The GEA way to perfect Karaage

The fully automatic line for traditional-style Karaage
WHAT IS KARAAGE?

Karaage is a traditional Asian cooking technique, dating back to the 17th Century, in which choice cuts of meat (usually chicken), fish or vegetables are fried in a light oil with a corn or potato starch coating. The coating can be seasoned flour (dry Karaage) or a light, crispy batter (wet Karaage).

The method became popular in the 1940s and 50s as a simple, nutritious way of cooking. Today it is found throughout the region in restaurants, as easy street food, and, of course, in the home. There are many variations of Karaage with each area, and even individual restaurants, creating their own unique style.
Is that possible? Even better than mother used to make? With GEA technology and know-how, yes, it is; and there’s even more to it. By combining the latest automated techniques for meat preparation and coating with flash frying and GEA’s versatile 3rd generation CookStar spiral cooker, it’s possible to lock in the juiciness of classic Karaage within an authentic crispy outer coating.

The industrial way
With fully automatic operation you can now make delicious wet or dry Karaage, at higher volume, with fewer staff, improved hygiene, better yield and using less oil - without losing that home-made taste and feel. It’s time to open your mind to a new concept in Karaage processing. This is Karaage the industrial way.

In many styles and shapes
Whether you prefer wet or dry Karaage, made with fish, meat or vegetables, GEA has a proven system to make it, at an industrial level, even better than home made. Mom will love it.
GEA BRINE INJECTION, FOR BONE-IN & SKIN-ON PRODUCTS

Would you like to process bone-in or skin-on Karaage products without skin slip, damaged bones, brine pockets or visible needle holes? Extend your processing line with the dedicated GEA brine injector that uses a combination of 2mm needles, a dense needle pattern, low pressure and controlled injection to ensure a consistent product quality and maximum profitability.
Meat preparation

Gentle handling for better products
Careful preparation can turn an ordinary cut of meat or fish into raw ingredient for succulent Karaage. Marination adds value by helping to create new Karaage products with a unique flavor, juicy texture and classic appearance and optimized shelf life.

GEA ScanMidi: the touch that adds value
To marinate meat or fish perfectly for Karaage cooking, GEA uses its ScanMidi tumbler that combines high performance with short processing times, adding to your potential profitability.

The ScanMidi naturally and gently massages and marinates the meat in a 95% vacuum. This preserves the original texture of the meat while the vacuum prevents oxidation, accelerates the process for maximum efficiency and ensures the best possible pick up of the marinade to give that authentic Karaage taste.

- Fast pick up of marinade
- Gentle meat-on-meat massaging action
- High product consistency
- Closed environment for maximum hygiene
- Easy loading and cleaning
- Simple controls

GEA ColdSteam T: yield instead of drip loss
Using the GEA tumbler with ColdSteam technology you can efficiently defrost and additionally marinate in one system. Using frozen meat for Karaage combines the advantages of lower raw material costs with increased operational flexibility. However it does require an efficient industrial defrosting system that doesn’t take all day to do the job. The ColdStream T is not only has one of the fastest defrosting systems available today, it also increases yield by eliminating drip loss.

The system operates under vacuum thus eliminating the risk of protein coagulation on the meat surface. The closed, steam-based process also provides well-controlled, homogeneous defrosting from -18 to +2 °C, resulting in better retention of meat juices and no weight loss on thawing.
ADVANCED COATING TECHNOLOGY
GEA has worked closely with the industry’s leading coating suppliers to perfect both the coatings themselves and the coating equipment used. The combination represents the ultimate in taste, appearance and texture for Karaage products.

GEA TEMPUMIXER
GEA TempuMixer II is an automated tempura mixer that ensures consistent viscosity, composition and temperature. Features include in-line viscosity measurement and automatic adjustment for reliable and repeatable results.
Coating

trusted automation for better returns

The coating process for Karaage is critical and, traditionally, the most labor intensive. However, the GEA process ensures that every piece is coated perfectly and automatically, with up to 80% less labor, at high speed for maximum productivity.

Reduce labor requirement

Prepared meat or fish is loaded in bulk, without any need for physical separation by operators, and conveyed continuously into twin GEA MultiDrum coaters. The tumbling action ensures that the product is evenly coated to create the classic Karaage look; the flour level, together with the speed and angle of the rotating drum, can be adjusted during production in accordance with the recipe requirements.

Dust-free operation

Dust is kept to a minimum through GEA technology that simultaneously feeds the flour, removes excess and extracts air to eliminate fines.

Solution for every type of Karaage

For wet Karaage the second MultiDrum coater is replaced with a GEA TempuDipper tempura applicator to provide even batter coverage with minimum wastage.

- Perfect home-style appearance
- Attractive ‘coral reef’ effect after frying
- Minimal manual intervention to spread products
- Dust-free operation for a cleaner environment
- Uses full belt width for maximum production
- Guaranteed 100% pre-dust coverage on natural portions
- Simple controls
COOKSTAR: THE MASTER OF COOKING

The 3rd Generation CookStar spiral oven represents the ultimate in high-speed, high-volume cooking technology. The three-phase cooking concept, double spiral configuration and balanced airflow allow the key parameters to be accurately controlled. This means the CookStar cooks the food thoroughly without losing moisture and keeps the crispy coating that is expected in perfect Karaage.
Heat Treatment

Fry-cook for improved juiciness and capacity
This is the key to GEA-style Karaage. Traditionally, Karaage is fried twice, or even three times. This fry-fry technique does create the characteristic crisp texture, but it can also dry out the meat. GEA does it differently: fry-cook.

Juicy inside, crispy outside
Using the fry-cook technique, the coated meat or fish is first flash fried, just to seal the coating, then cooked under carefully controlled conditions in the GEA CookStar spiral oven to make sure that the meat is cooked through, but remains juicy.

By precisely regulating the conditions within the oven, such as temperature, humidity and residency time, GEA not only ensures the product has the classic Karaage texture and taste but also keeps yields high and provides a fast return on investment.

• Classic Karaage crispy coating
• Juicy meat core
• Up to 35% higher yield
• Total control over cooking parameters
• Faster cooking
The ultimate Karaage processing line

The key to perfect Karaage is in the way each element of the line is brought together in harmony: defrosting, marinating, loading, coating and cooking – all designed with GEA flair and experience to work as one. Up and down-stream processes such as injecting, freezing, packing and oil recovery also contribute to achieving the best product and the best business concept.

But GEA knows that every line is different and Karaage is much more than just chicken and fish: many vegetables and shellfish are delicious cooked in the same way. Every manufacturer too has their own ideas, their unique concepts that make them special and give them the edge in a competitive market. That is why GEA works closely with each customer to fully understand their application and use its experience to create lines that are individual and precisely designed to meet each customer’s objectives.

Of course, every GEA production line is backed by the company’s global after-sales service, on call, worldwide.
Test before you invest
As with all new concepts GEA understands that customers will want to know more about the fry-cook process and its capabilities. That’s why GEA makes its testing facilities available to customers allowing them to try out processes and perfect recipes before making a firm commitment to invest.

The Technology Center in Bakel, The Netherlands provides a fully operational factory, including all elements of a Karaage processing line, at customers’ disposal. Here, specialist GEA technicians and food technologists work with customers to develop and prove concepts and refine recipes under strictly controlled conditions.

This gives customers the opportunity of designing new products and bringing them to market quickly and profitably, with total security of outcome, before committing to major investment.

It’s GEA know-how, available whenever you need it.
GEA is one of the largest technology suppliers for food processing and a wide range of other industries. The global group specializes in machinery, plants, as well as process technology and components. GEA provides sustainable solutions for sophisticated production processes in diverse end-user markets and offers a comprehensive service portfolio.

The company is listed on the German MDAX (G1A, WKN 660 200), the STOXX® Europe 600 Index and selected MSCI Global Sustainability Indexes.