

Fully automatic egg processing

From chicken to customer

#waaromlezen

voedselveiligheid
voorop, alles moet
traceerbaar zijn.

The cooked and peeled eggs are supplied to both industrial processors and catering companies. Food safety is essential. Pap guarantees its customers full traceability. Several certifications highlight the importance of delivering this product safely. Quality assurance ends when the products are bought by the customer. [Vincent van de Wel](#)



The company Pap Eggs (see picture 1) is a supplier of boiled and peeled chicken eggs, a food that is not only tasty but healthy too. The company is part of the Interovo Egg Group in Ochten (NL).

This is an umbrella organization of several companies specializing in the production of eggs and egg products. Pap Eggs BV is a modern, leading company with 40 years of experience in cooking, peeling and packing eggs. Cooking eggs is an important process.

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Pap offers its customers their choice of eggs from different poultry systems. Eggs are also classified as being suitable for industrial processing (salad eggs) or suitable for foodservice (sorted eggs), and come in various sizes. In addition to the choice of different packages and packaging sizes, it is also possible to choose from a selection of preservative fluids

PAP
EGGS



► **The processes**

Pap has chosen weighing and counting equipment for the complete process following cooking and peeling the eggs. From a technical point of view, weighing is ideal due to its insensitivity to differences in density. Another factor is hygiene. Weighing sensors are located outside of the egg flow. Another important factor is that Pap processes both solid, boiled eggs, and preservative liquids. So by counting and weighing, one combination of measuring systems is sufficient. Twenty-five years ago, Pap chose PENKO Engineering from Ede (NL) as a weighing supplier, because of its proven quality, accuracy, reliability and service.

To ensure the quality of the cooked eggs during storage and transport, they are put in a pre-package with a preservative liquid. This prevents the eggs from drying out, and provides effective protection. The type of preservative depends on the application of the eggs and is decided by the customer. Furthermore, Pap makes up the preservative liquid in different amounts, depending on the type of selected package and the number of packages. This combination of multiple types of liquid in different amounts requires a flexible production system. For this purpose, Pap uses a mixing tank in which the various components are dosed one after another. If necessary, an amount can be created in more than one batch. Because of the required flexibility, the different types of liquids and the required quantities, a PENKO FLEX-2100 controls the weighing and dosing.



△ The carousel for filling polybags

'The quality control only ends when the products have been delivered to the customer.'

▽ One of three supports under the net weigher.





△ Two stainless steel bulk tanks with the corresponding filling controller.. at the right : eThe control desk with a FLEX filling controller.

The most traditional way of packing is in buckets, where the eggs are stored in a preservative liquid. Pap supplies a wide range of buckets containing 20 to 168 eggs. Moreover, eggs are packed by weight and delivered in buckets. For this way of packing, Pap has two filling lines, a carousel and a linear one. In both cases, the eggs are first checked by weight and then the liquid is added. For technical reasons, both lines have two weighing systems, one for the eggs and another for the liquid. The carousel uses a PENKO MassteQ weighing controller in combination with an SAI weight indicator, while the linear filler is equipped with a modern PENKO FLEX dual-channel filling controller.

Another type of pre-package is the polybag, which is very suitable for industrial processing. Polybags can be filled by count and by weight. The polybags are supplied to the customer in plastic boxes. After filling the polybag with eggs and preservative fluid (see Figure 2), it is vacuumed and sealed. That's why Pap counts the eggs or doses them by weight and then adds the liquid. A PENKO FLEX is used as a weighing controller.

The filling equipment for the buckets and the polybags are called net fillers. The eggs and the preservative liquid are weighed first and then put into the packages. Each weigher has a stable three-point suspension with a weighing accuracy of 10 g (see picture 3).

The bulk packages (see picture 4), intended for major industrial processors, are plastic or stainless steel tanks. A plastic tank is filled with 750 kilograms of eggs, and the stainless steel ones with 850 kilograms. For this purpose, Pap uses a platform with a weighing capacity of 1500 kg in combination with a PENKO MiniMate dosing controller. This instrument controls both the egg and the fluid dosing.

To ensure that the amount of preservative liquid is always sufficient, all systems use automatic taring and an intelligent self-learning in-flight correction (see picture 5). Combined with the high measurement speed and internal resolution, this method allows a wide range of package sizes. Obviously, all filling installations comply with the Metrology Act of the Kingdom of the Netherlands and are approved for that reason.

An additional reason for the selection of PENKO as the main supplier for Pap was the availability of a complete range of weighing instruments. For all its reporting, Pap uses PENKO type BCS management information systems. Monitoring takes place on various screens, including for tracking & tracing and data transfer with analysis of pre-packages and their contents.

Conclusion.

For a company like Pap Eggs, a comprehensive quality assurance system, combined with tracking & tracing facilities, is essential to maintaining food safety. It ensures complete transparency of each lot of eggs, and the type, size, origin, operation and composition are completely traceable. Reliable and accurate measuring systems guarantying adequate process weighing results from an essential part of this quality assurance. Based on the positive experience during the last 25 years, Pap Eggs is continuing its collaboration with its main supplier, PENKO Engineering. The instrumentation has proved to be reliable and, if necessary, easily adaptable to changing work conditions. This safeguards the processes, and as a result, Pap's customers can rely on consistent quality and reliable deliveries