Focusing on innovation in roughing and finishing hard material complex parts, Fives designs dedicated extra compact 5-axis machining centers in vertical or horizontal configurations.

- Milling center or mill turn machining center
- High stiffness and accuracy
- High torque electrical spindle
- High pressure and flowrate coolant processing
- Secure process
- Stand-alone or FMS configuration
Relying on technological mastery and expertise into manufacture of 5-axis machining centers, the Forest-Liné Flexiax integrates all parameters to succeed hard materials machining.

Modern, robust and precise the Forest-Liné Flexiax is specifically adapted to the working of hard materials.

— Rigid construction for enhanced performance
— Patented “constant overhang ram” to ensure high stiffness and accuracy
— High-torque, high-powered 5-axis electro spindle
— High-pressure, high-flow coolant system for increased speed and productivity
— High chip removal

Because of the requirements in titanium and hard materials machining, the Forest-Liné Flexiax offers standard solutions to secure process.

— 3D-model for simulation software
— Automatic Tool Changer with tool management
— Direct measuring system
— Part touch probe
— Spindle expansion compensation
— Tool breakage control
— Adaptive control and power monitoring

**FEATURES**

— CNC: Siemens 840D sl / HEIDENHAIN iTNC
— Eco design
— CE certification
— 2-year full warranty

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**Specifications**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Forest-Liné Flexiax Φ</th>
<th>Forest-Liné Flexiax Φ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work area (Pallet)</td>
<td>Ø 1,6 m</td>
<td>Ø 1,4 m</td>
</tr>
<tr>
<td>Load</td>
<td>5,000 kg</td>
<td></td>
</tr>
<tr>
<td>Strokes (X / Y / Z)</td>
<td>1,95 m / 2 m / 1 m</td>
<td>2 m / 1,6 m / 1,6 m</td>
</tr>
<tr>
<td>Strokes (C/A) - N x 360° / ± 110°</td>
<td>(B/A) - N x 360° / ± 95° - 125°</td>
<td></td>
</tr>
<tr>
<td>Spindle</td>
<td>Electrospindle HSS</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>105 kW</td>
<td></td>
</tr>
<tr>
<td>Torque</td>
<td>1,000 Nm</td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>10,000 rpm</td>
<td></td>
</tr>
</tbody>
</table>

**Pallet system**

Table equipped from “zero point” systems to automatic pallet systems with shuttle.

**Smart way to switch from milling to turning mode:**

In turning mode (option) the spindle holder is equipped with an automatic effector changing device. The turning effector will be mounted on the spindle holder. It allows to use the turning tools independently of the milling spindle.

— High accuracy
— High torque electro spindle
— Handling large range of high parts

**SOME REFERENCES**

Airbus — Snecma — Figeac-Aero — General Electric — DCNS — Mecachrome — Sabca

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