

EMAG LASERTEC ELC 1200 V LASER PROCESSING MACHINE



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The vertical laser processing machine ELC 1200 V is designed for workpieces up to 1200 mm in length and impresses with its fast processing, a small footprint and extreme ease of operation.

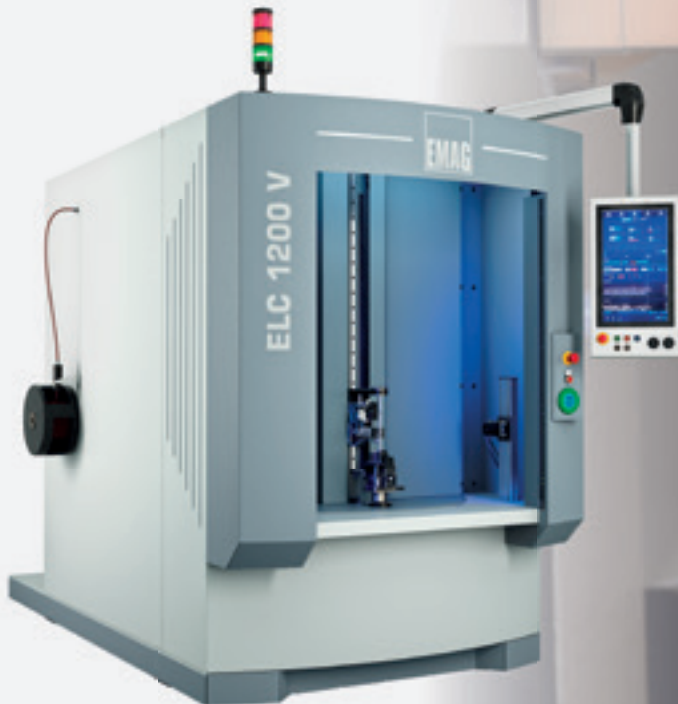
The ELC 1200 V offers maximum flexibility in production. The 3-axis laser lens is NC-controlled and can be configured to meet a wide variety of individual requirements.

In combination with the NC-controlled C-axis of the clamping device, the welding lens can also produce interpolated welds. This means that, for example, a quick conversion for laser welding of families of parts can be implemented without any problems. The clamping system is, of course, just as flexible as the laser lens.

The key highlight, however, is the graphical user interface with which the machine can be controlled and programmed.

TECHNOLOGIES COVERED

- + Laser welding
- + Laser cleaning
- + Laser hardening
- + Laser marking / Texturing



BENEFITS

- + The vertical machine requires only 4.3 square meters of floor space.
- + The new EDNA HMI makes it easier to operate and program the ELC 1200 V.
- + The loading and unloading by rotary indexing table takes place parallel to the machining time. The machine practically never stands still.
- + The laser lens has an X-axis and a Z-axis, as well as an additional B-axis for rotating the laser lens.
- + The ELC 1200 V vertical laser processing machine is designed for workpieces with a length of 50 to 1,200 millimeters.
- + The machine can be operated both manually and fully automatically.



HIGHLIGHTS:

- + Designed for simple workpieces/processes
- + Vertical workpiece clamping
- + Workpiece lengths between 50 mm and 1,200 mm
- + One or more welds
- + Flexible due to NC-controlled axes
- + Cycle times start at approx. 6 seconds
- + Loading and unloading during machining
- + Simplified user interface EMAG DNA panel

**FLOOR SPACE
NEEDED ONLY
4.3 m²!**

Laser safety function
integrated on the rotary table

Light curtain

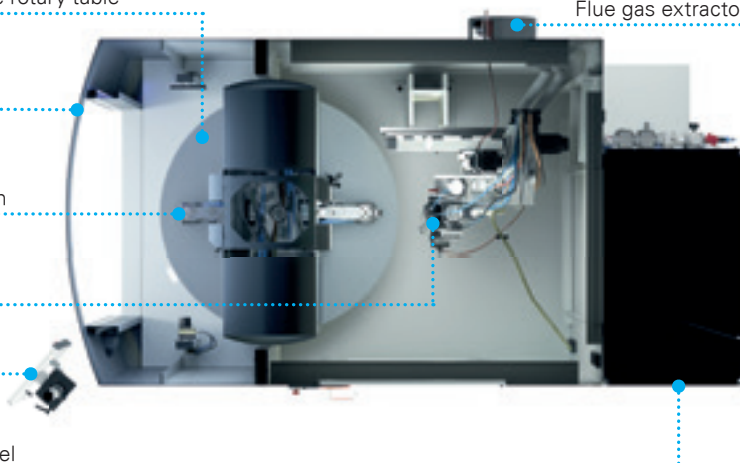
Loading platform

Working area

Control cabinet

EMAG DNA panel

Flue gas extractor



PROCESSES

- + Loading individual parts
- + Rotational movement in the laser welding area
- + e.g., laser welding
- + Rotary movement back to the loading/unloading position
- + Unloading

EXAMPLE OF LASER WELDING WITHIN THE ELC

Loading/Unloading

The machine's loading and unloading systems can be easily customized to the customer's requirements, whether it is linked by a belt or used as a stand-alone solution.



Rotary table

Components can be loaded and unloaded while another component is going through the machining process.



Lateral maintenance door

EDNA PANEL: THE PROCESS IS ALWAYS UNDER CONTROL

Another decisive quality of the new machine platform from EMAG LaserTec involves operating and monitoring the machines. Using the EDNA HMI panel with a highly intuitive multi-touch surface, operation of the machine is simplified "by design," making it similar to using a smartphone.

The panel alternately displays, for example, the user interface of a Siemens CNC screen, user administration, production drawings, operator instructions, and much more – made possible by a changeable and individually adaptable interface. New workpieces are set up using the "Teach in" function. In addition, there are optional extensive IoT functions, which are also displayed on the panel.

The technical basis here is "EMAG EDNA". This is what EMAG calls its modular software ecosystem made of interconnected software and machine components. The machine contains the EDNA IoT core – an industrial PC that is connected to the machine controller together with its software.

The system is then "IoT-ready" and processes various production data, which help those responsible get an overview of their entire production system, evaluate the performance of the machines and identify anomalies in order to avoid interruptions, for example.

NC-controlled axes

The ELC 1200 V has an X-axis and a Z-axis for moving the laser lens and a B-axis for its rotation. There is also a C-axis for rotating the workpiece, which can be up to 1,200 millimeters long with the ELC 1200 V. In combination with the NC controller, this approach opens up far-reaching possibilities for a conceivably large family of parts because the lens can be moved very freely. An interpolation of the axis movements (including the C-axis with the component) is also possible.

EMAG EDNA HMI

Control unit

TECHNICAL DATA

ELC 1200 V

Installation area of the basic machine	2,900 mm × 1,500 mm
Machine height	2,400 mm
Machine weight	2 t
Max. component length	1,200 mm
Max. component diameter	300 mm
Max. component weight	10 kg
NC Z-/X-axis	600/290 mm stroke
NC B-axis (optional)	75° (welding angle 15° – 90°)
NC Q-axis (table)	60 rpm (180° reversing)
NC C-axis (clamping device)	100 rpm ∞
Component clamping	Manually or via NC axis
Component clamping	Pneumatically
Attendance check	Laser light barrier + Clamping path control
Component inspection	Transmitted light system
CNC controller	Sinumerik 840D sl
User interface	EMAG EDNA



EMAG EDNA PANEL



EMAG LASER SYSTEMS APPLICATION LABORATORY

In our application laboratory, we offer you

- + Feasibility studies
- + Trial machining
- + Laser process development and component optimization
- + Prototype and small batch series production

We can provide effective laser welding systems, laser coating machines, laser hardening machines, laser cleaning machines, a well equipped metallography laboratory, ultrasound and micro-hardness inspection equipment, a measurement room and, above all, experienced staff.

The use of our machines and standard clamping and processing equipment in the prototype phase means that you receive reliable information, for example, about quality, possible tolerances and process times.

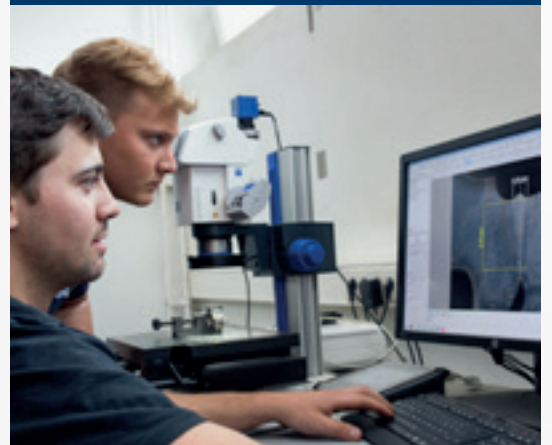


THE BENEFITS

1. Component and process development
2. Prototyping
3. Small batch series production

LABORATORY EQUIPMENT

- + Laser welding (CO₂, disk and fiber lasers)
- + Laser hardening
- + Laser coating
- + Laser cleaning
- + Ultrasonic crack inspection
- + Cross-section inspection through polished sections
- + Video microscope
- + Micro hardness tester
- + Surface test
- + Thermal camera
- + Measurement room

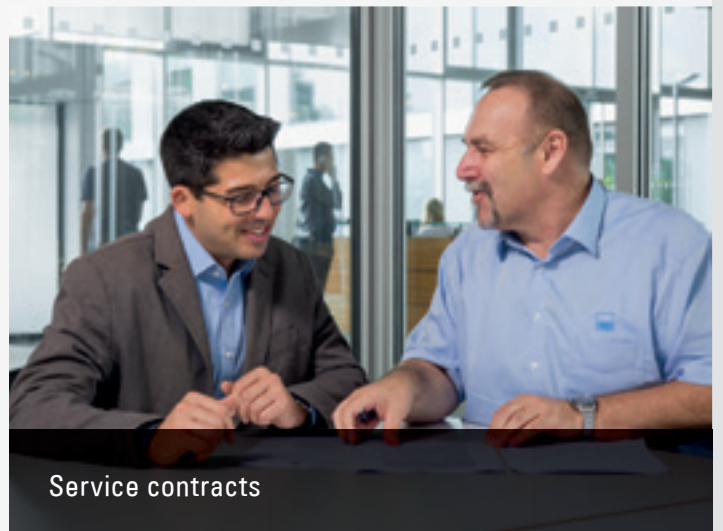


GLOBAL EMAG SERVICE

EMAG ServicePlus offers you a variety of individually modifiable services, customized to suit your specific requirements – from training through preventive maintenance and retrofits to permanently available genuine service parts.

In order to provide the best options for our customers, we use state-of-the-art technology and continuously optimize our ServicePlus organization. For instance, we meticulously analyze all of our service calls, record important information provided and highlight their solution, then make these notes available to clients worldwide and continuously improve the relevant software components. We are committed to finding solutions for even the most complicated problems. We guarantee that we will find the right solution for you, thanks to our highly trained service technicians and our commitment to offering the highest standard of service.

We plan, develop, operate, monitor, test, install, inspect, service and repair. We reduce idle times, boost productivity, prevent wear and ensure that your investment has a long service life. We detect and correct technical deviations at an early stage and notify you promptly when replacement parts are due.



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