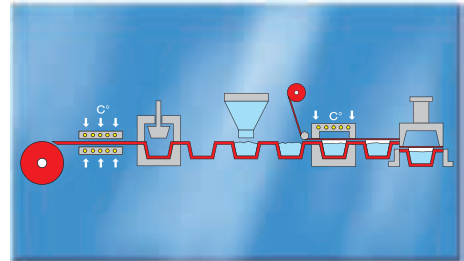


**illig®**



**Automatic  
blister sealing machine  
BSA 37**

## ***Universal automatic blister sealing machine suitable for manufacturing creative packs***



BSA 37 – optimum machine concept for packaging different products due to universal equipment range. Especially the packaging of premium products will be given a fresh impetus by the introduction of the machine to the market since high-class packaging solutions can be produced in different versions now.

With a high automation level, synchronization of machine and tool (format set) is a major prerequisite for smooth production, especially to fulfil complex packaging tasks. Short cycle times are a further demand.

Optional extras complementing the forming, sealing and punching station extend the universal application range of the machine. High productivity is achieved by combining the above elements with a proven quick-change technology for tools.

Reproducibility of all process parameters also supports the process.

Especially product-relevant machine sections such as contact heaters, forming tool, card magazine, sealing and punching tool are equipped with quick-acting locks. Format parts can thus be changed within a very short time.

Fast and programmable sequencing is ensured by using motor drives in the drive section, partly equipped with servo technology. Consequently nonproductive times are minimized resulting in high cycle speeds. Contactless limit switches, resistant to wear and tear, increase the machine's availability by minimizing down times.

Consistent use of control and Profibus systems ensures smooth retrofitting of addi-

tional equipment or interlinkage with product feed systems. Interlinkage with end packers or other downstream equipment is possible thanks to respective interfaces.

Up to 40 program data sets can be stored in the control system, so all machine parameters are available right away for repeat orders.

The operator-friendly guarding provides free access to all stations thus simplifying service and maintenance of the machine. All stations are installed in self-supporting stands featuring integrated cable ducts and individual control cabinets. Additional units, such as card loader, product control and product feed devices can be installed on the filling range without problem. Compact pneumatic valve terminals are used for pneumatic control.

Proven multiple gripper system for material transport through machine.



*multiple gripper system and sealing station*

Besides production safety, this also means narrow lateral edges and minimum material loss. Consequently, the forming area of the machine can be optimally used.



forming station with upper and lower tool part

- Machine technology
- Quick-change of tooling
- Packaging variants  
Control concepts  
Interlinkage



**Customer-specific equipment:**

**Material roll stand**

- modular system with double roll stand, cutting and splicing device, material storage container
- device for processing large material rolls, d = 600 mm, in sealing material section, roll change without lifting devices

**Thermoforming unit**

- cast-in tubular heaters for optimum temperature profile
- modular moving mechanism for contact heating plates with quick-adjustment for adaptation to index length
- forming device for positive forming with quick-change device

**Sealing unit**

- MP 370 T operating panel with function to switch languages and storage of production programs
- print mark registration unit for processing pre-printed materials
- automatic positioning of pre-printed materials by variable index length
- sealing station driven by motor
- feed by servo motor, index length can be digitally set
- quick-change of sealing electrodes



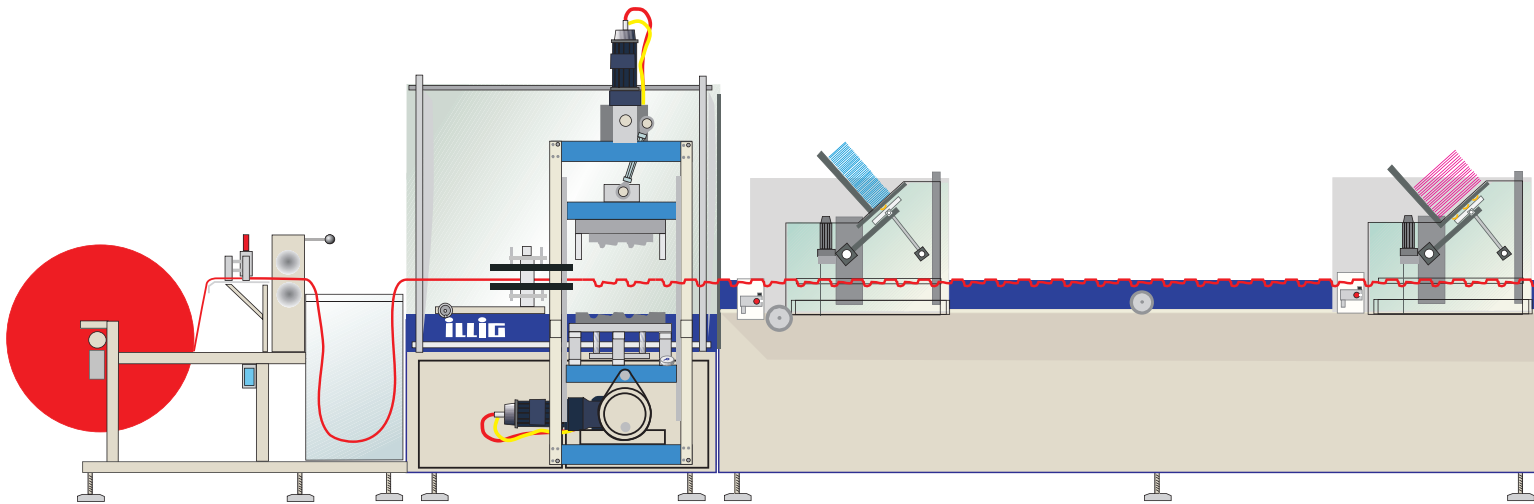
**Punching unit**

- electro-mechanically driven punching station, suitable for punch and die trimming tools
- indexing cooling plate in front of punching station
- motor-driven discharging conveyor for packs

*A comprehensive range of additional units is available to extend the basic machine.*

*Not all of the units described are included in the basic version of the machine!*

## ILLIG BSA37 function units featuring quick-change of tooling



### Contact heaters

The format-milled contact heating plates are equipped with quick-acting closures and can be easily changed.

Heating of the forming area ensures distortion-free and even material heating. This way the optimum forming condition of the material is achieved and the material distribution within the individual blisters is improved.

Stable web resulting from unheated intermediate bridges. Material shrinkage values are also reduced. The heating plates are Teflon-coated.



1

2



3

- 1 change of forming tool
- 2 exchange of material guiding units
- 3 pre-sealing electrode for decoration on blister bottom (quick-change type, option)

### Forming station

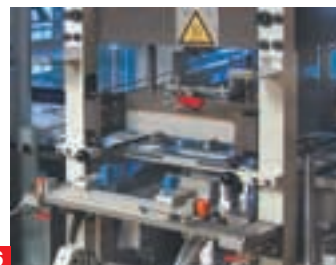
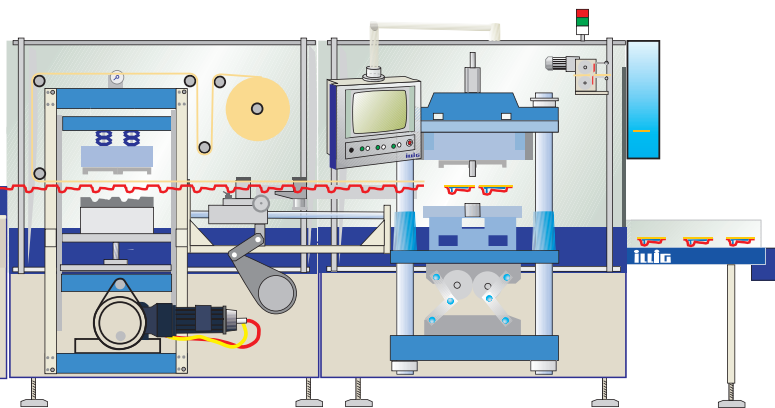
The forming station operates in the positive vacuum forming method. The upper tool part and the cooling frame are equipped with quick-acting locks which are unlocked by releasing the clamping levers. The lower tool part is also fixed with quick-acting locks.

All parts of the forming tool can be changed on the operating side, resulting in tool changes within only a few minutes.

### Card loader with pre-sealing unit

Card magazine, suction transfer and pre-sealing unit can be changed quickly and easily. Pre-assembled carrier plates with suction units can be used for different formats, they can be completely exchanged. The card loader is mounted on guide rails so it can be adjusted in feed direction. The card is fixed on the web in the pre-sealing station. The pre-sealing electrodes are installed on a heating element in a movable way to ensure precise setting of the sealing point. Setting with positional accuracy is simplified by a scale.

- Machine technology
- Quick-change of tooling**
- Packaging variants  
Control concepts  
Interlinkage



### Product control

Device for automatic product count control. Blister filling is checked by mechanical detection. If products are found to be missing, the machine automatically stops.

### Automatic re-positioning of station (optional extra)

Automatic re-positioning on sealing and punching station for narrow edges on packs and very safe mode of operation. The containers in the web are scanned by light barriers across the transport direction and re-positioned if required in case of mismatch. This way sealing and punching edges remain uniform even after a machine stop. Malfunctions due to material shrinkage and pack mismatch are being avoided.

### Adjustment of forming station

The sealing station determines the „0“ position of the web. Resulting from this there are the positions of the forming station subject to index length. This position adjustment can be carried out manually or – optionally – automatically.

### Sealing station

The sealing electrode is fixed in the station by a clamping frame. After releasing a lever the electrode can be pulled out of the station towards the front on the operating side. The same thing applies to the lower tool part which is fixed with a pre-clamped pin lock.

### Quick-adjustment of transport

The index length is entered on the operating panel. The transport is servo driven. Fast and easy adjustment

of material width by hand wheel. Exact setting in millimeter range possible due to counting unit.

### Punching station

For safety reasons the punching tool is fixed in the station with screws since it is exposed to higher dynamic stress. To perform a tool change, the tool is closed and the upper and lower parts are respectively secured. The tool change table simplifies the process and at the same time it serves as transport unit for the tool, required either to put it in storage or to do maintenance work.

- 4 *change of format parts on card loader*
- 5 *setting of product control*
- 6 *change of sealing electrode*
- 7 *change of punching tool*

## Future-oriented system technology

Flexible production system, maximum availability  
and market-oriented packaging solutions



### ILLIG BSA 37 – the machine for flexible pack design

All conventional container materials suitable for thermoforming can be processed on this machine, including PP with suitable equipment.

Lids can either be made from card blanks or roll materials, such as paper, aluminium or plastics. Consequently this machine is also interesting for customers who pack frequently changing products in respective quantities and at high performance.

Grouping of so called “family structures” makes this machine even more effective. Basic measurements, i.e. sealing and punching dimensions, are maintained. Only the forming segments are changed to make the production of different blister designs possible.

### Possible package variants:

#### Full-area plastics blisters with sealed-on card 1

One example are toothbrush blister packs made of thermoformed plastics materials (A-PET, PVC, etc.). Products are loaded in the filling section. Subsequently a card is positioned on the web to fill it to the optimum of its format. Punctual pre-sealing fixes the card on the web. In a further step the pack is completely sealed in the sealing station. The final contour cut is performed in the punching station. The finished packs are discharged by a conveyor or fed to an end packer.

#### All-plastics blisters with insert card 2

Alternatively, individual cards can be put into the blisters after loading of the products.

Subsequently the pack is sealed with transparent roll-fed plastics lid material.



filling range with card loader and pre-sealing device

#### All-plastics blisters with insert brochure and insert card 3

Several card loaders with pre-sealing unit can be mounted on the filling range for loading leaflets, operating manuals as well as decorative cards into the blisters. This way new design and packaging solutions can be produced. Subsequently the packs are sealed and punched.

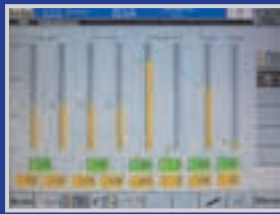
#### All-plastics blisters with roll-fed lid materials 4

After filling, these packs are sealed with:

- pre-printed blister paper suitable for sealing and positioned by an indexing control device
- transparent or pre-printed plastics material
- unprinted or pre-printed aluminium material

or

- pre-printed composite materials



menu page „heaters“

- Machine technology
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screen operating panel with sealing and punching unit

### Control concepts for complete machine lines

All functions in the control program can be entered via operating panel in the corresponding menu pages. Shortest start-up and conversion times due to precise operator guidance.

Furthermore, additional units can be integrated in the control concept without problem.

All data relevant to the process are entered on the operating panel and displayed as set point/actual comparison. In case of frequent product changes, reproducibility of these data is an essential factor to ensure consistent product quality. Essential operation data can be continuously accessed for process control during ongoing production.

The Siemens control systems used in the machines meet a world-wide standard, thus ensuring service and spare parts supply around the clock.

Delivery of all components from one source results in smooth production sequencing and maximum availability, from clarification of interfaces through to testing and commissioning of the complete system at customer's site.

### Additional units – automation

Our standard machines, in combination with additional units, form product-oriented packaging systems, which can be individually adapted to the customers' requirements.

Already in the planning stage interlinkage with loading devices, labeling units and end packers is taken into consideration. This way shortest commissioning times are achieved at customer's site and also performance and quality specifications are met.

One example is a feeding device for toothbrushes (please refer to last page) where customer components were combined with our scope of delivery to form a high-performance system.

6600 toothbrushes/hour are packed on this machine. This is one out of many examples showing the optimized, efficient working method of our machines.

## Machines and tools for thermoforming and packaging technology

Sheet processing machines

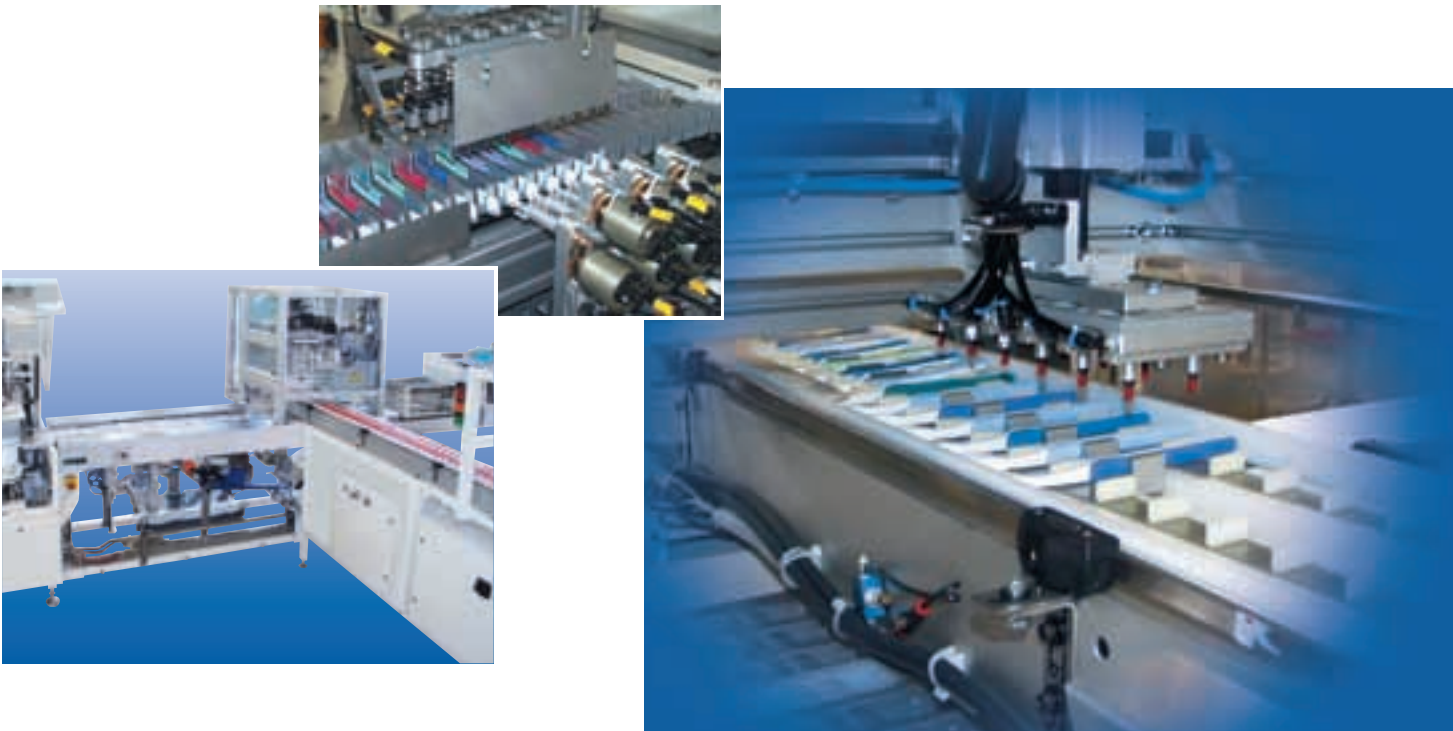
Automatic roll-fed thermoformers for forming/punching tools

Automatic roll-fed thermoformers, separate forming and punching

Skin and blister packaging machines

Form fill and seal lines

ILLIG-produced tooling



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