LASER MICROPROCESSING SYSTEM
P1000 automatic

Automated Laser Micromachining
for mass production
The P1000 automatic is the machine solution for automated laser micromachining of components in mass production. Equipped with an automated and process-adapted handling system, component parts with a typical size of 150 mm x 150 mm can be processed in series. By setting up the system in a dual-head configuration, auxiliary process times (component handling, measuring) can be reduced to a minimum so that the effective cycle time of the system can be adapted to customer specifications.

Equipped with either short pulse or ultrafast lasers and scan systems, the system can be used to perform a multitude of laser processes such as laser drilling, laser structuring or laser scribing. The core of the machine is an intelligent sequence control, which not only controls the laser processes but also the production quality management. Consequently, a 100% inspection of the components can be carried out via integrated measuring systems and the production data of each part can be passed on to a production control system.

The condition monitoring systems tracks the laser characteristics and surveys the connected machine environment to ensure reproducibility and availability. A comprehensive software solution enables order-related data analyses and ERP (enterprise resource planning) connectivity.

**Highlights**
- Dual-Head configuration for parallel processing
- Process adapted handling systems (robot, rotary indexing table,...)
- Measurement technology for component detection and process validation
- Intelligent control with option for a 100% component inspection

**CMS**

**Workpiece automation**
Workpiece automation includes positioners, grippers, workpiece carriers, conveyor and magazines for blank and finished parts. It thus ensures continuous production with high capacity utilisation for batch production, part production with workpiece carriers or roll-to-roll production.

**Measurement automation**
Microproduction is inconceivable without measurement technology. The automated geometric qualification of the manufactured components completes the capability of/ for series production. Vision systems and topography sensors provide structured production data.

**Machine design**
- Rigid double C-frame construction with external control cabinet
- Machine bed made of granite or concrete (UHPC)
- Motorized machine axes: XY crosstable, Z axis
- Working area (standard): 450 mm x 600 mm x 300 mm

**Dual-head configuration**
setup for parallel processing
**AUTOMATION CATEGORIES**

**Batch Processing**
- Cost-effective production type for <100 workpieces
- Automated search and alignment features
- Integrated inspection and disposition routines
- Front and rear side machining of sheet material

**Work Piece Carrier**
- Predefined and lightweight wpc design
- Applications specific component cavities
- wpc identification routines
- Stand-alone loading and magazine solutions

**Flexible Robots**
- Most flexible pick & place system with 6 DOF
- For workpiece carrier automation
- For single parts with medium payloads
- For a medium throughput purpose of about 10,000 pcs per week

**Roll-2-Roll (R2R)**
- Flexible substrates up to 500mm
- For applications with high demands to resolution and accuracy
- Advanced vision & alignment solutions
- Dualhead configuration

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*at your service*

Robotic arm in a configurated P1000 automatic (interior view)
ROBOTIC ARM
for automated production

Pulsar Photonics GmbH
Kaiserstraße 100
52134 Herzogenrath
GERMANY

CONTACT

+49 2407 555-55-0
info@pulsar-photonics.de
www.pulsar-photonics.de

distributed by

AYIN Technology Corporation
#502, Seongshin Technopark
38, Yeongtong-ro 323beon-gil,
Yeongtong-gu, Suwon-si,
Gyeonggi-do, Republic of Korea
16676

+82-70-7805-7790
kcho@ayincorp.com