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DATA SHEET

Model: ATENA

Anisogrid Filament Winding (FW)

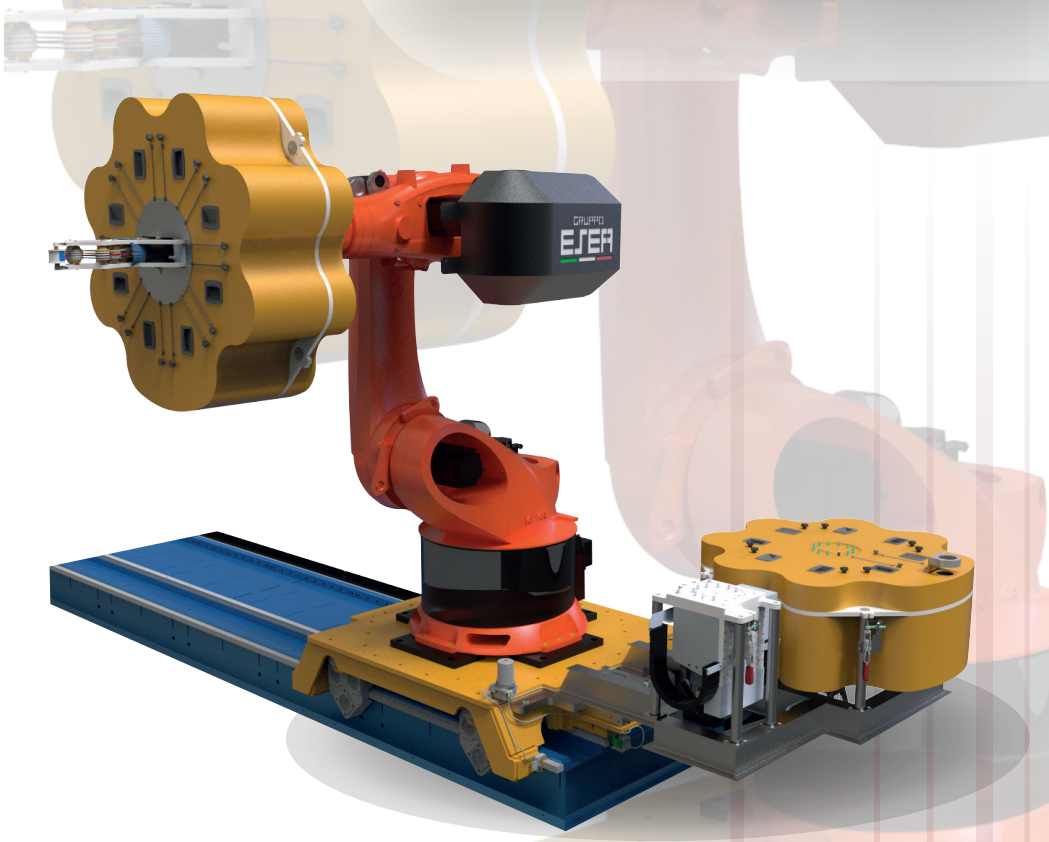
Product INFO

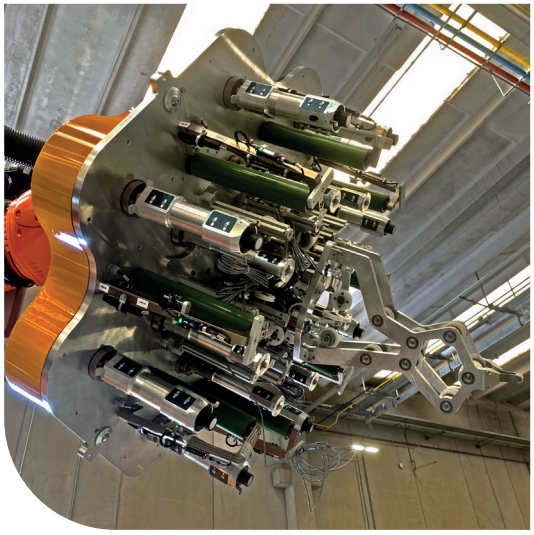
ESEA anisogrid filament winding is used to manufacture complex shape and high quality parts. ESEA robotic filament winding technology guarantees the minimum stress of the towpreg during the laying.

ESEA anisogrid filament winding is suitable for:

1. The production of ANISOGRID COMPOSITE LATTICE STRUCTURES FOR SPACECRAFT made of regular lattice of intersecting hoop and helical ribs by the filament winding thecnology.
2. Placement of towpreg and dry fibres along the

It represents an advantage as regards process control, repeatability and manufacturing times.





TECHNICAL DATA

FW PROCESS SPECIFICATIONS	
Head configuration	Spools on head to avoid tow's stress during laying
High accuracy robot laying	0,1 mm
Fiber yield	6K, 12K, 24K
Maximum lay-up speed	Up to 1,2 m/s
Fiber tension per tow	3 N to 100 N
Spool (on board)	8
Release film rewinder	8
HMI for advanced production management	Visual process control with intuitive windows for operation and maintenance
Bar-code reader for material traceability	
Offline simulation software	CADWIND
Offline postprocessing software	CADWIND
IP CAMERA	Visual control cam during operation
Quality assurance	Recording and storage of all the main process parameters.

CELL CONFIGURATIONS	
Robot Kuka	KR600
Robot on a linear axis	Up to 80 m in length
Heater	IR lamps 500 W, hot air torch
IR Camera control	
Electrical Cabinet	Insulation code IP56 and air condition system
Horizontal axis positioner	
• Payload	40.000 kg
• Maximum mandrel diameter	Ø 2.500 mm
• Maximum mandrel lenght	10.000 mm
• Angular accuracy	0.005°

COMPONENTS	
Robot	Kuka
Controller	Siemens CNC
Linear axis	Güdel
Positioner	ESEA Composites

MATERIALS	
Termoset Tape	Compatible
Thermoplastic Towpreg	Compatible
Dry fiber	Compatible

OPTIONS	
Laser heater	For thermoplastic process with optical zoom to adapt the laser spot to the bandwidth and trajectory specifics.
Vertical axis positioner	
• Payload	5.000 kg
• Table Diameter	2700 mm
• Angular accuracy	0.005°
Smart maintenance service with Augmented Reality functions	