


THE LAZ SERIES



WE SCALE YOUR MACHINE.

 Your partner from concept consultation to production-ready machine with maximum demands on quality and technology.

Developed in close co-operation with Fraunhofer Institute for Laser Technology in Aachen, the combination of wire bonding and laser welding offers the best of both worlds.

It is ideal for package interconnections in power modules and for battery pack assembly. Tab welding is possible with DelvoLAZ, MegaLAZ and GigaLAZ. In addition, DelvoLAZ can weld aluminum, copper or nickel ribbons using laser energy at low bond forces.

The process offers a large range of choice in very diverse joining materials.

The machines are available as stand-alone or in-line solutions incl. automated transport systems.

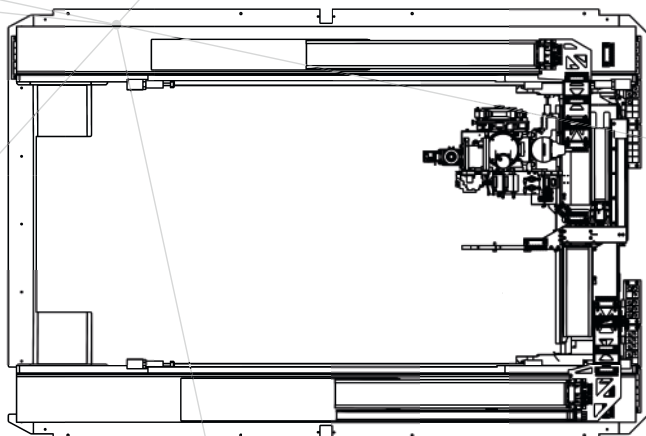
YOUR ADVANTAGES

- High electrical conductivity with large cross sections at low welding depth (to protect battery cell sealing)
- High production yield due to tolerance compensation through use of a touchdown sensor and pattern recognition
- Combines **two processes** in a single machine without modification:
 - Laser bonding of ribbons (DelvoLAZ)
 - Laser-tab-bonding of connections (DelvoLAZ, MegaLAZ, GigaLAZ)
- Low demand on surface quality, no gap between welded parts
- No damage to parts because of lower clamping forces
- **Machine size availability:**
 - DelvoLAZ
 - MegaLAZ
 - GigaLAZ

DIMENSION OVERVIEW

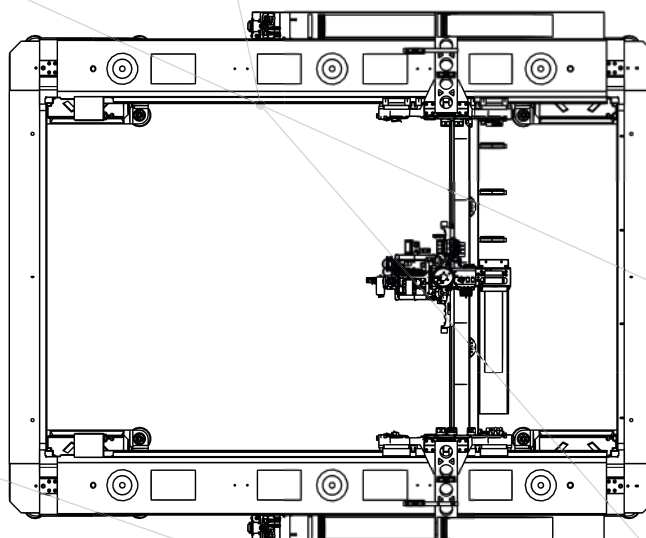
DELVOLAZ

WORKING AREA
1250 mm x 500 mm x 100 mm



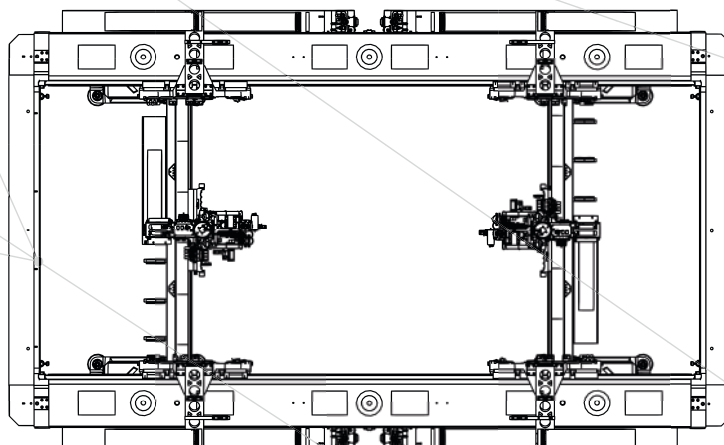
MEGALAZ

WORKING AREA
2400 mm x 1500 mm x 400 mm



GIGALAZ

WORKING AREA
2400 mm x 1600 mm x 400 mm



DELVOLAZ

THE CONCEPT

DelvoLAZ convinces with a working area of 1250x500x100 mm while the machine itself measures 1300x2500x2400mm (WHD). The interface included in the area DATA the following features: TCP/IP; SFTP DATA EXCHANG; PROFINET (on demand)

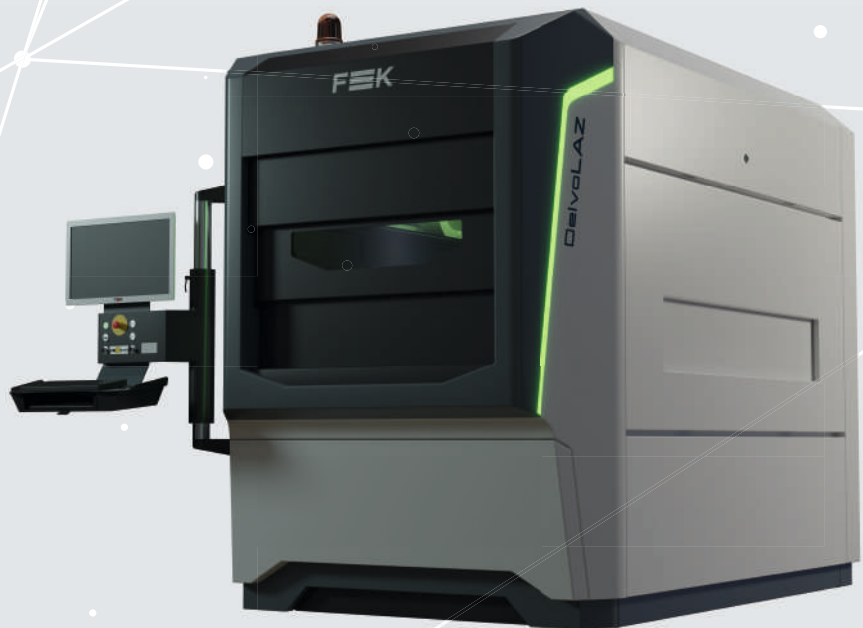
TECHNICAL DESCRIPTION

FUNCTIONALITY

- Camera based positioning system
- Scan Range: 10 x 10mm or 25 mm (work in progress)
- Repeatability: < +/-10 µm
- Substrate: TAB; RIBOON
- Ready for full line integration

TECHNICAL DATA

- IR-Fiber Laser (500W – 1,5kW)
- Spot diameter: <= 45 µm



QUALITY ASSURANCE SYSTEMS

- | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">• Laser<ul style="list-style-type: none">- Sky Writing- Automatic Laser Power Measurement- Automatic combined Laser Power and Focus Diameter Measurement- Automatic Laser Caustic Measurement- Laser optics protection glass insertion and contamination monitoring- Laser Welding Monitor (LWM) with real-time interface | <ul style="list-style-type: none">• Tool<ul style="list-style-type: none">- Tool database- Automatic assignment of tool to bond program- Visual Tool Inspection (VTI)- Automatic Tool Cleaning- Built-in protection gas- Gimbal-mounted self-levelling tool- Automatic Tool Change Station (ATC) for up to 5 tools | <ul style="list-style-type: none">• Automatic Bond Weight Verification• Automatic axis accuracy check<ul style="list-style-type: none">- Positioning accuracy- Accuracy of pattern recognition |
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MEGALAZ & GIGALAZ

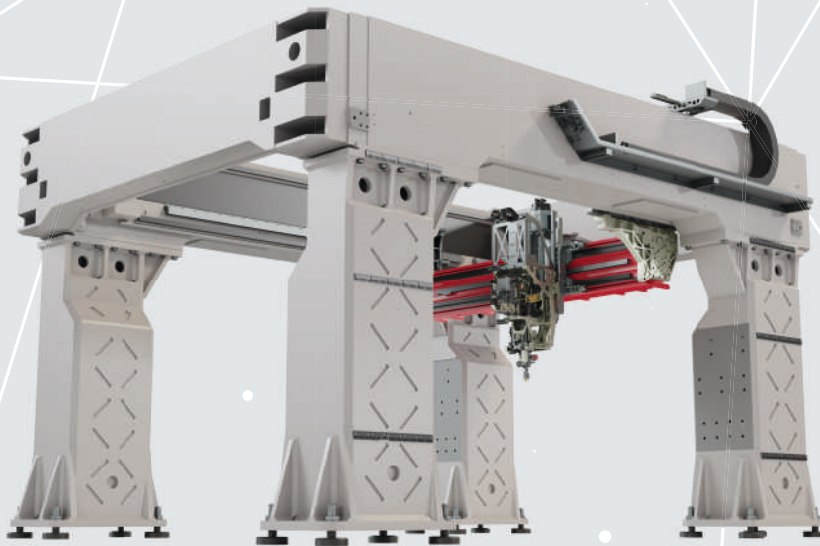
THE CONCEPT

Staying ahead in Bonding Technology: That's the motto we live by and that's why the LAZ-Series is not simply a machine line- it's your Cell-to-Chassis platform.

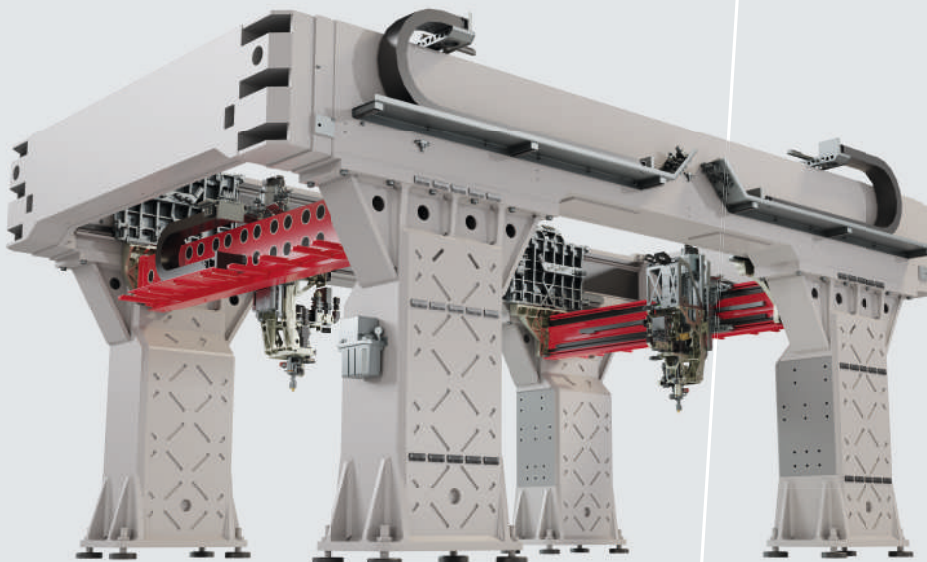
With a working area of up to 2400 mm x 1600 mm x 400 mm and diverse multiplebond head options, it fits your C2C line takt and product like a glove.

The completely new process based on laser microwelding is particularly suitable for joining bonded wire on battery terminals and on DCB substrates and copper terminals in housings of power electronics modules.

WE OFFER STATE-OF-THE-ART SOLUTIONS FOR CELL TO MODULE, CELL TO PACK AND CELL TO CHASSIS.



MEGALAZ



GIGALAZ

FUNCTIONALITY

WORKING AREA

- MegaLAZ: 2400x1500x400 mm
- GigaLAZ: 2400x1600x400 mm

CAMERA BASED POSITIONING SYSTEM

SCAN RANGE

- 10x10mm
- Average 25 mm (work in progress)

REPEATABILITY

- $\lt \pm 10 \mu\text{m}$

READY FOR FULL LINE INTEGRATION

HANDSHAKE INTERFACE WITH ROBOTICS

ONE-STOP SHOPPING

- Conveyor system
- Robotics
- Laser cabin with fire alarm systems, suction & filter unit

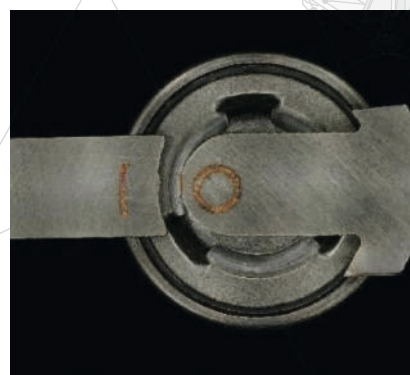
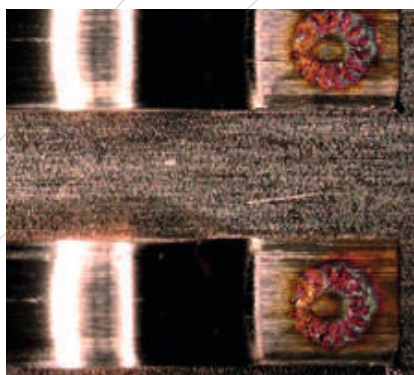
TECHNICAL DATA

IR-FIBER LASER

- 500 W - 1,5 kW

SPOT DIAMETER

- 36 - 40 μm



QUALITY ASSURANCE SYSTEMS

LASER

- Sky Writing
- Automatic Laser Power Measurement
- Automatic combined Laser Power and Focus Diameter Measurement
- Automatic Laser Caustic Measurement
- Laser optics protection glass insertion and contamination monitoring
- Laser Welding Monitor (LWM) with real-time interface

TOOL

- Tool database
- Automatic assignment of tool to bond program
- Visual Tool Inspection (VTI)
- Automatic Tool Cleaning
- Built-in protection gas
- Gimbal-mounted self-levelling tool
- Automatic Tool Change Station (ATC) for up to 5 tools

AUTOMATIC BOND WEIGHT VERIFICATION

AUTOMATIC AXIS ACCURACY CHECK

- Positioning accuracy
- Accuracy of pattern recognition

INTERFACE

DATA

- TCP/IP
- SFTP DATA EXCHANG
- Profinet on demand

POWER

- Voltage 400V (3P+N+PE)
- MegaLAZ:
Current 35A/40A; Fuse
50A/63A
- GigaLAZ:
Current 50A/80A; Fuse
63A/100A

FLUIDS

- Compressed air ISO 8573-1:2010 [1:7:2]: filtered and oil-free 6-8 bar
- Shielding gas: (Ar, N) consumption typically 2.5-10 l/min (0.4 - 4 Nm³/h)
- External coolant water: min. 3 m³/h per bond head, temperature max. 20°C

POWERFUL SYNERGIES.

“MEMBER OF STRAMA GROUP”

Strama-MPS develops special-purpose machinery, equipment and complete solutions for the production, assembly and testing of complex technical components and products.

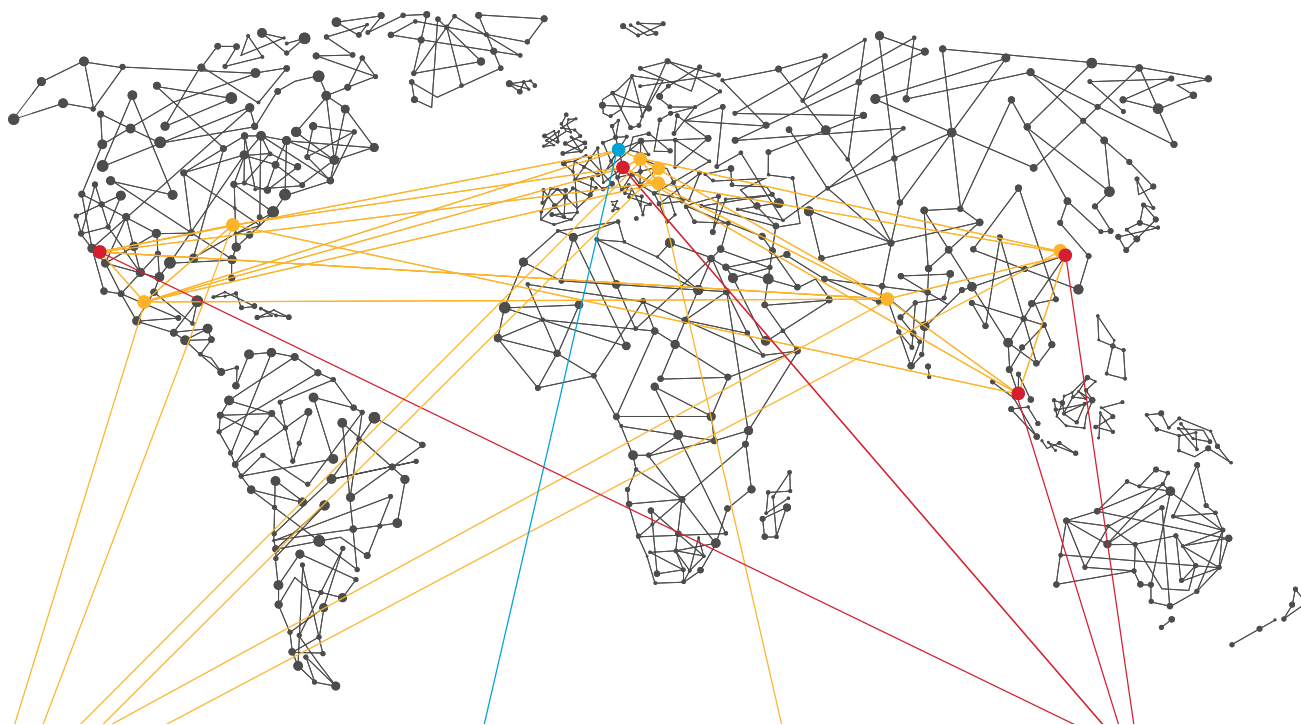
International technology groups appreciate our engineering expertise, the experience and the certainty:

We lead your project to success.

AuE Kassel has acquired in recent years an excellent reputation with assembly lines for axles and chassis components in the passenger car and commercial vehicle sector. With its axle alignment systems, AuE has long been the world market leader.

For more than 40 years,

F & K DELVOTEC is the worldwide innovation leader for wire and laser bonders. Technology and quality convince our customers from the industry and the research institutes.



GERMANY, Straubing
HUNGARY, Budapest

CHINA, Taicang

USA, Duncan

MEXICO, Puebla

INDIA, Nashik



GERMANY, Kassel



CROATIA,
Cerna
Gradište

GERMANY,
Osterhofen



GERMANY, Ottobrunn

USA, Foothill Ranch

CHINA, Taicang

SINGAPORE

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MADE IN GERMANY. MADE FOR YOU.

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