

TORQUE SYSTEM

EQUIPMENT

SERVICES

PROCESSES

INTEGRATION

**Equipping
the Factory of
the Future**

AUTOMATED SOLUTIONS
for wind turbine production

SOLUTIONS FOR YOUR REQUIREMENTS — CUSTOMIZED AUTOMATION

Broetje-Automation has more than four decades of experience in the automated assembly of large structures. We provide automated solutions to successfully ramp up the production of wind turbines to meet the demands of the energy energy transition. Our customized systems cover the full range of capabilities from part production, multiple assembly processes to integrated production and assembly lines.



Manufacturing

We offer flexible automation solutions for manufacturing, with a focus on reducing manual labor in wind turbine blade layup. Our systems improve quality, support ramp-up, and are built to adapt to future products and processes.



Fastening

Modern wind turbines require numerous high-strength joints, each tightened to precise torque and angle. Broetje-Automation's Fastening Systems automate this process, improving safety and ergonomics. They integrate easily into new or existing production lines, with digital controls ensuring accurate, documented results.



Assembly

As wind turbines grow larger, demands on logistics, assembly, and precision increase. Broetje-Automation meets these challenges with integrated sensor systems and features like Digital Twin simulation, Offline Programming, and Inline Quality Assurance—delivering a complete, future-ready production solution.



Factory Integration

Mobile and flexible production systems are key to the future of wind energy. Broetje-Automation offers specialized solutions for mobilizing machines, with advanced positioning and digital integration. We support customers from process planning to full factory layout implementation.

AUTOMATING TURBINE PRODUCTION – INDUSTRIALIZATION

Sustainable energy is a global challenge, with wind power playing a vital role. Yet, turbine production remains highly manual. To meet climate goals, industrializing this process is essential. Broetje-Automation supports this with a step-by-step approach to tailored automation solutions for the wind industry.

Quick Wins for the Existing Production



Rotary Torque System

- > Automate existing processes (e.g. Drilling, Bolting etc.)
- > Improve ergonomics
- > Improve safety

Ramp-Up Production Volumes



Stator Torque System

- > Digitalize Production and Documentation
- > Improve quality
- > Create flexible automation
- > Prepare for upcoming product innovations
- > Create process reliability

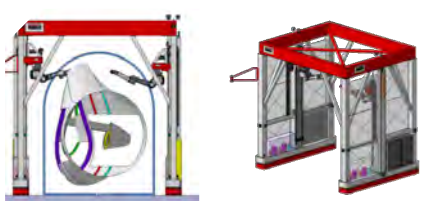
Make Production Flexible and Mobile



Mobile Robotic Platform

- > Automate production logistics and stations
- > Integrate automated systems in existing factories
- > Develop mobile machines and mobile factories

Design to Automation & Factory of the Future



Future Flexible Manufacturing

- > Innovative blade designs
- > Prefabricated products
- > Standardized assembly methods
- > Digitally integrated factories

YOUR PARTNER FOR AUTOMATED INDUSTRIAL APPLICATIONS

Broetje-Automation is the world's leading expert in automated production processes. The group offers solutions for the Factory of the Future, with equipment and turnkey integration, including factory planning and digital solutions. In our workshops and service centers around the world, we plan and implement machines and systems for wind turbine production.



BROETJE-AUTOMATION WORLDWIDE

