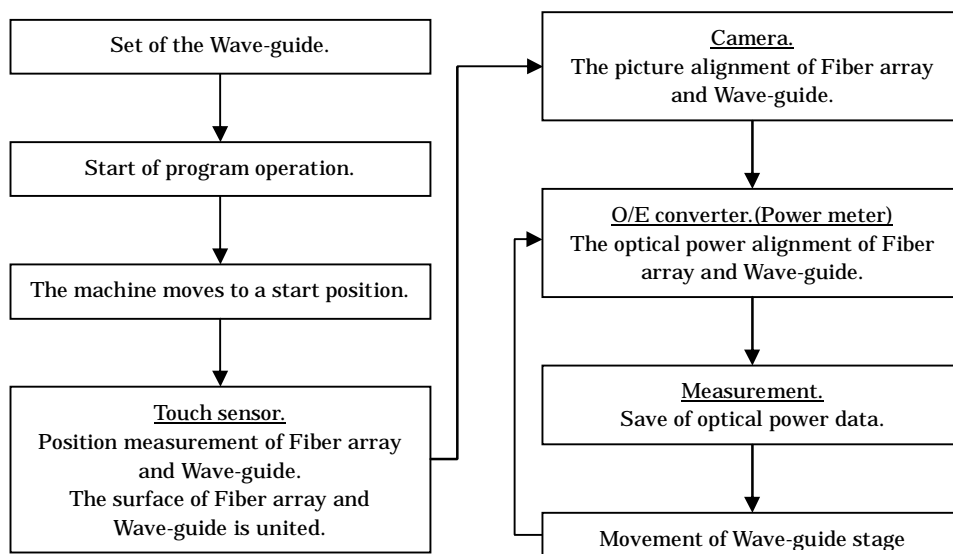# Wave-guide Measurement

High precision alignment by original high rigidity SUS stage.
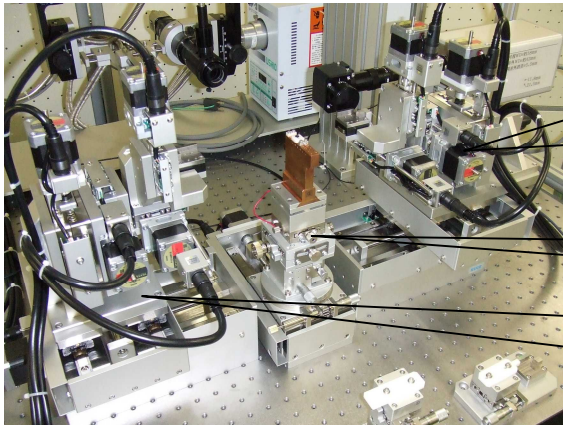
High speed alignment by original power meter.

High speed alignment by original multithread software.

The main flows of the alignment system.

Set of the Wave-guide.

↓

Start of program operation.

↓

The machine moves to a start position.

↓

Touch sensor. Position measurement of Fiber array and Wave-guide. The surface of Fiber array and Wave-guide is united.

Camera. The picture alignment of Fiber array and Wave-guide.

↓

O/E converter.(Power meter) The optical power alignment of Fiber array and Wave-guide.

↓

Measurement. Save of optical power data.

↓

| Movement of Wave-guide stage |
| --- |

The program can be changed freely.

KUGE

Output : Automatic Fiber array stage unit
Automatic stage = X,Y,Z,θx,θy ,θz
The contact sensor is attached
   (It is automatic and the surface of Fiber array and Wave-guide is united.)
Picture automatic alignment camera

Center : Automatic Wave-guide stage unit
Automatic stage = X   Manual stag = Y,θx,θy,θz

Input : Automatic Fiber array stage unit
Automatic stage = X,Y,Z,θx,θy ,θz
The contact sensor is attached
   (It is automatic and the surface of Fiber array and Wave-guide is united.)

Auto Motion Axes (12axes)
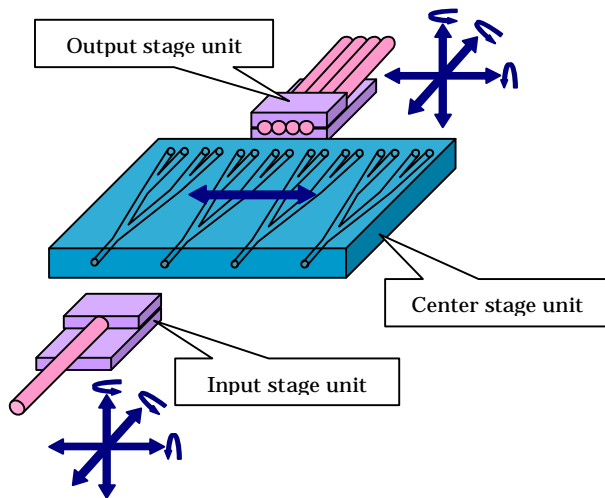
The move part of each unit.

	Axis	Working Range	Resolution
Input Automatic Fiber array stage unit	LX	± 25mm	0.025μ m
	LY	± 15mm	0.025μ m
	LZ	± 25mm	0.025μ m
	L x	± 8°	0.000015°
	L y	± 8°	0.000012°
	L z	± 8°	0.000012°
Center	CX	± 50mm	0.025μ m
Output Automatic Fiber array stage unit	RX	± 25mm	0.025μ m
	RY	± 15mm	0.025μ m
	RZ	± 25mm	0.025μ m
	R x	± 8°	0.000015°
	R y	± 8°	0.000012°
	R z	± 8°	0.000012°

The main equipment of KS502-Measurement

The main mechanism portions	The main control unit

Input :   Automatic Fiber array stage unit
   Automatic stage = X,Y,Z,θx,θy ,θz
   The contact sensor is attached
   Fiber array holder
	LD light source (Option)ASE light source
	         Selection of wavelength can be performed.

	O/E converter (Nch)
	Stepper motor driver (13 axis)

Center : Automatic Wave-guide stage unit
   Automatic stage = Y
   Manual stag = Z,θx,θy ,θz
   Wave-guide holder
	Contact sensor driver (2ch)

	Computer
	         Kuge proprietary Cockpit software
	         Stepping motor controller board
	         Picture board
	         A/D board
	         LCD monitor
	         Computer rack

Output : Automatic Fiber array stage unit
   Automatic stage = X,Y,Z,θx,θy ,θz
    The contact sensor is attached
    Picture automatic alignment camera
    Fiber array holder	

Stage unit of Observation camera. The observation camera and a monitor.(× 2)	
Anti-vibration table and Measurement shelf	