The Migros subsidiary Mibelle AG Cosmetics fills numerous different private label products on behalf of its customers. The Swiss company decided to install a filling line with pucks from Rationator in order to be able to respond as flexibly as possible to shape and size requirements.

The line for filling roll-on deodorant containers is designed to run at a speed of up to 120 cycles per minute.

Flexible puck lines

Rationator carries out packaging assignment at Mibelle in Switzerland

Urs Morgenegg

"I noticed the colourful pucks first before I saw the machine", is how Urs Morgenegg, packaging machine project manager at Mibelle AG Cosmetics in Switzerland, describes his visit to Fachpack packaging exhibition in Nuremberg, Germany, in 2003. These colourful pucks, which at first glance resemble little ships, are Rationator's trademark. The machine manufacturer from Hillesheim near Mainz in Germany works on the basis of a concept with which filling companies can respond flexibly to frequent changes in pack size and shape: every container is transported individually in the pucks. "Therefore the producer does not have to spend his time thinking about bottle transport", says the company's managing director Peter Schindel.

There is a choice of 80 standard pucks made from injection moulded PE. Schindel: "With our pucks already more than 500 bottle formats in the 20 ml to 2.5 l range are treated. For, the plastic 'ships' are oval on the outside and are configured in such a way on the inside that they do not specially adapt to a particular outline. However, they provide sufficient support all the same, so that bottles can be filled, even if they are not suitable for accumulation systems or are asymmetrical and have a tendency to wobble.

Peter Schindel

Minimisation of changeover times

"The main reason why more and more filling companies are opting for our Ratilight puck system is because changeover times and change part costs can be reduced considerably as a result.", says P. Schindel. In the final analysis, this is what also convinced the Swiss customer. In view of the roughly 1,500 different products that are filled in tubes, pots and bottles at Mibelle AG, filling line flexibility was a high priority on Urs Morgenegg's wish list.

It all started at Mibelle in Bolimatstrasse (Buchs, Canton Aarau) in 1961 with the production of soap. Framed soap moulds in the stairway of the technical building are a reminder of this. The company now develops, produces, sells and markets the following lines in the cosmetic field: body, dental, sun, baby, hair and facial care products. Morgenegg: "On the retail shelf our products have to stand their ground in comparison to famous brands". About eight per cent of sales, which most recently totalled roughly EUR 130 million, are therefore invested in research and development. Morgenegg: "Our customers expect us to come up with innovations. This is what also distinguishes us from other manufacturers of store brands.

Start-up in only three months

15 lines are available in Buchs: two pot, four tube and - with the two new ones from Rationator - and nine bottle lines. The decision in favour of the first line from Hillesheim was taken at short notice, after the safety officer had criticised an older existing line. "We did of course have to take a deep breath when we heard that the first

Since every container is guided individually, the Ratilight puck system is particularly suitable for the filling and closing of asymmetrical bottles.

line was supposed to come into operation within only three months", Schindel remembers. This short lead time is unusual for the supplier as well. But everyone pulled together to meet the deadline. "Precisely, to the very day", as Morgenegg adds.

During VR's visit to Buchs, a roll-on deodorant was being filled on the line that was first installed, while a suncream product was being processed on the second line, which was put into operation three months later. The roll-on bottles are first of all put into the pucks manually and then reach the eight-station servo-controlled Robomat linear filling machine. Schindel: "The piston filler has the advantage that a product which foams, for example, can initially be filled very slowly, in order to then be accelerated by filling below the liquid's surface. It processes the entire range of liquid products smoothly, whether their viscosity is high or low. The piston filler is provided with an autoCIP function and also supports cleaning actively. On a large touch panel of the Windows-based control system, the completely automatic cleaning process is conveniently presented graphically. Hygiene and cleaning are an important issue for U. Morgenegg too: "For tolerance reasons, we are dispensing with strong preservatives in more and more products and are drastically reducing the concentrations used." He adds that this makes it even more important for the filling operation to meet increasingly demanding standards. What is known as a cleaning box is installed in the machine as a permanent feature. At the press of a button, the filler moves to the cleaning position; the filling pipes do not have to be taken off separately. "As far as the quality requirements are concerned, we are getting closer and closer to the pharmaceutical industry. Our plans are therefore to control the cleaning process centrally from an external CIP system rather than on the line itself." This is made possible by an industrial PC with a soft PLC in accordance with IEC 61131, which also takes over all the other control assignments on the Robomat. Remote maintenance of the lines via a modem is feasible as well.

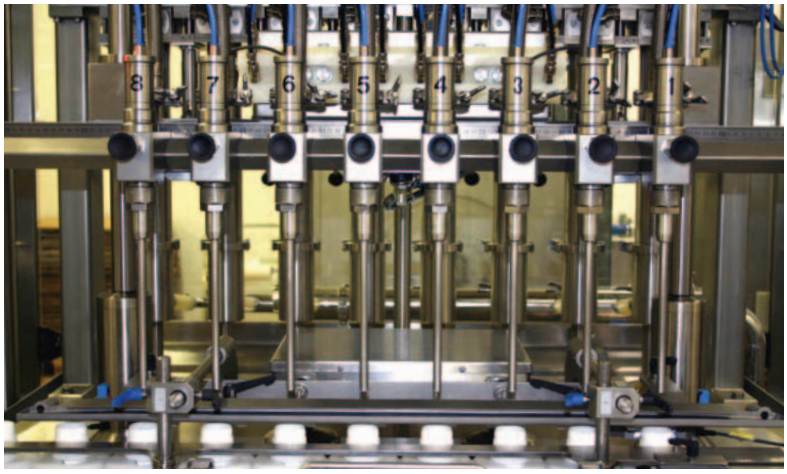
The filler and the two Robocap closing modules are connected by an uninterrupted conveyor belt: first of all, the roll-on balls are applied; the second Robocap adds the oval closures.

A special feature: 2-phase products can also be filled on the eight-station line. Schindel: "The product container has two chambers. Initially, the first phase is filled in the bottles. Then only four bottles move on instead of eight. The second phase is filled after this. In the meantime, product '1' is pumped back into the product container." Schindel does, however, admit that only half of the maximum output of about 120 bottles/min. can be reached as a result.

With CNC closing technology

The roll-on line features two rotary Robocap closing units; the balls are pressed onto the bottles on the first one, while the second one screws on the white caps. "Every closure spindle is guided by a separate servo drive, in order to be able to respond flexibly to all requirements", says Schindel. Closing parameters, torque, angle position, number of revolutions and speed are chosen in advance via a control panel. Schindel: "The position of moulded closures with optical and/or optomechanical alignment features, such as hand recesses or an asymmetrical external outline, is checked, and all the containers are then closed in the required position." With the Robocap DP, metering pumps can, however, also be fitted, aligned, screwed reliably to an exact torque level and then aligned again automatically, as is the case on the suncream line.

The Swiss company is so satisfied with the two flexible lines that it has in the meantime ordered a third one. Morgenegg: "We have to be in a position to respond to trends extremely quickly at all times. Our experience has been that Rationator is more flexible than others. We appreciate that!" mo ■



The maximum output of the eight-station 'Robomat' filling machine is about 120 bottles/min.

Photos: mo