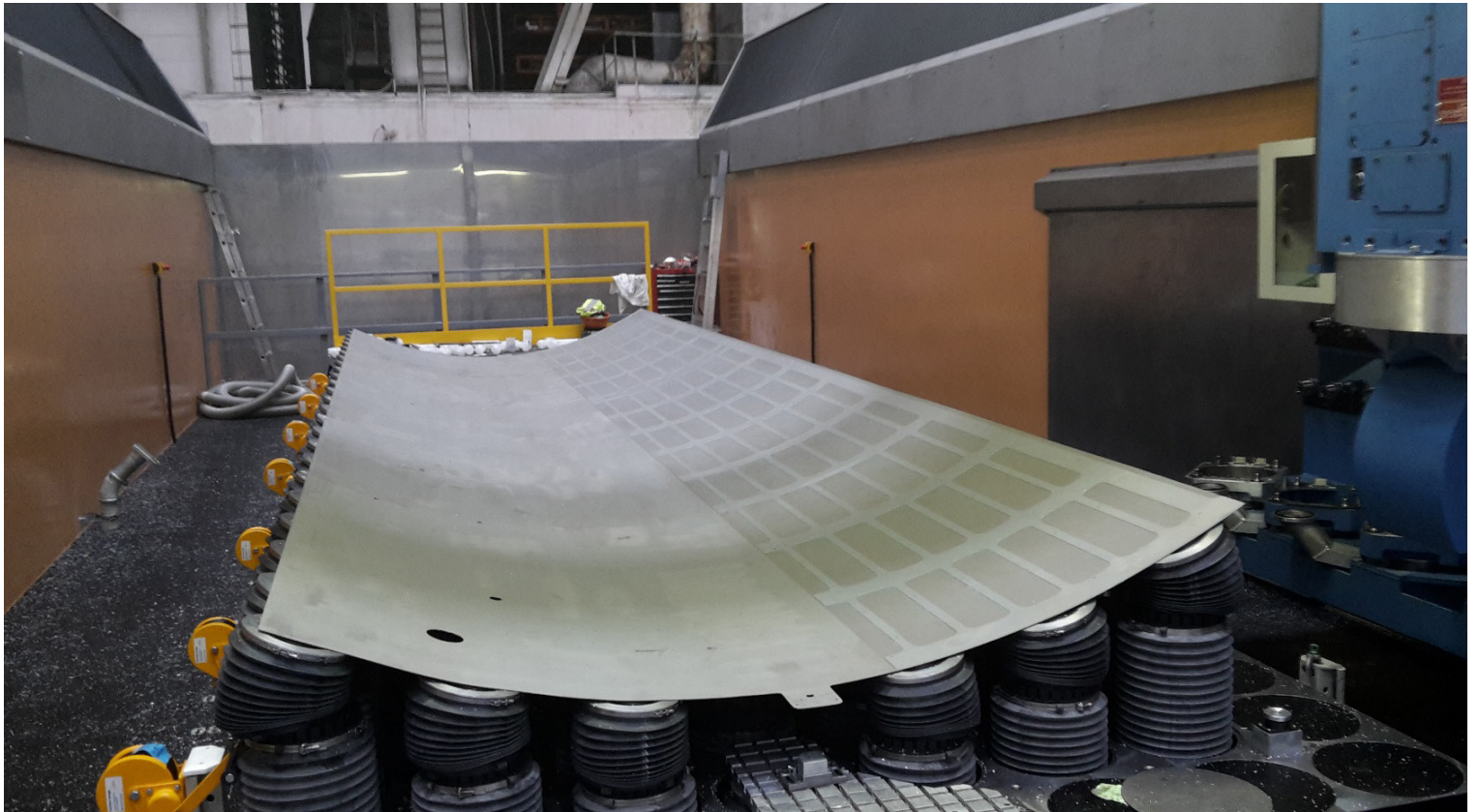


Liné Machines FlexiTool / RoboTool Advanced UHF and Automated Tooling Solutions



Flexibility and efficiency lead to greater productivity

The latest generation of automation with configurable tools: versatile and customizable

- Optimize the adaptability and efficiency of the machine with which it is integrated
- Reduce set-up times, from spindle end to spindle start
- Enhance your production configuration: save on hard fixture management and storage
- Lower your recurring operating costs

The ultimate fixturing solution for parts of various sizes and shapes

Liné Machines FlexiTool

Programmable Universal Holding Fixtures (UHF) offer prolific layout variations and can easily adapt to medium and large aluminum and composite parts, from simple to complex geometries.

The ultimate solution for the positioning and clamping of panels of various shapes during trimming, routing and drilling operations.

The Liné Machines FlexiTool can also be used for laser scribing or assembly applications.



Benefits

- High precision thanks to its ball screw technology, rigid guiding, and point-of-contact cup rotation
- High reliability with its simple non-hydraulic design, proven technology and secure vacuum grip
- Quick set-up times through high-speed actuator positioning and quick cup release
- Low maintenance: rapid actuator replacement and servo drive integrated into the motors

Wet or Dry applications

The Liné Machines FlexiTool is an excellent option for dry or wet environments as each actuator can be water- and dust-proof.



Configurations

The Liné Machines FlexiTool is available in different layout variations:

- Vertical: single-axis (MonoFlex)
- Vertical: 2-axis (MultiFlex) for mirrored (L/R) parts
- Butterfly configuration for heavily curved fuselage parts
- Half barrel



“The Liné Machines FlexiTool is modular, customizable and expandable.”

Main Specifications

Travel	500 mm (20 in) to 1 m (40 in)
Positioning speed	5m/min (200 in/min)
Maximum total set-up time	140 sec
Min. distance between actuators	254 mm (10 in)
End effectors rotation	+/-40°
Load capacity - active	1000 N (220 lb. ft)
Load capacity - static	5000 N (1100 lb. ft)
Holding force @-0.7 bar	550 N (110 lb. ft)
Certification	CSA, UL and CE

Available options

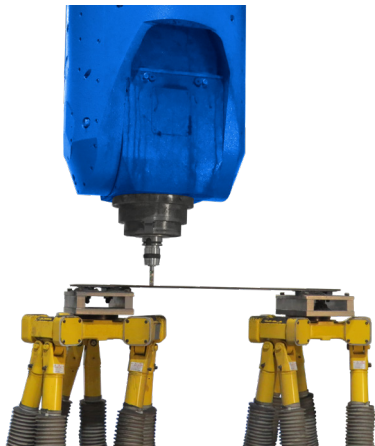
- Customizable cup size
- Offset end effectors
- Vacuum levels monitoring
- Index locators
- Sub worktable
- Y-axis
- Multiple work zones

A new era for UHF / Flexible tooling

Liné Machines RoboTool

The **Liné Machines RoboTool** consists of a series of hexapod robots that communicate together and with a CNC, providing a high degree of adaptability and customization for a wide range of applications.

Hexapods offer superior levels of stiffness, dynamics, precision and flexibility on a smaller footprint.

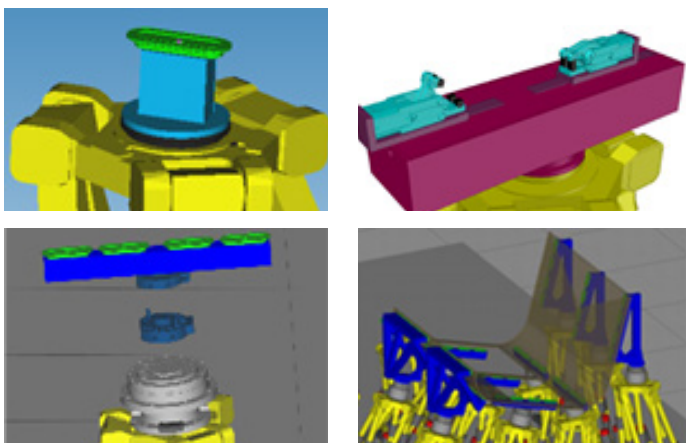


Versatility

End effector shapes, technologies and features are customized for each application.

A number of standard end effectors are available.

After an in-depth analysis, Fives will propose the end effectors best suited to the parts you wish to manufacture.

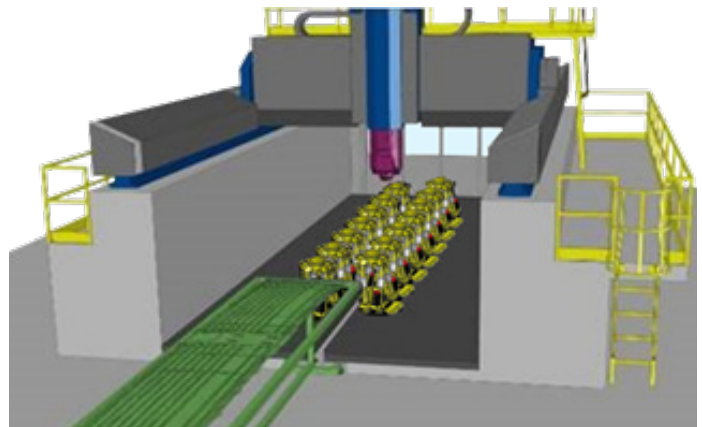


For easy set-up changes or maintenance purposes, the Liné Machines RoboTool can be configured with quick change connectors, providing efficiency, reliability and accuracy for all tool effector changing sequences.

Exclusive layout and loading system

To shorten idle time between parts, Fives proposes a method to store the parts, carry them around the machine, and then bring the parts into the machine.

With this system, you no longer need a crane to load and unload parts.



There is almost no limit to the ways the **Liné Machines RoboTool** can be configured.

It can be a stand-alone cell or part of a multi-zone work area. It can be integrated with a robotic trim and drill cell, with a larger machine, or with an existing installation.

“The Liné Machines RoboTool is highly adaptable and a valuable partner to any machine to which it is integrated.”

Benefits

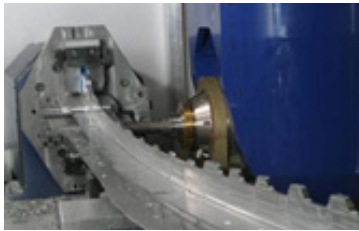
- Can adapt to various part families
- High flexibility/adaptability to part engineering changes
- High reliability due to very few components
- Easy programming thanks to the robots' flexibility
- No civil engineering required
- Can be installed under most machines, new or existing
- Very short non-productive time between parts
- With Fives' exclusive patent-pending design, no overhead crane or other lifting devices are required to load/unload inside the work zones

Pioneering solutions designed for your needs

Customization of specific part families



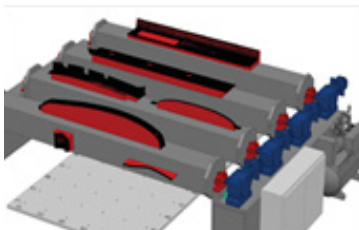
"Heavy" curved chord tooling with specific prehension



"Slightly" curved chord, + or ++ shapes



Stringers
Single curve or straight



Small components (0.2 - 2 m)
Hybrid flexible/hard



Half barrel RoboTool

Software and IT



For trouble-free system programming and safe operation, Fives provides a complete software package, including post-processing, to generate tool trajectories and visual simulation.

The software is supplied with a dynamic avoidance collision feature which corrects the position of the fixture when required.

It can be integrated into various CAD/CAM environments.

Compatibility with many of Fives' machining centers and equipment

The Liné Machines advanced UHF and automated tooling solutions are compatible with most of the Cincinnati, Forest-Liné, Giddings & Lewis, Liné Machines and Lund Engineering product ranges.



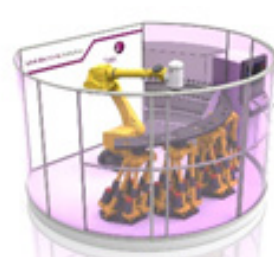
Gantry/Portal Mills



High Rail



Horizontal Trim & Drill



Robotics

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