RS-2

Fast Smart Modular Mounter

Revolutionary Speed
Revolutionary Flexibility
Revolutionary Quality

I-TRONIK
JUKI

Fast Smart Modular Mounter

RS-2

Revolutionary
Speed, Flexibility, Quality

The RS Series—combining unmatched flexibility and efficiency to meet diverse production needs—has evolved even further.
Achieving high-speed placement at 50,000 CPH, it features the advanced "TAKUMI head" with high-precision laser technology.
From the smallest components to large items, this single unit can handle any production requirement, adding new value to your production environment.



JUKI Smart Solutions

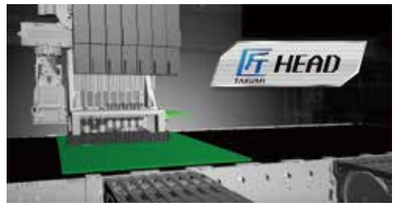
Revolutionary Speed

High speed of 50,000 CPH

High speed of 50,000CPH

By positioning the laser sensor closer to the board and reducing travel time from pick-up to placement, the one-head mounter achieves an optimal speed of 50,000 CPH in its ideal conditions.

*Optimum condition

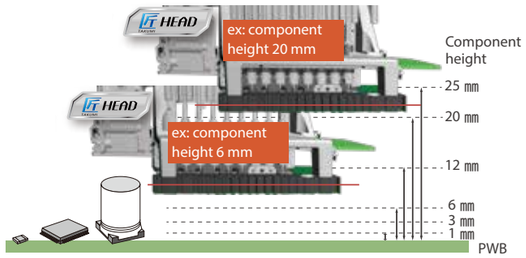


"TAKUMI head" with adaptive sensor height

The height of the laser sensor on the "TAKUMI head" automatically adjusts based on the height of each component being placed, allowing precise pick-up and placement.
This 8-nozzle "TAKUMI head" accommodates components of varying heights, from the smallest to the largest, ensuring optimal speed and accuracy.

*Component height can be selected from six levels: 1, 3, 6, 12, 20, and 25 mm.

【"TAKUMI head" which changes with the height of the sensor】



Realizes high-speed, high-precision recognition with JUKI's proud laser-recognition technique

JUKI's laser-recognition technology enables fast, accurate identification of various component shapes, including BGA, SOP, and QFP, ranging from as small as 03015 to sizes up to 50 mm square. This laser-recognition system ensures stable recognition and placement, unaffected by variations in electrode shape or surface gloss. Additionally, creating component data is simplified, allowing for quick integration of new components.

Recognition algorithm

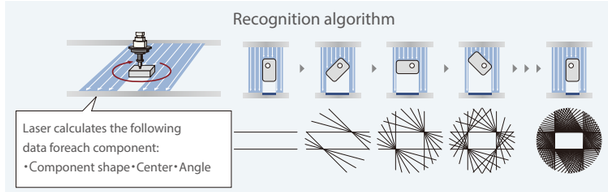
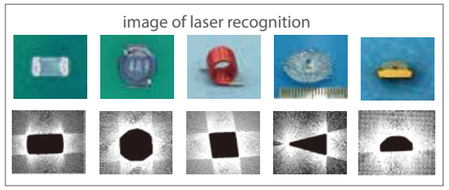


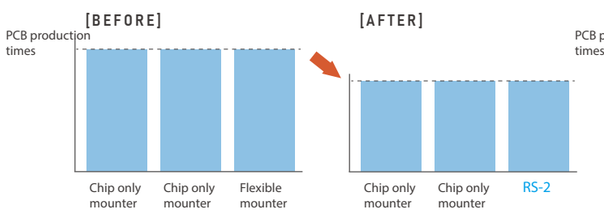
image of laser recognition



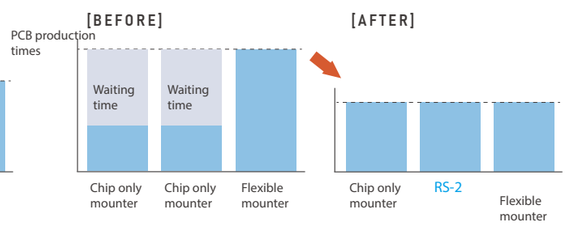
Optimum line balance and maximum throughput

Adding the RS-2 to the production line enables optimal line balancing, maximizing throughput. For production with larger chip components, the RS-2 helps reduce the load on the chip unit, while for larger component profiles, it eases the burden on the general-purpose unit.
By combining existing machines with the RS-2 or connecting multiple RS-2 units, we can create a highly efficient production line with enhanced capacity.

【For PCBs with high placement count】

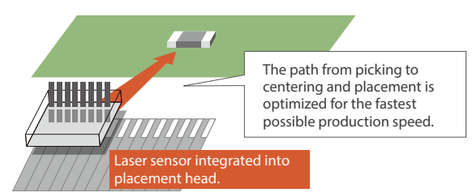


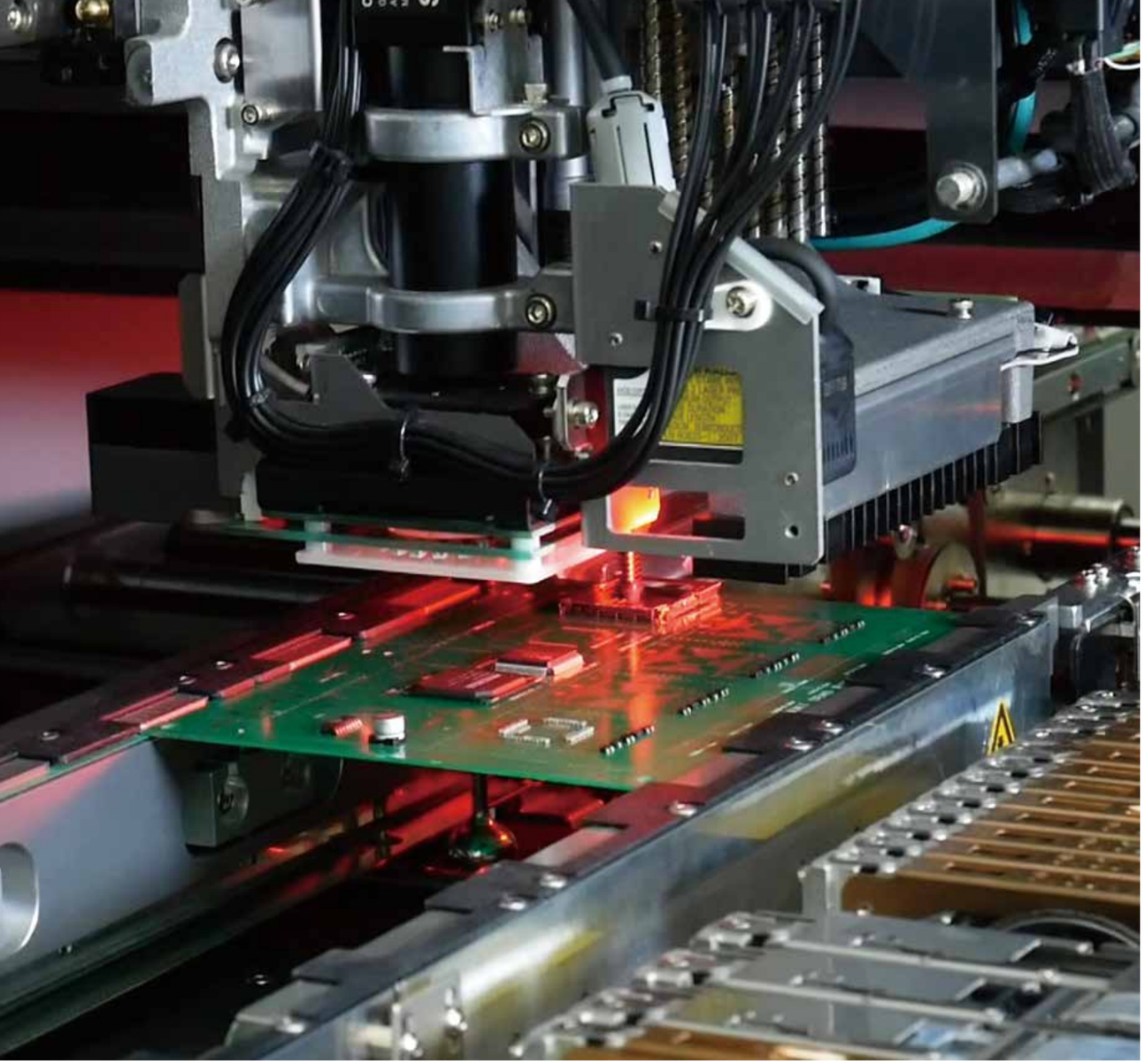
【For PCBs with many complex components】



8-nozzle on-the-fly centering for high-speed

The laser sensor is mounted on the head to minimize head travel.
The head moves directly from the pick position to the placement position for the shortest travel time.



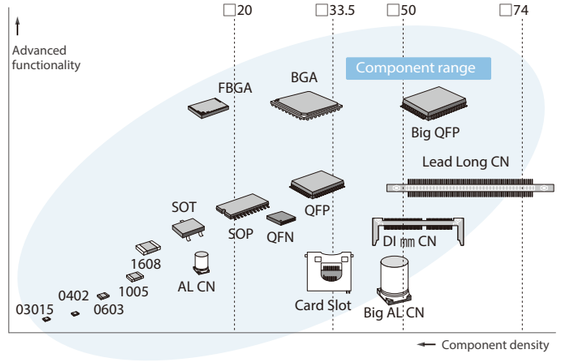


Revolutionary Flexibility

Supports a wide range of component from 03015 to 74mm square

Wide component range

Supports components from sizes as small as 03015 up to 74 mm square or 50 mm x 150 mm, with placement heights accommodating components up to 25 mm.



Up to 112 feeder mounting for flexible and efficient production

The compact, lightweight, and slim design of the RF feeder supports up to 112 feeder units (front and rear combined), enabling high-efficiency production.
This setup is ideal for multi-product, small-lot production with minimized setup times.

* When RF feeder (RF08AS) is used.

【Maximum number of feeders mounted】

112 units

(Total for front and rear)



RF feeder

Component compatibility

TR Series offers a wide range of rear-bank server types that enable direct component supply from trays, as well as horizontal changer types that supply component by shuttles.
In addition, a variety of selections are available depending on the application, such as a tray holder for one-stage feeding or a dual tray server for automatic replacement of two-stage trays.



Matrix tray holder



Dual tray server



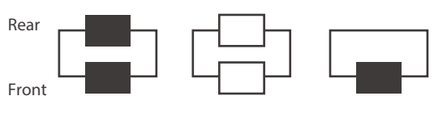
TR8SR（Rear installation type）

Bank specifications selectable

Bank specifications are customizable, with options including feeder trolley specifications, fixed bank specifications, and front-only fixed bucket specifications.*1

■Fixed bank specification

□exchange truck specification*2



*1 Contact us for details.　*2 Option



Feeder trolley

Large nozzle ATC

ATC plates support large nozzles up to 7 mm x 28 mm, allowing for efficient production of ultra-large profile components.



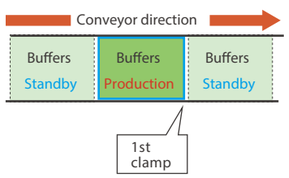
NEW Ideal for long PCB production

Standard specification
Up to 410 mm × 370 mm with one clamp (3 buffers)
Up to 800 mm × 370 mm with 2 clamps (1 buffer)

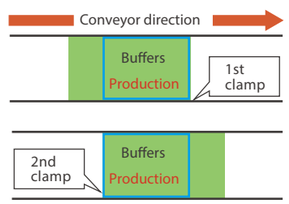
XL Specifications
Up to 650 mm × 560 mm with one clamp (3 buffers)
Up to 1200 mm × 560 mm with 2 clamps (1 buffer)*

*1 Extension unit must be added.

Standard specifications: 410 mm or less: 3 buffers
XL: 650mm or less: 3 buffers



410 ㎜ Ultra to 800 mm: 1 buffer
650 ㎜ Ultra to 1200 mm: 1 Buffer



Revolutionary Quality

High-precision placement thanks to reliable recognition and enhanced functions

Component image-recognition technology

Component positioning is achieved with a VCS camera that accurately recognizes shapes, leads, and balls. This technology enables the inspection of lead bends, missing balls, and other defects, allowing for precise recognition of QFP and BGA components.

●360 degree part recognition technology

The 360-degree component recognition system compensates for components with unstable packaging, ensuring accurate placement at the correct angle. Recognition angles can be adjusted as needed.

●Three color recognition lighting

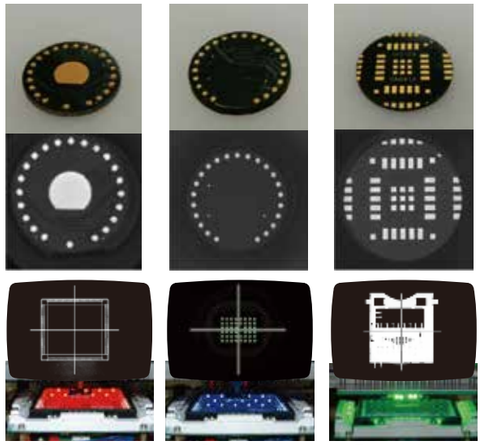
Stable component recognition is achieved by adjusting the illumination color based on component type and material, enhancing recognition accuracy.

●Wide component range

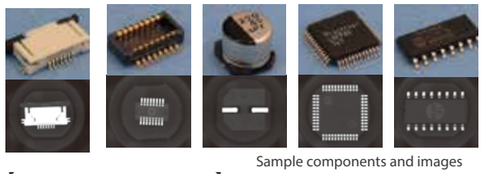
High compatibility with various components is achieved through simplified data creation and general-purpose vision teaching, which uses actual components for accurate teaching.

●Faster image recognition

Images are captured as the head moves along the X-axis, enabling high-speed, continuous image recognition without stopping.



Reflection recognition　Reflection recognition　Transmission recognition



Sample components and images

【Multi-component centering】



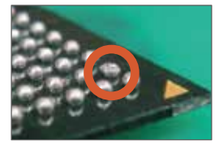
Up to 4 components are centered in a single image　Sample images

NEW Advanced high-precision coplanarity new model

Detects lead floating and BGA ball deformation to prevent the placement of defective components. High-precision coplanarity checks enhance product reliability.



New model coplanarity sensor



Bad BGA ball



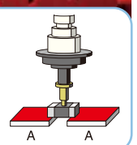
Lead float failure

Component Verification Syetem(CVS)

Incorrect component placement is prevented by verifying the resistor value, capacitance, and polarity of actual components, from sizes as small as 03015 up to 10 mm square, at the start of production and after component changes.

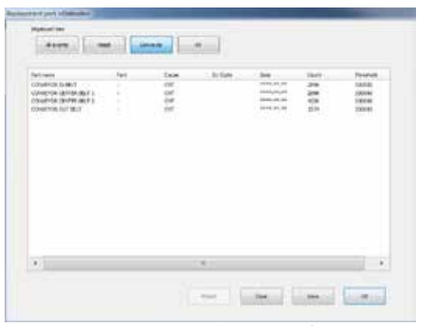


Electrodes (A) used to check polarity or measure components



Preliminary control
(consumable component replacement notification function)

This function notifies the replacement timing according to the order of the individual switches based on the usage status of the consumable component. The replacement timing is determined by the standards (time, number of operations, travel distance, etc.) set for each component.

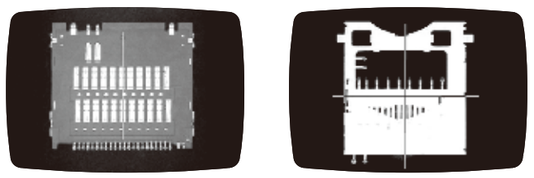


Replacement notification screen

Others

Flexible vision teaching

Data preparation for deformed components and other complex parts is made easy with guided instructions, significantly reducing the effort required for data creation.

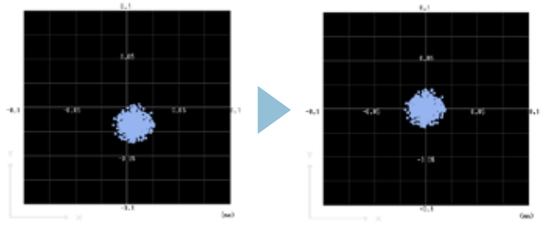




Flexible vision teaching

FCS (Flexible Calibration System)

The optional FCS adjustment tool allows for accuracy checks after facility relocation or as equipment ages. When adjustments are necessary, automatic corrections can be performed, ensuring stable placement position accuracy is maintained throughout relocation or over time.





FCS image

Improved quality using component checking

Placement quality is enhanced through various checking functions applied after component pick-up. Laser recognition verifies accuracy from pick-up to placement, effectively reducing defect rates.

1 Tombstone detection

Tombstone parts can be detected by laser and rejected.

2 Orientation check

Component width/length ratio can be checked to ensure the part was picked in the correct orientation.

3 Dimension check

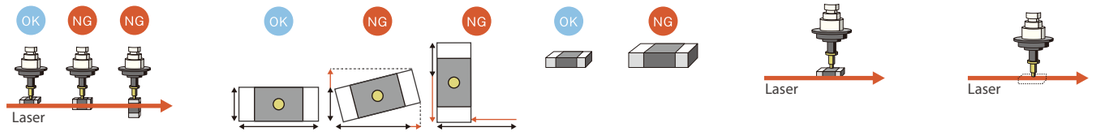
Component width and length can be verified to ensure it is the correct component.

4 Part drop check

Component presence is verified using the laser to ensure it has not fallen off the nozzle.

5 Release check

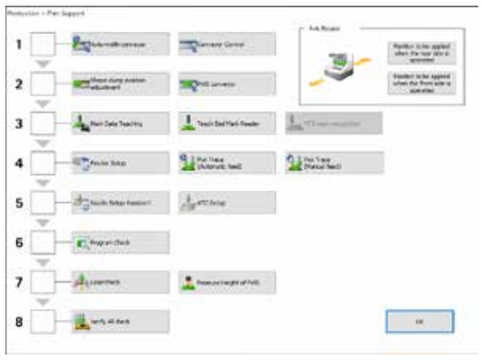
The laser checks the nozzle after placement to ensure the part was released on the PCB.



Automated preproduction check list

The production plan support function streamlines setup by guiding users through a series of options in the plan support menu, from "1. Automatic board width adjustment" to "8. Verification continuous Inspection." Following these steps ensures an optimized and efficient setup process.

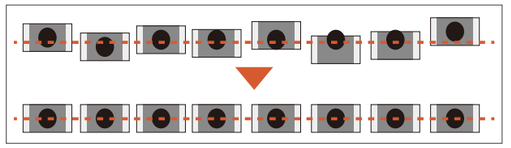
* Option



Setup preparation menu

Pick-up position compensation function

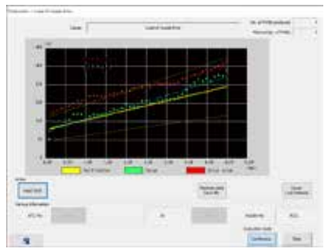
Automatically controls the component feed from the feeder to ensure stable positioning for simultaneous pick-up, improving accuracy and consistency.



Feeder pick position auto-correct

Load cell

Load cell measures the placement force precisely for each nozzle. The risk of damaging fragile components is reduced during both pick and placement. The load can be set individually for each part number.



Data check on the monitor screen

Ease-of-operation improved by automatic component measurement

Component data can be programmed simply by typing approximate dimensions, type and packaging information. (Laser-recognition component) Accurate dimensions, number of leads and lead pitch are measured and program med automatically by the machine.



Nozzle individual management function

Each nozzle is equipped with an RFID tag for individual tracking, allowing for precise management of maintenance schedules and traceability information.



Support sponge

Soft under board support reduces defects caused by PCB warpage. This unit uses soft pillars that will not damage components on the bottom side and do not require setup for each different PCB. They are easy to removed with a simple magnetic base.



Support sponge

Improvement tape reel mounting workability

A mounting base is provided for attaching tape reels to the tape feeder, with options for a main unit-mounted tape reel mount and a single-unit tape reel mount.



Feeder setup fixture for RF feeder

Full virtual keyboard

Standard touchscreen keyboard for fast data entry.



Keyboard entry screen

The IC collection belt

The IC collection belt provides a safe method to handle rejected parts while also protecting them from further damage. Belt pitch can be set for different size parts.



The IC collection belt



Linking systems

The RS-2 and integrated JaNets software work together to enhance production efficiency across the factory, providing features like production condition monitoring, storage management, and remote support.
Additionally, IFS-NX ensures high-quality production with traceability and component protection.

Production condition monitoring

Real-time monitoring of production conditions supports improvements in operational efficiency and quality.

Monitoring

Provides real-time display of production conditions, including machine-specific error counts, recent machine tact time, the most recent error, and error stop duration for each machine.

1. View floor selection tab
2. Production progress chart/table
3. Line selection tab
4. Line monitoring information



Monitoring screen

Components out forecast

Displays components at each feeding position that may run out during production, enabling efficient resupply.

1. Search • Export
2. Components out info card list



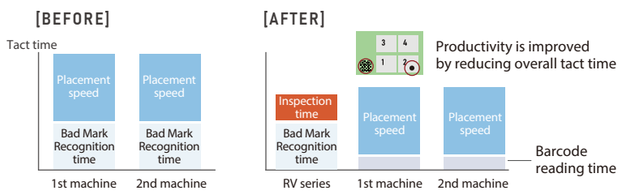
Components out forecast screen

Coordination among facilities

Enhances production performance through coordinated machine operations.

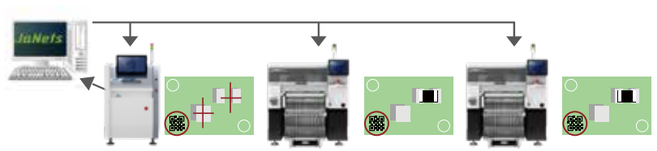
Bad mark propagation

Bad mark data detected by the tester or upstream equipment can be transmitted to the RS-2, reducing recognition time and enhancing production efficiency.



Feed forward for printing misalignment

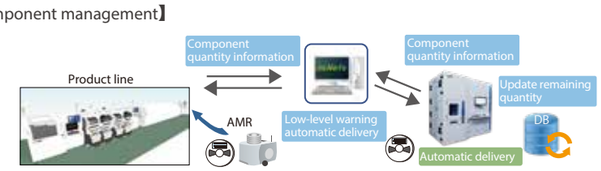
Retrieves print position offset information from the inspection machine and sends it to the RS-2 as placement offset data.



Component management with auto replenishment

In addition to automated component delivery from the warehouse during setup, production efficiency is enhanced through various linked processes, such as automatic delivery triggered by component run out warnings during production.

【Component management】



Specification

Fast Smart Modular Mounter RS-2			
		Standard	XL
Board size	Minimum	50mm × 50mm	
	Maximum 1 buffer	800mm × 370mm(double clamping)	1200 mm × 560 mm (Clamp twice)
	3 buffers	410mm × 370mm(single clamping)	650 mm × 560 mm (1 time clamp)
Allowable board weight		Max. 3 kg	Max. 10 kg
Substrate thickness		0.3 ～ 6.0mm	0.8 ～ 6.0 ㎜
Component height		25mm	
Component size		03015-50 mm × 150 mm (1 × 3 segment recognition) × □74 mm (2 × 2 segment recognition)	
Placement speed	Optimum	50,000CPH	
	IPC9850	32,000CPH	
Placement accuracy		±35μm (Cpk*1)	
Feeder inputs		112 products*1	
Power supply		Three-phase AC200V (standard type)/Three-phase 200 VAC to 415V (When the type with transformer is selected)	
Apparent power		2.2 kVA	
Operating air pressure		0.5±0.05 MPa	
Air consumption		When using a vacuum generator: 200L/min (standard), when using a vacuum pump: 50L/min (optional)	
Machine dimensions(W×D×H)*2		1,500mm × 1,686mm × 1,450mm	2,109 ㎜ ×1,876 ㎜ ×1,450 ㎜
Body weight		1,630kg	About 1,850 kkg

*1 Using RF(RF08AS) feeders
*2 D dimension does not include the front operation monitor. H dimension does not include signal tower.

Option

Fast Smart Modular Mounter RS-2	
Recognitions system	Image-recognition camera (Viewing angle 54mm)
Operations system	Rear-side operation unit
Inspection function	Coplanarity sensor / Component verification system(CVS)
Conveyor	Support pin automatic placement unit / Support pin/Support sponge/Long PCB support sponge
Electrical protection	CEcompatible specification / Ground-fault interrupter
Force Control	Load control nozzle / Force control nozzle
Software*3	JaNets / IFS-NX / Flexline CAD
Component handling and feeders	Feeder trolley RF feeder only / RF-EF dual servo*5 / Electric tape feeder (RF/EF*5) / EF feeder adapter*5/ Electric stick feeder*5(Type-N/Type-W) / Matrix tray server TR8SR, TR7DN, TR5SNX, TR5DNX / Matrix Tray Changer TR6SNV・TR6SXLX*4・TR6DNV・TR6DXLX *④/Dual-Lay Server TR1RB/Tray Holder/IC collection belt / Tape reel mounting base(for RF / for EF) / Splicing jig / Electric trolley power station PW02*6
Others	Nozzle (with RFID tagging) / Splicing tape / Mini-signal light / FCS calibration jig / large ATC / Vacuum pump / Nozzle RFID reader

*3 Please contact us for details.
*4 XL is specified.
*5 EF feeder and stick feeders, attachments and RF/EF banks are required.Please contact us for details.
*6 A separate connection cable is required.

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.

I-TRONIK S.R.L. Unipersonale
Viale dell'Artigianato, 20 - 35010 - Peraga di Vigonza (PD)
Tel. +39.049.895.2300 - Fax +39.049.893.4822 - P.IVA 01443020282
commerciale@itronik.it _ www.itronik.it

MS CM001
ISO 14001 JSAE389
ISO 9001
ISO 14001
ISO 45001

*Please refer to the product specifications for details. Specifications and appearance may be changed without notice.

November.- 2025/Rev.03