Specifications

		JM-100		JM-50	JM-20	
		Standard specification (L size PCB)	Clinch specification (L size PCB) Use/No use of clinch unit	Standard specification (L size PCB)	L size PCB	XL size PCB
Board size(㎜)	Single clamping	50×50～410×360	80×100～410×360	50×50～410×360	410×360	410×560
	Double clamping	50×50～800×360	80×100～800×360	50×50～800×360	800×360	800×560
PCB weight		4kg		2kg	4kg	
Component height		30㎜			55㎜	
Component size	Laser recognition	0603～□50㎜				
	Vision recognition	□3㎜～78×48㎜ or 85×25㎜			□3㎜～□50*7,1005～□24㎜*8	
Insertion speed (Insertion components) *Optimum	Vacuum nozzle	0.6 sec / part *1*4*5			0.8 sec / part *3	
	Gripper nozzle	0.8 sec / part *2*4*5			1.3 sec / part *2*4*5	
Placement accuracy (SMT)	Laser recognition	±0.05㎜ (3σ)				
	Vision recognition	±0.04㎜				
Insertion force		50N for JM-20/JM-100 and 20N for JM-50				
Power supply		3-phase AC200～415V				
Apparent power		2.2kVA			2.0kVA	
Circuit breaker		Standard				
Operation air pressure		0.5±0.05MPa				
Air consumption (standard)		81L / min			50L / min	
Conveyor height		900㎜ ±20㎜				
Machine dimension(㎜) (W×D×H)*6		1,500×1,500×1,450		1,454×1,505×1,450	1,500×1,657×1,550	1,500×1,892×1,550
Body weight		1,300kg			1,760kg	1,985kg

	JM-E01
Board size(㎜)	Single clamping：50×50～410×560 Double clamping：50×50～800×560
PCB weight	6kg(standard) 10kg(option)
Component height	Component body 80㎜ or less, lead + body = 90㎜ or less
Component size	Outer dimension (package) size □150mm/Recognition size once：40×25, 4×1：150×25, 4×2：150×48, 4×3：150×71
Applicable screw size	M3 size *9
Screw supply method	Force-feed type
Machine dimension(㎜) (W×D×H)*6	1,500×1,930×1,600
Body weight	2,000kg

*1 Our specified conditions (Applicable part: Aluminum electrolytic capacitor (φ 8 mm), Feeder: two M RF-S, Placement conditions: Simultaneous pick, sequential insertions using 2 nozzles)
*2 Our specified conditions (Applicable part: Connector (4 pin), Insertion conditions: 2 sequential picks and insertions using 2 nozzles)
*3 Our specified conditions (Applicable parts aluminum electrolytic capacitor (φ8 mm) When the component height is 28 mm, board transport and BOC mark recognition time are not included.)
*4 Board transport and fiducial recognition not included *5 For 16mm head height *6 For 900mm conveyor *7 Using 54mm VCS camera *8 Using 27mm VCS camera *9 Please contact for detail

Feeder capacity*1

	Bank	Max. SMT tape feeders (8mm)	Radial feeder			Axial feeder		Stacked stick feeder	General purpose bulk feeder MVF	Tray holder*3		MTS Number of trays (Max*4)
			MRF-S	MRF-SN*2	MRF-L/LF	MAF-S	MAF-L			Full	Half	
JM-100	18㎜ pitch	56	18	18	14	14	10	10	10	1	2	40
	12㎜ pitch	NA	16	18	12	16	12	12	10	1*2	2*2	40
JM-50	18㎜ pitch	56	18	18	14	14	10	10	5	1	2	40
	12㎜ pitch	NA	16	18	12	16	12	12	6	1	2	40
JM-20	—	80	26	26*4	20	22	16	16	14	2	4	40
JM-E01	18㎜ pitch	56	18	18	14	14	10	10	10	1	2	40
	12㎜ pitch	NA	16	18	12	16	12	12	10	1	2	40

*1 Max quantity of feeders for given type *2 It supports from the latest version (2.00.00A), and the old version cannot be used.
*3 Head height may be restricted depending on feeder location *4 Please contact for detail

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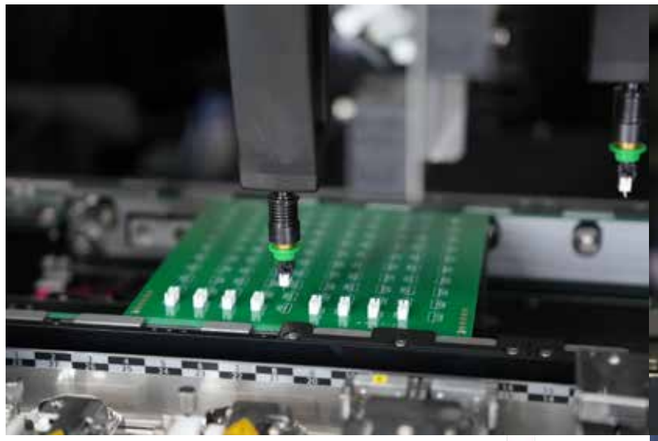
JUKI CORPORATION HEAD OFFICE
The activities of research, development, design, sales, distribution, and maintenance services of industrial sewing machines, household sewing machines and industrial robots, etc., including sales and maintenance services of data entry systems.

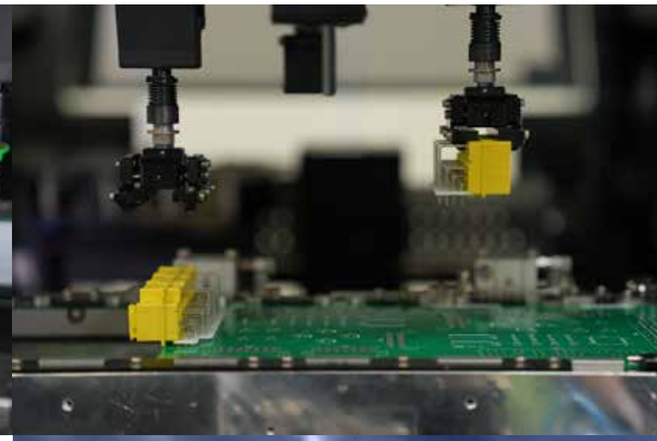
Oct- 2024/Rev.01

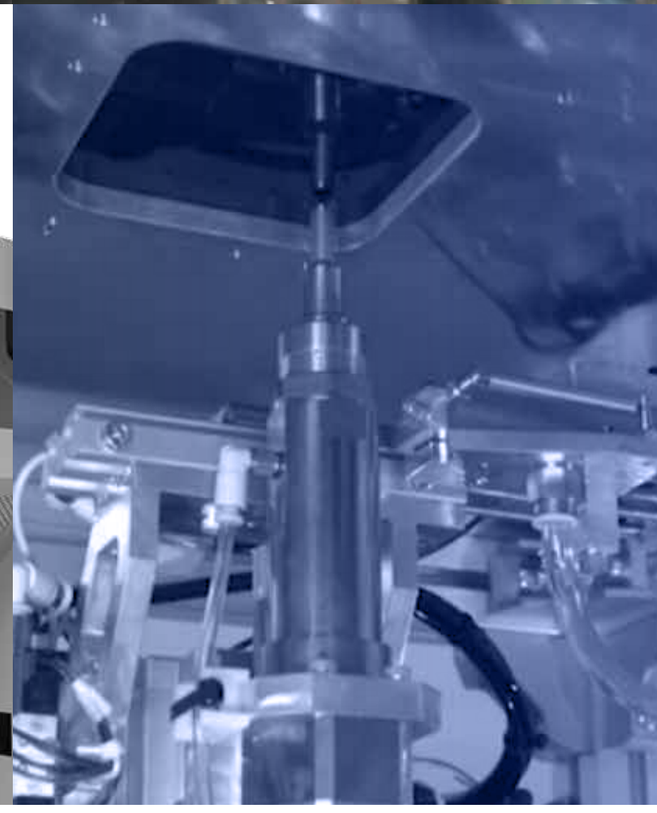
Multitask Platform

JM-Series

Automation Insertion process through reliable quality







JUKI Smart Solutions

Is there a problem during component insertion process?

- ☑ Different experience level between operators
- ☑ Human error caused by the operator
- ☑ Many different components manually handled by operator in short time
- ☑ Quality is not stable, and production is not improved
- ☑ High cost to hire and training many operators simultaneously
- ☑ Different component types and packaging make automation difficult

How to solve these problem?

- Wage increase, man-hour and labor shortage are replaced by facility.
- Insufficient experience, technician replacement, and quality instability of workers standardize work and stabilize processes.
- System to reduce human error and work management man-hours

JM series-automation results No.1 solves a variety of issues, including accuracy during insertion operation, improving processes, and eliminating variations.

Introduction results

Actual
01 Electronics manufacturers (China, East Europe)

Actual
02 PC Related Major EMS (Server Board/Motherboard)

Actual
03 Power Supply Manufacturers (China/Korea/Japan)

Actual
04 Automotive manufacturer (Tier1.2) (Japan)

Product lineup

High speed insertion model
JM-100

JM series standard model

■Component size(max.)
□50.0㎜(laser recognition)
■Component height(max.)
30㎜
■Board size(max.)
800㎜×360㎜
(X-2 feed))
■Machine size(㎜)
W1,500×D1,500×H1,450

■Feature
- High-speed model with the best tact in its class
  (Pick-up nozzle: 0.6 sec.
  Gripper nozzle: 0.8 sec./1 component)
- Ideal for high volume production
- Takumi head with multiple components heights recognition

Basic model
JM-50

Entry model focusing on basic functions

■Component size(max.)
□50.0㎜(laser recognition)
■Component height(max.)
30㎜
■Board size(max.)
800㎜×360㎜
(X-2 feed))
■Machine size(㎜)
W1,454×D1,505×H1,450

■Feature
- Basic model that combines reliable quality with convincing economic and efficiency
- Ideal for small-lot production
- Takumi head with multiple components heights recognition

Large boards/ Odd shape components model
JM-20

Versatile high-end model

■Component size(max.)
□50.0㎜(laser recognition)
■Component height(max.)
55㎜
■Board size(max.)
800㎜×560㎜
*XL type(X-2 feed)
■Machine size(㎜)
W1,500×D1,892×H1,550
*XL type

■Feature
- Versatile for large boards and odd shape component
- Ideal for production variates

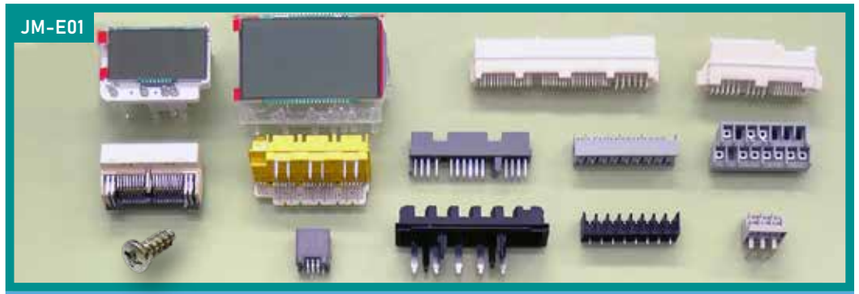
Large odd shape component insertion/ Screw tightening model
JM-E01

Custom models specialized for assembly and screw tightening

■Component size(max.)
□150.0㎜(external size)
■Component height(max.)
90㎜
■Board size(max.)
800㎜×560㎜
(X-2 feed)
■Machine size(㎜)
W1,500×D1,930×H1,600

■Feature
- An innovative model that automates multiple processes of insertion and screw tightening with a single unit
- Screws can be tightened from under the board. The board does not need to be turned over, preventing scratches and misalignment on the PCB and component.

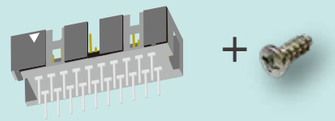
Excellent flexibility and a wide range of component capabilities



JM-E01

Custom models specialized for assembly and screw tightening

Component size : Max.□150.0㎜
Component height : Max.90㎜

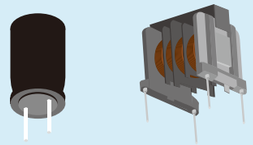


Connectors/stick component, etc.

JM-20

Large boards/Odd shape components

Component size : Max.□50.0㎜
Component height : Max.55㎜



Large and odd shape component such as DIMM, PCI and large connectors.

JM-100

High production and versatility

Component size : Max.□50.0㎜
Component height : Max.30㎜

Various component including taping component and bulk component

JM-50

Component size : Max.□50.0㎜
Component height : Max.30㎜

Features supporting JM-Series

POINT
01 High Flexbility

Large variety of nozzles

Support for solving problems by proposing optimal nozzles for customers

Mini chuck nozzle

Large variety of feeders

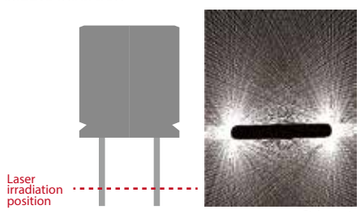
You can also propose customized supply unit to suit a variety of supply configurations.

Bulk Feeder

POINT
02 High quality

Laser recognition technology

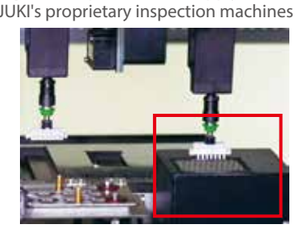
JUKI's proprietary SMT component to insertion component provides stable recognition and reliable insertion



String art

3D image recognition technique

Realizes high-precision placement with image recognition capabilities that apply the technical of JUKI's proprietary inspection machines



3D image recognition sensor

POINT
03 High efficiency

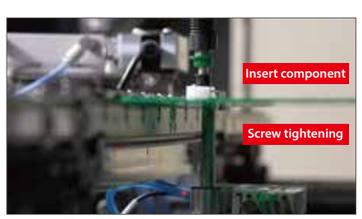
Fast insertion

Achieve the highest tact in the class

JM-100 placement/No need to replace nozzle

Achieved automation of multiple processes

One unit can insert component and screw tightening.



One unit can insert component and screw tightening

High Flexbility

Large variety of feeders and nozzles

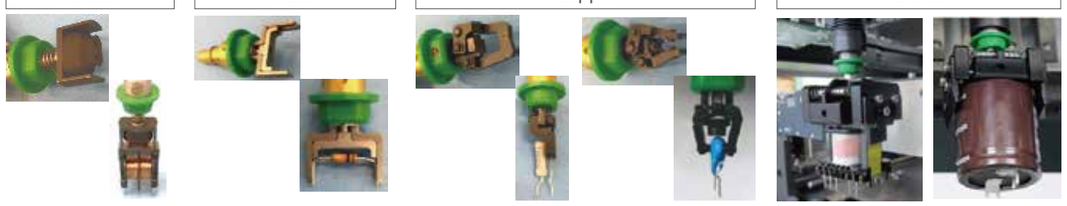
Feeder

※It is customized according to component.

Bulk component	Taped parts			Stick parts	Tray	
General purpose bulk feeder MVF	Radial feeder MRF-S/MRF-L /MRF-ML	Axial feeder MAF-S	Tape feeder (SMT)CTFR	Stacked stick feeder	Tray holder	Matrix tray server TR5SNK

Nozzle

Vacuum	Axial	Gripper	Chuck



Wide component range from small to large and heavy

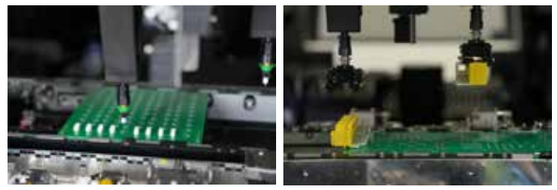
JM-100 **JM-50**

Component size 0603 to □50mm, component weight 200g, and the insertion force up to maximum 50N.

JM-E01

XY shaft construction adopted. By setting head unit axis to 2 axes, the compatible component size has been expanded. Component height is 90mm*, component heavy 400g, and insertion force up to maximum 50N.

*Component body 80㎜ or less, lead + body = 90㎜ or less



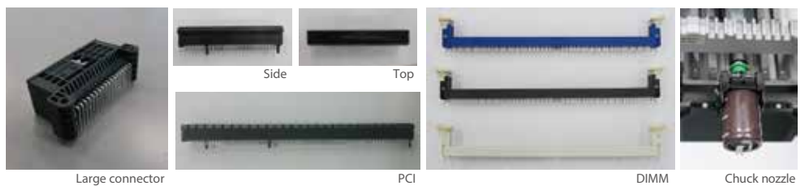
Small component

Large component

Insertion of odd-shape components

JM-20 **JM-E01**

The JM-20 supports larger nozzles and larger, odd shape components such as DIMM and PCI connectors and large capacitors or transformers.



Large connector

Side

Top

PCI

DIMM

Chuck nozzle

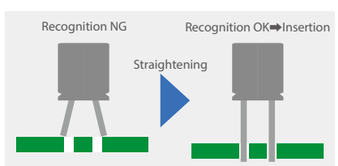
Option

Lead straightening adjustment function

This function straightens the lead pitch to allow non-standard lead pitch component to be inserted.

Multi-pin type

The multi-pin x 2-pin insert component can also be straightened. After image recognition, it is judged by the lead arrangement inspection.



Sweep insertion

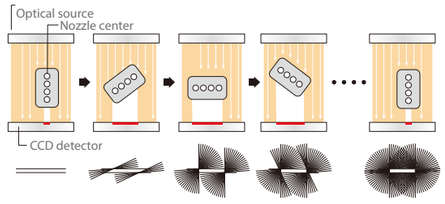
Insert a falling component while raising it with the following component. This feature allows insertion of near components as well side by side components.

High quality

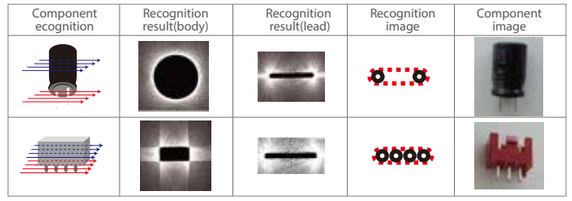
JUKI's unique laser-recognition technology ensures reliable and stable insertion

JM-100 **JM-50** **JM-20**

Components are rotated 360 degrees in the laser. The entire outline of the component is measured accurately by a high resolution CCD sensor. The exact component position and angle are obtained in a fraction of a second without a side trip to a camera.
After measuring the component body, the lead tips are measured to ensure accurate insertion.

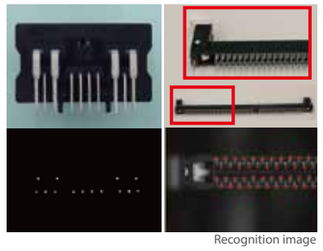


Component ecognition	Recognition result(body)	Recognition result(lead)	Recognition image	Component image

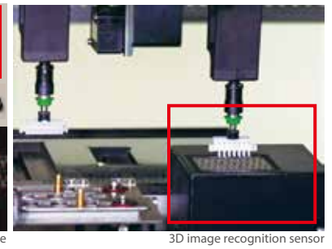


High-precision insertion is realized by image recognition using inspection machine technology

By applying JUKI's unique 3D image-recognition technique, the leading edge of the lead can be recognized more accurately. It also enables lead recognition with a pointed tip, semicircular tip, and difference in height, enabling high-precision insertion of a wide range of insertion component.



Recognition image



3D image recognition sensor

Active clinching

JM-100

*For clinch specifications

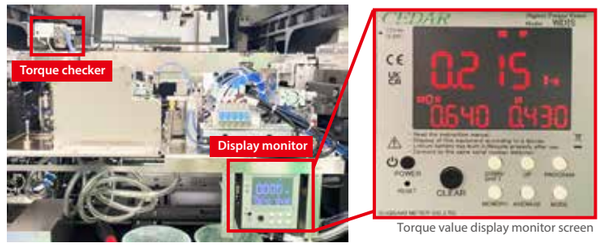
New active clinch unit supports bend in, bend out, and N bend to prevent components from lifiting during reflow and make easier prior to reflow.

Clinch unit

Torque checker

JM-E01

This option is used to measure the torque value set by the torque driver.
The measured results are displayed on the monitor screen, allowing the daily inspection of the torque driver and the quality control of the screw tightening torque value.



Torque value display monitor screen

Prevents scratches and misalignment of PCB and component

JM-E01

Screws can be tightened from under the board. Since the board does not need to be turned over, it prevents scratches and misalignment on the board and component and reduces losses.

Screw tightening

Traceability and system linkage

Component can be prevented from being mounted incorrectly when components out is replaced during production start or production. It is also possible to track the serial number of the board on which component is placement from component lot number, realizing high-quality production. Further JaNets・IFS-NX improves production efficiency and production performance.

Intelligent Feeder System
IFS-NX

Image to prevent incorrect installation of component by IFS-NX

High efficiency

Fast insertion

JM-100

Best in class speed. Significant speed increase over previous generation. Component insertion time down to 0.6 seconds for vacuum nozzle and 0.8 seconds for gripper nozzle.

JM-100 placement/No need to replace nozzle

One unit can insert component and screw tightening

JM-E01

This highly versatile machine realizes component inserting work, screw fastening work, and multi-process automation. The board size is 800mm x 560mm*1, and the weight is up to 10kg*2.

*1 At double feed: standard *2 Option

One unit can insert component and screw tightening