

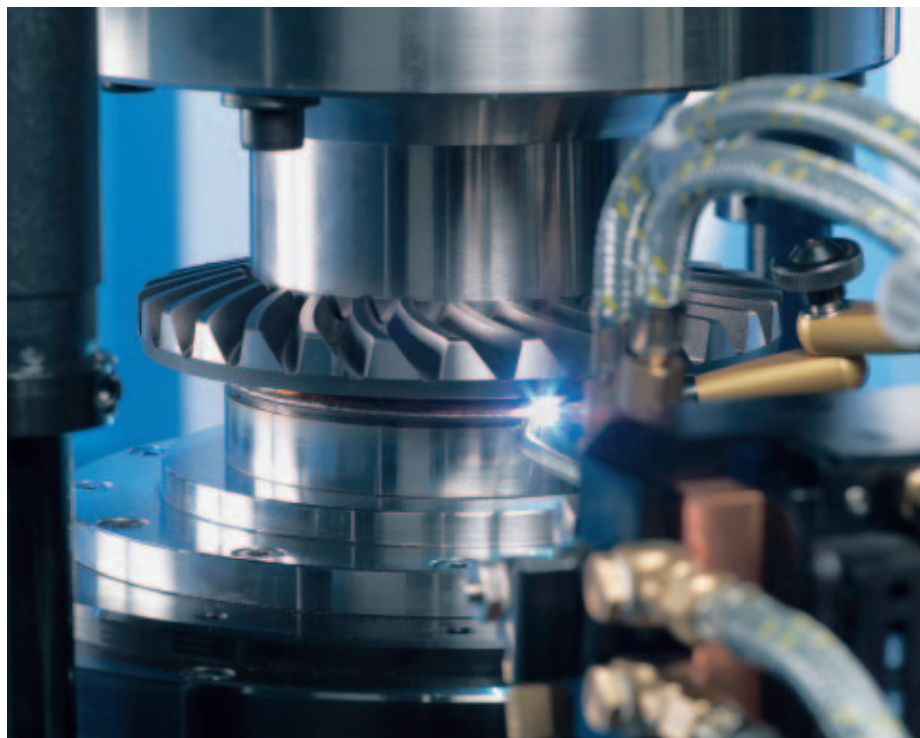


LASER WELDING SYSTEM
ELC 250 DUO

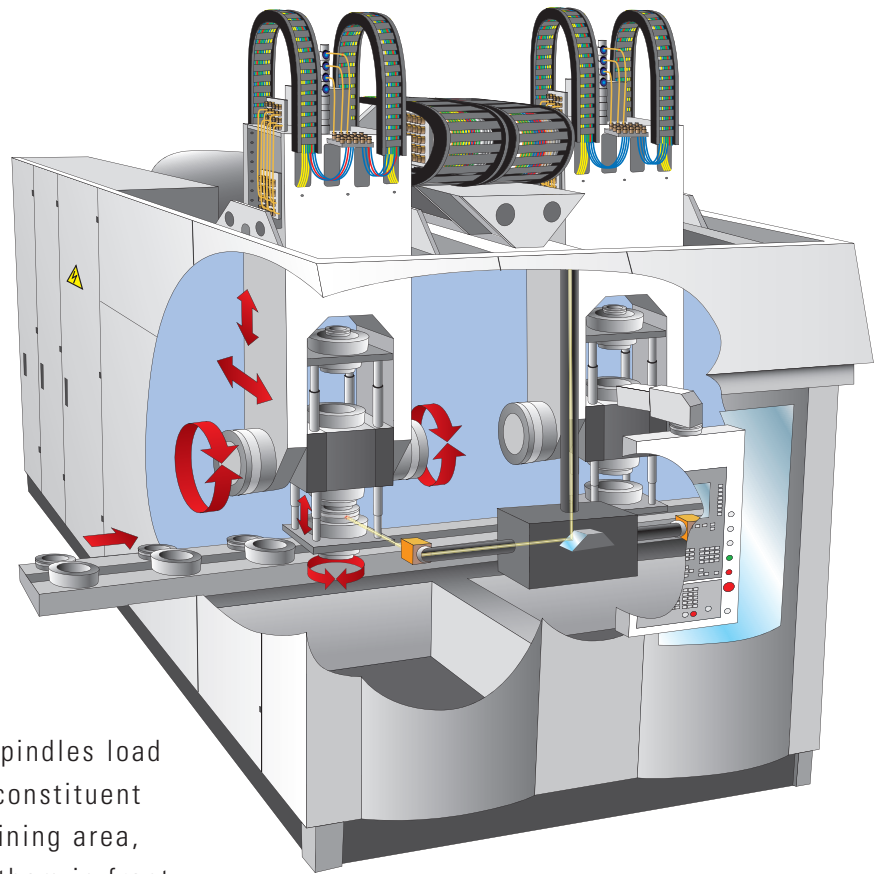


HIGH-EFFICIENCY LASER WELDING SYSTEM

The ELC 250 DUO is a highly efficient laser welding system for transmission components and other rotation-symmetric workpieces. This includes – besides transmission components in hardened steels – more complex components, such as differential casings in SG iron, which are to be mated with finish-machined gears.



WITH TWO SWIVELLING PICK-UP SPINDLES



Two swivelling pick-up spindles load themselves, convey the constituent components to the machining area, press-fit them, position them in front of the optics, where they are welded, and return the complete assembly to the conveyor belt.

DUO spells productivity: The laser beam source serves both spindles, with the beam switching between them. The cycle time-concurrent workpiece changeover ensures that utilisation of the laser is almost 100%. The cycle time is determined by the welding time. Unproductive idle times are reduced to a minimum. As a result, the ELC 250 DUO sets the standard in productivity.

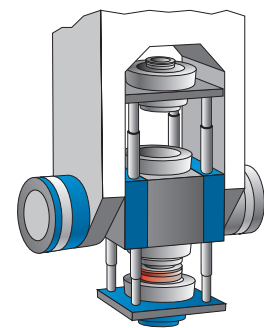
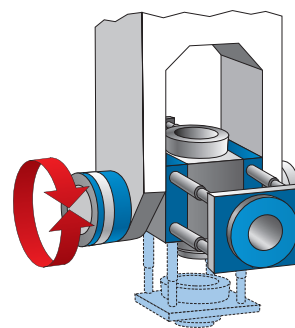
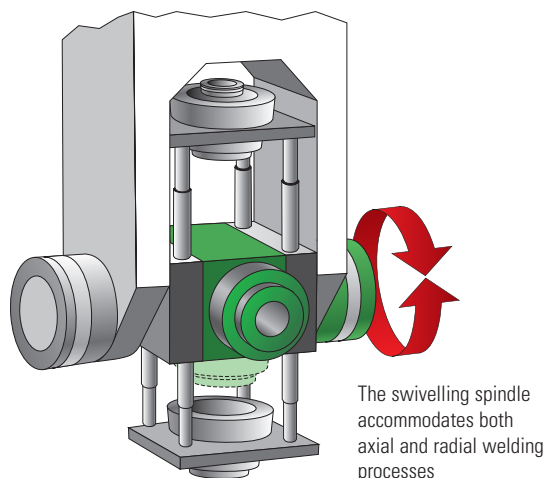
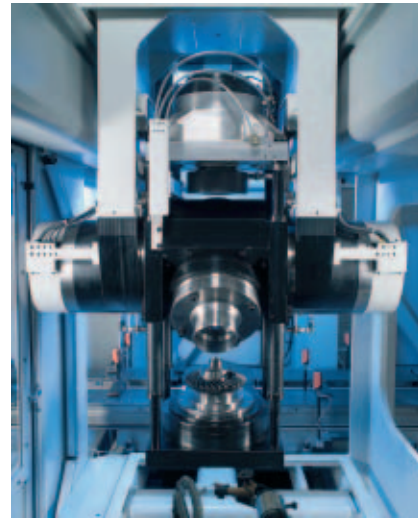
DUO also spells flexibility: The two spindles can either be used to have the same operations carried out on two identical sets of components, or each of them can hold a set of entirely different workpieces.

STATIONARY BEAM FOCUS CONTROL

The ELC 250 DUO can be equipped with CO₂ lasers with a power rating of max. 8 kW. These lasers represent today's level of technological know-how in the field of laser welding and set new standards in beam quality, welding results and simplicity of design. They are also maintenance friendly and – last but by no means least – keep operating and service costs low.

Beam focus control and welding optics are stationary. This ensures maximum thermal and optical stability of the beam focus and optimal accessibility of all components.

Here too, the ELC 250 DUO sets new standards in the ease of servicing and in operational reliability.



TECHNICAL DATA

WORKPIECE DIMENSIONS

Max. O/D.	300 mm
Max length	600 mm

FEED DRIVES

X- / Z-axis travel	2000 / 700 mm
B ₁ -axis travel	+105° – 0 – 15°
B ₂ -axis travel	+105° – 0 – 15°
C-axis travel	N x 360°
X-axis speed	90 m/min
Z-axis speed	60 m/min
B ₁ - / B ₂ -axis speed	4 rev/sec
C-axis speed	4 rev/sec

ASSEMBLY STATION

Max. press force	98 kN
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BEAM FOCUS CONTROL

Aperture	50 mm (3" deflecting reflector)
Reflector	OFHC-Cu, indirectly water-cooled
Focusing mirror	parabolic mirror, Mo-lined, indirectly water-cooled
Focal length of mirror	alternatively f = 200 / 250 / 300 mm
Crossjet system	integrated

LASER

Power output (rating)	2,0 / 2,5 / 3,0 / 3,5 / 4,0 / 4,5 / 5,0 / 6,0 / 8,0 kW
Power range	10 .. 100% of rated power

HEAT EXCHANGER

	integrated into ELC, water-to-water connection
Effective power	to match laser requirements, max. 80 kW for DC050
Temperature of water (supplied by customer)	15° C max.
Refrigerant	R407c (free of CFCs)

DRIVE AND CONTROL TECHNOLOGY

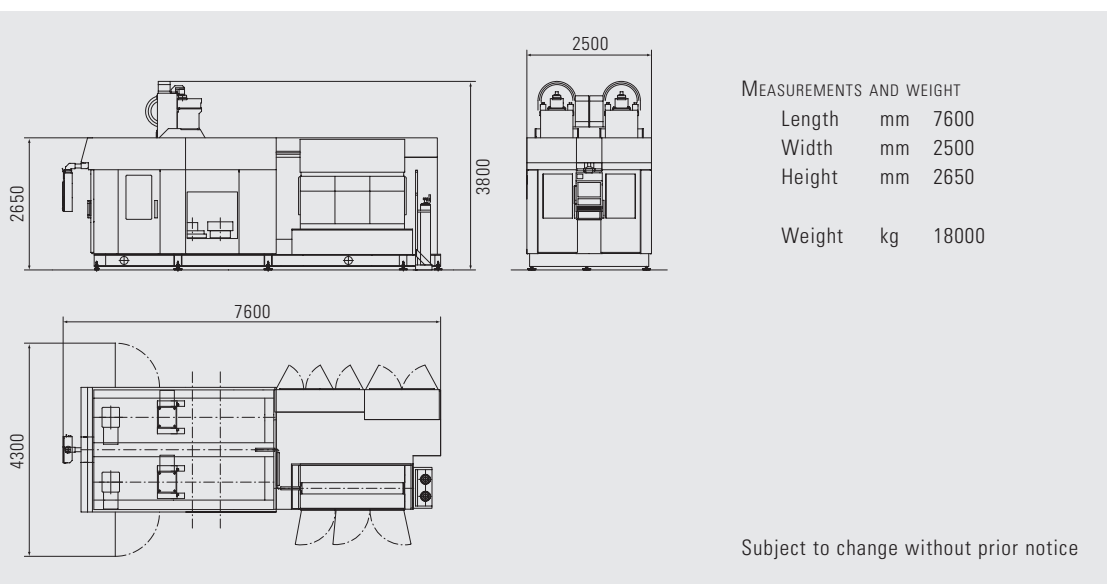
	SIEMENS SINUMERIK 840D
Drives	SIMODRIVE 611 D
Operating system (HMI)	OP012 / PCU50 / MSTT machine control panel

POWER SUPPLY

3*400V 50 Hz, PE

COMPRESSED AIR SUPPLY

	System pressure 6bar / 0.6 Mpa
Scavenging air processor	integrated



WORLD-WIDE PARTNER IN FORWARD
LOOKING PRODUCTION TECHNIQUES



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