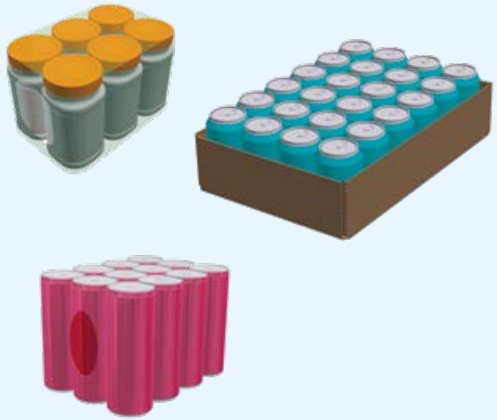
AUTOMATIC PACKERS

4.0 INDUSTRY compliant

IoT ready

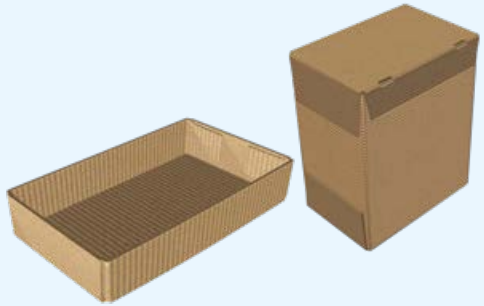
smi

PACKERS WITH IN-LINE INFEED

MODELS	PACKAGING	TYPES OF PACK	MAXIMUM OUTPUT
LSK 30 SF ERGON	FILM ONLY		30 PACKS / MINUTE
LSK 30 F/P/T ERGON	F = FILM ONLY P = PAD + FILM T = TRAY ONLY / TRAY + FILM		30 PACKS / MINUTE
LSK 40 F/P/T ERGON			40 PACKS / MINUTE
CSK 40 F/P/T ERGON	F = FILM ONLY P = PAD + FILM T = TRAY ONLY / TRAY + FILM		40 PACKS / MINUTE
CSK 50 F/P/T ERGON			50 PACKS / MINUTE
CSK 42 F ERGON	FILM ONLY		80 PACKS / MINUTE
CSK 52 F ERGON			100 PACKS / MINUTE
SK 500 F/P/T ERGON	F = FILM ONLY P = PAD + FILM T = TRAY ONLY / TRAY + FILM		50 PACKS / MINUTE
SK 600 F/P/T ERGON			60 PACKS / MINUTE
SK 800 F/P/T ERGON			80 PACKS / MINUTE
SK 502 F/P/T ERGON			100 PACKS / MINUTE
SK 602 F/P/T ERGON			120 PACKS / MINUTE
SK 802 F/P/T ERGON			140 PACKS / MINUTE
SK 1200 F HS ERGON	FILM ONLY		150 PACKS / MINUTE
SK 1202 F HS ERGON			270 PACKS / MINUTE

*The indicated output (packs per minute) refers to 3x2 packs of 1.5 L stable containers.

PACKERS WITH IN-LINE INFEED

MODELS	PACKAGING	TYPES OF PACK	MAXIMUM OUTPUT
SFP 30 ERGON	FILM ONLY (STRETCH)		30 PACKS / MINUTE
LWP 30 ERGON	WRAP AROUND CASE / TRAY		30 PACKS / MINUTE
CWP 40 EL ERGON			40 PACKS / MINUTE
WP 400 ERGON			40 PACKS / MINUTE
WP 500 ERGON			50 PACKS / MINUTE
WP 600 ERGON			60 PACKS / MINUTE
WP 800 ERGON			80 PACKS / MINUTE
ACP 20 ERGON	AMERICAN CARTON (RSC)		16 PACKS / MINUTE
ACP 22 ERGON			25 PACKS / MINUTE
MP 150 ERGON	CARDBOARD SLEEVES		150 PACKS / MINUTE
MP 150 BK ERGON			150 PACKS / MINUTE
MP 300 ERGON			300 PACKS / MINUTE

*The stated values are not binding, as they have to be confirmed by SMI according to production conditions and container/packaging material technical specifications.

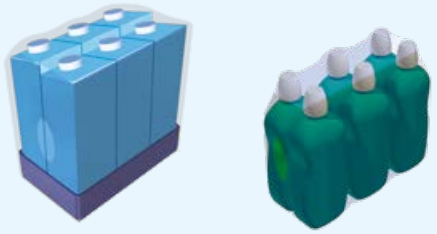
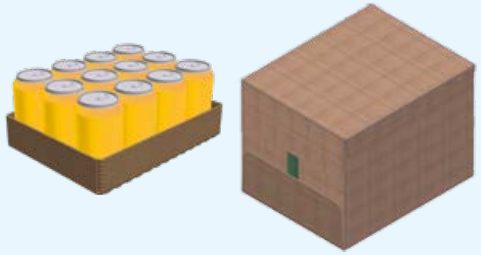
PACKERS WITH IN-LINE INFEED

MODELS	PACKAGING	TYPES OF PACK	MAXIMUM OUTPUT
TPP 300 ERGON	TOP PAD		300 PACKS / MINUTE

LCM 30 ERGON	TRAY ONLY TRAY + FILM CASE		30 PACKS / MINUTE
LCM 40 EL ERGON			40 PACKS / MINUTE
CM 400 ERGON			40 PACKS / MINUTE
CM 500 ERGON			50 PACKS / MINUTE
CM 600 ERGON			60 PACKS / MINUTE
CM 800 ERGON			80 PACKS / MINUTE
CM 400 R ERGON	FILM ONLY TRAY + FILM TRAY ONLY PAD + FILM CASE		40 PACKS / MINUTE
CM 500 R ERGON			50 PACKS / MINUTE
CM 600 R ERGON			60 PACKS / MINUTE
CM 800 R ERGON			80 PACKS / MINUTE

*The indicated output (packs per minute) refers to 3x2 packs of 1.5 L stable containers.

PACKERS WITH 90° INFEED

MODELS	PACKAGING	TYPES OF PACK	MAXIMUM OUTPUT
ASW 80-I F/P/T ERGON	F = FILM ONLY P = PAD + FILM T = TRAY ONLY / TRAY + FILM		80 INTRODUCTIONS / MINUTE
ASW 150-I F/P/T ERGON			150 INTRODUCTIONS / MINUTE
ACW 80-I ERGON	F = FILM ONLY P = PAD + FILM T = TRAY ONLY / TRAY + FILM		80 INTRODUCTIONS / MINUTE
ACW 150-I ERGON			150 INTRODUCTIONS / MINUTE
AFCW 80-I ERGON	TRAY + FILM TRAY ONLY WRAP-AROUND CASE		80 INTRODUCTIONSI / MINUTO
AFCW 150-I ERGON			150 INTRODUCTIONS / MINUTO

*The stated values are not binding, as they have to be confirmed by SMI according to production conditions and container/packaging material technical specifications.

Features and benefits

NEW ERGON RANGE

For the new ERGON range of secondary packaging machines SMI has introduced innovative concepts in terms of ergonomics and modularity which have allowed to further increase the packers' flexibility and considerably facilitate their management and maintenance operations. The new ERGON series – from the Greek word *érgon* meaning "work" - is the outcome of a two-year R&D project wich led to notable enhancements concerning the technical configurations featuring SMI secondary packaging machines.

» Slightly-rounded sliding safety guards

The new design entails more room inside the machine, which is used for a more ergonomic and functional configuration of both mechanical and electronic components. Furthermore, the doors are equipped with a safety deceleration device which, by means of a buffer, ensures their soft, final closure.

Advantages: easy access to inner machine's parts; highly safe access for the operator.

» Low energy consumption motors easy to be reached

Thanks to larger room inside the machine, made possible by the rounded safety guards, motors can be installed externally on the edges of the machine. Moreover, SMI packers are actuated only by brushless motors (controlled by digital servo-drivers, which in most cases are integrated into the motor), directly connected to transmission axles.

Advantages: motors and their components are easier to be accessed for reactivation and maintenance operations; the absence of geared motors entails more efficient and precise movements, reduced energy dissipation, low noise level and wear of components.

» Motorized products unscrambler at the machine's inlet

Device made up of a group of oscillating guides which accurately convey loose containers toward the machine's inlet.

Advantages: smooth feeding of the products to be packaged.

» Products separation bars

The pack formation system is equipped with products separation bars made of thermoplastic material ensuring a smooth and constant production process without abrupt movements.

Advantages:
lower wear if compared to metal bars, low machine's noise level, protection of fragile containers (for example glass containers) and labels.

» Curved cardboard climb

The initial and final part of the cardboard climb is slightly curved, so as to ensure an easier transfer of the cardboard blank from the magazine to the work surface area.

Advantages: interruption-free packaging process.

» Film unwinding by brushless motor

Highly-precise film unwinding thanks to a brushless motor for each film reel (except LSK/CSK/LCM).

Advantages: the absence of mechanical reductions ensures more precision and low maintenance costs.

» Film-tensioning system

The system is actuated by a piston, ensuring a constant film tensioning.

Advantages: this new solution enables to pass easily and quickly from a packaging in single lane to a packaging in doble/triple lane.

» Direct drive film cutting device

SMI packers are equipped with a blade driven by a direct-drive brushless motor enhancing the film cutting operation and simplifying the motor's maintenance operations.

Advantages: more precise film cutting operations; reduced maintenance operations; low noise level; low energy dissipation; easily accessible blade unit.

» Multi-pitch configuration

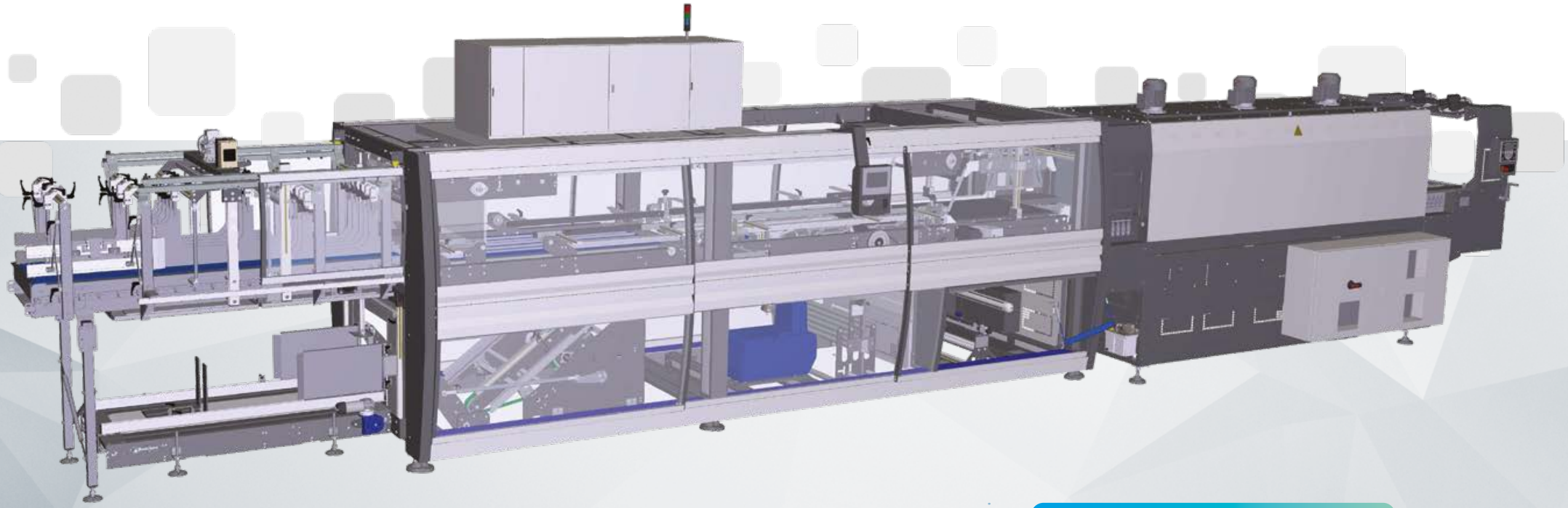
SMI machines are arranged to control up to three different machine pitches, without replacing the mechanical components. The working parameters of each pitch are memorized in the POSYC display; the mechanical setting of the product divider, of the cardboard climb, of the tray/case former and of the film wrapper is very easy, thanks to the coloured position indicators installed on the chains.

Advantages: the dimension range of the products handled is one of the widest on market, thanks to the possibility to pack a large range of containers in a high number of configurations.

» User-friendly man-machine interface

The POSYC control panel, which slides on a track running the whole length the machine (optional on some models), is equipped with an extremely intuitive interface, a touch screen display, diagnostic functions and real-time technical support.

Advantages: easy and efficient use of the machine also by low experienced operators.



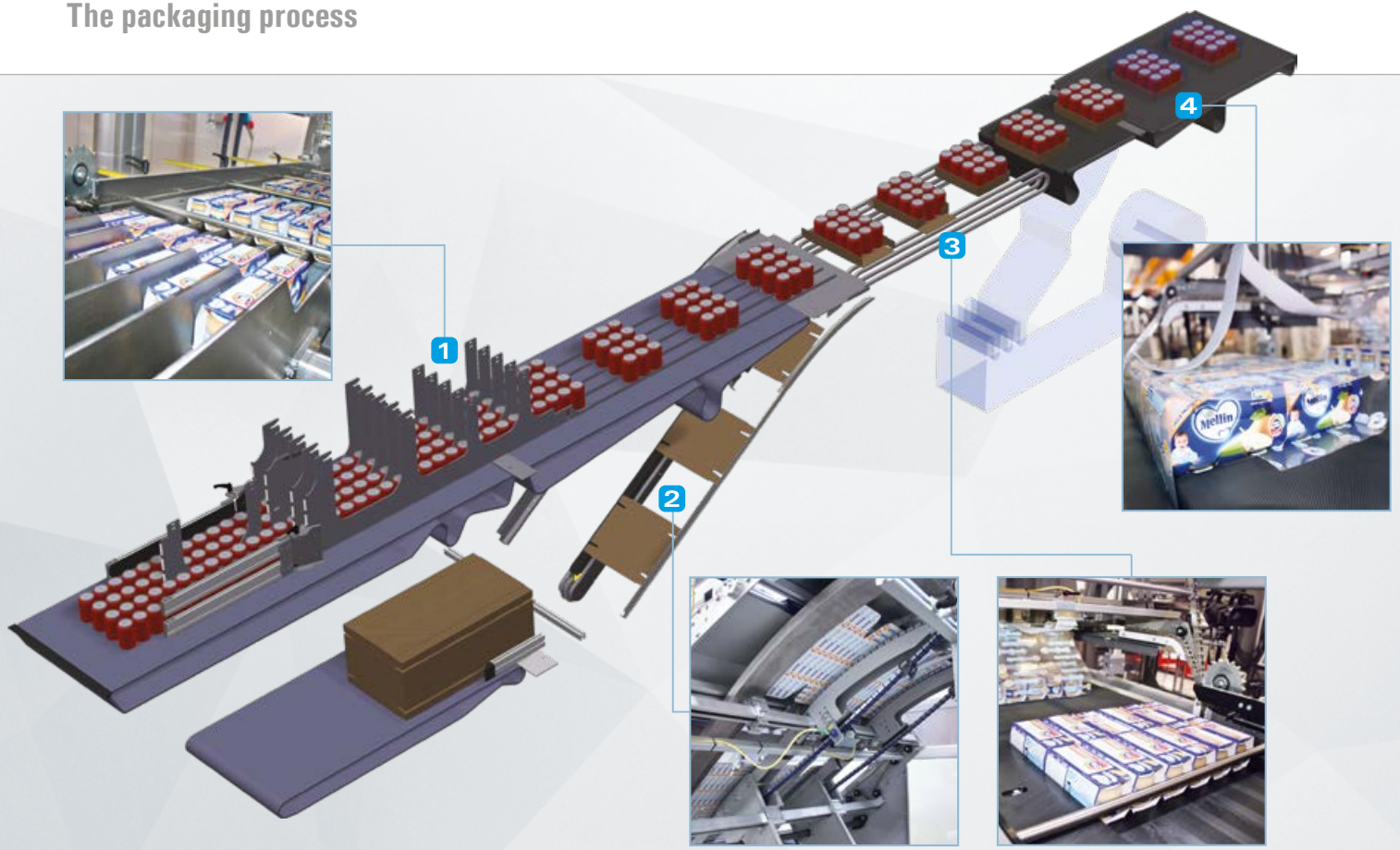
MODEL RANGE

LSK 30 F / SF		
LSK 40 F	LSK 30 P	LSK 30 T
LSK 32 F	LSK 40 P	LSK 40 T
LSK 42 F		

UP TO 40 PACKS/MINUTE

» Low-medium speed shrink wrappers

The LSK series is composed of automatic machines to pack plastic, metal, cardboard or glass containers.
Depending on the model chosen, they can make packs in film only, cardboard pad + film, cardboard tray, cardboard tray + film.
LSK ERGON series packers achieve an output rate up to 40 packs per minute in single lane, according to the machine model and the type of product to be handled.
Pack collations can vary according to the container shape, capacity and size; the most requested collations are: 2x2, 3x2, 4x3 and 6x4.
All LSK machines are equipped with a mechanical product grouping system and are supplied with an in-line or a 90° infeed conveyor, depending on the customer's exigencies. The change-over is manual.



1 At the machine infeed, an oscillating unscrambler accurately lines up the loose containers carried by a conveyor belt featuring low-friction chains made of thermoplastic material. In the pack formation section, the containers are clustered in the required format through a pneumatic device operating in alternate motion.

2 In P and T models, a corrugated cardboard pad or blank is picked from the blank magazine by an alternate motion picker composed of a group of vacuum suckers. The pad or the blank moves along the blank climb and gently places itself underneath the group of products in transit with the long side leading.

3 In the trayformer, special mechanical devices fold the blank's front and rear flaps.
The side flaps are sprayed with hot melt glue and then folded, thus forming the tray.

4 The unwinding of the film reel, placed in the lower part of the machine, is controlled by a progressive brake, which ensures the film constant tension. The film joining operation when the reel runs out takes place by means of a hand-operated sealing bar.
Before the pack enters the shrinking tunnel, the film is wrapped around the container batch and overlapped at the base of the pack.

» LSK SF ERGON: Modular and compact structure

- very compact structure since the machine does not have neither the cardboard magazine nor the cardboard climb;
- continuous cycle packaging system, by means of a special pneumatic separator (press);
- high reliability of the packaging process;
- high quality of the final pack;
- film cutting blade activated by direct drive brushless motor;
- the packers from the LSK SF ERGON series achieve an output rate up to 30 packs per minute in single lane.

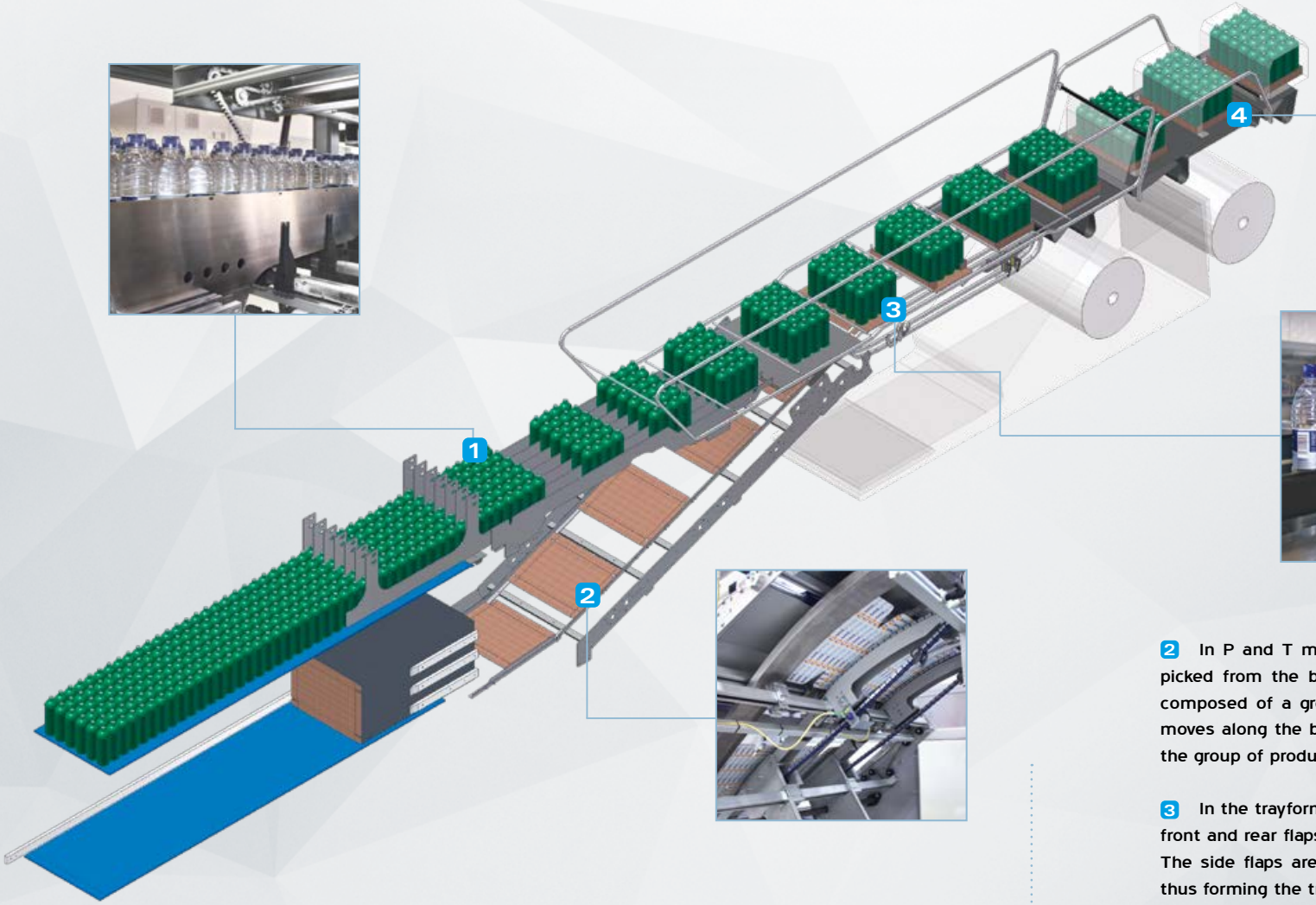
MODEL RANGE

CSK 40 F		
CSK 50 F	CSK 40 P	CSK 40 T
CSK 42 F	CSK 50 P	CSK 50 T
CSK 52 F		

UP TO 50 PACKS/MINUTE

» Low-medium speed shrink wrappers

The CSK series is composed of automatic machines to pack plastic, metal, cardboard or glass containers.
Depending on the model chosen, they can make packs in film only, cardboard pad + film, cardboard tray, cardboard tray + film.
CSK packers achieve an output rate up to 50 packs per minute (50+50 in the double lane only film version), according to the machine model and the type of product to be handled.
Pack collations can vary according to the container shape, capacity and size; the most requested collations are: 2x2, 3x2, 4x3 and 6x4.
All CSK machines are equipped with an electronic product-grouping device and with film-cutting blade and flap-folding device actuated by direct drive brushless motors.



1 At the machine infeed, an oscillating unscrambler accurately lines up the loose containers carried by a conveyor belt featuring low-friction chains made of thermoplastic material.
In the pack formation section, the containers are clustered in the required format through electronically synchronized pins and separation bars.

2 In P and T models, a corrugated cardboard pad or blank is picked from the blank magazine by an alternate motion picker composed of a group of vacuum suckers. The pad or the blank moves along the blank climb and gently places itself underneath the group of products in transit with the long side leading

3 In the trayformer, special mechanical devices fold the blank's front and rear flaps.
The side flaps are sprayed with hot melt glue and then folded, thus forming the tray.

4 The unwinding of the film reel, placed in the lower part of the machine, is controlled by a progressive brake, which ensures the film constant tension.
Before the pack enters the shrinking tunnel, the film is wrapped around the container batch and overlapped at the base of the pack.

UP TO 450 PACKS/MINUTE

Medium-high speed shrink wrappers

The SK ERGON series is composed of automatic shrink wrapping machines for packing plastic, metal , cardboard or glass containers. Depending on the model chosen, they can make packs in film only, cardboard pad + film, tray only, cardboard tray + film.

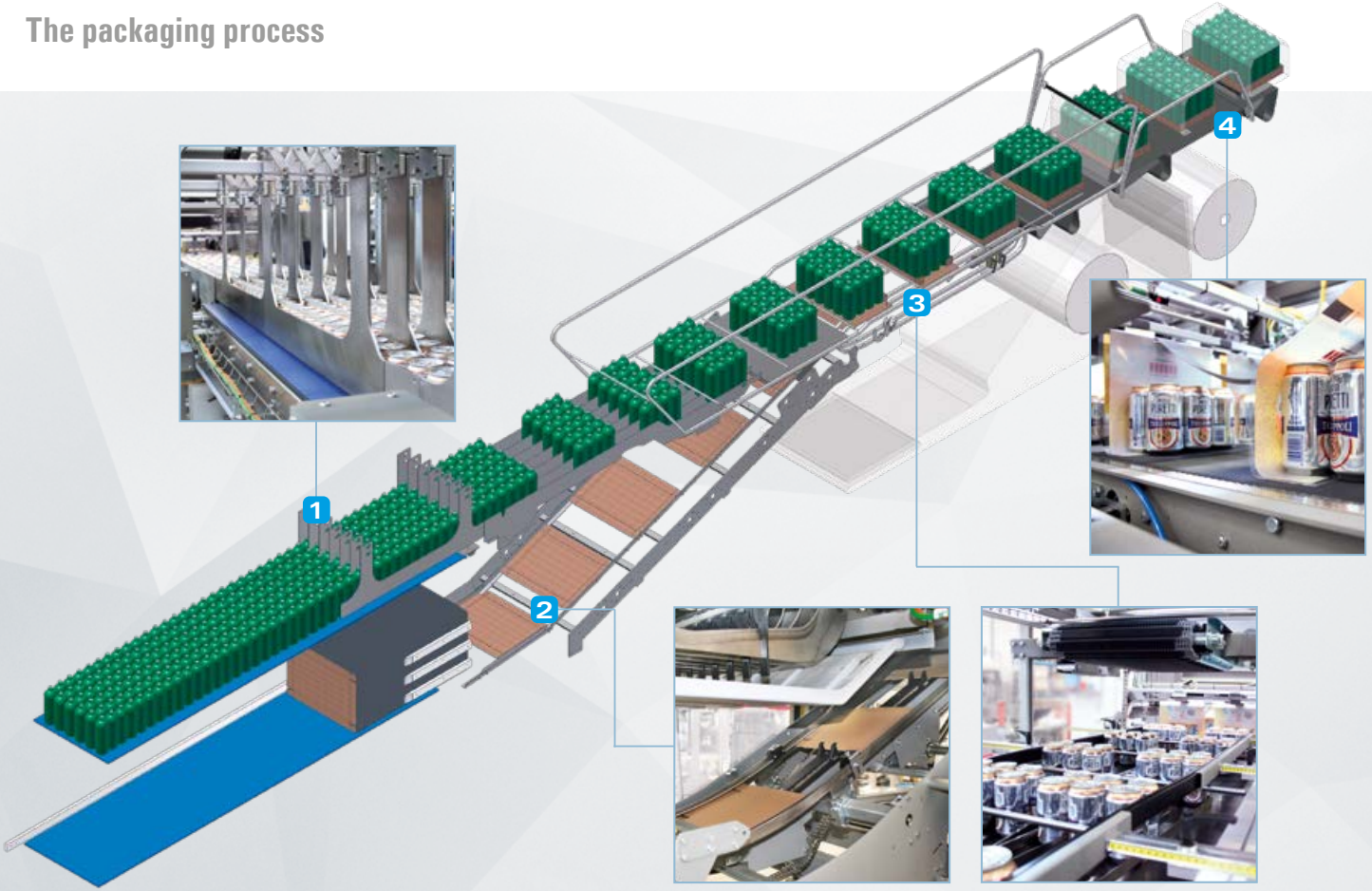
The SK ERGON series packers can achieve an output up to 450 packs per minute (can packs in triple lane), depending on the machine model and on the product to be packaged. The pack collations can vary according to the container shape and size. In general, the most frequently requested collations are: 2x2, 3x2, 4x3 and 6x4.

All SK ERGON models are equipped with an electronic grouping device and are available with single or double lane, according to the customer's exigencies.

The SK models are equipped with automatic changeover.

MODEL RANGE

SK 500 F	SK 500 P	SK 500 T
SK 600 F	SK 600 P	SK 600 T
SK 800 F	SK 800 P	SK 800 T
SK 1200 HS F		
SK 502 F	SK 502 P	SK 502 T
SK 602 F	SK 602 P	SK 602 T
SK 802 F	SK 802 P	SK 802 T
SK 1202 HS F		



1 In the machine infeed, a group of guides accurately lines up the loose containers carried by a conveyor belt featuring low-friction chains made of thermoplastic material. In the pack formation zone, the containers are clustered in the required format through electronically synchronized dividing fingers and bars, operating in continuous motion.

2 In P and T models, a corrugated cardboard pad or blank is picked from the blank magazine by a rotary picker composed of two groups of vacuum suckers. The pad or the blank moves along the blank climb and places itself underneath the group of products in transit with the long side leading. P and T models on double lane are supplied with Easy-Load cardboard magazine as standard (see page 42).

3 In the trayformer, special mechanical devices fold the blank's front and rear flaps.
The side flaps are sprayed with hot melt glue and then folded, thus forming the tray.

4 The unwinding of the film reels, placed in the lower part of the machine, is controlled by a brushless motor, which ensures the film constant tensioning. The machine is equipped with two reels: one is operating, the other one keeps stopped. When the first reel ends, a manual sealing bar joins the films of the two reels. To facilitate the operation of reel replacement, the machine is outfitted with a special trolley. Before the pack enters the shrink tunnel, the film is cut by a knife with motorized blade controlled by a brushless motor with direct-drive transmission, wrapped around the group of containers and overlapped on the pack bottom.

» Beehive packs

SMI's LSK, CSK and SK shrink wrappers can be equipped with a dedicated device, which arranges the containers (bottles or cans) in staggered alternating rows and keeps them in this manner during the process in which the pack is formed, thereby creating the characteristic beehive collation.
This is a newly-devised packaging solution, which offers considerable advantages in terms of reduced production and palletizing costs since the latter can take place without the insertion of an interlayer between layers, ensuring the customer substantial savings on the purchase of packaging materials.
This is possible thanks to the greater stability and compactness of beehive packs, inside which the containers are "jammed" into one another and where gaps are minimized (contrary to what occurs in traditional and perfectly rectangular packs).
All this allows space optimization on the pallet.



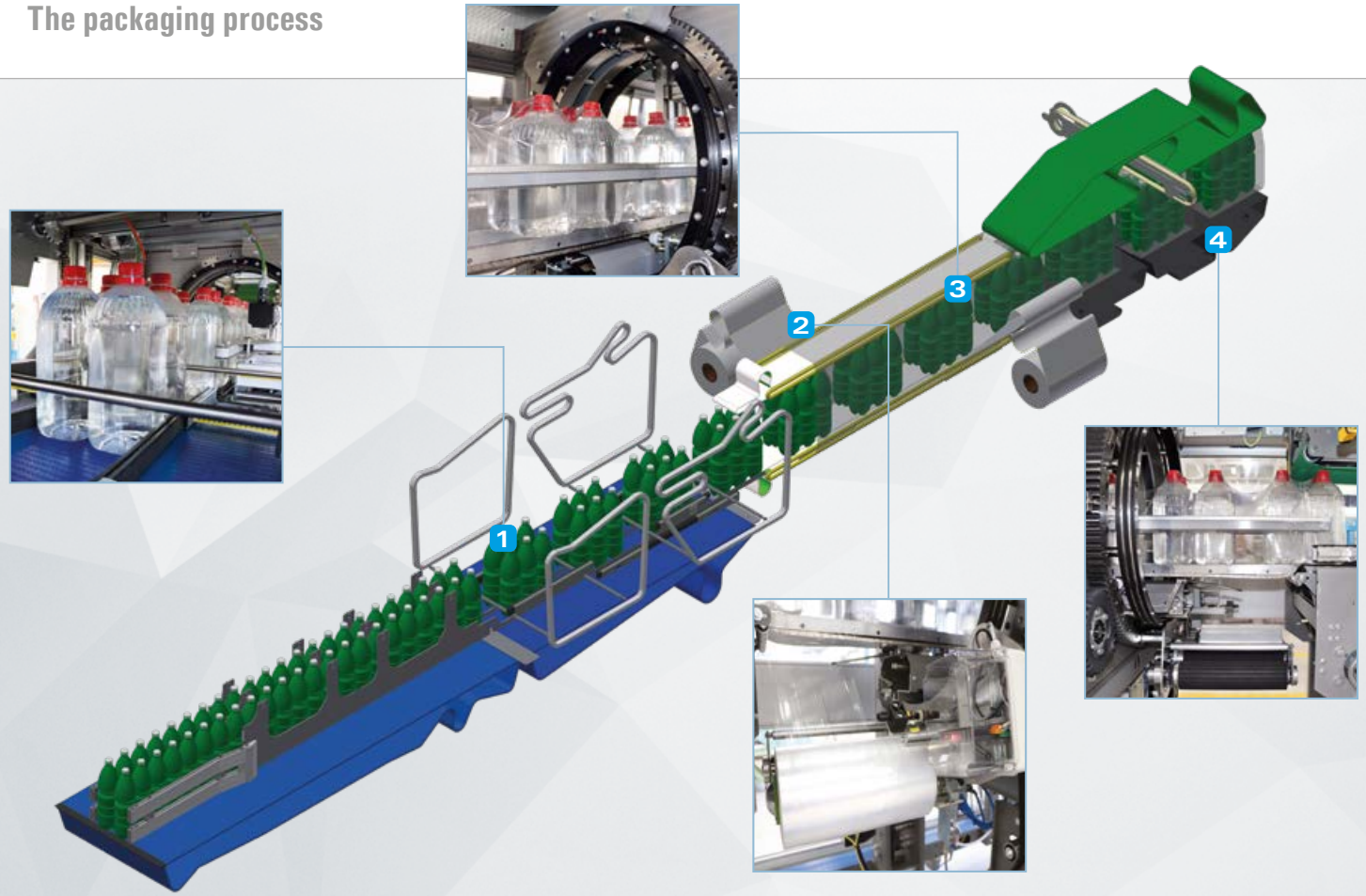

MODEL RANGE

SFP 30

UP TO 30 PACKS/MINUTE

» Stretch film packers

The SFP ERGON series is composed of automatic machines for the continuous packaging of loose containers and already made packs in stretch film (thickness between 10 and 30 microns). The packers from the SFP ERGON range can achieve an output rate up to 30 packs per minute in single lane and make packs in 1 x ... and 2 x ... These machines stand out for the low energy consumption, since they are not equipped with a shrink tunnel, for the stable and resistant packaging, ensured by the application of the two film webs in a criss-cross pattern and the space between the packs and for a reduced consumption of packaging material compared to traditional shrink wrappers.



1 At the machine infeed, an oscillating unscrambler accurately lines up the loose containers carried by a conveyor belt featuring low-friction chains made of thermoplastic material. In the pack formation section, the containers are clustered in alternate motion in the required format through a pneumatic device and electronically synchronized compensation bars.

2 The film unwinding is operated by brushless motors (one for each of the two reels) for precise and continuous adjustment of the film tensioning (controlled by a progressive brake), which ensures the constant tensioning of the film and allows quick and easy changeover operations.

3 A high-speed film wrapper rotor with counterweigh, controlled by brushless motor, applies two film webs in a criss-cross pattern around the group of containers in transit. The first reel wraps the group of containers in a clockwise direction, while the second one wraps it in a counter-clockwise direction, thus realizing a resistant and long-lasting pack.

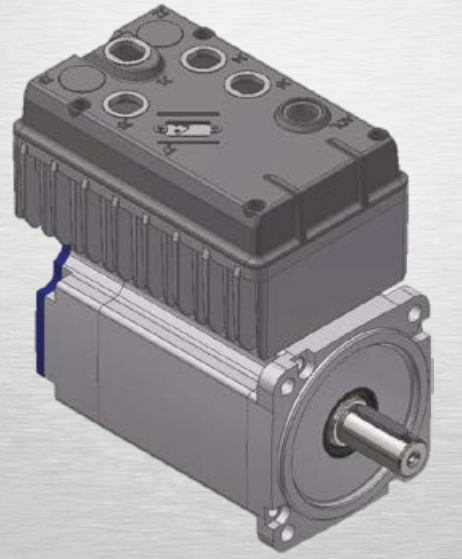
4 The machine is equipped with a film-cutting device with resistance-heated vertical blade, controlled by a brushless motors. The 2-step cutting operation is carried out at the front and back of the pack in transit through horizontal movements of the heated blade.

» SFP ERGON: energy saving

Since SFP packers have no heat-shrink tunnel, a substantial saving in power consumption can be achieved during the packaging operation.

Optimized electrical consumption of the motors

The new ICOS motors mounted on the SFP ERGON are equipped with built-in digital servo-driver, with the advantage of simplifying the machine wiring since the servos are no longer installed in the electrical cabinet. This new solution allows to generate less heat inside the electrical cabinet; as a result, the air-conditioning system is not required for temperatures up to 40 °C, thus reducing the power consumption of the facility.

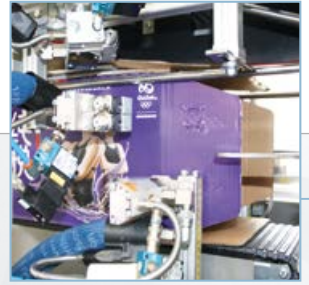


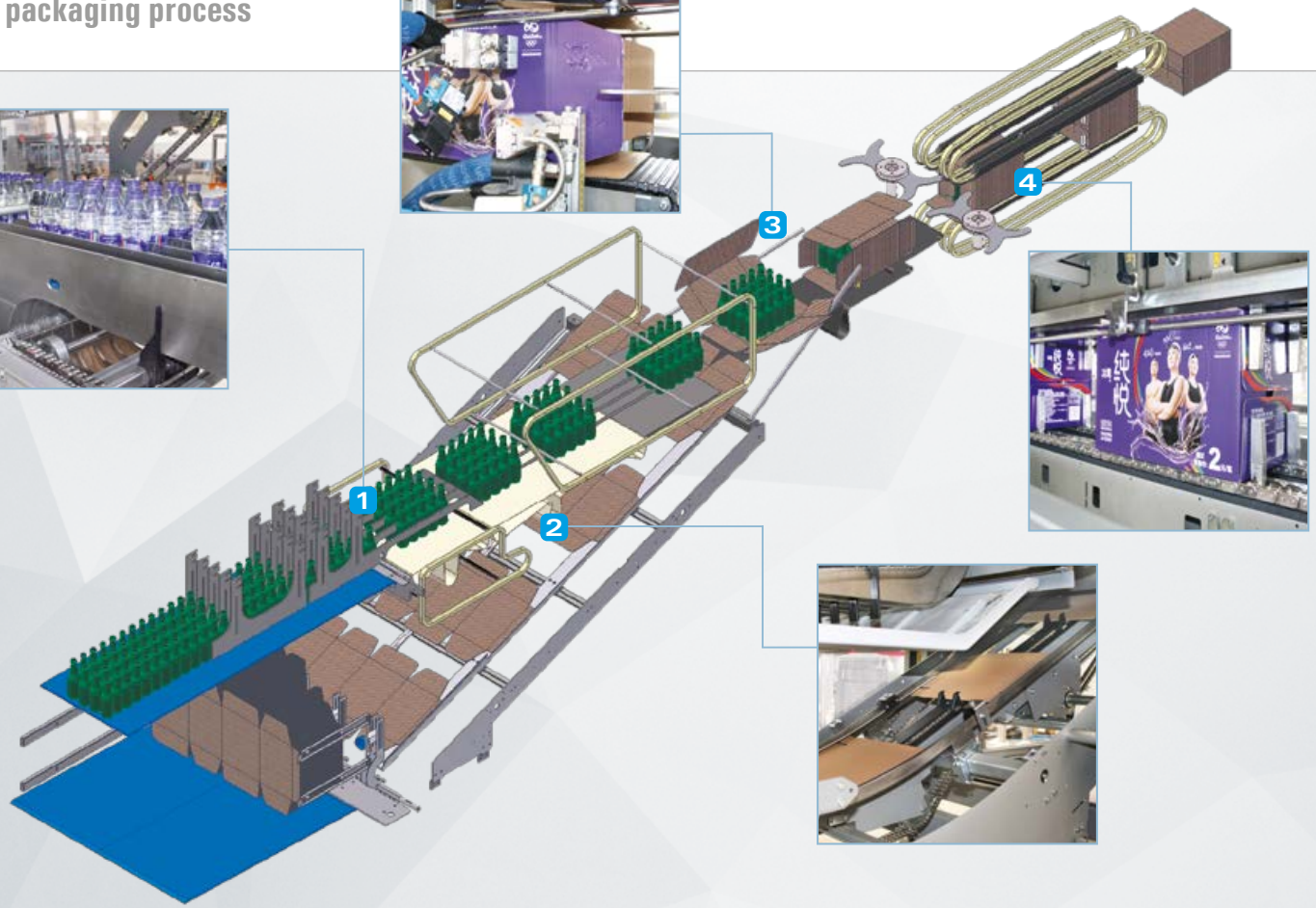
MODEL RANGE
LWP 30

UP TO 30 PACKS/MINUTE

» Wrap-around case packers

LWP series features automatic machines for packing plastic, metal, cardboard or glass containers in corrugated cardboard cases and/or trays without film.
LWP wrap-around packers run up to 30 packs per minute, depending on the product handled and on the packing pattern.
Different pack collations can be formed according to the container's shape, capacity and dimensions; the most popular formats on the market are 2x3, 3x4 and 4x6.
LWP packers are equipped with a mechanical product-grouping system and manual format changeover.





1 At the machine infeed a group of guides lines up loose containers along a conveyor belt featuring low-friction chains made of thermoplastic material. In the pack-forming unit products are grouped in the chosen packing pattern by means of an alternate-motion pneumatic device.

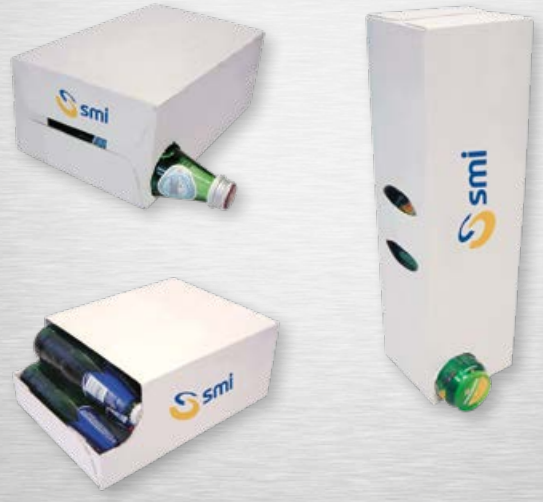
2 A sheet of corrugated cardboard is picked from the blank magazine by an alternate-motion picker with vacuum suction cups; the carboard blank is then carried up along the blank ramp and positioned under the incoming pack collation with short leading side. The box/tray former operates in continuous motion with wrap-around system.

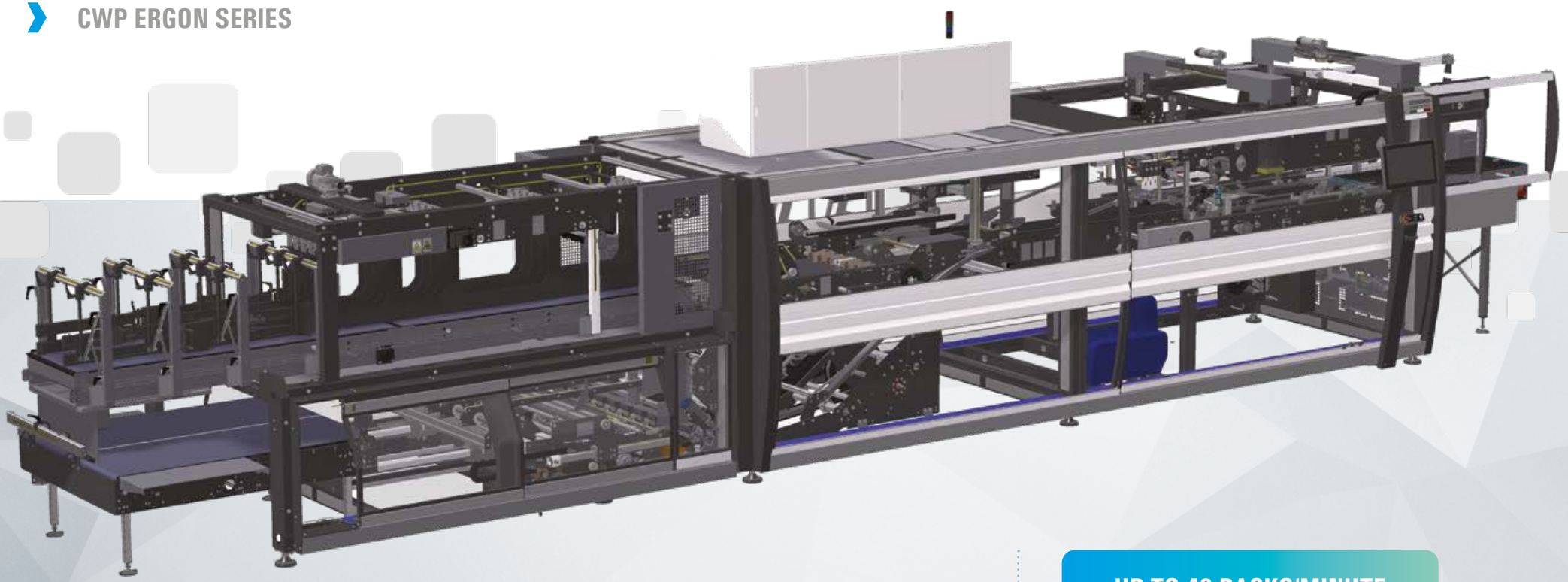
3 Later on flap-folding devices fold first side flaps and then upper/lower flaps on both the front and the back of the pack. A gun sprays a thin layer of hotmelt glue on the flaps to ensure a perfect endurance of the box/tray.

4 At the machine outlet the case walls are pressed by special guides.
Such system ensures perfect and durable pack squaring, if compared to pressing systems with rotating chains, which cannot provide the same quality standard.

» Fridge packs

SMI wrap-around packers can pack bottles and cans in pack formats specifically designed to fit into the limited space offered by fridge compartments, therefore named “fridge packs”.
Thanks to an innovative design, the box is fitted with a special opening (engraved on the box itself) which allows to pick from the pack only the bottles or cans needed, leaving the remaining ones stored in the fridge.
The box serves as a dispenser for the products gathered in the pack.
Crucial for the realization of this pack is the use of the kraft cardboard which, though it's thinner, ensures a firm packaging.





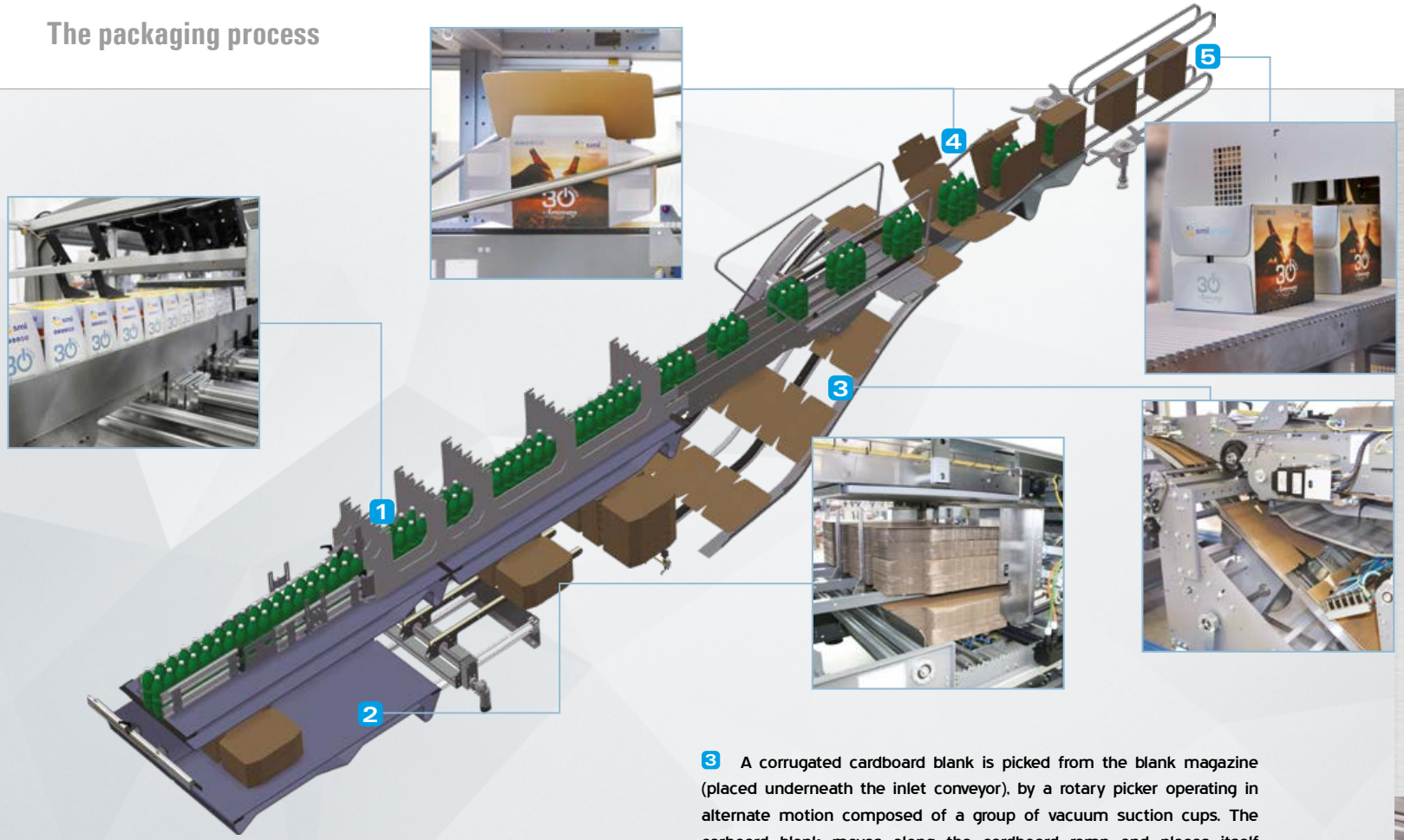
MODEL RANGE

CWP 40 EL

UP TO 40 PACKS/MINUTE

» Wrap-around case packers

CWP series features automatic machines for packing plastic, metal, cardboard or glass containers in corrugated cardboard cases and/or trays without film.
CWP wrap-around packers run up to 40 packs per minute, depending on the product handled and on the packing pattern.
Different pack collations can be formed according to the container's shape, capacity and dimensions; the most popular formats on the market are 2x3, 3x4 and 4x6.
CWP packers are equipped with an electronic product-grouping system and manual format changeover.
The CWP series is also available in the "EL" version with Easy-Load horizontal carton magazine.



1 On the machine's inlet conveyour belt, featuring low-friction chains made of thermoplastic material, a specific group of motorized oscillanting guides accurately lines up the loose containers moving towards the pack formation zone, where the containers are clustered in the selected format through electronically synchronized fingers, operating in continuous motion.

2 The new Easy-Load system automatically loads the cardboard blanks into the machine cardboard magazine. The new loading device is made up of a group of motorized belt conveyors on which the operator easily places the cardboard blanks in uniform horizontal stacks.

3 A corrugated cardboard blank is picked from the blank magazine (placed underneath the inlet conveyor), by a rotary picker operating in alternate motion composed of a group of vacuum suction cups. The carboard blank moves along the cardboard ramp and places itself underneath the group of products in transit with the short side leading.

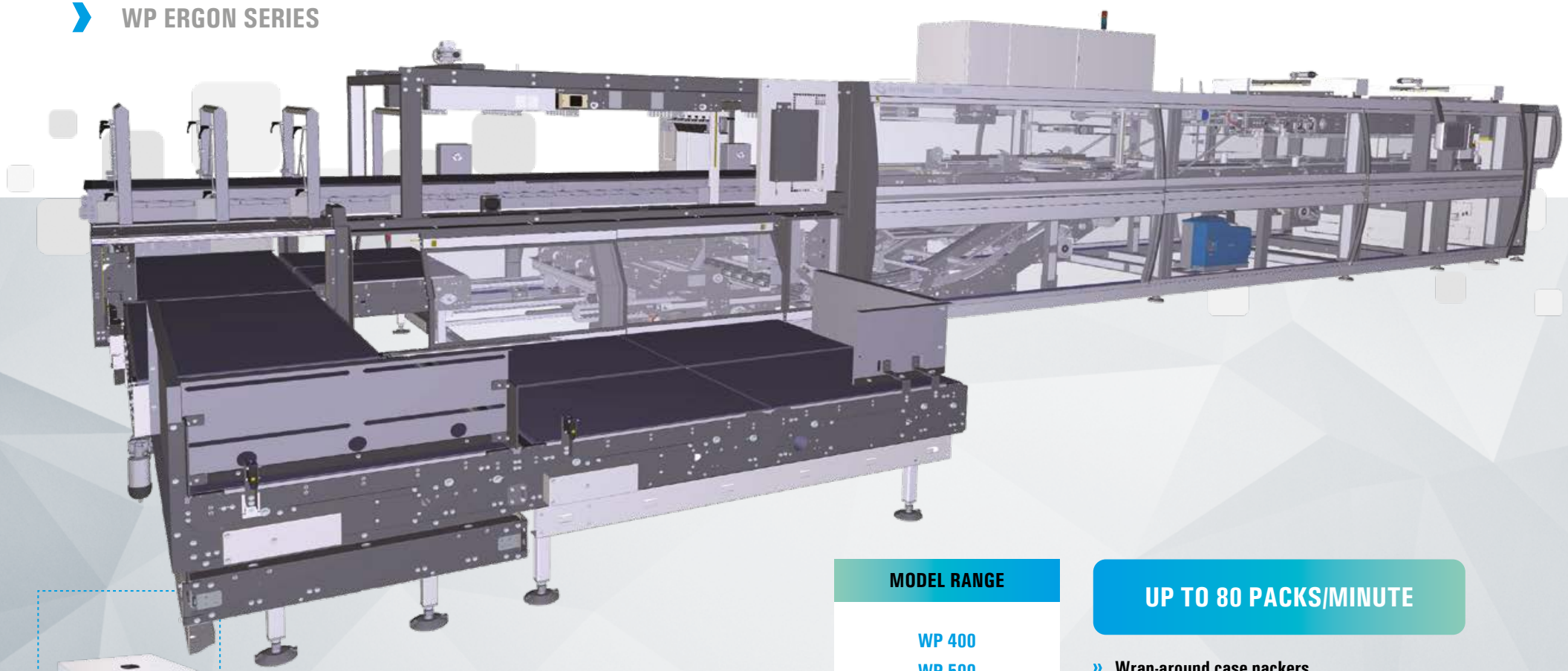
4 The tray/case former features a continuous wrap-around system. In the tray/case former, the cardboard blank is folded and wrapped around the products by means of special guides. The flap folding devices fold the blank's side flaps and then the top/bottom flaps of both the front and back side of the pack. The hot melt glue sealing ensures a very high resistance of the pack.

5 At the machine outlet, the pack walls are pressed by special guides that guarantees a perfect and lasting squaring of the cases. Such system ensures perfect and durable pack squaring, if compared to pressing systems with rotating chains, which cannot provide the same quality standard.

» Wrap-around technology

The wrap-around system offers the following advantages:

- only one machine is required to form the cardboard case and seal the product inside it;
- wide flexibility of use and high stability of the packs;
- continuous packaging that ensures a smooth production process, without jerky movements;
- ideal solution to obtain a shock-resistant pack, capable of protecting the containers during the transport;
- better quality of the pack and reduced mechanical wear;
- possibility to graphically customize the cardboard case to draw the consumer's attention;
- easy and safe maintenance operations.



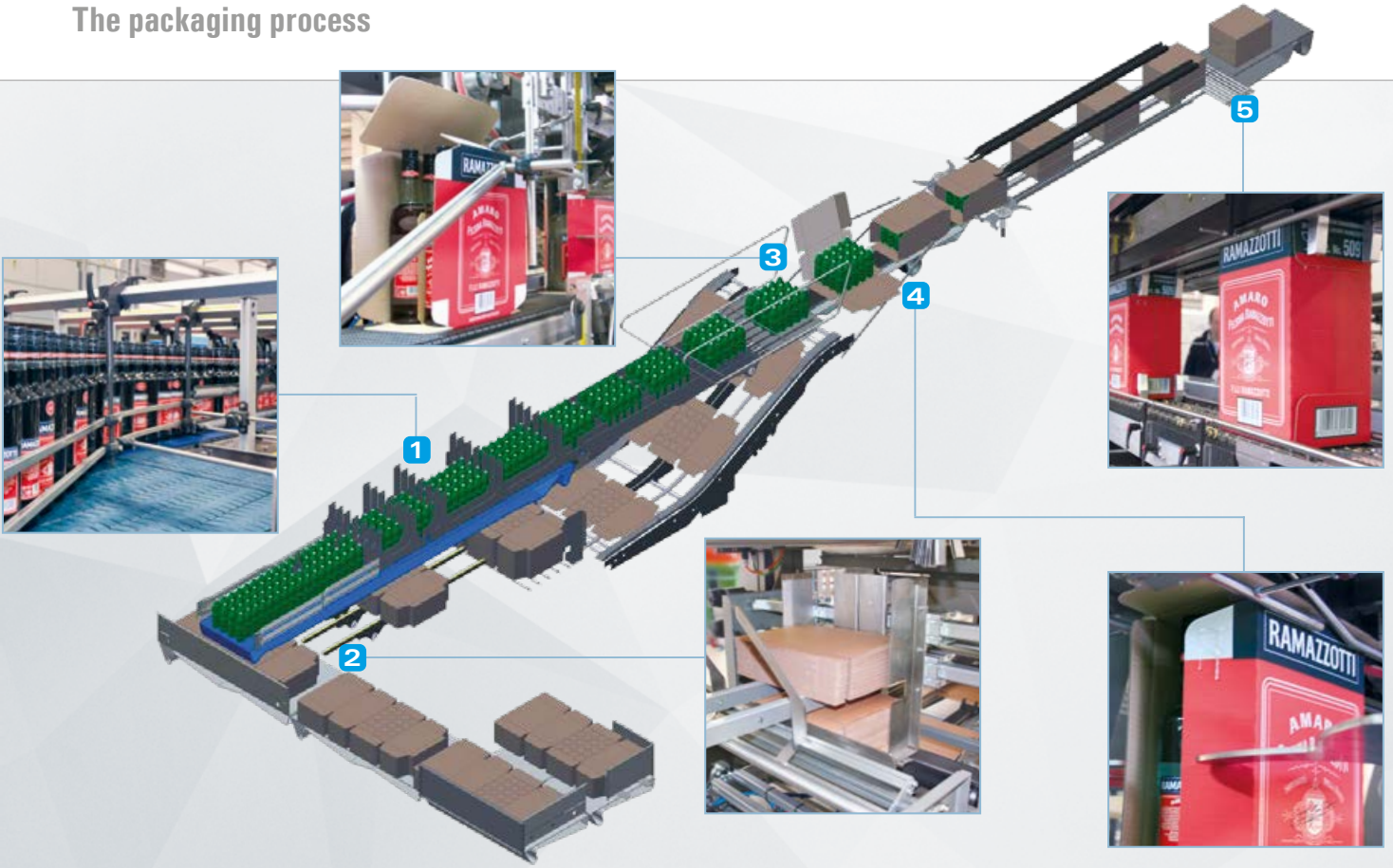
MODEL RANGE

WP 400
WP 500
WP 600
WP 800

UP TO 80 PACKS/MINUTE

» Wrap-around case packers

The WP series includes automatic machines for the packaging of plastic, metal, cardboard and glass containers in corrugated cardboard cases and/or trays without film. The WP case packers can achieve an output rate up to 80 packs per minute, according to the machine model and to the product. Pack collations can vary according to the container shape, capacity and size; in general, the most requested collations are: 2x3, 3x4 and 4x6. The blank magazine capacity of all WP models can be increased through additional modules. Moreover, all WP case packers are equipped with an electronic grouping system, manual format changeover and with the Easy-Load system to automatically load the cardbord blank magazine.



1 On the machine's inlet conveyour belt, featuring low-friction chains made of thermoplastic material, a specific group of motorized oscillanting guides accurately lines up the loose containers moving towards the pack formation zone, where the containers are clustered in the selected format through electronically synchronized fingers, operating in continuous motion.

2 The new Easy-Load system automatically loads cardboard blanks into the dedicated blank magazine of the machine. The new loading device is made up of a group of motorized mat-equipped conveyour belts on which the operator easily places the cardboard blanks in uniform horizontal stacks.

3 A corrugated cardboard blank is picked from the blank magazine by a newly designed picker equipped with vacuum suction cups; then, the carboard blank is carried up along the blank ramp and positioned under the incoming pack collation with short side leading. The tray/case former features a continuous wrap-around system.

4 In the tray/case former, the cardboard blank is folded and wrapped around the products by means of special guides. The flap folding devices fold the blank's side flaps and then the top/bottom flaps of both the front and back side of the pack. The hot melt glue sealing ensures a very high resistance of the pack.

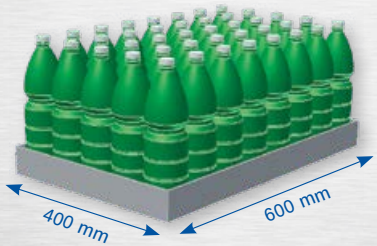
5 At the machine outlet, the pack walls are pressed by special guides that guarantees a perfect and lasting squaring of the cases.

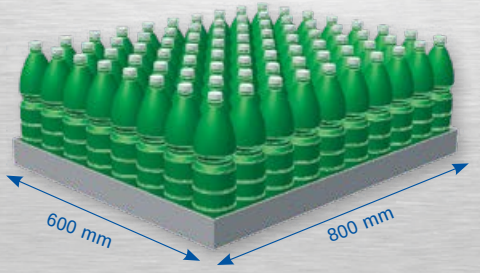
Extra-large pack capability

SMI wrap-around case packers of WP series can be equipped to make form both standard-sized and extra-large cardboard cases or trays as big as ¼ (400x600 mm) or 1/2 europallet (600x800 mm), the so called pallet display.

This solution allows consistent cutbacks on operating costs, if compared to existing systems composed of two machines: one wraparaound packer to realize standard 2x3, 3x4, 3x5 and 4x6 pack collations; and one tray-packer to put up to 80 bottles in trays as big as 1/4 or 1/2 europallet.

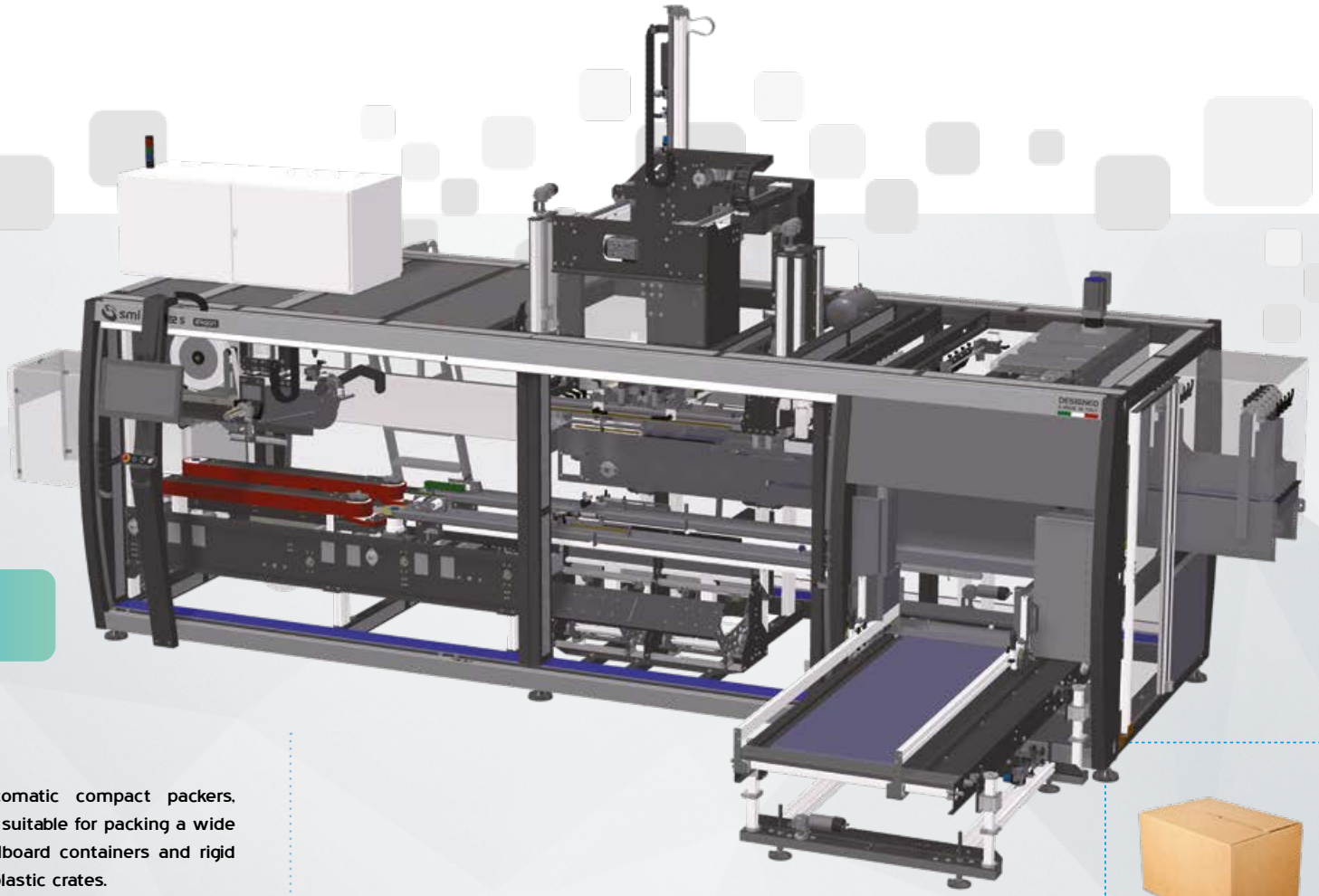
WP XL wrap-around packers also ensure further savings on costs thanks to optimisation of operational and storage areas, lower consumption of packaging materials and reduction of energy costs.





MODEL RANGE

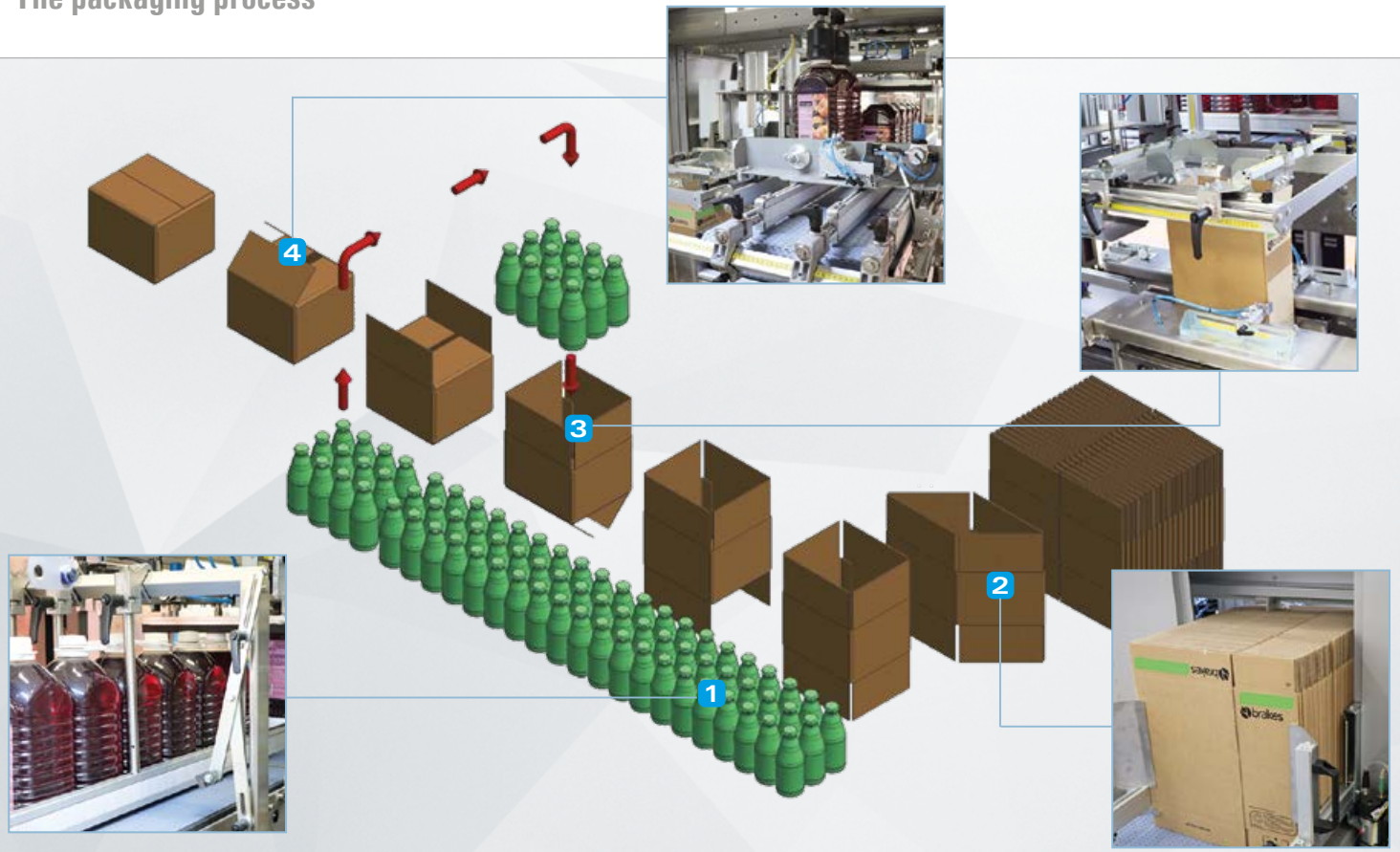
ACP 20
ACP 22



UP TO 25 PACKS/MINUTE

» Pick & place case packers

The ACP ERGON series consists of automatic compact packers, characterized by a solid monoblock structure, suitable for packing a wide range of products (glass, metal, plastic, cardboard containers and rigid bags) in American cardboard cases (RSC) or plastic crates.
Case packers from the ACP ERGON range feature a pick & place packaging system with loose product top loading.
The currently available models are two: ACP 20 ERGON for production speeds up to 16 packs/minute and ACP 22 ERGON, with double picking gripper, for speeds up to 25 packs/minute.
Adhesive tape is used to seal the cases.
Format changeover is easy and quick and is carried out through the replacement of picking grippers.
The machine access is easier, with advantages for the maintenance operations performed by the operator.



1 On a four-lane infeed conveyor, equipped with chains made of thermoplastic material with low friction coefficient level, a mechanical system for separating the product, composed of a pneumatic device for blocking and releasing the upper and lower loose product, creates the desired format.

2 The pre-folded blanks are picked from the cardboard magazine by an alternate motion picker composed of a group of suckers with vacuum suction. By moving away from the magazine, the combined movement between the picker and a specific guide opens the cardboard blank by giving it the squared shape of an open case.

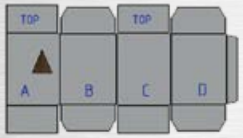
3 The rotary flap-folding devices close the case lower flaps. The upper stabilizer opposes the upward push that the case receives during the closure of the lower flaps. The pre-inserting flap opener keeps the case upper flaps open during the product loading.

4 The product is picked by grippers in the case of loose containers and by suction suckers in the case of packs and is placed in the case through a top-loading system. Flap-folding devices activated by semi-rotary cylinders close the case upper flaps.

» Advantages of ACP case packer

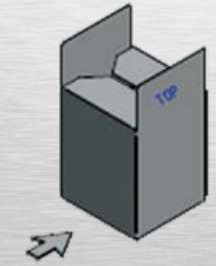
- Compact machine with a reduced size
- Possibility to stack the product in the case during its insertion, without the need for dedicated systems (low costs)
- Adhesive tape is used to seal the cases
- Possibility to pack several types of products, in particular oval containers (such as shampoo) and briks (teas, juices, etc.), simply by changing the picking gripper
- Possibility to handle delicate products, such as wines, sparkling wines and liquors, without damaging the label during the machine functioning

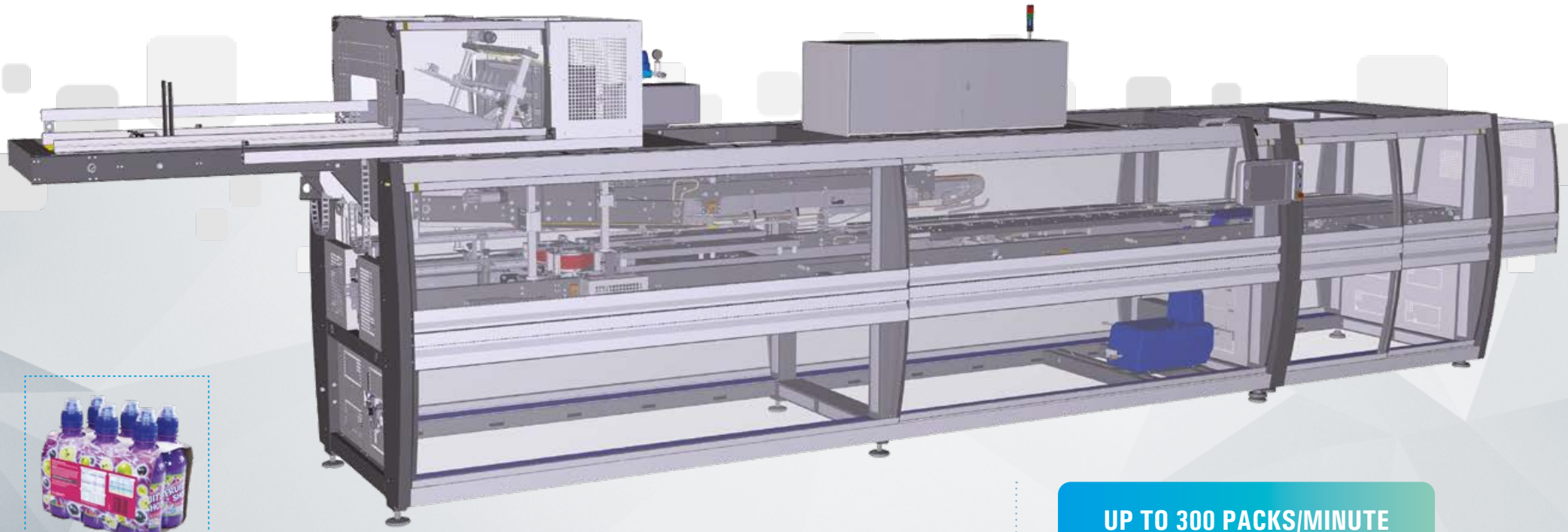
» Feasible cases



Open blank not glued

Blank to be used in the machine (pre-folded and glued)





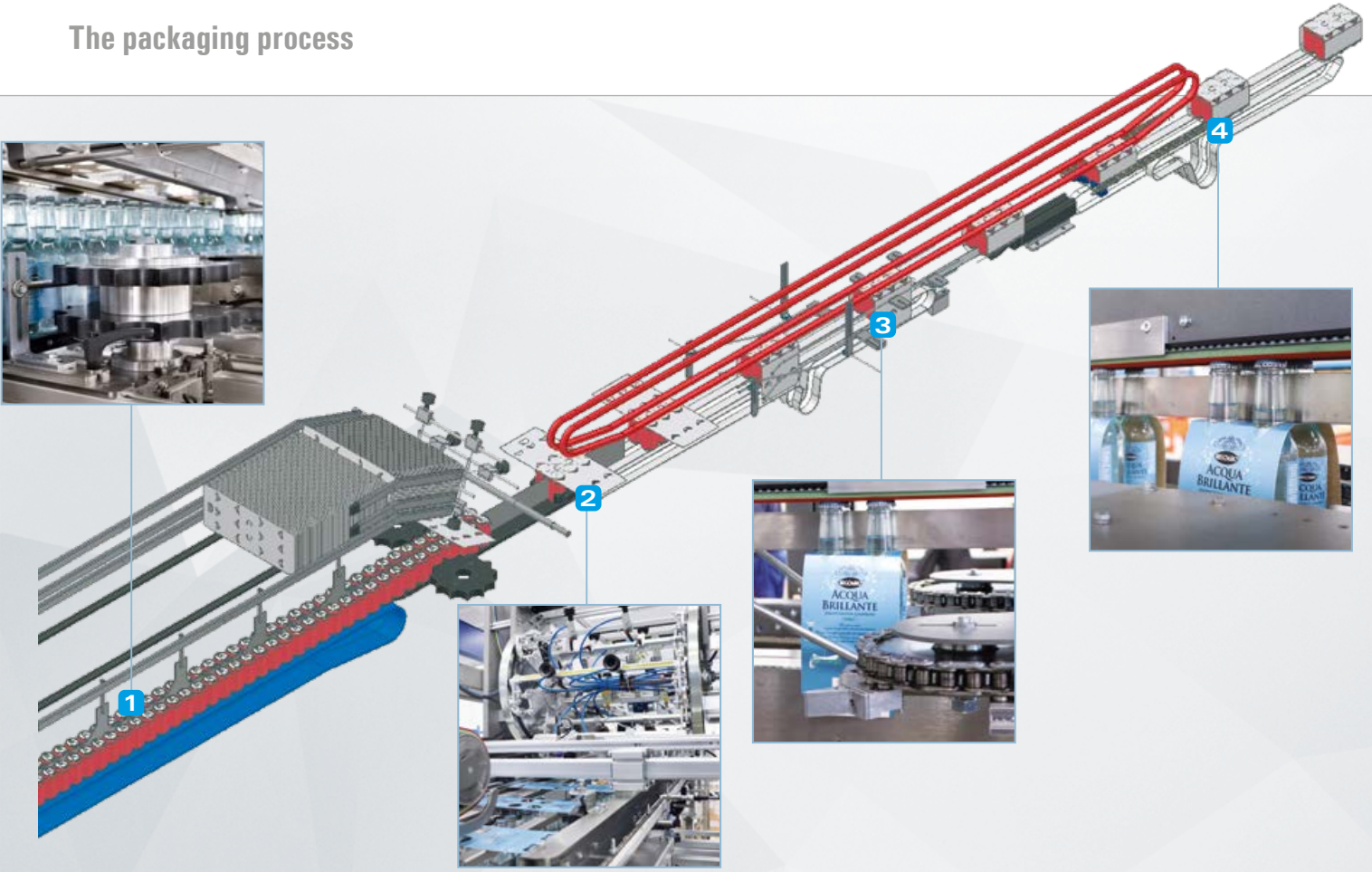
MODEL RANGE

MP 150
MP 150 BK
MP 300

UP TO 300 PACKS/MINUTE

» Cardboard sleeve multipackers

The MP series includes automatic machines for the packaging of plastic, metal, cardboard and glass containers in overlapping cardboard sleeves. MP multipackers can achieve an output rate up to 300 packs per minute, depending on the machine model and on the product to be packaged. Low or medium capacity containers can be packed in OTT (Over The Top) or NT (Neck Through) system. With unusually-shaped products, the pack can be strengthened by adding a top/bottom retaining flap which keeps the containers perfectly steady inside the cardboard sleeve. Pack collations can vary according to the container shape and size; in general, the most requested collations are: 1x3, 1x4, 2x2, 2x3 and 2x4. All MP models feature an electronic grouping system; the change-over operation is manual (also available in the automatic version as a paid accessory).



1 On the machine's inlet conveyour belt, featuring low-friction chains made of thermoplastic material, the loose containers arrive already laned in 1 or 2 rows.

2 In the pack formation section, the containers are clustered in the required format through electronically synchronized dividing fingers, operating in continuous motion. At the same time, a cardboard blank is picked from the blank magazine, placed in the upper section of the machine, by a rotary picker operating in alternate motion composed of a group of six vacuum suction cups and placed upon the products in transit.

3 Dedicated mechanical devices fold down the two longest sides of the cardboard blank; then, the pack bottom is sealed with hot melt glue. The choice of a hot melt glue sealing instead of a mechanical tucked-in closure ensures stiffer and steadier packages.

4 Only in the models equipped with the "TR module – translating conveyor at the machine output", the packs at the machine outlet can be positioned on multiple lanes (from 1 to 6) before being conveyed to another packaging machine or directly to the storage area.

» New TPP range - Multipack packer with top pad up to 300 packs/minute

The new TPP ERGON range (acronym for Top Pad Packer) is a plastic-free solution for multipack packaging of various types of cans, through the application of a cardboard pad positioned in the upper part of the pack.
Taking on board some of the main features of the overlapping cardboard sleevers of the MP ERGON series, the TPP ERGON project was conceived by SMI as a technologically advanced, packaging solution, suitable for high production speeds (up to 300 packs/minute), that stands out for respect for the environment, advanced automation and flexibility of use.
The new multipacks, which do not require the use of glue, thus respond to the growing demands of the market for eco-sustainable packaging solutions and companies needs to have efficient, flexible and competitive packaging machines.

MODEL RANGE

LCM 30	LCM 40 EL

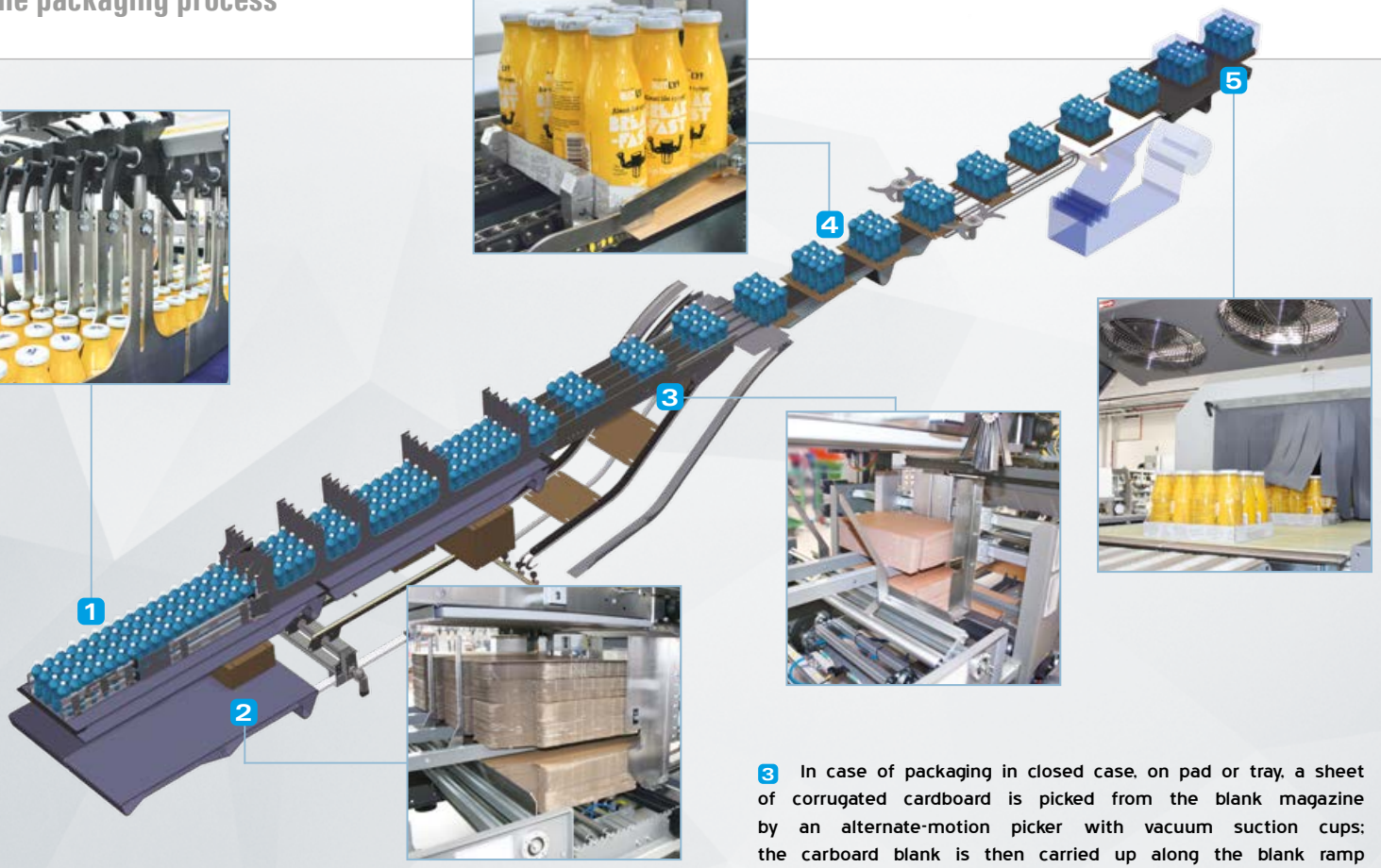
UP TO 40 PACKS/MINUTE

» Combined packers

LCM automatic machines combine in one system the functions provided by wrap-around packers and shrink wrappers, for the packaging of plastic, metal, cardboard and glass containers in closed cases, on cardboard pad + film, on cardboard tray + film, and in cardboard tray only.

LCM packing machines run up to 40 packs per minute, depending on the product handled and on the packing pattern. Different pack collations can be formed according to the container's shape, capacity and dimensions; the most popular formats on market are 2x3, 3x4 and 4x6 in closed boxes, 4x3 and 6x4 on tray+film.

Furthermore, all LCM 30 combined packers are equipped with a mechanical product-grouping system and manual format changeover, while the LCM 40 EL is equipped with a system with electronically synchronized pins. The LCM 40 EL is supplied with an Easy-Load system for the loading of the cardboard magazine.



1 At the machine infeed a motorised oscillating sorter lines up loose containers along a conveyor belt featuring low-friction chains made of thermoplastic material. In the pack-forming unit products are grouped in the chosen packing pattern by means of an alternate-motion pneumatic device (LCM 30) or electronic device (LCM 40 EL)

2 In the LCM 40 EL, the new Easy-Load system automatically loads the cardboard blanks into the machine cardboard magazine. The new loading device is made up of a group of motorized belt conveyors on which the operator easily places the cardboard blanks in uniform horizontal stacks.

3 In case of packaging in closed case, on pad or tray, a sheet of corrugated cardboard is picked from the blank magazine by an alternate-motion picker with vacuum suction cups; the carboard blank is then carried up along the blank ramp and positioned under the incoming pack collation with short leading side (wrap-around case) or long leading side (tray).

4 Depending on the packaging features, in the case/tray forming unit the cardboard blank is folded and wrapped around the products by means of special guides.
Later on flap-folding devices fold first side flaps and then upper/lower flaps on both the front and the back of the pack.
Hot-glue sealing makes the case highly resistant.

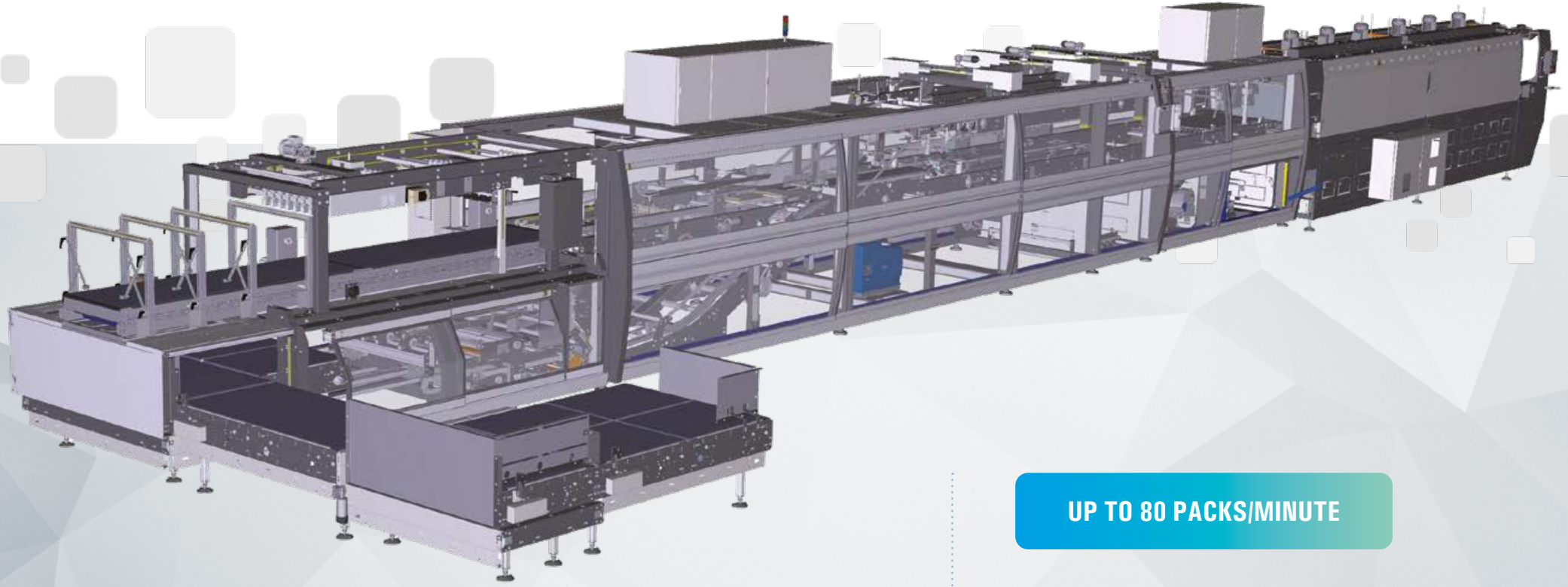
5 If set in the packaging program, the film is wrapped around the pack in transit and overlapped on its bottom and then enters the shrink tunnel. The unwinding of film reels - positioned in the lower part of the machine – is adjusted by a progressive brake which provides constant film tensioning.

» Versatile packs

Besides the cases with traditional sealing, the LCM, CM, LWP and WP models can make cases with joining flaps. Cases can be highly customized by printing images on the 5 visible sides, thus becoming an excellent vehicle of product marketing and promotion, and provide as well a higher protection of the case content from dust, insects, dirt, etc.

1) Traditional closure

2) Closure with joining flaps



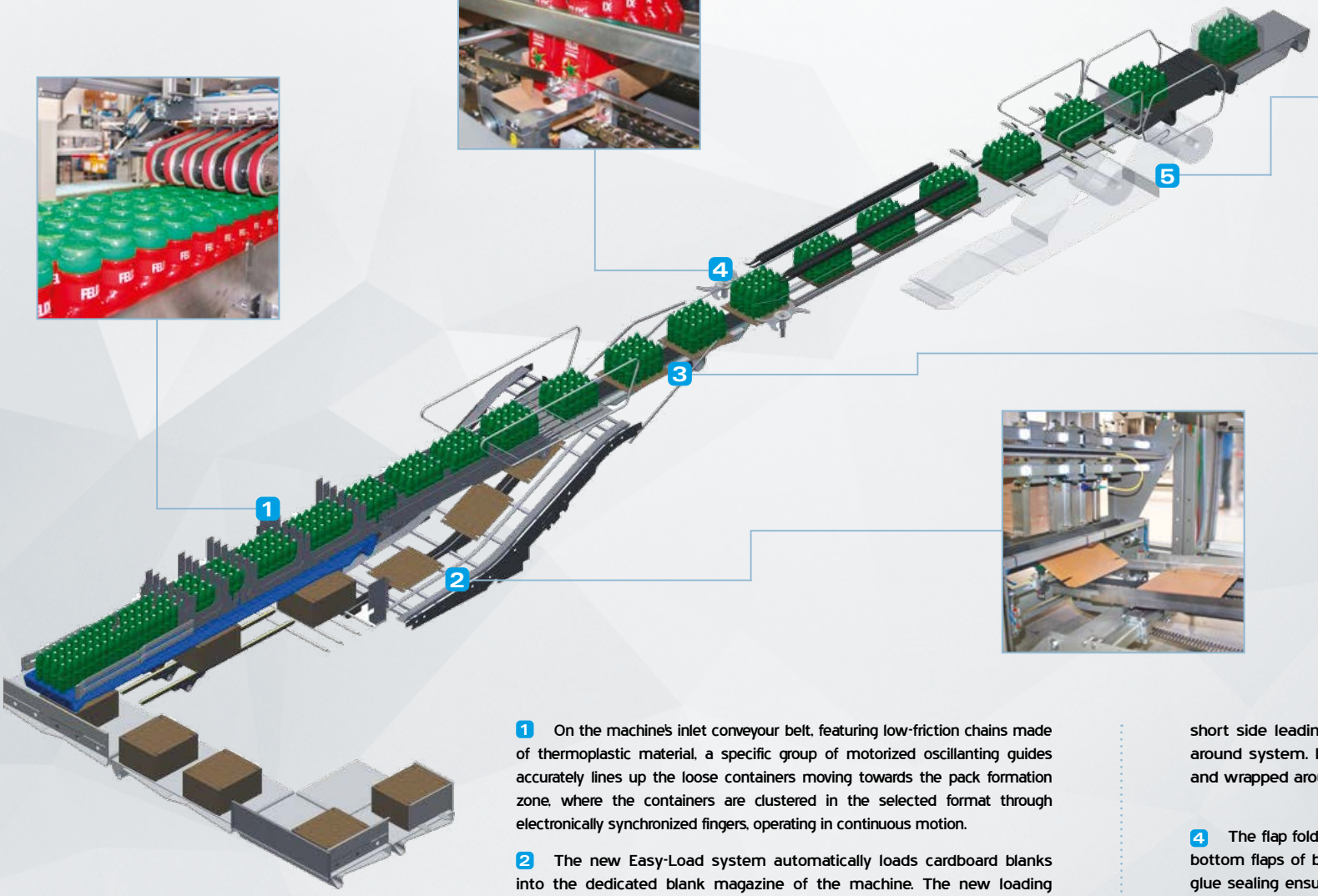
MODEL RANGE

CM 400	CM 600
CM 500	CM 800

UP TO 80 PACKS/MINUTE

» Combined packers

The CM series includes automatic machines gathering into a single unit the functions of a wrap-around case packer and of a shrink wrapper, for the packaging of plastic, metal, cardboard or glass containers in the following package types: cardboard case, cardboard tray + film and cardboard tray only. CM FP models also make pad + film and film only packs. CM machines can achieve an output rate up to 80 packs per minute, according to the machine model, the type of product and the selected format. Pack collations can vary according to the containers shape, capacity and size; in general, the most requested collations are: 2x3, 3x4 and 4x6 for wrap-around cases and 4x3 and 6x4 for tray + film packs. The blank magazine capacity can be increased through additional modules. All CM packers feature an electronic grouping system, manual format changeover and the Easy-Load system to automatically load the cardbord blank magazine.



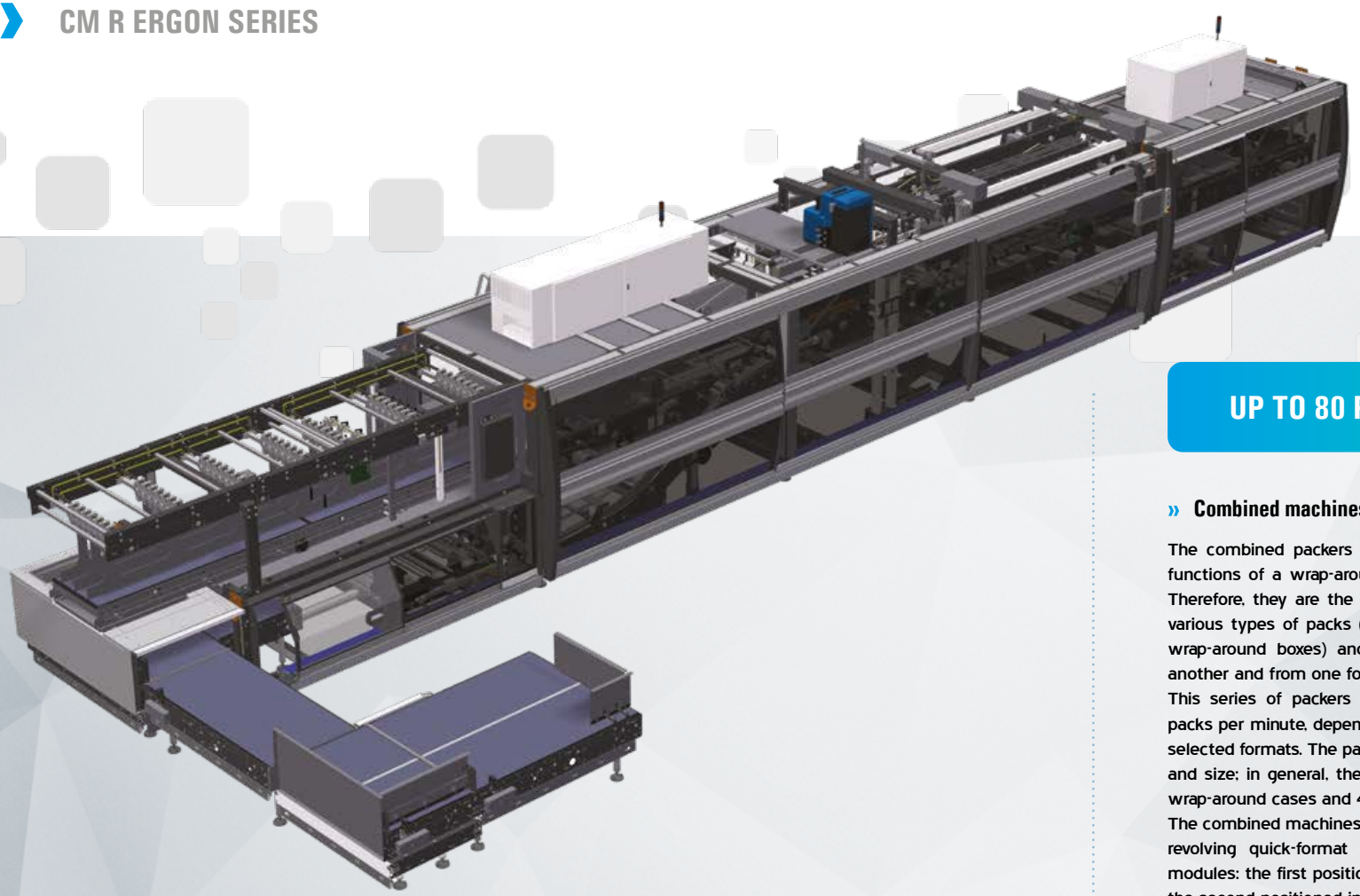
1 On the machine's inlet conveyour belt, featuring low-friction chains made of thermoplastic material, a specific group of motorized oscillanting guides accurately lines up the loose containers moving towards the pack formation zone, where the containers are clustered in the selected format through electronically synchronized fingers, operating in continuous motion.

2 The new Easy-Load system automatically loads cardboard blanks into the dedicated blank magazine of the machine. The new loading device is made up of a group of motorized mat-equipped conveyour belts on which the operator easily places the cardboard blanks in uniform horizontal stacks.

3 In case of packagig in cases or trays, a corrugated cardboard blank is picked from the blank magazine by a newly designed picker equipped with vacuum suction cups; then, the carboard blank is carried up along the blank ramp and positioned under the incoming pack collation with short side leading. The tray/case former features a continuous wrap-around system. In the tray/case former, the cardboard blank is folded and wrapped around the products by means of special guides.

4 The flap folding devices fold the blank's side flaps and then the top/bottom flaps of both the front and back side of the pack. The hot melt glue sealing ensures a very high resistance of the pack. At the machine outlet, the pack walls are pressed by special guides that guarantees a perfect and lasting squaring of the cases.

5 In case of packaging in cases or trays with film, the unwinding of the film reels, located in the lower part of the machine, is controlled by brushless motors, in order to ensure a constant tensioning of the film.



UP TO 80 PACKS/MINUTE

» Combined machines

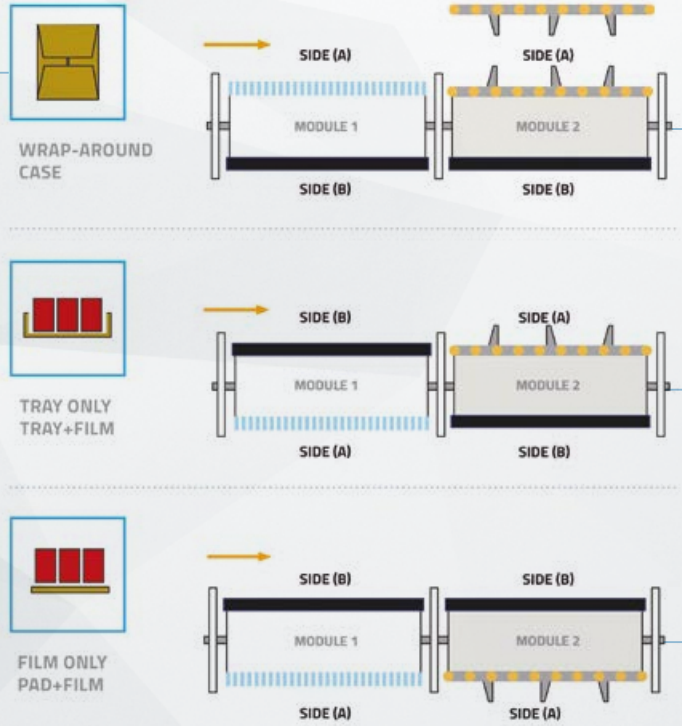
The combined packers from the CM R range group in a single system the functions of a wrap-around case packer, a tray packer and a shrink wrapper. Therefore, they are the ideal solution to pack a wide range of containers in various types of packs (film only; cardboard pad+film; tray+film; tray only and wrap-around boxes) and to make frequent switches from one product to another and from one format to another

This series of packers is capable of reaching production speeds up to 80 packs per minute, depending on the machine model, the product type and the selected formats. The pack collations can vary according to the container shape and size; in general, the most requested collations are: 2x3, 3x4 and 4x6 for wrap-around cases and 4x3 and 6x4 for tray + film packs.

The combined machines from the CM R range are equipped with the innovative revolving quick-format changeover system which consists of two rotary modules: the first positioned in the cardboard/loose product advance area and the second positioned in the area of box/tray formation and loose product flow. The two rotary modules are supplied with double equipment: that required for working in film only and that for the packaging in tray or wrap-around cases.

ERGON MODEL RANGE

CM 400 R	CM 600 R
CM 500 R	CM 800 R



1 At the infeed conveyor of the machine, a motorized system of oscillating guides correctly channels the loose containers towards the pack formation area.

2 The Easy-Load system automatically loads the cardboard blanks into the machine cardboard magazine. A corrugated cardboard blank is picked from the cardboard magazine through a cam-controlled picker with new-generation suction cups, moves along the cardboard climb and is positioned below the incoming group of products with short side leading (wrap-around box) or long side leading (tray). The cardboard/ tray packer operates continuously with wrap-around system.

3 In the pack formation area, containers are grouped continuously in the selected format through electronically synchronized pins.

4 The module for the advance of the cardboard blanks or loose product is supplied with double equipment (MODULE 1):

- SIDE (A): motorized belt equipped with fingers and side guides for the case formation
- SIDE (B): motorized belt for the transport of loose products or products in pad/tray.

5 The module of the former is supplied with double equipment (MODULE 2):

- SIDE (A): motorized conveyor equipped with fingers and side guides that fold and wrap the cardboard blank around the products. The flap-folding devices fold first the side flaps and then the lower/upper flaps, both of the front and rear side. A gun sprays a thin layer of hot melt glue on the flaps to ensure excellent pack resistance. At the machine outfeed, specific fixed guides press the walls of the box that has just been realized.
- SIDE (B): motorized belt for the transport of loose products or products on pad. The rotation of the two modules by 180 degrees enables to obtain the pack combinations shown in the picture.

6 In case of packaging in case/tray with shrink film, the unwinding of the film reels, positioned in the lower part of the machine, is controlled by a brushless motor, that ensures the precise and constant film tensioning. Before the pack enters the shrink tunnel, the film is cut by a knife equipped with motorized blade, wrapped around the group of containers and overlapped on the pack bottom.

MODEL RANGE

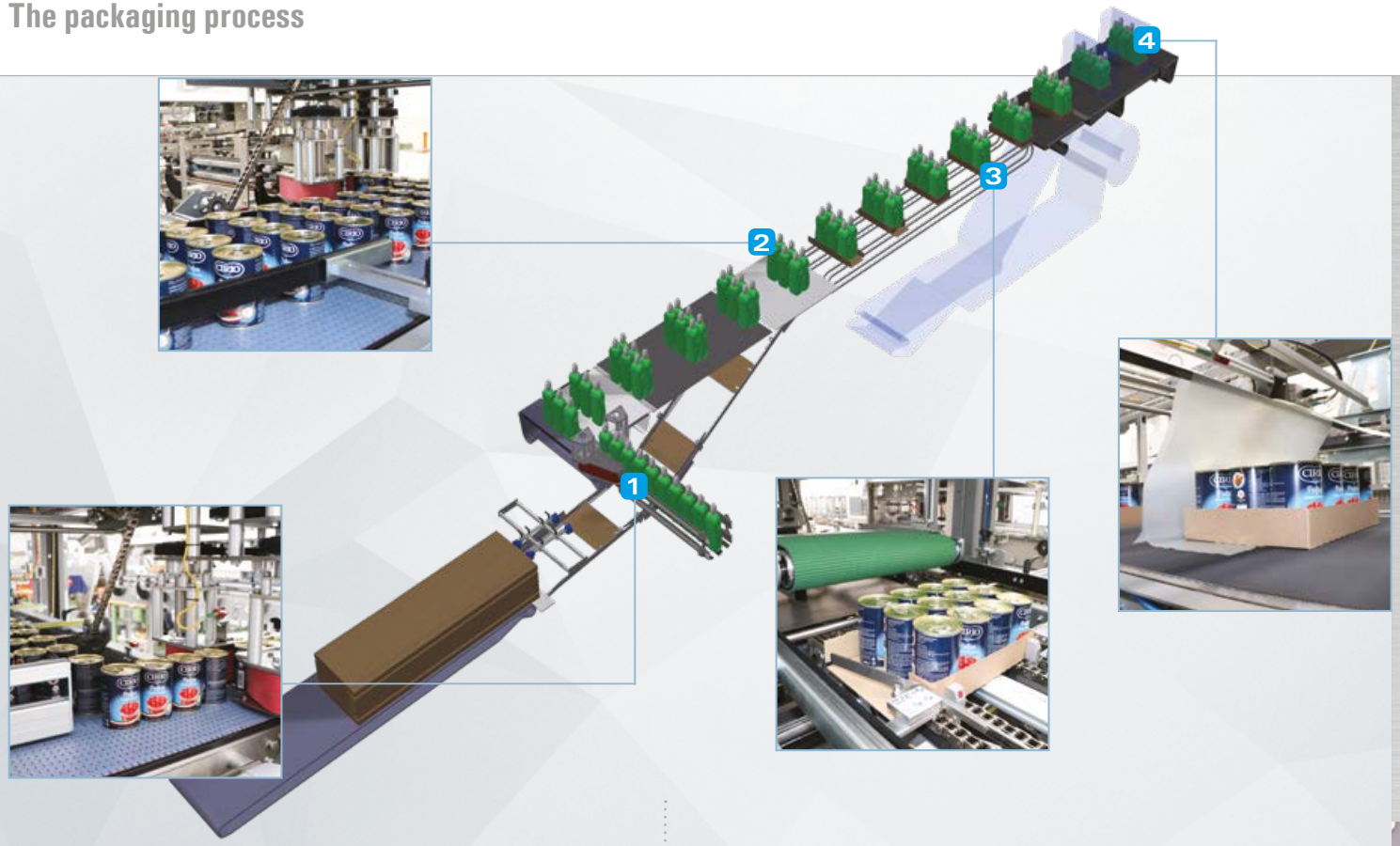
ASW 80-I

ASW 150-I

UP TO 150 INTRODUCTIONS/MINUTE

» Medium speed shrink wrappers

The ASW ERGON range is composed of different models of compact shrink wrappers with single lane 90° product infeed, suitable for making packs in film only, cardboard pad + film, cardboard tray, cardboard tray + filmThe ASW shrink wrappers are suitable to pack a wide range of cylindrical, oval or square/rectangular containers at a speed of max. 150 introductions/minute, according to the machine model and the type of product to be processed.The models of this series stand out for their compact structure that is easily adapted to the logistic end of line conditions and for fast and easy changeover, thanks to the single-lane infeed.



1 A system with a single-lane infeed facilitates the correct laning of the loose containers on the conveyor. The product feeding system features a continuous motion and the pack formation is performed by a double-belt product separation system driven by electronic axis.

2 Then, loose products are pushed by the single lane conveyor to the multi-lane conveyor. This is carried out in the ASW 80-I thanks to a Cartesian axes system, while in the ASW 150-I by a rotary system. In P and T models, a corrugated cardboard pad or blank is picked from the blank magazine by a rotary picker composed of two groups of electrical vacuum suction cups. The pad or the blank moves along the cardboard climb and places itself underneath the group of products in transit with the long side leading. The tray former operates in continuous motion.

3 In the tray former, special mechanical devices fold the blank's front and rear flaps. The side flaps are sprayed with hot melt glue and then folded, thus forming the tray. The unwinding of the film is controlled by the cutting unit in the ASW 80-I and by brushless motors in the ASW 150-I.

4 The film tensioning is controlled in the ASW 80-I by a system equipped with tensioning spring and in the ASW 150-I by a piston. When the operating film reel is over, a manual sealing bar joins the films. Before the pack enters the shrink tunnel, the film is cut by a knife blade controlled by direct-drive brushless motor, wrapped around the group of containers and overlapped on the bottom of the pack.

» Single-lane infeed for simple and quick format changeover

ASW series is characterized by a single-lane infeed; as a consequence, a divider is not necessary to lane the products. This enables to reduce the costs, as well as the space occupied by the conveyor line. Furthermore, the single-lane infeed offers the advantage of working lots of different kinds of containers, with different sizes, without having to have additional belt equipment. It follows that format changeover is much faster and easier, as there is no need to regulate the guides on the different lanes.

MODEL RANGE

ACW 80-I

ACW 150-I

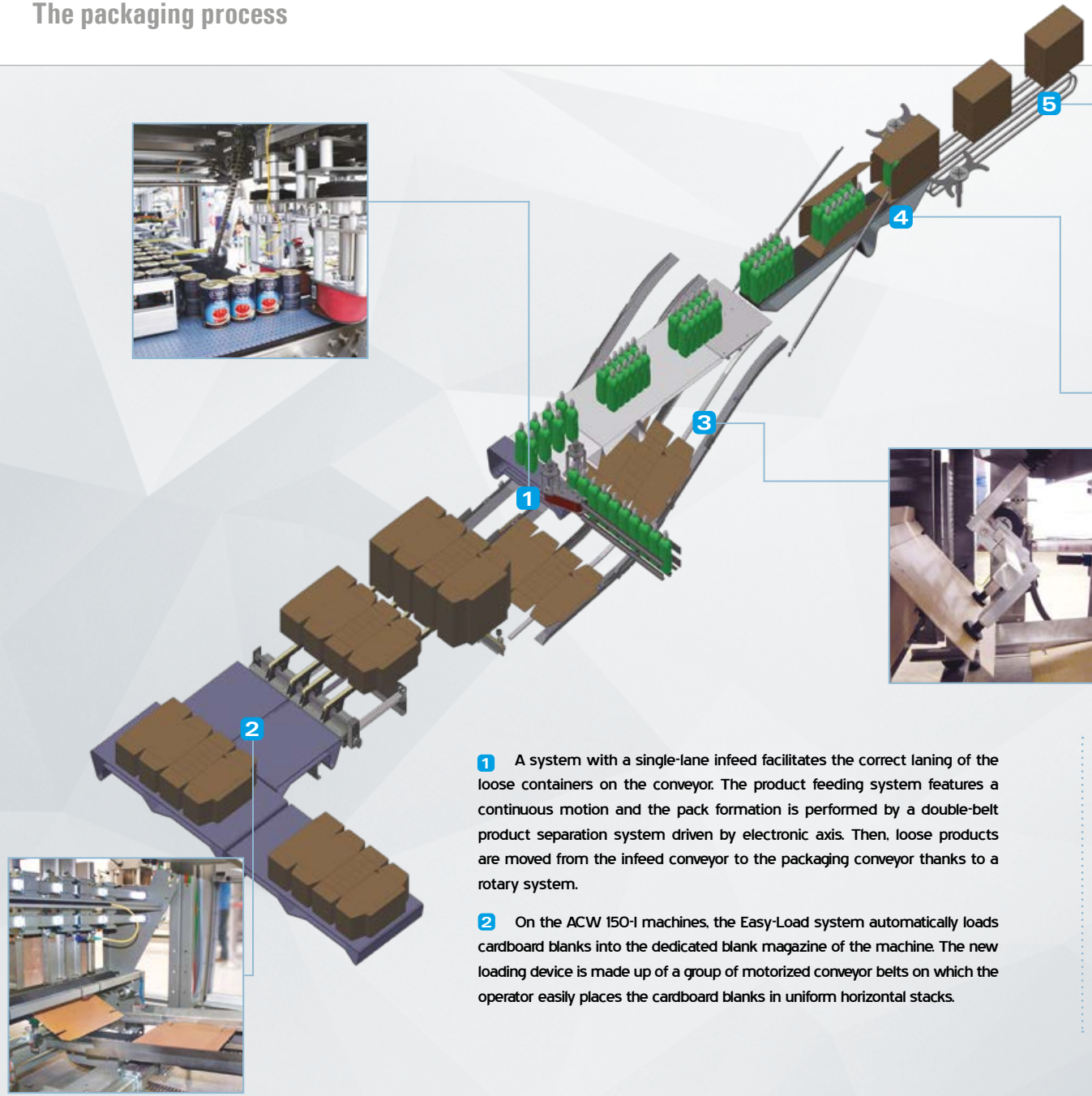
UP TO 150 INTRODUCTIONS/MINUTE

» Wrap-around case packers

The ACW ERGON range is composed of wrap-around case packers with single lane 90° product infeed, suitable for making packs in wrap-around cases and trays (the latter with walls with either the same height or different heights).

These packers can pack a wide range of cylindrical, oval or square/rectangular containers at a speed of max. 150 introductions/minute, according to the machine model and the type of product to be handled.

The ACW 150-I ERGON series are equipped with the Easy-Load innovative system, that allows the fully automated transport of the cardboard blanks, thus simplifying the loading operations for the operator.



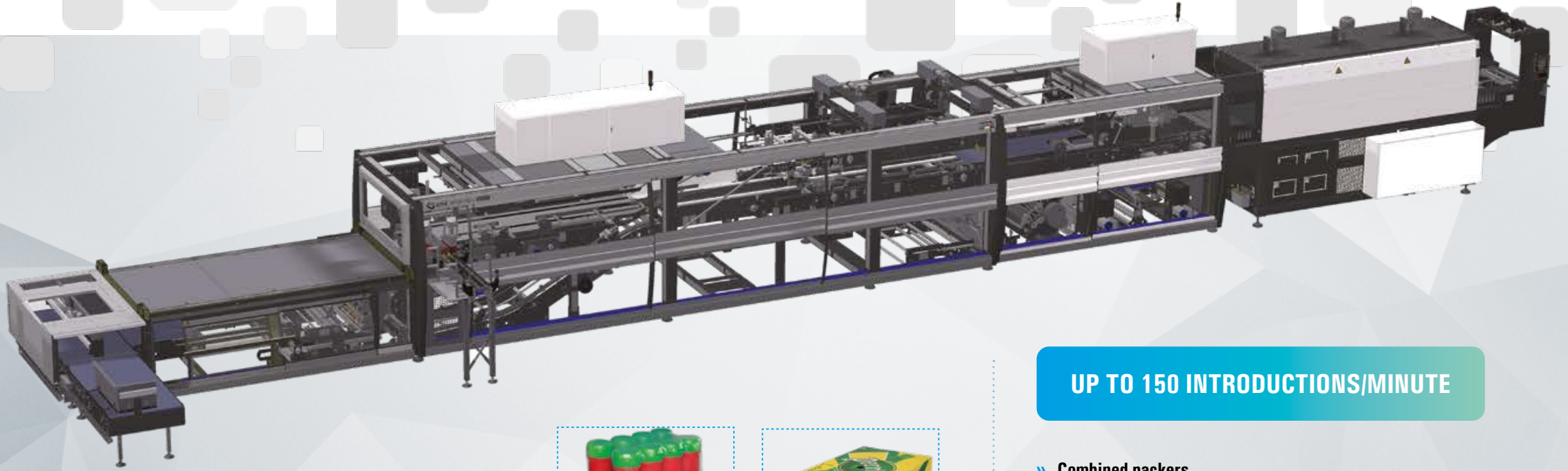
1 A system with a single-lane infeed facilitates the correct laning of the loose containers on the conveyor. The product feeding system features a continuous motion and the pack formation is performed by a double-belt product separation system driven by electronic axis. Then, loose products are moved from the infeed conveyor to the packaging conveyor thanks to a rotary system.

2 On the ACW 150-I machines, the Easy-Load system automatically loads cardboard blanks into the dedicated blank magazine of the machine. The new loading device is made up of a group of motorized conveyor belts on which the operator easily places the cardboard blanks in uniform horizontal stacks.

3 A corrugated cardboard blank is picked from the blank magazine by a rotary picker equipped with two groups of suction cups. The carboard blank is carried up along the blank ramp and positioned under the incoming pack collation with short side leading. The tray/case former features a continuous wrap-around system.

4 In the case/tray former, special guides fold and wrap the cardboard blank around the incoming products. The flap-folding devices first fold side flaps, then upper/lower flaps of both the front and back of the pack. The hot-glue sealing makes the case highly resistant.

5 At the machine outfeed, fixed guides keep the case walls pressed downward.



MODEL RANGE

AFCW 80-I

AFCW 150-I

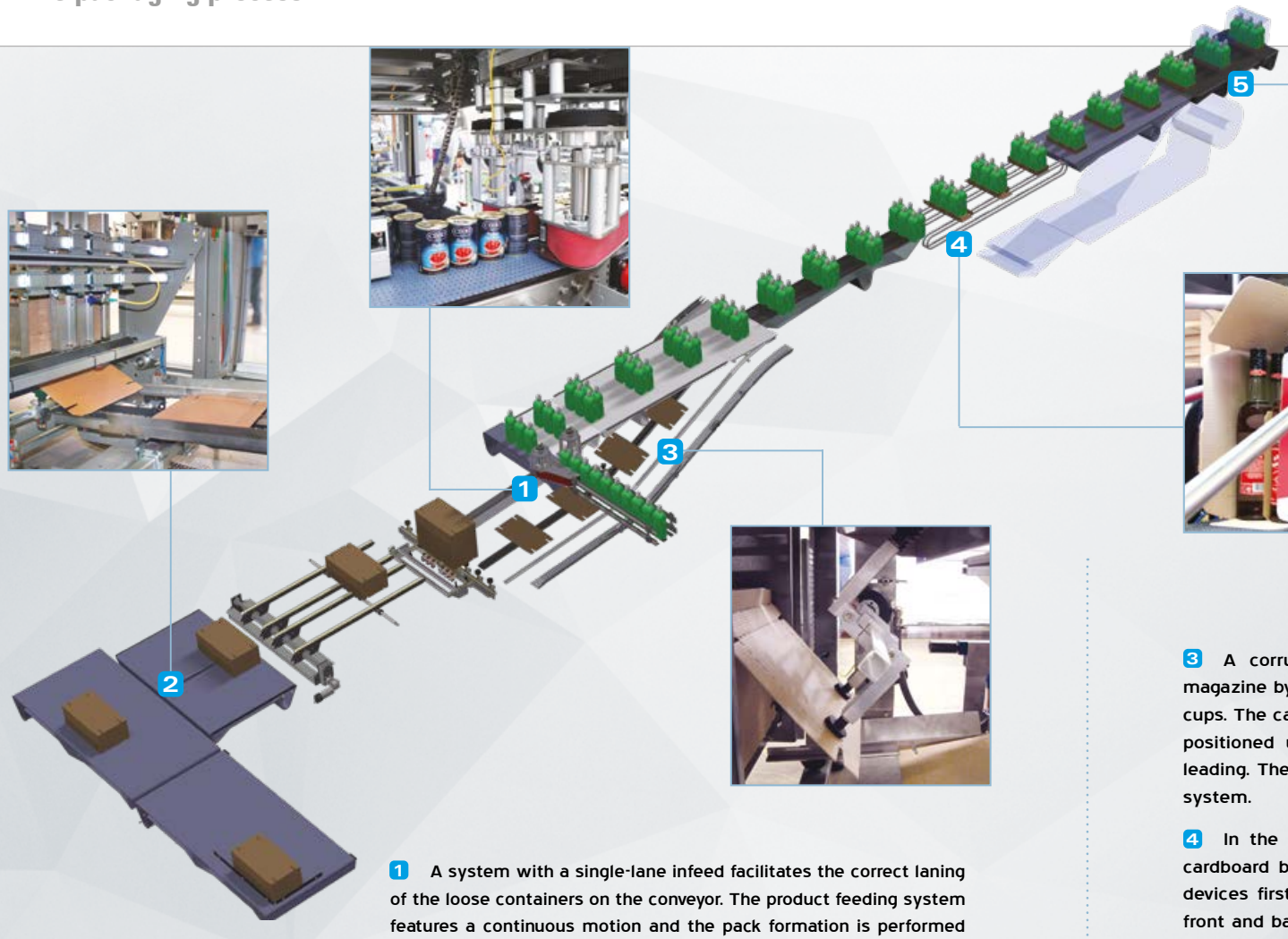
UP TO 150 INTRODUCTIONS/MINUTE

» Combined packers

The AFCW ERGON range is composed of combined packers with single lane 90 product infeed, suitable for making packs in wrap-around case, tray and tray + film.

These machines can pack a wide range of cylindrical, oval or square/rectangular containers at a speed of max. 150 introductions/minute, according to the machine model and the type of product to be handled.

The models of this range stand out for their compact structure that easily adapts to any end-of-line logistic conditions and for fast and easy changeover, thanks to the single-lane infeed. The AFCW 150-I range is equipped with the Easy-Load innovative system, that allows the fully automated transport of the cardboard blanks, thus simplifying the loading operations for the operator.



1 A system with a single-lane infeed facilitates the correct laning of the loose containers on the conveyor. The product feeding system features a continuous motion and the pack formation is performed by a double-belt product separation system driven by electronic axis. Then, loose products are moved from the infeed conveyor to the packaging conveyor thanks to a rotary system.

2 On the AFCW 150-I machines, the Easy-Load system automatically loads cardboard blanks into the dedicated blank magazine of the machine. The new loading device is made up of a group of motorized conveyor belts on which the operator easily places the cardboard blanks in uniform horizontal stacks.

3 A corrugated cardboard blank is picked from the blank magazine by a rotary picker equipped with two groups of suction cups. The cardboard blank is carried up along the blank ramp and positioned under the incoming pack collation with short side leading. The tray/case former features a continuous wrap-around system.

4 In the case/tray former, special guides fold and wrap the cardboard blank around the incoming products. The flap-folding devices first fold side flaps, then upper/lower flaps of both the front and back of the pack. The hot-glue sealing makes the case highly resistant. At the machine outfeed, fixed guides keep the case walls pressed downward.

5 In case of packaging in film, the film is cut by a knife blade controlled by direct-drive brushless motor, wrapped around the group of containers and overlapped on the bottom of the pack, that in the end enters the shrink tunnel. The film tensioning is controlled in the AFCW 80-I by a system equipped with tensioning spring and in the AFCW 150-I by a piston. When the operating film reel is over, a manual sealing bar joins the films.

Thermo-shrinking tunnel

The shrinking tunnels of the ERGON series feature state-of-the-art technical solutions which reduce energy consumption and offer the maximum environmental compatibility.

They are characterized by innovative design and manufacturing criteria, enabling the combination with a large range of packers according to the output rate and the type of product handled.

Thanks to an accurate analysis of the thermodynamic phenomena generated by the shrinking process, the tunnel manages in an efficient and homogeneous way the hot air flows on the whole surface of the pack, ensuring its high quality.

In particular, in the new ST ERGON range air adjustments have further increased, with the result of a more precise management of heat flows.

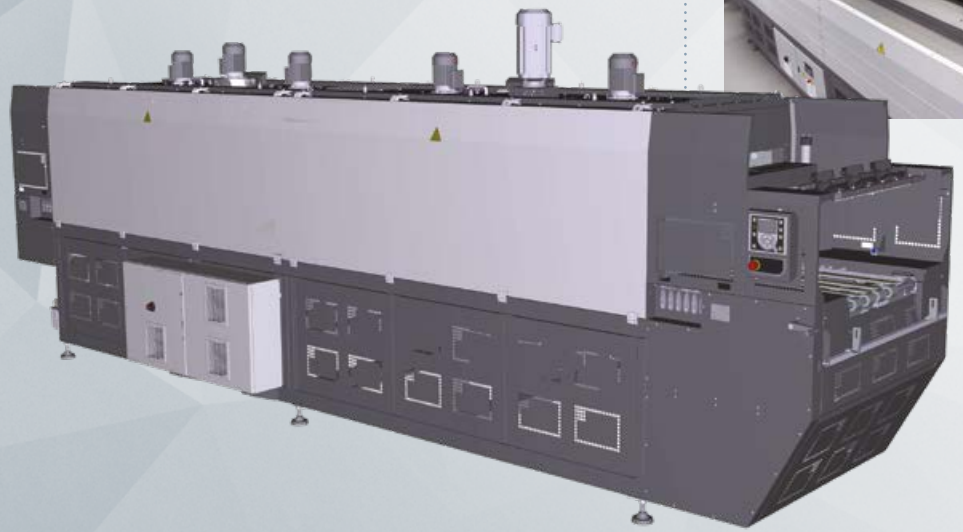
Immediately after shrinking, the pack undergoes a cooling process which, by means of a higher number of fans set at regular intervals of one meter each, fix the pack's shape, aesthetic qualities and sturdiness to prevent deformations or damages during the following packaging steps.

At the tunnel outlet a belt joins the tunnel with the conveyors; this connection is ventilated so as to ensure the proper thermal transition of the pack.

The first section of the tunnel's belt is equipped with cleaning brushes which remove the possible residual dirt.

SMI shrinking tunnels are devised for an easy and safe access to the inner parts during cleaning and maintenance operations which, among other things, are much lower thanks to traditional systems.

The new tunnel from the ST ERGON range has an electric panel with a reduced size positioned in an easily accessible area.



UHQ (Ultra High Quality) Thermo-shrinking tunnel

» SMI packers on double lane are equipped with a special shrin-king tunnel, specifically designed to pack cans and glass or PET containers in high quality shrink film bundles; by this means the traditional "wrinkles" are significantly reduced compared to normal and the "bull eyes" on the short side of the pack are regular and uniform (the quality of the final result may vary according to the container and the film features).
The new UHQ tunnel (available as an option on the models of the other series) is fitted with a warm air distribution system which includes added air flows for the side shrinking of the packets in transit; in this way, the shrink film wrapping occurs in a more homogeneous and uniform way at all areas of the pack, allowing for the creation of flawless packages (no wrinkles and folds) even at high speeds.

The temperature inside the tunnel, controlled electronically, is maintained, during the entire working cycle, at the optimal levels established in the production programme, thanks to newly-devised technical solutions which dramatically reduce heat loss.

The amount of time each spends inside the tunnel is also regulated automatically by the machine control system, which keeps it constant for all processed formats.

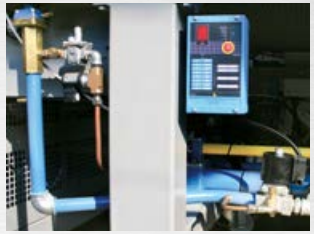
If the speed of the shrink wrapper must vary depending on the selected pack configuration, an appropriate device automatically compensates the difference of shrink wrapper speed/oven by adjusting the belt between the two modules; this allows for high quality shrinkwrapped packs to be obtained, regardless of the format.

The thermo-shrinking tunnel for packs UHQ is available for packaging operations in single, double or triple lane variants.

» Methan-heated shrinking tunnel

SMI packers can be equipped with a methan-heated shrinking tunnel, as an alternative to the traditional oven, heated by means of electrical resistances.

Natural gas offers several benefits, if compared to traditional fossil fuels:



- its combustion is smogless and pollution-free;
- it complies with current regulations on environmental protection;
- it allows consistent cutbacks on energy bills in countries where gas is cheaper than electricity.

According to accurate tests performed by SMI engineers, in those countries where gas is available at convenient prices – such as in Italy – the methan heated tunnel provides up to 40% saving on energy bills, if compared to traditional electrically-heated tunnels.

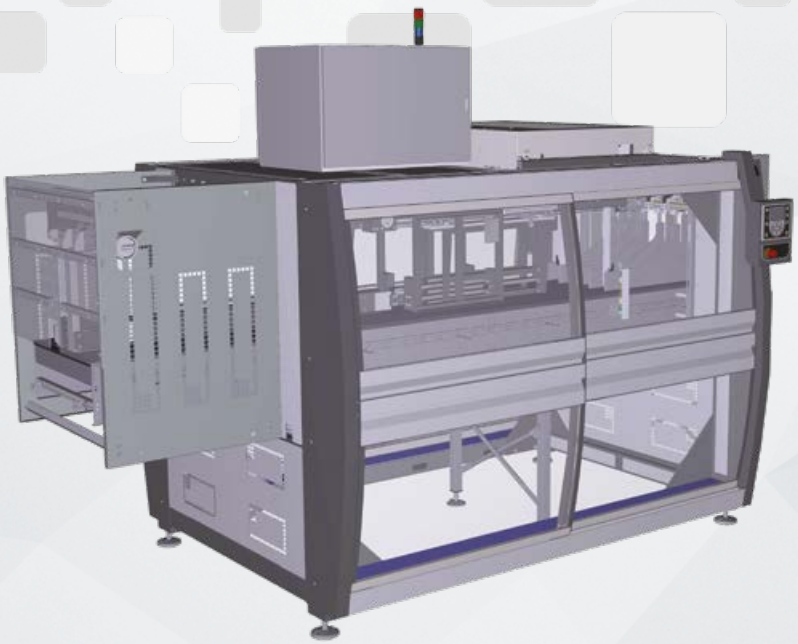
Dividers

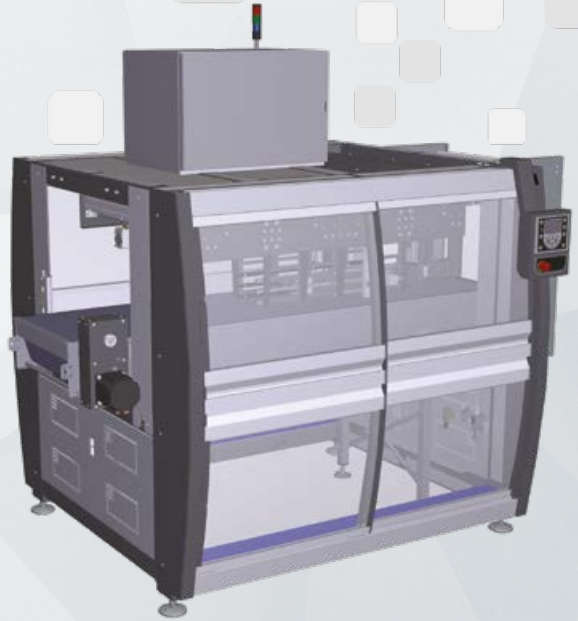
DV 250 S ERGON - DV 500 S ERGON series dividers

The distribution of the containers within a production line is made possible by the dividers of the "DV 250 S" and "DV 500 S" series. The DV dividers receive the loose products in single row, divide them into several rows and lane them towards the secondary packaging machines. At present, two models are available:

- alternating motion DV 250 S, with a maximum output of 250 containers per minute (*)
- continuous motion DV 500 S, with a maximum output of 600 containers per minute (*)

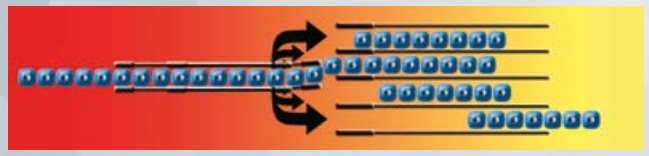
(*the outputs are referred to a ø 50 mm PET container).





Reliability and duration

SMI dividers are made of top-quality materials, ensuring operating reliability and long-term duration. The use of wear-resistant components minimizes the maintenance and cleaning operations, thus reducing the total operating costs.



TS Tray Stacker

Tray Stacker

The TS (Tray Stacker) stacks on two or more layers clusters of plastic, metal, cardboard or glass containers either clustered in cardboard trays or pad or loose (this latter solution available only for fit-in type cans).

This device can be installed on SK shrink wrappers, on WP case packers and on CM combined packers.

It consists of an electronic stacking device operating in continuous motion, which achieves an output rate up to 60 packs per minute according to the machine model and to the product handled.

Pack collations can vary according to the container shape, capacity and size; in general, the most requested collations are: 4x3 and 6x4.

It is available both for single and for double lane production.

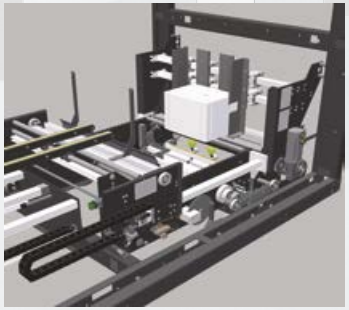
Operation

After coming out of the trayforming unit of the packaging machine, two or more layers of containers are stacked by a Cartesian axes coordinate system. Before the pack enters the shrinking tunnel, the film is wrapped around the products and overlapped at the base of the pack.

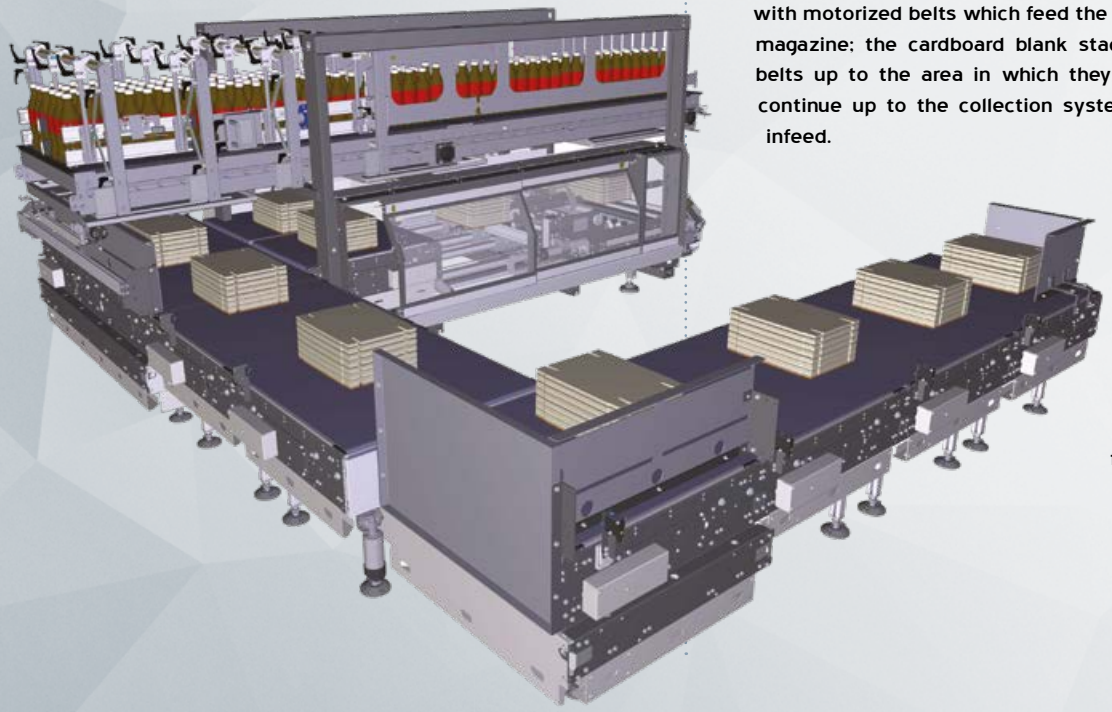
EASY-LOAD

» Automatic loading of the cardboard blanks magazine

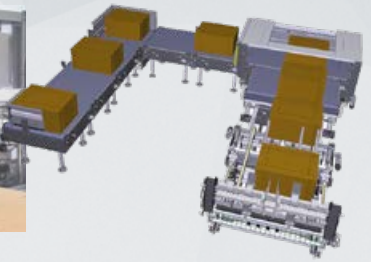
The innovative Easy-Load system allows the automatic loading of the cardboard blanks magazine and features considerable advantages from an operating and functional point of view; in fact, the operator can easily load the cardboard blanks, stacked horizontally in uniform groups, because the feeding belt of the cardboard blanks magazine is positioned at the same working height as the packer's infeed belt, rather than under it.



In more detail, the new system patented by SMI is made up of a series of conveyor belts, fitted with motorized belts which feed the packer's cardboard blanks magazine; the cardboard blank stacks are carried on these belts up to the area in which they are translated and then continue up to the collection system at case/shrink packer infeed.



Thanks to specific sensors, both the disposition and feed of the cardboard blanks on the conveyor belts fitted with motorized rollers and their loading into the packer's magazine is, in fact, fully automated.



PID SBP®
Partitions inserting device

» Stretched board pre-assembled partition inserting device

The PID SBP® inserts stretched board pre-assembled partitions into cardboard cases, in order to protect fragile products (such as glass containers) and save their labels from abrasions.

This device can be installed on the WP series' wrap-around case packers and on the CM series' combined packers.

The PID SBP® and the partition magazine are situated at the machine infeed, above the pack formation unit.
The maximum output is 40 packs/minute for 1-head model and 60 packs/minute for 2-head models.

» Advantages

Compared to the traditional inserting systems of cardboard non-preassembled partitions, the PID SBP® allows to:

- reduce the partition purchasing cost by about 20% and the partition storage volume by at least 60%;
- have a more compact machine, since both the partition magazine and the Partition Inserting Device are mounted on the top of the machine; therefore, the machine dimensions are the same as those of a conventional case packer;
- speed up the partition inserting operation and the magazine loading time, since the partitions are already pre-assembled;
- reduce the effects on the partitions of humidity and climate changes.

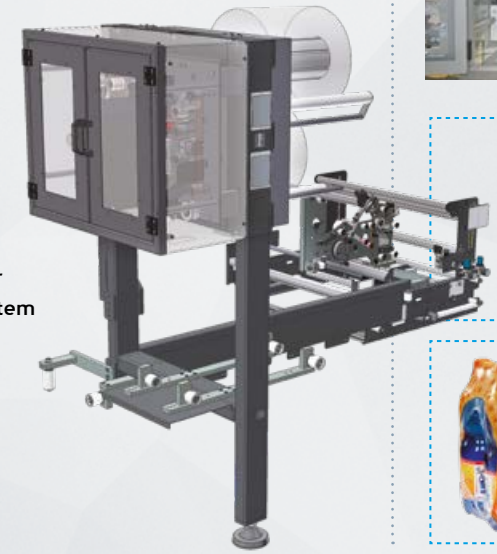
» Operation

A mechanical arm equipped with vacuum suction cups picks a stretched board pre-assembled partition from its magazine, opens it and lowers it between the products which have just been grouped in the required pack collation.
Finally, a cardboard blank is wrapped around the products by means of special guides, thus forming a case.

PSHA

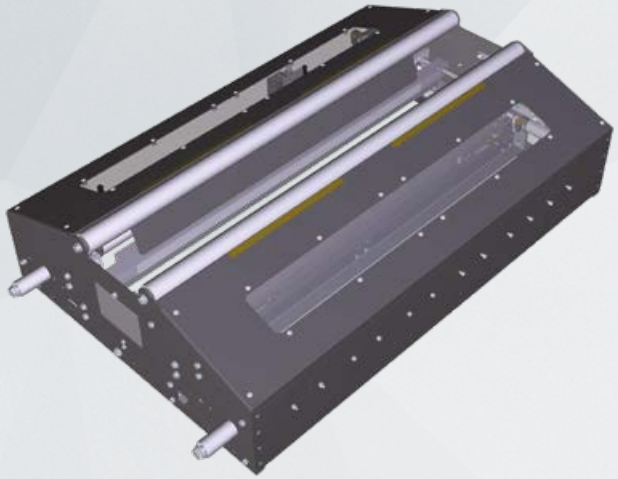
Pre-shrinking handle applicator

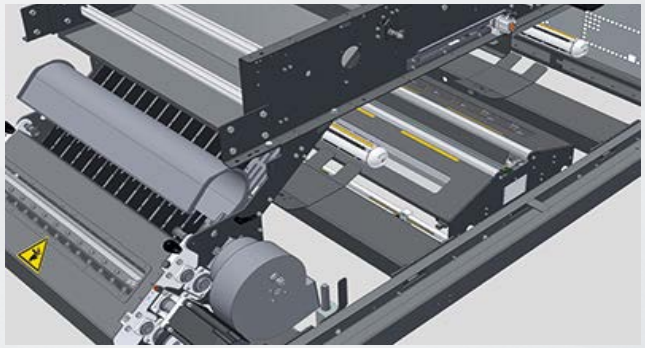
SK ERGON series shrink wrappers can be equipped with a PSHA (Pre-Shrinking Handle Applicator) automatic handle applicator to apply handles onto heat-shrinking film before packs are formed and enter the heat-shrinking tunnel.
This optional device is an advantageous solutions for those who don't have enough room to install a stand-alone handle applicator downstream the packer and the conveyor belts connecting the two machines.
The PSHA handle applicator is mounted on the outer edge of SK ERGON shrink wrappers and, according to the machine's configuration, can be mounted on the operator side or on both sides in case of dual lane operations.
It matches adhesive tape with a non-adhesive central support (a handle made of paper or plastic), thus composing an uninterrupted string of handles which, once wound on a reel, is loaded on automatically-locking mandrels to be then attached onto the heat-shrinking film surface.
The PSHA handle applicator is perfectly synchronised with the packaging machine on which it is installed; the latter sets automatically in stand-by mode when the handle reel is used up. Two reels can be mounted, one in operation and the other one in stand-by (in dual lane productions four reels are installed: two in operation and two in stand-by); in such a case, a photoeye detects when the reel in operation is running out of handles and turns on an automatic splicing device that joins together the edge of the exhausted tape reel with the edge of the stand-by tape reel, so as to prevent breakdowns in the packaging process.
The adhesive handles are precisely applied onto the heat-shinking film, so that they keep in the right position on the heat-shrunk packs moving out of the tunnel.
The operator panel of the PSHA allows direct modification of the machine parameters, real-time monitoring of the machine state and production data transfer to the user's control system through MODBUS TCP protocol on Ethernet wire.
The electrical cabinet is mounted on the top of the handle applicator.



Film welding device by heated blade

SMI customers can now upgrade their SK and CM packers with an innovative film welding device.
The "film welding device by heated blade" joins the edge of the film reel about to end with the beginning of the new reel while the machine is running, with no need to stop production.
The machine slows down and the film (printed or neutral with reference mark) is automatically joined; the machine is immediately back to running at full pace.
The new system allows dramatic cuts on energy and maintenance costs compared to traditional hot sealing method, as there are no more sealing rollers to be kept at a consistent temperature.
The sealing precision of printed film or neutral film with reference mark is higher, with +/-10mm margin from the reference mark.
The "film welding device by heated blade" can handle also no-collant film.





EASY OPEN

» Device for the easy opening of shrinkfilm packs

The Easy Open system can be installed both on SK shrink wrappers and on CM combined packers.
It consists of a device piercing the film during the cutting operation, in order to create the required mark.
It can pierce two types of marks and is available both for single and for double lane productions.

Advantages

Thanks to the Easy Open system, the customer's level of satisfaction can be remarkably improved, because of the pack's easier opening. Moreover, this application does not require any specific packaging material and, therefore, it is possible to make eye-catching packs without additional costs.
The pack can be opened easily and safely by finger pressure onto a pre-scored opening.

Changeover

Simple and quick transfer from a pack to another.

SMI packers are the ideal solution for the packaging of a wide range of products in several pack collations.
Thanks to a very quick change-over procedure, it is really easy to change the pack format and immediately re-start the production.
The operating parameters of each pack are stored in the POSYC's memory; the operator can select the required format directly from the touch-screen display.
The mechanical adjustment of the machine components might require the operator's manual intervention, depending on the packer model and on the product to be packaged.
On machine models with the manual change-over system, the operator can easily arrange the machine for the new product collation packaging, by means of counting devices and hand-cranks for the guides' adjustment.
On machine models with automatic change-over system, the machine is electronically arranged for the packaging of the new format by means of brushless motors; in most cases, no tool or operator's intervention are needed.
The change-over operation simply consists in the selection of the new format from the POSYC's touch-screen display.
In order to further simplify the shift from a small pack to a large pack or vice versa, SMI packers are set to control up to three different machine pitches, identified by coloured position indicators installed on the chains.

Automatic changeover of inlet guides

SMI packers can be equipped with an automatic adjustment device for product inlet guides, which improves and optimises changeover operations.

The system features DC motors driven by the control PC, which ensure high precision of movement and shorter changeover times for adjusting infeed guides according to the product parameters.

Thanks to the application of this optional device, combined with the automatic adjustment system featured as a standard by the dividing/grouping module, the operator can easily switch formats from the control panel touch-screen display with virtually no manual intervention.

» SMI exclusively manufactures hi-tech packaging machines, featuring modular design, operating flexibility and high energy efficiency, thanks to fully automatic processes, electronically controlled drive shafts and field bus wiring. The hardware and software components complying with the EC regulations and relying upon proven standards of the industrial field and of the packaging sector: OMAC guidelines, SERCOS, PROFIBUS, IEC61131, OPC, Industrial PC, Linux. As a result, referring to guide lines of OMAC (Open Modular Architecture Controls) and to the relevant work group for the packaging sector (OPW= Omac Packaging Controls), SMI machines can guarantee an easy integration with the other machines in the line, a user-friendly technology and the safeguard over time of the capital invested. Moreover, SMI systems are compliant with the technical requirements of Industry 4.0 and IoT (Internet of Things) technologies, which allow to easily and effectively run production lines within a "Smart Factory", even remotely through mobile devices. The automation and control of the machine are managed by the MotorNet System® which, as far as the hardware is concerned, is composed of the following devices: MARTS (process controller), POSYC (man-machine interface), ICOS (integrated digital servodriver for brushless motors, except SK and WP), dGATE and aGATE (remote IP65 I/O digital/analogic modules). The MARTS is a PAC (Programmable Automation Controller), based on an industrial PC, which can be programmed in IEC61131 languages. The ICOS servodrivers and the dGATE/aGATE I/O modules are connected to the PAC via SERCOS. The POSYC is a control PC with IP 65 touch screen, based on a fanless PC with solid state drives.

MotorNet System®

SMI automation and control solutions ensure:

- High outputs and high quality packs.
- Constant keeping of control parameters during the whole production cycle.
- Low machine noise.
- Direct control of the machine-serving conveyors, without additional PLC.
- User-friendly technology and easy maintenance.
- Automatic warning on the operator panel's display of programmed maintenance operations to be carried out.
- Quick changeover.
- Possibility of programming machine pitch and drive shafts movement.
- Machine manuals available through the operator panel's memory.
- Machine performance monitoring and down-times analysis (Pareto diagram).
- OPC or MODBUS/TPC connection for production data collection.
- Tele-assistance by phone or by the internet.
- Easy back up of installation parameters.
- Easy updating of the employed solutions.
- POSYC's interchangeability with compatible PC Panels.
- COSMOS' interchangeability with compatible SERCOS PACK PROFILE servodrivers.
- Access to the operator interface by means of password, pre-arranged USB key and/or biometric fingerprint USB key.

SHRINK WRAPPERS WITH IN-LINE INFEED

› LSK ERGON max 40 packs/minute	› CSK ERGON max 50 packs/minute	› SK ERGON max 450* packs/minute *(can in triple lane)
▪ Packaging in shrink film, pad+film, tray only, tray+film	▪ Packaging in shrink film, pad+film, tray only, tray+film	▪ Packaging in shrink film, pad+film, tray only, tray+film
▪ Infeed with manual guides and motorized oscillating device for the product channeling	▪ Infeed with manual guides and motorized oscillating device for the product channeling	▪ Infeed with automatic guides and motorized oscillating device for the product channeling
▪ Product separation by means of pneumatic device	▪ Product separation by means of electronically synchronized fingers	▪ Product separation by means of electronically synchronized fingers
▪ Vertical cardboard magazine (P and T models)	▪ Vertical cardboard magazine (P and T models)	▪ Vertical cardboard magazine (P and T models single lane), Easy-Load horizontal cardboard magazine (P and T models double lane)
▪ Alternate motion cardboard blank picker	▪ Alternate motion cardboard blank picker	▪ Rotary motion cardboard blank picker
▪ Film unwinding controlled by the cutting blade motor	▪ Film unwinding controlled by the cutting blade motor	▪ Film unwinding controlled by brushless motor of the reel holder synchronized with cutting blade
▪ Single reel (double available as an option)	▪ Double film reel	
▪ Management of format changeover by means of handwheel counters	▪ Management of format changeover by means of handwheel counterscounters	▪ Availability of format changeover with automatic adjustments (standard for F model, optional for P and T)

STRETCH FILM PACKERS WITH IN-LINE INFEED

› SFP ERGON max 30 packs/minute
▪ Packaging in stretch film
▪ Infeed with manual guides and motorized oscillating device for the product channeling
▪ Product separation by means of pneumatic device and electronically synchronized compensation bars
▪ Film unwinding controlled by brushless motor of the reel holder
▪ Two film webs applied in a criss-cross pattern
▪ Film cutting operation performed by resistance-heated vertical blade
▪ Double film reel
▪ No shrink tunnel

WRAP-AROUND CASE PACKERS WITH IN-LINE INFEED

LWP ERGON max 30 packs/minute	CWP ERGON max 40 packs/minute	WP ERGON max 80 packs/minute
▪ Packaging in wrap-around case and WP tray	▪ Packaging in wrap-around case and WP tray	▪ Packaging in wrap-around case and WP tray
▪ Infeed with manual guides and motorized oscillating device for the product channeling	▪ Infeed with manual guides and motorized oscillating device for the product channeling	▪ Infeed with manual guides and motorized oscillating device for the product channeling
▪ Product separation by means of pneumatic device	▪ Product separation by means of electronically synchronized fingers	▪ Product separation by means of electronically synchronized fingers
▪ Vertical cardboard magazine	▪ Easy-Load horizontal cardboard magazine	▪ Easy-Load horizontal cardboard magazine
▪ Alternate motion cardboard blank picker	▪ Alternate motion cardboard blank picker	▪ Alternate motion cardboard blank picker
▪ Manually phased tray forming unit	▪ Manually phased tray forming unit	▪ Manually phased tray forming unit
▪ Cardboard climb with slightly rounded final part	▪ Cardboard climb with slightly rounded initial and final part	▪ Cardboard climb with slightly rounded initial and final part
▪ Rotary flap-folding device with easy manual adjustments	▪ Rotary flap-folding device with easy manual adjustments	▪ Rotary flap-folding device with easy manual adjustments

RSC PICK & PLACE PACKERS WITH IN-LINE INFEED

ACP ERGON max 20 packs/minute
▪ Packaging in American cardboard case (RSC)
▪ 4-lane infeed conveyor, where the product reaches the machine already channeled
▪ Product separation by means of pneumatic device for blocking and releasing the upper and lower loose product
▪ Cardboard magazine installed next to the machine with easy and ergonomic loading of pre-folded blanks
▪ Alternate motion cardboard blank picker driven by brushless motor
▪ Picker equipped with photocell for controlling the presence of cardboard blanks in the suction area
▪ Different types of picking grippers depending on the product to be picked
▪ Case sealing by means of tape

CARDBOARD MULTIPACK SLEEVERS WITH IN-LINE INFEED

MP ERGON
max 300 packs/minute

- Packaging in overlapping cardboard sleeves
- Single or double-lane infeed
- Product separation system with gear sector driven by brushless motor
- Cardboard sleeve magazine positioned above the machine infeed conveyor
- Continuous motion cardboard blank picker
- Folding down of the two sides of the cardboard blank by means of a mechanical device
- Pack bottom sealing with hot melt glue

COMBINED PACKERS WITH IN-LINE INFEED

LCM ERGON
max 40 packs/minute

- Packaging in wrap-around case, tray only and tray+film
- Infeed with manual (LCM 30) or automatic (LCM 40 EL) guides and motorized oscillating device for the product channeling
- Product separation by means of pneumatic (LCM 30) or electronic device (LCM 40 EL)
- Vertical cardboard magazine
- Alternate motion cardboard blank picker
- Film unwinding controlled by the cutting blade motor
- Manually phased tray forming unit
- Single reel (double available as an option)
- Management of format changeover by means of handwheel counters

CM ERGON
max 80 packs/minute

- Packaging in wrap-around case, tray only and tray+film
- Infeed with automatic guides and motorized oscillating device for the product channeling
- Product separation by means of electronically synchronized fingers
- Easy-Load horizontal cardboard magazine
- Alternate motion cardboard blank picker
- Film unwinding controlled by brushless motor of the reel holder synchronized with cutting blade
- Automatically phased tray forming unit
- Double film reel
- Management of format changeover by means of handwheel counters

CM R ERGON
max 80 packs/minute

- Packaging in wrap-around case, pad+film, tray only, tray+film and film only
- Infeed with automatic guides and motorized oscillating device for the product channeling
- Product separation by means of electronically synchronized fingers
- Easy-Load horizontal cardboard magazine
- Alternate motion cardboard blank picker
- Film unwinding controlled by brushless motor of the reel holder synchronized with cutting blade
- Automatically phased tray forming unit
- Double film reel
- Reduction of the format changeover times by means of a new revolving system with the rotation of the two modules by 180°

SHRINK WRAPPERS WITH A 90° INFEED

› ASW ERGON

max 150 introductions/minute

- Packaging in shrink film, pad+film, tray only, tray+film
- Infeed with single-lane conveyor and 90° product feeding system
- Double-belt product separation system driven by electronic axis
- Vertical cardboard magazine
- Alternate motion cardboard blank picker
- Film unwinding controlled by the cutting blade motor (ASW 80-I) or by the brushless motor of the reel holder (ASW 150-I)
- Manually (ASW 80-I) or automatically (ASW 150-I) phased tray forming unit
- Single film reel (ASW 80-I), double film reel (ASW 150-I)

WRAP-AROUND CASE PACKERS WITH A 90° INFEED

› ACW ERGON

max 150 introductions/minute

- Packaging in wrap-around case and WP tray
- Infeed with single-lane conveyor and 90° product feeding system
- Double-belt product separation system driven by electronic axis
- Vertical cardboard magazine (ACW 80-I), Easy-Load horizontal cardboard magazine (ACW 150-I)
- Alternate motion cardboard blank picker
- Manually (ACW 80-I) or automatically (ACW 150-I) phased tray forming unit
- Case sealing by means of hot melt glue

COMBINED PACKERS WITH A 90° INFEED

› AFCW ERGON

max 150 introductions/minute

- Packaging in wrap-around case, tray only and tray+film
- Infeed with single-lane conveyor and 90° product feeding system
- Double-belt product separation system driven by electronic axis
- Vertical cardboard magazine (AFCW 80-I), Easy-Load horizontal cardboard magazine (AFCW 150-I)
- Alternate motion cardboard blank picker
- Film unwinding controlled by the cutting blade motor (AFCW 80-I) or by the brushless motor of the reel holder (AFCW 150-I)
- Manually (AFCW 80-I) or automatically (AFCW 150-I) phased tray forming unit
- Single film reel (AFCW 80-I), double film reel (AFCW 150-I)

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INDUSTRY 4.0 compliant

IoT ready