

AXOSMART®, ROBOSMART®

MODULAR LAYER FORMING SYSTEMS FOR PALLETIZATION



*Performance
through
Understanding*

 **Sidel**

MODULAR LAYER FORMING SYSTEMS FOR PALLETIZATION

AxoSmart® and RoboSmart® are innovative solutions for moving and turning packs to form palletization layers. These highly flexible, entirely modular and automated systems can handle all types of secondary packaging.

AxoSmart® and RoboSmart® are an excellent alternative to traditional, "collision"-type layer forming systems. Because there are no collisions as the packs move forward, this system is described as "positive turning" in order to distinguish it from conventional systems requiring rollers to convey the packs and obstacles to turn them.



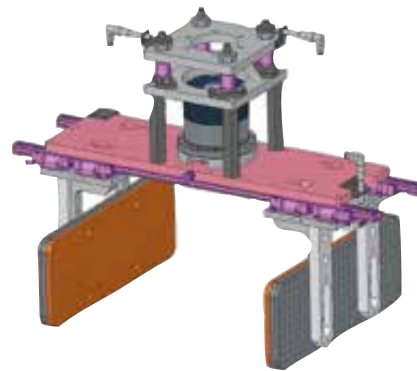
3-D view of the AxoSmart® gripper head

SYSTEM FEATURES

Sidel has designed AxoSmart® and RoboSmart® to meet the need for more eco-friendly packaging (lightweight bottles and less secondary packaging) that is also easier to handle (i.e. thanks to a growing variety of pack types, especially smaller packs).

The system consists of:

- A dosing conveyor that counts and separates crates
- A transfer table made up of a mat of flat chains (for channeling and conveying the packs at the right speed)
- One or more gripper heads, which transfer and turn the packs into the correct position
- A layer forming table for positioning the packs according to the chosen palletization pattern.



3-D view of the RoboSmart® gripper head

Thanks to their modular design, these systems can be perfectly adapted to various line speed requirements.

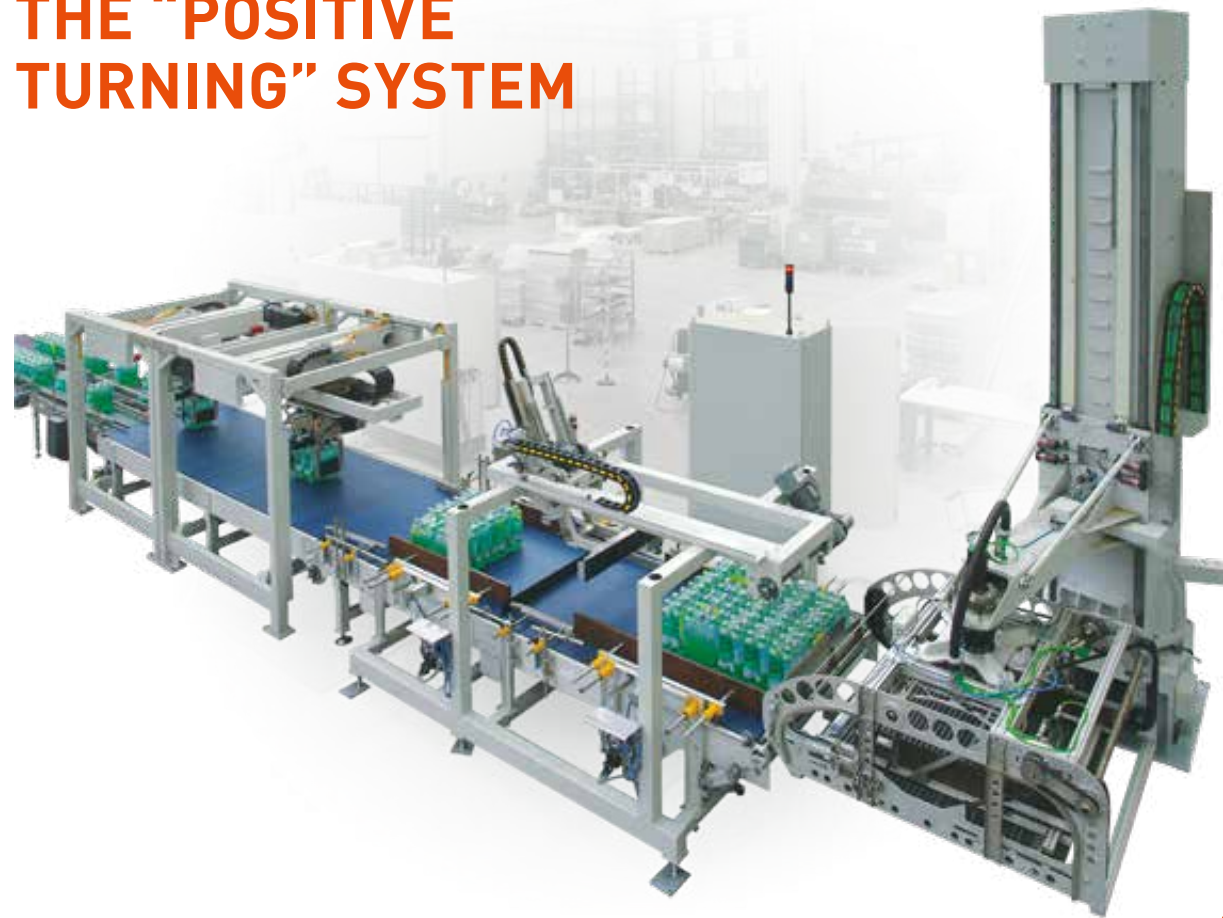


ADVANTAGES

- Ideal for handling more delicate packs/containers
- Optimal stability, even for smaller packs
- Very reliable and flexible: the machine can handle all kinds of secondary packaging (cartons, packs and crates) with extreme precision
- Modular system: the number of modules can be adapted to suit various line speeds
- High performance levels, further enhanced by the possibility of handling several types of packs in the same cycle
- Rapid format and palletization pattern changeovers managed completely by software (with no manual adjustments of mechanisms required). Ideal for frequent format changeovers
- Minimal need for maintenance, thanks to simple mechanical construction
- Low running costs because of integrated servomotors for pack movements
- Potentially unlimited number of palletization patterns can be created
- Easy-to-use operator interface with touch screen for programming and checking the status of system peripherals.



THE “POSITIVE TURNING” SYSTEM



A mat with flat chains guarantees pack stability at the infeed, since its surface is completely level.

Direct pack positioning by means of the gripper head is extremely precise: packs are positioned at exactly the right point established in the chosen pattern. The pack is fully controlled and guided during turning.

The gripper head is lowered onto the pack as it moves forward; at the same time, two flaps grip the sides of the pack and/or turn and pull it along the mat. The gripper head's longitudinal speed is exactly the same as that of the conveyor: as a result, the pack is never rocked.

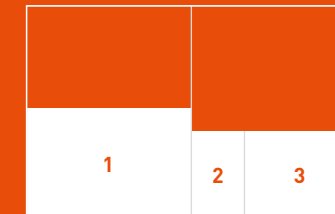
MAIN FEATURES OF THE GRIPPER HEAD

- Gripper heads are made of aluminum and flaps of carbon fiber, providing optimal lightness and robustness
- Guided by brushless motors, three axes move independently: the system is highly flexible, because in addition to moving the gripping flaps, it adjusts automatically to different formats by varying the distance between the flaps, thus adapting them to the product being handled.

MODULAR SYSTEM

Designed and built according to a modular concept, AxoSmart® and RoboSmart® are totally flexible. In fact, they can be combined with all Sidel palletizers: PalKombi, PalLinear and RoboKombi.

Depending on the required line speed, various transport modules and infeeds can be added.



- 1 - Overall view of the AxoSmart®
- 2 - Two-module RoboSmart®
- 3 - Layer gripping area combined with Robo-Kombi

	1 module	2 modules	3 modules	4 modules
Average speed (strokes/min.)	27	60	80	112
Max. speed (strokes/min.)	33	70	97	130



PALLETIZATION PATTERN CONFIGURATION SOFTWARE

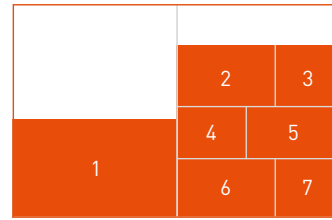
Sidel supplies innovative software for the automatic configuration of the palletization pattern. The software can be installed to be operated from the HMI touch screen on the palletization island (local mode) or on the supervisor server (remote mode).

MAIN ADVANTAGES

- Very flexible and high overall efficiency
- Very easy to use
- Palletization island managed completely independently
- Automatic link to ERP system (in remote mode).

Main software operations:

- Creation and management of a database with register, items and palletization patterns: programming new patterns is speeded up by referring to previously used patterns
- Creating or modifying new palletization patterns are always simple operations
- Automatic checks on the suitability and stability of pallets for the chosen patterns: checking prevents possible errors and optimizes efficiency.



1 - Place interface

2 - AxoSmart® with double infeed

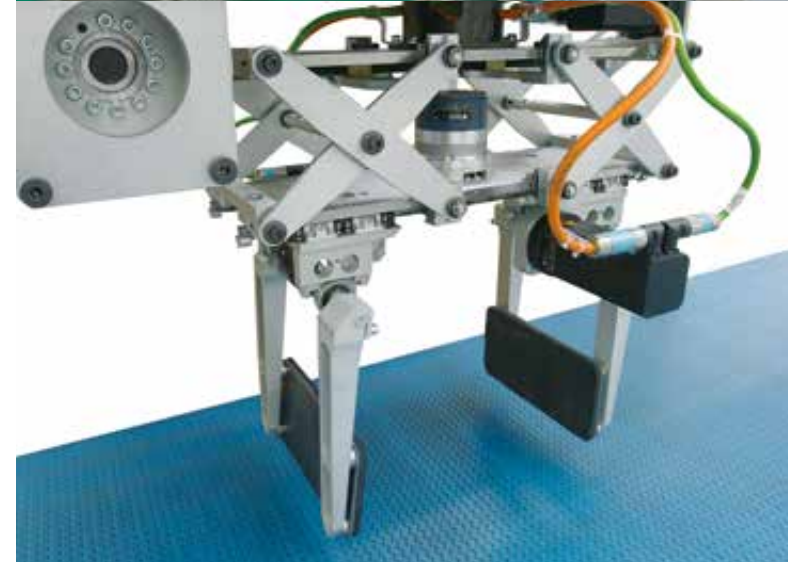
3 - RoboSmart® in operation

4/5/6/7 - Details of the AxoSmart® and RoboSmart® gripper head



OUR RANGE OF SERVICES FOR ROBOSMART® AND AXOSMART® PALLETIZERS INCLUDES:

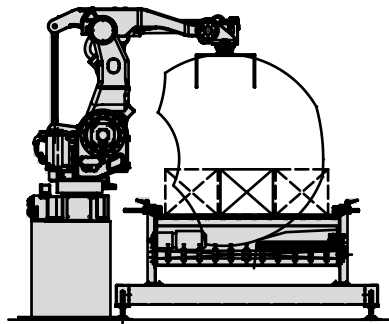
- Complete site installation service from supervision to turn key service, equipment start-up and final commissioning
- All the essential services needed to keep your equipment running perfectly:
 - a highly reliable spare parts supply
 - maintenance services and on site diagnostic
 - technical support for equipment troubleshooting and repairing
 - training on machine operation, assets maintenance, repairing, refurbishing and advanced diagnostic
- Continuous equipment improvement, engineering and installation support to introduction of new packaging formats



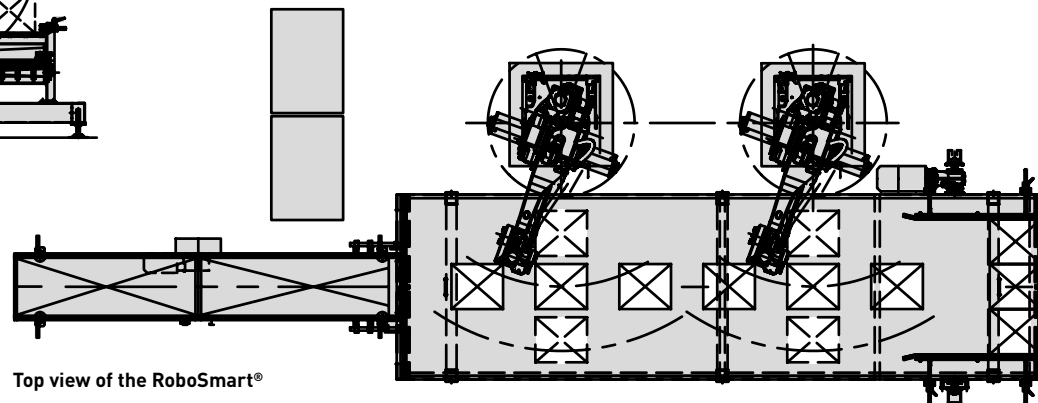
CONFIGURATION WITH ROBOT

ROBOSMART®

This solution is designed for moving packs with a Fanuc robot. In addition to the advantages mentioned on page 3, this solution provides further specific benefits.



Side view of the RoboSmart®

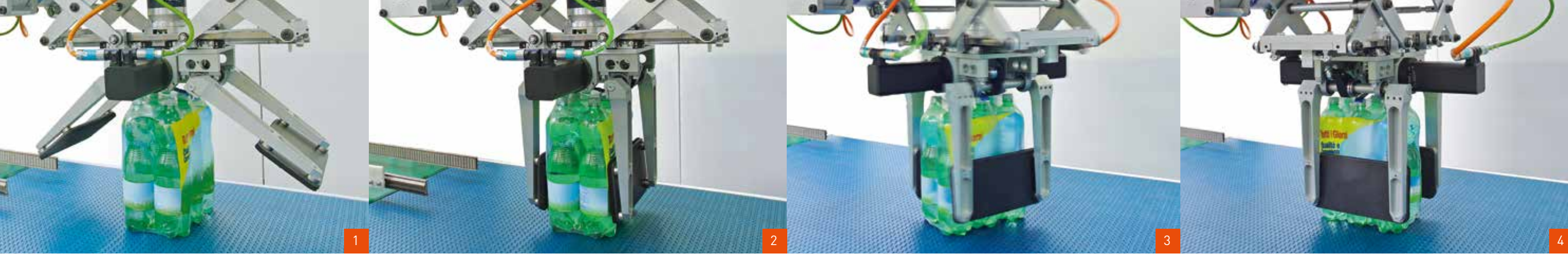


Top view of the RoboSmart®



BENEFITS

- Highly repeatable, precise movements
- Full access and extremely neat layout
- Straightforward machine and software management
- Customers can use the software on their own to manage new palletization patterns and to modify parameters in existing patterns
- Low costs and less machine downtime for maintenance operations.

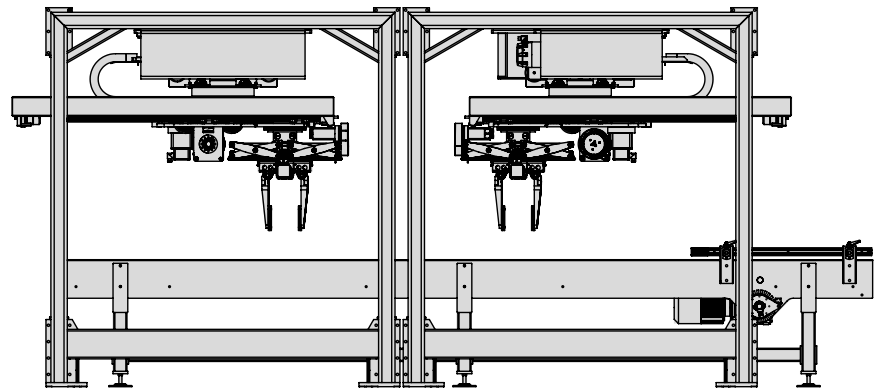


Sequence of movements

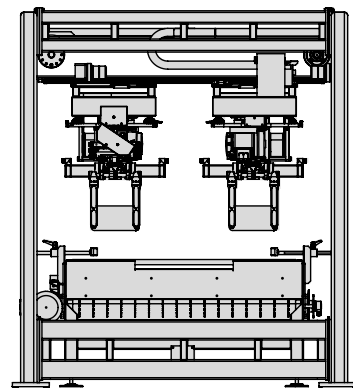
AXOSMART®

CONFIGURATION WITH GANTRY

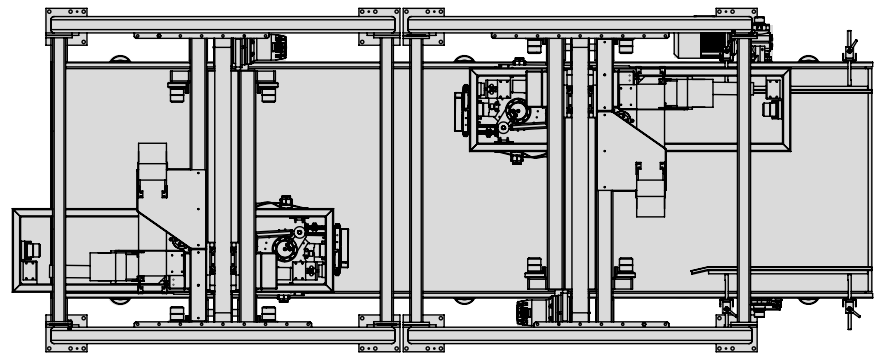
This solution is designed with the gantry structure above the pack infeed. By moving along three Cartesian axes inside the gantry, one or several gripper heads convey the packs according to the chosen sequence.



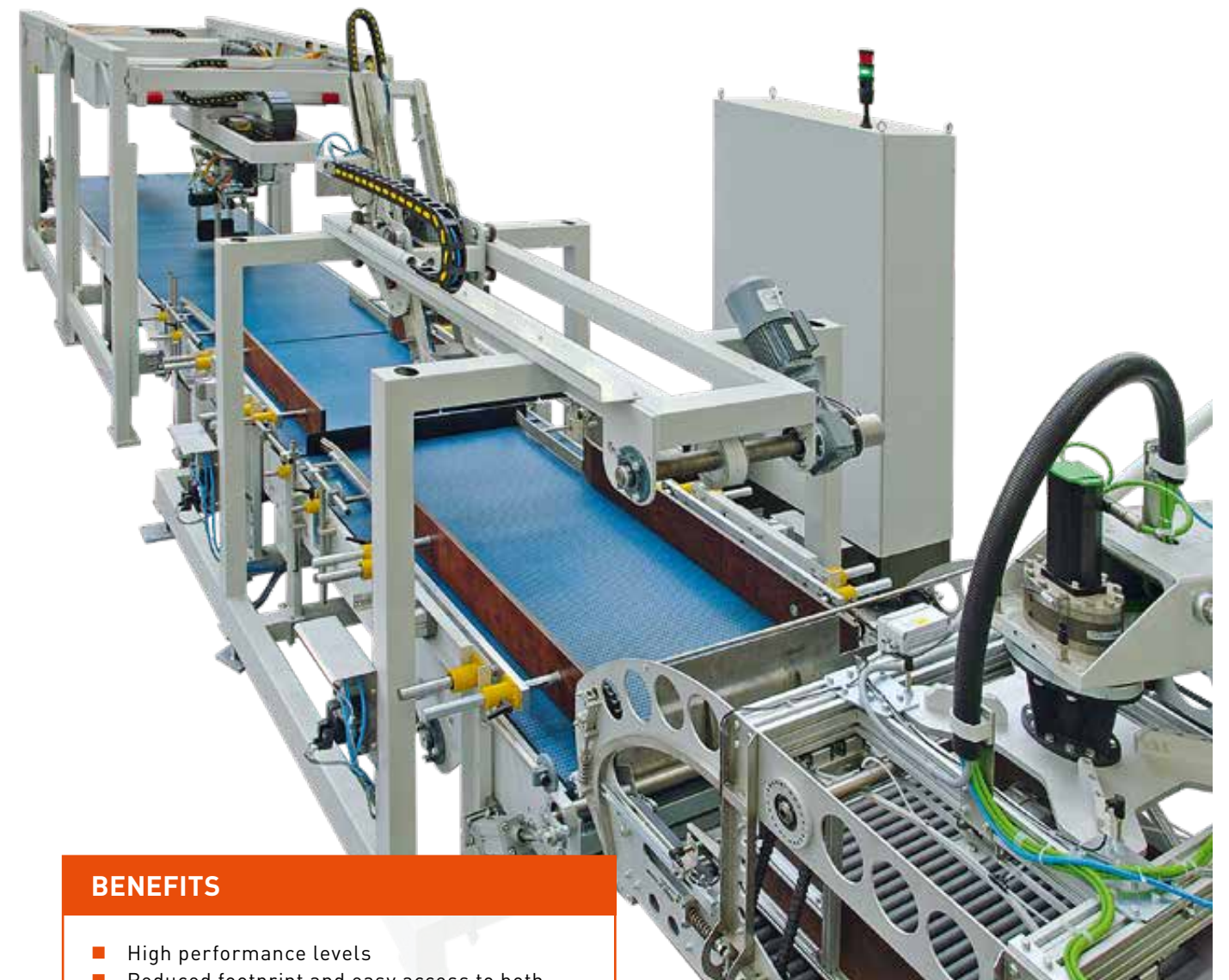
Front view of the AxoSmart®



Side view of the AxoSmart®



Top view of the AxoSmart®



BENEFITS

- High performance levels
- Reduced footprint and easy access to both sides of the conveyor
- Gripper heads of various sizes/weights can be used
- Customers can use the software on their own to manage new palletization patterns and to modify parameters in existing patterns.

Sidel is a leading provider of equipment and services solutions for packaging beverage, food, home and personal care products in PET, can, glass and other materials.

With over 40,000 machines installed in more than 190 countries, we have nearly 170 years of proven experience, with a strong focus on the factory of tomorrow with advanced systems, line engineering and innovation. Our 5,500+ employees worldwide are passionate about providing solutions that fulfil customer needs and boost the **performance** of their lines, products and businesses.

Delivering this level of performance requires that we stay flexible. We continuously ensure we **understand** our customers' changing challenges and commit to meeting their unique performance and sustainability goals. We do this through dialogue and by understanding the needs of their markets, production and value chains. In turn, we apply our solid technical knowledge and smart data analytics to ensure lifetime productivity reaches its full potential.

We call it **Performance through Understanding**.

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