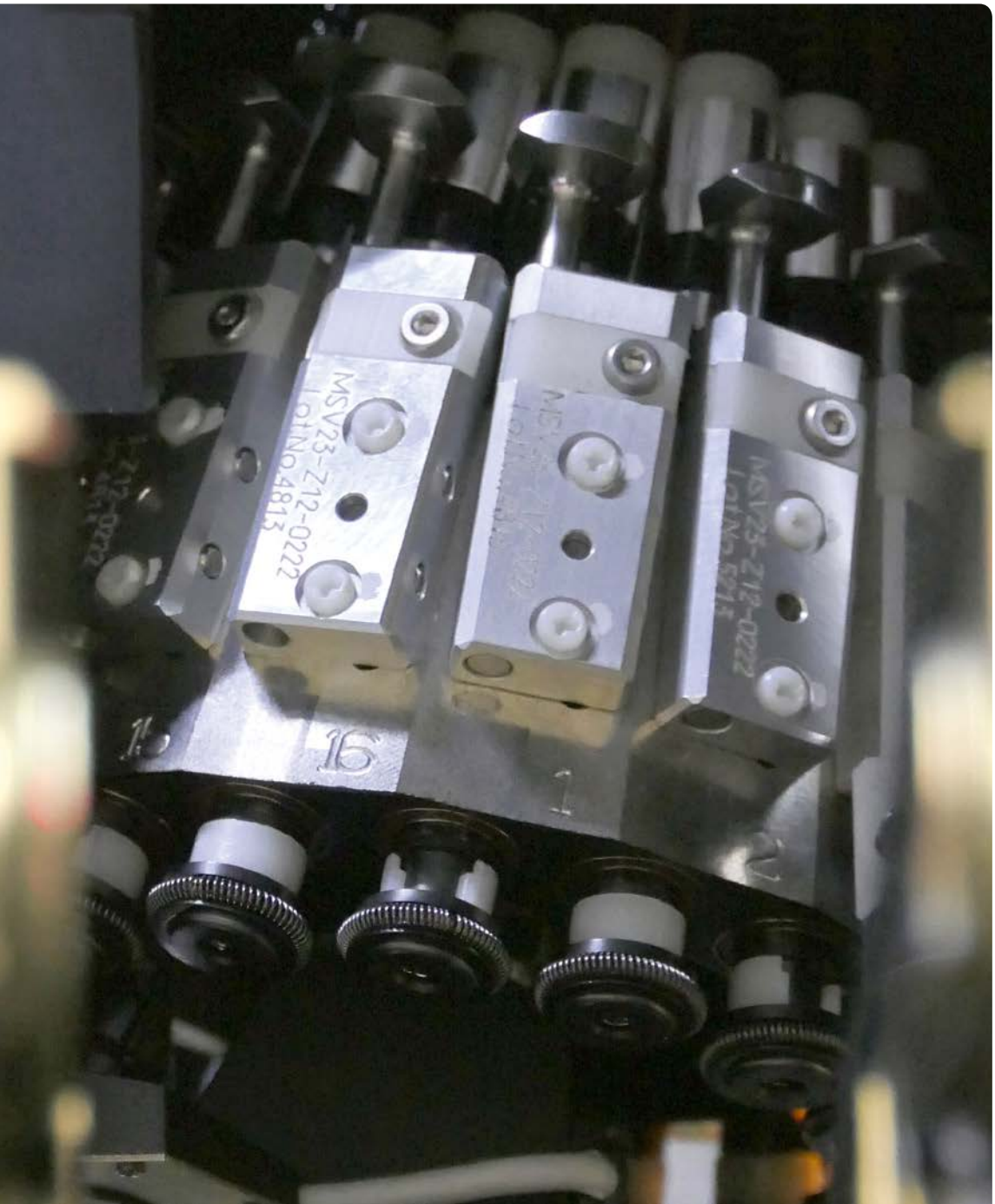
JUKI

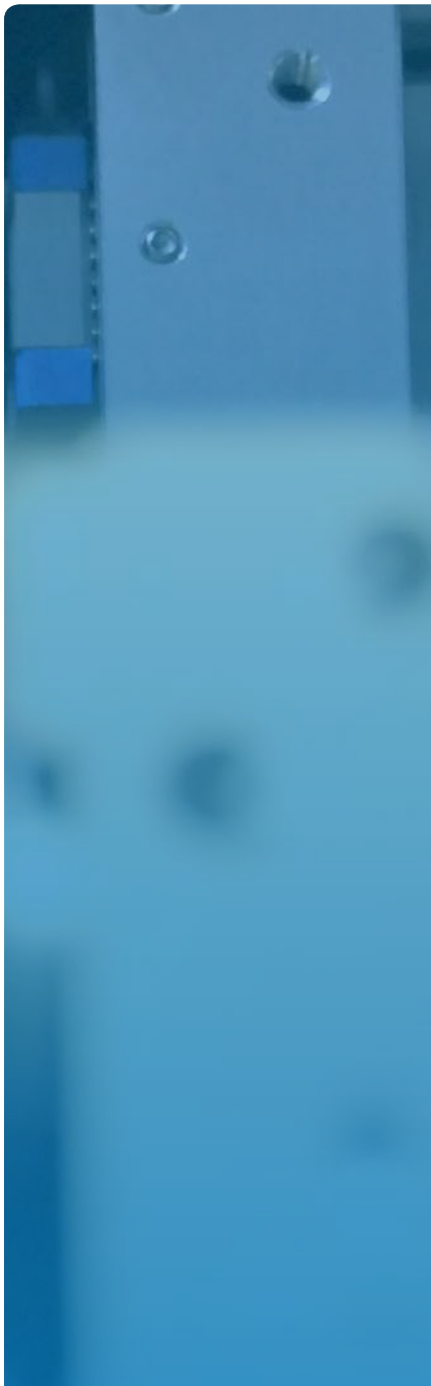
smart.fast.modular.

PLACEMENT SOLUTION

RX-7 SERIES

High-Speed Compact Modular Mounter





RX-7 BASIC FEATURES

RX-7 SERIES

High-Speed Compact Modular Mounter

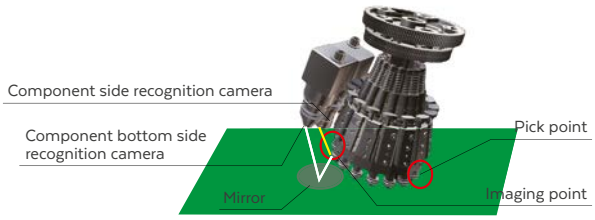
Production line productivity is improved due to the combination of a planet head which provides optimum productive capacity, based on the parts to be placed and the configuration of a flexible production line.

- Space-saving design with a width of 998 mm
- Dual-lane conveyor included as standard equipment to ensure high productivity
- The combination of two head units allows configuring the ideal production line for each production item
- High productivity based on an original planet head and a structure of parallel two heads
- Applicable to small-size components ranging from 03015 chip to 25 mm square to be placed*

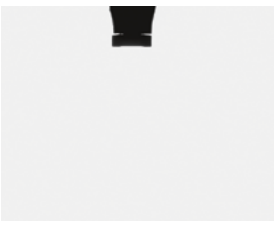
* Under defined conditions. Please contact us for details.

P16-HEAD UNIT THAT REALIZES HIGH-SPEED HIGH-DENSITY PLACEMENT OF VERY SMALL COMPONENTS

Regarding the P16-head unit, the Z-axis stroke at component pick and component placement can be minimized by inclining the head's rotary axis. The two cameras incorporated in the head unit can recognize component thickness and dimension with high accuracy. High-speed and high-accuracy placement at a placement speed of 75,000 CPH (optimum condition) and a component placement accuracy of ±0.04 mm (Cpk ≥ 1) is realized.



Component bottom side recognition camera

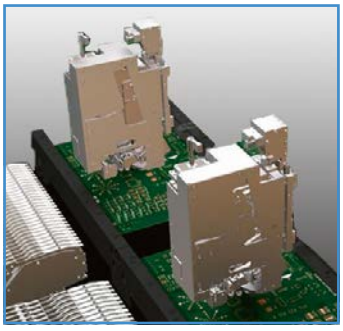


Component side recognition camera

RX-7 BASIC FEATURES

PLANET HEAD TECHNOLOGY REALIZES HIGH SPEED AND A HIGH QUALITY

Owing to a structure with two parallel heads that is free from mutual interference between mounted heads, the maximum throughput can be realized. For a placement head, users may select between the two types of planet head, namely, P16-head unit and P8-head unit. The original lightweight compact planet head technology provides high-speed, high-quality and high-accuracy placement.



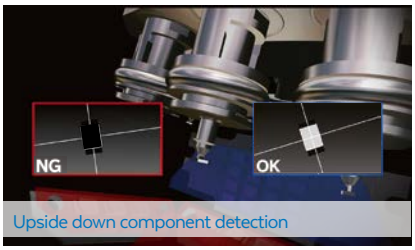
Parallel head configuration

P16-head unit - ideal for the placement of very small components

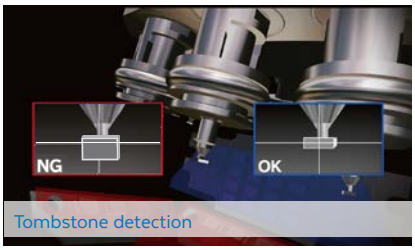
P8-head unit - ideal for the placement of components ranging from small-sized to 25 mm square components

Substantial inspection items

Tombstone inspection, component presence/absence inspection and upside down inspection can be executed. High-quality placement of very small components can be realized. Moreover, the automatic pick position correcting function corrects the component pick position automatically to enhance the pick rate.



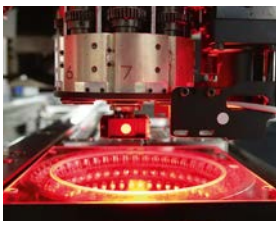
Upside down component detection



Tombstone detection

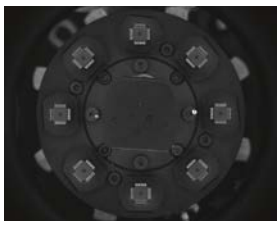
P8-HEAD UNIT THAT REALIZES HIGH-SPEED AND HIGH-ACCURACY PLACEMENT OF MIDDLE AND SMALL GENERAL-PURPOSE COMPONENTS

The P8-head unit can place components ranging from small chip components to small and medium general-purpose components. High-speed and high-accuracy placement can be realized with high-accuracy overall vision recognition using a VCS camera. This can also perform component reverse inspection and component presence/absence inspection in the same way as the P16-head unit.



VCS camera

Component side recognition camera



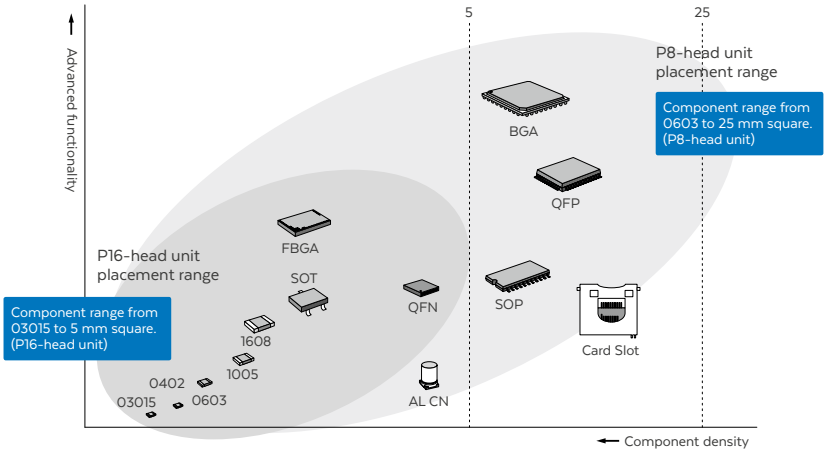
Component vision by VCS camera

Vision by side recognition camera

HIGH FLEXIBILITY

WIDE RANGE OF COMPONENTS

The P16-head unit is applicable to very small components with a size of 03015 (metric) to 5 mm square and the maximum height of 3 mm. The P8-head unit is applicable to components with a size of 0603 (metric) to square 25 mm and the maximum height of 10.5 mm, for example, small IC components such as QFP and BGA. These two planet head types can achieve maximum performance for various production needs.



Capable of small-sized 03015-chip (when using P16-head unit; please contact us for details).

BY USING DIFFERENT COMBINATIONS OF HEAD UNITS, VARIOUS PRODUCTION FOR A FLEXIBLE PRODUCTION LINE WILL BE AVAILABLE

Users may select an optimum head combination according to production items and components to be placed. A combination of the P16- and P8-head units and a fitted production line configuration allow a mass production line for example for smart phones and a high-speed placement line for various production items. The performance of the machine itself and a line balance of the whole placement line is improved, thereby increasing productivity.

P16-head unit × P16-head unit

Placement and high-speed placement of very small components

P16-head unit × P8-head unit

Placement of very small to medium-sized components

P8-head unit × P8-head unit

Placement of medium-size components such as extremely variable BGAs

HIGH PRODUCTIVITY

SPACE-SAVING DESIGN WITH A WIDTH OF 998 MM

Super-slim 998 mm width! At 75,000 CPH, the RX-7 provides excellent placement per square meter.

Placement speed (Optimum): 75,000 CPH

Component size: 03015 ~ 5 mm*1
0603 (metric)/0201 (inch) ~ 25 mm*2

*1 When using P16×P16-head unit; under defined conditions.

*2 When using P8×P8-head unit.

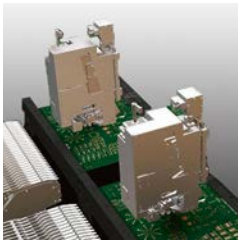
Rated 75,000 CPH*3

*3 Under optimal conditions.

DUAL-LANE PRODUCTION

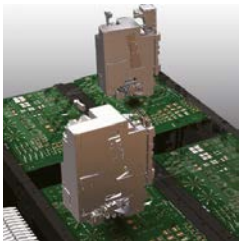
The dual-lane transport system comes as standard. The PWB transport waiting time is minimized, which improves the effective tact time for high-speed production.

Single-lane conveyor



Maximum PWB size of
50 × 50 mm to 510* × 450 mm

Dual-lane conveyor

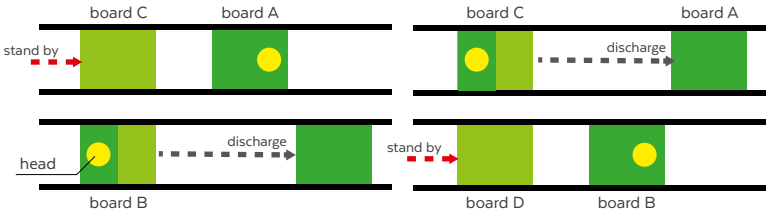


Maximum PWB size of
50 × 50 mm to 510* × 250 mm

*When using a long size PWB mode.

RX-7 dual-lane production system

1. Board B is placed by using the left head unit and board A is placed by using the right head unit simultaneously. In this period, the transport standby of board C is completed.
2. Board C is placed by using the left head unit and board B is placed by using the right head unit simultaneously. In this period, the transport standby of board D is completed.

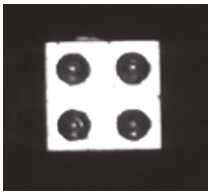


HIGH-ACCURACY PLACEMENT USING NEW-STRUCTURE CAMERA RECOGNITION

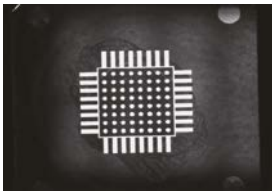
Clearer imaging can be performed with the recognizing technology using new-structure coaxial lighting. As a result, high-accuracy placement recognition can be realized.

0402 chip component

0603 chip component



Small type BGA



Glass jig recognition

HIGH FLEXIBILITY

COMPONENT VERIFICATION SYSTEM (CVS) TO PREVENT THE PLACEMENT OF INCORRECT COMPONENTS*

option

By measuring the resistance, capacitance, or polarity before production starts, the machine can prevent incorrect components from being placed.

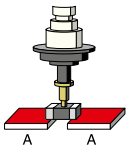
Resistance, capacitance and polarity are checked before production starts.

▼

This prevents incorrect component/reel from being used.

▼

Incorrect component placement is prevented.



Electrodes (A) used to check polarity or measure components

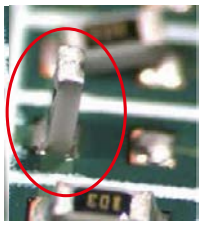
*This is applicable only with the P16xP16-head unit.

REDUCTION OF ERRORS DUE TO SOLDER PASTE ALIGNMENT OFFSET PLACEMENT AFTER SOLDER SCREEN-PRINTING

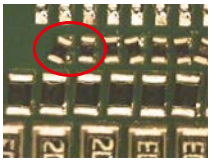
Unique feature

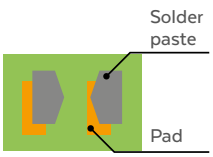
option

The OPASS function uses the machines' integrated camera to check the location of solder paste vs. the pads and corrects the placement accordingly. This function reduces defects caused by misalignment of the paste on the pads.

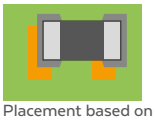


A printing misalignment occurs



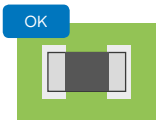


With OPASS function



Placement based on solder paste location

OK



Without OPASS function

Placement based on pad location

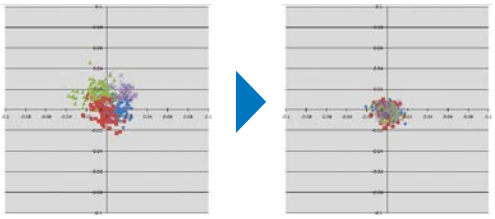
NG

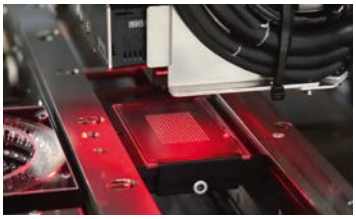
▶ Reduction in the percentage of defects

FCS (FLEX CALIBRATION SYSTEM)

option

JUKI's highly regarded ease of maintenance just got even easier! The optional FCS calibration jig is a simple-to-use system to recalibrate the placement accuracy. After automatically picking and placing the jig components, the machine measures the error and adjusts all necessary calibrations.





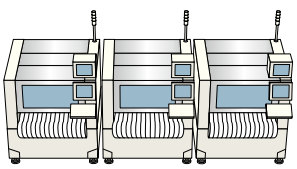
FCS (Flex Calibration System)

IFS-NX (INTELLIGENT FEEDER SYSTEM)

option

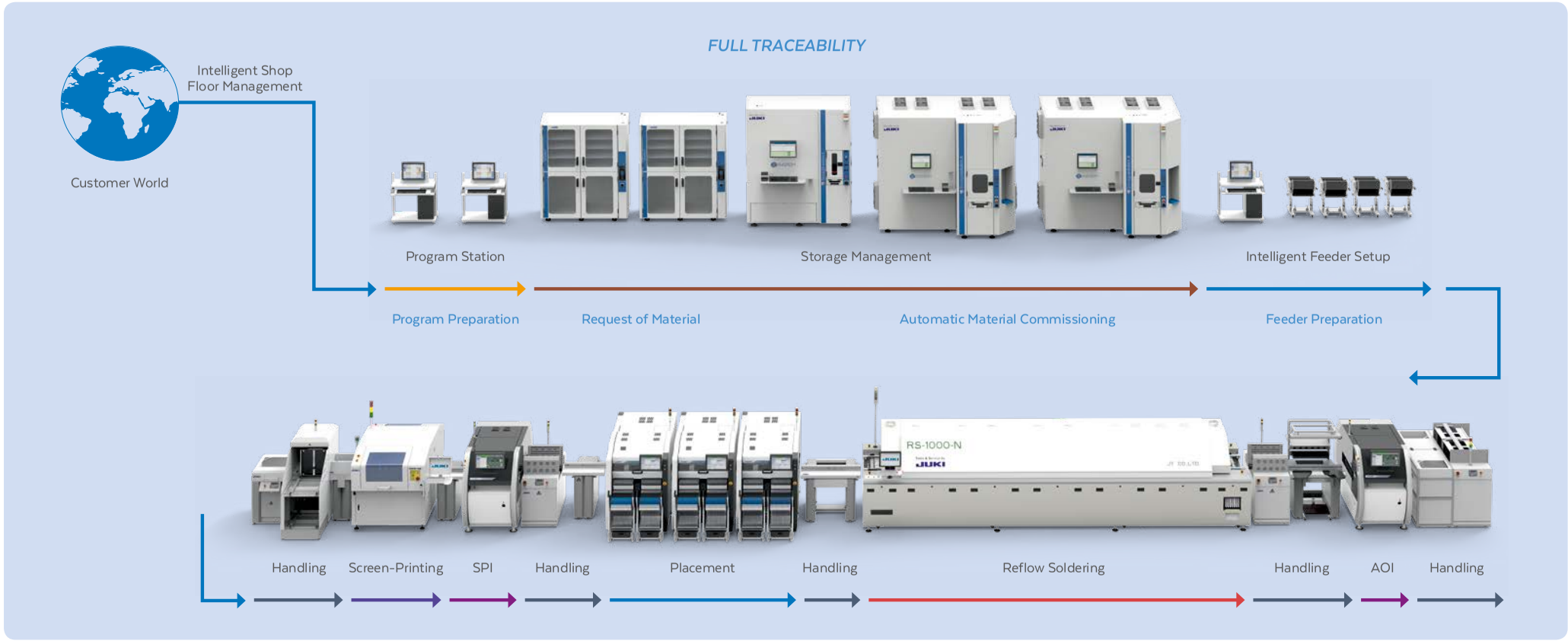
The Intelligent Feeder System (IFS-NX) option provides enhanced setup control by verifying part barcodes to smart feeders. Traceability to the reference designator level is available as a further option. Other functions include inventory tracking and feeder setup assistance.

Recording traceability data



- Production time
- Operater ID
- Mounter ID
- PCB ID
- Component ID
- Production program name
- Nozzle No.
- Place direction information
- Feeder ID
- Reel No.etc

PRODUCT PORTFOLIO



SOFTWARE

STORAGE

SCREEN-PRINTING

INSPECTION

PLACEMENT

SOLDERING

HANDLING

SPECIFICATIONS

			High-Speed Compact Modular Mounter RX-7		
			P16 × P16-head unit	P16 × P8-head unit	P8 × P8-head unit
Board size	Single-lane conveyor		50 × 50 ~ 510[*1] × 450 mm		
	Dual-lane conveyor		50 × 50 ~ 510[*1] × 250 mm		
Component height			3 mm	3 mm (P16-head unit) 10.5 mm (P8-head unit)	10.5 mm
Component size			03015[*2] ~ 5 mm	03015[*2] ~ 5 mm (P16-head unit)	0603(0201) ~ 25 mm
				0603(0201) ~ 25 mm (P8-head unit)	
Placement speed		Chip (Optimum)	75,000 CPH	54,900 CPH	34,800 CPH
		IC	-	6,400 CPH[*3]	12,800 CPH
Placement accuracy		Chip	±0.04 mm (Cpk≥1)		
		IC	-	±0.04 mm	
Component loading quantity			Up to 76 component types (when an EF08HDR is used)[*4]		
Power supply			AC 200 – 430 V; 3-phase		
Apparent power			3.3 kVA		
Operating air pressure			0.5 ± 0.05 Mpa dry air		
Air consumption			20 l/min (during normal operation)		
Machine dimensions (W × D × H)[*6]			998 × 1,895 × 1,530 mm[*6]	998 × 1,895 × 1,530 mm[*5 *6]	
Mass (approximately)			1,950 kg		

[*1] When using long size PWB mode. [*2] Under defined conditions. Please contact us for details. [*3] This is applicable only to the P8-head unit. [*4] When a double-lane feeder is used. [*5] In the case of the P8-head unit specification, the feeder is set at 123 mm ahead in comparison to the P16-head unit. [*6] The depth (D) of external dimensions applies only when the display is excluded, and the height applies when the transport height is 900 mm, excluding the display.

03/2018_Rev01

OPTIONS

Conveyor	Support-pin / Support-sponge
Inspection function	Component Verification System (CVS)
Component handling and feeders	Feeder Trolley / Electric tape feeder / Tape reel mounting base / Feeder stocker / Splicing jig /
	Feeder Calibration Jig with Monitor / Tray holder / Electric Trolley Power Station
Software	JaNets / IFS-NX (parts verification; traceability; component inventory control)
Others	Dedicated nozzle / Spare nozzle cartridge / Flexible Calibration System (FCS) / Offset placement after solder screen-printing

LINE CONTROL SOFTWARE

Product Name	Major functions
JaNets	User definition / Facility definition / Component DB / Creating production programs / Line optimization
	Line monitoring / CAD conversion* / Cluster optimization

* CAD conversion is optional.

Specifications and design subject to change without notice.

Head Office.
Etek Technology Centre,
Dow Road,
Prestwick Aerospace Park,
Monkton, Prestwick KA9 2TU

Email sales@etek-europe.com
Tel +44(0)1292 834 000
Email etek-europe.com

www.juki-smt.com