

Conveying solutions  
at the heart of your productivity



THE SHORTEST PATH BETWEEN TWO POINTS IS A STRAIGHT LINE. HOWEVER, THIS IS NOT ALWAYS THE MOST RATIONAL OR THE BEST POSSIBILITY UNDER REAL INDUSTRIAL CONDITIONS.

# Industrial geometry

Your empty bottle leaves a machine, heads straight for 20 meters, takes a sharp 90° turn, is lifted up 3 meters, turns off at a switching point and passes through a wall, before plunging down into the line. Before it reaches the end of the line - filled, capped, labeled, controlled, overpacked and palletized - your product will have covered several times the real distance between all the machines. The few minutes necessary for the bottle to make this journey will have

been used, among other things, to separate bottle production or bottle supply from the bottling area, to save ground space, to isolate a few samples for checks, to prepare product flows for machine infeed, to offer the best ergonomics to the line operators... Above all, this time will have contributed to guarantee the output and thus the profitability of your production. For no machine works independently from the others, it is the main purpose of the regulation

## A complete range of conveying solutions

Air conveying  
of empty PET bottles  
p.8-9

Conveying engineering  
p.4-5

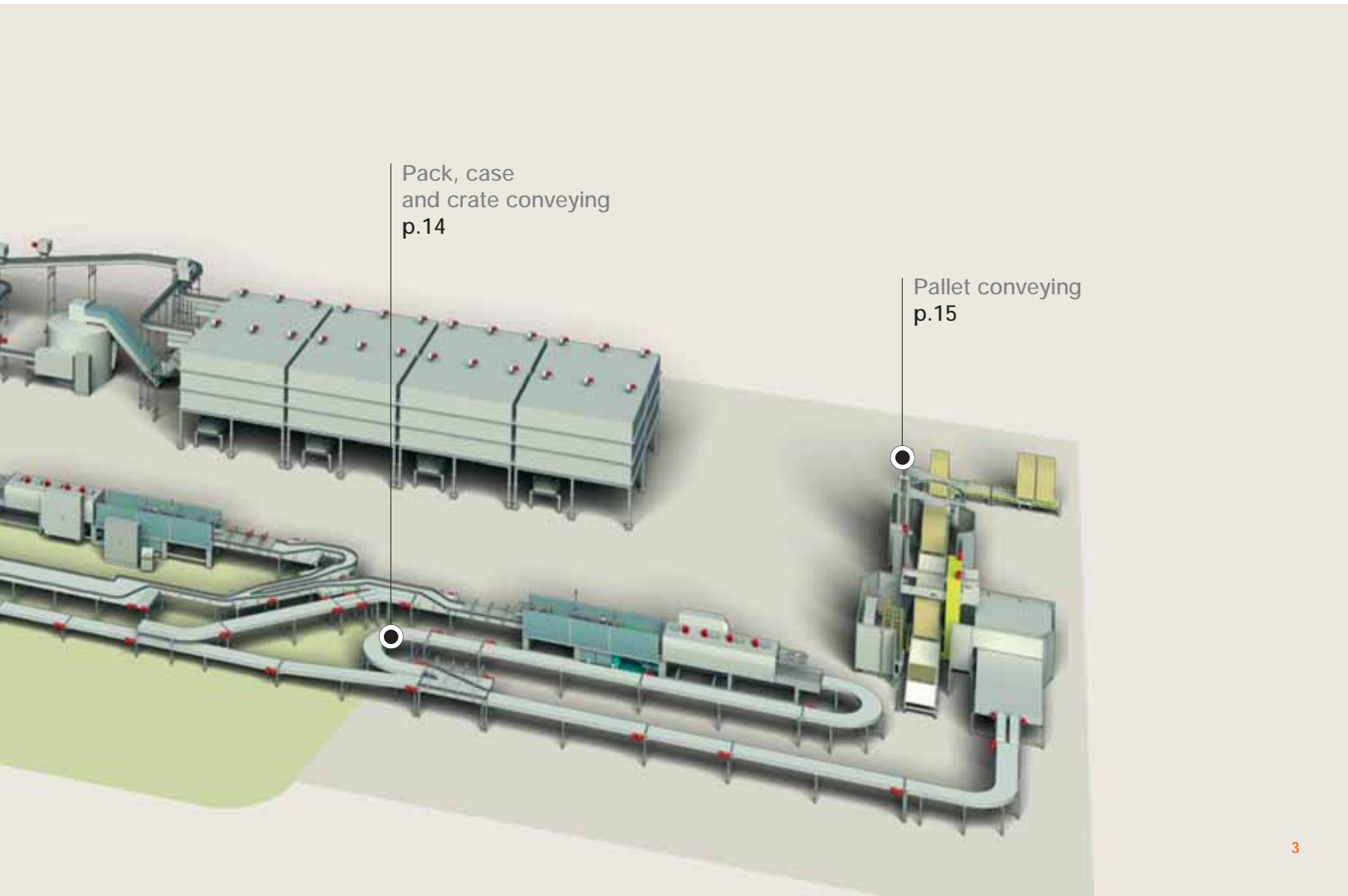
Container conveying  
p.12-13

Product care  
and flow regulation  
p.6-7

Cap feeding  
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system to ensure the continuous running and the overall performance of the line.

Thereby, because industrial geometry knows no rules other than performance, Sidel Conveying solutions cover all the necessary functions for your layout projects and combine the best in equipment ergonomics and conveying engineering for optimum line control.



Pack, case  
and crate conveying  
p.14

Pallet conveying  
p.15

# Conveying engineering

## Understand your industrial project

Sidel conveying engineering make your production strategies a reality thanks to an overall understanding of your goals and of your packaging line. The equation that determines your performance involves numerous variables. In a word, it is specific to you. Your production equipment depends on the characteristics of your products, your location, your market and even your competitors. In short: your production strategy.

Do you need to adapt (it) to market evolutions? To make fast responses to demand fluctuations? To reconcile high speeds with high productivity? To manage the complexity of increasingly diverse production patterns or simply to increase line efficiency and improve your productivity? Above all, we strive to understand this industrial project.

### MANAGING PRODUCT DIVERSITY

Do you have to manage a wide range of different products, formats and container types each day? For more complex production, we design solutions that favour flexibility for format changeover, ergonomics and smooth flow management.

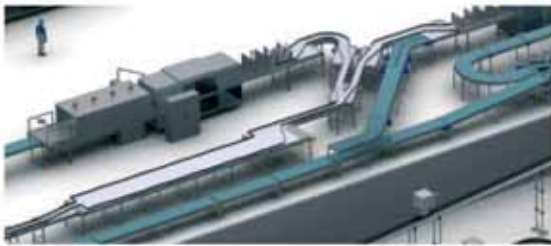


*High-speed air conveyor switching systems for multi-product and multi-format lines.*



## BETTER REGULATION FOR BETTER PERFORMANCE

Do you need accumulation to secure the good running of your line and to increase its efficiency? Accumulation time and performance are precisely calculated according to your production characteristics. Sidel's control system adapts conveying speeds to your bottle and line properties, for fluid, smooth conveying.



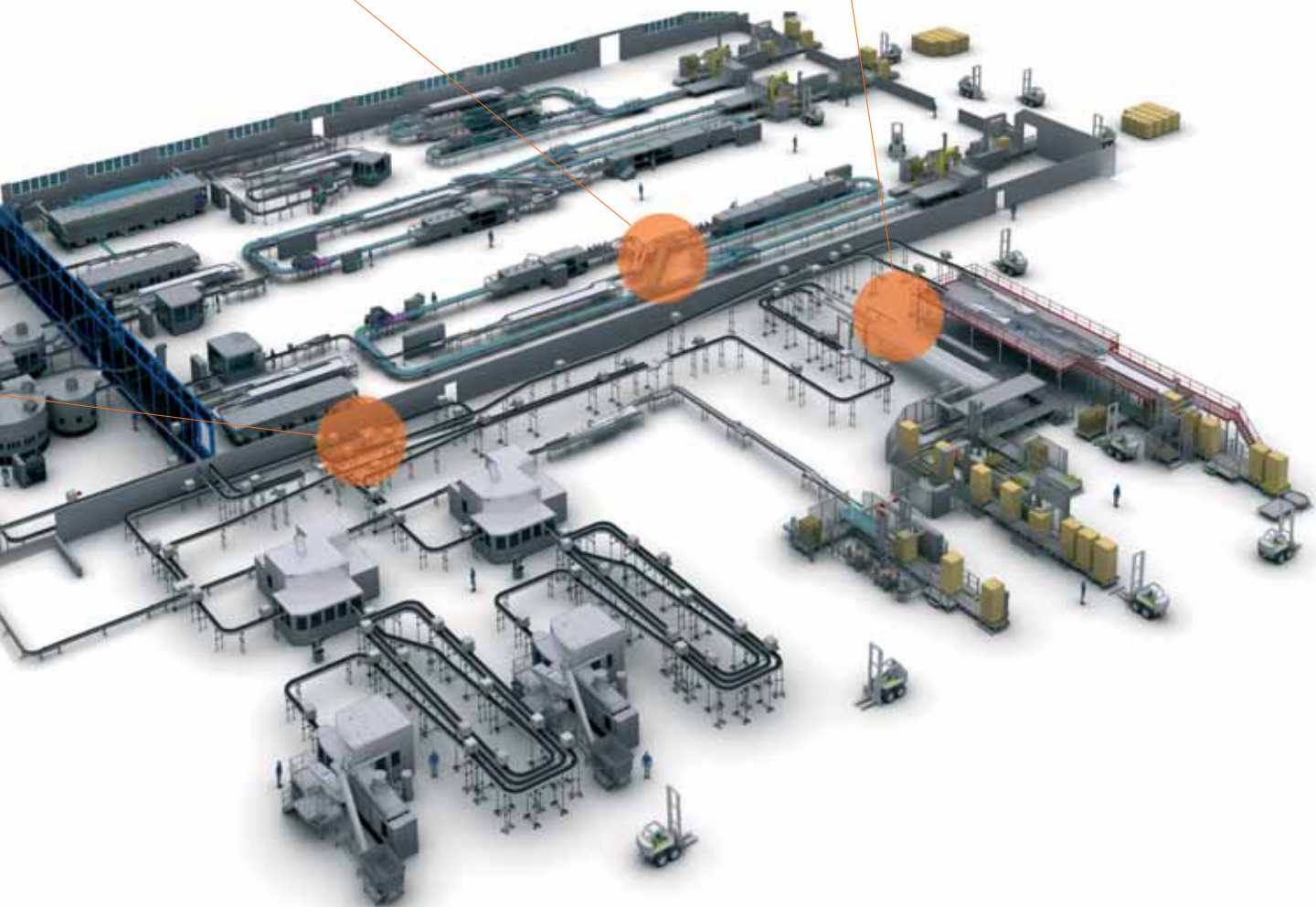
*Sidel accumulations  
secure line efficiency.*

## MODIFYING OR EXPANDING YOUR LINE

Are you planning to modify some parts of your line? To add new functions and the corresponding equipment to it? To update the existing line? To be able to evolve according to your line, Sidel conveyors are designed with a mechatronic approach: each element connects quickly to existing interfaces and is easily integrated into the modular architecture of the PLC centralizing all parameters.



*Integration of an empty bottle  
palletizing cell  
to gain flexibility and production profitability.*



# Transport your products

The challenge of your production is twofold: guarantee the attractiveness and quality of your products, maximize the productivity and output of your production at the end of your line. It is the commitment of Sidel's conveying solutions.

## PRODUCT CARE

Just a few grams... but between 60 and 80% of your product cost at the end of the line: the container is worth as much as the product it contains. It allows you to get your product to your customers, wherever they may be, but it also enables you to differentiate your product from its competitors, to showcase it and to enhance your brand image.

At a time of packaging material reductions and facing demanding consumers, to protect your bottle from physical damage and from contamination is particularly important.

This can be achieved through the securing of a flowing and dynamic conveying preventing any damaging pressure or friction on the container or the label. For multi-format production, it also means protecting the integrity of the packaging while providing flexibility to packaging diversity.

This is why Sidel conveying solutions are built upon a mechatronic architecture giving

the priority to simple and efficient mechanical principles combined with the best in electronics and computer networks. As a result: these systems are both simple to use and able to convey and regulate diverse product flows without time-consuming or complex operator interventions.

## TOTAL COST OF OWNERSHIP

And because all these principles are only worthy if they meet profitability, Sidel also develops low energy consuming versions of its equipment.

- Movigear drives: -24% electric consumption
- Dry lubrication for low friction and significant water consumption savings
- Use of blown air for cap feeding.



*Sidel conveyors preserve your product and your performance.*

# Accumulation tables: Regulate your flows

Accumulation is at the heart of line regulation: it adjusts the operating speed of the machines to adapt it to production needs and compensates for machine shutdown to ensure continuous flow of products. This is why reliability and responsiveness are the key words for Sidel accumulation systems.

## **SIMPLE AND EFFICIENT**

The reliability of accumulation tables is due, first of all, to the simplicity of their design based on the same shape: an open, compact and fully accessible table, enabling easy integration in any type of line, either new or existing.

In terms of footprint, they offer the maximum use of the effective space for accumulation.

The dynamic accumulation principles behind Sidel's AQ-Max and AQ-HC accumulation tables show the same efficient simplicity: combined with the table's balanced proportions, they guarantee the absence of pressure on the bottles as well as First In, First Out (FIFO) management of product flows, which is essential for good traceability.

## **GREATER RESPONSIVENESS**

The responsiveness of accumulation is first based on the use of the best sensor technologies (ultrasonic and telemetric) for precise detection of upstream flows, while downstream, the use of a mechatronic drive system (Movigear™) enables quick, smooth variation of conveyor speeds.

Between machines, it's all a matter of smart management! The modular design of the Sidel PLC, which processes input and translates it into orders for the conveyors and machines, enables precise, optimal management of flows between two machines ensuring excellent overall performance.

Finally, the modularity of Sidel accumulation tables and their various possible configurations offer a great deal of flexibility for adapting them to any type of production.

## **AQ-HC (HIGH CAPACITY)**

With AQ-HC (High Capacity), Sidel is revolutionizing accumulation principles for all production conditions and particularly for high output rates.

Its patented accumulation principle combines the splitting of the table into two opposing flows and uses a curved, mobile guide in order to obtain variable, dynamic accumulation.

- Maximum accumulation potential: use of all infeed chains for accumulation
- 100% use of the effective space
- Increased responsiveness thanks to a longer table size and a wider table infeed: the AQ-HC immediately adapts to large variations in production flows and can easily absorb large quantities of product at a Combi outlet, for example.



# Air conveying for empty PET bottles

Your bottle is all the more sensitive and fragile as it is empty, before the filler. Transporting these few grams as carefully and as efficiently as possible up to the filler means ensuring air purity and precisely controlling air flow rate.

## FLEXIBILITY

- Transport of a great diversity of shapes and sizes of empty PET container, even at high speed
- Easy integration in any existing building or line: wide range of plenums, curves, up and downslopes
- Fast changeover: manual or automatic adjustment of guide and body rails, preset formats accessible through a use-friendly control panel
- Management of complex lines: high speed switch gates for distribution and combining of up to 3 lanes.

## HYGIENE

- Air quality control: filtration levels from pre-filtration to absolute filtration (99.99% at 0.5  $\mu\text{m}$ )
- Airtightness control: airtight plenum-to-plenum connecting flange, side or full cowling, air overpressure tunnels
- Full cleanability: washable design and materials, demountability and accessibility to all conveyor elements.

## PERFORMANCE

- Flowing conveying: fans automatically adjust to container characteristics, machine speeds and to conveyor occupation rate thanks to dedicated frequency inverters
- Dry lubrication for optimum friction coefficient
- Ergonomics : accessibility to wire ways, grooved aluminum profile for installation of peripherals, easy clip-and-slide of neck rails for quick replacement.



*Friction coefficient, format changeover, maintenance: we pay special attention to your bottle's neck guide rail.*



*Adjustable body guide.*



*Sidel Air Conveying preserves the integrity of your bottles even at high speeds.*

## RANGE

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### TRANSPORT

- ▶ Straight plenums from 300 to 3,000 mm, curves from 15 to 90°, up and downslopes from 5 to 15°
- ▶ Floor, aerial or wall support
- ▶ Bottle train formation
- ▶ Accumulation
- ▶ Bottle ejection for downstream machine protection, sampling or silo feeding

### DISTRIBUTION AND COMBINING

- ▶ Switch gates, up to 3 lanes

### MACHINE INTERFACES

- ▶ Adjustable height of bottle release on table top conveyor for multi-formats
- ▶ Blower's outfeed for quick changeovers.

# Cap and crown feeding

Capping is critical because it is the point at which the container, contents and closure come together. In fact, product quality and overall production performance can hinge on choosing the right cap infeed solution.

Storage, elevation, orientation and high speed feeding of the filler: Sidel Cap Feeder combines the 4 functions with optimum reliability thanks to its simple orientation principle based on gravity (Aidlin patent).

## PERFORMANCE AND PRODUCTIVITY

- Easy integration : low space requirement, Flat Top air conveyor enabling complex trajectories and bypassing of obstacles, with no limits on distance
- Easy use : tool-free adjustment of the speed bump, hopper replenishment at chest height
- Operational autonomy: large size hopper available in various formats, low-level and blockage detection system in the hopper and ejector, pre-feeding solutions
- Quality control : ejection systems for caps that are missing the tamperproof ring and for upside-down caps.

## FLEXIBILITY

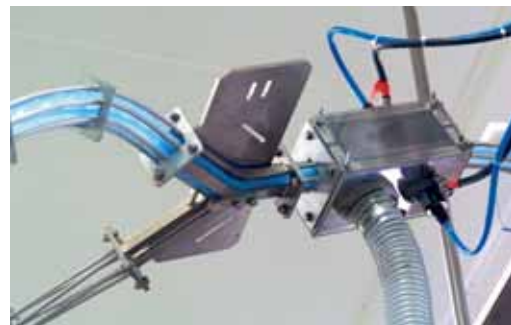
- Short production changeover times thanks to an automatic emptying system
- Infeed of standard-neck and lightweight caps on the same belt, without any adjustments
- Dual-belt cap feeder: format changeover via a simple switch in less than 5 minutes
- Automatic, telescopic chute for intervention-free adaptation to all bottle formats and for greater reliability of adjustments.

## PROTECTED HYGIENE

- Possibility of moving cap infeed outside the filling chamber
- Cap elevation and orientation without creating any dust, cap ejection via filtered air (compressed air or fan)
- Dust removal chamber, combining air ionization and particle suction at the capper outfeed
- Secure front access door for hopper maintenance and cleaning
- Total accessibility and use of durable materials (PET, stainless steel) to simplify cleaning
- High Hygiene options: positive pressure in hopper, 0.01 micron filtration at ejection, HEPA filtration of Flat Top air columns, raised hopper and under-chassis protection.



*Remote feeding outside the filling area.*



*Dust removal chamber.*



*Crown feeding.*

## RANGE

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### PRE-FEEDING

- ▶ Box discharge system
- ▶ Trickle feeder

### STORAGE AND FEEDING

- ▶ Low or high speed feeding
- ▶ Cap and crown feeding
- ▶ Dual belt cap and/or crown feeding

### CONVEYING

- ▶ Gravity chute
- ▶ Telescopic chute
- ▶ Flat Top air conveyor

### CLEANLINESS

- ▶ Dust removal chamber at filler infeed

# Container conveying

Because the output of your line greatly depends on the conveying systems, Sidel conveyors are designed around a modular mechatronic approach ensuring their reliability and adaptability to production changes. Sidel conveyors handle a wide range of container shapes and formats in different configurations: PET or glass bottles, metal cans, beverage cartons.

## EASY LINE INTEGRATION

- Simple wiring to existing interfaces thanks to hybrid cabling
- Compliance with most common technical standards, machine specifications and line networks
- Easy integration to automation architecture centralizing line parameters.

## PRODUCT CARE

- Flowing conveying preventing pressure on the products and obstructions on the line
- Conveying parameters adapted to the characteristics of the container to convey
- Dry or wet lubrication for a smooth conveying
- Ultrasonic sensor improving line reliability compared to traditional technologies.

## FLEXIBILITY

- Fast and easy format changeovers thanks to preset control programs and pre-programmed intuitive operator panel
- Automatic adjustment of guiding system to bottle formats in lanes
- Multi-format mechanical design and functional drive design enabling fast format change with minimum settings.

## TOTAL PRODUCTIVITY MAINTENANCE (TPM)

- Sturdy design and materials (stainless steel)
- Standardized drives, chains, pneumatics and computer elements for easy maintenance
- Easy parts management and supply: mechanical wear parts available by the biggest manufacturers improving
- Simplification and reduction of automation equipment (control cabinets, wiring, captors, actuators) thanks to decentralized and modular mechatronic architecture and hybrid cabling.



*Intuitive and user-friendly operator panel.*



*Simple and open mechanical design.*



*Automatic guidance in lanes.*

## **RANGE**

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### **TRANSPORT**

- ▶ Automatic guidance in lanes
- ▶ Pressure or pressureless dividing

### **MACHINE INFEEED**

- ▶ Pressure or pressureless combining
- ▶ Dispatching and train formation
- ▶ Laning systems with automatic format changeovers

### **MACHINE OUTFEED**

- ▶ Pressureless distribution

# End of line conveying

## Secondary packaging conveying

The overpackaging of your products is as important as their packaging. It allows palletizing and eases the handling of your products through the distribution network. Filmed pack or cardboard box, it helps differentiate your products on supermarket shelves

This is why Sidel pack, case and crate conveyors are designed to manage continuous flow of products and protect the aspect of overpackaging while adapting to the diversity in secondary packaging.

### PRODUCT CARE

- Smooth and flowing conveying ensuring low pressure and friction, pressureless dynamic accumulation principles
- Preservation of pack aspect and line continuous running thanks to fast automatic conveyor discharge and dynamic interfaces by means of motorized rollers
- Swan-neck inclines and declines to avoid product and chain damage.

### PERFORMANCE

- Transport of every kind of overpacked goods: full or empty cases, cardboard boxes, crates, tray, hi-cone and shrink wrapped multipacks
- Fast and easy format changes with minimum settings thanks to multi-format mechanical design and preset control programs
- Compact conveying concept thanks to modular belt (Sidel patent) enabling 180° curves with short radius of curvature.

### TOTAL PRODUCTIVITY MAINTENANCE (TPM)

- Open structure for easy maintenance, accessibility to wear parts
- Durability and high resistance to abrasion: stainless steel conveyor with PBF axis (Polybutylène Téréphthalate)
- Easy clip and slide of guiderails for simple tool-less maintenance replacement
- Standardized drives, chains, pneumatics and computer elements for easy maintenance.



*Smooth conveying of packs.*

### RANGE

#### TRANSPORT AND ACCUMULATION

- ▶ Curves, inclines and declines
- ▶ Magneroll rollers or LBP (Low Back Pressure) accumulation

#### ORIENTATION

- ▶ Turners
- ▶ Crate diverters
- ▶ Crate sorting systems

# Pallet handling

Because the reliability and the productivity of your workshop are essential to efficient logistics, the complete range of Sidel pallet handling equipment, together with Sidel know-how in end-of-line engineering, make it possible to build customized solutions adapted to both your product and installation.

Sidel plant layout studies focus on the ergonomics of your workshop and floor space optimization.

## OPTIMIZED MECHANICAL DESIGN

- Simple all-purpose design enabling use in various industries and adaptation to any change in production requirements
- Materials and mechanical design adapted to production constraints: galvanized or stainless steel welded structure
- Integrated cabling
- Silent drive
- Even pallet motion due to longitudinal off-set of the central chain gap from gaps of the side chains
- Reduced floor space.

## TOTAL PRODUCTIVITY MAINTENANCE (TPM)

- Easy accessibility to all wear parts
- Quick dismantling of the motor in lateral position
- Quick replacement of the return gears without screw
- Individual tightness of the chains through a single screw.



*Even pallet motion.*

## RANGE

### TRANSPORT

- ▶ Chain conveyors
- ▶ Free or motorized roller conveyors
- ▶ Modular belt conveyors

### ORIENTATION

- ▶ Transfer tables
- ▶ Rotary tables
- ▶ Repartition tables
- ▶ Shuttles

### STORAGE

- ▶ Elevators
- ▶ Consolidation tables
- ▶ Stacking tables
- ▶ Empty pallet magazines



[www.sidel.com](http://www.sidel.com)