

# Stand-alone or Flexible Manufacturing System (FMS)

The Liné Machines horizontal machining centers can be proposed either in a stand-alone version or integrated in a full manufacturing cell. Various loading/unloading alternatives are offered to fit your available space or ergonomic constraints.



## SPECIFICATIONS

	Liné Machines Aerostar	Liné Machines Powermill H	Liné Machines Powermill H Ti
<b>Pallet</b>			
Width	2 m (78.7 in)	1.5 – 2.5 m (59 - 98 in)	2 m (78.7 in)
Length	4 m (157 in)	4 to 20 m + (157 to 787 in)	4 m (157 in) / 6 m (236 in)
Maximum Load	2,500 kg (2.7 tons)	Up to 4,536 kg (5 tons)	
<b>Travels</b>			
X	4.1 m (161 in)	4.5 to 20 m+ (177 to 787 in)	4.5 (177 in) / 6.5 m (256 in)
Y / V	2.1 m (82 in)	2 – 3.5 m (78.7 – 137.7 in)	2.5 m (98 in)
Z / W	750 mm (29.5 in)	800 mm – 1,200 mm (31 – 47 in)	1 m (39 in)
A	+/- 110 deg		+/- 110 deg
C	+/-200 deg; +/- 360 deg; n x 360 deg		+/-200 deg; n x 360 deg
Acceleration	Up to 0.5 G		0.2 G
<b>Feeds</b>			
Linear axes	80 m/min (3,150 in/min)	Up to 75 m/min (2,950 in/min)	40 m/min (1,575 in/min)
Rotary axes (A / C)	20 – 40 rpm	Up to 50 rpm	10 rpm
<b>Milling Head</b>			
	<b>ORB</b>	<b>HS3 MC</b>	<b>HS5</b>
Power	Up to 150 kW (201 hp)		100 kW (134 hp)
Torque	Up to 163 Nm (120 ft-lb)		1,000 Nm (737.5 ft-lb)
Speed	Up to 30,000 rpm		10,000 rpm
<b>CNC</b>			
Standard	Siemens 840D SL	Siemens 840D SL or FANUC 30 i	Siemens 840D SL

## FEATURES

- Direct measuring system
- Chip management
- Safety and protection
- Process optimization
- Collision detection device
- Full two-year warranty

## SERVICES

- Process engineering
- Civil engineering and foundation
- Rigging
- Project management
- Life-cycle support
- After-sales support

## SOFTWARE AND IT

- Industry 4.0
- Connected machines
- Overall equipment effectiveness (OEE) reporting
- Tool software management

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## CONTACT US

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Metal Cutting | Composites

# Liné Machines Aerostar / Powermill H Liné Machines Powermill H Ti Horizontal Machining Centers



Designed to process complex integral aircraft parts with a high chip-removal rate

Proven multi-axis horizontal profilers dedicated to aerospace aluminum, aluminum alloy and titanium parts

- High stiffness and accuracy
- Thermal stability
- Compact machines
- Linear motors for speed, reduced noise, low maintenance, and high-quality part finishing
- Flexible configuration: stand-alone or FMS multi-pallet and multi-machine cell options

## From high-productivity machining solutions for aluminum...

### LINÉ MACHINES AEROSTAR



The lightweight and rigid mobile structure combined with linear motor drives allow a smooth movement that guarantees accuracies and excellent surface finishing on the machined parts when operating at high feed rate and acceleration.

The closed structure ensures high rigidity while considerably reducing the effects of rises in temperature, thus providing high precision and geometrical stability.

The **Liné Machines Aerostar** (known as the Forest-Liné Aerostar in Europe and Asia) is a very compact machine with an optimized footprint. It does not require a costly foundation.

The loading/unloading of the pallets is done offline, outside of the machining zone, on an intelligent twist-and-tilt loading station.

#### Features & Benefits

- Moving pallet, fixed column/gantry
- 2 x 4 m pallet with embedded vacuum network
- Closed-loop structure
- Outstanding productivity with its 5-axis high-speed spindle head (up to 150 kW and 30,000 rpm)
- High dynamic performance linear motors
- Optimized transport and “plug & play” installation time
- Flexible configuration: stand-alone or FMS

“Provides geometric stability and outstanding accuracy when operating at high speeds.”

### LINÉ MACHINES POWERMILL H



With column guidings both on the top and bottom of the structure, optional constant overhang of the ram, and the use of linear motors, the **Liné Machines Powermill H** ensures high accuracy, no matter the position of the spindle.

The loading/unloading of the pallets is done offline, outside of the machining zone, either in front of, or on the side of the machine.

#### Features & Benefits

- Fixed pallet, moving column/gantry
- Fully enclosed with oil-mist collection
- Thermal stability
- Outstanding productivity with its 5-axis high-speed spindle head (up to 150 kW and 30,000 rpm)
- Linear motors for speed, reduced noise, low maintenance, and high-quality part finishing
- Optional constant overhang ram design for Z axis: 800 mm / 1000 mm
- Flexible configuration stand-alone or FMS multi-pallet and multi-machine cell options



## ...to high and stiff horizontal machines for titanium

### LINÉ MACHINES POWERMILL H TI



The **Liné Machines Powermill H Ti** horizontal machining center (known as the Forest-Liné Powermill H Ti in Europe and Asia) is specially designed for roughing and finishing complex aircraft structural parts made of titanium or other hard materials.

#### Features & Benefits

- High stiffness and accuracy
- Roughing and finishing with the same head
- Constant overhang with fixed column
- High-pressure and flowrate cooling fluid processing
- Secure process
- Extra-compact machine
- Flexible configuration: stand-alone or FMS multi-pallet or multiple machine cell options

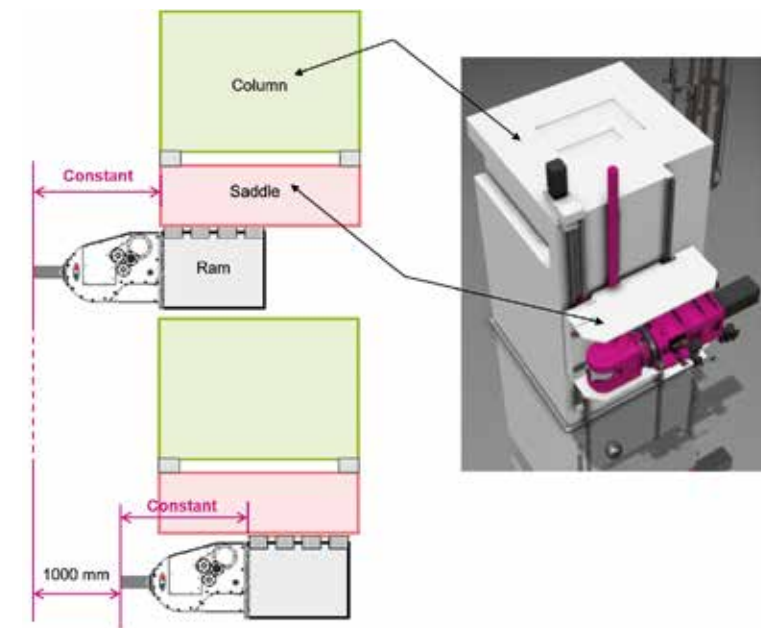
#### High-pressure coolant

To ensure parts quality, the high-pressure coolant system delivers up to 70 bars of pressure.

This allows efficient cooling of the cutting tool edges and chip removal. With titanium, chips tend to stay around the cutting tools due to low cutting feed rate and the characteristics of the material.

“With its Liné Machines Powermill H Ti, Fives offers ultimate solutions for titanium.”

#### Constant overhang



The patented “constant overhang” ram, the largest section ram used in the machine-tool industry, ensures the best milling conditions for titanium, whatever the position.

#### Exclusive HS5 5-axis milling head



The **Liné Machines HS5** head combines high torque and high speed for roughing and finishing without changing the head.

One of the stiffest heads on the market, it offers the same B-axis control and encoder, ram interface, and axis clamping device as the proven Fives 5-axis mechanical head. On its B axis, the HS5 head delivers a driving torque of 6000 Nm and a clamping torque of 9000 Nm while the pivot distance is only 300 mm.

Among other innovative elements, the direct drive spindle is only 610 mm long, providing superior stiffness, better behavior and increased machining quality.

Available power, speed, torque and taper:  
105 kW, 10,000 rpm, 1,000 Nm and HSK100A.