



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

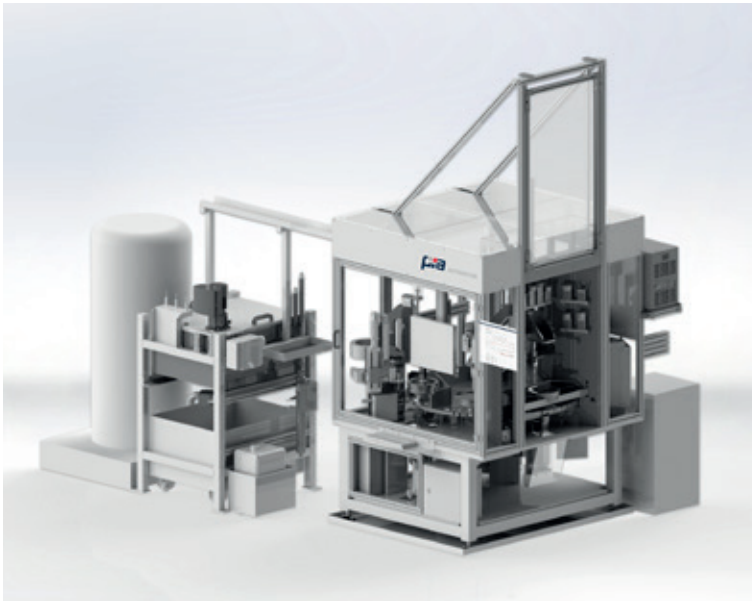
- Washing systems
- Laser cleaning
- Component measuring

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

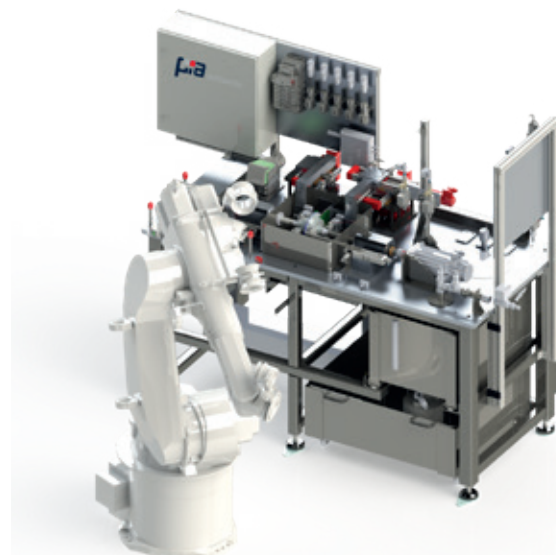
- Position of probe can be defined freely
- Horizontal and vertical testing position
- Minimal surface wetting when using the bubble technology
- Adjustment to customer-specific component geometry
- Project-specific bubbler jet
- Adjustment to customer-specific testing requirements
 - Welding seam depth
 - 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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WWW.PIAGROUP.COM

EUROPE

PIA Automation Holding GmbH

Theodor-Jopp-Straße 6
97616 Bad Neustadt a.d. Saale
Germany
T +49 (0) 9771 6352 - 1000
F +49 (0) 9771 6352 - 8980
info@piagroup.com

PIA Automation Amberg GmbH

Wernher-von-Braun-Str. 5
92224 Amberg
Germany
T +49 (0) 9621 608 - 0
F +49 (0) 9621 608 - 290
info@piagroup.com

PIA Automation Austria GmbH

Testlastraße 8
8074 Grambach/Graz
Austria
T +43 (0) 316 4000 - 0
F +43 (0) 316 4000 - 29
info@piagroup.at

PIA Automation Bad Neustadt GmbH

Theodor-Jopp-Straße 6
97616 Bad Neustadt a.d. Saale
Germany
T +49 (0) 9771 6352 - 1000
F +49 (0) 9771 6352 - 8980
info@piagroup.com

PIA Automation Croatia D.O.O.

Ulica Dr. Franje Tuđmana 26
Novaki (Sveta Nedelja)
10431, Croatia,
T +385 (1) 264 - 1771
info-cr@piagroup.at

PIA Automation Service DE GmbH

Branch Erfurt
Stotternheimer Str. 37b
99087 Erfurt
Germany
T +49 (0) 361 26279 - 610
F +49 (0) 361 26279 - 609
sales@piagroup.de

PIA Automation Service DE GmbH

Branch Stuttgart
Kollwitzstr. 1
73728 Esslingen am Neckar
Germany
T +49 (0) 711 50482 - 841
F +49 (0) 711 96895 - 554
sales@piagroup.de

AMERICA

PIA Automation Canada Inc.

355 Norfinch Drive
Toronto, North York, Ontario
M3N 1Y7
Canada
T +1 416 665 - 9797
F +1 416 661 - 8338
sales@piagroup.ca

PIA Automation US Inc.

5825 Old Boonville Highway
Evansville, IN 47715
USA
T +1 812 485 - 5500
info-us@piagroup.com

ASIA

Ningbo PIA Automation Holding Corp.

Building 4#
No. 99, Qingyi Road
Hi-Tech Park | Ningbo,
Zhejiang Province
Post code: 315040
PRC
T +86 574 8749 - 7888
F +86 574 8907 - 8964
info-cn@piagroup.com

PIA Automation (Suzhou) Co., Ltd.

No. 12, Baiyu Road
Suzhou Industrial Park | Suzhou,
Jiangsu Province
Post code: 215028
PRC
T +86 (512) 6818 - 9566
info-suz@piagroup.com

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