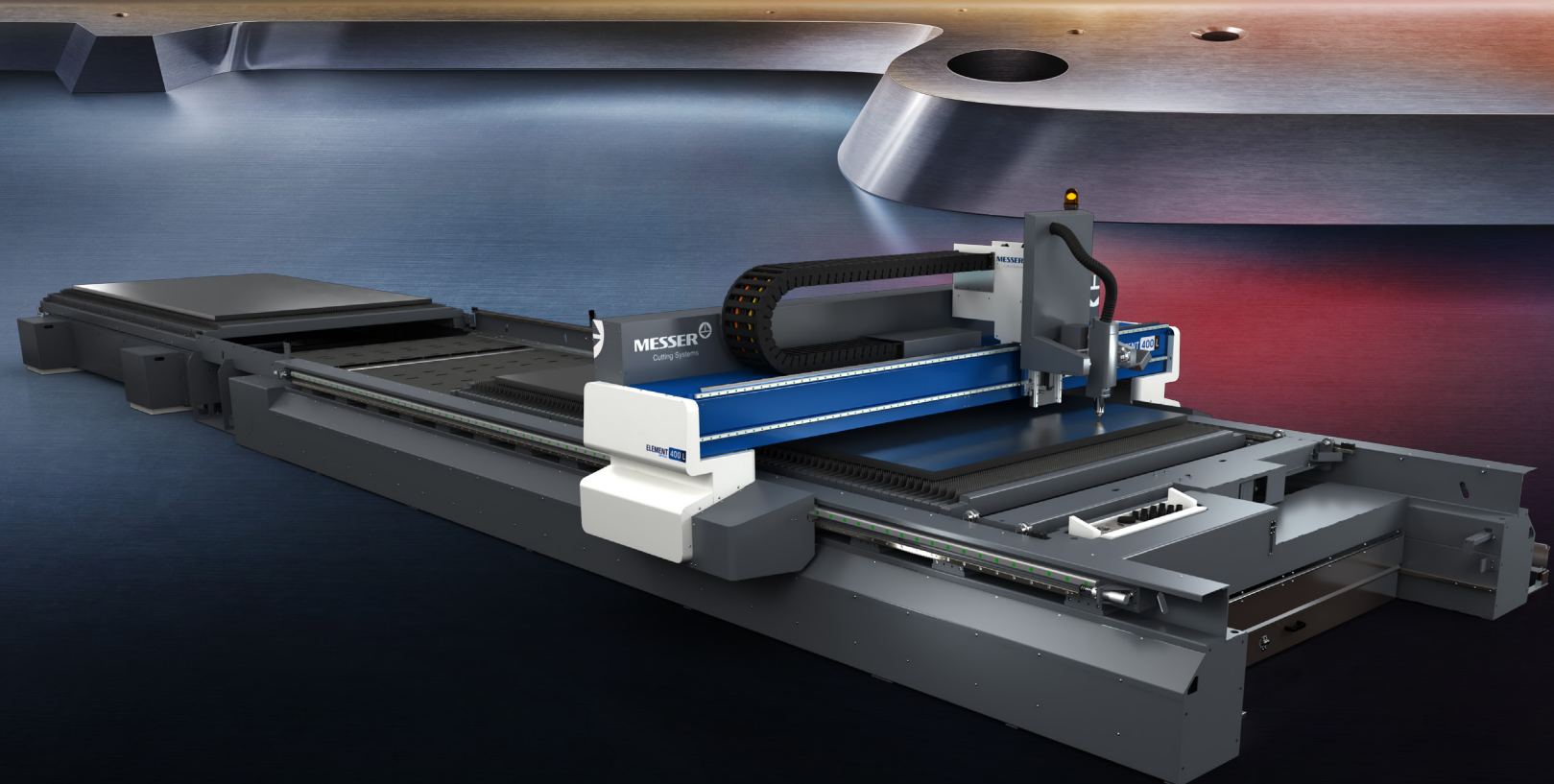


ELEMENT 400L UNITIZED PRODUCTIVITY REDEFINED

State-of-the-art laser beveling technology for
maximum productivity and quality.



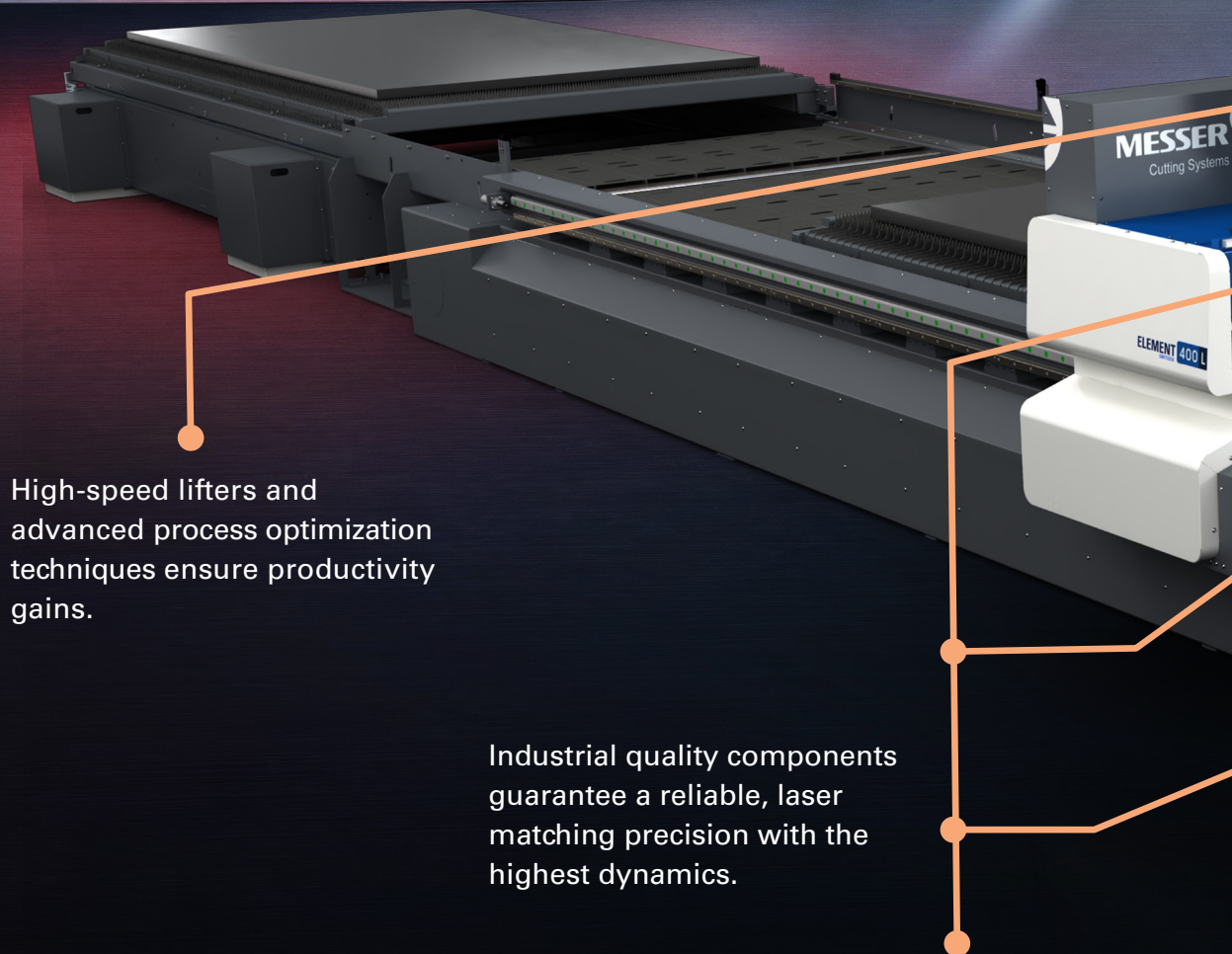
ELEMENT 400L UN

INNOVATIVE PLATE PROCESSING

For over 125 years, we have provided quality products and reliable services for the metal processing industry.

The ELEMENT 400L Unitized is a flexible machine platform that can be specifically adapted to your application.

ELEMENT 400 L laser bevel cutting machine scores with remarkably high dynamics, the latest laser technology and the ability to economically process XXL sheets. Various features can be combined with powerful software to ensure maximum productivity and performance. In this way, the ELEMENT 400L becomes a seamless total solution for metal processing in just a few steps.



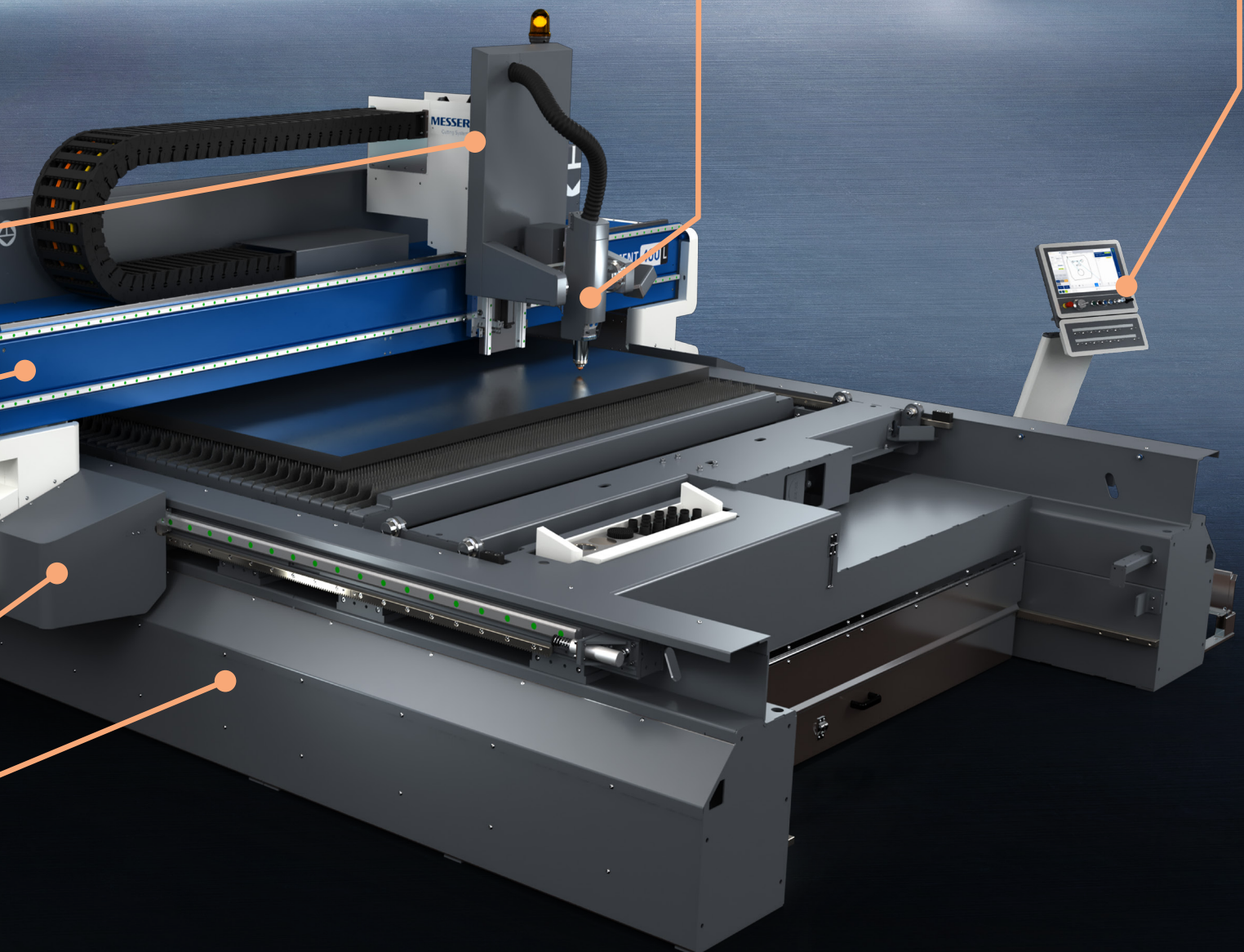
High-speed lifters and advanced process optimization techniques ensure productivity gains.

Industrial quality components guarantee a reliable, laser matching precision with the highest dynamics.

ITIZED

Independent servo driven tools provide versatile processing options. Reduce setup time by spacing or parking multiple tools automatically through the part program or at the control (optional).

Global Connect CNC control designed to improve operator efficiency, eliminate redundancy and to provide more clarity of operations of important production data.





ELEMENT 400L UNITIZED

**CARRIER OF
SOLUTIONS**



PROCESS OPTIONS

Laser

Leap in performance in laser beveling technology! Whether it is rapidly increasing laser powers, different fiber types or even new cutting gases: Today's laser machines must be able to follow current trends.

Innovation is needed as applications must become more effective and transparent. In addition, the increasing shortage of skilled workers is pushing for plants to become more self-sufficient. One machine operator alone has to be able to supervise several machines.

Automation of nozzle change material supply and removal and continuous data exchange or reconciliation across the entire production flow are the prerequisites that were at the forefront of the ELEMENT L's development.



PROCESS OPTIONS

Plasma

Several advancements in plasma technology over the last few years allow for precision cutting of mild steel, stainless steel, and aluminum. Most recent plasma power and torch development has been focused on improved hole cutting and longer consumable life, providing fewer secondary operations for lower operating costs.

The best plasma system to fit your application will include collision protection and will be mounted on one of our high-speed lifters. Along with other process optimizing features, we can provide higher productivity with all industry standard plasma systems.

LASER PRECISION CUTTING
OF MILD STEEL, O₂, AND N₂
AS WELL AS MIXED GAS
TECHNOLOGY, FOR
STAINLESS STEEL AND ALUMINUM
PLATE



+/- 50° Bevel cutting.

- + Increased dynamics.**
- + Tightest component tolerances.**
- + Reduced maintenance.**
- + Automation for loading and unloading.**

PRECISION CUTTING OF
FERROUS AND NON-FERROUS
MATERIAL UP TO 2 INCHES



**+ Maximum thickness up to 2"
(non-ferrous material) dependent on
process.**



LASER BEVEL CUTTING HEAD

Bevel-U

The Bevel-U bevel unit, specially developed for the laser process, can bevel up to $\pm 50^\circ$. With this unique design precise and repeatable bevel parts can be produced. The bevel angle is continuously adjusted during the laser cutting process. Edge shapes such as I, V, Y, X, and K are possible. Optimal for welding plate into precision shapes. The actual cutting angles depend on the material type, thickness, and bevel type such as AS or DS.

After nozzle changes consistent quality is ensured by an automatic test and calibration routine. The design also includes magnetic collision protection for the cutting head and a manual control panel for all drives to perform adjustments directly on the machine.

SPECIAL FEATURES

Automatic sheet positioning detection system

The sheets to be processed are never aligned parallel to the processing machine. This is where the sensor technology of the cutting nozzles helps to detect the sheet position before the actual cutting.

By contactless approaching the sheet edge at three points, the automatic system is able to determine the actual orientation of the sheet and rotate the CNC program accordingly. This considerably reduces the work involved in placing the sheets and also makes it possible to process several remaining sheets automatically.

BEVEL AND WELD PREPARATION



- + With bevel angle from -50 to $+50^\circ$.
- + Laser cutting up to 20kW.
- + YDS, YAS, K with land height from 1.5 mm for automated robot welding as well as V and X cuts.

PRECISE ALIGNMENT OF THE NC PROGRAM TO THE ACTUAL POSITION OF THE METAL SHEET



- + Manually from the control panel or automatically from the program.
- + High speeds positioning.
- + Makes the optimal use of plate while reducing scrap.



MARKING OPTIONS

Inkjet Marker

Parts often need non-permanent marking for secondary operations such as layout lines or simple part identification as they move through production. The inkjet marker produces markings that do not damage the plate and are not visible after painting.

Production does not slow down for marking as the marker creates text at speeds of up to 17 characters per second. Available with 7 or 16 nozzles.

Black ink only systems satisfy most requirements while optional hardware can be used with pigmented ink to create higher contrast results for some applications.



MARKING OPTIONS

PinStamp® Marker

For applications which require a more permanent mark, the Telesis PinStamp® marker uses a vibrating stylus to create easily legible characters or layout lines.

In just a few seconds, the robust and low-maintenance marker can create text as small as 10 mm.

The results are visible on a variety of materials, including primed, rusted, or mill scale plate. In some cases, the mark may still be visible after painting.

NON-PERMANENT MARKING OF TEXT AND LAYOUT LINES



- + Acetone is standard. MEK (Methyl Ethyl Ketone) available upon request.
- + Dries in 3–5 seconds.
- + Will not wipe off with water.
- + Standard text height at 9, 12, 18, 27 mm.
- + Optional 45 and 67 mm text.

TEXT AND LAYOUT LINES THAT ARE MORE PERMANENTLY VISIBLE



- + Clear, physical markings that cannot be easily removed.
- + Variable marking depth.



SPECIAL FEATURES

Motion System

Is the cut edge smooth enough? Are the holes round? Are the corners sharp? Is the part accuracy correct? The answers to these questions speak volumes about the quality of the machine. An experienced operator knows that optimized parameters and new consumables will not produce any usable parts if the machine motion is uneven and the tool does not stay in position.

The ELEMENT 400L Unitized is equipped with a helical rack and pinion drive and precise linear guides, which form the basis for smooth motion. Powerful AC servo motors ensure fast rapid acceleration of the cutting tool in and around holes and corners and thus for outstanding cutting quality.



SPECIAL FEATURES

Laser Nozzle Control LNC

The nozzle has a great influence on the cutting quality: With the next generation Laser Nozzle Control (LNC), Messer Cutting Systems offers the solution to operate a laser cutting machine with maximum processing quality, productivity, for any material, thickness, and process. With autonomous operation the operator does not even need to be present, the machine does the work for you.

The LNC offers the following functions: Before each job, it checks whether all necessary nozzles are present in the station. To ensure maximum process reliability, the nozzle quality is regularly checked, cleaned and replaced if necessary, e.g. in the event of a defect or if a different nozzle is required for a different sheet thickness.

In addition, the calibration of the nozzle height and centering of the nozzle jet ensure reliable cut quality and shortened setup times.

HIGHEST PART QUALITY IN
SHORTEST PROCESSING
TIME



- + Positioning speed up to 140 m/min.
- + High acceleration.

FAST AND RELIABLE
AUTOMATION OF LASER
MACHINES



- + Automation of set-up operations.
- + Prevents machine downtime.
- + Shortened set-up times before and during the cutting process.
- + Planning, reliability, and optimization.



SPECIAL FEATURES

Safety

Functional safety technology prevents damage to the machine and minimizes downtime. However, its main task is to ensure the protection of people.

With modern fiber laser technology, this requires full enclosure that prevents direct and unobstructed viewing of the laser. In addition, its access points for material and people are monitored for safety.

A robust shuttle table ensures fast material changes and minimizes downtimes.

SPECIAL FEATURES

Cutting table with smoke extraction

Smoke extraction tables ensure workpiece support and a very effective extraction of the pollutants produced by thermal cutting.

Sectional exhaust ventilation ensures the concentration of the entire ventilation process upon the cutting area and thus uses minimal fan power to achieve complete ventilation of cutting dust and smoke.

Single or multiple channel extraction available for optimized requirements based on the volume of air extracted while maintaining the full effectiveness of the fume extraction table.

The Slagger table comes standard, allowing for easy and automatic cleaning of the cutting area floor.

LEVEL OF PROTECTION FOR
THE MACHINE BUT MORE
IMPORTANTLY THE OPERATOR



- + Glare curtains and other overall machine safety features are available.
- + Internationally certified TwinSAFE on-board.
- + Key switch prevents machine movement during maintenance operations and when performing consumable exchange.

EFFECTIVE SMOKE REMOVAL
AND MINIMAL CUTTING
TABLE MAINTENANCE



- + Can be used with plasma and laser applications.
- + Widths from 6', 8', and 10'.
- + Lengths up to 50'.



OMNIWIN

Ideal for preparing work

OmniWin is a powerful, easy-to-use designing and nesting software that saves time, material, and costs. It is the ideal tool for preparing work in oxyfuel, plasma, and laser cutting with CNC machines, taking over all cutting tasks for order-based production.

The software is both effective and economical – for small production runs as well as for just-in-time manufacturing with changing quantities in custom cutting operations.



OMNIBEVEL

The tool for bevel cutting

OmniBevel software for dimensionally accurate parts and the leading product for bevel cutting. The post-processor module with a graphical, easy-to-use interface delivers superior cutting results.

Built for vertical cuts, cylindrical holes, exact bevel angles and with enormous flexibility. Almost all possible technology parameters and operation details are adjustable.



YOUR DIGITAL WORKFLOW

DIGITALIZED PRODUCTION

Our solutions ensure maximum transparency in operations management, production planning, and control.



OMNIFAB

Software suite for digital transformation

The OmniFab software digitalizes your processes from sales quotes, production planning, to monitoring to analysis throughout the value chain.

You gain real added value from the “enhanced” machine data in real-time through the integration of all systems. Control your material handling systems like loading/unloading stations, towers, material flow and more with OmniFab – all accessible from desktops to tablets.

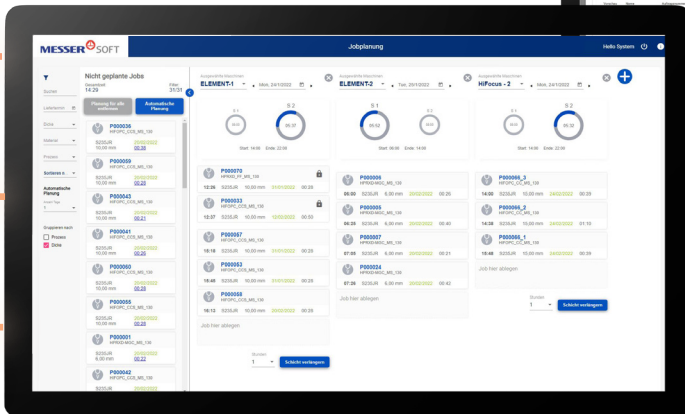
GLOBAL CONNECT



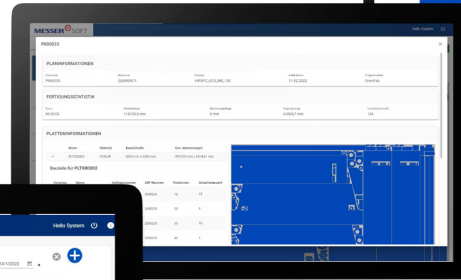
Everything at a glance

With OmniFab Job Management, you always have an overview of all jobs on the Global Connect. Process your orders on the right machines at the right time with optimal utilization, regardless of whether you plan manually or automatically.

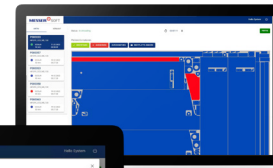
Via OmniFab PDC, feedback from the running operation comes in real-time from the machine operators. You can use this information to react quickly to unforeseen events so you can make the right decisions.



**OmniFab
Job Management**



**OmniFab
PDC Digital
Working Paper**



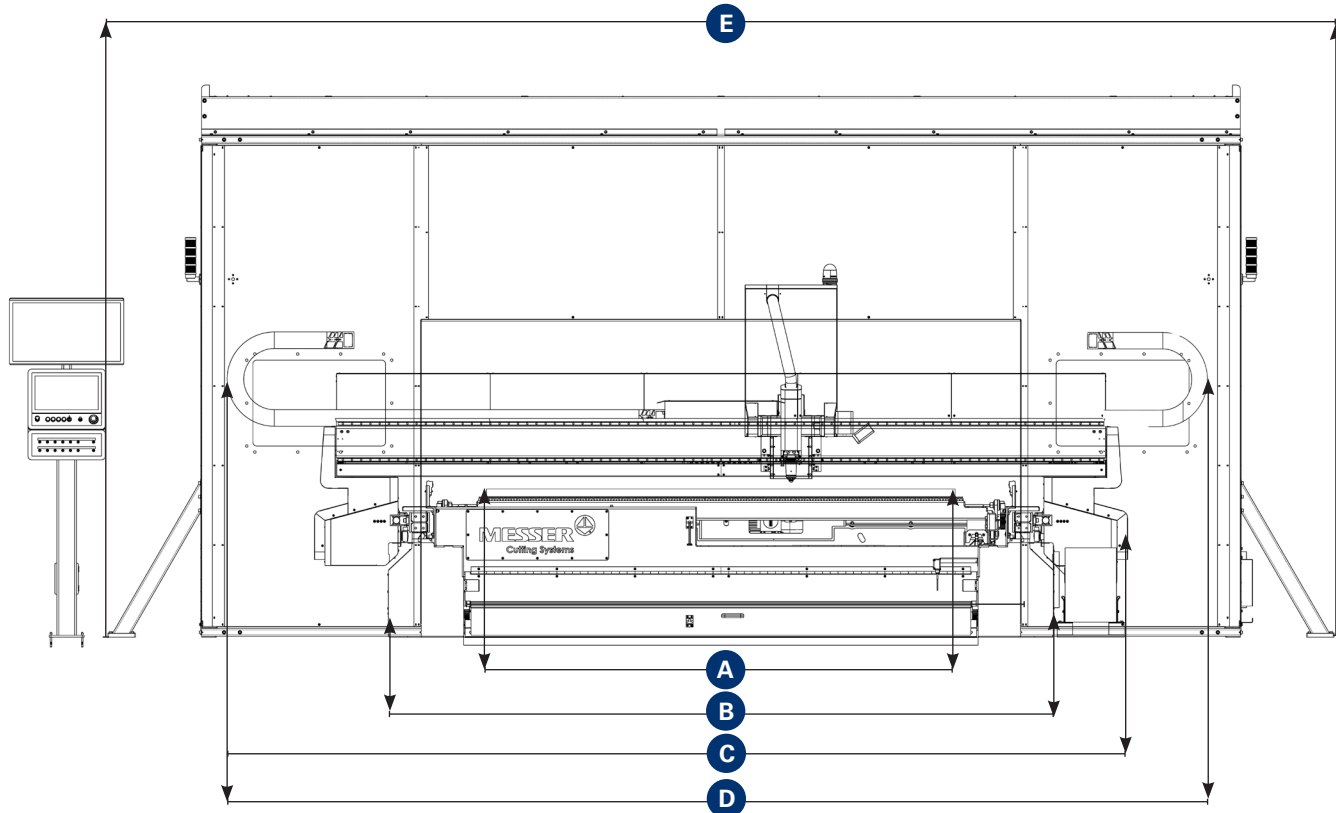
**OmniFab
PDC Parts Status**

**Novice operators become experts.
Programmers control the process remotely.
Maintenance employees prevent downtime.
Production managers know the job status
and reduce operating costs.**

All of this is possible if you see the CNC control as the connector between production plant, machine and its operator to allow local as well as remote production scheduling. Data transparency to others within the organization provides key information which is needed to make better business decisions.

- + Flexible job-centric environment for new operators to learn quickly and experienced operators to excel.
- + Job scheduling for improved production flow.
- + Quick processing of past or repetitive jobs.
- + Local nesting and standard shape library for just-in-time workflow.





		A	B	C	D	E		I	J
	Beam Width	Nom. Plate Width	Table Width	Single Process Machine Width	Multi Process Machine Width	Enclosure Width	Machine Clearance Width Without Enclosure	Loading Area Width	Loading Area Clearance Width
Shuttle Table Widths	12.47'	6'	10.25'	15.39'	17.84'	18.17'	21.23'	10.66'	16.50'
	14.37'	8'	12.21'	17.36'	19.80'	24.17'	23.19'	12.63'	18.47'
	16.40'	10'	14.19'	19.33'	21.77'	26.17'	25.16'	14.60'	20.43'

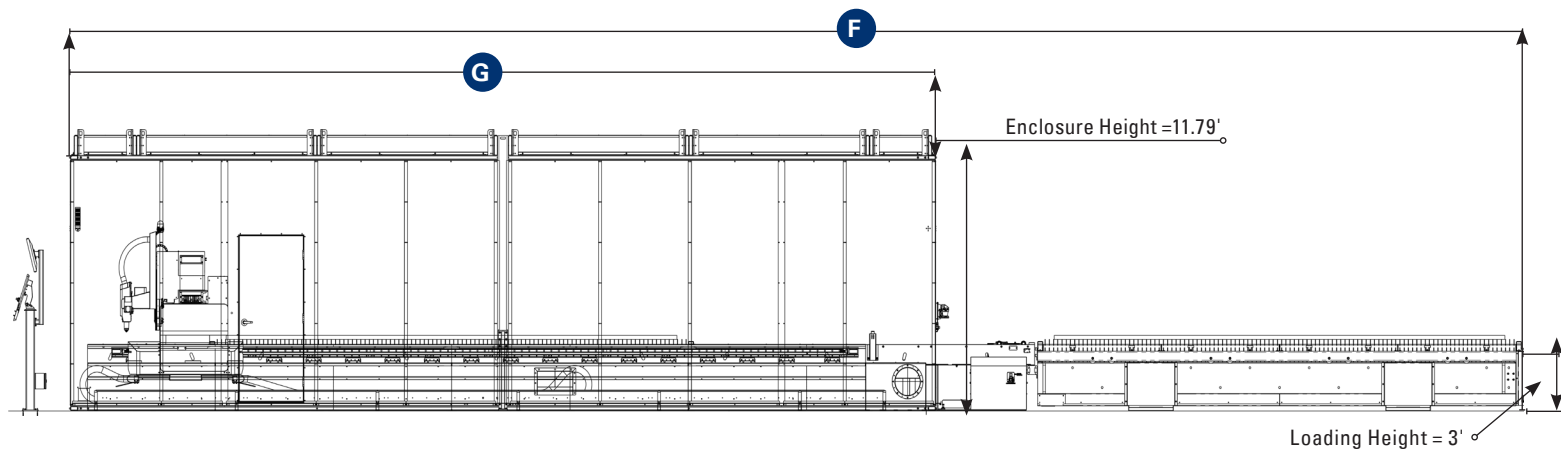
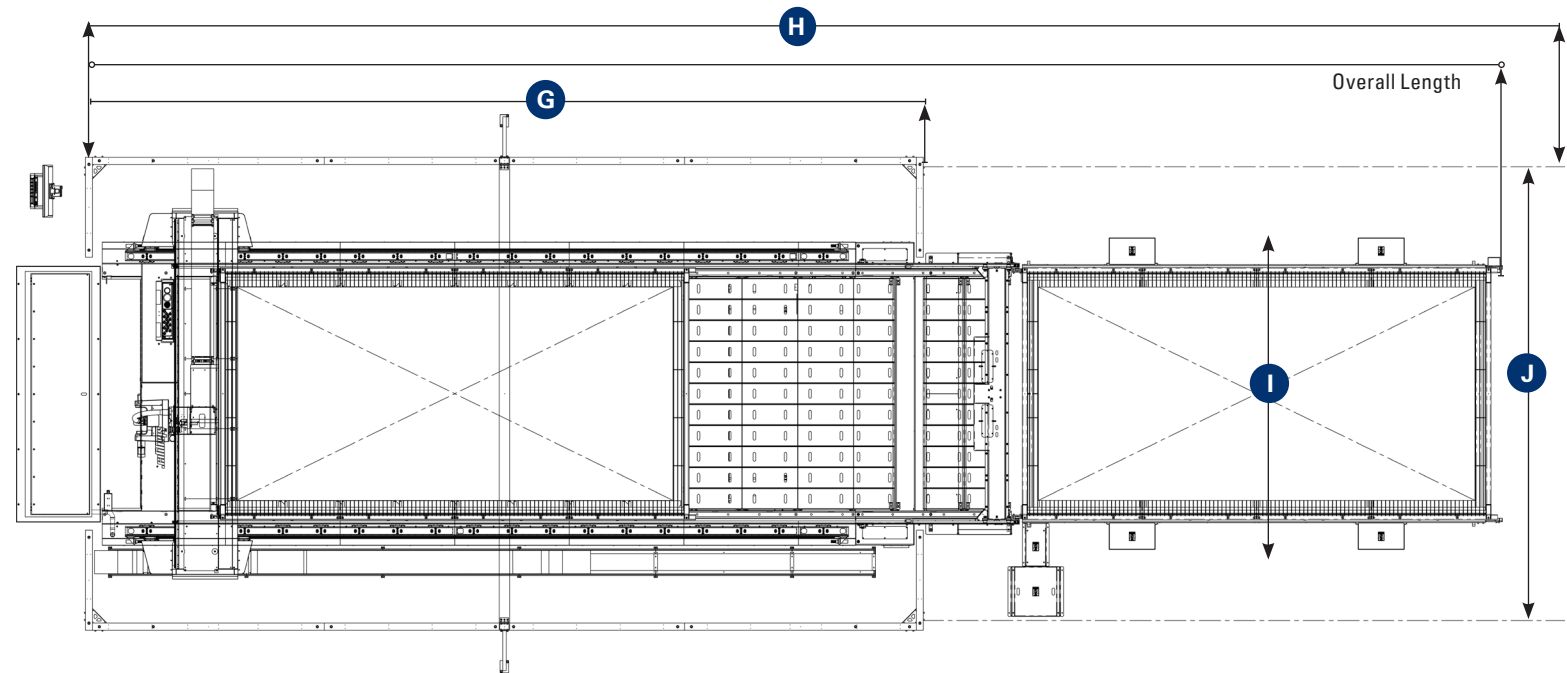
Standard features

- + Working width 6', 8', and 10'.
- + Working length up to 50'.
- + Sheet thickness up to 2" (50mm) possible.
- + Mild steel, stainless steel, and aluminum.
- + Positioning speeds up to 140 m/min (combination X/Y axis).
- + Reinforced welded steel construction.
- + Up to two processes are supported. Three process machines are possible depending on machine configuration
- + Global Connect, Windows®-based with easy-to-use user operator interface.
- + Stand-alone operator console, tiltable and swiveling for ease of access.
- + Virtual Service™ remote consultation and diagnostics.
- + High positioning accuracy via linear guidance in X- and Y-axis.
- + Advanced laser technology ensures uniform piercing and faster cutting.
- + UL/CUL.

Optional features

- + Plasma bevel cutting units: Bevel-R and Bevel-S.
- + Laser bevel cutting unit +/- 50°: Bevel-U .
- + Laser cutting up to 20kW.
- + Advanced laser technology with optional automatic gas mixing unit.
- + Automatic torch spacing with programmable torch selection.
- + Marking systems: Plasma, Inkjet, and Telesis PinStamp.
- + Digital video camera.
- + Automatic plate alignment.
- + Laser pointer.
- + Programming and nesting software.
- + Automatic nozzle cleaning, nozzle changing, and testing unit LNC.
- + Enclosure for any laser is required.
- + The Slagger®.
- + Dust collectors.
- + Material handling systems.
- + Visual Service support.

Shuttle Table Drawings and Measurements



Shuttle Table Lengths	Nom. Plate Length	F Overall Machine Length	G Enclosure Length	H Overall Clearance Length
	10'	46.25'	29.29'	49.25'
	15'	57.28'	34.81'	60.28'
	20'	68.29'	40.31'	71.29'
	25'	79.32'	45.83'	82.32'
	30'	90.34'	51.33'	93.34'
	40'	112.38'	62.35'	115.38'
	50'	134.42'	73.38'	137.42'



CREATING SOLUTIONS BEYOND MACHINES

What we stand for

PRODUCT

Messer Cutting Systems is a global supplier of cutting-edge technology for the metalworking industry.

AUTOMATION

DIGITAL

SERVICES

KNOW-HOW

Our portfolio is built on the pillars of PRODUCT, DIGITAL, SERVICES, AUTOMATION and KNOW-HOW. With over 900 employees worldwide in over 50 countries, we maintain a constant dialogue with our customers. Through these partnerships, we achieve customer-oriented innovation and focus on “creating solutions beyond machines”.

We deliver not just modern cutting systems and solutions for plasma, laser, and oxyfuel technology, but appropriate services, training, our own software applications, and the integration of solutions from our technology partners in the field of automation. A network encompassing the machine, providing total solutions.

Our know-how combined with our customer-oriented attitude and actions have made us the worldwide partner of choice, delivering innovative solutions to the plate processing industry for over 125 years.

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