

Deburring

Case study: Toilet seats, Viebahn, Germany

Applications

- Deburring
- Machine tending

ABB Products

- IRB 2400
- IRB 4400

In Germany, Viebahn increases the added value of thermoset manufacturing with deflashing done with the help of robots.

Innovation is a Viebahn Pressen Systeme GmbH strength. For 125 years, this press manufacturer in Gummersbach in Germany has been a leader in manufacturing installations for processing thermosetting materials, such as toilet seats.

Reduced cycle time

“A cycle time of 140 seconds for a light seat is considered an optimum value seldom achieved. For the same part, we need 110 seconds, but we have already achieved values less than 100 seconds,” says Manager Ulrich Viebahn. Capacity increase for thicker pieces with cycle times of over 240 seconds is even better. Up to 600 packaging-ready sets can be produced per day. During production, fully cured parts are removed from the mould by an ABB 6-axis robot and, while still warm, trimmed by milling. Additional custom finishing operations like grinding and polishing can be integrated as well. Depending upon the weight of the part, two types of ABB robots are used during deflashing: the IRB 2400 or the IRB 4400. The robot is located between both presses and alternately removes the seat and lid from the moulds with a special gripper. Then it passes the cured part over stationary conditioning spindles to remove hard flashing. Afterwards, the robot lays the part on a conveyor. During processing of the outer contour of the part, besides high path accuracy with ABB TrueMove software, high rigidity of the robot ensures a consistent result with a higher surface quality. Time-consuming - and expensive - further machining can be completely avoided.



Deflashing hot parts

“The new thing about our ABB robot application is that we are the first in the thermosetting world to take the part out of the press and deflash it while it is at a temperature of around 150 °c,” says Ulrich Viebahn. “The part does not have to cool, storage space is saved, and it cannot warp yet, which is beneficial for precision milling. “In addition,

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model-specific mechanical milling support is not necessary. This is important, because our customers have many different models. Plus higher milling speeds are possible and milling cutter wear is lower, since less milling time is needed. We also have arranged the presses and robots in such a way that space is no longer wasted.”

> FACTS

Viebahn Pressen Systeme GmbH

- Founded 1881 by Adolph Viebahn, great grandfather of the current owner
- In 1930, Heinrich Viebahn, grandfather of the current owner, designed the hydraulic Viebahn toggle lever press used for manufacturing fireproof bricks for the electronic industry
- Over time, the Viebahn toggle lever press was automated, and it still forms the backbone of modern thermoset and rubber presses.
- Website: www.viebahn-pressen.de

Advantages of robotization

- Cycle time of less than 100 seconds, more than 40 seconds shorter than the industry standard
- Up to 600 toilet seat sets produced per day
- Space saved due to no need to let pieces cool before deflashing
- Higher milling speeds means less cutter wear and less downtime