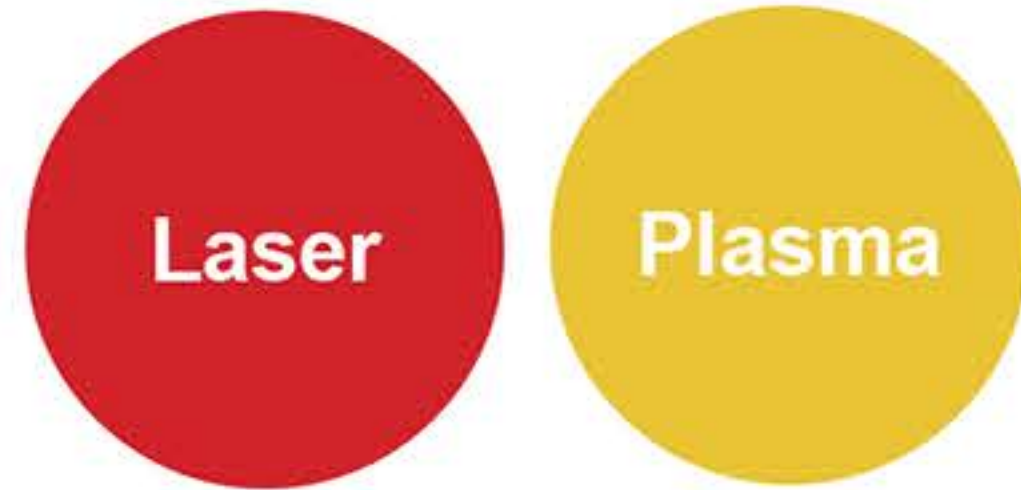


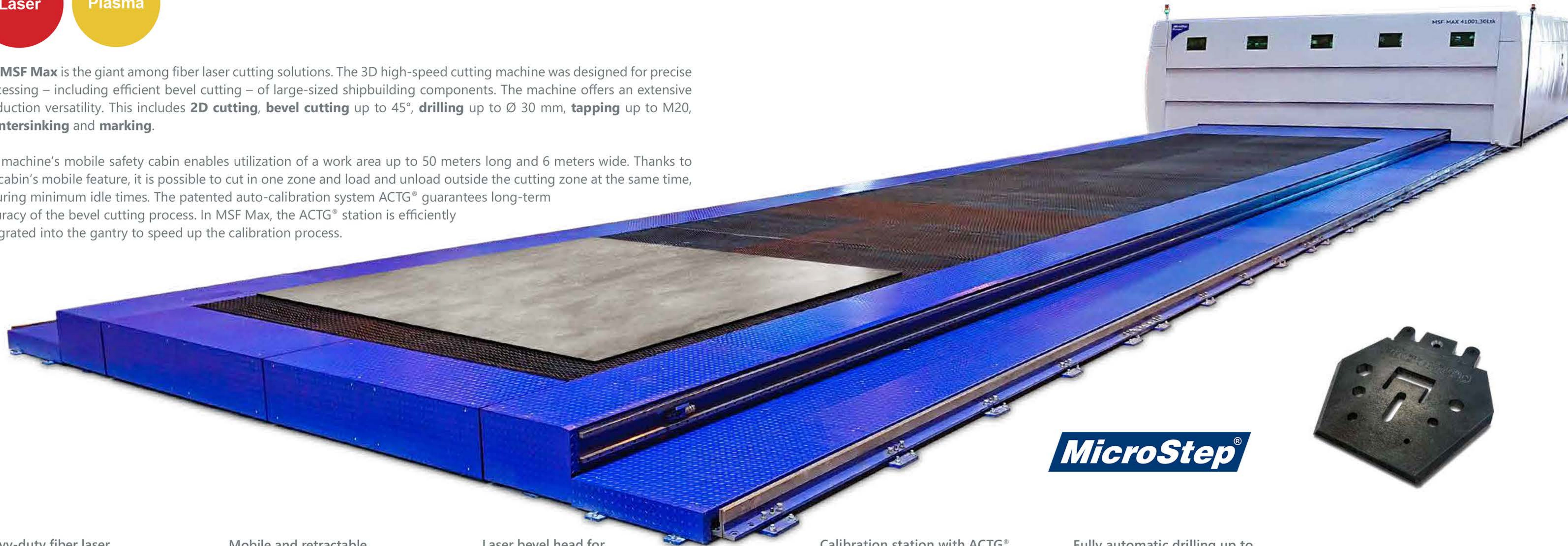
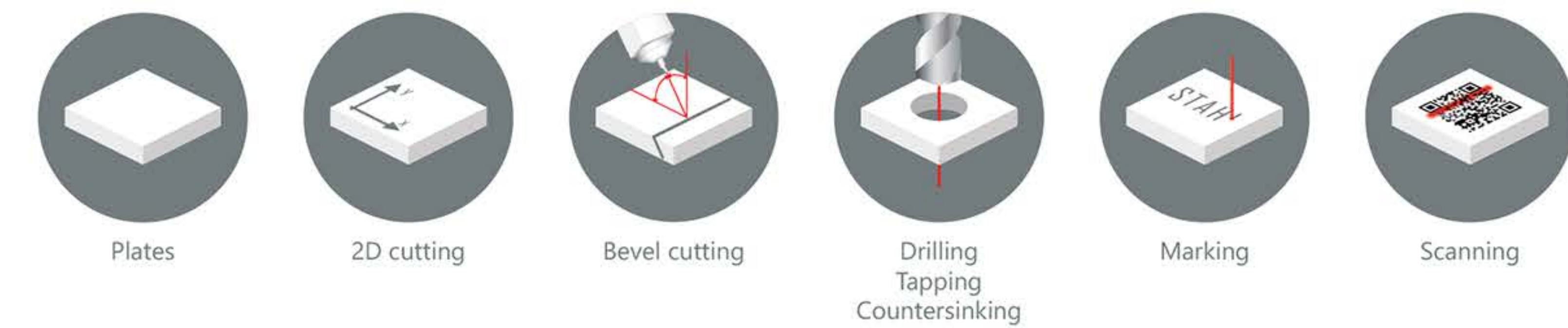
# MSF Max series

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.



**MicroStep®**



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°



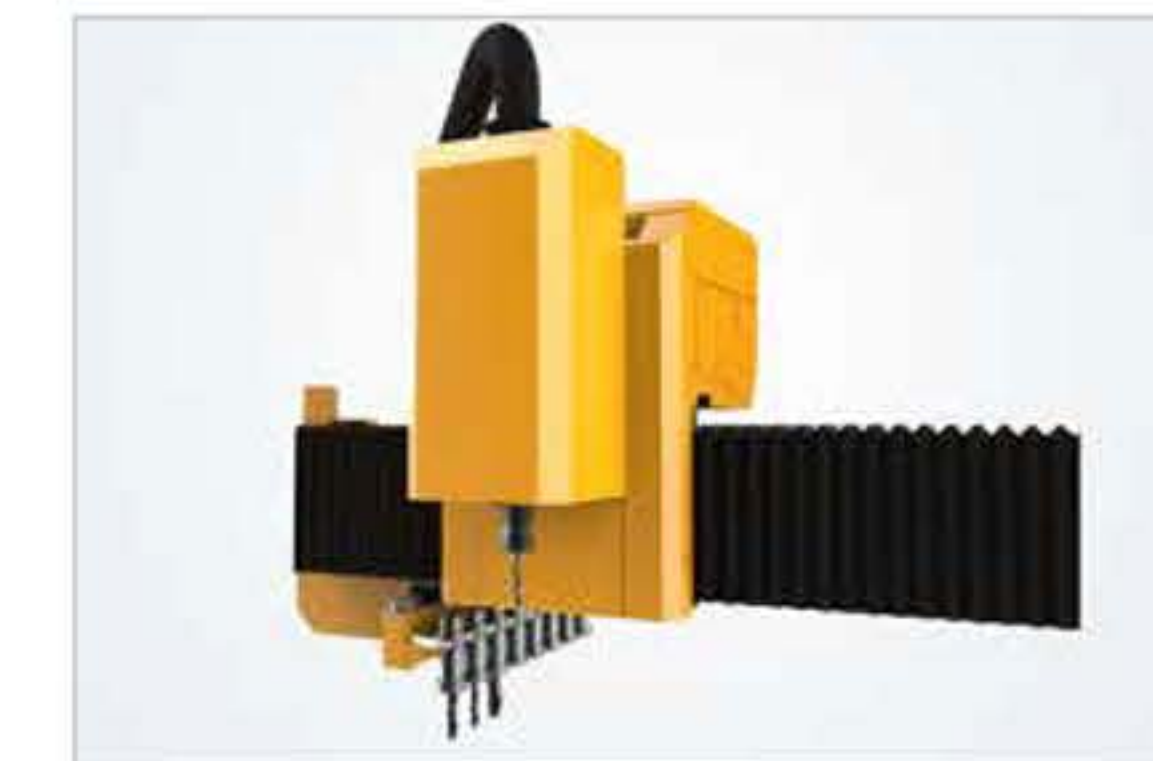
- V- and X-cuts as well as complex Y- or K-cuts up to 45° with micro joints
- Additional Beveling Process (ABP) – simple and reliable subsequent weld edge preparation via a laser scanning process
- Easy programming thanks to intuitive software tools
- Auto-calibrated height sensor for correct height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