Fully Automated Assembly of Optical Modules



Overview

Fully automated, industry-qualified assembly for optoelectronics and singulated photonic devices and PICs. Featuring high-precision 'align-&-attach' bonding capability for all optical elements, fibers and arrays, as well as for die, chip or PIC integration and. SmarAct optical assembly solutions deliver cutting-edge technology for the alignment, positioning, and integration of optical components with nanometer accuracy. Several optical elements with a 20mm diameter are to be aligned on top of each other with a defined gap width and joined using UV-curing adhesives to form optical sub-assemblies. Especially for pro-ducts with narrow tolerances, the implementation in complete production process chains is often still based on. The assembly of optical assemblies is demanding. Only when component quality, assembly technology, assembly environment and joining technology are coordinated can high-precision systems be created.



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Article Content

Production-ready manufacturing of precision optical assemblies

SmarAct''s solutions enable fully automated assembly with alignments at micrometer-level accuracy, as demonstrated in our application example. If your project demands similar capabilities or tailored

Digitized assembly of complex optical systems. White paper

Starting from optics design, continuing through tool and mold making and replication to metrological qualification and final assembly, the Fraunhofer IPT draws on a wealth of back-ground expertise and

Assembly and system integration of optical components

We develop optimal assembly concepts for polymer optical components: manual, fully automated, ESD-protected, dust- and particle-free.

Machine Platforms and Product Lines – ficonTEC Service

Fully automated, industry-qualified assembly for optoelectronics and singulated photonic devices and PICs. Featuring high-precision ''align-&-attach'' bonding capability for all optical elements,

Photonics assembly and testing – From Lab to Fab – ficonTEC Service

ficonTEC provides device micro-assembly and testing solutions for the photonic device industry. These solutions are realized as cutting-edge, high-precision production systems utilizing advanced

Automated precision and micro assembly

For the particularly precise assembly of optical and electronic components, we develop plant prototypes and modular systems with Industry 4.0 functionalities. Integrate active alignment into assembly

Optical Assembly & Custom Lens Modules – Turnkey Integration for ...

Yighen delivers precision optical assembly and custom lens modules for applications including imaging, sensing, projection, and metrology. Our solutions combine optics, mechanics, and coatings into

How XVP Photonics automates high-precision optical

With its compactness and six degrees of freedom, the Meca500 can create automated assembly stations with full versatility from the start, eliminating the

Photonic Transceiver Module Assembly for High-Speed Data

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To automate the assembly process, the profiles simply needed to be enhanced with automatic handling steps for components and sub-assemblies, as well as with automatic alignment routines based on

Automated Precision Assembly of Optical Systems

The increasing automation of the assem-bly of ever smaller optical systems often requires that highly accurate alignment instruments, so-called micromanipula-tors, are applied for aligning the compo

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Automated mass production line for optical module using passive ...

Basically all modules have same optical coupling structure and keep the design rules for automatic assembly. Accordingly, we can use the same equipment for the same assembly process.

Integrated Tool-Chain Concept for Automated Micro-optics Assembly ...

The work presented in this paper aims for a significant reduction of process development and production ramp up times for the automated assembly of micro-optical modules and systems. The approach

OPTICAL ASSEMBLY SOLUTIONS

From Individual Modules to Turn-Key Solutions With the increasing demand for miniaturized, high-performance optical systems, the need for precise and fully automated assembly solutions has never

Photonic Transceiver Module Assembly for High-Speed Data

Enable optical transceiver manufacturing with automated die bonding. Achieve precise alignment, high reliability and scalable production for photonic modules.

Fiber Optics Automation: Improving Cost, Yield and Throughput

The need to inexpensively supply increasing quantities of fiber optics components, while maintaining high reliability and yield, is pushing manufacturers toward automated assembly.

Opto-Mechanical Assemblies | Optical Modules | Corning

Corning provides fully integrated “Optical Modules” or systems: All designs are optimized for manufacturability, performance and quality These systems include

Automated Precision Assembly of Optical Systems

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Automated Precision Assembly of Optical Systems Modular and flexible machine architectures allow for shortest time to market and scalable assembly solutions for optical systems

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