

ECOBLOC® ERGON KL HC: *Big bottles, big savings*

SMI presents its ECOBLOC® ERGON KL HC integrated systems, the ideal solution to bottle liquid food and beverages at the maximum output of 7,200 bottles/h in high-capacity containers, which are 100% recyclable and environmentally sustainable

Producing and filling PET high-capacity containers up to 10 L with a single machine is more and more often the optimal solution for mineral water and edible oil manufacturers. With the ECOBLOC® ERGON KL HC integrated system supplied by SMI, the whole wet section of the bottling line is grouped into a single system that performs the stretch-blow moulding, filling and capping functions. This compact and flexible solution offers several advantages in terms of production cost reduction, as the system does not require a rinser. Furthermore, the ECOBLOC® ERGON system does not have conveyor belts between the blow moulder and the filler and the related accumulation, thus ensuring a controlled and flexible production process; this results in greater efficiency for the

management of the whole wet section of the bottling line by a single operator on an extremely compact surface, improving at the same time the production sustainability thanks to the reduced energy consumption. The combi solution supplied by SMI also offers advantages in terms of structure compactness compared to the other integrated systems available on the market, since the machine preform heating and stretch-blow moulding sections are integrated into a single module. The space-saving design of the ECOBLOC® ERGON range:

- Easily adapts to small-sized bottling lines
- Enables to reduce the transport cost, as a container is enough to handle it
- Cuts the installation and start-up costs, as these operations can be easily and quickly carried out in a few working days.



Green solutions for the primary packaging of high-capacity containers

In the beverage and food industry, the container design plays a key role for enhancing the brand and reducing the carbon footprint of the companies, that increasingly use packaging containers and materials with a low environmental footprint in the production, use and disposal phases.

ECOBLOC® ERGON KL HC integrated systems are the ideal solution to produce and bottle liquid food and beverages at the maximum output of 7,200 bottles/hour (according to the features of the container) in high-capacity containers, that are 100% recyclable, environmentally sustainable, light, unbreakable, safe, with a high hygiene level and suitable for the conservation of the qualities of the product contained inside them.

Main advantages of ECOBLOC® ERGON KL HC systems:

- The preform heating tunnel is equipped with a system of thermo-reflective panels made of highly energy-efficient composite material, placed in the front and the rear of IR ray lamps aimed at heating the preforms. This system ensures a high reflection of the heat generated by the lamps and therefore ensures a more uniform

distribution of the heat over the surface of the preforms. An aluminium diffuser is also integrated into the tunnel to ensure the optimal control of the temperatures and avoid overheating problems.

- The stretch-blow moulding section is equipped with an AirMaster double stage air recovery system, that allows to add, besides the standard air recovery system, a second circuit to recover and recycle part of the air coming from the high-pressure blowing process. This ensures a considerable saving on the compressor energy consumption.

- The blow moulding unit is equipped with motorized stretch rods, controlled by an electronic drive and without the use of mechanical cams, for a more precise management of the path of the stretch rod, its accurate position and a considerable energy saving compared to traditional solutions. This system allows to modify the stretch speed without mechanical interventions (cam replacement).

- The mould mechanical unit is equipped with its own motorization, that performs with the utmost precision the up/down motion of the mould bottom and the opening and closing operations of the mould-holder unit.

- The machine adopts high-performance low dead volumes valves that enable to reduce energy consumption and compressed air. The optimization of the blowing cycles also allows high operational performances.

- The isolation system between the dry section of the blower and the wet section of the filler ensures the perfect separation between the two modules.

- The introduction of the bottled product and the return of the washing product take place in the lower part of the machine by means of a ceramic collector equipped with two gaskets (a sealing and a





safety) with inspection light. This leads to the separation between wet collectors (product and CIP return) and dry collectors (electric and pneumatic), besides a high durability.

- The filling and capping modules have a modular frame, without welding and equipped with highly resistant, long-lasting access doors made of tempered glass.
- Filling module equipped with electronic meters to ensure a high filling precision.
- The machine areas in contact with the product to be bottled are made of stainless steel and glass, for a high hygiene level.
- The optimization of the placement of the carousels inside the frame has enabled to obtain reduced dead angles, with advantages in terms of plant productivity.
- Fast format changeover of the bottle guide equipment.
- The filling module is equipped with automatic insertion dummy bottles to ensure a fast format changeover and reduce the operator's intervention.
- Reduced maintenance and management costs of the plant.

Environmentally sustainable containers for big productions

In terms of **size**, high-capacity containers, such as **5, 8 and 10 L** containers, arouse growing interest, especially in the companies that pay attention to green and efficient solutions. By using high-capacity bottles, in fact, fewer containers are required to reach a certain product volume and therefore, **logistic, handling and disposal costs are reduced. SMI has decades of experience in the manufacturing of machines for the production of high-capacity containers**, as well as in the **design of bottles** that meet customers' functional and aesthetic requirements. Thanks to an advanced CAD centre for

the 3D design, SMI has been investing in innovative solutions for producing rPET bottles of different sizes and shapes, that are 100% recyclable, resistant, light and energetically virtuous.

Neck-in-bottle solutions

SMI has been developing innovative containers, such as stackable "neck-in-bottles", that, thanks to a particular design of the hollow of the bottom, enable to:

- **Optimize the space on the pallet**
- **Reduce the packaging costs** (cardboard interlayer pads are not required)
- **Lower transport and storage costs**, thanks to the higher number of bottles on each pallet
- **Reduce the waste**: the necks of the bottles are subject to fewer breakages during the palletizing phase
- **Improve the aesthetic aspect of the pallet**, that results more compact and can be graphically customized.

Solutions for tethered caps

Tethered caps, that remain attached to the bottle after they have been opened, will become an object of everyday life for European consumers starting from 2024, when EU 2019/904 directive will enter into force. This new provision of the European Union establishes the minimum percentage of recycled material, that has to be present in the plastic bottle used for the beverage bottling and requires the use of tethered caps in order to be recycled together with the bottle, so that they do not get lost in the environment.

Aware of the challenges that this new law poses to food and beverage manufacturers, SMI has developed a series of innovative solutions for realizing rPET containers in compliance with 2019/904 directive, supporting customers in the choice of the type of bottle and tethered cap that best meets their specific needs.



IMAGINE THE PACKAGING OF THE FUTURE WITH US

Imagine recyclable and recycled packaging, capable of reducing the carbon footprint!



IMPROVING YOUR PRODUCTION EFFICIENCY IS EASY WITH SMI.

OUR BOTTLING AND PACKAGING SYSTEMS BENEFIT FROM INDUSTRY 4.0 AND IOT TECHNOLOGIES, CAN PROCESS RECYCLABLE MATERIALS SUCH AS RPET AND ALLOWS FOR CONSIDERABLE ENERGY SAVINGS. FIND OUT OUR SOLUTIONS FOR PACKING A WIDE RANGE OF CONTAINERS UP TO 36,800 BOTTLES/HOUR.

