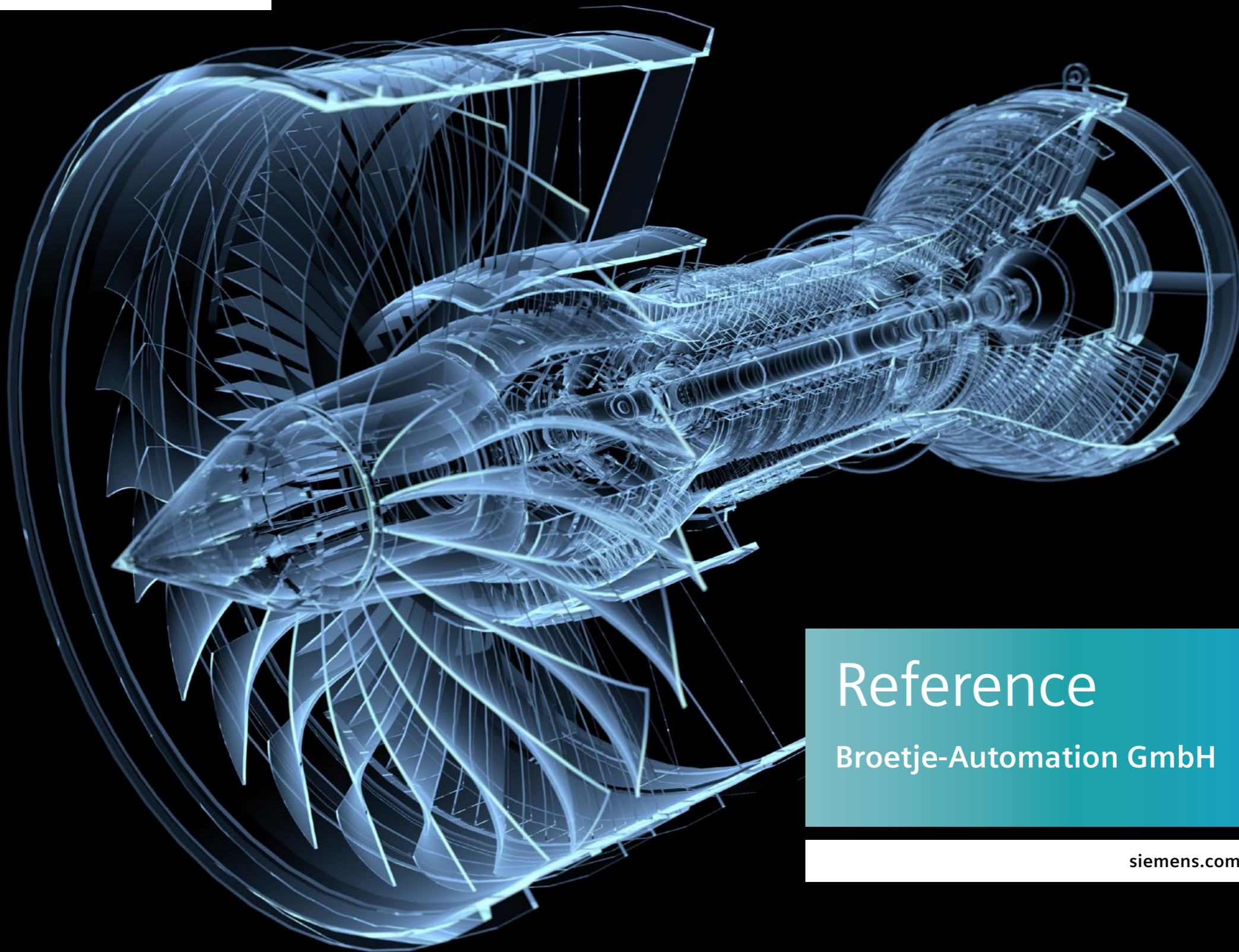


SIEMENS
Ingenuity for life



Reference

Broetje-Automation GmbH

[siemens.com/aerospace](https://www.siemens.com/aerospace)

Broetje-Automation GmbH

»We as first tier supplier for aircraft assembly technology are requested to provide technically mature and reliable solutions. The use of Siemens components enables us to provide state-of-the-art technology in combination with a worldwide established service net to ensure an efficient production.«



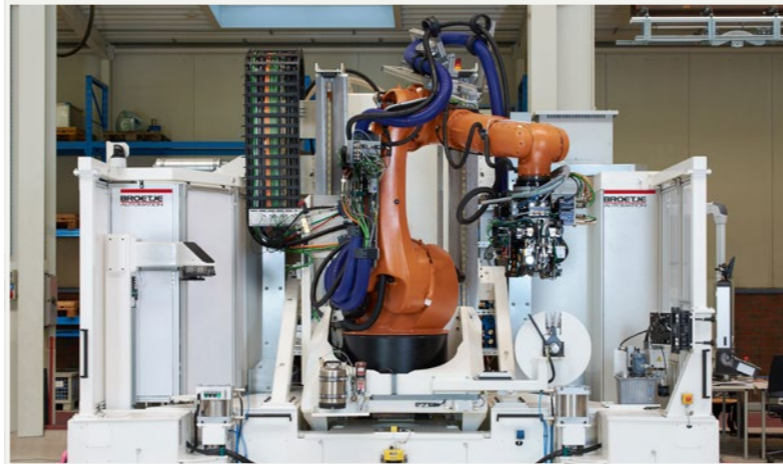
Holger Mayländer,
Executive Vice President
Marketing & Sales



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ROBOT ASSEMBLY CELL – RACE



Siemens Package:

SINUMERIK 840D sl, SIMATIC S7-300 PLC, SIMATIC Industrial Flat Panel, SIMATIC MOBILE PANEL 277 10-inch Touch, SIMATIC WinAC RTX, SIMATIC WinCC 7.0, VNCK

Application:

Automated drilling and fastening of aircraft cockpit and sub assemblies

Highlights:

- Fully automated process inclusive referencing system guarantee's high product tolerance and repeatability
- High accuracy positioning system based on standard robot, controlled by SINUMERIK 840D sl improved with Broetje compensation methods and force sensors
- Highly flexible movable assembly platform with integrated safety
- Fully offline programmable solution using Virtual NC Control Kernel to generate safe and reliable NC code

MULTI PANEL ASSEMBLY CELL – MPAC



Siemens Package:

SINUMERIK 840D sl, SIMATIC S7-300 PLC, SIMATIC PANEL IPC677D, SIMATIC WinAC RTX, SIMATIC WinCC 7.0

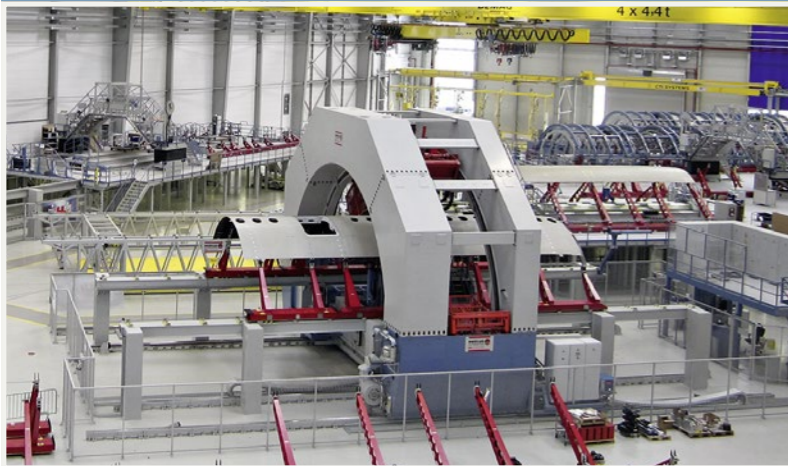
Application:

Automated drilling and fastening of different aircraft type panels

Highlights:

- High speed operation suitable to drill and fasten parts made of mixed material stacks like composite and titanium
- 10-axes positioning system allows processing of various aircraft products up to 180° panels without limitation in length
- Gantry configuration allows easy loading and unloading via overhead crane, conveyor system or AGV
- Easy accessibility for operator and maintenance personnel

PULSE MOTION LINE



Siemens Package:

SIMATIC S7-300, SIMATIC Panel IPC677D, SIMATIC WinCC 7.0, SIMOTION

Application:

Manuel and automated assembly of aircraft fuselage panels integrated in pulsed production line

Highlights:

- Parallel processing of robotic and manual operations
- Multiple panels in serial production operated at the same time. All panels pulsed simultaneously – push principle
- Space saving – less floor space required
- High flexibility – supporting different panel types and lengths
- Improved transparency – production progress according to position of the panel
- Less work-in-progress – no buffers required
- High scalability due to flexible line configuration regarding work contents

STAXX COMPACT 1700



Siemens Package:

SINUMERIK 840D sl, SIMATIC S7-300 PLC, OP12, HMI-PRO (TRANSLINE), VNCK

Application:

High production rate fiberplacement application for automotive parts (b-pillar reinforcements, backwall, hood, roof, ...) as well as aerospace parts (clips, brackets, patches, ...)

Highlights:

- Robust 16 lane fiber placement machine
- High lay-up rates > 30 kg
- Minimized scrap
- Enhanced part quality due to controlled fiber orientation
- Short cycle times
- Suitable for backing film and non-backing film materials
- Main time parallel and automated loading and unloading of parts
- Operator friendly HMI