

**MicroStep®**

POWERED BY



# MSF Initio

The essential line for exceptional performance  
Start smart. Start with Initio.

3D FIBER LASER

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# MSF Initio

3D FIBER LASER

The essential line for exceptional performance



The MSF Initio is a robust, heavy-duty laser cutting machine designed for reliable performance in demanding industrial environments.

Its solid construction ensures excellent stability during thick-plate cutting, including precise bevel processing for weld preparation, while its structure is thoroughly heat protected using cast iron plates, graphite surfaces, and high-alumina refractory materials that prevent burning and thermal deformation.

Engineered for long-term durability and consistent output, the MSF Initio delivers high-quality results while keeping the overall investment economical, making it an ideal choice for cost-efficient production across a wide range of industrial applications.



## Digital heart of MicroStep production systems.

**Built on more than 30 years** of experience in CNC cutting machine control and automation

**Real-time EtherCAT-based control system** with high-performance multi-axis motion control for high machine dynamics and fine contour quality

**Intuitive and easy user interface** fully integrated with production management system CyberFab Manager to ensure high productivity

**Service Manager module** for effective preventive and predictive maintenance

Comprehensive operation data collection, **Industry 4.0 Ready**

**T-SQL or optionally OPC-UA** northbound interface for key machine data

**Laser-protected safety** area around the capsule

**Integrated advanced functionality** for CNC cutting and automation

- **Cutting parameter database** and Cutting ParamGuide to simplify the process of fine-tuning of cutting parameters for specific materials and cutting conditions
- Smart Z movement optimizes traverses between cuts, **saving significant time**
- **Dynamic piercing to avoid contamination** of the protection safety lens located inside of the laser cutting head during material piercing
- **Automatic plate alignment** for identifying position and rotation of the plate on the cutting table. Size of the plate can be checked as well
- **Smart cut ordering** through MicroStep CAM (Asper®) to prevent collisions caused by part flipping



## Bevel Cutting Tool Station

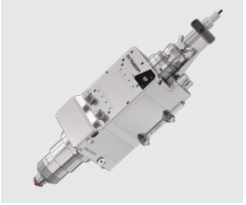
Equipped with the Precitec laser head, this station delivers high-precision 3D bevel cutting. Its robust, durable mechanical design supports high dynamics and stable, repeatable operation under heavy workloads. It enables accurate bevel cutting up to  $\pm 45^\circ$  with consistent edge quality across complex geometries.



## Cutting Head Precitec ProCutter 2.0

STANDARD DELIVERY

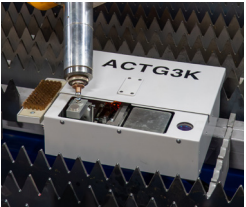
The cutting head combines high-precision optics with intelligent sensor technology for stable, accurate laser cutting. Its robust design minimizes mechanical deviations, while integrated monitoring ensures optimal focus position and beam quality throughout the process.



## ThermaCut EX-TRABEAM Fiber Laser Cutting Head

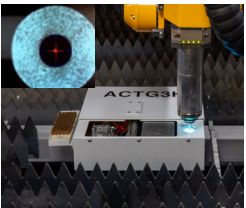
OPTIONAL

ThermaCut EX-TRABEAM® fiber laser cutting head offers low-drift regulation, autofocus, Smart Protection of focal optics, and robust cooling for laser power up to 30 kW. It includes an embedded EtherCAT control system and enables on-site maintenance by MicroStep or certified partners without dismantling the head from the machine.



## Auto Calibration of Torch Geometry

The patented auto calibration system for geometry of the cutting tool (ACTG) is designed to eliminate mechanical inaccuracies in the cutting head setup and thereby increase the accuracy of bevel cutting. The compensation works by superimposing appropriate correction movements onto the X, Y, and Z motion axes.



## Calibration and Cleaning Unit Integrated with ACTG

The calibration and cleaning unit ensures long-term process stability by automatically cleaning contaminated nozzles, checking their condition, and calibrating the height-sensing system. After each nozzle change or set number of cycles, it performs cleaning, sensor calibration, and camera-based centricity verification.



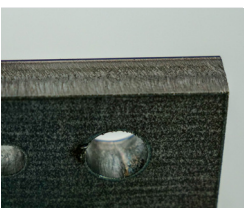
## Laser Source from Maxphotonics

The fiber laser source from renowned manufacturer Maxphotonics, with power up to 30 kW, provides an optimal solution for a wide range of cutting applications, materials, and thicknesses.



## Independently Driven Capsule

The capsule is equipped with its own independent drives, ensuring that it does not limit or interfere with the cutting gantry's dynamics. This separation allows the gantry to operate at full speed and precision, achieving high-performance motion and stable cutting even on complex trajectories.



## MicroStep MixGas Technology

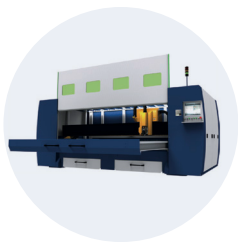
MicroStep MixGas technology improves high-power laser cutting of medium to thick mild steel by mixing Nitrogen with Oxygen. It delivers excellent edge quality, 10 to 20% higher cutting speeds, less burr, lower gas costs, and efficient use of full laser power when Oxygen is no longer suitable and Nitrogen alone is too costly.

## Technical parameters

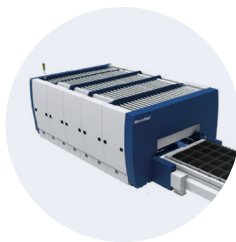
<b>Model</b>	MSF Initio
<b>Power</b>	max. 30 kW
<b>Max. positioning speed</b>	100 m/min
<b>Max. acceleration</b>	1G
<b>Repeability of positioning</b>	0.05 mm
<b>Bevel type</b>	positive V-bevel, reverse V-bevel, positive Y-bevel, reverse Y-bevel, X-bevel, K-bevel
<b>Bevel cutting angle</b>	+45° to -45°
<b>Working width</b>	3 000 mm straight cut, 2 500 mm bevel cut
<b>Working length*</b>	8000 mm, 12 000 mm , 16 000 mm, 20 000 mm, 24 000 mm

\* the maximum plate length can vary

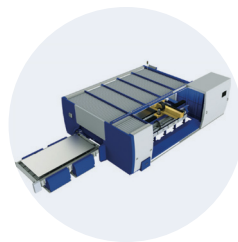
Unlock unmatched productivity, versatility and multi-functionality with our **MSF series**



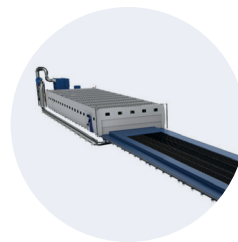
MSF Compact



MSF Cut



MSF Pro



MSF Max



MSF Pipe

## Your Partner for Cutting and Automation



MicroStep offers CNC cutting systems with a variety of processes and accessories in a single machine.

Our machines enable complex bevel cutting jobs with all technologies, plasma, fiber laser, oxyfuel and waterjet along with marking, drilling, tapping, milling and countersinking operations.

With welding and bending added to our portfolio, we bring matching fabrication processes under one roof. After cutting, MicroStep supplied welding machines and press brakes are ready to take over.

We do not stop there, we integrate our machinery with material handling systems and provide added value through automation and digitalization.

For more information visit **our website**



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