Laser Welding Systems

LASER ISSE

www.laserisse.com

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LASER ISSE TURKEY

LASER ISSE GERMANY

LASER ISSE USA

Innovative Simplified Solutions for Efficiency

Laser ISSE was founded in 2003 as the pioneer laser job shop company in Turkey with laser engraving and welding systems, to service and support the rapidly expanding use of laser technology in a wide range of industries.

Whereby, with European suppliers, we became a spare parts vendor for equipment such as laser lamps, rods, filters, mirrors, protective windows, lenses, flow tubes, fiber optic cables and goggles to the laser machines from different brands in many countries: Turkey, the Middle East, Europe and Asia.

Since 2008, we have been producing and providing engraving, cutting and welding systems like 2D engraving and cutting, coil fed cutting, robotic applications and turnkey solutions with different types of laser such as Fiber Lasers, Diode Pumped Solid State, Nd:YAG, UV, Disc and CO2. Thanks to our international young and dynamic team; we had delivered and run more than 1400 systems and exported to 46 different countries from USA to China in 10 years.

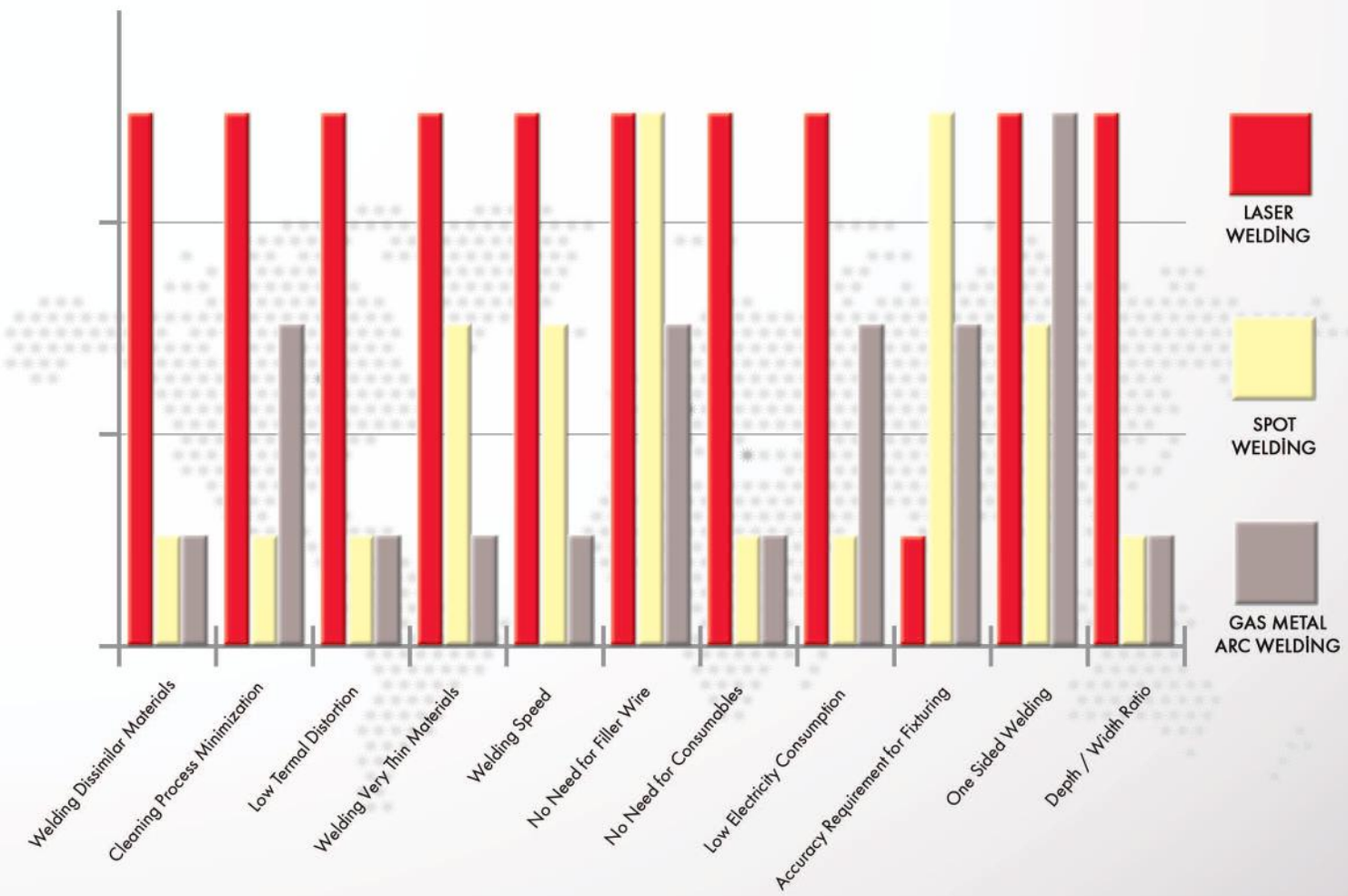
Our aim is to become more engaged in the field of laser technology on the global scale so we exhibit at many trade shows worldwide, we also have the presence in 16 countries, in addition to offices in USA and Germany.

Taking the satisfaction of customers as our utmost priority, we always try to offer more than they may expect. With our innovative and creative approach we always fulfill the demands of our customers.

LASER ISSE

Advantages of Laser Welding

- Welding different metals to each other
- Minimization of conventional cleaning processes after welding
- Les distortion to the thermal effects to metal than other welding techniques
- Easier integration of control and automation
- Faster application and higher resistance
- Allowing the use of thinner materials
- Reduction in production costs with faster production capabilities
- Direct welding of the material without using any feed wire
- No consumables, or calibration, are needed with Fiber or Disk Laser Systems
- Cost reduction through automatization efficiencies as unskilled operators can be used



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Laser Welding Cell & Safety Room

With the integration of laser beam obtained either from Lamp Pumped Nd:YAG or CW (Fiber - Disk) laser systems with robots it is capable of 6 axis movement via fiber optic cable. Laser welding applications are needed in many different sectors and can be carried out conveniently. Laser ISSE engineers, with specialized training on these systems, enter the necessary parameters to control the robots, again, according to customer requirements (training is provided). Using the teach mode of the robots, the orbit of the laser head is programmed. In this manner, quality welding is on every surface and at the same size.

General Properties

- Thanks to the software, the laser control is from the robot's control display
- Gas opening and closing is conducted automatically in line with the start and ending process
- The points are selected conveniently from the CCD Camera
- With the security measures included, the robot will not do any harm to the surrounding area
- Custom made automation and fixture solutions

KUKA
OFFICIAL SYSTEM
PARTNER

Laser Safety Room

- Class 1 Enclosure
  (Complete safe working environment)
- Rotary indexing table
- Compact design
- Kuka 6 axis robot
- Active laser safety windows
- Sliding doors & mag-lock
- Safety PLC & interlocks
- Localized internal camera

Laser Welding Cell

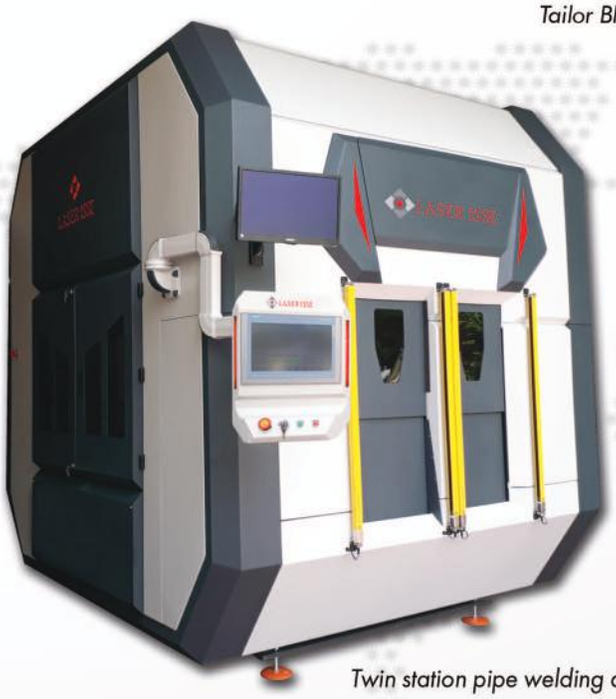
LASER ISSE

Custom-Made Laser Welding Solutions

By selection of the appropriate power, Fiber or Nd: YAG lasers will be ideal to meet customer process requirements as it offers automated, high precision solutions. With Turn-key systems, it will enable manual or automatic loading, resulting in best performance and minimum failure.

Consisting of well-known brand names such as Siemens, KUKA, THK and SMC, the quality of the components used are sure to provide problem free, 'user friendly' systems which do not require experts or qualified employees to operate.

Tailor Blank Laser Welding Automation



Twin station pipe welding automation

Diamon Saw Blade Welding System

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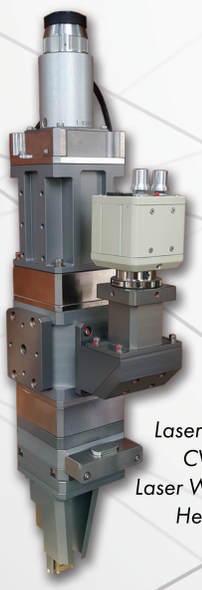
CW Fiber Laser Source

These are produced using Fiber Laser technology. These Fiber systems operate for many years without any need for consumables. Fiber Lasers are used in welding applications effectively by virtue technology.

With the higher power range 1 kW - 6 kW and CW (continuous wave) laser beam, it allows for a faster process time compared to Pulsed Nd:YAG Lamp Pumped Systems.

SPI Lasers

	redPOWER 1000	redPOWER 1500	redPOWER 3000	redPOWER 4500	redPOWER 6000
Beam Source	Fiber Laser				
Wavelength	1080 nm				
Laser Power	1000 W	1500 W	3000 W	4500 W	6000 W
Min. Rise / Fall Time	10 µs	10 µs	5 µs	5 µs	5 µs
Max. Modulation Frequency	50 kHz	50 kHz	≤ 50 kHz	≤ 50 kHz	≤ 50 kHz
Beam Diameter	50 - 100 - 300 µm				
Power Stability at Nominal Power	±1 %	±1 %	±2 %	±2 %	±2 %
Cooling Water Temperature Range	5 °C – 25 °C	5 °C – 25 °C	5 °C – 25 °C	5 °C – 25 °C	5 °C – 25 °C



Laser ISSE CW Laser Welding Head

CW Disk Laser Source

With the Disk Laser technology, this allows for higher power range 2 kW - 6 kW, with fast and non-problematic application opportunities when thick materials, and materials with highly reflective surfaces, are needed to be processed.

	TRUDISK 2000	TRUDISK 3000	TRUDISK 4000	TRUDISK 5000	TRUDISK 6000
Beam Source	Disk laser; diode - pumped solid - state laser				
Wavelength	1030 nm				
Laser Power	2000 W	3000 W	4000 W	5000 W	6000 W
Beam Quality	50 / 200 µm	100 / 200 / 600 µm	100 / 200 / 600 µm	200 / 600 µm	150 / 200 / 600 µm
Power Stability at Nominal Power	±1 %				
Cooling Water Temperature Range	5 °C – 25 °C				
Dimensions (L / W / H)	730 x 1375 x 1220 mm	1600 x 1550 x 950 mm			

Nd:YAG Lamp Pumped Laser Welding Source

Nd:YAG Lamp pumped pulsed laser welding systems produced by Laser ISSE are effective in spot welding and eam welding applications due to the high peak powers that can be achieved. With the delivery of a laser beam via a fiber optic cable; it allows operating on the positioned X-Y axis using cartesian coordinates, or via a robot.

Power or time sharing can be achieved by taking the four different output from the same resonator. When a camera and monitor are integrated into the system, you are then able to easily see the focus and position of the welding site. You can also determine the point to be welded with the help of the red pilot laser.

	150 W	300 W	600 W
Beam Source	Nd: YAG Lamp Pumped		
Wavelength	1064 nm		
Maximum Pulse Energy	80 J	100 J	100 J
Maximum Peak Power	7 kW	9,9 kW	9,9 kW
Maximum Average Power	150 W	300 W	600 W
Pulse Width	100 ms/s	200 ms/s	
Pulse Frequency	1 - 100 Hz	1 - 300 Hz	
Voltage	160 - 500 W	200 - 500 W	
Focal Length	80 mm / 100 mm / 120 mm / 150 mm / 300 mm		
Display Systems	CCD Camera		
Parameter Settings Memory	32 Settings Pages		
Energy Measurement System	Integrated		
Controller	Multi-controller-system, self-diagnostic-system, plain text for maintenance and status messages		
Interface	RS232		
Shielding Gas Supply	Flexible and Co-Axial Nozzle		
Cooling System	Integrated, Water / Air Heat - Exchanger		
Cooling Option	Integrated Water Cooling + Separated Chiller System		
Electrical Supply	AC 380 V ±%10 3p+N+PE 50 / 60 Hz		
Power Consumption	6 kW	12 kW	18 kW
Dimensions (L / W / H)	650 x 1160 x 1000 mm	650 x 1330 x 1000 mm	

Handheld Torch Laser Welding Systems

The Handheld Torch allows manual application of the laser beam obtained from Lamp Pumped Nd: YAG 150 W, 300 W and 600 W systems via a fiber cable to an optical head without any automation. This is operable continuously without any problem due to special cooling and gas control. It allows faster, higher resistance and cleaner application compared to other welding methods.

General Properties

- Laser operates only when the operator uses the glasses, and the graphite touches the working material
- Graphite tips are designable specifically for the weldingpiece and easy to apply
- Provides economic solutions as fixturing is not required
- With its ergonomic design, it facilitates welding application in sections difficult to reach
- Time assist gas control allows for a cleaner surface to be obtained
- A red pilot laser allows for faultless and fast positioning
- Parameter selection from control panel

4 Axis CNC

With integration of laser beam obtained either from Lamp Pumped Nd: YAG or CW (Fiber - Disk) laser systems, and combined with CNC integration, it is capable of controlling 4 axis translation stages and using a fiber optic delivery cable. Thanks to the teach-mode capability of the software, laser welding is applied fast and easily with the CCD camera and without any drawing files.

General Properties

- X, Y, Z, C servo motor controlled 4 axis translation
- X, Y axis travel range from 100 mm x 100 mm up to 1000 mm x 1000 mm
- Locating the focus height with the help of CCD camera
- CNC control unit and software
- Pneumatic outlet for automation
- Automatic assist gas control
- Nozzle outlet for gas at the welding point

LASER ISSE

Lamp Pumped & Fiber Laser Deposit Welding Systems

Welders used for fillet welds and mould repairs particularly have the best selection of wire fed systems. We provide all support and can respond to any questions which may arise. All this can be addressed thanks to our Laser ISSE authorized engineers with their specialized training on these systems.

VISION

Sales, Service and Application Partner

	150 W Lamp Pumped	200 W Lamp Pumped	300 W Fiber	450 W Fiber
Beam Source	Nd: YAG		FSS	
Wavelength	1064		1070	
Max. Pulse Energy	70 Joule		30 Joule	45 Joule
Max. Peak Power	17 kW		3 kW	4,5 kW
Max. Average Power	150 W	200 W	300W	450W
Pulse Width	1-20 ms		0,1-50 ms/cw	
Pulse Frequency	1-30 ms		1-100 Hz	
Pulsefill	10- 100%		-	
Pwm Mode	1-100%		1-100%	
Energy Adjustment Mode	Voltage or PWM Mode		Current	
Voltage / Power %	160 - 500 V	200 - 500 V	13 - 100 %	
Focal Length	190 mm		190 mm	
Beam Diameter	200 µm - 2mm Adjustable		100 µm - 2mm Adjustable	
Microscope	Leica binocular, oculars magnification 20x			
Illumination of Workplace	Dual LED , switchable			
Parameter Settings Memory	50 settings, individual named			
Energy Measurement System	Integrated			
Controller	Multi-controller-system, self-diagnostic-system, plain text for maintenance and status messages			
Interface	RS232, CAN-Bus			
Shielding Gas Supply	Flexible Nozzle, adjustable gas delay			
Cooling System	Integrated, water / air heat - exchanger	Integrated, water / air heat-exchanger, external cooling required	Integrated, temperature controlled fan	
Cooling Option	Integrated, water / air heat-exchanger Integrated bypass control	External cooling required	-	
Electrical Supply	3 phases, 400 V / 50 Hz		1 phases, 90-250 V, 50/60 Hz	
Power Consumption	3 kW	4,5 kW	1,5 kW	2,5 kW
Dimensions	1487 mm x 995 mm x 790 mm			

Sectors

Aviation Industry
Defence Industry
Tube Industry
Storage Tank Industry
Ventilation Industry
Kitchenware
Cookwares
Cutlery
Promotion & Gift
Solar Industry
Medical Industry
Mold Repairing
Cabinet Industry
Machine Industry
Automotive Industry
Electronics Industry
Hardware Industry
Lift Industry

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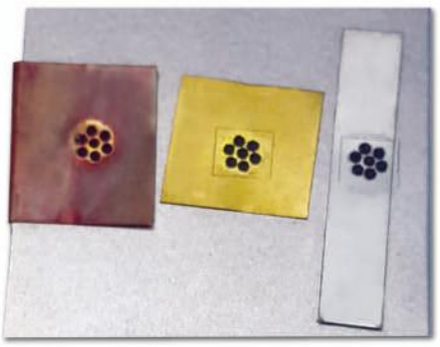
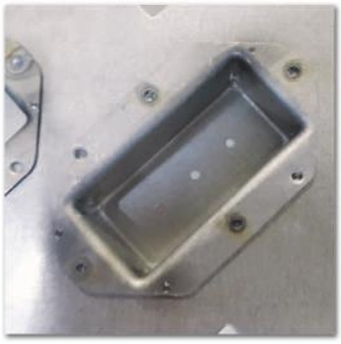
Laser Welding Applications

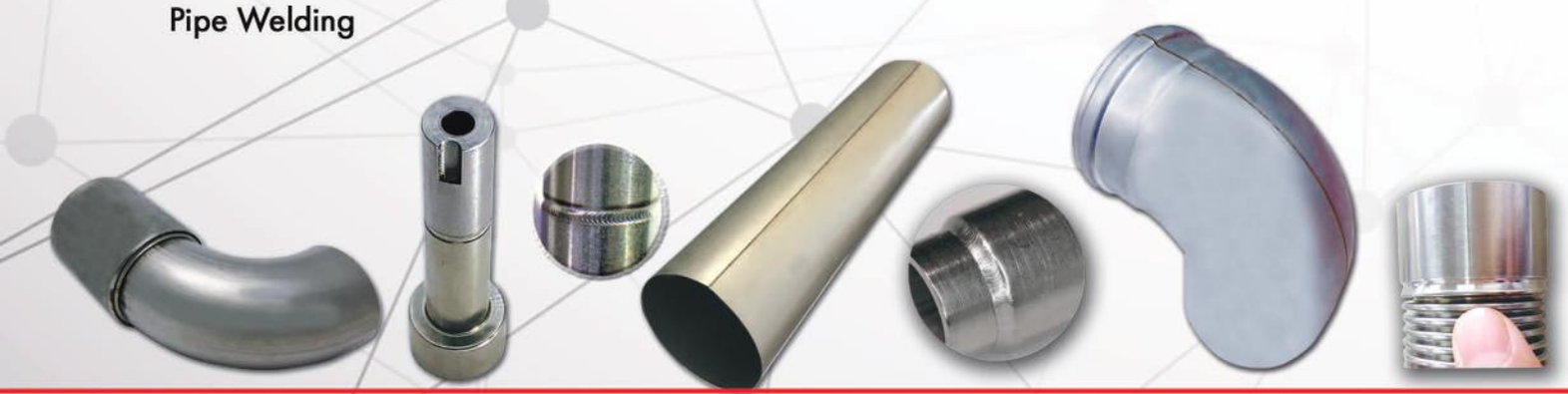
Spot Welding





Seam Welding

Pipe Welding



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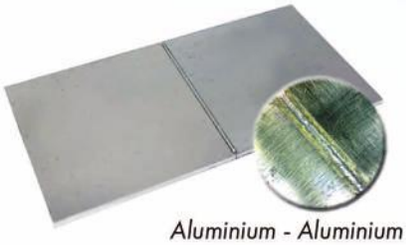
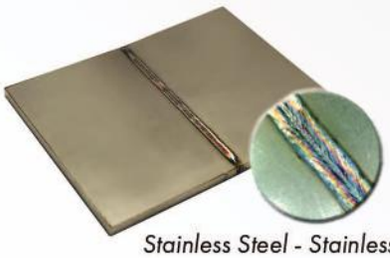
Various Welding Applications

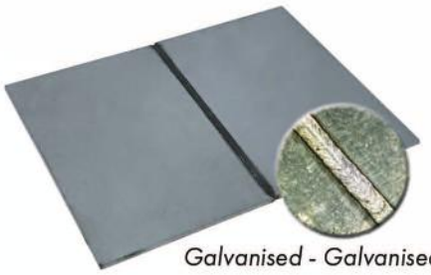


Aluminium - Aluminium

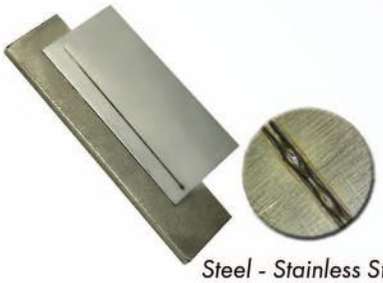


Stainless Steel - Stainless Steel

Steel - Steel



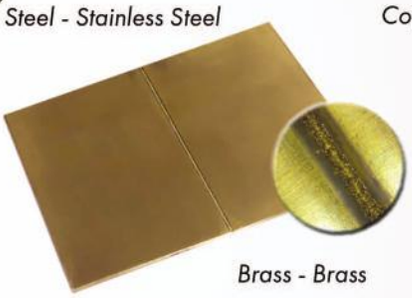
Galvanised - Galvanised



Steel - Stainless Steel

Copper - Copper

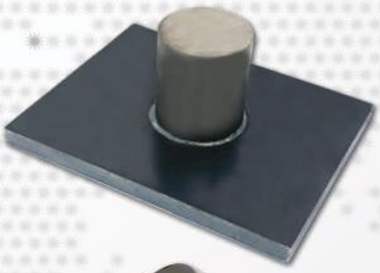
Brass - Galvanised



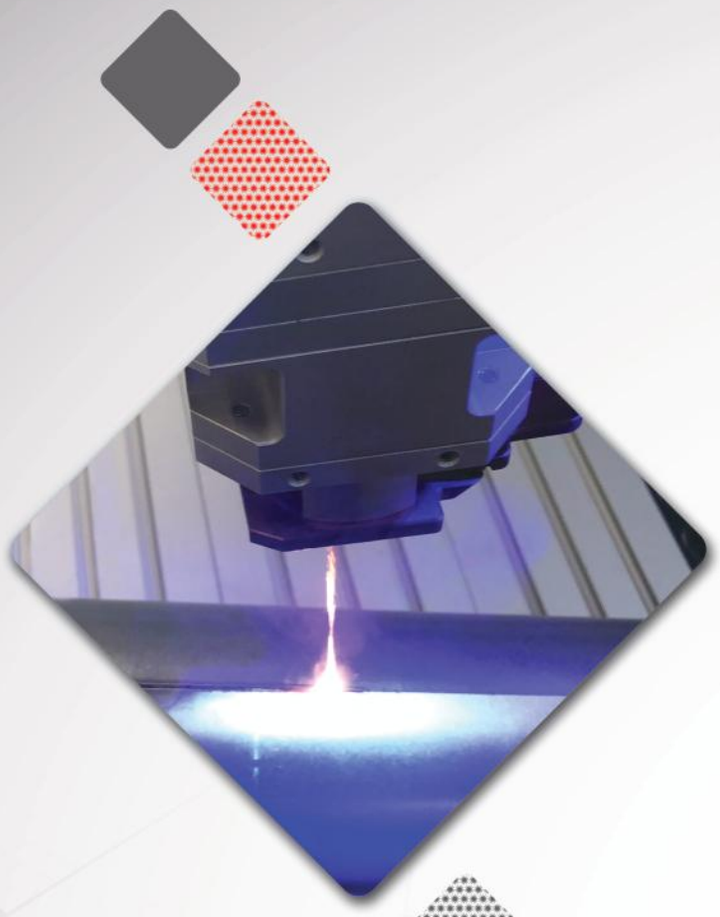
Brass - Brass

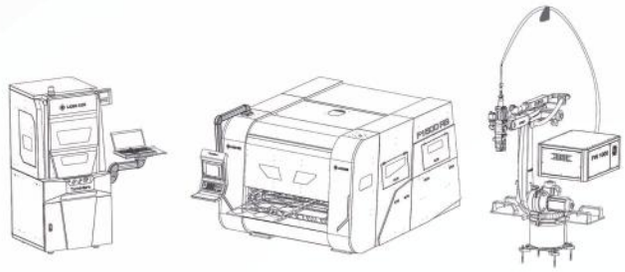
Welding Electronic Parts

Welding Electrical Parts



Battery Welding





ENGRAVING CUTTING WELDING

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