FOCUS ON:
SINCRO BLOC FOR EDIBLE OIL

SYNCHRONIZED BLOWING AND FILLING OF EDIBLE OIL BOTTLES

Synchronization is everywhere. At the movies, we watch the Mission Impossible team synchronize watches to make sure their incomprehensible plot goes to plan.
On the sports channels, we marvel at the beauty of synchronized swimming and we cheer when the relay runners exchange batons at full speed, millimeters inside the box.
We synchronize our electronic devices to make sure we always have access to critical documents (or maybe the latest song by Adele).
For the industrial world, SIPA has the Sincro Bloc system for blowing, filling and capping bottles.
It could be filling the bottles with just about any sort of liquid, but today we focus on systems for edible oil.

SPACE AND COSTS CONTAINED

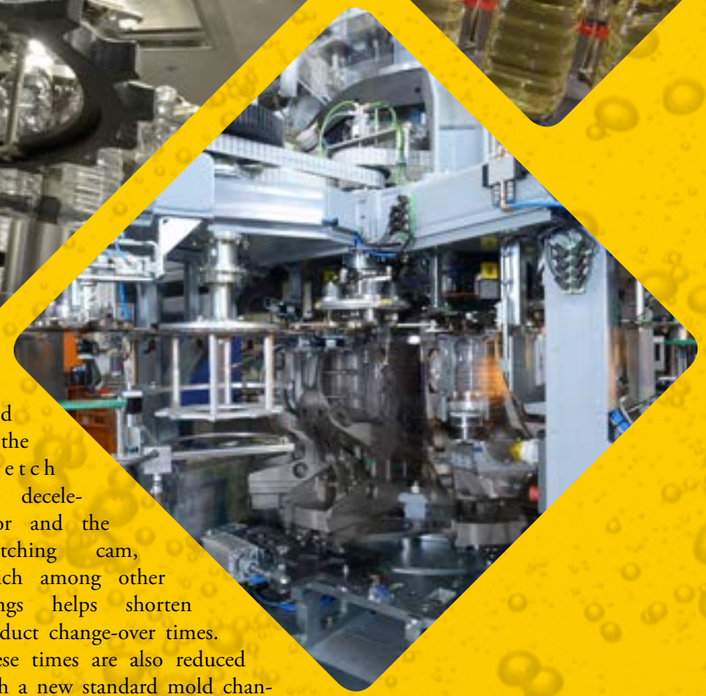
Sincro-Bloc is a highly compact, fully integrated system that can produce and handle up to 30,000 bottles per hour. By bringing together, in perfect harmony, the best technologies available today on the market in blowing, filling and capping, it ensures the highest performance in the smallest space possible. The SFR rotary blower and the Flextronic W weight filler are synchronized electronically, with a bottle transfer unit linking them together.
Not only is space reduced, but so are the costs. The entire system can be controlled by one operator; energy consumption is cut by eliminating any air conveyors; there is no need for any rinsers, so water consumption is minimized too. Costs involved in product changeovers and in maintenance are also kept down.

MAXIMUM EFFICIENCY

The low costs are complemented by high operating flexibility, hygiene, and overall efficiency. The Sincro-Bloc can for example handle a wide range of body, neck and cap shapes and sizes, and various tools installed in the equipment reduce any change-over time.
Efficiency obviously comes through the electronic coupling of the blowing and filling operations, with no bottlenecks in between. A special cap feeding unit eliminates obstacles in the chute. Overall efficiency can be as high as 98%.

EVOLUTION IN BOTTLE BLOWING

SIPA continues to improve the Sincro-Bloc system. It can, for example, now be fitted with the SFR Evo3 rotary stretch-blow molding unit, which is faster than its predecessor but still manages to use up to 25% less air, and less energy too. Improved oven efficiency, special reflectors and lamps, and more stable process conditions all add up to an energy consumption reduction in this area of up to 40%.



Thanks to new designs in the clamp unit and in the cams that have reduced moments of inertia, the SFR EVO3 has a maximum output rate of 2250 bottles per hour per cavity, which makes it highly competitive.
The SFR EVO3 can be equipped with electrical drives for the stretching rods. This brings much more versatility in fine tuning the process compared to pneumatic drives. Stretch rod timing, speed, acceleration and distance can all be controlled with ease. Electric drives are perfect for the Sincro Bloc, since it is so much easier to match the blowing operation to different filler speeds.
Electric drives mean there is no need for the stretch rod decelerator and the stretching cam, which among other things helps shorten product change-over times. These times are also reduced with a new standard mold changeover system on the SFR EVO3 that is quick and easy to use.

With the standard mold change-over system, each cavity can be changed in 100 seconds, which is already fast. But with optional tool-free systems for extra-quick changes in the shells and the bottom mold, that time can be cut to just 35 seconds.

HIGH LEVEL OF HYGIENE

SIPA pays special attention to how preforms are treated in the Sincro-Bloc, to ensure maximum levels of hygiene. The hopper and descent chute into the blow molding section are completely covered and equipped with an over-pressure module, for example. Dust inside the preforms is virtually eliminated by a combination of ionized air and suction. UV lamps or pulsed light keep the neck areas clean, and the oven aspiration system is equipped with special filters.
In the transfer module between the blowing and filling units, cleanliness is further maintained by having the module completely closed to the outside world, and also over-pressurized with sterile air. The bottles are transferred using grippers on the neck ring, to minimize any equipment modifications when bottle shape or size is changed. If the neck finish stays

the same, no hardware modification is needed at all.
Although the Sincro-Bloc is fully enclosed, it is far from being a “black box.” Transparent glass guards provide full visibility, and access to the line, when required, is optimized.

FLEXTRONIC W WEIGHT FILLER

The Flextronic W weight filler, which SIPA introduced in 2014, has outstanding accuracy and precision that make it a perfect fit in Sincro-Bloc lines for edible oils. It is also very clean, benefitting from SIPA’s extensive experience in development and production of systems for a wide range beverage products, including sensitive ones. Components throughout are in stainless steel, helping make cleanliness easy to maintain.
Weight filling technology is considered the most reliable, clean and efficient system for filling bottles with edible oil. Overfills are avoided: by measuring the weight directly in the container (net weight), the Flextronic W it takes into account the changes in the tare as well as the temperature or nature of the oil, and adapts to intrinsic changes of the product during the production cycle.

TO CAP IT ALL

Flexibility extends through to capping machines that can be used in the Sincro-Bloc. The Sincro solution requires the use of a cap feeding system that can guarantee the highest efficiency as well as the complete emptying of the units in unlikely case of a cap jam without wasting any single cap, preform or bottle. Every solution that SIPA supplies responds to this requirement. Twin and Single Hopper systems enable feeding to continue even when there is a blockage, for example. In the Cap Stream gravitational feeding and buffer system, caps arrive already oriented at the top of the feeder and descend under gravity to the caps chutes, without the need for compressed air.

THE BEST BOTTLE DESIGN FOR THE LINE

A further improvement in production efficiency can be achieved by having SIPA help in the design of high performance and attractive bottles that perform the best on the Sincro-Bloc system. SIPA can bring its know-how to bear on development of bottles with improved ergonomics – particularly important with edible oil bottles. SIPA has extensive experience in the creation of designs with integrated and embossed grips, and also of designs with separate handles. Bottles can be as small as one liter, or as large as 30. But whatever the size, they will look great on the shelf.