



Automotive Industry

# TBL Technology

## Tailored Blank Lamination

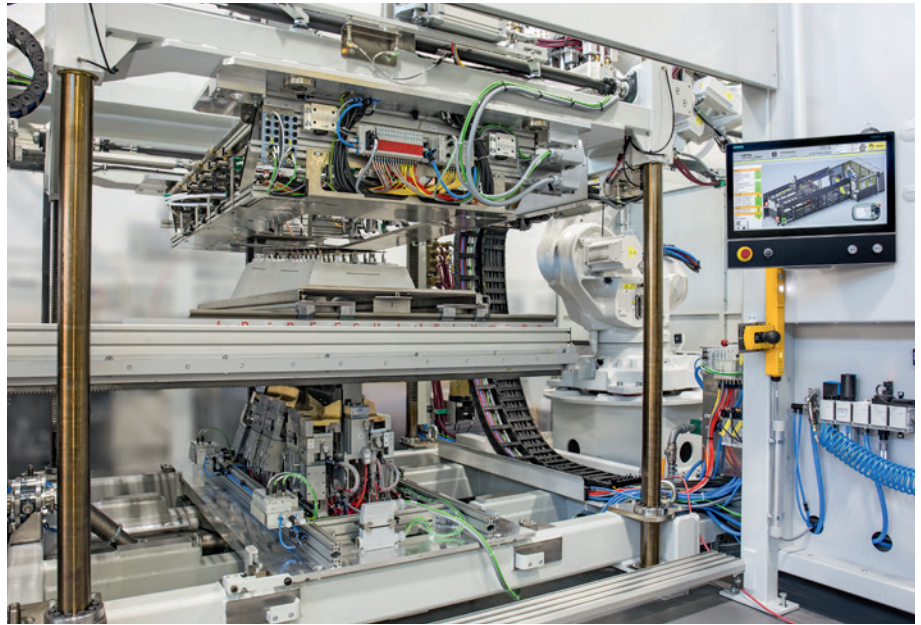


Advanced TBL Technology (**T**ailored **B**lank **L**amination) represents the next generation of vacuum lamination machines offered by Kiefel. The new machine concept introduces new cost saving and quality benefits to existing processes.

This innovative technology can be used for all types of finished products such as door uppers and armrests, manufactured with traditional vacuum lamination process. The TBL Technology is suitable for vacuum lamination and press lamination.

## Fields of applications

- Door uppers
- Armrests
- Storage compartments
- Center consoles
- Instrument panels



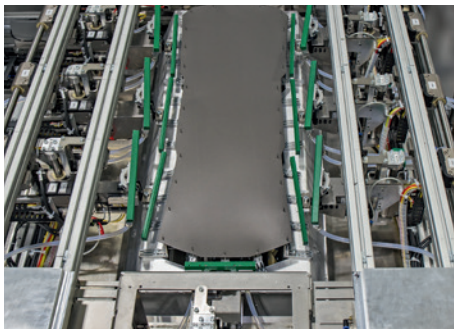
Vacuum laminating tool in new TBL machine

## TBL Technology

Tailored Blank  
Lamination

## Main benefits at a glance

- **Improved product quality:** due to insignificant film stretch/grain washout as well as even soft-touch all over the part
- **Reduced film consumption:** up to 40%, depending on component geometry in comparison to traditional vacuum laminating technology
- **Reduced machine footprint:** around 50% less in comparison to traditional vacuum laminating machine
- **Full flexibility:** individual programmable 3D servo-grippers are positioning the foil on the substrate without any film stretch
- **High level of automation:** high efficiency due to fully automatic operation process, no operators are required
- **Integrated robot automation:** vacuum laminated part can be loaded by the robot to the next process step, e.g. edgefolding or punching process
- **Smart alternative to IMGL:** better quality results, undercuts of the parts are possible



Servo-driven 3D grippers: Individually programmable

## Technical data

Max. forming surface	1,100 x 1,200 mm
Min. forming surface	250 x 250 mm
Cycle time	< 40 sec.
Dimensions	10,300 x 4,000 x 4,200 mm
Weight (incl. tooling)	approx. 12,000 kg