



CUTTING EDGE

The Egg Process

We take it as a matter of course that eggs sold in packs in supermarkets come uniform in arrangement and in size. However, the truth of the matter is that eggs go through several different processes before they are shipped. First, before the eggs are packed for display in shops, they must all be placed the same side up, washed, dried, checked, sterilized, weighed and graded according to size. That this entire complex series of tasks can be carried

out automatically is thanks to the fully automated egg grading and packing system developed by NABEL Co., Ltd., which is based in Kyoto Prefecture. This system employs cutting-edge technology in its machinery, electronics and data processing, with the top-of-the-line machine being able to grade as many as 60,000 eggs per hour.

The system works like this. After each egg has been washed and dried, it undergoes acoustic anal-



LEFT: Each egg is weighed before being graded into eight different sizes and automatically placed into packs according to size.

BOTTOM: Finally, the product label is inserted into the pack, which is then sealed. With this the fully automated grading and packing process is complete.



ysis to detect any cracks. Then the eggs are checked with a high-performance CCD camera for abnormalities, such as blood spots or meat spots. Next, a special light is used to allow a computer analysis of any changes that may have occurred in the hemoglobin in the blood components, detecting blood spots in a fraction of a second. After that, each egg is weighed before being graded into eight varieties of sizes, from SSS to LLL, and placed into packs according to size. Finally, the product label is inserted into the pack, which is then sealed, thereby completing the fully automated grading and packing process.

Reflecting on the hurdles involved in the development process, NABEL Managing Director Tatsuo Nanbu says: "The toughest aspect of creating the system was developing the component called a 'finger,' which grasps the eggs. It was a real headache to get it to the stage where we could drop the eggs straight down without imparting too much shock."

Currently, NABEL's fully automated egg grading and packing systems are exported to 27 countries around the world, including through original equipment manufacturing supply arrangements.

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