



MANUFACTURING MADE LIGHT
Solutions for integrated photonics. Built to scale.



A100 - PRELIMINARY

Reconfiguration and repurposing made light

A modular base photonic assembly system with focus placed on ease of reconfiguration and re-purposing for high-touch optical align-&-attach duties. Typical usage scenarios include higher education, training of personal, process development and contract/low-volume manufacturing.

Highlights

- ✓ Designed for all optical element, fiber and chip assembly tasks
- ✓ Expandable with many pre-engineered tools & accessories
- ✓ Easy reconfiguration combined with cost-effective long-term ROI
- ✓ For education, training, development and low-volume manufacturing



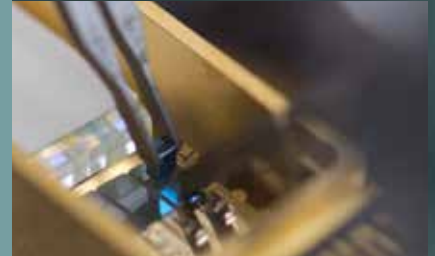
ficontec
photonics assembly & testing

As little or as much capability as you need

The A100 is an easily reconfigurable base assembly system predestined for use within educational organizations, as an industrial training tool, for product and process development, for contract manufacturing and for other low-volume environments.

The A100 provides submicron-precision metrology and align-&-attach capability for all optical elements such as planar waveguides, AWGs and fiber collimators as well as for singulated photonic devices and PICs. It is typically offered in a 6-axis configuration, together with motion control electronics, an optical power-meter and an industrial-grade PC.

The A100 is however field-upgradable with a wide range of pre-engineered plug-&-play hardware accessories as well as software interfaces and engineering services. The simplicity of the system and the diverse options enable rapid re-purposing to suit changing system need, and additionally safeguard flexible and cost-effective utilization as well as maximum return on capital investment.



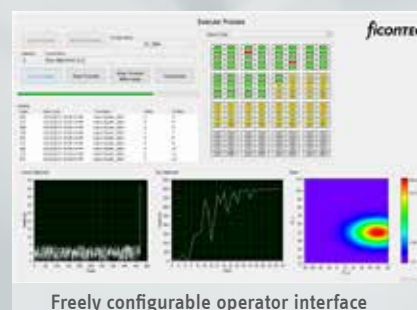
Optical element align-&-attach



Active fiber (array) alignment

Software Control

PROCESS CONTROL MASTER (PCM) is ficonTEC's unified process-oriented control interface that ships with all turn-key stand-alone systems and multiple machine configurations. PCM features an intuitive UI that includes all machine vision, high-resolution positioning and system management software routines required to reliably and repeatably drive passive/active alignment and attachment/bonding process hardware.



Freely configurable operator interface

To ease the learning curve, the A100 utilizes a more streamlined user interface. No knowledge in programming language is needed. The software can be used to perform automated alignment, metrology, robotic material handling, data recording and process management. Graphical interfaces for many hardware devices are provided and additional devices can be added.



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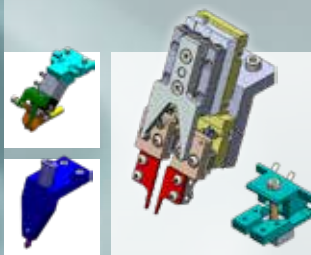
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Diverse Accessories

Aside from ease of use and ease of reconfiguration, the other key aspect of the A100 is the adaptability and expandability. By incorporating alternative tools & grippers, dispensing systems, motion system axes, vision systems and chucks, the A100 can be easily repurposed to be compatible with a great many different optical align-&-attach tasks.

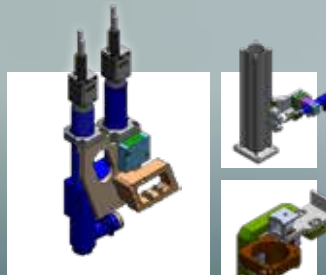
The base version the A100 is provided with a single 6-axis aligner, a motion control system (computer, controller) and a hand panel. It is supplied without a breadboard or table system, and additionally without any specific gripper or tool accessories – however, any number of compatible accessories can be optionally added to suit intended needs.



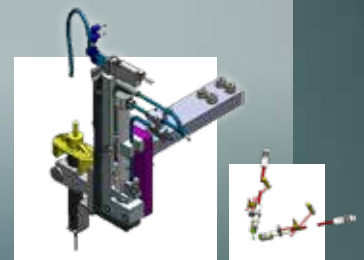
Grippers & tooling



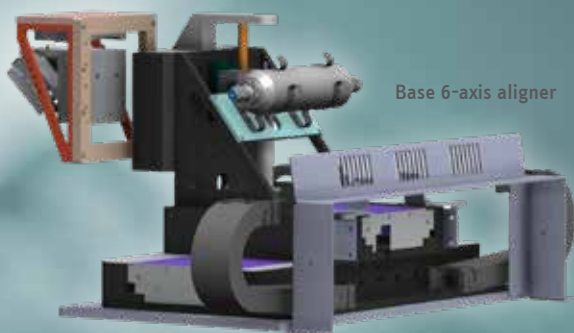
Chucks & trays



Vision cameras



Dispensing & UV



Base 6-axis aligner

Key features

- Expandable 6-axis base motion system
- Specifically designed for ease of use
- Pre-engineered accessories optional
- Easily add/swap to reconfigure & repurpose
- Cost-effective together with maximum ROI

General tasks & applications

- All optical element & device align-&-attach tasks
- Fiber/waveguide pigtailling/connectorization
- Hands-on process & device development
- Ideal as a 'high-touch' & hands-on training tool
- Suitable for all photonics assembly tasks



Configuration example including optional breadboard

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ficonteC is the global market leader for automated assembly and test systems for modern optoelectronics and integrated photonic devices. An unequalled breadth in process capability has been developed in serving the needs of a broad range of applications, including telecom/datacom and 5G, sensors and lidar, IoT and mobility, high-power diode laser assembly, and many more.

A unique and modular approach to production equipment design means that each system delivered is the automated and optimized embodiment of a customer-defined process.

Contact us


ficonteC Service GmbH
Achim, Germany

T +49 4202 51160-0
info@ficonteC.com

For ficonteC subsidiaries
and distributors around the globe:

www.ficonteC.com/locations



Core system specifications	 A100 - PRELIMINARY
Motion system	6-axis precision alignment * Linear translation range (xyz): 100 x 300 x 50 mm Resolution 5 nm (with tuning) Bi-directional repeatability ± 50 nm Rotational translation range (Rx Ry Rz): $\pm 4^\circ$ Resolution up to 2" (with tuning) Bi-directional repeatability $\pm 30''$
Load options	manual loading only
Machine vision	system referencing and observation camera options
Software features	easy & flexible process programming via a streamlined interface Windows 10 PC
Electrical	230 VAC 50 Hz, 3 phase, 16 A Type C only OR 120 VAC 60 Hz, single phase, 16 A Type C **
Connections	air min. 6 bar vacuum max. 100 mbar min. 100 Mbit/s network RJ45
Dimensions (w x b x h)	760 x 540 x 345 mm (nominal base system, all axes at 'o')
Weight	30 kg (max. individual component) 200 kg (max. total)

* alternative multi-axis configurations optional ** others available on request

A100 systems are suitable for low-volume manufacturing, for proof-of-concept process and product development as well as for photonic device assembly educational and training duties. The system is configurable and expandable with breadboards and tables, extended motion system options and hardware and software tool accessories to suit changing and growing needs.