

Forest-Liné Minumac

High Speed Vertical Machining center



The Forest-Liné Minumac - the smart solution for roughing and finishing medium to large parts with rapid precise production throughput.

- Capacity to process soft and hard materials
- Large choice of Milling Heads (In-house Designed and manufactured)
- Linear motors on X, Y and Z-axis for reduced noise, no wear over time, and high finish quality
- Direct measuring system
- High removal rate of chips

Over 150 High Speed cutting machines in production worldwide

The Forest-Liné Minumac is designed to mill and drill composites, plastic resins or soft metals parts for aerospace, automotive and mechanical industries and also for semi-finishing and finishing operations on titanium and hard metal (full scale die models...).

The rigid construction, the high feed rates and the fast accelerations guarantee accuracy and good surface finish of the machined parts with high throughput.

The Forest-Liné Minumac can be equipped with a range of versatile peripheral equipments and spindles that permit to efficient machining of a wide kind of materials on the same machine tool.

OPTIONS & SERVICES

Ergonomic & Automation

- Multiple working zones
- Forest-Liné FLEXITOOL
- Pallet system

Parts & chip management

- Spindle-mounted probe
- Chip conveyor
- Coolant systems

Head & Tool Management

- Automatic Tool Changer
- Tool management
- Integrated tool calibration laser
- Tools ID
- Right angle heads

Secure process

- Geometry Fives Axis Check System (GFACS)
- Collision detection device
- 3D-model for simulation software

Optimize process

- Power adaptive control
- Post-processor

Safety & Protection

- Full enclosure
- Retractable roof
- Fumes and oil mist collection system
- Power failure back-up

Production Starting kit

- 2 weeks assistance after final acceptance
- 1 week engineering training

Diagnostic & Services

- Remote Maintenance System (RMS)
- Global services: complete life-cycle support

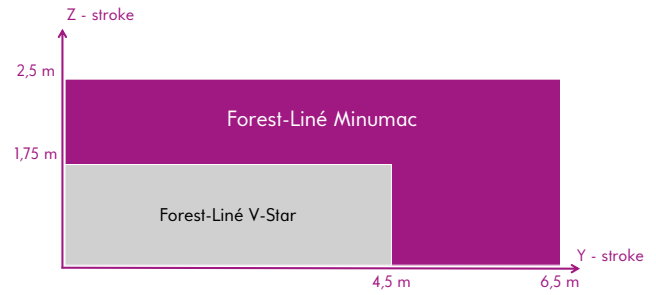
FEATURES

- CNC: SIEMENS 840D sl (other system on request)
- User-friendly integrated HMI: FL Vision
- Linear motors on X, Y and Z-axis
- Direct measuring system
- Eco design

Customized project on request.

SOME REFERENCES

Audi — Bertrandt — Boeing — Figeac Aero — Fokker — Koller — MBtech — Patria — Saab — Siebenwurst



Lab processing

FOREST-LINÉ MINUMAC SPECIFICATIONS

X Axis (Longitudinal)	
Travel	2,9 to 40 m
Feed rate	80m / min
Acceleration	up to 5 m/s ²
Y Axis (Horizontal)	
Travel	2 to 6,5 m
Feed rate	60 m / min
Acceleration	Up to 5m/s ²
Z Axis (Vertical)	
Travel	1.5 to 2.5 m
Feed rate	60 m / min
Acceleration	up to 5 m/s ²
C Axis (Rotary)	
Travel	+/- 400 deg; n x 360°
Feed rate	Up to 40 rpm
A Axis (Rotary)	
Travel	+/- 110 deg
Feed rate	Up to 40 rpm
Milling Head	
Power	Up to 125 kW
Torque	Up to 163 Nm
RPM	Up to 30,000 rpm



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