

NEW

MSF series

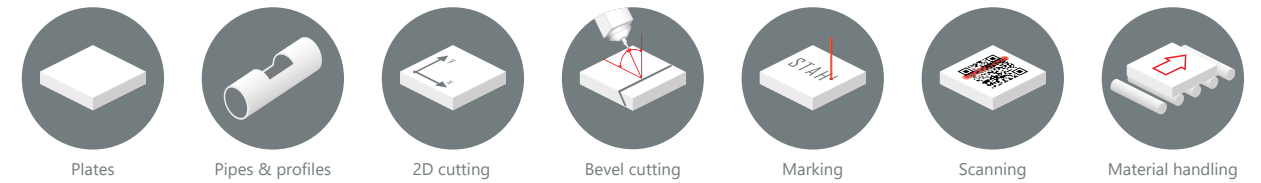
Powerful solution for fiber laser cutting

Laser

MicroStep's precise **laser all-rounder MSF** allows for multi-functional processing of materials: 2D and 3D cutting of sheets with bevels up to 45°, drilling, tapping, countersinking as well as marking. The machine can be equipped with a turret drilling head for 6 tools that allows **drilling up to Ø 20 mm** and **tapping up to M16**. Optionally, the cutting area can be extended by a pipe & profile cutting zone for processing of **pipes up to Ø 500 mm** and a length up to 12 m, or **hollow sections** up to the size 350 x 350 mm.

Thanks to the patented ACTG® technology, MSF machines deliver consistent, highly precise **bevel cutting** results in a reliable process with minimum maintenance downtimes. Another innovative technology – ABP – offers the option of adding bevels to already cut parts, for example to thicker workpieces that were cut with plasma in advance. By default, MSF machines are equipped with automatic shuttle tables, whereas **automatic material handling** and sorting options for sheets, pipes and profiles are likewise available.

MSF machines are designed for production of highly accurate parts at high cutting speeds, with surprisingly low maintenance and operational costs. The outstanding dynamics of MSF is achieved by a low-seated gantry, digital AC drives and precise planetary gears. The machines are equipped with state-of-the-art fiber laser sources of powers up to 10 kW.





Robust, dynamic, and long-lasting machine design

- Gantry with extremely high torsion resistance enable high traverse speeds of up to 180 m/min
- Bellows on all axes protect the guidelines from contamination
- Automatic lubrication of linear guidelines and carriages with auto-control of its frequency and duration
- Possibility of parallel cutting with two cutting heads
- Smart Z Movement (SZM) feature for smoother and faster operation



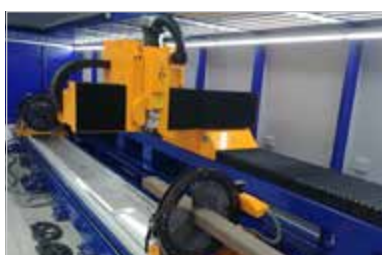
Extensive automation features and options

- Shuttle table with fast table changeover reduces costly downtimes
- Automatic focus position and diameter adjustment according to the cut material
- Automatic cutting height sensor calibration and nozzle cleaning cycle
- Automatic nozzle change option
- Possibility of complete automation of loading and unloading including part sorting



High economic efficiency

- 2/3 lower power consumption and higher cutting speeds (compared to CO₂ laser of the same power)
- The complete machine is nearly maintenance-free
- No laser gases necessary
- Smaller footprint in comparison to CO₂ lasers
- No warm-up time, after switching on immediately ready to work



Pipe and profile cutting

- Various pipe and profile cutting options in combination with sheet processing or as a standalone pipe cutting solution
- Cutting of pipes up to Ø 500 mm and a length up to 12 m, and hollow sections up to the size 350 x 350 mm
- Motorized and synchronized pipe support positioned automatically according to the cutting program
- Automatic pipe loading, feeding and unloading system as option
- Convenient cutting program creation in MicroStep's 3D CAM software mCAM



Laser bevel head for bevel cuts up to 45°

- V- and X-bevels as well as complex Y- or K-bevels up to 45° with micro joints
- Auto-calibration of tool geometry (ACTG®) feature ensures high precision and reliability of bevel cutting with minimum downtimes for maintenance
- Additional Beveling Process (ABP) – simple and reliable subsequent weld edge preparation via a laser scanning process
- Auto-calibrated height sensor for correct height control in all cutting angles



Fully automatic drilling up to Ø 20 mm and tapping up to M16

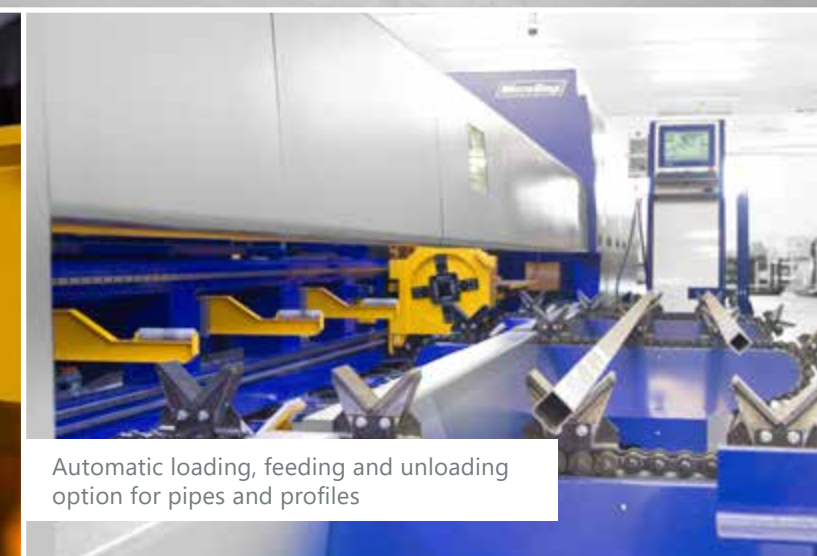
- Fully automatic drilling solution for laser machines
- Drilling up to Ø 20 mm, tapping up to M16 and countersinking
- Turret head with tool magazine for 6 tools
- Auto-calibration of drill bits (ACDB) feature
- Pneumatic retainer close to the drill tool ensures accuracy of the drilling process



A versatile CNC fiber laser cutting machine for sheets and pipes with laser power up to 10 kW



Laser bevel head allows 3D processing of sheets and pipes



Automatic loading, feeding and unloading option for pipes and profiles



Turret drilling head with 6 tool positions for drilling up to Ø 20 mm and tapping up to M16

NEW

MSF Compact series

Compact, fast, precise

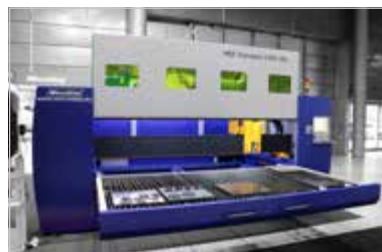
Laser

The **MSF Compact** combines precise 2D laser cutting with a compact design. This space-saving version of MicroStep's fiber laser machine is available in **work areas** of **1,000 x 2,000 mm**, **1,250 x 2,500 mm** and **1,500 x 3,000 mm** and is particularly attractive thanks to its small footprint in combination with the genuinely high cutting quality. A manually extractable cutting table enables easy and straightforward loading.

MSF Compact machines are available with state-of-the-art fiber laser sources with a power range **1 – 4 kW**. The machines are perfect for production of highly accurate parts at high cutting speeds, with a small footprint and low maintenance and operational costs. Their high dynamics is achieved by a low-seated gantry, digital AC drives and precise planetary gears.



Your solution for fast and precise cutting



- A powerful, compact laser cutting machine for cutting a wide variety of materials
- High precision and accuracy of parts and contours
- Excellent dynamics thanks to a robust machine design, low-seated gantry, digital AC drives and precise planetary gears

Robust, dynamic, and long-lasting machine design



- Gantries with extremely high torsion resistance enable high traverse speeds
- Compact, manually extractable cutting table for convenient loading of sheets up to 15 mm thick
- Bellows on all axes protect the guidelines from contamination (optional)

Excellent cutting quality



The compact version of MSF achieves excellent cutting quality on a variety of cut parts thanks to high-quality of used components. An advanced sensor system inside the cutting head ensures reliable performance in single- as well as multi-shift operations.

High economic efficiency



- 2/3 lower power consumption and higher cutting speeds (compared to CO₂ laser of the same power)
- The complete machine is nearly maintenance-free
- No laser gases necessary
- Extremely small footprint
- No warm-up time, after switching on immediately ready to work
- Fast commissioning thanks to its compact design (Plug & Produce)

Compact machine with manual loading and unloading



The MSF Compact is available with work areas of 1,000 x 2,000 mm, 1,250 x 2,500 mm and 1,500 x 3,000 mm and is particularly attractive thanks to its small footprint in combination with the genuinely high cutting quality. A manually extractable cutting table enables easy and straightforward loading.

High-quality components

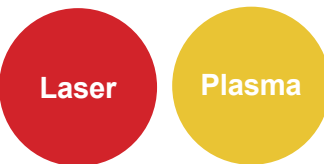
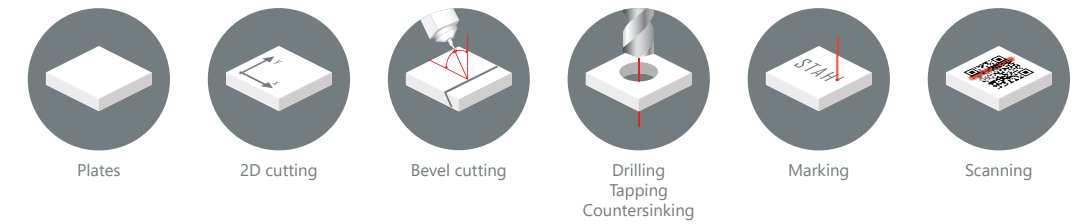


MicroStep relies exclusively on high-quality components from established manufacturers to ensure long-lasting and accurate results. Thus, laser sources from IPG Photonics with a power of up to 4 kW are available. For high cutting speeds, an automatic laser cutting head from the German manufacturer Thera-cut is used.

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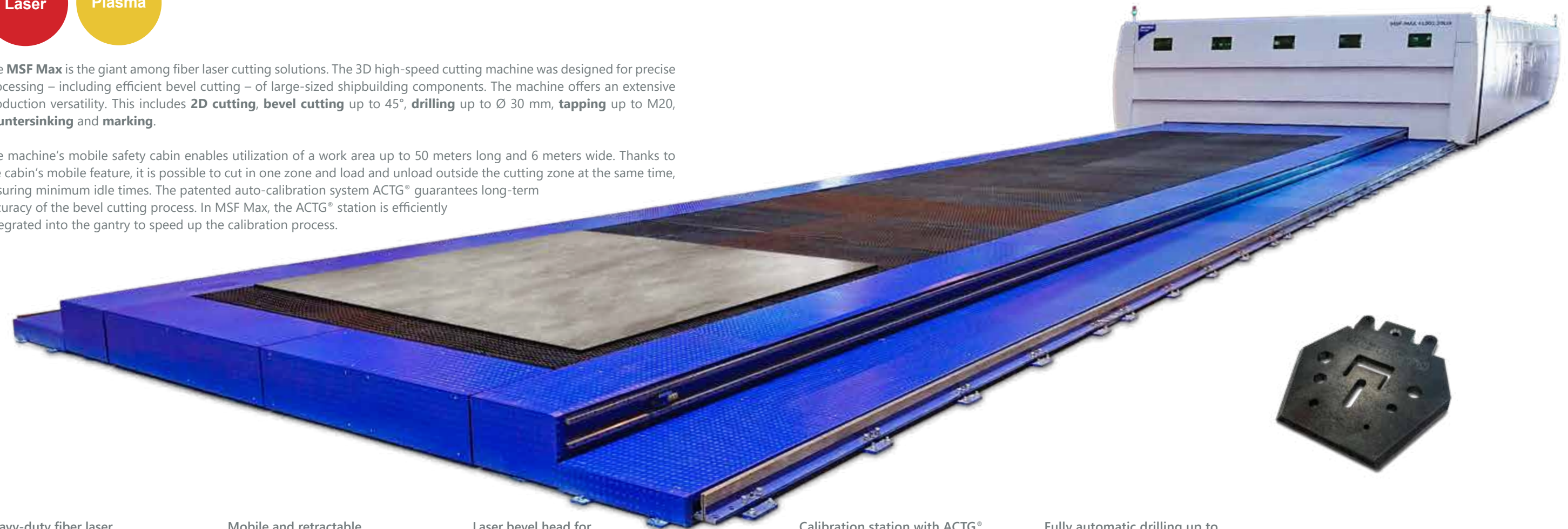
MSF Max series

3D fiber laser machine for large-scale applications



The **MSF Max** is the giant among fiber laser cutting solutions. The 3D high-speed cutting machine was designed for precise processing – including efficient bevel cutting – of large-sized shipbuilding components. The machine offers an extensive production versatility. This includes **2D cutting**, **bevel cutting** up to 45°, **drilling** up to Ø 30 mm, **tapping** up to M20, **countersinking** and **marking**.

The machine's mobile safety cabin enables utilization of a work area up to 50 meters long and 6 meters wide. Thanks to the cabin's mobile feature, it is possible to cut in one zone and load and unload outside the cutting zone at the same time, ensuring minimum idle times. The patented auto-calibration system ACTG® guarantees long-term accuracy of the bevel cutting process. In MSF Max, the ACTG® station is efficiently integrated into the gantry to speed up the calibration process.



Heavy-duty fiber laser cutting machine



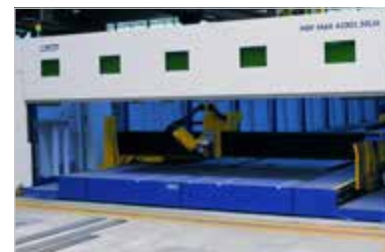
The MSF Max, with its maximum work length of up to 50,000 mm and width of up to 6,000 mm, is an excellent laser cutting solution for large-scale applications. The fiber laser cutting machine developed originally for the shipbuilding industry is designed for reliable and precise processing of large components. The design makes MSF Max a heavy-duty fiber laser cutting machine for complex and extraordinary cutting tasks.

Mobile and retractable safety cabin



To accommodate its unconventional work areas while maintaining high safety standards, MSF Max uses a mobile safety cabin to shield against laser beam reflection. The mobile cabin moves on its own guidelines and can reach the entire work area of the machine. Optionally, a retractable version of the mobile cabin allows to choose different work area sizes and thus enables an unmatched flexibility of operation.

Laser bevel head for bevel cutting up to 45°



- V- and X-cuts as well as complex Y- or K-cuts up to 45° with micro joints
- Additional Beveling Process (ABP) – simple and reliable subsequent weld edge preparation via a laser scanning process
- Easy programming thanks to intuitive software tools
- Auto-calibrated height sensor for correct height control in all cutting angles

Calibration station with ACTG® unit integrated into the gantry



In case MSF Max is equipped with a laser bevel head, the system comes with the ACTG® unit and auto-calibration feature by default. Unlike in other MicroStep machines, the unit is integrated directly into the gantry in a combined calibration station that is ejected during the calibration process. The station contains also a pad for calibration of the capacitive height sensor in the cutting head and a nozzle cleaning system consisting of a camera and a wiping brush.

Fully automatic drilling up to Ø 30 mm and tapping up to M20



- Fully automatic drilling solution for the MSF Max machine
- Drilling up to Ø 30 mm, tapping up to M20 and countersinking
- Automatic tool exchange with a tool magazine for up to 8 tools mounted on the gantry
- Auto-calibration of drill bits (ACDB) feature
- Pneumatic retainer close to the drill tool ensures accuracy of the drilling process

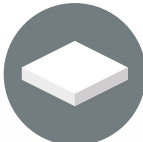
High-quality components



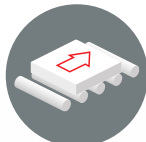
MicroStep uses laser sources from IPG Photonics, the leading manufacturer of high-power fiber laser systems. Sources with a power of up to 10 kW are available with MSF Max. High cutting speeds and long-lasting operation are ensured by the automatic laser cutting head BIMO-FSC MZ from the German manufacturer HighYAG.

MSLoad / MSTower / MSSort

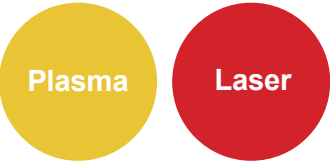
Solutions for automated material handling



Plates



Material handling



MSLoad is a modular system for automatic loading of workpieces and unloading of cut parts for MicroStep laser and plasma cutting machines that brings production automation up another level. Combined with optional storage and part sorting systems, material handling solutions can be as simple or comprehensive as desired.

MSTower is an in-house developed supplement to MSLoad, providing buffer storage close at hand for raw material and cut material alike.

Unloading a cut plate from the machine is not the end of the task. To separate cut parts from waste material and sort them according to a customer-defined sorting plan, MicroStep offers **MSSort** with a customized set of clamping heads, tailored to each part type and stored in a magazine for automatic exchange according to the sorting plan.



MSLoad:
Flexible material handling



The variable and modular structure of the whole material handling system allows it to fit any requirements and environment. Loading and unloading can take place on the same or opposite sides, even on both sides at once.

MSTower:
Customized storage solution



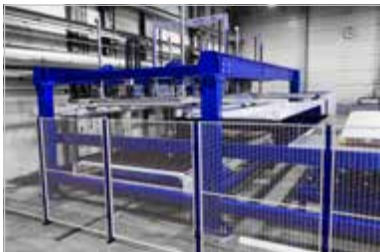
Standard MSTower comes in sizes from 3 x 1.5 m to 6 x 2 m and accommodates up to 10 loading pallets. However, MicroStep's offer does not end there. We offer custom solutions in terms of pallet size and number, as well as integration with supplementary technology.

MSSort:
Sorting tailored for your needs



MicroStep's integrated CAM software pack allows to generate sorting plans along with cutting plans with ease. The rotary sorting tool station features automatic exchange of clamping tools that are designed for various shapes and sizes of parts.

Safety



Safety is paramount in material handling. The loading system is secured by lockable fences and optical barriers that stop all movement when entry into the work area is detected.

Ever higher efficiency with automatic nozzle changer



Automation and productivity are the industrial buzzwords. To bring them ever closer to reality, MicroStep's laser systems can be equipped with an automatic nozzle exchange system that further reduces the need for staff labour and makes the machine's operation even faster and more precise.