

High-performance plastics for fast machines

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When designing filling machines and dosage systems for food and beverages, demanding production parameters such as high filling speeds must be met, and the materials selected must comply with stringent food safety norms. F.B.L. FOOD MACHINERY SRL, a specialist in the development and manufacture of filling machines for foods, therefore uses the high-performance plastics ERTALON®, ERTALYTE® and TECHTRON® from the Angst+Pfister assortment.

With a staff of around 20 employees, F.B.L. FOOD MACHINERY SRL in Sala Baganza, Italy, develops and manufactures special machines that fill foods into a wide variety of glass and metal containers. The company is successfully keeping pace with the ever-increasing demands of its local and international customers. Enhancing productivity by continually increasing filling speeds is always the highest priority.

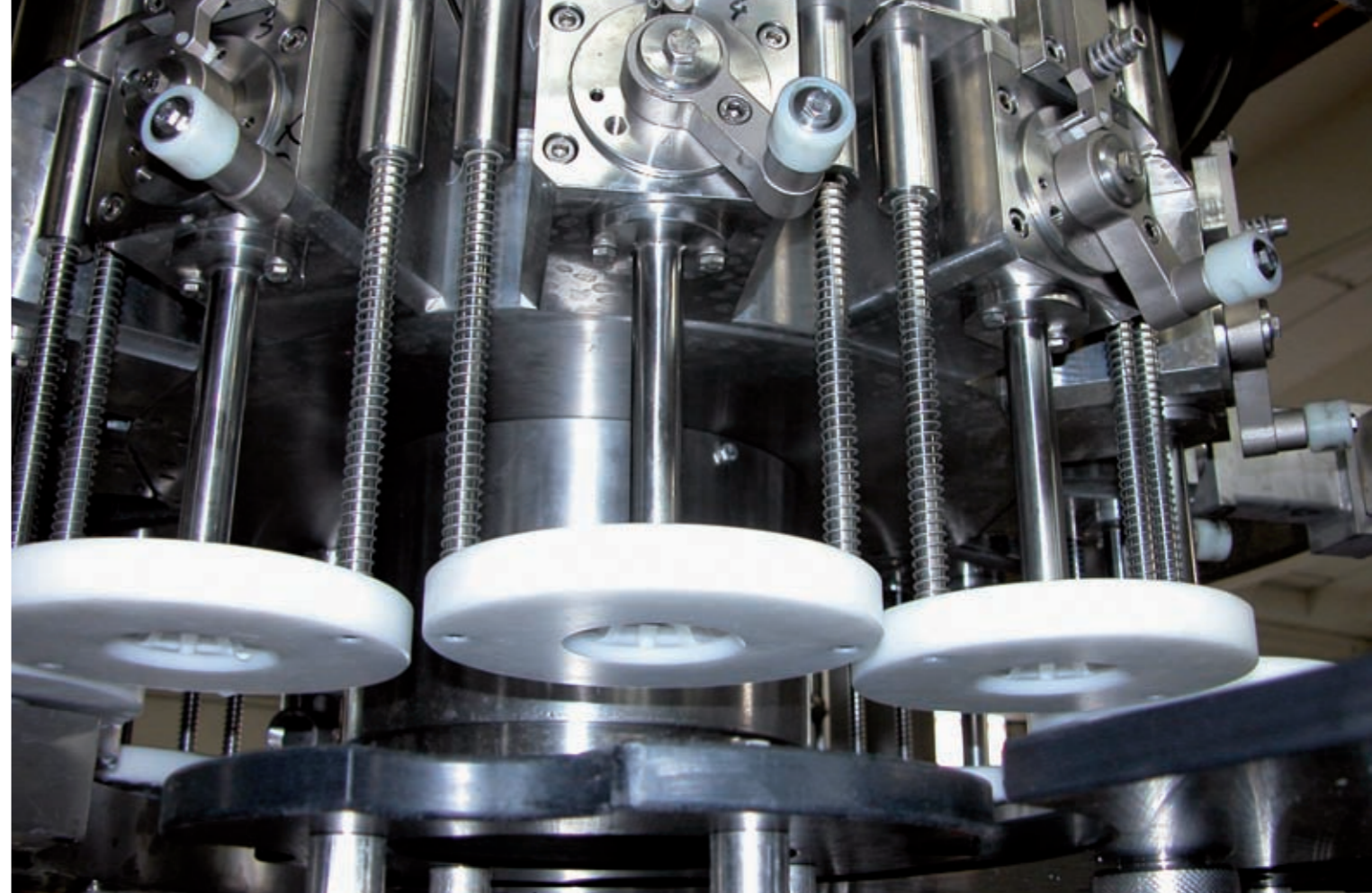
Highly stressed components

Delivering the desired productivity gains poses challenging tasks for the design engineers. For example, at higher cadence rates, the components of the dosage assembly in the upper section of the machines are subjected to particularly high stress. Rollers and moving parts are especially affected. The product is fed through the top of the machine into the dosage assembly, which then presses it automatically into the containers with



Friction wheel of the dosage assembly

the aid of the friction wheel acting upon a cam from the outside. This process is performed in sync with the movement of the bottles or cans to be filled in the production circuit. Since the high operating speeds subjected the moveable components made of recycled plastic in the dosage assembly to enormous wear and tear, the engineers at F.B.L. FOOD MACHINERY sought out a new solution, which was found in close cooperation with the plastics technology specialists at Angst+Pfister.



Complete view of dosage assembly

Ingenuous material selection

Critical components of the dosage assembly are now manufactured using high-grade technical plastics or high-performance plastics from the Angst+Pfister catalog. For instance, the calender roller of the piston is made of ERTALON® 66 GF30 to significantly reduce wear and at the same time to increase roll friction. ERTALYTE® TX was selected as the material for the piston slideway of the spacer. This selection resulted in a vast improvement of the sliding action, with a lowered coefficient of friction as well as increased wear resistance.

For the material to be used for the sliding block spacer on machines that for hygienic reasons – especially in the upper sections where the dosage device is located – need to be cleaned with aggressive chemicals, the specialists at Angst+Pfister recommended the tribological high-performance plastic TECHTRON® HPV PPS. TECHTRON® HPV PPS is a hydrolysisresistant material with excellent chemical resistance suitable for sliding applications requiring a low coefficient of friction.

The positive experiences so far confirm the correctness of the material selection. The excellent characteristics of the employed plastics listed below are utilized to their full potential in this application.

Predestined for tribological applications

ERTALON® 66 GF30
(calender roller of the piston)

- high mechanical sturdiness
- high wear resistance
- high stability of shape
- optimal kinetic friction on the roll surfaces

ERTALYTE® TX
(piston slideway spacer)

- very low kinetic coefficient of friction
- low stick-slip tendencies
- high wear resistance
- good stability of shape

TECHTRON® HPV PPS
(sliding block spacer)

- excellent friction and wear behavior
- very good resistance to chemicals
- excellent hydrolysis resistance
- exceptional stability of shape
- high temperature resistance

Make use of our experience when it comes to finding solutions for applications in plastics technology. Order our specialized Technical Plastics catalog, or consult with one of our specialists.

