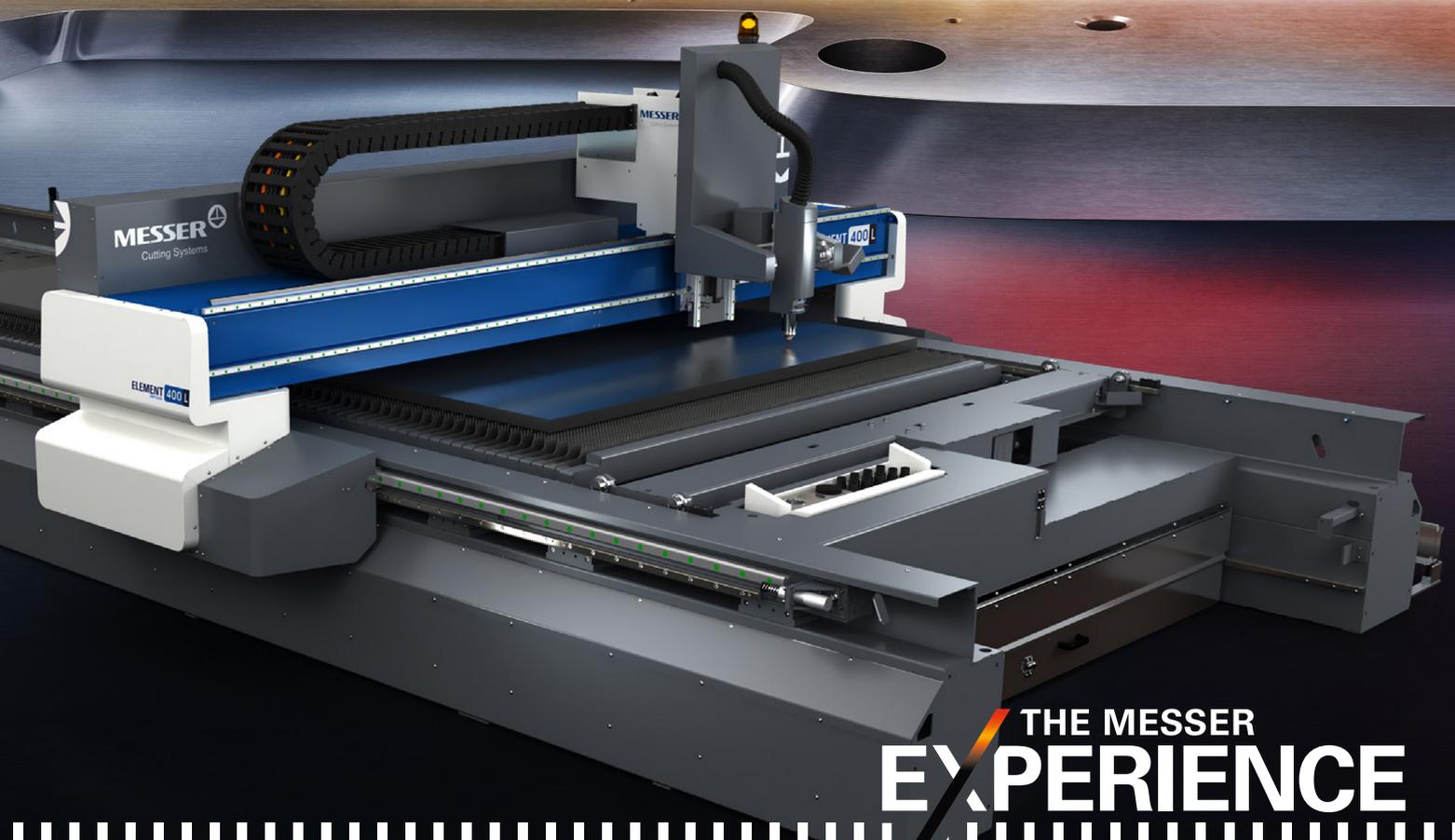


ELEMENT 400 UNITIZED PRODUCTIVITY REDEFINED

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



THE MESSER
EXPERIENCE

ELEMENT

INNOVATING PLATE PROCESSING

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.

Precitact precision laser cutting heads designed to provide the highest level cut quality.

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

Industrial quality components guarantee reliable precision with the highest level of dynamics.

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

The ELEMENT is a flexible machine platform that can be specifically adapted to your application, scoring with remarkably high dynamics, the latest laser technology and the ability to economically process large sheets. Various features can be combined with powerful software to ensure maximum productivity and performance. The ELEMENT 400 UNITIZED was developed to be a complete solution for metal processing.



ELEMENT 400

CUTTING-EDGE SOLUTIONS



PROCESS OPTIONS

Laser

Take a leap in laser technology and performance!

Whether it is rapidly increasing laser powers or even new cutting gases, today's laser machines must be able to solve the latest industry challenges.

Innovation is needed as processes must become more effective and transparent. In addition, the lack of skilled workers is pushing plants down a path to become more self-sufficient. One machine operator has to be able to supervise several machines simultaneously.

Automation of nozzle changes, material supply, remnant removal, and continuous data exchange across the entire production flow are the industry challenges that drove the design and development of the Element 400 L Unitized.



Plasma

Several advancements in plasma technology over the last few years allow for precision cutting of mild steel, stainless steel, and aluminum.

The most recent developments have been focused on improving hold cutting and increasing consumable life, reducing secondary operations and lowering operating costs.

Our industry leading process optimization features combined with one of our high-speed lifters can provide higher productivity with all the standard plasma systems.

LASER PRECISION CUTTING OF MILD STEEL O2 AND N2, STAINLESS STEEL AND ALUMINUM



- + 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 4 in. (non-ferrous material)



LASER BEVEL CUTTING HEAD

Bevel-U

Specifically developed for the laser process, the Bevel-U enables beveling in the workpiece between -50° and 50°.

The bevel angle is continuously adjusted during the laser cutting process, allowing for edge profiles such as I, V, Y, X, and K for the subsequent welding process of the workpiece.

The actual cutting angles depend on the material type, thickness, and bevel type such as AS or DS. With this unique design, precise and repeatable bevel parts can be produced.

Consistent quality after nozzle changes is ensured by an optional automatic test and calibration routine.

SPECIAL FEATURES

Automatic sheet position detection system (APA)

Sheets in the processing stage are rarely aligned parallel to the processing machine. With our APA system, sensors in the cutting nozzle help to detect the sheet position prior to cutting.

By contactlessly approaching the sheet edge at three points, the automatic system is able to determine the orientation of the sheet and rotate the CNC program accordingly.

This reduces or eliminates the manual work involved in orienting the sheets, and makes it possible to process several remaining sheets automatically.



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.

In addition, production does not slow down for markings as the marker creates text at speeds of up to 17 characters per second.

Black-ink-only systems satisfy most requirements while optional hardware can be used with pigmented ink to create higher contrast results needed for some applications while protecting your marking from heat and UV light.



MARKING OPTIONS

Pin Marker

For applications which require a more permanent mark, the Pin Marker uses a vibrating stylus to create highly visible characters or layout lines.

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

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.

BEVEL AND WELD PREPARATION



- + With bevel angle from -50 to +50°
- + YDS, YAS, K with land height from 1.5 mm for automated robot welding as well as V and X cuts
- + Variable bevels for developments

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



- + Manually from the control panel or automatically from the program
- + Very fast
- + Helps to make optimal use of plates

NON-PERMANENT MARKING OF TEXT AND LAYOUT LINES



- + Dye-based ink Acetone
- + 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 speaks volumes about the quality of the machine.

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 400 is equipped with a helical rack and pinion drive and precise linear guides, forming the basis for smooth motion.

Powerful AC servo motors ensure rapid acceleration of the cutting tool in and around holes and corners, all contributing to an outstanding cut quality.



SPECIAL FEATURES

Laser Nozzle Control (LNC)

The LNC has a direct impact on the cut quality.

With the next generation LNC, Messer Cutting Systems offers solutions to operate a laser cutting machine with maximum processing quality and productivity for any material, thickness, and process, achieving autonomous operation that eliminates the need for an operator to be present.

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



SPECIAL FEATURES

Safety

Functional safety technology prevents damage to the machine and minimizes downtime while most importantly, ensuring the protection of employees.

Modern fiber laser technology requires a light-tight enclosure under all circumstances. In addition, all access points used for material and people are constantly monitored for safety.

A robust shuttle table ensures fast material changes, minimizing downtime and optimizing the benefits of your laser system. Incidentally, shuttle tables offer the best prerequisite for the next step in the automation evolution for both material supply and removal.

SPECIAL FEATURES

Cutting table with fume extraction

Fume extraction tables ensure workpiece support and the effective extraction of fumes produced through the thermal cutting process.

Sectional exhaust ventilation ensures the concentration of the entire ventilation process upon the cutting area, minimizing the required fan power to achieve complete ventilation of cutting dust and smoke.

Your machine is designed with either single or multiple channel extraction, optimizing the requirements based on the volume of air extracted and maintaining the full effectiveness of the fume extraction table.

The SlaggerTable system provides automatic discharge of slag and small parts, relieving the operational workload considerably.

HIGHEST PART QUALITY IN
SHORTEST PROCESSING
TIME



- + Positioning speed up to 5500 in/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

MAXIMUM LEVEL OF
PROTECTION FOR THE
OPERATOR AND MACHINE



- + Light curtains and other overall machine safety features are available
- + Internationally certified real-time safety PLC
- + Key switch prevents machine movement during maintenance operations and when performing consumable exchange. (Option)

EFFECTIVE SMOKE REMOVAL
AND MINIMAL CUTTING
TABLE MAINTENANCE



- + Can be used with plasma and laser applications
- + Small parts may also be easily retrieved
- + Table widths from 6' to 10'
- + Table lengths up to 54'

PRODUCTION DIGITIZATION

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



OMNIWIN

Ideal for work preparation

OmniWin is a powerful, easy to use designing and nesting software that saves time, material and costs. It is the ideal tool for work preparation 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 of choice for bevel cutting

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

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



OMNIFAB

Software suite for digital transformation

The OmniFab Suite digitizes your processes from sales quotes, production planning, control and monitoring to business process analysis in the entire 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 transport devices and more with OmniFab – even on mobile devices.

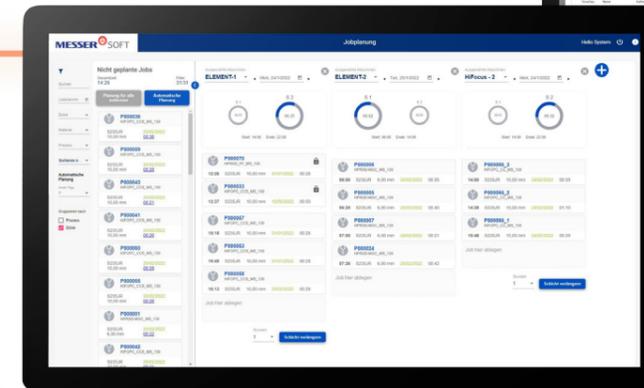
GLOBAL CONNECT



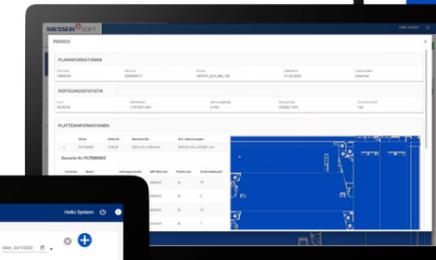
Everything at a glance

With OmniFab Job Management, you always have an overview of all jobs – even on the Global Connect. Process your orders on the right machines at the right time and 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 and make the right decisions.



OmniFab Job Management



OmniFab PDC Digital Working Paper

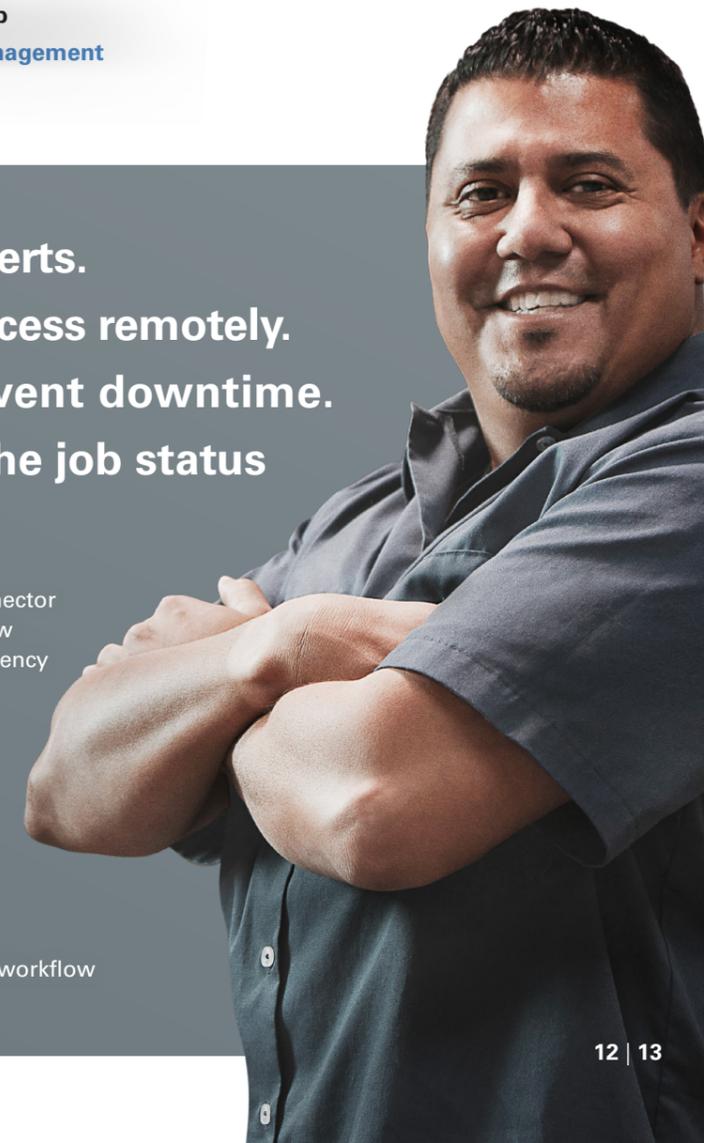


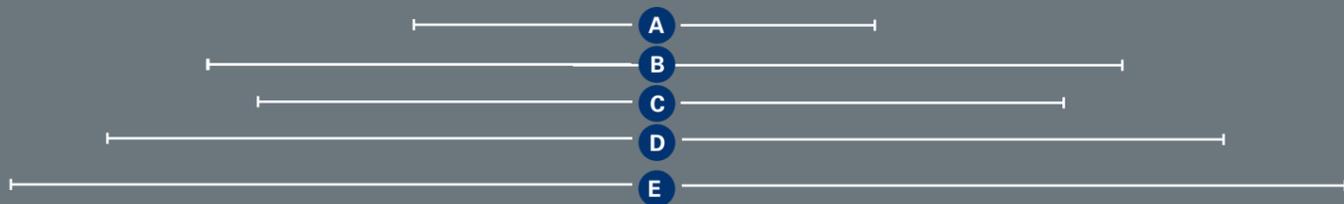
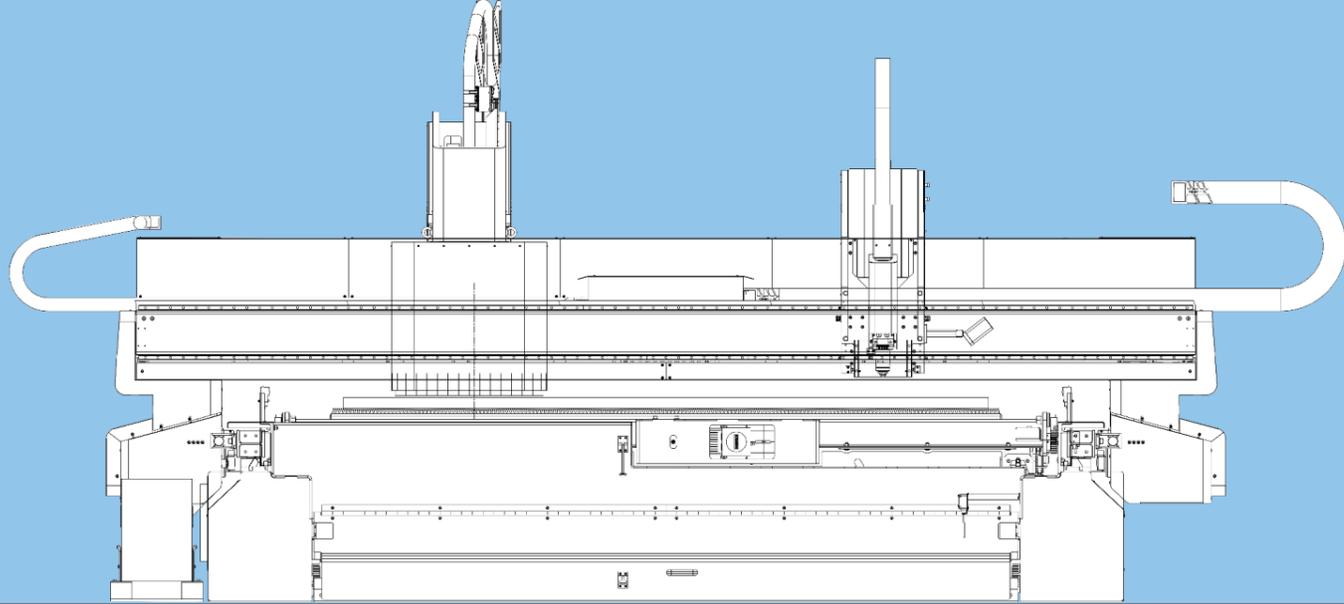
OmniFab PDC Parts Status

**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





Beam	A Maximum Plate Width	B Maximum Table Width	C Maximum Rail Gauge	D Machine Width	Machine Clearance
3,800	72" (6')	123"	118"	201"	237"
4,400	96" (8')	146"	142"	225"	261"
5,000	120" (10')	170"	165"	249"	285"

Standard features

- + Working width 6' to 10'
- + Working length up to 54'
- + Sheet thickness up to 2" possible
- + Mild steel, stainless steel, aluminum
- + Positioning speeds up to 5500 in./min (combination X/Y axis)
- + Reinforced welded steel construction
- + Closed energy chains in both axes as standard
- + Up to six torch stations (maximum two laser stations)
- + Global Connect, Windows®-based with easy-to-use user interface
- + Stand-alone operator console, tilt-able and swiveling for high convenience
- + 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
- + Meets all safety requirements

Optional features

- + Plasma bevel cutting units: Bevel-R and Bevel-S
- + Laser bevel cutting unit: Bevel-U
- + Advanced laser technology with optional automatic gas mixing unit
- + Automatic torch spacing with programmable torch selection
- + Marking systems: Plasma, inkjet and needle marker
- + 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 requirement
- + Cutting tables with extraction zones
- + Filter systems for various applications
- + Material handling systems
- + Visual service support





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

Our portfolio is built on the pillars of PRODUCT, AUTOMATION, DIGITAL, SERVICE, AND KNOW-HOW. With over 800 employees world-wide 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".

DIGITAL

SERVICES

KNOW-HOW

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 world-wide partner of choice, delivering innovative solutions to the metalworking industry for over 120 years.

Messer Cutting Systems GmbH

W141N9427 Fountain Blvd,
Menomonee Falls, WI 53051

Tel. 1-262-255-5520

Fax 1-262-255-5170

Mail info@messer-cutting.com

messer-cutting.com

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EXPERIENCE