BOBST

Flat bed die-cutting process

BOBST and flat bed die-cutting go hand in hand, after all we did invent the technology with our first Autoplaten® press, the AP 900, introduced back in 1940. From that pioneering die-cutter, right up to today's highly sophisticated production lines, BOBST has continuously developed and improved the technology of the flat bed die-cutting process. [+]

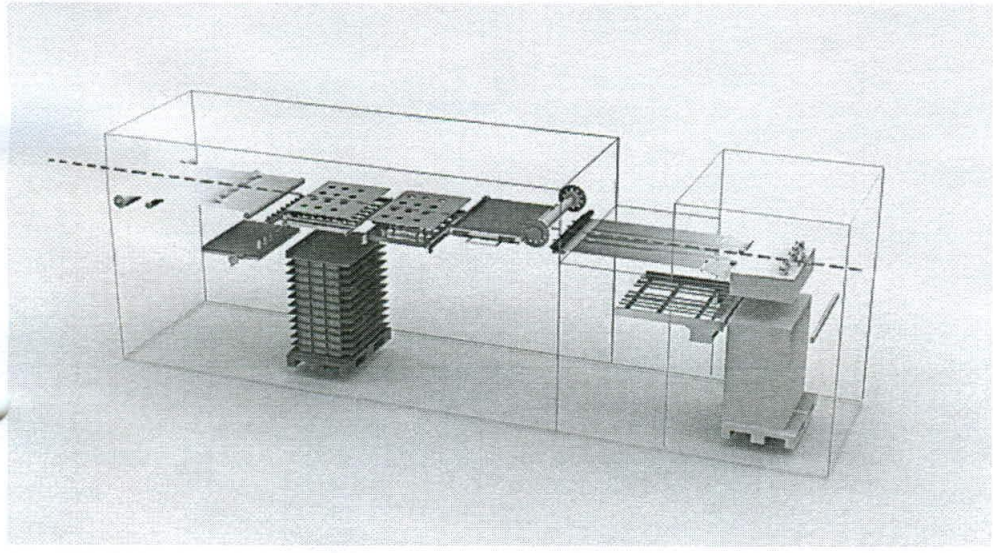
Flat bed die-cutting process

Flat bed die-cutting is a process used for the cutting, creasing, embossing, waste stripping, and blank separation of a range of sheet materials, from light papers and carton board, through heavy solid board, plastics and in-mold labels (IML), to micro-flutes and most types of corrugated board. The process is used in a wide variety of sectors from packaging, label, and display manufacture to commercial printing.

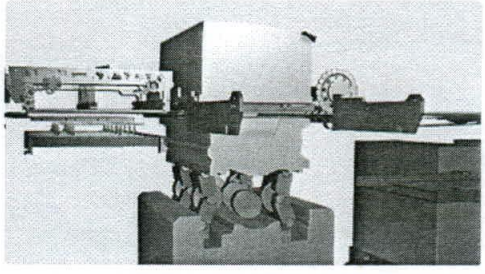
Process advantages

By combining highly accurate registration with precise sheet control at each stage of the process, a flat bed die-cutter offers the ultimate in quality when cutting, creasing or embossing sheeted material.

Flat bed die-cutter and process description



A flat bed die-cutting press may be an offline, stand-alone machine, or may be inline with a printing press and/or other units. Having been fed into the press and held by a gripper bar, the sheet of substrate is transported through a number of stations which carry out sequential processes. The exact configuration of a flat bed die-cutter will vary depending on the application but, in broad terms, the elements that may be present are:

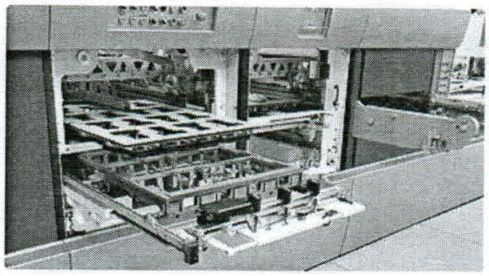


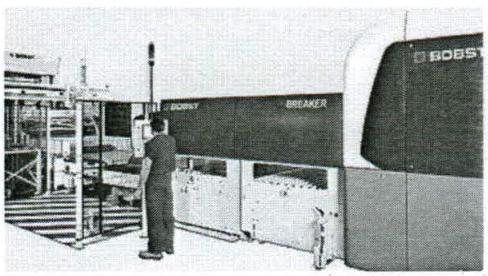
- **Feeder or loader:** Using suction heads or a push system, this unit transports sheets from the pile to the machine in-feed
- **In-feed:** Takes control of each individual sheet and registers it to the cutting tools using mechanical or dynamic registration
- **Platen section:** This is the heart of the machine, bringing the cutting die and cutting plate together under pressure. Held between them, the sheet of substrate may be die-cut,

creased or embossed, depending on the application and substrate

- **Stripping section:** Internal waste, and sometimes side and rear trim, is removed using an upper stripping tool, central stripping board, and, in some tooling arrangements, lower stripping pins
- **Blank separation section:** Using universal or dedicated blanking tools this unit pushes individual cartons from the sheet, creating a pile of flat blanks ready for further processing or for transfer to the customer. A blank separation unit incorporates its own delivery unit
- **Delivery:** On machines with no blank separation section, the delivery creates either a pile of full sheets or of blanks attached to each other by nicks. The front trim of the sheet may be removed at this stage

Flat bed die-cutters used in the corrugated industry may be augmented by peripheral units such as breakers and palletizers.





BOBST expertise and knowledge

With extensive and ongoing research and development, the BOBST die-cutter range continues to push the boundaries of what is possible using the flat bed die-cutting process. This constant evolution has seen BOBST adapt the Autoplaten® concept to suit the needs of many different types of user, from entry level to expert, and from small businesses to multi-national corporations.

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Cutting Machine D 66 ECO

Pprogrammable cutter with hydraulic drive and 5,5“ monochrome display

Description of the Polar D 66 ECO

The cutter POLAR 66 is designed for one-shift operation. The precise and gentle swing cut is carried out hydraulically. Thus, the time of the knife spent in the lower dead end can be adapted to the material. The ultra-smooth stainless table surface allows an easy handling of the material even without air jets. Within a wide setting range the clamping pressure can be adjusted infinitely to each cutting material by means of a turning knob with scale. Bright LEDs mark the cutting line clearly visible for the operator.

The operation of the machine is done via an ergonomically positioned control panel with 5.5“ monochrome display and additional membrane keypad. Recurring cutting sequences can be memorized (memory capacity 198 programs) and adapted at any time. The creation of the cutting programs is done either manually or menu-driven and intuitively via block programming. To optimize the cutting quality the pre-clamping time can be adjusted according to the material.

Customer benefits

- Extensive programming options with a memory capacity of 198 programs
- Minimal maintenance requirements due to the use of novel materials
- Extended operating life of the knife as well as faster knife change thanks to POLAR OptiKnife with knife fine adjustment in the lower dead end
- Machine frame with optimized stability for optimum absorption of cutting forces and greatest cutting accuracy

Technical data

Cutting width	670 mm 26.38 in
Feeding depth	670 mm 26.38 in
Feeding height max.	80 mm 3.15 in
Clamp pressure min.	200 daN 441 lbs
Clamp pressure max.	1,500 daN 3,307 lbs
Backgauge speed on return way (0 - ...)	70 mm/sec 2.76 in/sec
Smallest cut, automatically, without false plate	15 mm 0.59 in
Smallest cut, automatically, with false plate	50 mm 1.97 in
Dimensions (w × d × h)	1,250 × 1,825 × 1,500 mm 49.21 × 71.85 × 59.06 in

Further technical data are available for download on our website.

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POLAR-Mohr Maschinenvertriebsgesellschaft GmbH & Co. KG
Hattersheimer Straße 16 – 42 \\ 65719 Hofheim \\ Germany
info@polar-mohr.com \\ www.polar-mohr.com