



# GEA MultiJector

Redefining flexibility, accuracy and  
hygiene in brine injection



# Number one in flexibility

The GEA MultiJector is a multi-purpose brine injector that does not compromise on the accuracy or performance you can get from an application-specific machine. It sets new standards for hygiene, food safety and cleanability. It is a flexible solution for injecting bone-in, boneless and delicate products, and is packed with cutting-edge technology that adds value to your products and processes.

## Switching from one product to another

To ensure a quick and efficient switch from one product to another, special attention is given to the user friendliness of the injector. All process parameters such as product height and needle depth are part of the recipe program, and specifications are stored in an intuitive control panel. Switching between products can be done without the need to make mechanical adjustments on the equipment by the operator. This not only avoids problems due to wrong settings after changeover but also ensures consistent product quality right away.

## Product under full control

The GEA MultiJector features GEA's unique 'weightless' stripper plate that prevents pressure on products during injection regardless of the product height. First developed for the GEA YieldJector and successfully proven in the field, this feature prevents damage to sensitive, delicate or bone-in products. It works by using hydraulic compensation to produce a weightless effect on the stripper plate. The system senses the height of the product on the belt, determines if it is higher or lower than the preceding product, and remembers the value. This enables the machine to start brine injection at precisely the right moment when the next product passes under the needles, resulting in less excess brine and therefore avoiding warming-up of the brine in the system.

## Unique manifold design

An innovation to speed up changeover as well as simplify cleaning is the special design of the cassettes that consist of a manifold with needle guides and needles. Complete cassette assemblies are easily exchanged without tools to speedily switch needles patterns or needle types. If required, individual needle guides can also be replaced one-at-a-time without dismantling the manifold, which makes it easier to exchange a leaking guide.



*Special cassette design*



*GEA MultiJector*

# Number one in accuracy

To ensure consistent vertical brine distribution throughout the full depth of the product and therefore guaranteeing consistent product quality, the GEA Multijector combines proven GEA technology - such as linear movement of the needles and dynamic brine flow.

## Linear vertical movement

In conventional brine injectors, the needles travel up and down with sinusoidal movement. This means the vertical speed of needle is slower at the top and bottom of the product than in the middle. The result is uneven vertical brine distribution. To overcome this unwanted effect, GEA developed a technique to ensure the needle's linear speed is constant throughout the whole injection stroke. This linear movement ensures consistent brine distribution throughout the whole depth of the product.

## Highly controlled injection

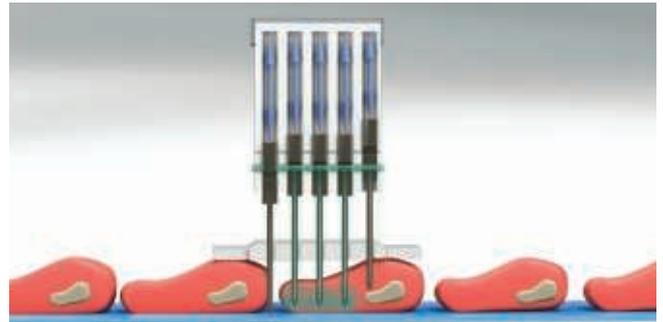
To further contribute to a controlled brine injection, the GEA Multijector incorporates an adjustable needle depth and adjustable product height. The right needle depth avoids brine pockets occurring in bottom fat layers of, for example belly sides and skin-on products. The right product height avoids capacity loss as a result of head-travel time outside the meat. With help of analyzed fluid dynamics, a consistent brine flow is guaranteed throughout the system. The machine is equipped with a custom made centrifugal pump that delivers a constant brine pressure, regardless of the number of open needles.



### Individual needle brine control

A proven feature of all GEA brine injectors is the automatic brine feed stop. This ensures automatic retraction of each individual needle into the airhead when it hits bone or another obstruction. When the needle hits bone, the brine feed for that individual needle is cut off, avoiding brine pockets around the bone. To protect delicate bones, the airhead pressure is adjustable, so that needles retract even when hitting small bones in for example chicken wings. The airhead pressure is program controlled, so that delicate chicken wing bones are automatically protected when changing to the 'chicken wings' program.

When selected, the Multijector can ensure individual needle activation and brine flow based on the product surface contours. This minimizes return brine and additional brine heating for products with variable product heights such as ham. The stripper plate solely functions to keep the product in place, without pressing on the product due to the weightlessness of the plate.



*Individual needle brine control*

### All parameters are set from the control panel

The Multijector control system is accessed by an intuitive user interface. This comprehensive control system allows all relevant process parameters to be set in the individual recipe programs. This eliminates the need for manual and mechanical adjustments by the machine operator. The injection process becomes far less dependent on manual settings.



# Number one in hygiene

Much attention has been focused on the hygienic design of the GEA Multijector. It is possible to thoroughly clean and inspect the machine without using tools, thanks to the design of the needle head, the manifold, the conveyor belt-handling and the new frame design.

## Unique needle head design

The design of the needle head greatly simplifies inspection, cleaning, needle removal and needle replacement. The conventional manifold has been replaced by a newly designed cassette assembly. The cassette consists of a manifold with needle guides and needles. The complete cassette assemblies are easily removed for cleaning and the machine can continue to operate with a new cassette while others are being cleaned.



*Exchanging cassettes*

## Conveyor belt cleaning procedure

Thanks to the unique conveyor belt cleaning procedure, which comprises a hoisting device mounted on a trolley, the belt can be removed, cleaned and returned by one person without having to clear space by removing up and downstream equipment. The hoisting device removes the belt to optimize accessibility for step-by-step cleaning of both the front and back of the belt. This process is welcomed by belt suppliers and is set to become the solution for the future.



*GEA Multijector with removed conveyor belt*

## Ultra-hygienic frame design

Built on a completely new frame that is fabricated from sheet material rather than hollow tubes, the GEA Multijector has no hidden or inaccessible cavities that are difficult to clean or inspect. All surfaces are easily reached, and horizontal faces are inclined to prevent fluids building up. Other hygienic design features include the routing of hoses, cylinders and pneumatic systems away from the food zone, while the bottom of the drive zone is completely free of components for effective inspection.



*Cleaning position of needle head*

# Number one in marination

The GEA Multijector adds value to your products and processes. Thanks to 40 years' experience in brine injection - starting with respected marination equipment manufacturer Belam in 1972 - our product designers and customer support teams understand the processes involved as well as the applications.

This experience in machines for injecting meat, poultry and fish has enabled GEA to develop a benchmark machine in terms of flexibility, accuracy and hygiene: the GEA Multijector. It is one of a range of brine injectors, and part of an even wider range of marination equipment - including brine mixing and storage solutions, brine chillers, tumblers, ultrafast defrosting solutions and loading equipment.

## Technical innovation

Other technical solutions:

- OptiFlex needles - The injectors use our long-lasting OptiFlex needles that have unmatched bending resistance. All needles and needle guides are easy accessible and can be replaced individually.
- GEA SuperChill - The optional GEA SuperChill is a stand-alone brine chiller that cools light brines up to heavy marinades to between 2 and 4°C. Accurate brine temperature control reduces injection pick-up variation and reduces post-injection purge, which in turn, increases the yield.
- GEA ScanBrine - Perfect mixing from light brines up to heavy marinades, modular design, minimum cost of ownership, optimum yield for the end product.
- GEA Fresh Enhanced Line - The GEA Fresh Enhanced Line is a complete solution for controlled injection of fresh poultry parts and minimizes drip loss without need to changing functional ingredients. It includes various handling equipment, infeed and outfeed shakers (GEA MultiShaker) and inline tumbler (GEA RotoDrum) solutions.





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