



**fia** AUTOMATION

THE LASER WELDING CELL OF THE FUTURE

# LASER-WELDING-CELL LC300 ULTRASONIC-TESTER

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## LASER-WELDING-CELL LC300

# LASER WELDING CELL FOR AXIAL AND RADIAL CIRCUMFERENTIAL SEAMS

The LC300 was developed to weld axial and radial circumferential seams with high precision and repeat accuracy in large series. Thanks to the built-in rotary table, up- or downstream processes such as joining or laser cleaning of components can be integrated into the LC300. This flexibility also shows in the fact that the LC300 can be used with components from all common manufacturers. The welding system's core components such as joining system, beam source, beam guidance and quality assurance system can thus be selected freely.

### BENEFITS OF LC 300

- Laser-proof housing
- Accessible laser cell, compact construction, crane hook station, high maintenance and user friendliness
- High flexibility, adaptability to customer-specific requirements
- High system availability
- Manual or automated loading
- Easy to set up for various types
- Radial and axial welding seams
- Welding with or without pre-stressing
- Joining of components in the system
- Process-optimized extraction system
- Seam tracking systems
- Process monitoring and recording by means of dome camera
- Customer-specific beam source, beam guidance components, processing optics and quality assurance systems Interface connection with specific manufacturing management systems (SCADA, MES, ERP)
- Operating data and machine data recording ready

### BASIC DATA

- Manual / automated loading
- Rotary table with several positions
- Input-output
- Pressing
- Welding
- Press force 60/100/200 kN
- Max. axial or radial welding diameter 300 mm
- Cycle time < 30 s possible
- Manual / automated tool change
- Automated tool identification

### UPSTREAM PROCESS

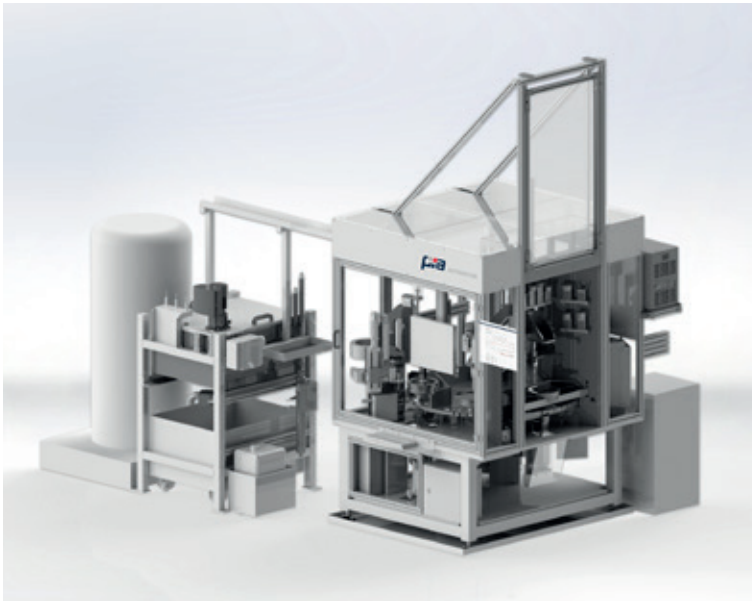
- Washing systems
- Laser cleaning
- Component measuring

### DOWNSTREAM PROCESS

- Laser cleaning
- Brushing
- Component measuring (trueness, run-out, seam geometry)
- Non-destructive materials testing – ultrasonic testing

### DATA LOGISTICS

- 100% data tracking thanks to manual or automated DMC input
- 100% DMC labeling if no DMC available
- 100% Process data documentation,
- Database, trends, histogram, statistical evaluations



## ULTRASONIC-TESTER

# NON-DESTRUCTIVE IN-LINE MATERIAL TESTING / ULTRASONIC TESTING

The flexible, non-destructive ultrasonic testing system allows for an automated immersed or immersion-free (bubble method) in-line welding seam testing directly downstream from the LC300. The path finder is optimally adjusted to the LC300's produced welding seam geometry. Thereby one can freely define the probe's movements (spiral-like, sequential adjustment). An additional downstream blow-off station cleans the test specimen's surface which minimizes the amount of water carried on to following stations. The flexibility of this ultrasonic testing system extends to the use of all common manufacturers of ultrasound sensors.

### BENEFITS OF ULTRASONIC

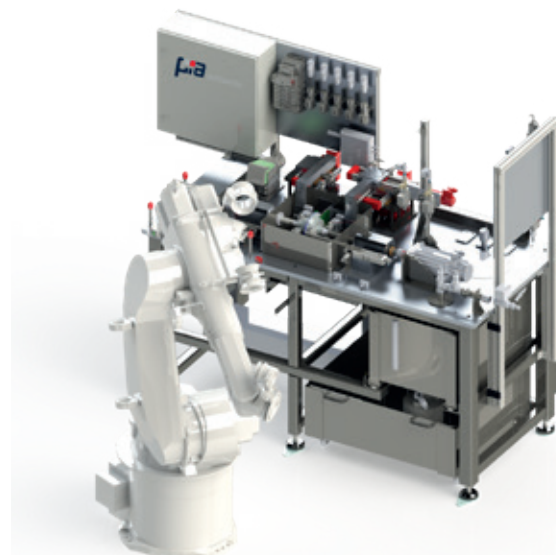
- Position of probe can be defined freely
- Horizontal and vertical testing position
- Minimal surface wetting when using the bubble technology
- Adjustment to customer-specific component geometry
- Project-specific bubbler jet
- Adjustment to customer-specific testing requirements
  - Welding seam depth
  - Irregularities in welding joint
- Designed for radial and axial welding seams
- Manual or automated loading
- Blow-off device adjusted to component geometry
- Minimal amount of water carried on to following stations

### BASIC DATA OF IMMERSION TECHNOLOGY

- Ultrasonic testing device for radial or axial welding seams
- Horizontal or vertical testing position
- Rotary table with 6 positions
  - Input/output
  - Filling station
  - Ultrasonic testing
  - Extraction station
  - Blow-off station
  - Laser inscription (DMC & plain text)
- Ultrasound sensor
- Automated loading and unloading
- Test equipment: e.g. Proline

### BASIC DATA BUBBLER TECHNOLOGY

- Ultrasonic testing device for radial or axial welding seams
- Horizontal or vertical testing position
- Bubbler jet
- Ultrasound sensor
- Blow-off device
- Cycle time < 30 s possible
- Automated loading and unloading
- Test equipment: e.g. Proline





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