BROETJE AUTOMATION

COMPOSITES

CONTINUOUS PREFORMING SYSTEM

Collaborative Technology Development within the IRIS Demonstrator Project

SPIRIT AEROSYSTEMS

JEC WORLD INNOVATION AWARDS FINALIST 2020

- Highest Forming Rate up to 100kg/h
- Continuous Stacking, Cutting and Forming
- Eight Steps in One Automated Line

COMPOSED TO COMPETE

COMPOSITE SYSTEMS

CONTINUOUS COMPOSITE PREFORMING

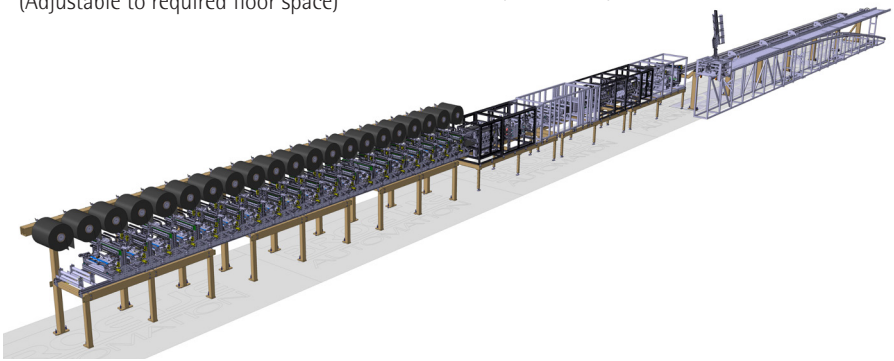
Area of Application

The Continuous Composite Preforming System is an integrated pre-cure stacking, cutting and forming unit that allows the automatic pre-forming of various profile types in a continuous (endless) process. The Continuous Composite Preforming System has been developed by Broetje-Automation in close collaboration with its customers and is individually adaptable to customer needs for various types of shapes and forms.

- Support of prepreg and dry fiber material
- Simple and complex profiles incl. variable shapes
- Possible Applications: Wingcover, HTP, VTP, Fuselage
- Modular system adjustable to part length / complexity and floor space
- Easy upscaling of the system for production ramp-up

Technical Data

Material storage: 21 creels up to 600mm diam. (approx. 140m BiAx material with 495gsm)	98 Servo drives
19 drop units to allow various stack sequences from 2 to 21 layers	31 controlled heating devices
Machine width: 3.8m	2 logic controllers
Machine height: 2.6m	12 proportional flow valves
Machine length: 44m (Adjustable to required floor space)	226 pneumatic position switches



Special Features

Several integrated processes in one line

- Easy loading / unloading of material storage with quick release mechanism
- Build up of various stack sequences and applications with several reinforcement types (width/length, contour - foot to web transition)
- Ultasonic in-process trimming unit cuts through fully consolidated preform
- Trimming of flange and web area
- Lateral cut on the fly to desired preform length without process interruption
- Heating and stabilization of complex profile stack
- cross section forming to desired final contour with adaptable web and flange length
- Several automatic gap insertion units
- Large-area drive units which exert only low shearing forces on the fibress
- Curvature and joggle forming

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