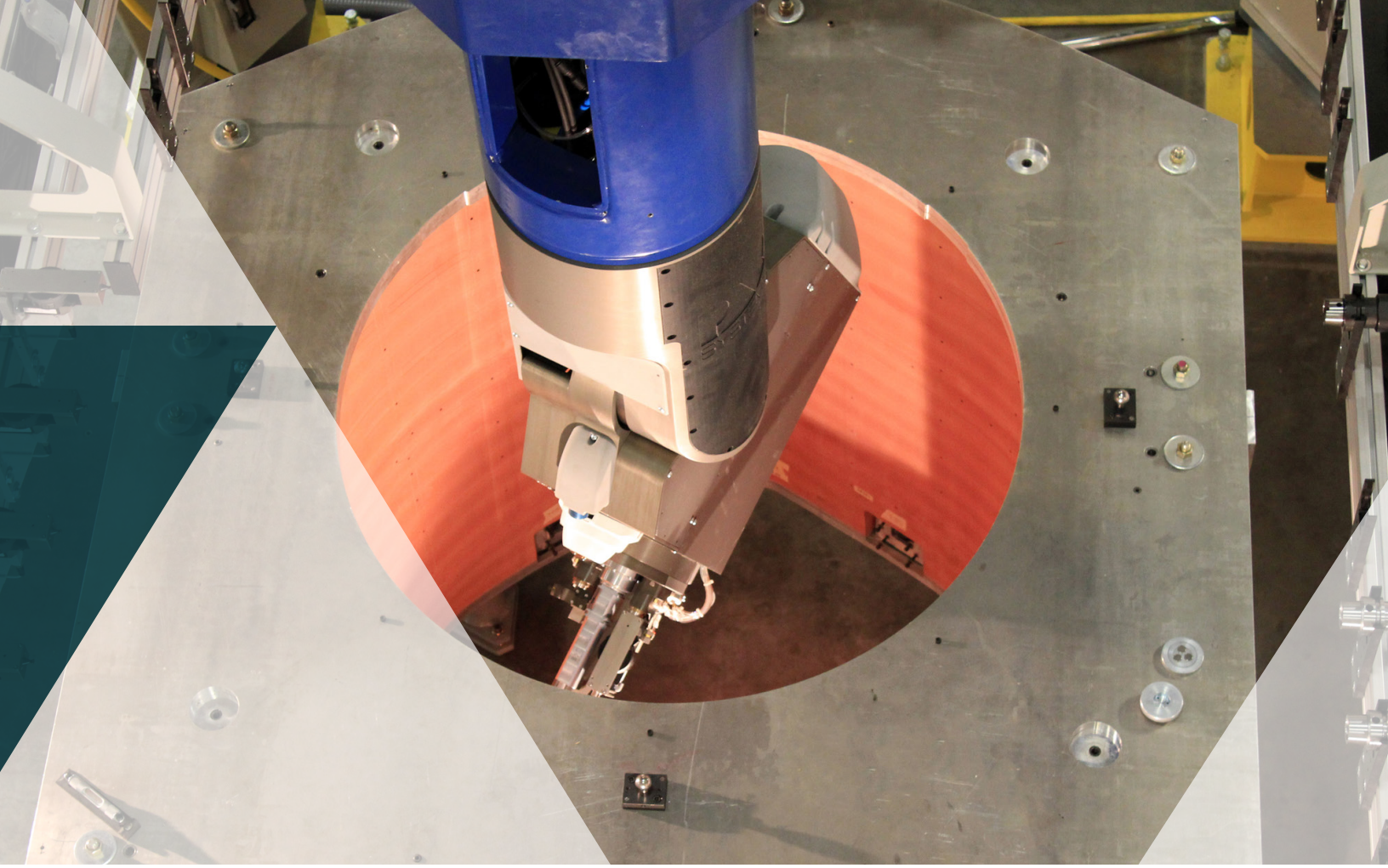


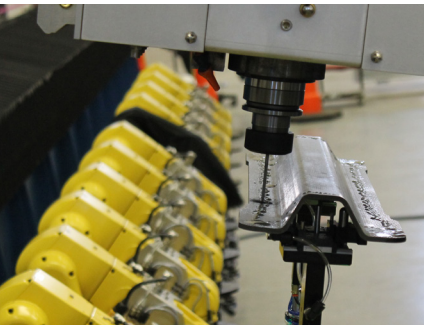
PRECISION DRILLING

Precision drilling is a critical requirement for assembly operations. Whether drilling determinant assembly holes or precision fastener holes in composite skins or multiple material assemblies, PAR provides precision drilling expertise. From wing spars to fuselage barrels, to flight control surfaces, PAR can provide the automated drilling system to ensure you meet your program needs.

BENEFITS OF PRECISION DRILLING

- Customizable system configuration for very long work envelopes
- Exchangeable heads for a wide range of dilling sizes, from large hole drilling to small hole drilling
- Automated tool changer, tool verification and coupon drilling
- Precision probing to define spar flange condition with subsequent adaptive machining to assure fair and fitted joins
- Multiple work stations to allow manual operations adjacent to automated machine operations

PAR SYSTEMS



INDUSTRIES SERVED

- General Industrial, Structures and Bridges
- Transportation
- Aerospace
- Space

TECHNICAL INFORMATION

Processes

- High-speed spindle drilling
  - Precise depth control
- Laser drilling
  - Non-contact or limited part contact
  - No tool wear

Features

- Automated drilling verification for high value assets via contact probe or non-contact machine vision
- Automated intelligent drilling
- Patented multifunction end effector
- High-rate stacked material management and drilling
- Patented adaptive manufacturing/artificial intelligent CAM and part management
- Automated calibration
- Safe error and fault handling via HMI
- Large area/system drilling and mobile solutions
- Rigid dedicated tools or configurable/robotic fixtures
- Automated tool loading and unloading

Materials

- Carbon fiber composites
- Fiberglass and Kevlar
- Aluminum
- Titanium
- Stainless and carbon steel
- Ceramic

Supporting Technologues

- Automated hole inspection
- Clamp foot module
- Chip and dust management
- Cell management

PAR SYSTEMS

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