



MKT · MKT-S [Packaging Technology]



[ALL YOU NEED]

System Solutions & Customized Solutions

- Individual process solutions adapted to the customer's product
- Linkage and combination of technology platforms to form integral system solutions
- System supplier of complete lines with turnkey services

Technology for Inhalers & Diagnostics

- Lines for the dosing and weighing of micronized powders
- Lines for the dosing and weighing of pasty media and liquid products
- Machines for the assembly of inhalers, inhaler components, active ingredient carriers and diagnostic products
- Machines for filling inhaling devices and inhalation cavities with extremely small volumes
- In-process checks and function tests for inhalation and diagnostic products

Capsule & Powder Technology

- Omnidose – Powder filling machine for laboratory and small scale series production
- Modu-C – Capsule filling and closing machine
- KWS – Capsule weighing and controlling machine
- KPG – Capsule polisher
- Filling and dosing systems for a wide range of different media
- Powder analyses and filling tests
- Project planning of powder dosing systems

Blister & Tablet Technology

- OmniControl – Checking system for pharmaceutical solids
- Test units and production machines for the manufacture of powder and liquid blisters
- Blister buffering and traying systems
- Units for nesting and grouping of blisters / blister folding machines
- Wallet packaging lines including line synchronization / turnkey service

Web Converting Technology

- **PatchLine** Complete lines for the manufacture and inline packaging of:
 - Transdermal systems (reservoir & matrix), wound dressings, surgical and special patches
- **FoilLine** Installations for manufacturing foil products:
 - Oral film strips, double bags for enteral nutrition, urine bags, Diagnostic products etc.
- **FormPackLine** Installations for the packaging of products in molded film/foil packs for:
 - Diagnostic tubes, surgical suturing material, lithium-ion batteries, Care creams, detergents and cleaning agents, catheter packaging etc.
- **SachetLine** Machines for the manufacture, filling and sealing of four-edged sealed sachets
 - Dosing systems for bulk materials and sachet leveling systems

Syringe & Injection Technology

- Machines for the assembly and filling of depot injection syringes with solid implantates
- Machines for the assembly and filling of multi-chamber injector syringes with powder and liquid
- Machines for the assembly of needle-free injectors (needle-free syringes)

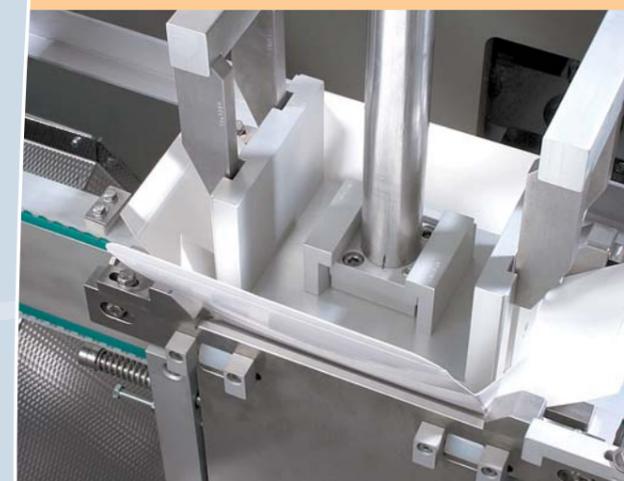
Packaging Technology

- **WalletLine** Modular packaging machines for wallet packs
 - Peripheral units for the handling and conveying of components for wallet packs
 - Systems for stacking and grouping for end packing
- **CartoningLine** Horizontal cartoning machines for folding cartons
 - Product specific feed systems, tray loading and unloading systems
 - Buffering systems for packages and package components
- **TopLoader** Modular TopLoader packaging machines for the manufacture of:
 - Pharmaceutical multi-product packs
 - Universal product end packing
- **EndPackingLine** Packaging machines and handling systems for secondary packaging and end-of-line applications:
 - For tray, display, multiple and end packaging
 - Pick-and-Place systems for individual handling and packaging
 - Turnkey project planning and realization

Aseptic Technology

- Machine engineering in GMP and validatable execution
- Cleanroom technology for a wide range of applications
- Production lines for assemblies in cleanroom environment

[ALL YOU NEED]



EndPackingLine

Technologies for end packaging



Verpackungsmaschinen GmbH

Helmholtzstraße 4, 71573 Allmersbach im Tal, Germany
Phone: +49 (0)7191/501-0, Telefax: +49 (0)7191/501-244
info@hoefliger.com, www.hoefliger.com

[ALL YOU NEED] E
Packaging Technology

End of Line

Equipment made by



It is our task to optimize the manufacturing and packaging processes of our customers. We consider integrated systems, from the manufacturing process through to an automated end packing solution, with the philosophy that the reduction in process costs creates a fundamental competitive advantage.

We are able to deal flexibly with the tasks in hand due to the broad product range of machines for the different end packing variants. From the pool of basic machines available we configure complete end packing peripheries. If the process requires additional packing and handling systems, we plan and implement them individually to match the specific task.

We have decisively expanded our packaging capability by setting up an additional plant for the project planning and installation of end packing lines. The task of these specialists is to deal exclusively with the development and implementation of technology for end-of-line applications.

In close collaboration with leading packaging manufacturers Höfliger provides its customers with consulting services for special questions. When it is a question of using the optimal type of packaging, a special product presentation or of fine tuning the overall process – at Höfliger you will always find the right contact person.

PHARMA

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CONSUMER PRODUCTS

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FOOD

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TopLoader TL: Packaging of application sets in multi-product packages.

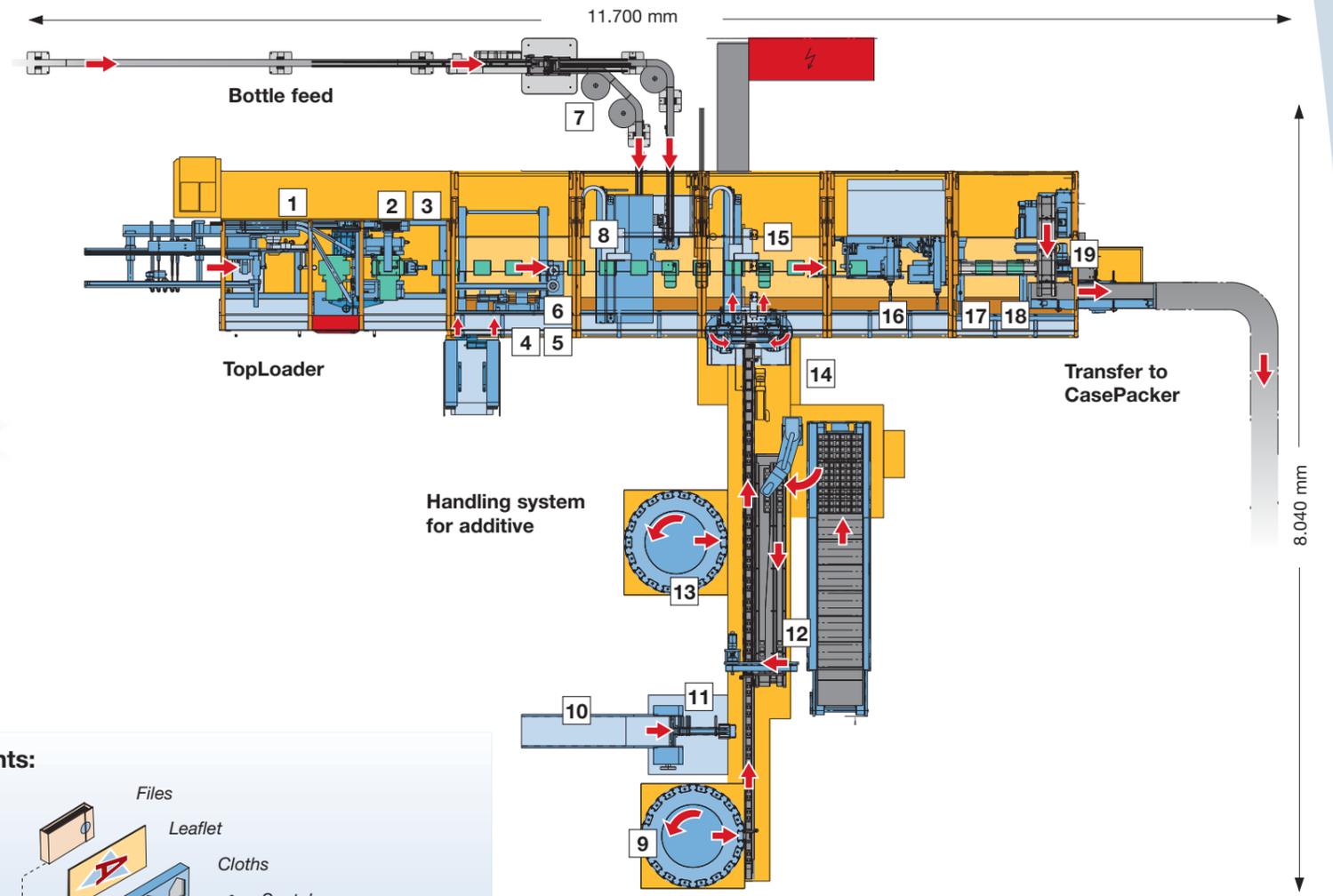
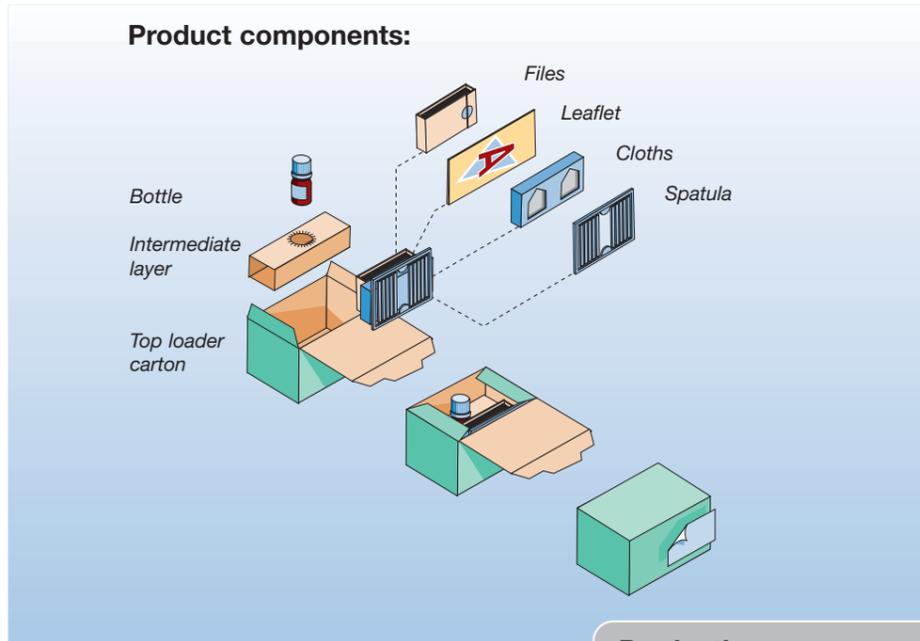


On this line top loader cartons are erected and then loaded with small bottles and other care components using the top loading process.

The preparation containing the active substance is filled into small bottles on an upline machine. The screwed, labeled containers are fed to the top loader line. Gluing and erection of the carton blank is performed at the beginning of the packaging process. An intermediate layer is inserted into the carton as a receptacle for the container. This is punched out accordingly to fix the bottle. This ensures safe storage of the bottle in the pack. In addition other application aids and a leaflet are integrated into the pack, these being brought together and stacked in a separate handling system.

At the same time the additive is inserted into the two packs via a duplex feed unit.

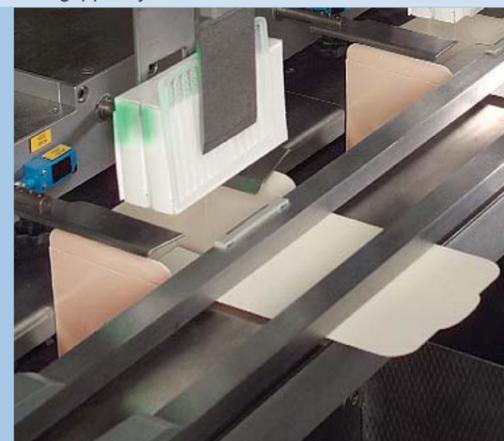
These processes require very precise logistical procedures. The solutions for this are based on our technical knowledge of handling techniques for the top loading process. At the end of the line the pack is closed, labeled and transferred for end packing into shipping cartons.



Applications that fit exactly:
Insertion of an inline erected intermediate layer into the top loader cartons



Handy solutions:
Pick-up and transfer of the component stack via a gripper system



Production sequence

- 1 Erection of the blank
- 2 Blank code control
- 3 Feed of the intermediate layer
- 4 Laser coding
- 5 Laser embossing control
- 6 Bottle feed on two lanes
- 7 Bottle insertion
- 8 File feed
- 9 Leaflet feed
- 10 Leaflet code control
- 11 Cloth feed
- 12 Spatula feed
- 13 Transfer magazine for component stack
- 14 Place stack in cartons
- 15 Stack loading
- 16 Pack closure
- 17 Labeling
- 18 Pack outfeed
- 19 Packing into shipping cartons

Technical data

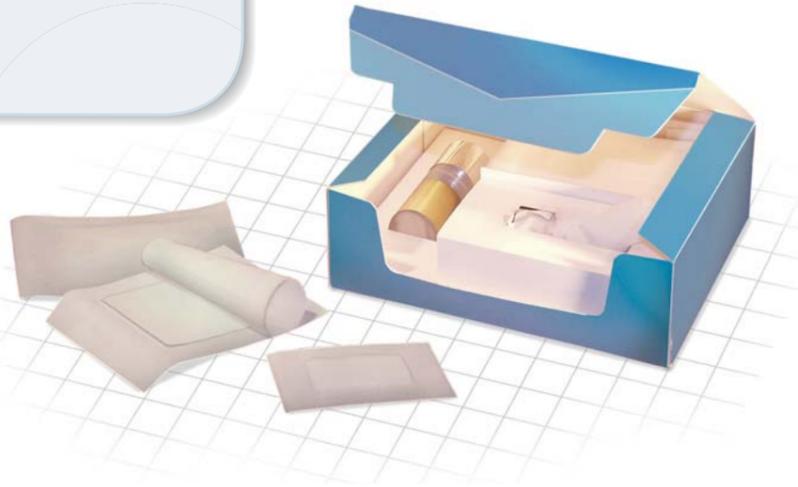
Output:
TopLoader TL: 60 multi-product packs / min.

3 sizes of TopLoader cartons:

	L	B	H
	110	45	79 mm
	110	71	79 mm
	110	89	79 mm

Bottle sizes: 2,5 or 5 ml

The end packaging solution for medical products.



For secondary packaging the products are fed to the top loader line from an upline Höfliger patch machine with an integrated bag packaging module.

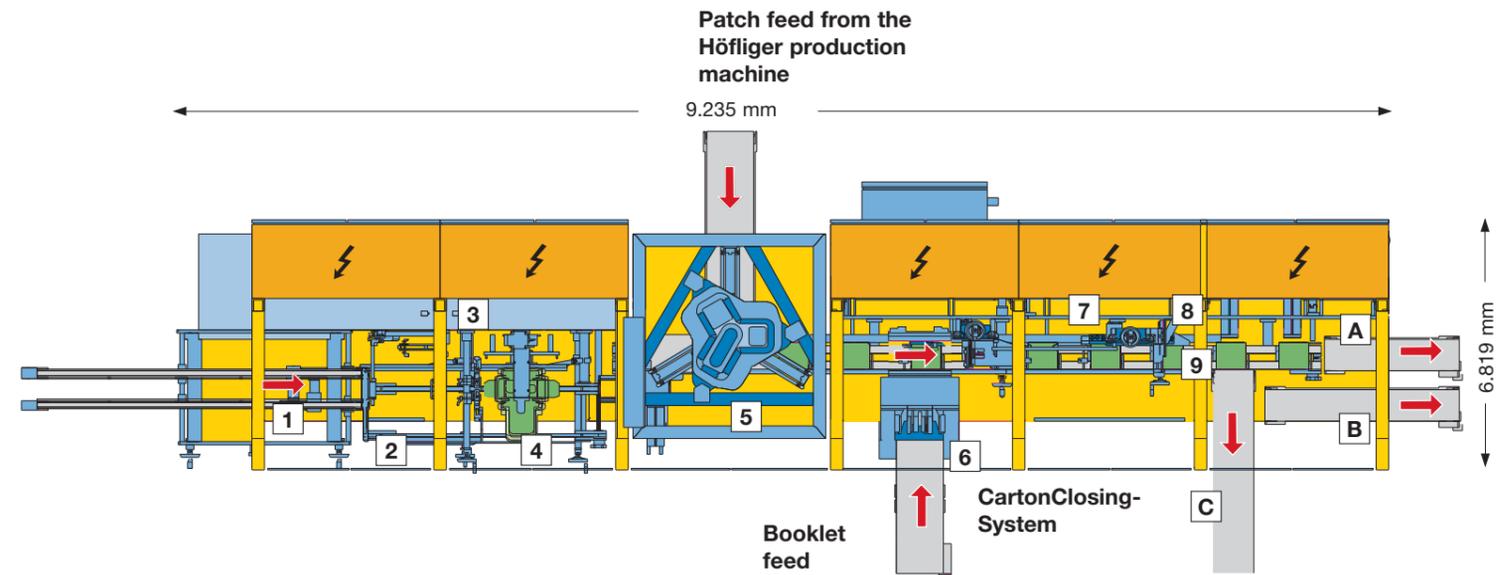
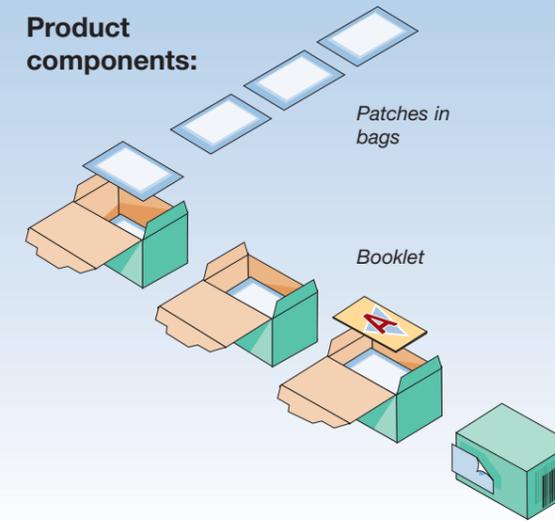
The carton blanks are erected by a plunger and a folding pocket. Various pack forms can be processed using the hotmelt gluing process or glueless interlocking. These can be cartons with an attached lid or simple trays. A Flexpicker robot is used for loading the top loader cartons. The Flexpicker picks up the patches, which are packaged in a bag, from the cross belt in order to stack them in an exact position in the carton. The booklet is also fed transversely to the line and is positioned in the multi-product pack by way of friction guides.

Carton closure is via a flap folding wheel, lid turnguide and a press-in wheel, guaranteeing gentle pack closure. The lid can be closed optionally with hotmelt glue or by means of tuck-in flaps.

At the end of the packing process there are several pack control routines:

- Control for any missing products via weight control
- Inspection for an open pack lid via sensory analysis
- Multiple labeling and coding

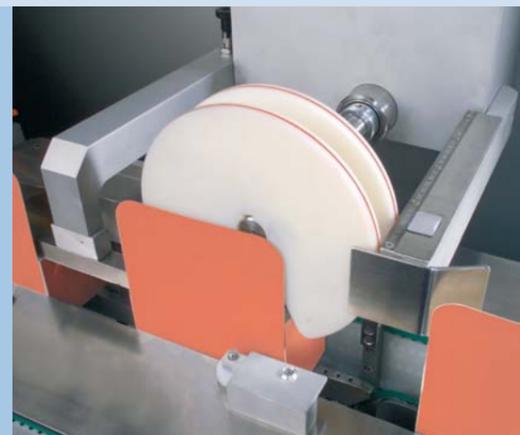
Product components:



A flowing movement:
Suction removal and transfer of flat blanks to the erecting station

Pure flexibility:
Flexpicker robot for stacking bag packs in cartons

Gentle moments:
Folding of the flaps to close the multi-product pack by means of the flap wheel



Production sequence

- 1 Blank removal via suction pad
- 2 Provision of the blank
- 3 Gluing of the side walls
- 4 Plunger erection
- 5 Bag feed from the patch production machine
- 6 Booklet feed
- 7 Pack closure
- 8 Lid closure control
- 9 Pack outfeed for pass packs

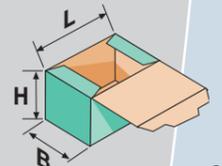
- Pack controls:**
- A "Open lid" fail pack outfeed
 - B "Missing product" fail pack outfeed
 - C Overfeed of pass packs for labeling

Technical data

- Output:**
- Carton erector:** Single-track version
35 (to 100) cartons / min.
Two-lane version
Up to 160 cartons / min.
- Flexpicker:** Up to 150 picks / min.
- Carton closer:** 35 (to 240) cartons / min.

Top loader carton sizes:

	L	B	H
From	55	55	20 mm
To	400	300	150 mm



The end packaging line for dressings.



For the packaging of patch rolls in top loader cartons an integrated line has been configured, which consists of the following line components:

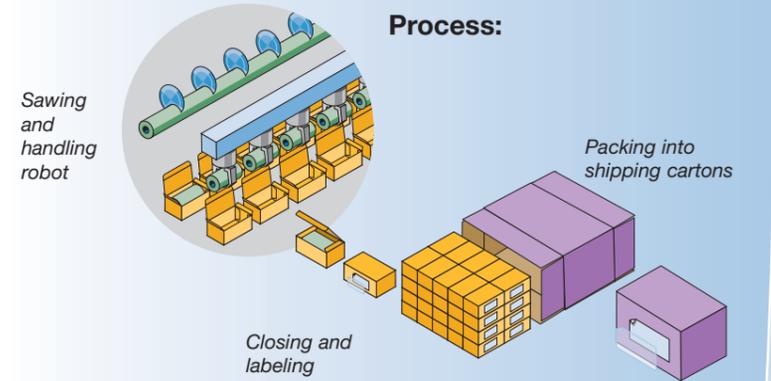
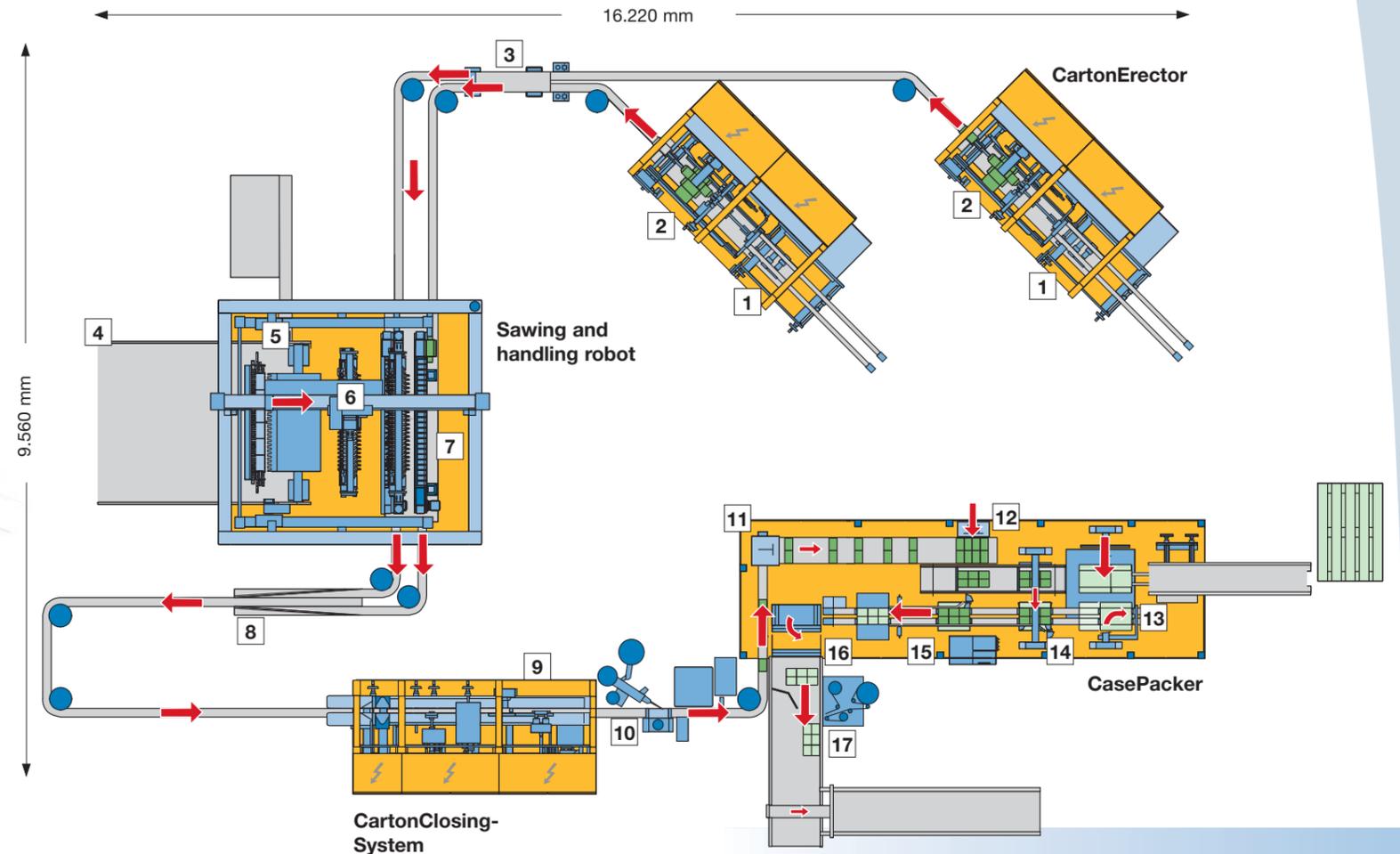
- 2 CartonErectors
- 1 sawing and loading robot
- 1 CartonClosing system
- 1 CasePacker

Two erectors connected in parallel produce 170 cartons per minute and feed these on two tracks to a robot system. The robot's gripper system takes over the roll segments, which have been pre-cut to lengths of 50 to 200 mm.

After take-over, spreading to the center spacings of the top loader cartons that have been fed.

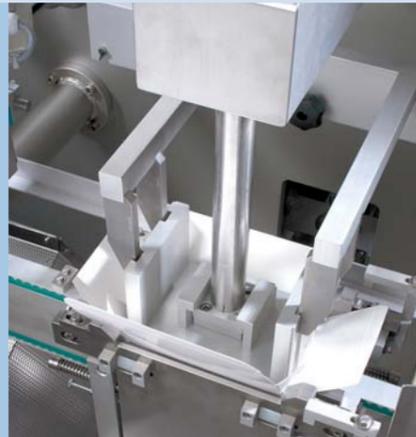
In the top loading process the singularized rolls are inserted directly into the cartons.

Uniting of the two on one product lane takes place during the overfeed to the carton closing system. In a few work steps the closure flap is folded over and the pack is securely closed. The integrated labeling unit provides for coding with the product-specific data. The packs are then grouped, stacked and packed on the case packer into shipping cartons.



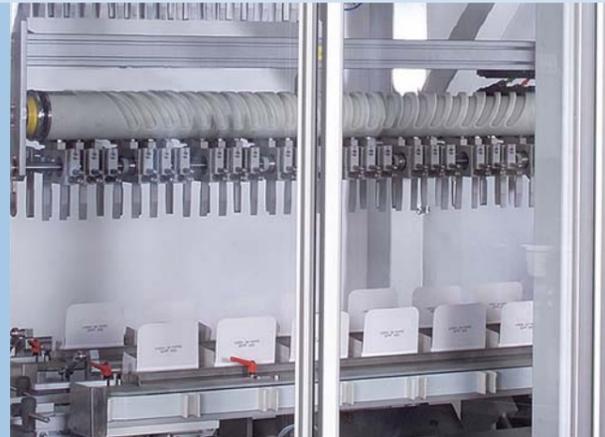
Clean and fast:

Erection of glued top loader cartons by means of a plunger and folding pocket – 85 cartons / min.



Automation & handling:

Sawing and transfer of patch rolls into top loader cartons



Production sequence

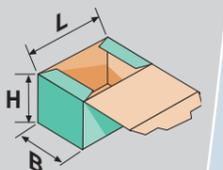
- | | |
|---|-----------------------------|
| 1 Blank feed | 9 Carton closure |
| 2 Plunger erection | 10 Carton labeling |
| 3 Carton conveyance / two-lane | 11 Cross pusher |
| 4 Roll feed | 12 Stacking station |
| 5 Cut the separate rolls / 6 to 24-fold | 13 Shipping carton erection |
| 6 Expand the distance between centers | 14 Filling station |
| 7 Carton loading | 15 Hotmelt glue closure |
| 8 Joining together of the cartons on one lane | 16 Carton outfeed / turning |
| | 17 Labeling |

Technical data

Output:
Packaging of rolls: Up to 170 cartons / min.
 Product loading via twin gantry robots
Packaging of cartons: Up to 17 shipping cartons / min.

Sizes TopLoader cartons:

	L	B	H
From	55	55	20 mm
To	400	300	150 mm



The special machine for wallet packs / sleeves.

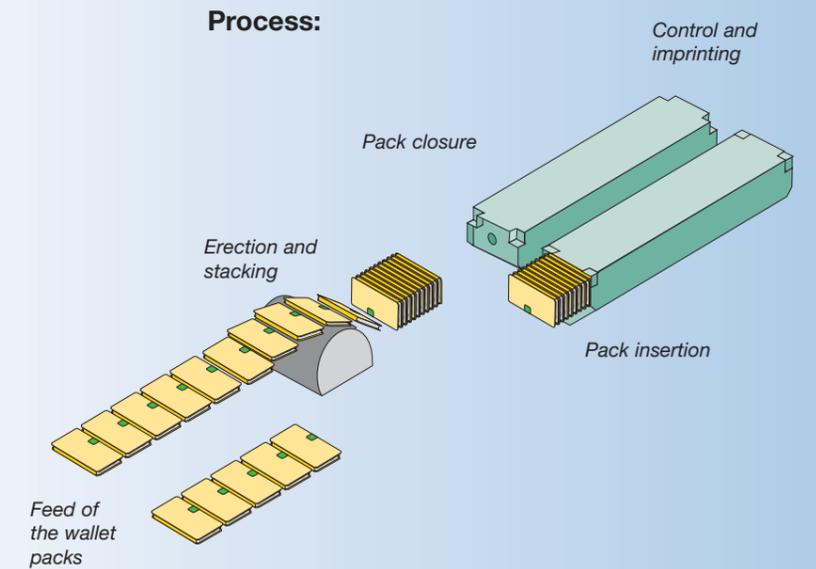
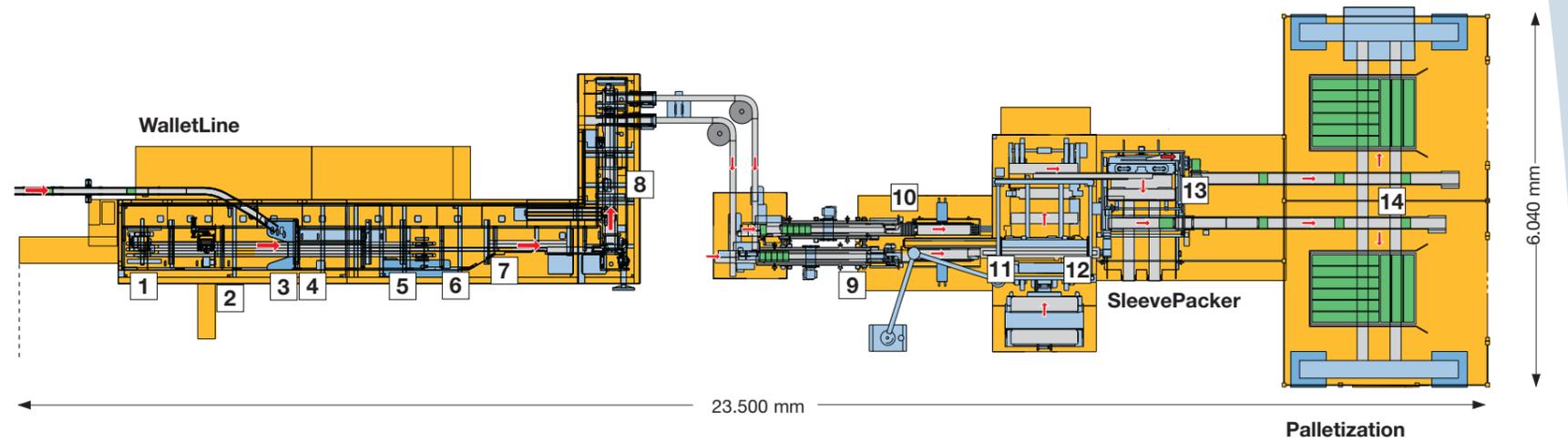


For years Höfliger has been one of the leading manufacturers of wallet packaging lines. As a rule the wallet packs are cartoned and packed into shipping cartons immediately after the production line.

The sleeve pack is an alternative packaging solution. It is highly functional for transport and storage. The sleeve pack ensures optimized storage and stacking – without the wallet warping or shifting.

To realize this packaging process we have developed a concept that is specifically matched to this pack variant:

- Wallet feed via accumulation belt with two-lane cross discharge
- Erection of the wallet packs via a product-specific guide and handling system
- Grouping and stack formation in an obliquely positioned magazine pocket
- Pack insertion of the stacked packs via overhead conveyor
- Weight control for the purpose of checking the pack for completeness
- Inline coding
- Palletization via a 4-axis gantry robot



All in the right order:
Erection and grouping of the wallet packs in the magazine pocket

All OK:
Completeness control of the packs by weighing



Production sequence

- | | |
|---|-------------------------------------|
| 1 Manufacture of tablet blisters | 8 Laser coding |
| 2 Wallet blank feed | 9 2-track accumulation belt |
| 3 Booklet feed | 10 Formation of stack |
| 4 Blister feed | 11 Insertion into sleeve |
| 5 Camera control | 12 Verschließen Sleeve |
| 6 Folding of the wallet | 13 Closure of sleeve |
| 7 Label feed | 14 Checkweigher with turning |

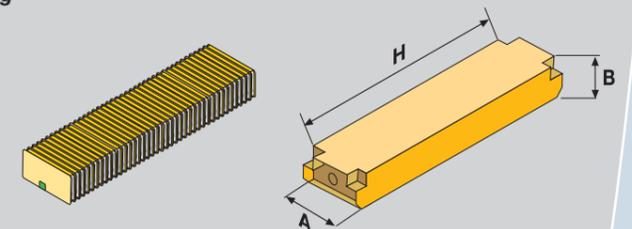
Technical data

Output:
WalletLine: up to 200 packs / min.
SleevePacker: 3 to 4 sleeves / min.

Sleeves

	A	B	H
	760	120	70 mm

Other dimensions on request



Complete line for surgical suture.



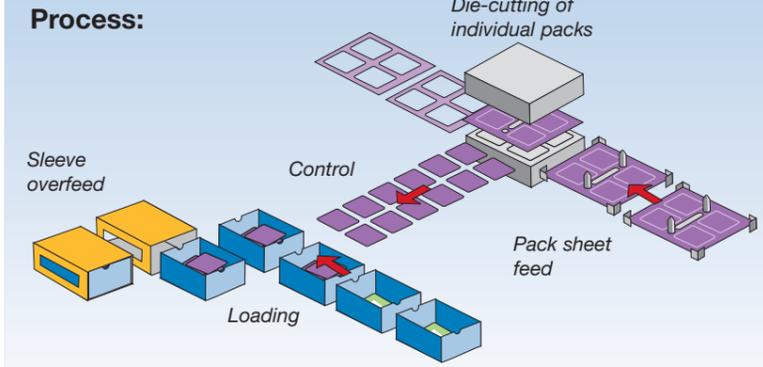
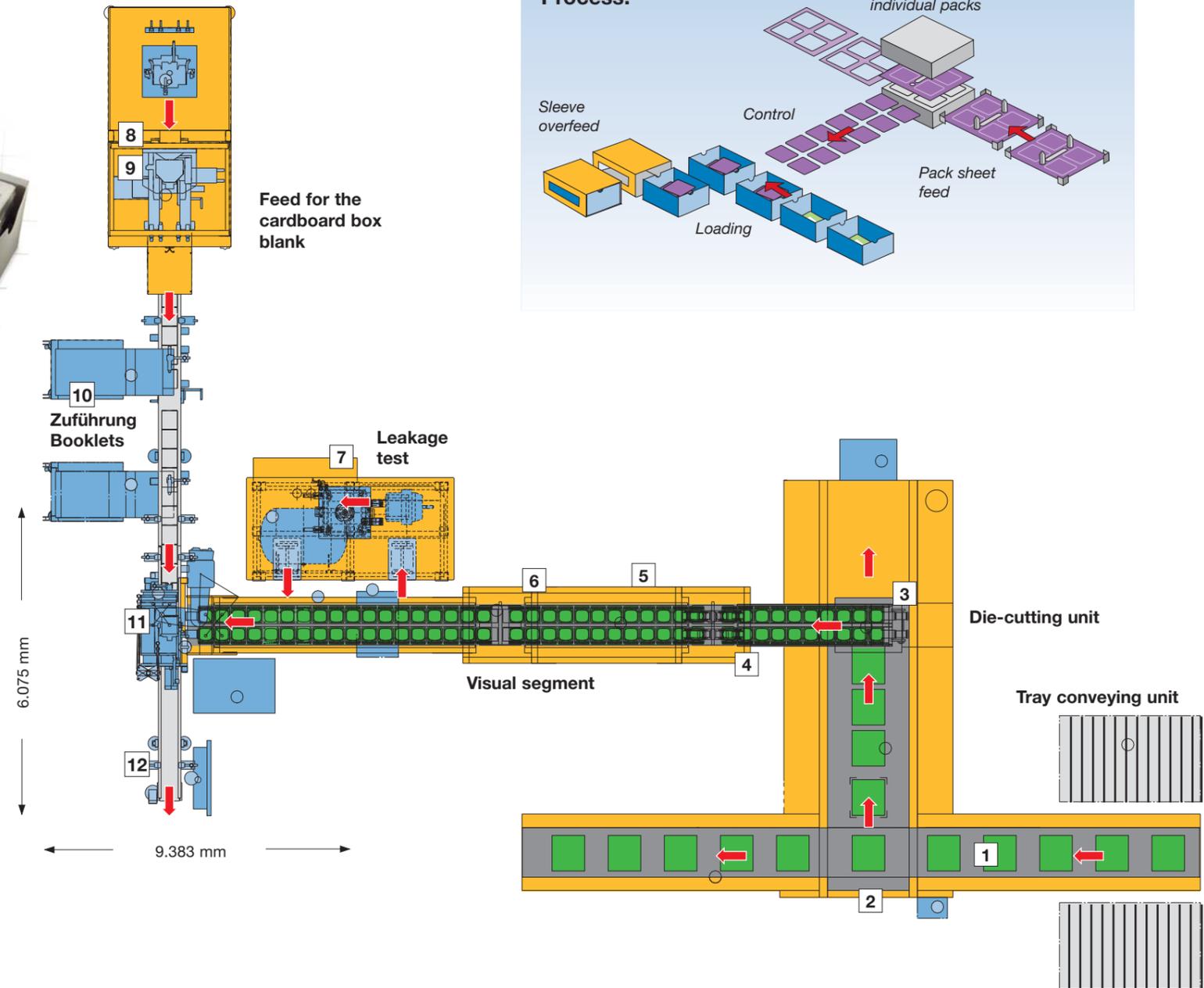
At the end of an extensive and very complex process for the manufacture of sterile surgical suture material there is a packaging line, which performs the following tasks:

- Handling of sheets of film
- Removal from the carrier system and transfer onto the product conveyor of the die-cutting machine
- Die-cutting of single packs from the sheet blank
- Code inspection of the pack imprint
- Leakage test before the cartoning to ensure that the pack is sterile.

Packaging in a user-friendly cardboard box system:

In practice the surgical suture is inserted sorted according to needle type into cardboard boxes. Easy handling of the pack is the paramount objective. In compliance with these requirements the pack is constructed with a bottom tray part and a sleeve with an integrated window for product-related data.

The trays are erected by the flat-folded blank, loaded with a booklet and traversed under the pick-and-place unit. After the stacking of 12 suture material packs each, the sleeves are pushed onto the trays.



Best turning facilities:

Turning wheel for rotating the pack (visual inspection)



A gripping transfer:

Robot transfer of individual packs into carton underparts



Production sequence

- 1 Tray feed
- 2 Lifting up and transfer onto conveyor belt
- 3 Die-cutting of individual packs
- 4 Turning table for visual segment
- 5 Inspection of pack underside / manual sorting of fail parts

- 6 Turning on upside
- 7 Leakage test in a vacuum
- 8 Cardboard box erection
- 9 Bar code reading
- 10 Booklet feed
- 11 Insertion of packs via robot
- 12 Sleeve overfeed

Technical data

Processing: Singularization of 4-unit packs into individual products and packaging in cardboard boxes

Output: 10 cardboard boxes / min.
120 products / min.

End packaging of spray cans in shipping cartons.

Compact construction, short size-changing times and good accessibility were the basic guidelines for this task. In addition it has had to be taken into consideration that two different packaging media - either a tray or a wrap-around packaging unit with an attached lid - are used.

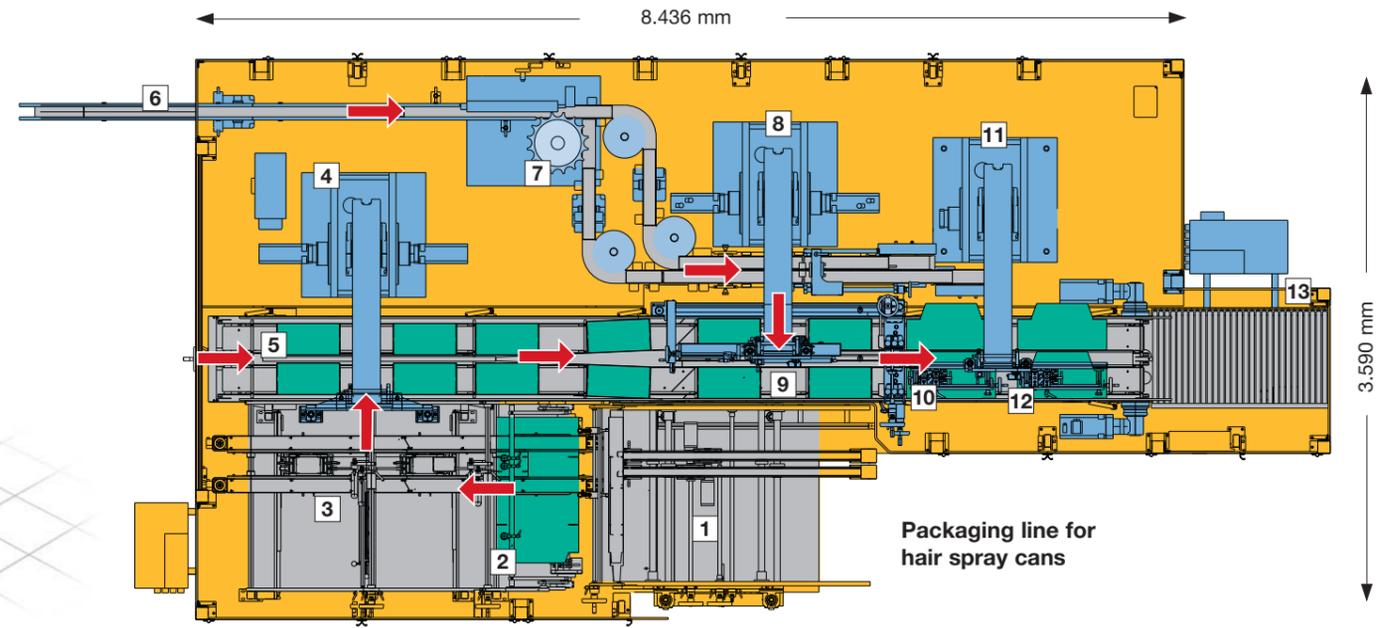
For realization of the line a total of three EAGLE modules have been integrated into the packaging line - each module having independent tasks:

- The cartons are fed on two tracks into a horizontal magazine
- The side flaps of the blanks are glued and erected by the first robot
- The cans are fed parallel to the folding carton chain, picked up in a swiveling movement by the second robot and with a lift stroke are loaded into the erected packs
- The third robot folds the attached lid and closes the pack. Alternatively preglued or interlocked tray lids can be placed in this station
- Fast size-changing in 15 mins.



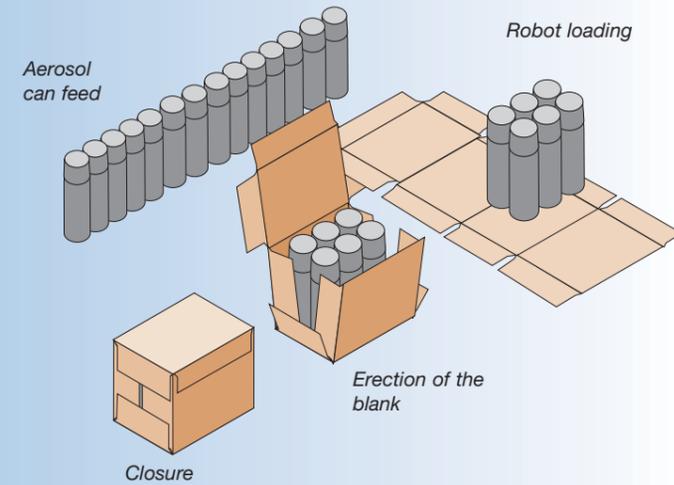
The special features of the EAGLE:

- Versatile use as a stand-alone unit or as a module within a line
- Designed for a performance of up to 50 strokes and a maximum loadbearing capacity of up to 60 kg
- Easy adaptation to new tasks through a copy & teach-in program. The paths to be covered or changed sizes are calculated by the control unit itself
- With 2 - 4 axes for additional swiveling and rotating movements



Packaging line for hair spray cans

Process:



3 power packs:

Series linked bending arm robots with three different functions



Product-adapted tools:

Special tools enable the fast and safe transfer of containers



Production sequence

- | | |
|--|---------------------------|
| 1 Magazine blank | 7 Distribution wheel |
| 2 Feed of the cardboard blanks to the erecting station | 8 Loading robot |
| 3 Erecting station | 9 Carton loading stations |
| 4 Erecting robot | 10 Lid gluing |
| 5 Insertion of the cartons into the 2-track conveyor chain | 11 Lidding robot |
| 6 Single-track feed of the cans | 12 Lidding station |
| | 13 Carton outfeed |

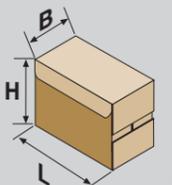
Technical data

Output: Up to 25 strokes / 50 cartons / min.
 Product pick-up: Suitable for up to 60 kg

Sizes:
 Aerosol cans: Dia. 45 - 66 mm
 Height 120 - 300 mm

Tray pack sizes:

	L	B	H
From	120	100	120 mm
To	400	300	300 mm



Complete line for packaging contact lens strips.



Before removing the contact lenses from the manufacturing process, from nesting, grouping, grouping and coding through to the finished shipping process.

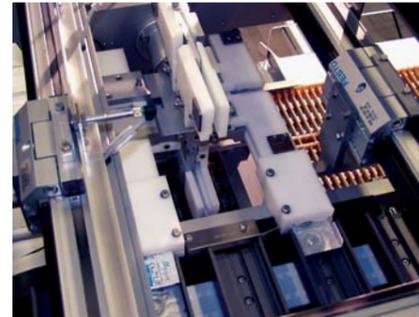
The contact lens strips are fed vertically in conveying trays and nested by means of a handling system. By means of a transfer belt the product stacks reach the pocket chain of the cartoning machine.

Special solutions are used for processing the folding carton blanks:

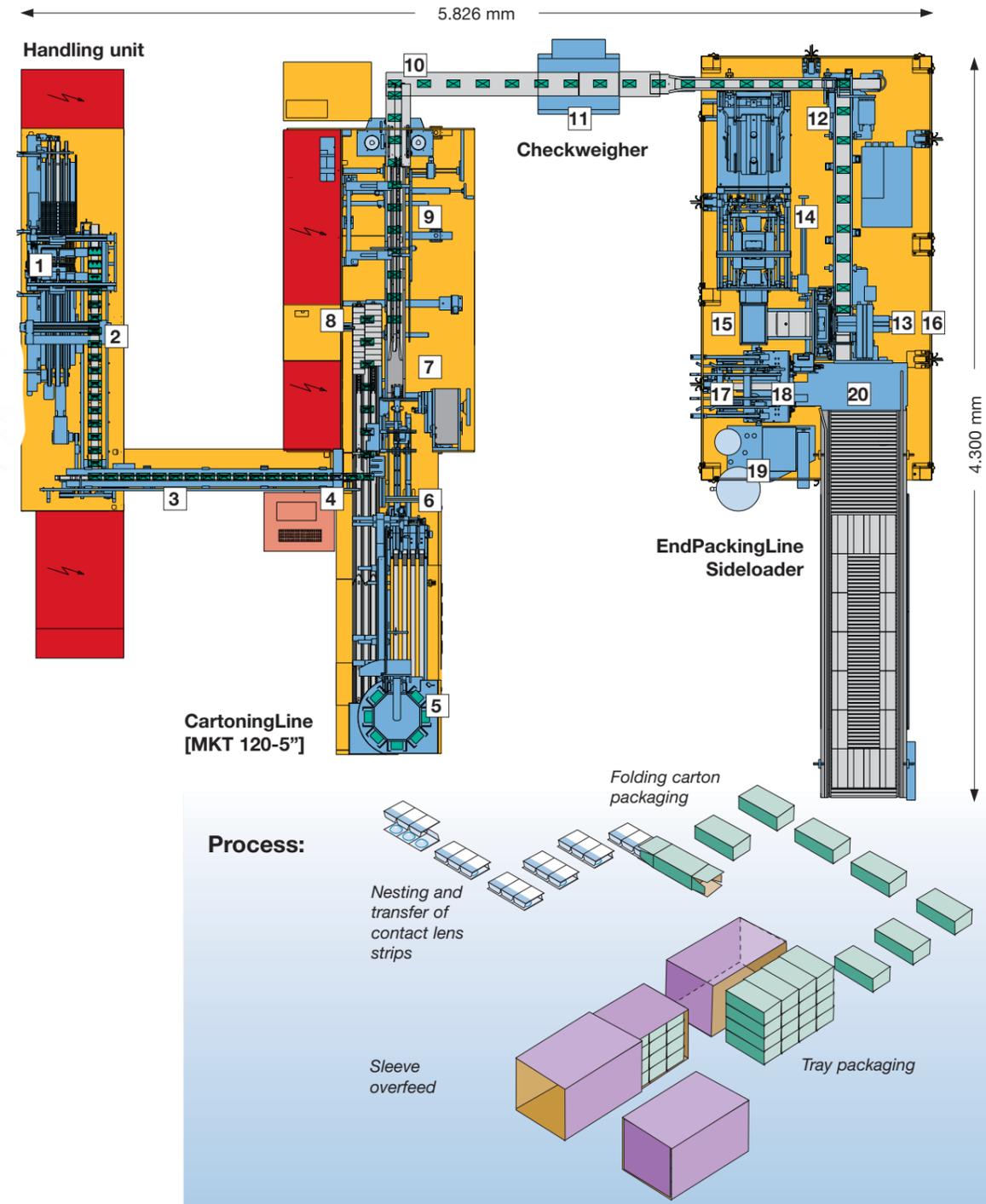
The blanks are unloaded from the vertical blank magazine and laser-coded within a horizontal feed segment. Due to the design of the pack with a tear-open perforation the folding carton flaps are closed in an order that deviates from standard.

CasePacker – compact sequences for the end packing of folding cartons into trays with Schober sleeves:

- Product-conserving folding carton cross discharge into the feed of the stacking station
- Stacking station with co-traveling pocket. The folding cartons are grouped in rows and stacked deep inside a co-traveling pocket
- Precise product insertion into the under cartons by means of a slide mechanism
- Erection of the sleeve and carton closure with adhesive tape or hotmelt glue



Versatile and flexible:
Gripper system for removal of the contact lens strips from trays and for nesting of the strips



A perfect print image:
Laser coding of horizontally fed folding carton blanks



Packed ready for shipment:
Erection, loading and closure of the shipping cartons in the CasePacker



Production sequence

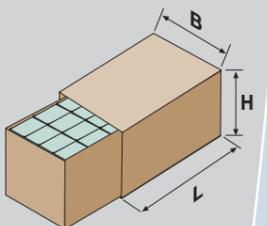
- 1 Contact lens tray unloading
- 2 Stacking and nesting
- 3 Stack transfer
- 4 Infeed into product chain
- 5 Folding carton feed
- 6 Laser coding and camera control
- 7 Folding carton erection
- 8 Product loading
- 9 Glue closure
- 10 Outfeed and conveyor belt
- 11 Checkweigher
- 12 Product infeed
- 13 Stacking station
- 14 Carton erection
- 15 90° turning of carton
- 16 Product infeed
- 17 Erection of sleeve
- 18 Carton insert
- 19 Labeling
- 20 Carton outfeed

Technical data

Mechanical output:
MKT 120-S: Up to 120 folding cartons / min.
Sideloader: Up to 15 shipping cartons / min.

Shipping carton sizes:

	L	B	H
minimum	200	100	50 mm
maximum	400	300	150 mm



Complete line for packaging stamps.

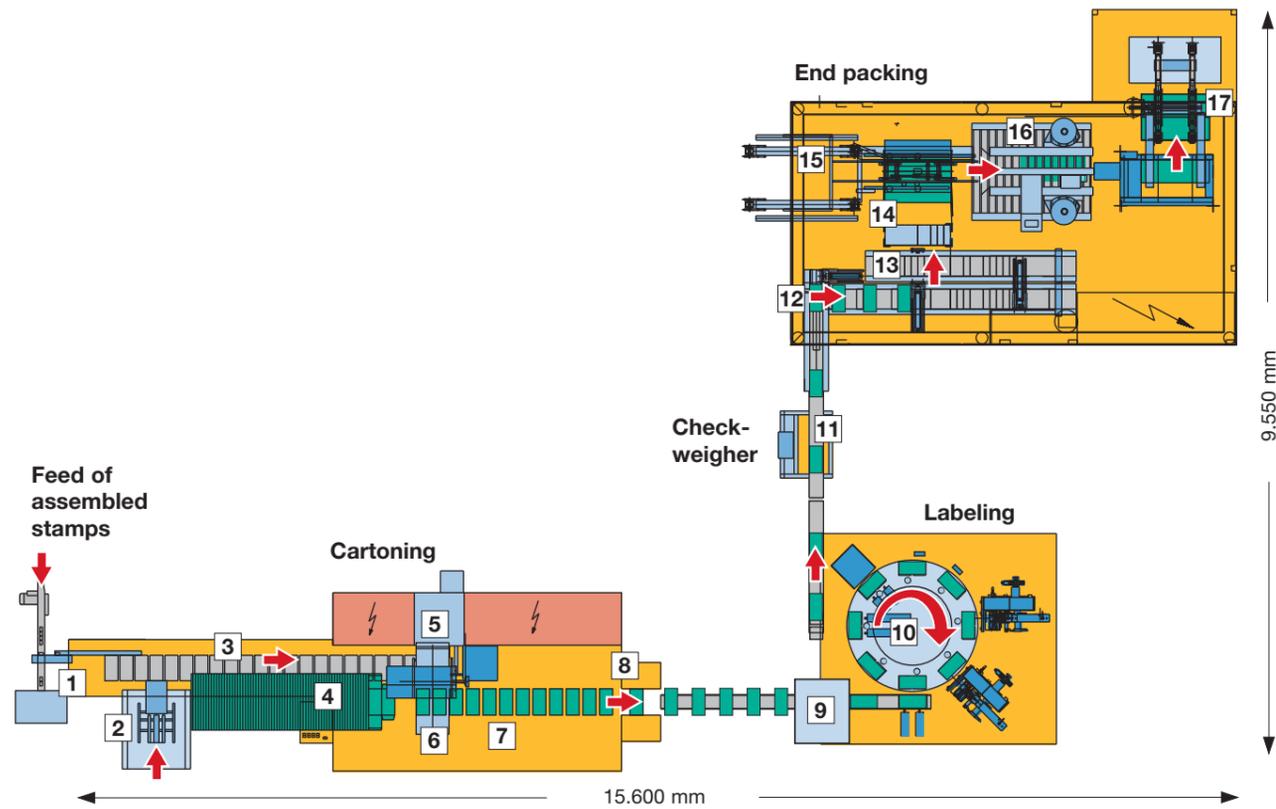
Office stamps are completed on an upline assembly machine and transferred to the subsequent end packing process. This process requires precise and product-conserving procedures, necessitated by the surface of the stamps being sensitive to knocks and scratches.

A linearly operating vibrating unit and a turning wheel are used for the product feed. With a vertical rotational movement the stamps are deposited into the product chain from vertical to horizontal position. In addition a blank print image card is inserted into the product chain via a friction delivery. In later use this card is clipped into the transparent window which is an integral part of the stamp. Before product insertion into the erected folding carton blank a leaflet is placed in the product package. Optimal product protection is ensured for pack closure through the gentle guidance of the closure flaps.

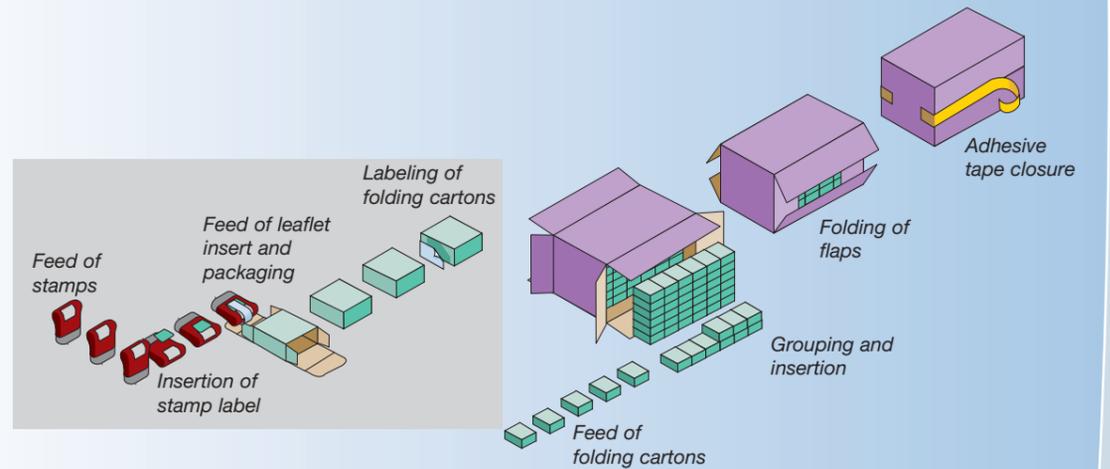


CasePacker – special handling during product insertion as well:

Before the end packaging process the folding cartons pass through a labeling unit with a subsequent completeness control by a checkweigher. Due to the special design of the folding carton pack the pack stacks are carefully placed in rows, grouped and overfed into the erected shipping carton by an overhead belt pusher.



Process:



The right push:
Insertion of the stacked folding carton packs via overhead belt pushers



Stacked and grouped:
Loading of the folding carton into the erected shipping carton



Production sequence

- | | |
|---------------------------------|--|
| 1 Stamp feed | 10 Labeling |
| 2 Turning wheel | 11 Checkweighing |
| 3 Product chain | 12 Cross discharge of folding cartons |
| 4 Folding carton feed | 13 Stack formation and grouping |
| 5 Opening of the folding carton | 14 Shipping carton erection |
| 6 Addition of blank labels | 15 Pack stack insertion |
| 7 Product loading | 16 Carton flap closure / Adhesive tape |
| 8 Folding carton closure | 17 Pack outfeed |
| 9 Overfeed to the case packer | |

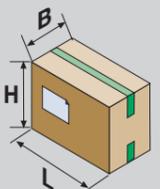
Technical data

Mechanical performance:

MKT 120-5": Up to 100 cartons / min.
Sideloader: Up to 10 cartons / min.
 Up to 15 cartons / min.

Shipping carton sizes:

	L	B	H
Minimum	300	200	100 mm
Maximum	600	400	350 mm



End packaging of writing pads in shipping cartons.

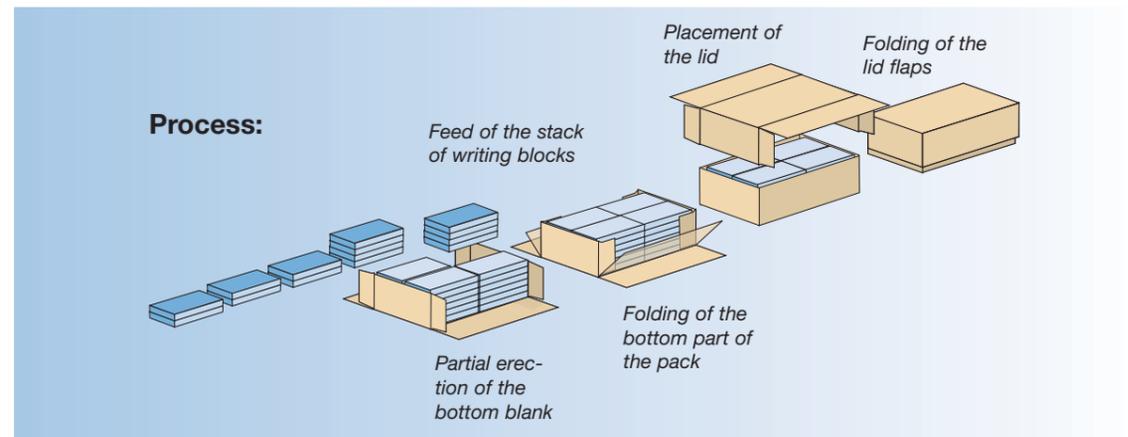
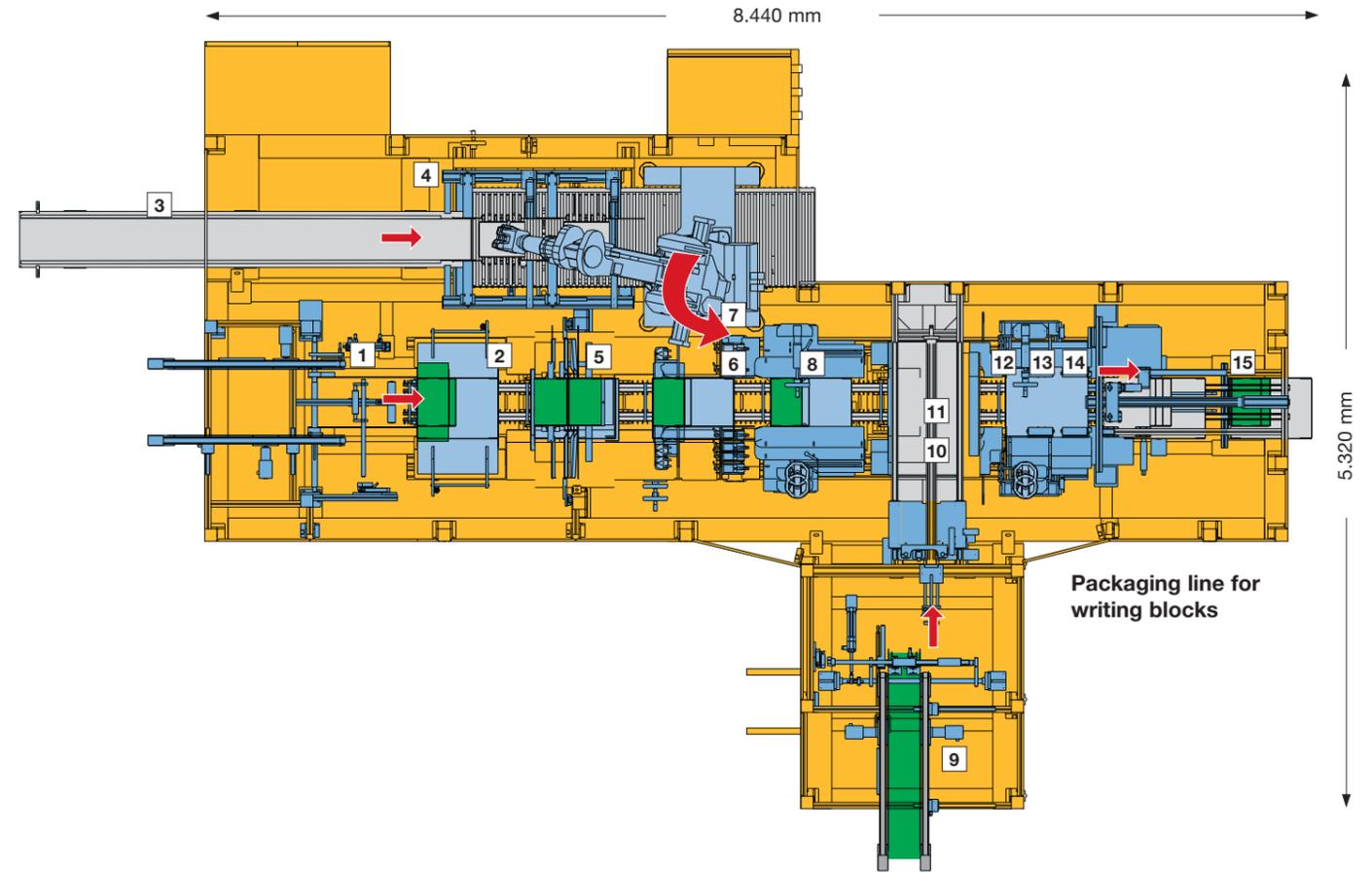


Individually intermatched packaging and handling technologies are used for the packaging of stacks of writing blocks.

Six writing blocks in a stack, shrink-wrapped in film, reach the robot unit via a feed belt. The six-arm robot is equipped with special devices for fixing the corners and for undergrasping the very unstable stack formation.

Parallel to this the bottom part of the cardboard container of the flat blank is inserted into the product chain and the side flaps are folded inwards at a pitch of 10°. This special feature in the processing ensures improved precision of the product loading. After loading the carton bottom surface with six stacks the side flaps are glued, folded and pressed on.

At the next station the feed of the cover blank is effected, the rear and front flaps being folded over beforehand. Due to this prepackaging the lid is positioned exactly on the bottom part of the carton and thus closed.



Cascading:
Pre-stacking of writing pads



Packaging logistics:
Placement of the prefolded lid



Production sequence

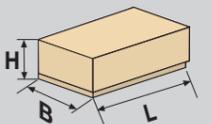
- 1 Base blank feed
- 2 Folding of the front and rear side walls
- 3 Container feed
- 4 Container prestacking
- 5 Insertion of the containers by robot
- 6 Folding of the glued flaps
- 7 Application of glue spots
- 8 Folding and pressing-on of the side walls
- 9 Lid blank feed
- 10 Folding of the front and rear lid sides
- 11 Setting-down on the loaded bottom part
- 12 Folding of the glued flaps
- 13 Application of glue spots
- 14 Folding and pressing-on of the remaining lid flaps
- 15 Discharge conveyance of the finished carton

Technical data

Feed performance: 50 containers / min.
Production performance: 7 outer cartons / min.

Tray pack sizes:

	L	B	H
Minimum	300	200	100 mm
Maximum	450	350	300 mm



Product infeed for gingerbread.



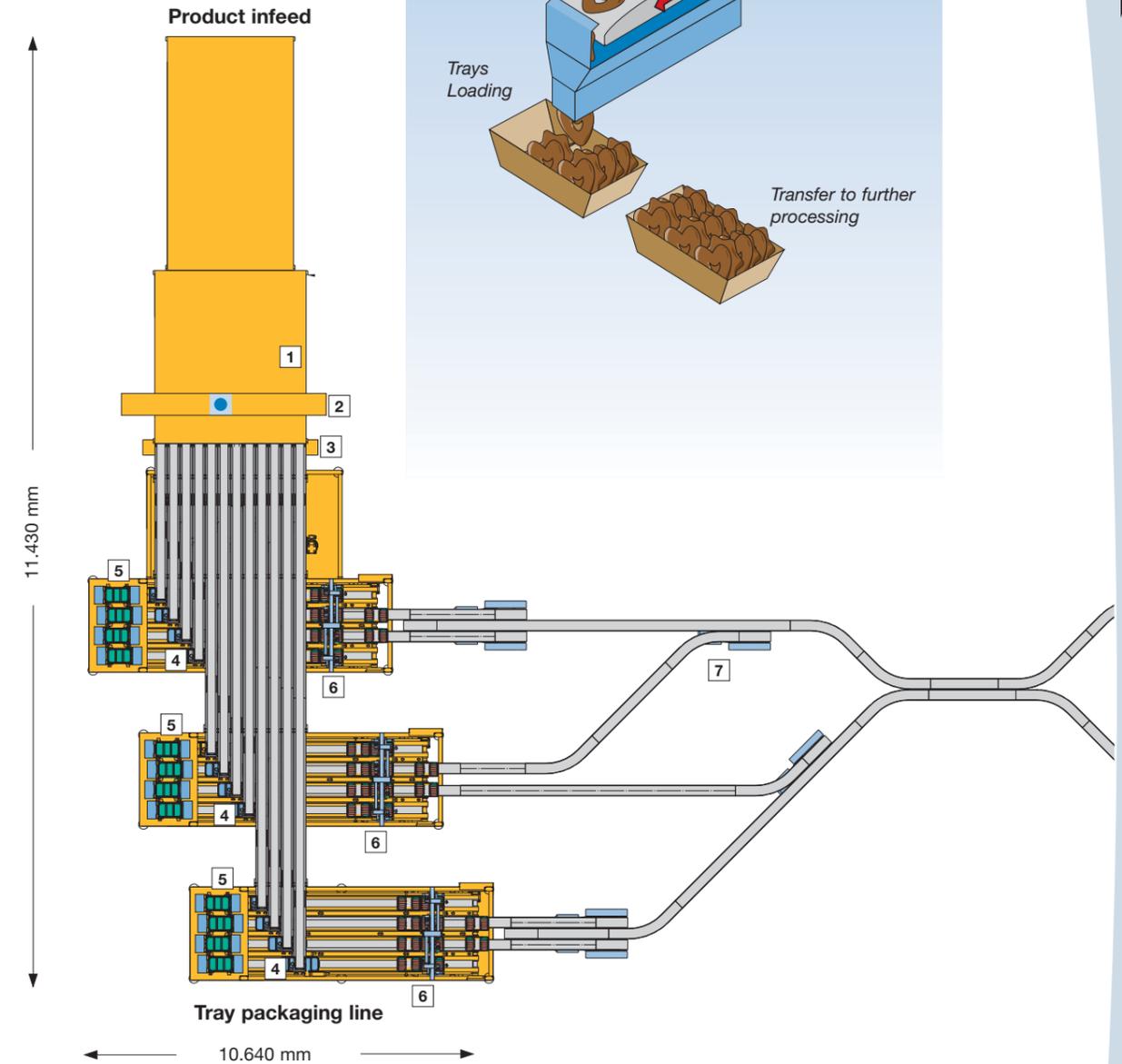
Gingerbread cake is a product that is extremely difficult to handle, the quality of which, in addition to the quality of the flavor, is assessed by the optical decoration and presentation. Measured by these criteria a line concept has been developed, which does absolute justice to these requirements.

The task consist of the inline control, loading and conveyance of the gingerbread cakes in trays:

- Expanded product transfer on 12 lanes with a metal detector
- Camera control on the product feed for shape and caking of the ginger bread with the outward transfer of defective products
- Reversing belt with a filling nose for transfer of the gingerbread cake into the trays provided
- Erection of the gingerbread cake from a horizontal to a vertical position
- Loading of three rows with six gingerbread cakes per tray

Perfectly lined up:
Erection of the gingerbread cake and loading of the trays

A full load:
Trays are removed from a high-performance magazine and fed



Production sequence

- 1 Gingerbread cake
- 2 Camera control
- 3 Outfeed of defective products
- 4 Tray loading position
- 5 Unstacking and feeding of the plastic trays
- 6 Belt conveyor
- 7 Tray conveying system with turnguides

Technical data

Production output: 1.200 tray packs / min.
67 gingerbread cakes / min.

Tray pack sizes

	L	B	H
	230	145	40 mm

Other dimensions on request

