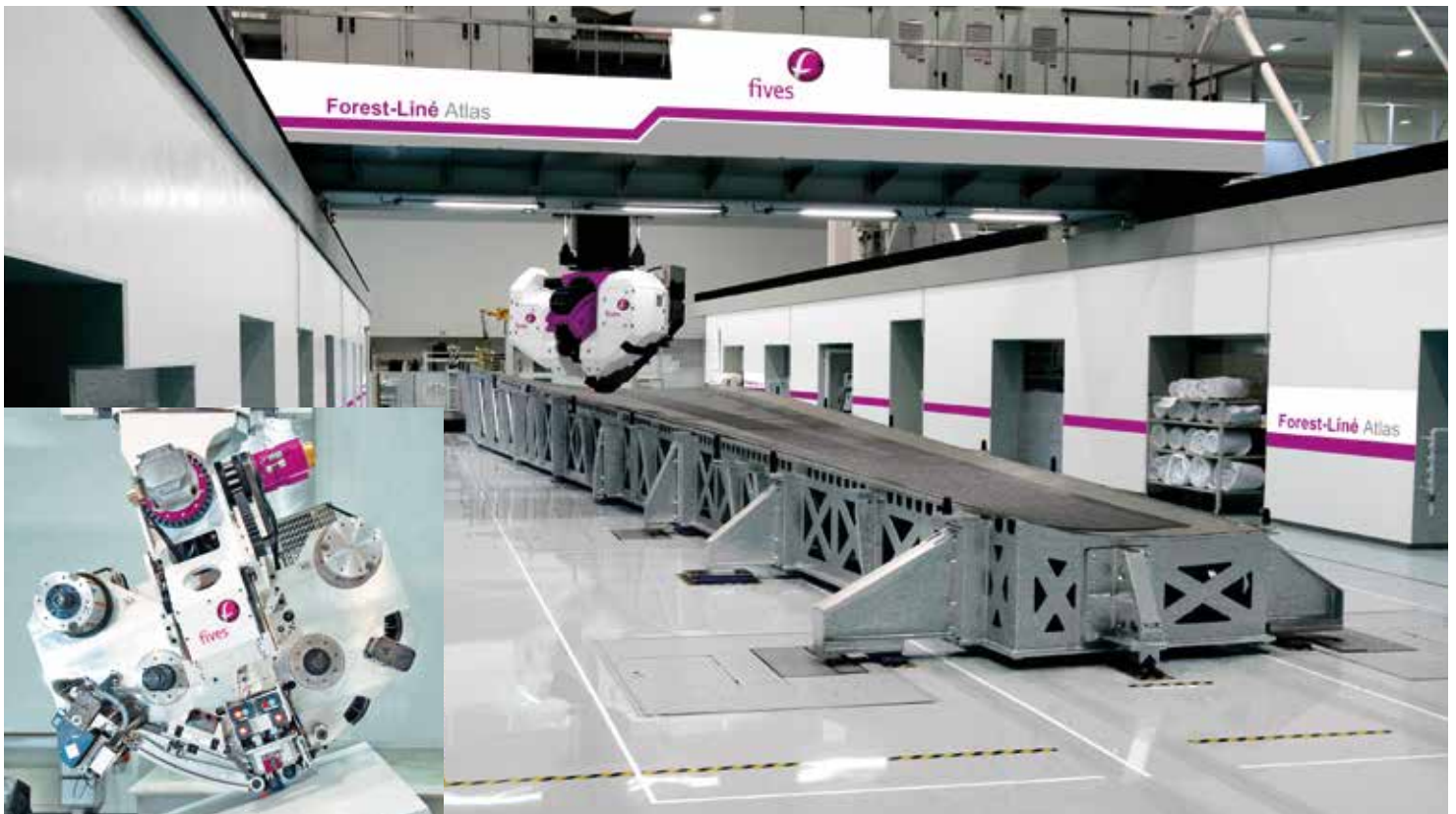


Forest-Liné ATLAS Forest-Liné ACCESS

Automated Composites Processing



To produce wide composite parts with double curvature and complex shape, Fives' exclusive dual phase tape laying technology is the ultimate solution

- Saves the scrap rate in the range of 5 to 10% / optimizes buy to fly ration (BTF), depending on part complexity
- Allows to pay parts up to 6.5 m wide
- Improves productivity on complex double curvature parts and complex plies shape
- High layup capability on non-developable surfaces, slopes, ramps and padups
- Full automation machines with 100% traceability
- Parts history supervision (logbook) with compilation of production events
- High accuracy with tape positioning within 0.5 mm with the continuous 6-axis head
- IPI: In-Process Inspection automatic control of the lap and gap for Quality Assurance

Over 35 Forest-Liné tape-laying solutions supplied worldwide.

Thanks to its know-how in the composite industry, Fives designs tape-laying solutions adapted to each market's unique requirements, in particular for the aerospace and wind energy markets.

Two to three times faster than the market standard, the **Forest-Liné ATLAS/ACCESS**, tape layer features tape positioning within 0.5 mm, 100 % traceability, feed rate of 60 m/min, highly dynamic axes, linear motors, and optimized scrap rates.

Its flexibility combining pre-cut 150 mm tape or 300 mm bulk material, allows the design to be optimized with virtually no manufacturing limits (for wing skins, central wing boxes, tail...).

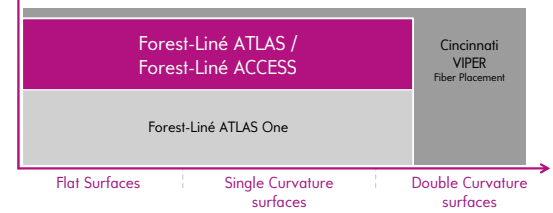
Tape laying limitless design contour and scrap optimization produces parts that are 3 to 5 % lighter compared to parts designed by conventional tape layers.

The **Forest-Liné ACCESS** pre-cutting machines can feed up to 3 **Forest-Liné ATLAS** tape-laying machines.

OPTIONS

- In-process recording of the lap and gap values for Quality & Assurance
- Foreign object detection
- Infra red heating
- Ultrasonic trimming cutter
- Inkjet marking
- Ply boundary inspection
- Program simulation offline
- Part traceability

Ply / Contour Complexity



FEATURES

- Forest-Liné ATLAS: Carbon prepreg tape: 150/300 mm
- Forest-Liné ACCESS: Carbon prepreg tape: 150 mm
- CNC: SIEMENS 840D SL
- User-friendly integrated HMI: FL Vision
- Direct measuring system
- Eco design
- CE certification

FOREST-LINÉ ATLAS ACCESS SPECIFICATIONS

X Axis (Longitudinal)		A Axis (Rotary)	
Travel	8 m to 40 m	Travel	+/- 30 deg
Speed	60 m/min	Speed	2.6 rpm (936 deg/min)
Acceleration	1 m/s ²	Acceleration	0.32 m/s ²
Y Axis (Horizontal)		B Axis (Rotary)	
Travel	4.3 m / 6.5 m	Travel	+/- 30 deg
Speed	60 m/min	Speed	2.6 rpm (936 deg/min)
Acceleration	1 m/s ²	Acceleration	0.32 m/s ²
Z Axis (Longitudinal)		C Axis (Rotary)	
Travel	0.52 / 0.75 / 1.2 m	Travel	+/- 200 deg
Speed	60 m/min	Speed	23.6 rpm (8,500 deg/min)
Acceleration	3 m/s ²	Acceleration	0.41 m/s ²

SOME REFERENCES

Airbus — Avic — Daher Socata — Dassault Aviation — Fuji Heavy Industries — Mitsubishi Heavy Industries

The information provided on this brochure is for information purposes only and does not constitute a legal obligation or a warranty, express or implied, concerning quality, marketability or suitability for a specific purpose.



CONTACT US

Fives Machining - Forest-Liné Capdenac facility

44, boulevard François Mitterrand - 12700 Capdenac - FRANCE - Tel.: +33 (0)5 65 63 80 27 - www.fivesgroup.com

mcc-europe@fivesgroup.com - mcc-china@fivesgroup.com - mcc-asean@fivesgroup.com

mcc-russia@fivesgroup.com - mcc-americas@fivesgroup.com