

PACKAGING

ROBOTICS

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In the U.S. and Canada, **Propack** pushes automation in the snack-food sector.

Page 8 >

Robotics expert Geoff Pegman sees a strong future for food assembly.

Page 6 >

Technology: User-friendly software update for PickMaster gives more options.

Page 16 >

PFM's **Daniel Gravini**

chooses robots **for flexibility** and accuracy.

Page 4 >

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by Claudia Flisi
photos Maurizio Camagna

Robot-wrapped birthday package

PFM in Italy puts the lid on flexible film packaging problems.

> Baby wipes for a 40th birthday? They are appropriate if the “baby” in question is PFM, a family-owned Italian company specializing in flexible film packaging, celebrating its 40th anniversary in 2004. The packages for baby wipes produced by PFM are unique in that their plastic lids are applied not by human hands but by vision-equipped robots – the FlexPicker – supplied by ABB.

Baby wipes weren't the company's original focus, however. PFM (the initials stand for Pietro Fioravanti Macchine; “macchine” means machines) has been making packaging systems since 1964 from its home in Torrelvicino (Vicenza), Italy, at a time when robots on an Italian production line were the stuff of dreams.

Italianapack, the company that was to become PFM, was created by Pietro Fioravanti for the production of horizontal flow-wrap packaging machines. That means PFM does not build machinery for paper packaging, but rather for flexible film packaging.

“We are the second oldest company in Italy in our sector and the only one with ISO 9001/2000 certification,” points out Paolo Fioravanti, son of

PFM founder Pietro Fioravanti and current managing director. “Our competitors are primarily in Italy and Germany. Together these two countries produce 80 percent of the world's packaging machines. To stay ahead of the game, we are always seeking new technology, proposing new efficiencies, faster equipment and a faster pace of change to our clients.”

This is where the baby wipe project comes in. About 10 years ago, producers of “Pillow-Pack” type packages for moist baby wipes began asking PFM to put lids on these packages, so the wipes would be easier to extract and be protected so they wouldn't dry out once the package was opened. “We said ‘Impossible. It can't be done,’” admits Paolo Fioravanti.

Then he saw ABB's FlexPicker at a trade show in 1998. The Vision system of the FlexPicker seemed to offer a way to apply glue to the lids without creating more problems than it solved. PFM started talking with ABB. Eventually several technicians from ABB came down from Sweden to offer support in Vicenza. By 2000, a prototype machine was ready.

While the first year saw many kinks that needed

FlexPicker key to solution

The FlexPicker system is composed of two feeding belts and a glue application gun. The robot's job is to pick the lid up from a cleated chain conveyor using a vacuum cup system, apply a continuous flow of glue, and place the lid on the target package with a precision of three mm. With the PickMaster system any shape lid can be used with a minimum usage

of glue and a very fast changeover time (five to 10 minutes), according to Daniel Gravini, customer support engineer for PFM.

Gravini notes that the system is extremely user friendly and allows clients to set up and run new products without any problems or special knowledge.

Davide Rossi, robotics technician for ABB Process Solutions & Services (a branch of the Automation Technologies division of the ABB Group), adds that the modular system and the suction grip adapt to various lids and packs, in contrast to traditional systems, and are safer for the operator and more hygienic for the final consumer.



to be ironed out, in 2001 ABB introduced a new generation of software for Vision – ABB's PickMaster, designed specifically for use with handling consumer goods like jar lids – which solved the problems, says Daniel Gravini, customer support engineer for PFM.

That year PFM gave a prototype to an Italian client, and immediately sold three more to that same client. They have since sold 16 machines to customers in Korea, the U.S., Germany, and the Netherlands as well as Italy.

The complete line costs 350,000 euro and produces 70 packs a minute. Formerly these packs had to go through two additional processes for sorting and orienting and produced 50 packs a minute. Moreover, the equipment traditionally used was inflexible.

“We have seen that once it has been made for a lid shape it is very hard to change,” observes Gravini. This inflexibility could be a big problem in a country like Korea, for example, where 40 different-shaped lids are available, from teardrop to square to round. Applying glue could also be a real challenge because of the problem of leakage in a product where hygiene is essential. But the FlexPicker and PickMaster provide the flexibility and accuracy that help eliminate these difficulties. And price is not a major consideration; payback comes in less than 18 months anyway. “Ease of use and positive results are what count for our clients,” says Fioravanti.

PFM has a varied and interesting history. Between 1964 and 1974, flow-wrap machines, overhauls of used machines, and machine tooling work were the company's core business. In 1974, the company launched production of forced air rotary ovens for bakery goods. This business area would co-exist with packaging for about a decade. In 1984 a new law regarding mozzarella packaging set the stage for an explosion in this specialized segment of the packaging business, and PFM became its leader, a position it continues to maintain.

Production range is made up of around 40 models divided into flow wrap and fill, form seal packaging machines, various automatic feed systems, an infinite range of accessories for specific operations and for customization of machines and lines, as well as a complete series of linear and multi-headed weighing machines.

Products handled are cheese, fresh salads, bakery

goods and confectionery, meats, detergents, cosmetics... and wipes for personal hygiene, naturally. “We sell in all sectors but are leaders in food, especially dairy,” reports Paolo Fioravanti. “We are divided among dairy, produce, meats, and confectionery. Seventy percent of our machines are for food, 30 percent for non-food.”

Today the company has seven plants, three in Northern Italy, and one each in the U.K., Germany, the United States, and Canada. Sales have been increasing 10 percent annually in recent years.

Total sales in 2004 are about 50 million euro, half from the main plant in Vicenza and half from the others. Half of the company's 300 employees are based at headquarters, and half of the total output of 1,000 machines is assembled there..

PFM cells work with everything from baby wipes to cookies.

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Paolo Fioravanti, PFM

Plenty of benefits

The advantages for PFM's popular solution for handling the lids of baby wipe packages include:

- Lower cost
- Simplicity for the operator
- Takes less space than traditional gluing solutions because the ABB FlexPicker robot is placed over the work area and not next to it
- More hygienic because there is less handling.
- Reliability.
- “If the client wants, we test every machine with the specified film and product right here before it is shipped out,” says PFM customer support engineer Daniel Gravini. “Modifications done here are practically free.”