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Expert team | Trust guarantee | 100% satisfaction

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Find the *Panasonic YB-02AD2 / YB-02AE2* at our website: ***Click HERE***

We provide TOTAL SOLUTIONS for micro-soldering and localized heating applications.

Softbeam

Productivity
Effective operation with simple maintenance

Reliability
Decreased correction rate that is only 1/10 to 1/50 that of conventional soldering irons

Precise Heating
Focal point heating as small as ϕ0.3mm

Quality
Stable soldering using non-contact heating



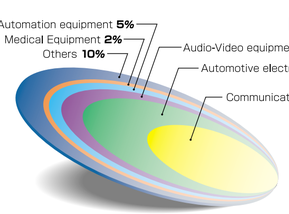
SOFT BEAM



LINE SYSTEM



LD SOFT BEAM



Breakdown of industries using Soft Beam

Soft Beam has been well accepted by a wide variety of industries.

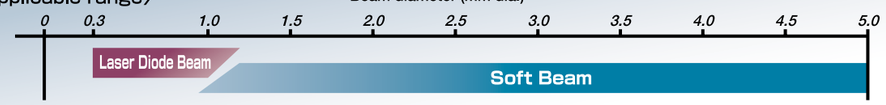
※For examples of specific applications, see page 4.

Number of patents granted : 24／Number of patents pending : 86／US patent No. 5,373,985・No. 5,335,309・No. 5,671,324

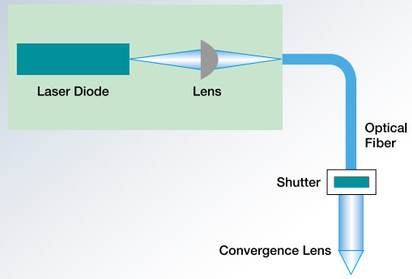
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Non-contact heating method provides high quality and consistent soldering.

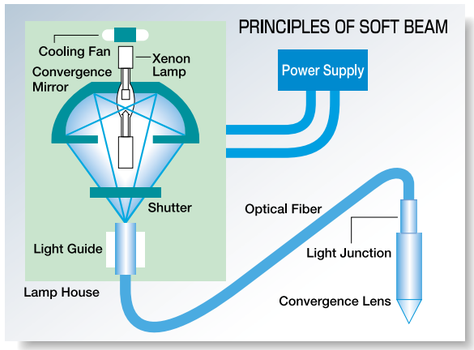
〈Applicable range〉



PRINCIPLES OF LASER DIODE SOLDERING DEVICE



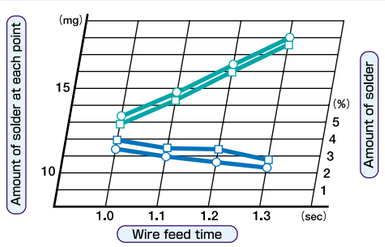
PRINCIPLES OF SOFT BEAM



Features

Application of proper solder amount is critical for quality micro-soldering.

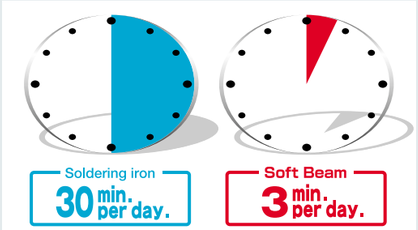
Our wire feed controls the solder amount within 5%.



- Green lines indicate 「Amount of solder at each point」 = φ0.4mm
- Blue lines indicate 「Fluctuation of the amount of solder」 = φ0.5mm

Simple procedures reduce maintenance time.

It is possible to operate for 24 hours a day and 365 days a year continuously.



- Solder amount is irregular due to tip drag.
- Condition adjustment is required after tip replacement.
- Cleaning time is reduced.
- Since the Soft beam does not generate solder balls like those produced by the air blowers used with soldering irons, it helps establish a clean workingenvironment.

Comparison of the correction ratios of the Soft Beam and soldering irons

	Soldering iron correction ratio	Soft Beam correction ratio
Company A	3~4%	0.2%
Company B	5%	0.03%
Company C	1.6%	0.2%

Example comparing variation in solder volume

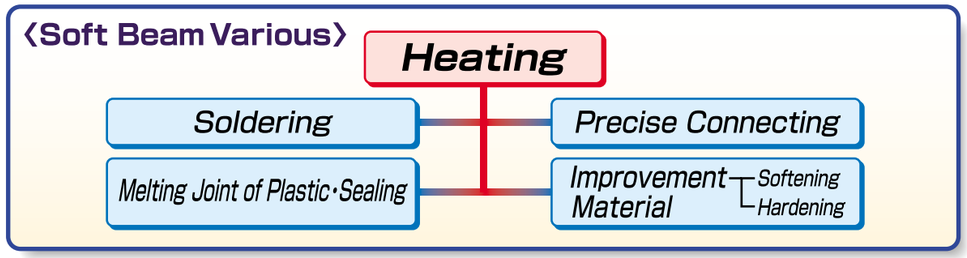
〈Applied workpiece: Glass-Epoxy substrate + Poly-urethane insulated wires (φ45μm)〉

	Soldering machines made by other companies	Soft Beam
Average soldering height	0.38mm	0.24mm
Variation in solder height (Within 0.5 mm of the standard)	MAX 0.57mm~ MIN 0.19mm	MAX 0.34mm~ MIN 0.15mm

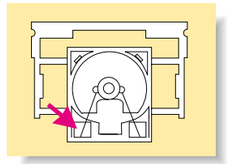
※Contact-type soldering machines creates variations in soldering height due to solder sticking to the soldering iron.

Soft Beam Systems are utilized in a wide range of applications.

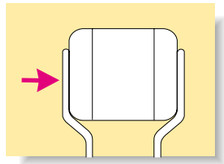
〈Soft Beam Various〉



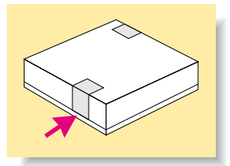
Communications



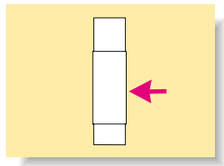
Sound generator
Electrode ⊕ Poly-urethane insulated wire (φ40μm)



Ceramic capacitor
Capacitor ⊕ Lead wire



High frequency parts
Ceramic substrate ⊕ Shielded case

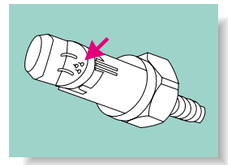


Oscillation motor
Case ⊕ Housing

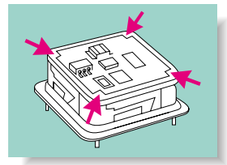
LC film
Chip parts (10 to 20 chips) ⊕ Film

Crystal resonator
Blank ⊕ Inner lead

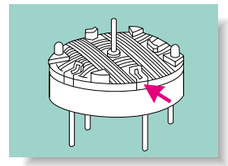
Automotive electronics



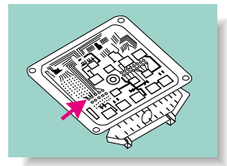
Fuel injection control, pressure sensor
Substrate ⊕ Terminals



Airbag sensor
Substrate ⊕ Terminal



Bobbin
Terminals ⊕ Coil

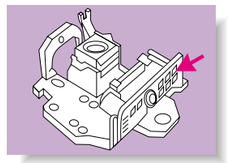


Engine controller
Glass epoxy PCB ⊕ Connector

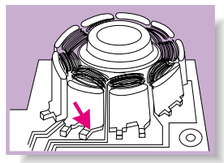
Navigation system for automobile
Glass epoxy PCB ⊕ Odd shaped parts

HIC
Ceramic ⊕ Lead frame

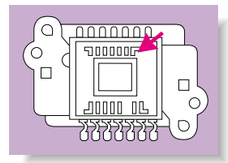
Audio-Video equipment & Various



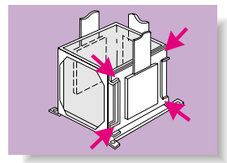
CD-ROM pickup
Suspension wire ⊕ Bobbin terminal Substrate land



DVD motor
Motor terminal ⊕ Flexible substrate



CCD
CCD element ⊕ Flexible substrate



LC projector
Frame ⊕ Frame

Recommendation by our engineers

In order to provide quick and accurate response to your requests, please supply the following information.

- Tact time
- Quality requirements (please submit quality samples if possible)
- Specific type of solder and flux to be applied (if any)
- Availability of preheat process

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Non-contact localized heating method by Soft Beam assures high quality micro-soldering.



SOFT BEAM
YB-02AC5

SPECIFICATIONS Power supply/Lamp house

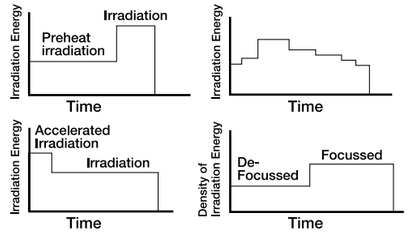
Model		YB−02AC5
Rated input voltage		200VAC
Phase		Single
Input voltage variation range		±20V
Frequency		50/60Hz
Rated input		3.9kVA
		3.0kW
Lamp current range		25～90ADC
Output adjustment range	3.2mm dia. fiber	8～20W ※
	5.0mm dia. fiber	16～40W ※
	6.5mm dia. fiber	24～60W ※
Rated operating efficiency		100%
Weight	Lamp house	45kg
	Power supply	19kg

※ Output adjustment range shows the value when the lamp (UXL1501DB) and optional fiber of each diameter are combined.

Precise Control of Energy

Soft Beam incorporates accurate control of both light beam energy and irradiation time. The output energy and shutter time can be controlled to suit individual work pieces.

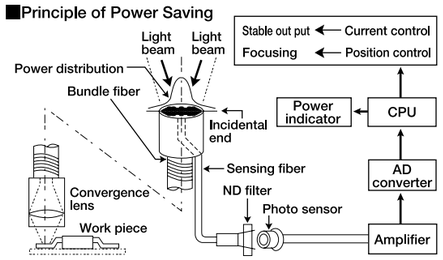
■Energy Control for Soft Beam



Automatic focusing feature

A photosensor detects the light distribution at the incidental end of the optical fiber and uses this information to adjust lamp position so that irradiation output is most effective.

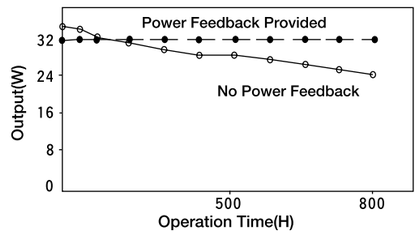
■Principle of Power Saving



Power Feedback Control

As lamp intensity decreases due to deterioration, a closed-loop feedback circuit will automatically recognized and adjust the lamp output so the soldering energy is consistent.

■Change of Light Energy Power



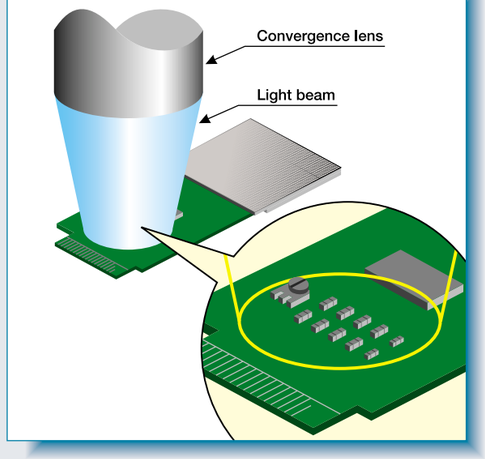
Wire Solder Feeder Control

The power supply provides an integrated controller for use with Wire Solder Feeder YB-30 AB3.

Reflowing is possible (partial reflow)

Even heating 20 to 30 mm away from the beam facilitates soldering multiple chips and parts that have a low tolerance for heat at one time 10 to 20 pieces.

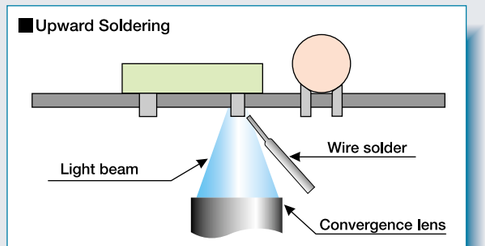
■Partial Reflow



Upward soldering

By utilizing our fiber optic cable, it is possible to solder from under the workpiece, thus the need to secure the components and flip the workpiece is not necessary.

■Upward Soldering



Lead solder can be used.

- Makes possible a smooth change from eutectic soldering to lead-free soldering
- Decreased solder drips compared with soldering irons.
- Localized heating compared to other methods.

[Part numbering]

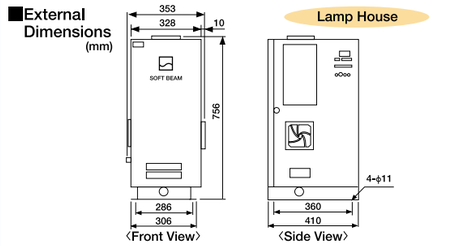
YB-02AC5G □ □

Number indicates which diameter of fiber is used.

Number indicates which convergence lens is used.

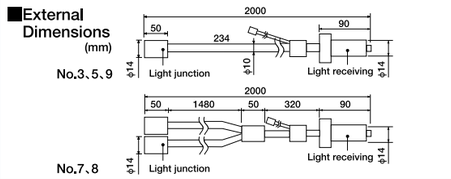
The part number varies depending on which optical fiber and convergence lens are combined. Part numbering system corresponds with the following.

■External Dimensions (mm)



OPTICAL FIBER

■External Dimensions (mm)

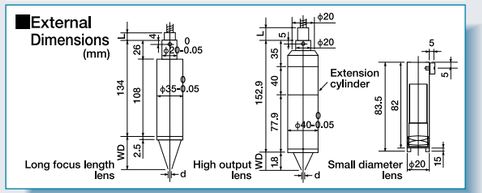


No.	Part No.	Fiber diam. (φmm)	Max. output (W)	Fiber length (m)	Comments
3	BXF00003	3.2	20	2.0 External Length 1.7 Option 3.0 External Length 2.7	—
5	BXF00001	5.0	40		—
	BXF00017	6.5	60		—
7	BXF00006	3.2	10×2		Option Dual-split
8	BXF00007	5.0	20×2		Option Square
9	BXF00005	□2×8.0	34		

※The optical fiber is equipped with a sensor (external dimensional drawings are omitted). Optional specifications will be produced on demand.

CONVERGENCE LENS

■External Dimensions (mm)



NO.	Part No.	Spot dia. "d" (mm) φ3.2fiber	Spot dia. "d" (mm) φ5.0fiber	Focal length (mm)	Fiber guide setting (mm)	Comments	External dia (φ)	Main use
5	BXL35005	3.0～1.6	5.0～2.5	50～36	0～40	Long focal length	35	Solder Paste
3	BXU00032	3.5～0.9	5.4～1.4	39～16.7	0～40	D.D	40	Thread solder
—	BXU00047	5.0～2.5	7.8～3.9	33～20	6.5～20	Small diameter	20	Space saving

※By changing fiber setting "L", you can change focal diameter "d." However, the focal distance "WD" and the radiation energy will change, accordingly.

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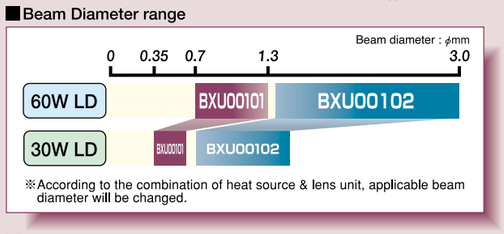
Non-contact, selective heating realizes high quality micro-soldering.



We also have "2 heads" type LD(30,60W)

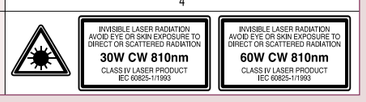
- Fine soldering of micro components with a beam of min. ϕ 0.35mm.
- High speed soldering with high power density of LD.
- Applicable to lead-free soldering
- Easy integration

■Beam Diameter range



※According to the combination of heat source & lens unit, applicable beam diameter will be changed.

■Specifications

No.	Items	Contents			
1	Model number	YB-30FL2 YAB	YB-30FL2 YAC	YB-60FL2 YAB	YB-60FL2 YAC
2	Lens unit	BXU00101	BXU00102	BXU00101	BXU00102
3	Beam shape (standard)	circle		Double circles (○○)	
4	Beam Diameter (at Lens)	ϕ0.35~0.64 (mm)	ϕ0.70~1.52 (mm)	ϕ0.7~1.3 (mm)	ϕ1.4~3.0 (mm)
5	Beam shape with an optical rod (additional option)	–	–	circle	
6	Beam Diameter with an optical rod (additional option)	–	–	ϕ0.82~1.49 (mm)	ϕ1.64~3.58 (mm)
7	Output power (at lens)	4~20W (ϕ0.35mm) 4~26W (ϕ0.35~0.64mm)	4~23W	8~41W (ϕ0.70mm) 8~52W (ϕ0.70~1.27mm)	8~45W (ϕ1.39mm) 8~47W (ϕ1.39~3.04mm)
8	Duty cycle	100%		40%	70%
9	Rated input voltage	Single phase AC200V			
10	Tolerance range of rated input voltage	AC180~220V			
11	Frequency	50/60Hz			
12	Rated input	650VA		1.2KVA	
13	Wave length of Laser	790~830nm (center of wave length 810nm)			
14	Power stability	±5%			
15	Fiber length	2.8m			
16	Aimming beam	Wave length 670nm, Max. output power 0.8mW (Class 2)			
17	Mass: Power source	15kg		20.5kg	
17	Mass: Laser head	13kg		17.5kg	
18	Safety standard: Max. output power	30W (at fiber end)		60W (at fiber end)	
18	Safety standard: classifications	4			
18	Safety standard: Label				

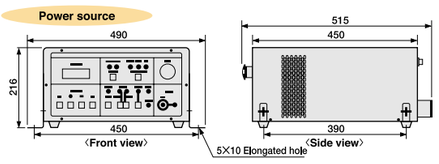
■Specifications of water tank (for 60W LD)

No.	Items	Contents
1	Model number	YX-09KDC1TAD
2	Rated input voltage	Single phase AC200V
3	Tolerance range of rated input voltage	AC180~220V
4	Frequency	50/60Hz
5	Water capacity	9ℓ ※1
6	Cooling system	Forced-air cooling system with radiator
7	Circulating system	Forced circulation system with pump
8	Cooling ability	125kJ/min
9	Flow rate of water ※2	2.2/2.6ℓ/min
10	Water head ※2	20/25m
11	Mass	28 (At being filled with water 37) kg

※1 Use distilled water. Do not use automotive anti-freeze that contains rust inhibitors or leak stoppers. These coolants will damage the pump and the small internal water pipes.
※2 At connected "Panasonic" LD soft beam. Use the unit for cooling the laser head of LD soft beam.

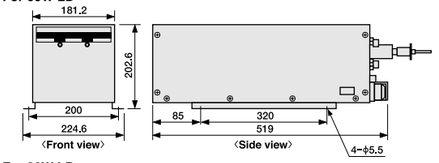
■External Dimensions (mm)

Power source

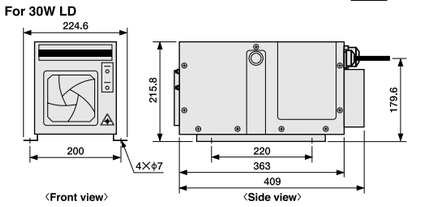


Laser head

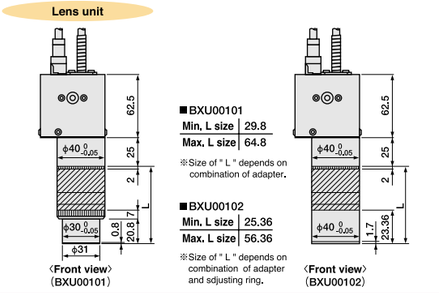
For 60W LD



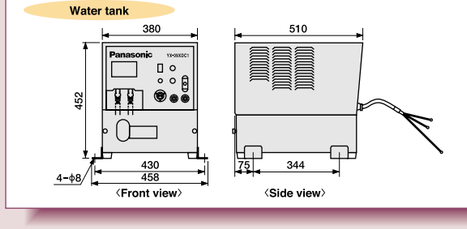
For 30W LD



Lens unit

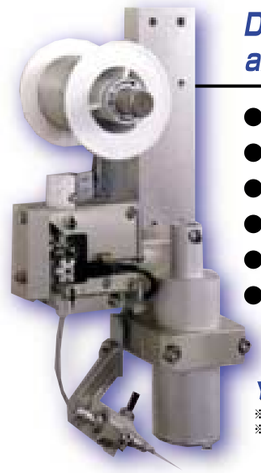


Water tank



OPTION(common)

Wire solder feeder



Designed for quality micro-soldering, high reliability, and ease of operation.

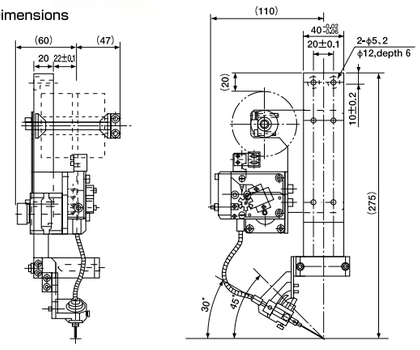
- ●Solder out and solder jam sensors
- ●Newly added wire spool adjusting function
- ●Easy adjustment of solder wire feed position
- ●Compact and lightweight (radius of gyration:110mm)
- ●Programmable solder wire feed rate (0.1—30mm/sec)
- ●Quick replacement of solder wire roll

YB-30FG3
※Photo for YB-30FG3G01
※Lens and wire solder are not included in the specifications.

Model		Lens type	Lens angle
YB-30AB3 (With a controller)	G01	For ϕ40 lens	Fixed type
	G02	For ϕ35 lens	
YB-30FG3 (Without a controller)	G03	For ϕ40 lens	Variable type
	G04	For ϕ35 lens	

Guide unit	
Solder diameter	Model
ϕ0.3	BGU00065
ϕ0.4	BGU00066
ϕ0.5	BGU00067
ϕ0.6	BGU00068
ϕ0.8	BGU00069
ϕ1.0	BGU00070

External Dimensions



※We also have a wire solder feeder, YB-30AB3TAA, exclusive for LD Soft Beam.

Rated input	100VAC 50VA	
Feed speed	Linear	0.1~9.9mm/sec (increment of 0.1mm/sec)
	Spot	1~30mm/sec (increment of 1mm/sec)
Controller : outside dimension (mm)	(W)166mm×(D)101mm×(H)327mm	
Controller : mass	4.3kg (cable not included)	
Drive motor	Pulse motor	
Applicable solder mass	MAX 0.5kg	
Applicable solder size (diameter) (mm)	ϕ0.3、ϕ0.4、ϕ0.5、ϕ0.6、ϕ0.8、ϕ1.0mm	
Feeder head : mass	1.3kg (for G01)	

※A controller is installed on model YB-30AB3□□□.

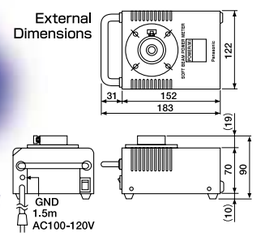
Power meter



A power meter is required for calibration of Soft Beam unit. Soft Beam SLIM series offers the option of auto calibration.

YB-05FC1

External Dimensions



Rated input voltage	AC100~120V±10%	Minimum display unit	0.1W
Rated input	11VA	Maximum irradiation time	10min.
Frequency	50/60Hz	Ambient temperature	10~30℃
Measurement range	5~70W	Size	(W) 122mm
Accuracy	±2% (FS)		(D) 183mm
Sensor type	Thermocouple		(H) 99mm
Response speed	Within 5.5 sec.	Weight	1.8kg

(The controller for the LD Soft Beam is part number YB-05FC1TAL)

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Panasonic Soft Beam

SLIM SERIES

Standard Robot System

Equipment systems responding to manufacturing requirements.

○Easy to Operate

Program and display screens run on Windows operating system

○Easy to Solder

Soldering technique is programmable.

○Automatic calibration

Easily maintained using the automatic power calibration function

※A dedicated power meter is required.

○Option

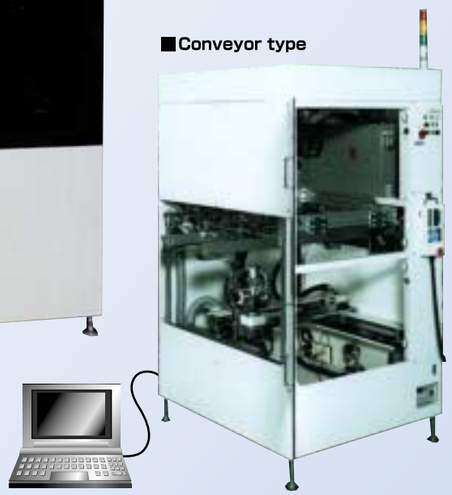
- ●Conveyor
- ●Shuttle unit
- ●Preheat unit
- ●Memory card
- ●Exhaust duct
- ●Solder paste dispensing unit

SLIM-II series

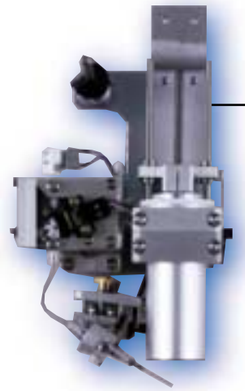
■Shuttle type



■Conveyor type



※A personal computer is not included in the specifications.



OPTION

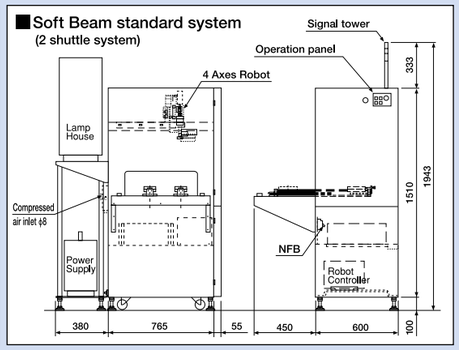
■Variable beam unit

○Programmable beam diameter for multiple soldering applications (adjustment range : ϕ1.9 − 4.7mm) ※at 5.0 fiber with D.D lens

○Solder wire feed position is automatically adjusted for each beam diameter

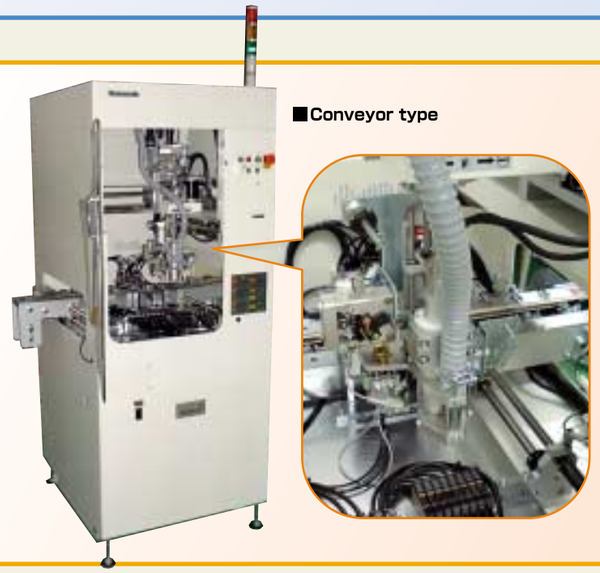
YB-04FH2	
Applicable PCB	Minimum 50mm(Width)×50mm(Depth) Maximum 330mm(Width)×250mm(Depth)
Main body size	600mm(W)×1200mm(D)×1943mm(H)
4 axes cartesian robot Stroke	Stroke/X:300mm Y:400mm Z:100mm W-50°+315° Repeatability/X,Y,Z,:0.05mm
Soft Beam	YB-02AC5G□□
Wire solder feeder	YB-30FG3□□□or YB-02GA1□□□
Controller type	Remote teaching, MDI
Powder supply	Single phase, AC100V/1.5kVA, AC200V/4.0kVA

■Soft Beam standard system
(2 shuttle system)



SLIM series

■Conveyor type



LINE SYSTEM



■Combined Upward and downward soldering system

A system designed to solder leaded components on a PCB from underneath the board(using upward system)and then solder the remaining mounted components from the top(using downward system).

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