRODUCTION LINES



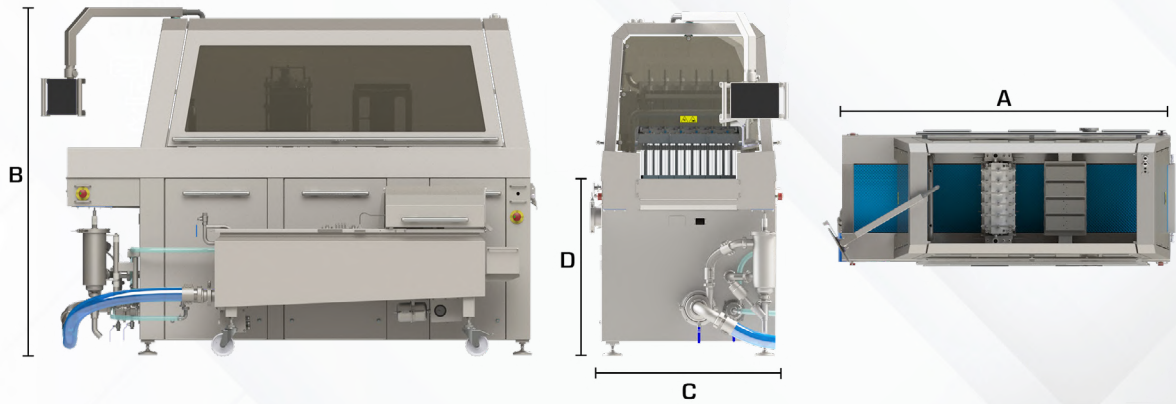
Automated Injection Lines – Efficiency and Precision

At Garos, we understand that efficiency and consistency are crucial in meat processing. That's why we offer automated injection lines, designed to integrate seamlessly into your production process. Our lines incorporate Garos Injectors along with complementary equipment such as brine preparation units, vacuum filling systems, and tenderizers, ensuring a continuous and optimized production flow.

Our automated lines are built for precision, hygiene, and productivity, making them an ideal solution for large-scale meat, poultry, and fish processing. The integration of various Garos technologies guarantees maximum brine absorption, uniform injection, and reduced product loss, all while maintaining high-speed operation.

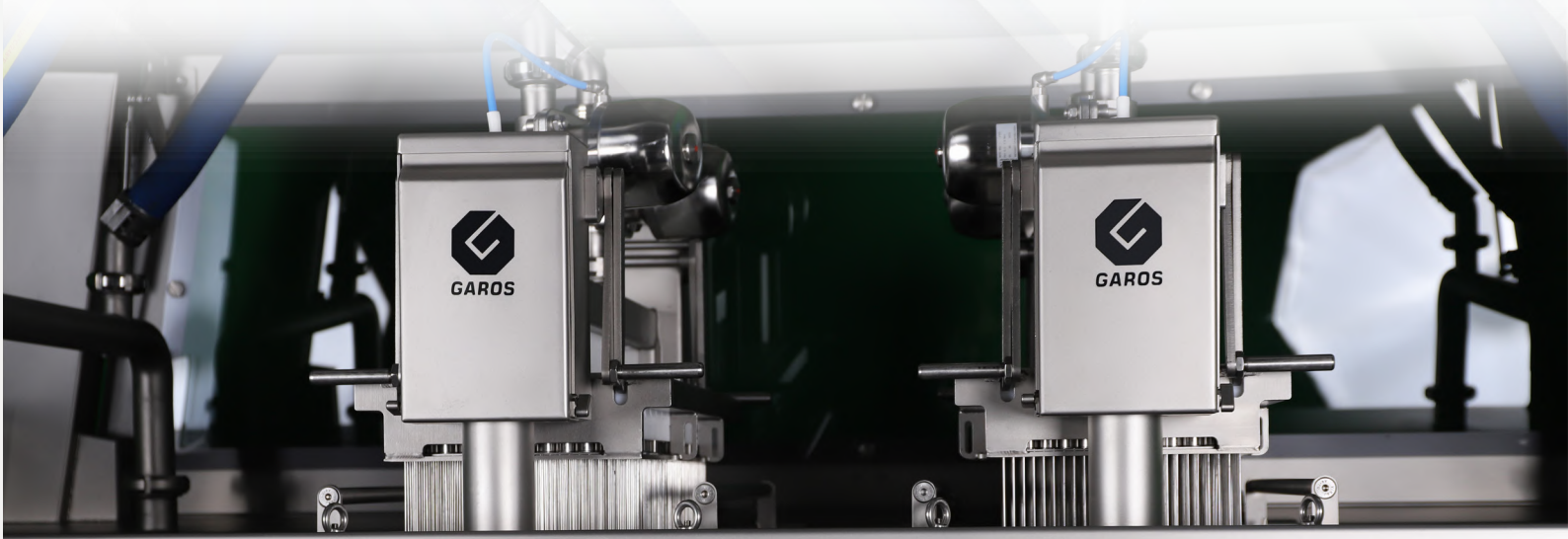
Key Benefits of Automated Injection Lines:

- **Consistent injection performance** – Ensures even brine distribution for improved product quality.
- **Seamless integration** – Compatible with injectors, tumblers, and vacuum metering systems for a fully automated workflow.
- **Increased efficiency** – Optimized production speeds with minimal manual intervention.
- **Superior hygiene standards** – Easy-to-clean designs with self-cleaning filtration systems.
- **Versatile solutions** – Suitable for a wide range of meat, poultry, and fish products.
- **Scalability** – Modular systems tailored to different production capacities.



Technical specification	GSI 420	GSI 620	GSI 820
A - length [mm]	2490 ¹ / 3100 ^{2,3} 3340 ⁵ / 3950 ⁶	2490 ¹ / 3100 ^{2,3} / 3710 ⁴ 3340 ⁵ / 3950 ⁶	2490 ¹ / 3100 ^{2,3} / 3710 ⁴ 3340 ⁵ / 3950 ⁶
B - height [mm]	2240	2240	2240
C - width [mm]	1050	1250	1250
D - loading height [mm]	1345	1225	1345
Weight [kg]	1280 ¹ / 2000 ² / 1750 ³	1405 ¹ / 2075 ² / 1860 ³ / 2500 ⁴	1530 ¹ / 2175 ² / 1980 ³ / 2675 ⁴
Capacity [t/h]	Up to 7*	Up to 11*	Up to 13*
Forward feeder width [mm]	420	620	820
Forward feed [mm]	30-240	30-240	30-240
Rated Voltage [V]	400	400	400
Conected load [kW]	9,4 ^{1,5} / 11,9 ² / 17,4 ^{3,6}	9,4 ^{1,5} / 11,9 ² / 17,4 ^{3,6} / 19,9 ⁴	9,4 ^{1,5} / 11,9 ² / 17,4 ^{3,6} / 19,9 ⁴

Description
1 - Single - one injection head
2 - Combi - one injector head, one tenderizer head
3 - Double - two injection heads
4 - Triple - two injector heads, one tenderizer head
5 - Fish injector with one injection head (single)
6 - Fish injector with two injection (double)
* Depending on the product and brine type
** Depending on the needle head pattern





RED MEAT



POULTRY



FISH

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