Solutions for mayonnaise production lines
Smooth indulgence

To compete successfully in today’s global food and beverage markets manufacturers need to offer high quality products, at the right price, and keep track of local, national and international trends to meet changing demands.

Mayonnaise is a global consumer favorite that complements many dishes. We all have our favorite uses of mayonnaise, perhaps as a spread in sandwiches, a topping for fresh salad or as a dip for french fries, or mixed with other sauces, spices and condiments to accompany fish, meat or vegetable dishes.

Consumers expect a wide variety of products, including healthier options. For mayonnaise manufacturers this means developing recipes that contain less fat, sugar, and fewer additives, and developing processes for manufacturing top quality products that don’t compromise on texture, color, taste or shelf life.

GEA offers hygienic, versatile technologies and solutions that give mayonnaise manufacturers the confidence to innovate with healthier, tasty recipes. Our flexible solutions let our customers respond quickly to market demands, but remain efficient to reduce costs, resource and energy use.
Expertise for making high quality mayonnaise

GEA understands that to make the highest quality mayonnaise, manufacturers need the right equipment and technologies, configured for optimum productivity, reliability and sustainability. Building on decades of know-how and experience working with the food industry, we can offer systems and solutions that optimize key stages in your manufacturing processes.

The ability to mix powders and liquids homogenously is critical for manufacturing stable, long shelf life products in which the particles stay dispersed in solution and do not separate during packaging or storage.

GEA mixing technologies are designed to prevent flocculation and sedimentation, which reduces separation. Our high shear mixing systems facilitate dispersion and minimization of oil droplets, to produce emulsions that are stable and homogeneous.

Temperature control is also critical to the final product composition. GEA has developed an integrated temperature control system to prevent the emulsion from cracking and to ensure a consistent final product.

To oversee and optimize your mayonnaise processing lines GEA also offers user-friendly automation systems with recipe management, which monitor and precisely control every variable. Using our technologies you can create or optimize recipes for new and existing products, and be confident of top quality for every batch of mayonnaise.
Solutions for mayonnaise manufacturing

GEA provides a comprehensive range of technologies and equipment for fully integrated mayonnaise manufacturing lines, from raw materials reception to filling. We work closely with each customer at every stage, starting at inception and design, right through to hand-over. Our experts can develop and configure an optimized solution that will fulfill all your requirements, whatever your ingredients (liquid/powders), capacity and level of automation.

GEA process design and plant integration
GEA can supply preconfigured, standalone equipment and technologies or tailor, deliver and install complete, fully integrated mayonnaise processing lines for small- and large-scale production.

We understand that while you need solutions and plants for your existing product range, capacity and throughput, you also need the flexibility to be able to develop new products and processes, and to respond to changing markets. Our technologies are designed to offer that versatility, and to give you the assurance of robust, long-term solutions.

We also configure upstream solutions that will fit in with the throughput, capacity and processing times of your mayonnaise filling lines, so end-to-end processing is seamless, without delays or bottlenecks.

And of course, all GEA equipment and solution designs meet the strictest industry hygiene requirements.
Training and support

• GEA offers training and support to ensure robust plant operation, so our customers can be confident that all their equipment and process lines offer optimum operation, throughput and reliability for the entire lifecycle of the plant.

Project management

GEA makes sure that no detail is overlooked, and that every deliverable is achieved, on time.

• All GEA customers benefit from our world-renowned project management expertise. We undertake all aspects of project execution, from conception and layout through to equipment delivery and installation, including international contract management, commissioning and start up.

• A dedicated team will liaise with 3rd party suppliers, secure utilities supply, and provide comprehensive after-sales support and training.

Partner with GEA and you have the security of expert support from day one, with options for flexible service, maintenance and upgrade packages.
Ingredients reception, handling and mixing

Reception and handling of raw ingredients
Safe ingredients handling and traceability are vital for mayonnaise manufacture. GEA can tailor the right solution for handling all your ingredients, including powdered and fresh eggs. Control systems connected to scanning and weighing equipment check ingredients, and we can also configure oil reception and storage systems with a feed line, equipped with cooling, to our BATCH FORMULA® Mixer.

Mixing for stable emulsions
Mixing is a key process that affects the consistency and quality of mayonnaise. For mayonnaise processing it is important to have a reduced oil droplet size, and to avoid trapping micro bubbles in the product. GEA’s one-pot BATCH FORMULA® Mixer is ideally suited to processing mayonnaise and other challenging products. The BATCH FORMULA® Mixer incorporates a high shear device, sited in the cone at the bottom of the vessel, which is key to the system’s ability to generate a highly uniform product without recirculation loop. The high shear technology maximizes energy utilization, so improving efficiency and reducing energy use.

The BATCH FORMULA® Mixer uses the GEA Vacuum System to introduce liquids and powders below the liquid surface so wetting is almost instantaneous. This approach results in faster processing times, reduces air incorporation and foaming, and deaerates the premix. There is also less equipment clogging, while production capacity and operational efficiency are increased, and cleaning-in-place (CIP) cycles can be optimized.

Our customers benefit from maximum return on their investment, reduced product loss and improved profits.
Key features of the BATCH FORMULA® Mixer:

- High shear and no shear mixing are carried out in the same vessel
- High efficiency mixing results in a stable emulsion
- Hygienic system design ensures total mixer drainage between batches
- Versatile design for multiple applications with high viscosity and up to 80% TS
- Accurate temperature control
CIP and Automation

The amount of time it takes to switch between products can have a major impact on your plant’s overall capacity. GEA systems are designed to maximize that capacity, and feature sanitary, hygienic designs and automation, with either integrated cleaning-in-place (CIP) or minimal manual intervention for cleaning, to help speed changing between products.

CIP to save time, resources and costs
Optimized CIP ensures fast product changeover and minimizes the use of detergents and water. Innovative CIP solutions from GEA meet all critical hygiene standards to guarantee product safety at every point of processing. Our highly efficient CIP systems prevent product leakage into cleaning lines, to avert contamination and carry-over. GEA plants are designed so that where possible, your production line may continue operating while some parts are undergoing a CIP cycle. This can significantly reduce down time and help to lower costs.

Process automation for reliable, reproducible manufacturing
Every plant will have different process automation requirements. GEA offers a wide range of automation systems and services that range from basic process control to integrated, enterprise-wide network systems with MES (Manufacturing Execution System).

Our MES solutions are built on our extensive industry know-how, and allow customers to manage and monitor every stage in their production processes to ensure both optimum use of resources and consistent product quality.

Our process automation solutions reduce the need for manual tasks so you can be confident of reproducible, reliable processing for all your mayonnaise products.

GEA in addition offers an intelligent recipe application module, designed specifically for the food industry, so that customers can easily create and manage recipes and production scheduling.

Modular Compact CIP plant
Components

GEA has worked continually with customers over the last 80 years to develop technologically advanced solutions, equipment and individual components, including pumps and valves, for even the most challenging of processes.

**GEA Hilge NOVALOBE®**

Hygienic pumps that can operate in close contact with product are key components of mayonnaise production lines. The GEA Hilge NOVALOBE® pump range, which is part of GEA’s Varipump line of technologies, can be used with viscous media, and for applications where gentle pumping or dosing is important. The hygienic design and use of pore-free materials make the technology ideally suited to mayonnaise manufacturing.

**GEA valves**

GEA has developed hygienic valves that represent key core components of matrix-piped process plants. Developed to offer flexibility, reliability and innovative control functions, GEA valves give our customers cost-effective options for specific applications.

**Product recovery systems**

Lower product losses mean improved profits, so GEA has developed state-of-the-art technology for recovering valuable product from pipe systems. For long piping routes we have developed the VARICOVER® Product Recovery Systems, which reduce waste, prevent carry-over between batches or at product changeover, and improve the economic efficiency of your production plant.

Using GEA product recovery systems, residual products are expelled from the pipes and returned into the product flow by pigging. This leaves only a thin residual film in the pipe system, which can easily be removed by cleaning (CIP). Less product in the pipes and more efficient cleaning also dramatically reduces the waste water load.
Customized solutions for optimum plant operation

GEA develops components, equipment and solutions that help to optimize every aspect of your mayonnaise plant operation. All our equipment is built using high quality, hygienic materials. Each plant is designed to fit in with the layout and configuration of your facility, and to offer robust, reliable operation to keep operating and maintenance costs down.

Our processing platforms, CIP and automation systems reduce cleaning times and minimize product losses for the whole life cycle of your plant. Combining optimum plant design with robust equipment and versatile technologies will help to maximize your productivity, flexibility and profits. Energy and water recycling systems help you to meet environmental and sustainability goals.

And of course, GEA supports you for the entire lifecycle of your plant, with maintenance and upgrade plans and ongoing training, to ensure that every piece of GEA equipment continues to function at its optimum level.

Test facilities for product development
GEA offers laboratory and pilot plant testing facilities for customers to try out new mayonnaise recipes and formulations, and work on process development and validation. Our experts can offer an unparalleled range of equipment and industry-leading know-how, spanning early stage product development through to final process refinement.
GEA Service – For your continued success

Working with GEA Service means partnering with a dedicated team of service experts. Our focus is to build, maintain and improve customer performance throughout the entire life cycle of the plant and its equipment.

**Beginning of Life Services**
Getting you started with seamless support for instant productivity and performance

**Lifetime Services**
Keeping it running with the cost-efficient way of ensuring safety and reliability

**Extended Life Services**
Constantly improving by sharing our knowledge to safeguard your investment

**Consulting & Enhanced Operations**
Together with you by enduring commitment to you and your business
We live our values.
Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA is a global technology company with multi-billion euro sales operations in more than 50 countries. Founded in 1881 the company is one of the largest providers of innovative equipment and process technology. GEA is listed in the STOXX® Europe 600 Index. In addition, the company is included in selected MSCI Global Sustainability Indexes.