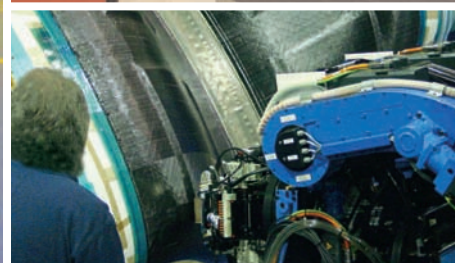
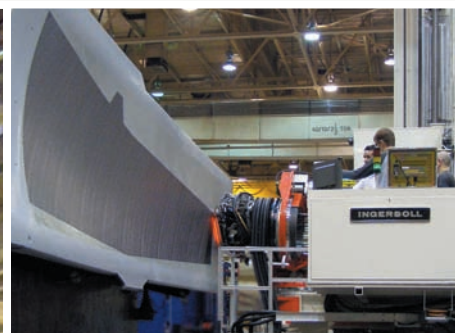


HORIZONTAL AUTOMATED FIBER PLACEMENT MACHINE TOOLS

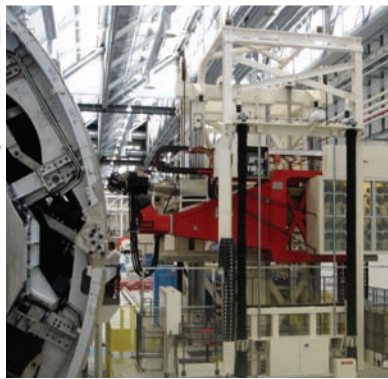


INGERSOLL

Machine Tools

Building our Future...together!

HORIZONTAL CAPABILITIES



FEATURES INCLUDE:

- Up to 8,000 sqf/hour (720 m²/hour)
- Customized configurations for the best and more suitable Fiber Placement Solutions utilizing:
 - Standard Fiber Delivery Modules
 - Standard 3-Axis Positioners
 - Standard Rotating Mandrel Systems
- Main Performances:
 - Lay-up speed up to 60 m/min
 - Cut Speed up to 60 m/min
 - Add speed up to 50 m/min
- Fiber delivery module with optional automatic exchange capability includes:
 - Lay-up head
 - Wrist
 - Creel
- Main features:
 - Up to 32 tows
 - Tow width from 1/8 to 1 in.
 - Wrist with Yaw - Pitch - Roll or Roll - Pitch - Roll configuration
 - Polar axis up to 12,000 deg/min speed
 - Bi-directional lay-up capability
 - Conformable compaction roller for uniform distribution of compaction pressure
 - IR heater intensity dynamically adjustable with the lay-up speed
 - Lay-up head components quickly interchangeable
 - Temperature and humidity controlled creel
 - Material consumption management
- 3-Axis positioner covering a working envelope up to:
 - Length: 80 m (3,200 in)
 - Height: 8 m (320 in)
 - Depth: 4 m (160 in)
- Rotating Mandrel System:
 - Mandrel size up to dia. 10 m (400 in) x Length 25 m (1000 in)
 - Mandrel weight up to 150 ton (330,000 lbs)
 - Exclusive automatic mandrel exchange capability
 - Multiple mandrel configurations
- Stationary Lay-up Tool:
 - Male or female configuration
 - Multiple lay-up tool set ups to minimize AFPM idle time
- Exclusive Software: Ingersoll Composite Software Suite - iCPS
The iCPS is an interactive program that runs within CATIA V5 (and future V6):
 - integrated Composite Programming System (iCPS)
 - Composite Simulation System (CSS)
 - Composite Post Processor (CPP)
 - Composite Front End (CFE)
 - Composite Tailor® for Weight Optimization
 - FEA Interface
 - Real-Time Inspection System (RTIS)
 - Composite Machine Examiner (CME)
 - Remote Diagnostics

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