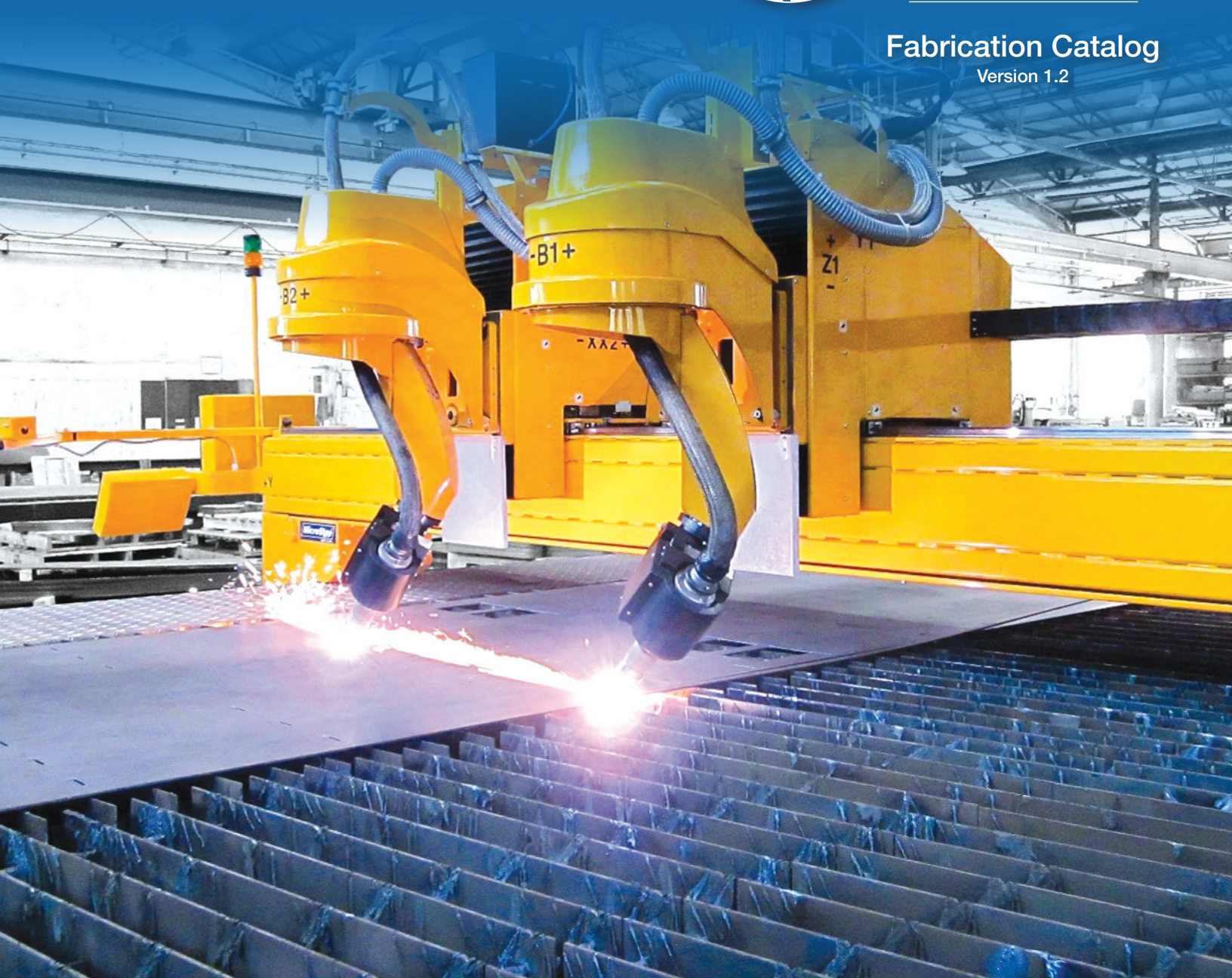




UNITED PRECISION

Fabrication Catalog
Version 1.2



MicroStep®





UNITED PRECISION



Company Profile

United Precision Services, Inc. is a 20+ year old organization located in Cincinnati, OH (the former “Blue Chip” capital of the world). Due to our rich heritage in metal cutting, many of our skilled craftsmen come from generations of German immigrants that honed their skills in machine tool building and servicing. Today, we represent some of the highest quality and most reputable machine tool builders in the world.

Our company is comprised of immensely talented individuals in sales, engineering, process development, programming, machining, installation, and service. We represent specialized builders in the medium to large part fabrication machining segment of the industry (1M size and larger). Even though most of our builder partners

offer a standard product range, all of them will offer specialized solutions to get the highest level of production, dependability, and quality out of the machine tool.

The working showroom at United Precision is one of the largest in the world. You can visit at any time to see the machine tools that we offer making parts for manufacturers all over the world. Today, we have exclusive import/distribution rights for HEXRAM (USA), MTE (Spain), Giuseppe Giana (Italy), HURON (France), MATEC (Germany), ROMI Heavy Duty (Brazil), MAUSA (Brazil) and MicroStep (Slovakia).

Our partner and dealers around the country are trained on the products we bring to market and in many cases aid in the support of the machinery thru their life cycle.



Value Added Services

United Precision Services is unique in the machine tool industry. We not only service and support the products that we sell, but we also use the same or similar machinery every day. Our technical staff are trained on the very machines we provide. Some of the “value added” services that we offer are shown below:



Sales

Assistance in identifying the right product for maximum productivity



Installations

U.S. trained and authorized installers



Service

Authorized service on products we sell, as well as, other OEM's



Parts

Storeroom for replacement and spare parts



Foundation Design & Build



Holding Fixture Design & Build



Machining

Sample part runoff and supplemental machining requirements



Application Engineering



Part Programming



Training

Maintenance, Operator, and Programming



Preventative Maintenance Services

Leveling, geometry, laser, and ballbar



Company Profile

Headquartered in Bratislava, Slovakia, MicroStep has been manufacturing metal fabrication machinery for more than 30 years. They offer a full range of cutting technologies -plasma, oxyfuel, laser, waterjet- in many different table sizes. One machine can accommodate solutions such as drilling, tapping, countersinking, marking, scanning, 2D cutting, 3D (bevel) cutting, beam processing, dome processing, and pipe & profile processing. Highly intelligent programming software and advanced automation solutions improve efficiencies and productivity.

- Comprehensive functions to make bevel cutting a simple, fast, and reliable process using different cutting technologies.
- Parallel bevel cutting for increased productivity.
- Auto Calibration of Tool Geometry (ACTG®) that not only guarantees long-term accuracy but also simplifies maintenance.
- ABP - Additional Beveling Process enables adding of bevels to parts that have already been cut.
- ITH - Intelligence Torch Holder ensures protection of the torch in case of accidental collision.
- mScan technology for 3D mapping of real dome shapes
- Cutting tables up to 50m (164ft) long x 8m (26ft) wide in select machine models.



PLASMA

OXYFUEL

LASER

WATERJET

DRILLING

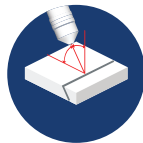


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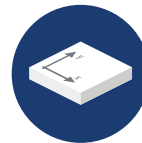
MicroStep®



ONE MACHINE MULTIPLE PROCESSES



Bevel Cutting



2D Cutting



Pipe & Profile Processing



Marking



Beam



Scanning

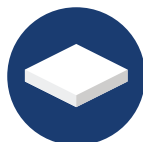
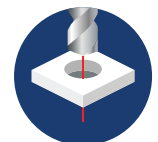


Plate Processing



Dome Processing



Drilling, Tapping & Countersinking

Beveling

Our comprehensive beveling functions allow our customers to process a wide range of material thicknesses depending upon the chosen cutting technology. MicroStep® machines can combine various cutting technologies within a single machine.

ACTG®

Auto Calibration of Tool Geometry

Ensures that during rotation and tilting that the tip always stays in the required (exact) position. The ACTG® consists of a calibration station, a torch extension probe, and advanced control software. It eliminates the necessity of mechanical adjustments of the bevel head and significantly reduces setup time of the machine from several hours to a couple of minutes.

ITH

Intelligent Torch Holder

Provides protection of the torch in case of an accidental collision. Its slip-back function ensures return of the torch into the correct position after collision. The ITH body includes an advanced sensor system for detection of the exact torch position.

ABP

Additional Beveling Process

Enables adding bevels to parts that have already been cut with a straight tool, by plasma, laser, oxyfuel, or even waterjet.



PLASMA

OXYFUEL

LASER

WATERJET

Software

ASPER BASIC

Asper Basic 2D CAM software for intuitive and efficient manufacturing

MicroStep's 2D CAM software Asper® is the ideal tool for easy and fast creation of CNC programs for various cutting and supplementary technologies. Even in its basic version, Asper® offers powerful functionalities for 2D cutting that can be further extended by a variety of specialized modules (e.g. bevel cutting module, pipe cutting module, multi-torch cutting module and more) and even customized to fit a customer's special requirements. The intuitive structure and sophisticated features make Asper® a modern and powerful tool for CNC programming.

ASPER NESTING

Asper Nesting The tool for efficient automatic nesting

Easily and intuitively nest component drawings into efficient cutting plans. Follow your own requirements: whether you need to prevent material overheating or just to save as much material as possible, Asper® Nesting makes your work easy!



iMSNC

iMSNC Smart solution for multitechnology work

iMSNC® from MicroStep is one of the most advanced control systems for CNC cutting machines. It was developed to easily, reliably, and efficiently turn cutting plans into finished parts with the help of a clear and modern user interface. The system's hardware consists of a stand-alone control console with a TFT touchscreen and a control panel with an LCD display mounted on the gantry. In order to achieve maximum utilization and flexibility of our machines, the ergonomic control console offers the opportunity to nest new cutting programs and generate new CNC codes during an ongoing cutting process. As the iMSNC® control system and all CAM software solutions come from our company, the software with its versatile modules can be individually customized for your production. Parameter databases for individual technologies enable consistently high quality under various circumstances. iMSNC® comes with multiple efficient evaluation tools for production process optimization. These provide you with the much-needed overview of current cutting orders, cutting times, cost calculations and machine utilization in day-to-day production.

mCAM

mCAM Powerful 3D CAM software for complex cutting programs

mCAM is an efficient tool for automated 3D cutting of pipes, profiles, beams, domes and flat plates with cutting machines equipped with various technologies (plasma, oxyfuel, waterjet and laser). mCAM can directly import 3D models (created in SolidWorks, Inventor, etc.), organize them into individual libraries and process them. The software analyzes the shape of an entire model and automatically detects cutting paths. Thanks to the integrated nesting process, the individual components can then be efficiently nested on material templates.

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MG Series

The MG series is the top performer among MicroStep's cutting machines.

It is built for heavy-duty industrial use to meet the highest demands on precision, performance and ease of operation.

MG machines are suitable for a variety of applications from 2D and bevel cutting with plasma and oxyfuel, pipe & profile cutting, dome cutting, drilling, tapping and countersinking to marking and additional beveling with ABP technology.

Working Length	1,500-50,000 mm (5'-164')
Working Width	1,500-8,000 mm (5'-26')
Max. Number of Tool Stations	6 (8G)
Max. Thickness of Material Cut by Plasma	determined by the plasma source
Max. Thickness of Material Cut by Oxyfuel	150 mm (5.9")
Bevel Cutting	yes (additional accessory)
Pipe Cutting	Ø 30 - 1000 mm (1.2"-39")
Drilling & Tapping	Ø 4 - 40 mm (.16"-1.57"), M4 - M33, automatic tool exchange
Positioning Speed	max 56 m/min (2,205 ipm)
Bidirectional Repeatability	0.05 mm/m (.002"/39")



PLASMA

OXYFUEL

Combicut Series

This robust and high-precision CNC machine is designed especially for multiple-shift high-performance plasma and oxyfuel cutting. It allows cutting of steel up to 300 mm, bevel cutting with a pair of rotary oxyfuel triple torches or plasma rotators, simultaneous cutting with more than 10 torches, drilling up to Ø 40 mm, inkjet or micropercussion marking, pipe and dome processing.



Working Length	1,500-50,000 mm (5'-164')
Working Width	1,500-8,000 mm (5'-26')
Max. Number of Tool Stations	5 (8 oxyfuel)
Max. Thickness of Material Cut by Plasma	determined by the plasma source
Max. Thickness of Material Cut by Oxyfuel	300 mm (11.8")
Bevel Cutting	yes (additional accessory)
Pipe Cutting	Ø 30 - 1500 mm (1.2"-39")
Drilling & Tapping	Ø 4 - 40 mm (.16"-1.57"), M4 - M33, automatic tool exchange
Positioning Speed	max 50 m/min (1,968 ipm)
Bidirectional Repeatability	0.05 mm/m (.002"/39")



PLASMA

OXYFUEL

MasterCut Series

Mastercut is a versatile CNC cutting machine which can be applied throughout industry, reaching from small workshops to big factories. The application range of the entry version with rails in X direction dedicated to fully automated oxyfuel cutting or cutting with conventional plasma can be enhanced to a variety of high precision plasma cutting applications including pipe, profile or elbow cutting and marking.

The machine comes in two configurations - with linear guides or with rails in the X axis.

Working Length	1,500-30,000 mm (5'-98')
Working Width	1,500-4,000 mm (5'-13')
Max. Number of Tool Stations	4 (6 oxyfuel)
Max. Thickness of Material Cut by Plasma	determined by the plasma source
Max. Thickness of Material Cut by Oxyfuel	150 mm (6")
Bevel Cutting	yes (additional accessory)
Pipe Cutting	Ø 30 – 700 mm (1.18"-27.5"), max 10 t
Drilling & Tapping	up to Ø 13 mm (.51") M4 - M30, automatic tool exchange
Positioning Speed	max 51 m/min (2,007 ipm) linear guides, max 43 m/min (1,693 ipm) rails
Bidirectional Repeatability	0.05 mm/m (.002"/39")



PLASMA

OXYFUEL

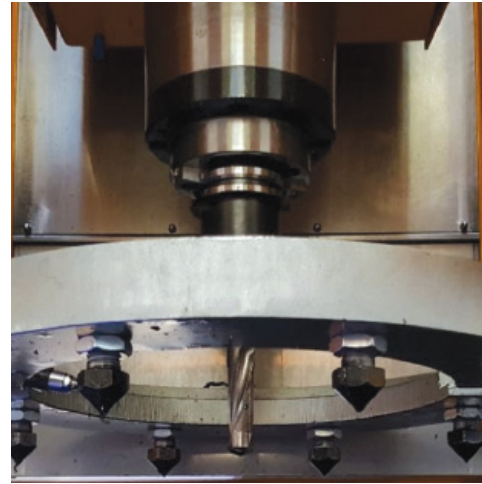
DRM Series

The DRM is a heavy-duty cutting and drilling machine designed for a wide range of dome, sheet and pipe processing applications.

Its robust gantry enables vibration-free operation of heavy equipment such as several automatic oxyfuel triple torches, a 3D rotator with tilting up to 120° and Z-axis stroke 1,500 mm or other custom equipment.

Along with the full range of sheet and pipe cutting options, DRM offers special applications on domes like trimming, separation cuts, cutting of diverse openings and weld edge preparation across the whole dome surface. An advanced 3D scanning process with MicroStep's mScan technology allows the machine to achieve excellent spatial precision in 3D cutting.

A special version of the machine with a drilling table and a selection of powerful drilling tool stations up to 55 kW allows for heavy-duty drilling of construction sheets, tube sheets for heat exchangers and other demanding drilling jobs.



Working Length	3,000-30,000 mm (10'-98')
Working Width	1,500-8,000 mm (5'-26')
Max. Number of Tool Stations	4
Max. Thickness of Material Cut by Plasma	determined by the plasma source
Max. Thickness of Material Cut by Oxyfuel	200 mm (7.8")
Bevel Cutting	yes (additional accessory)
Pipe Cutting	Ø 30 - 1500 mm (1.18"-59"), max 12 t
Drilling & Tapping	Ø 4 - 60 mm (.16"-2.3"), M4 - M30, automatic tool exchange
Positioning Speed	max 62 m/min (2,440 ipm, linear guides), max 56 m/min (2,204 ipm, rails)
Bidirectional Repeatability	0.05 mm/m (.002"/39")



PLASMA

OXYFUEL

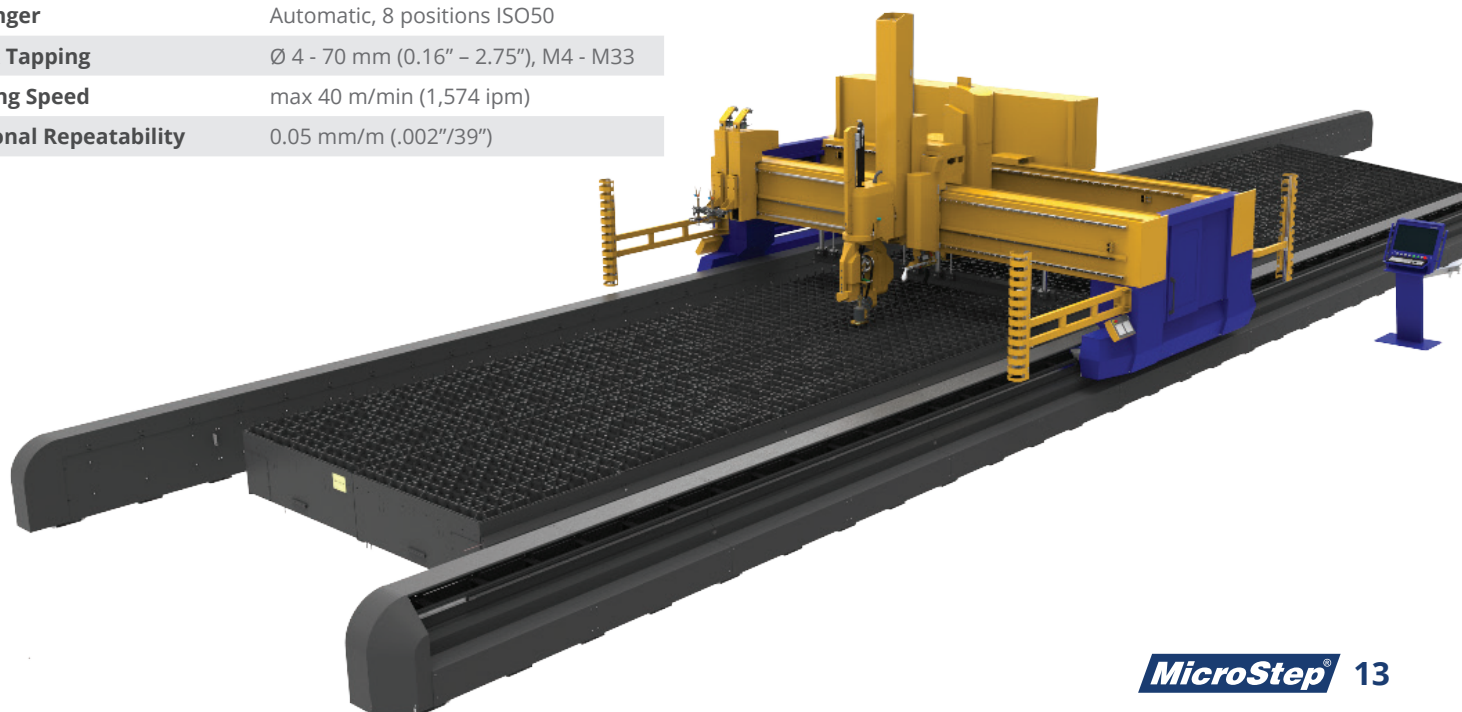
DRM Max Series

DRM Max is a heavy-duty CNC cutting, drilling & milling machine with key applications in offshore, wind tower, heavy vessels, columns, reactors, and heavy-duty machinery segments.

The machine has a dedicated drilling/milling area with an independent sub-gantry and two powerful retainers that make milling up to a length 750 mm (29.5") along the X axis possible. The robust design enables drilling up to Ø 70 mm (2.75") and a variety of milling jobs such as large hole milling, face milling, pocket & slot milling, chamfer milling, thread milling or counter boring.

DRM Max can be also equipped with other accessories of the DRM series enabling plate, pipe, beam and dome cutting applications.

Working Length	3,000 - 30,000 mm (10' - 98')
Working Width	1,500 - 4,000 mm (5' - 13')
Max. Number of Tool Stations - Front Gantry	max. 4 (6 - oxyfuel)
Max. Number of Tool Stations - Inner Gantry	1 drilling/milling
Max. Thickness of Material Cut by Plasma	according to a plasma source
Max. Thickness of Material Cut by Oxyfuel	300 mm (11.8")
Bevel Cutting	yes (see accessories)
Pipe Cutting	Ø 30 - 1500 mm (1.18" - 59"), max. 12 t
Spindle Type (Power, Torque, RPM)	Direct drive 42kW (42 Hp), 276Nm (203 ft-lb), 10000 rpm Direct drive 55kW (73 Hp), 834Nm (615 ft-lb), 6000 rpm
Tool Changer	Automatic, 8 positions ISO50
Drilling & Tapping	Ø 4 - 70 mm (0.16" - 2.75"), M4 - M33
Positioning Speed	max 40 m/min (1,574 ipm)
Bidirectional Repeatability	0.05 mm/m (.002"/39")



PLASMA

OXYFUEL

ProfileCut Series

The ProfileCut series is dedicated for production of steel structures. It provides efficient and cost-effective cutting and marking of commonly used types of beams and profiles.

Besides optional tube and plate cutting areas, the machine has a dedicated area for cutting of beams such as I, H, U, or L. To enable precise processing of beams in the required spots, ProfileCut machines are equipped with a laser scanner that measure the exact shape of the beam in the place of cutting. That allows the control system to adjust the movement of tool according to the true shape of the particular beam.



Working Length	1,500-50,000 mm (5'-164')
Working Width	1,500-8,000 mm (5'-26')
Max. Number of Tool Stations	6 (8 oxyfuel)
Max. Thickness of Material Cut by Plasma	determined by the plasma source
Max. Thickness of Material Cut by Oxyfuel	300 mm (11.8")
Bevel Cutting	yes
Pipe Cutting	Ø100-1500 mm (4"-39"), max 12 t
Hollow Profile Cutting	100 x 100 - 600 x 600 mm (4" x 4" - 23.6" x 23.6")
H-Profile Cutting	max HEB 1000
Drilling & Tapping	Ø 4-40 mm (.16"-1.57"), M4 - M33, automatic tool exchange
Positioning Speed	max 23 m/min (905 ipm)



PLASMA

WATERJET

AquaCut Series

AquaCut is a high-precision CNC cutting machine designed for processing of a wide variety of materials including those that cannot be subject to thermal or mechanical stresses.

Pure water or abrasive cutting can be applied to metal, stone, marble, armoured glass, ceramics, plastics, wood, corrugated cardboard, foamed material as well as sandwich materials.

The machine can be equipped with a 5-axis waterjet rotator and also combined with plasma or drilling and tapping units.

Working Length	3,000-18,000 mm (10'-59')
Working Width	1,500-4,000 mm (5'-13')
Max. Number of Tool Stations	4
Max. Thickness of Material Cut by Plasma	determined by the plasma source
Max. Thickness of Material Cut by Oxyfuel	200 mm (7.87")
Bevel Cutting	yes (additional accessory)
Pipe Cutting	inquire individually
Tapping	M3 0 M12
Positioning Speed	max 56 m/min (2,204 ipm)
Bidirectional Repeatability	0.05 mm/m (.002"/39")



MSF Series

The MSF series offers a comprehensive product line for fiber laser cutting machines that cover a wide range of applications from 2D sheet cutting to bevel cutting, marking, drilling, tapping, countersinking, and pipe & hollow section cutting. Automation capabilities are available as well with loading, unloading, sorting, storage towers, and production management software.

MSF Compact

Small footprint 2D cutting applications in sizes 1m x 2m, 1.25m x 2.5m and 1.5m x 3m with fiber laser powers ranging up to 4kW. Equipped with fully telescopic single grate system mounted on linear guidelines which is pulled from the cabin to front of machine to ensure convenient loading and unloading.

MSF CUT

High precision 2D cutting applications in sizes 1.5m x 3m, 2m x 4m and 2m x 6m, with fiber laser powers ranging up to 15kW. Equipped with a dual-pallet automatic shuttle table with motorized lifting of cutting grates and integrated into MicroStep automation systems.

MSF PRO

High performance 2D & 3D cutting applications in various sizes starting from 1.5m x 3m to 3m x 15m, with fiber laser powers ranging up to 20 kW. Equipped with a dual-pallet automatic shuttle table with powerful hydraulic lifting. It can be equipped with tool stations for straight and 3D (bevel) cutting up to 45°, high speed marking or drilling/tapping, and countersinking. The machines can be enhanced with supplementary zone for pipe and hollow section cutting with manual or fully automatic workpiece loading as well as integration into MicroStep automation systems.

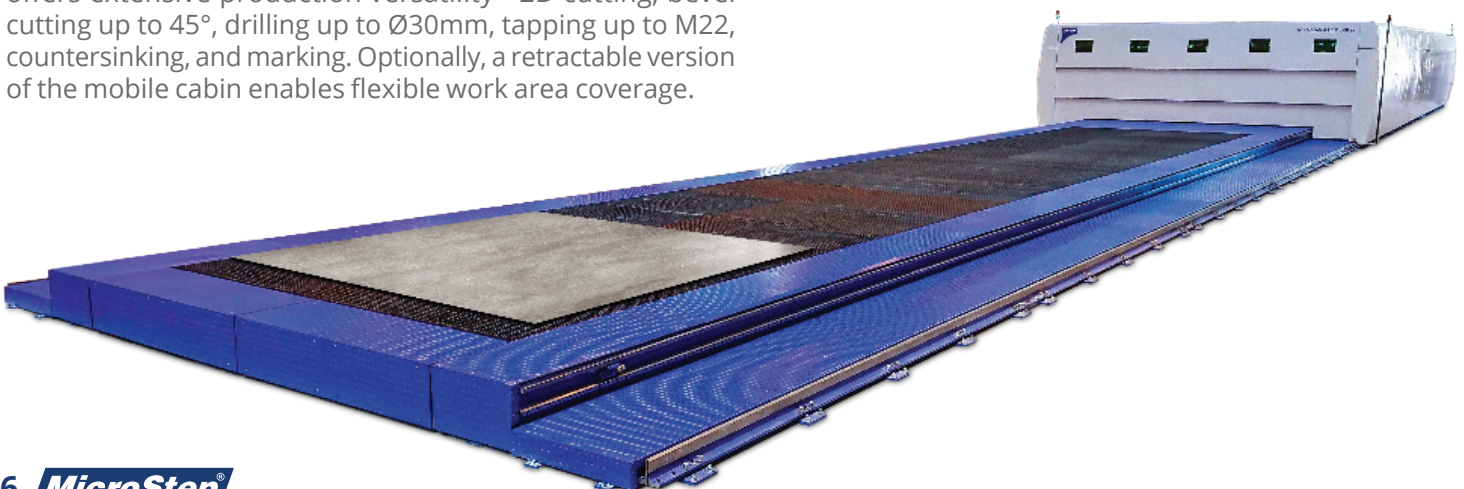
MSF MAX

Large format 2D & 3D cutting applications with fixed cutting table and a moveable cabin that covers the active cutting zone and allows for simultaneous cutting in the covered zone and loading/unloading in the uncovered zone. The machine offers extensive production versatility - 2D cutting, bevel cutting up to 45°, drilling up to Ø30mm, tapping up to M22, countersinking, and marking. Optionally, a retractable version of the mobile cabin enables flexible work area coverage.



Working Length	up to 50,000 mm (164')
Working Width	up to 6,000 mm (20')
Max. Number of Tool Stations	2
Max. Thickness of Material Cut by Laser	determined by the laser source
Bevel Cutting	yes (additional accessory)
Pipe Cutting	upon request
Drilling & Tapping	up to Ø 30 mm (1.18")
Positioning Speed	max 164 m/min (6,456 ipm)
Bidirectional Repeatability	0.03 mm/m (.001"/39")

specifications apply to MSF MAX



PLASMA

LASER

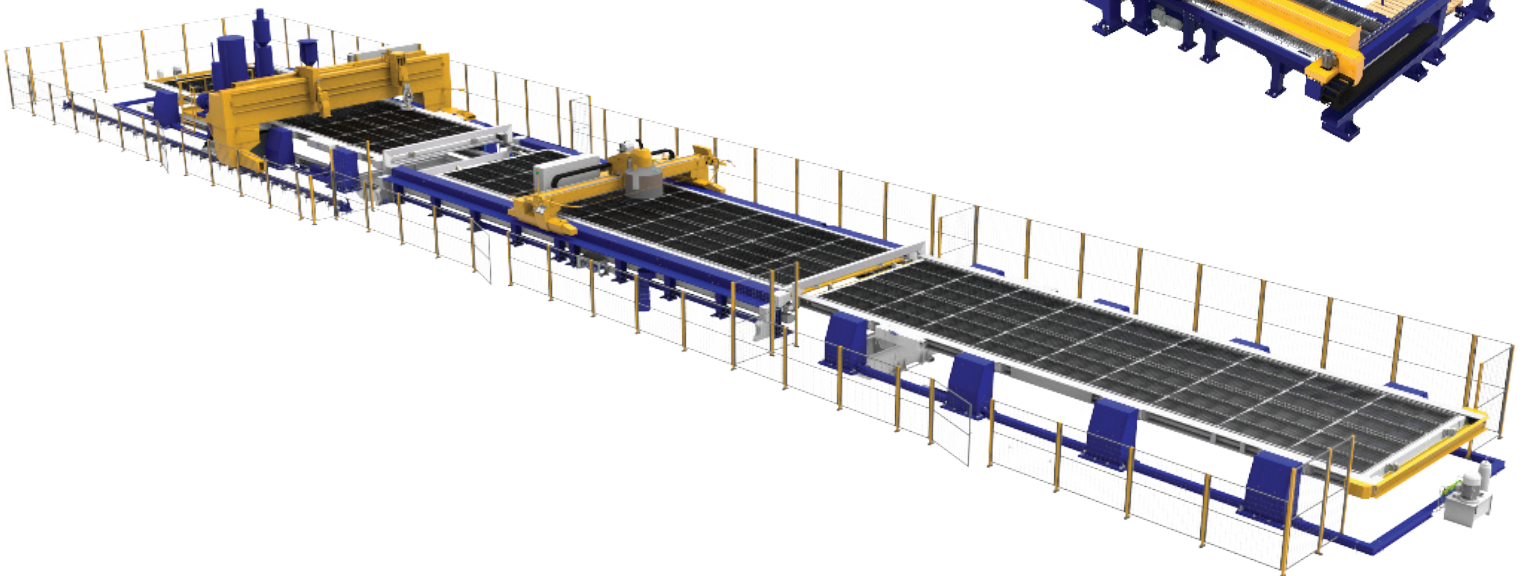
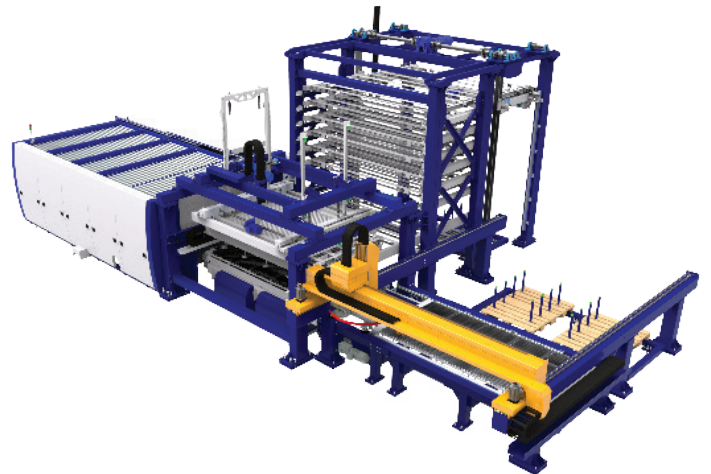
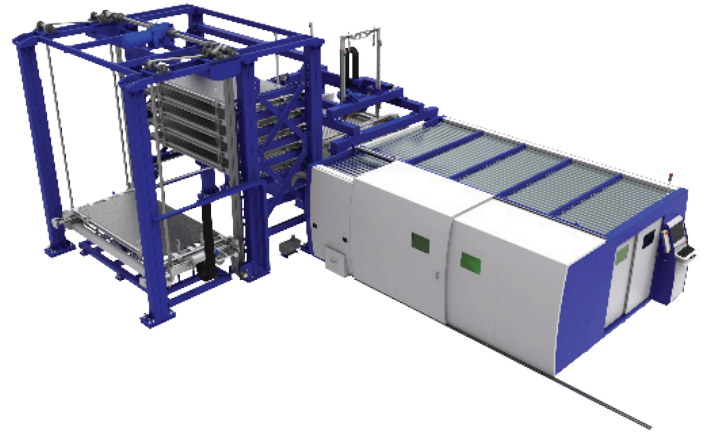
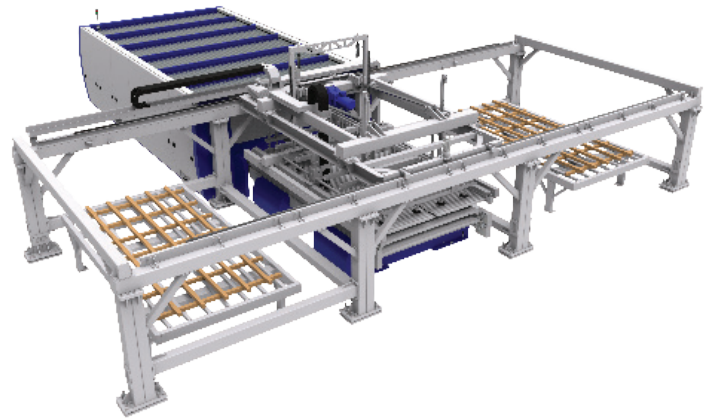
Automated Material Handling Solutions

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

MSTower supplements MSLoad by providing buffer storage close at hand for raw material and cut material alike.

MSsort separates cut parts from waste material and sorts them according to a customer-defined sorting plan. Customized set of clamping heads tailored to each part type and stored in a magazine for automatic exchange according to the sorting plan.

MSLoop automated table exchange system significantly increases throughput as it allows simultaneous loading, cutting, and unloading of material. Its three grates exchange in a continuous loop, with the returning grate moving underneath the CNC machine. Once a grate is loaded with material, it moves into the work area for cutting or other processing operation. After processing, it continues to the unloading area while the other grates also switch places. When unloading is completed, the empty grate moves underneath the work zone back into the loading area.



MSBend Series

MSBend series press brakes offer the complete lineup to suit your bending demands. Combined with advanced production management tools, they represent an optimal choice for your fabrication needs.

MSBend-R is designed for general use and provides high bend accuracy and repeatability. Models from 4' x 40 ton up to 13' x 300 ton.

MSBend-S is designed to maximize productivity with faster ram and backgauge speeds. Models from 4' x 40 ton up to 32' x 2,000 ton.

MSBend-E is an electric servo non-hydraulic bending solution. Models from 5' x 40 ton to 10' x 100 ton.

Tandem press brakes are available for bending long parts when using simultaneously or to double production when used independently. Automated bending stations can be created using robotic interface and backgauge sensors.





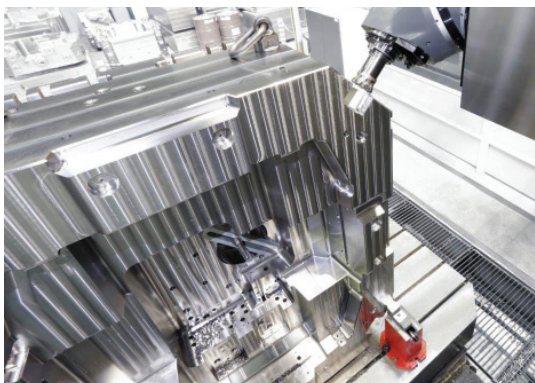
UNITED
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Turning & Milling Machinery



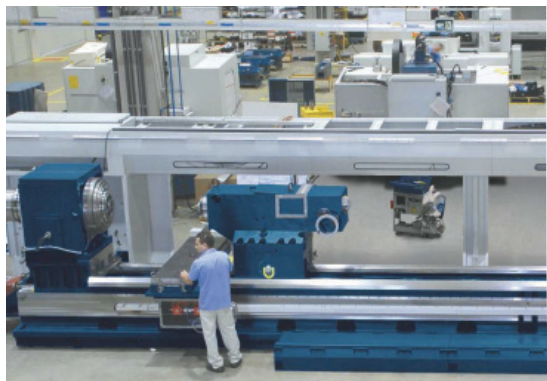
Giuseppe
Giana

MM HL



MTE
Machine Tool Engineering, S.A.

UM MM TC



ROMI

VL MM HL



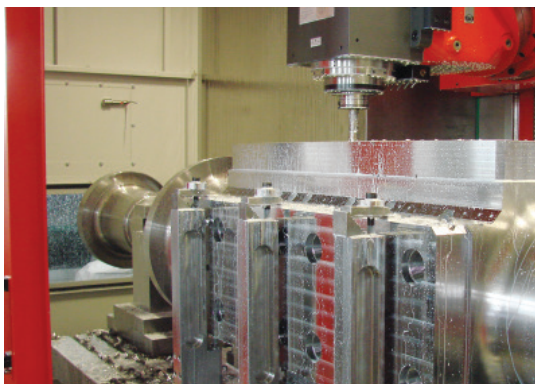
HURON

GM PM MM



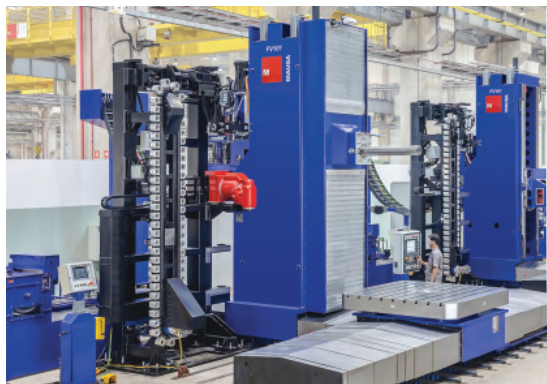
HEXRAM
MACHINE

GM PM MM



MATEC
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M
MAUSA

MM HM TC

UM

Universal Mills

VL

Vertical Lathes

BM

Boring Mills

GM

Gantry Milling

PM

Portal Milling

RT

Rotary Tables

MM

Multi-Process
Machines

HM

Horizontal
Boring Mills

TC

5-Axis
Traveling Column

HL

Horizontal Lathes

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