

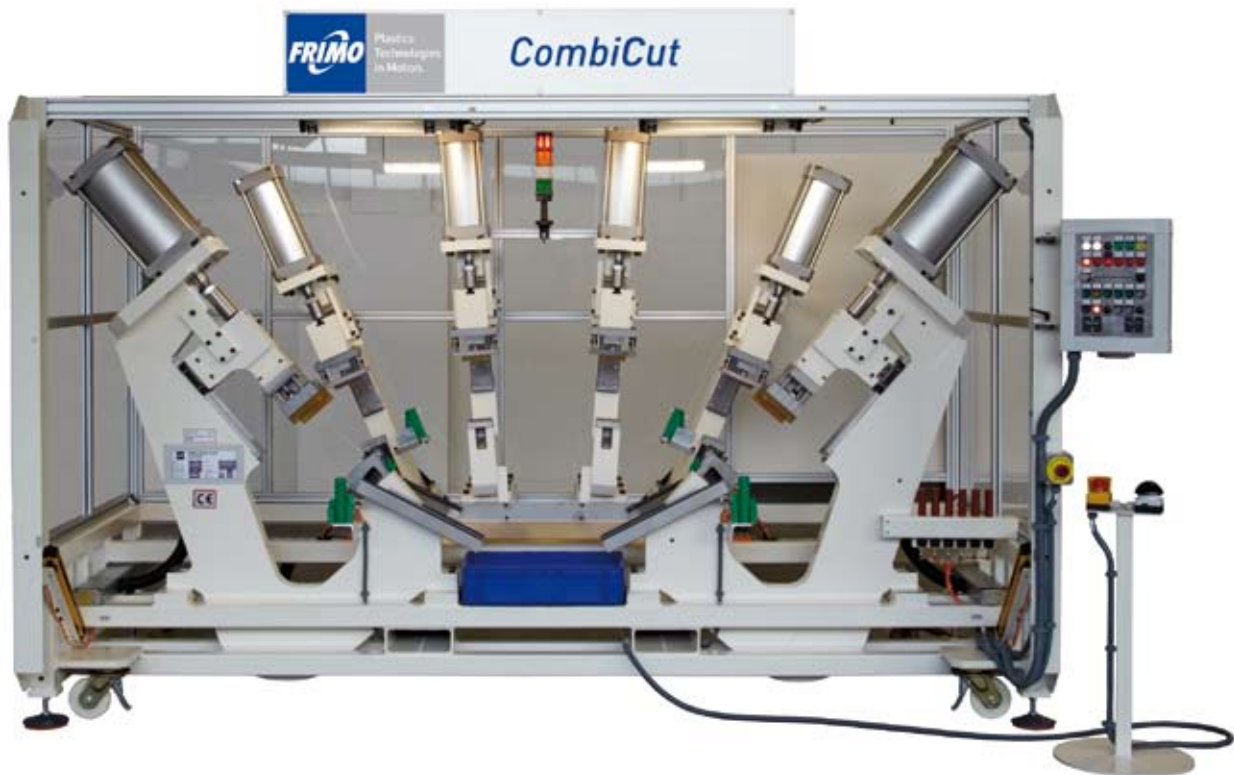


CombiCut Punching Machines

Plastics
Technologies
in Motion.

CombiCut Machines – Punching, embossing and joining in a single unit

The FRIMO *CombiCut* machines have been specially developed for the punching, embossing and joining of bumpers and other grained, painted or unpainted exterior plastic components in a single unit. The *CombiCut* is very well suited for large-scale production, especially for creating variants. This means, optional punchings and fastener elements for e.g. parking assistants, headlight wipers, fog lamps and trailer hitches can be added just prior to final assembly. That reduces inventories and simplifies stockholding.



Example of an operating cycle

The operator places the part e.g. a bumper on the product fixture, which is mounted on a conveyor sled. When the cycle is started, the sled moves the part into the punching position. In parallel to

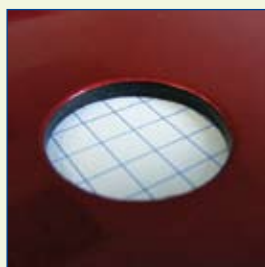
the punching process and the radius-embossing buckets or other fastener elements can be loaded. These elements are ultrasonically welded or glued to the part in the assembly station. As an

option, a mechanical system for positively centring the elements to the punched holes can be offered. The finished part is moved back to the starting position where the operator can unload the part.

Punching, ...



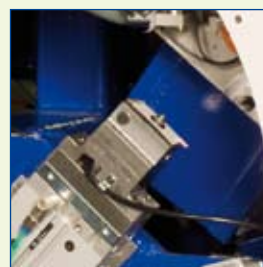
Radius-Embossing, ...



Positioning, ...



Gluing ...



or Ultrasonic-Welding ...



... all in one Machine!

Ideal for exterior components



CombiCut with ultrasonic-welding station



CombiCut with gluing station

Versatility of application

Variant manufacturing for options like:

- Park Distance Control
- Parallel Parking Assistant
- Headlight washing
- Fog lamps
- Side marker
- Assembly holes for further differentiations like sill plates, spoiler, etc.
- Tow hook opening
- Trailer hitch

Power systems

FRIMO offers hydraulic or pneumatic drives for the punching application. Combinations like air-over-oil cylinders are possible as well.

Alternative trimming technologies from FRIMO

- Conventional punching
- Flexible trimming technologies

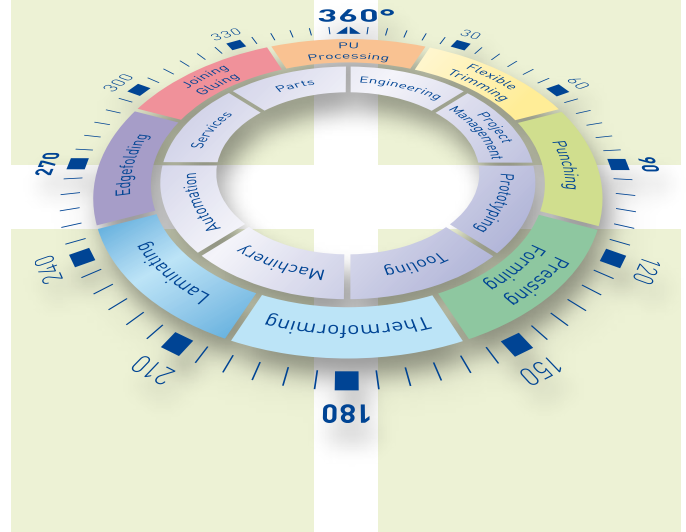


Benefits

- Multiple operations in one machine
- Radius-embossing also for painted parts
- Easy fine-tuning of the embossing process
- Selection and processing of several variants in one machine
- Automatic feed of components
- Compact design
- Short cycle times
- Long tool life
- Maximum availability
- High process reliability
- Own manufacturing of ultrasonic key-components
- Ergonomically optimized feed and operation
- Integrated punch-slug disposal



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