Alignment System





There are various types of alignment system for various devices, passive or active, with multi purpose as Research and Development and Mass Production.



Suruga Unique Technology

Our core competence is precise process technology. Unique technologies which are manufacturing stages, motion control system integration built up based on core competance and long-term experiences.



Propose the optimal systems

We integrate the optimal systems and a variety of device alignment systems.



Guidance

Probe

system

alignment

LD/PD

alignme





HOURS

www.hours-shop.com

alignment LD/PD alignm Available power meter for alignment within the range of built-in PD other than communication wave

Please contact us about optical sensitivity characteristics.

pplicable Stage Unit P.4-019~

Guidance

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alignment unit

Motorized alignment un Device unit

Fiber holders

Device holders

Adaptors

Lens tube

Monitoring unit

camera Monito

Lighting

UV equipmer

Pump

Probe

system

Alignment

Alignment

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WG



Waveguide Alignment System (Passive Device Alignment): PS-1000 Series

We offer the best suited alignment system, which fulfills the needs of customers and characters of devices, covering a wide range of alignment specifications varying from waveguide device evaluation for research and trial use till UV bonding of splitters and AWG devices for production use.



We propose the optimum system with stage unit and software which developed for decicating alignment system.

- High speed alignment
- Hign speed alignment with our original algorithm. Improvement operation
- Improve software operation with interactive interface. Customized
- We can customized for your needs.

Features

OAutomatic Alignment

Positioning optical axis of optical fiber and waveguide device in quickly.

OPosture adjustment

Automatically operated an angle control and GAP adjustment between devices by our own facing technique.

OHolders

It is a comprehensive style catalog with the introduction of a range of holders for devices.

OSoftware

Consisted micro sequence of process by the interactive interface of alignment software. Also control the device evaluation equipment such as IL and PDL measurement is available.

Customization

We can provide a solution to meet your requirements.

Alignment system basic configuration



PC specification

CPU	over than Core2Duo
HDD	over than 40GB
Memory	over than 2GB
The bus occupancy number	PCI-Ex(1.0)1
0S	Windows Professional 7 (32bit)

Optical power meter recommended type

•MT9810A、MT9810B (ANRITSU)

8153A、8163A、8163B(Agilent Technologies)

AQ2201 (Yokogawa Electric Corporation)



Optical fiber alignment

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alignment

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Lens tube

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Motorized stage alignment unit



6-axis stage unit for alignment system

Available proximity a microscope and probe according to have a space of upper optical axis. 30% smaller than former model.

Available standard holder on the catalog.

*Corresponde to automatic 3 to 5-axis unit

	Axis	Travel distance	Resolution
Alignment unit (6-axis)	Х	50mm	
	Y	10mm	0.05um/Pulse(MS1/20)
	Z(Optical axis)	50mm	
	θx	±6°	0.001233°/Pulse (Half)
	θу	±8°	0.0015°/Pulse(Half)
	θz	±8°	0.0016°/Pulse(Half)

Detailed 6axis stage unit P.4-022

Alignment software

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Automatic alignment application "IROHA" is the dedicated siftware for alignment.

- ●JOG · · · Stage driving operation by PC mouse-clicked.
- Automatic alignment · · · Automatically controlled alignment (XY alignment, XYZ alignment, XYθz alignment).
- Touch-sensing · · · Control a touch-point and a GAP from devices automatically.
- •Automatic facing • Automatic facing control from devices.
- External equipment control · · · Communication with an external connection equipment (GP-IB, Serial, I/O). Profile display · · · Beam profile measurement and displaying and saving of results.
- Output display · · · Optical power display.
- Program driving • Mcro sequence programing function.

Alignment pattern



Contact sensor/facing function





Our original contact sensor/facing function

- Can be automatic recognition by precision positioning and displacement censor
- of motorized stage connection point that contacted between devices with any grams. Can be positioned parallel between devices automatically
- by consisted 2-axis goniometer stage controller for connecting sensor during sampling tilt.

Benefit

- Better than use the processing image.
- No deformation such as breakage, tilting.
- As precision positioning and sampling by displacement sensor , it is able to display the tables because of good reproducibility.





High-Stability Waveguide Alignment System: PS-1000H Series

This is a waveguide alignment system pursued static stability after alignment process, which can offer a system component that is best suited for a long-hour measurement of micro core devices.

Features

High-Stability is improved by using a motorized thermal management stages.
Improved product safety through isothermal device.
Available standard device holder.
We can customized for your needs.



(heat-suppresing alignment unit)



Thermostatic device

Thermal stability data



The following graph shows the fluctuation example, after alignment. The strain stability with thermal control is better than former unit.





Guidance

alignment unit

Motorized alignment unit Device unit

Fiber holders

Device holders

Adaptors

Lens tube

Monitoring unit

Monitor

Lighting

UV equipmen

Pump

Probe

Alignment

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WG alignment LD/PD alignment Alignment components

(When using the thermostatic device, this is the repeating measurement example for 2 hours stability data after rounded-end optical fiber alignment.)

Waveguide Manual Alignment Package: E8203B

This is a very useful package for manual operation of waveguide device(splitter) alignment and UV bonding. Our long history of producing various alignment units concluded that this is one of the best component alignment packages. With a selection of holders, development/trial purposed evaluations of various waveguide devices are possible.



Features

OManual stage alignment unit having coarse and fine adjusting device. OStandard equipment upper unit with monitoring/UV changeover stage. OAvailable standard device holder.

※: Accessories:Bracket for V20-501S (C P.4-048), VFGB5F (C P.4-058)

SPEC			
Axis	Travel distance	Resolution	
Х	±6.5mm	Coarse motion:10 μ m/scale Fine motion:0.5 μ m/scale	
Y	±6.5mm	Coarse motion:10 μ m/scale Fine motion:0.5 μ m/scale	
Z	±6.5mm	Coarse motion:10 μ m/scale Fine motion:0.5 μ m/scale	
θx	$\pm 2.5^{\circ}$	Approx 29%/scale	
θу	$\pm 2.5^{\circ}$	Approx 28∥/scale	
θz	±4.0°	Approx 33 // scale	

Model

E300-L

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Holder/Accessories

The following goods are not included. (Sold separately)

- · Various holders (Fiber, FA and WG)
- Observation equipments (Lens tube, CCD camera, monitor and lighting)
- UV radiation equpment (UV light source)

Configuration example for spritter module alignment





This is the configuration example for spritter module. Please order as necessary.

Holder (Option)



Monitorings (Option)

27.0



Incident holder Preset type WG holder E340L-2-A(%1) Preset base E300-R Output holder Preset type WG holder E340R-2-B(%2) WG holder Preset type Waveguide holder E400-10N (%3) %1 : FA holders for FA 3~5mm width and 2~2.5mm thickness (Available other size)

Product Name

Preset base

*2 : FA holders for FA 5~8mm width and 2~2.5mm thickness (Available other size) 3 : Holder 10mm width(Available 6,8,20,30,40mm width WG holder)

	Product Name	Model	The page
Upper observatin equipment	Zoom head	V20-501S	P.4-048
	CCD Camera	VSTC-620CCSET	P.4-054
	Monitor	VQT-1504P(%4)	P.4-054
	Cold light	VMEGA100(%4)	P.4-055
	Cold light guide	VFGS6F-1500	P.4-055
Edge-face observation equipment	The end face monitoring unit	E791	P.4-053
	Zoom head	V20-501S	P.4-048
	CCD camera	VSTC-620CCSET	P.4-054
	Monitor	VQT-1503P(%4)	P.4-054
%4 ∶ Use power-supply	converter in outside Japan.		

	Product Name	Model	The page
UV irradiating	UV light source	VEXECURE4000-D	P.4-058
equipment	UV light guide (Binary)	VFGB5F1500UVR	P.4-058

*Contact sensing meter (Option)

OV irradiating equipment (Option)



GAP adjustment / side alignment of the light guide is enabled by combined with a manual unit. Detailed P.4-040

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YAG Welding Alignment System: YS-1100 Series

This system can operate fully-automated process from LD/PD module alignment with YAG laser welding work.

With the best-designed micro-positioning mechanism for alignment and our unique software to optimize the use of the mechanism, this welding alignment system can meet a wide range of alignment needs of users.

Pump

Alignment controller WG alignment







Features

©Excellent operability

Just place the parts, press the button and from the tilt alignment of the device to the YAG welding process will be operated automatically.

OSuport the variety of production process.

Available processing management depending on the device. We also have library routine for supporting production.

○Variety of measuring function

Device judgment function is satisfactory such as measuring a focal length, angle and IL characteristic.

 $\bigcirc \mbox{Our}$ original automatic facing function.

Can be adjusted device posture by our original facing function.









Process example implementation

Support the alignment and YAG welding of many active devices.



Alignment unit & YAG laser unit



Х Alignment unit (Motorized 5 axes) 20mm 0.05um/Pulse(MS1/20) γ θх 0.0025°/Pulse(Full) $\pm 5^{\circ}$ 0.0020°/Pulse (Full) θу θz 360° 0.004°/Pulse(Full) Z (Optical axis) 0.05um/Pulse(MS1/20) Ferrule unit 70mm YAG head unit 20mm γ 1um/Pulse(Full) (Motorized 2 axes) 30mm

Axis

Travel distance

Resolution



(Butterfly type module chuck example)



Additional lens alignment function and UV resin hardening are available.



WG alignment LD/PD alignment

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alignment unit Motorized

alignment uni

Device unit

Fiber holders

Device holders

Adaptors

contact sensing mete

for alignment

Lens tube

Monitoring unit

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Monitor

Lighting

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LD/PD Alignment System(Active Device Alignment): PS-2000 Series

We offer the best suited alignment system, which fulls the needs of customers and characters of devices, covering a wide range of alignment specications varying from LD/PD device evaluation for research and trial use to UV bonding for production users.

Alignment system configuration example





Alignment software "I • Ro • Ha"



(An example LD/PD-Lens-Fiber)

(An example LD/PD-Sleeve-Fiber)

Features

OAutomatic alignment

Precision automatic positioning for measuring optical ber and LD/PD device in quickly.

OPosture adjusting

Can be control an angle and GAP between devices by our original facing function.

◎Holders

Available standard device holder.

OAlignment software

Can be combined micro sequence in the process by the interactive interface of alignment software.

\bigcirc Customized

We can customized for your needs.

Guidance

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Alignment components

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Fiber holders

Device holders

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Lens tube

Monitoring unit

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