LX-8

JUKI
I-TRONIK®

Advanced Flexible Mounter

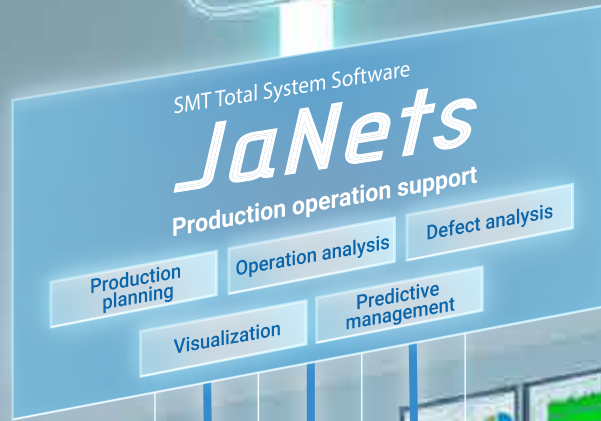# High Productivity
High Flexibility
High Quality

JUKI
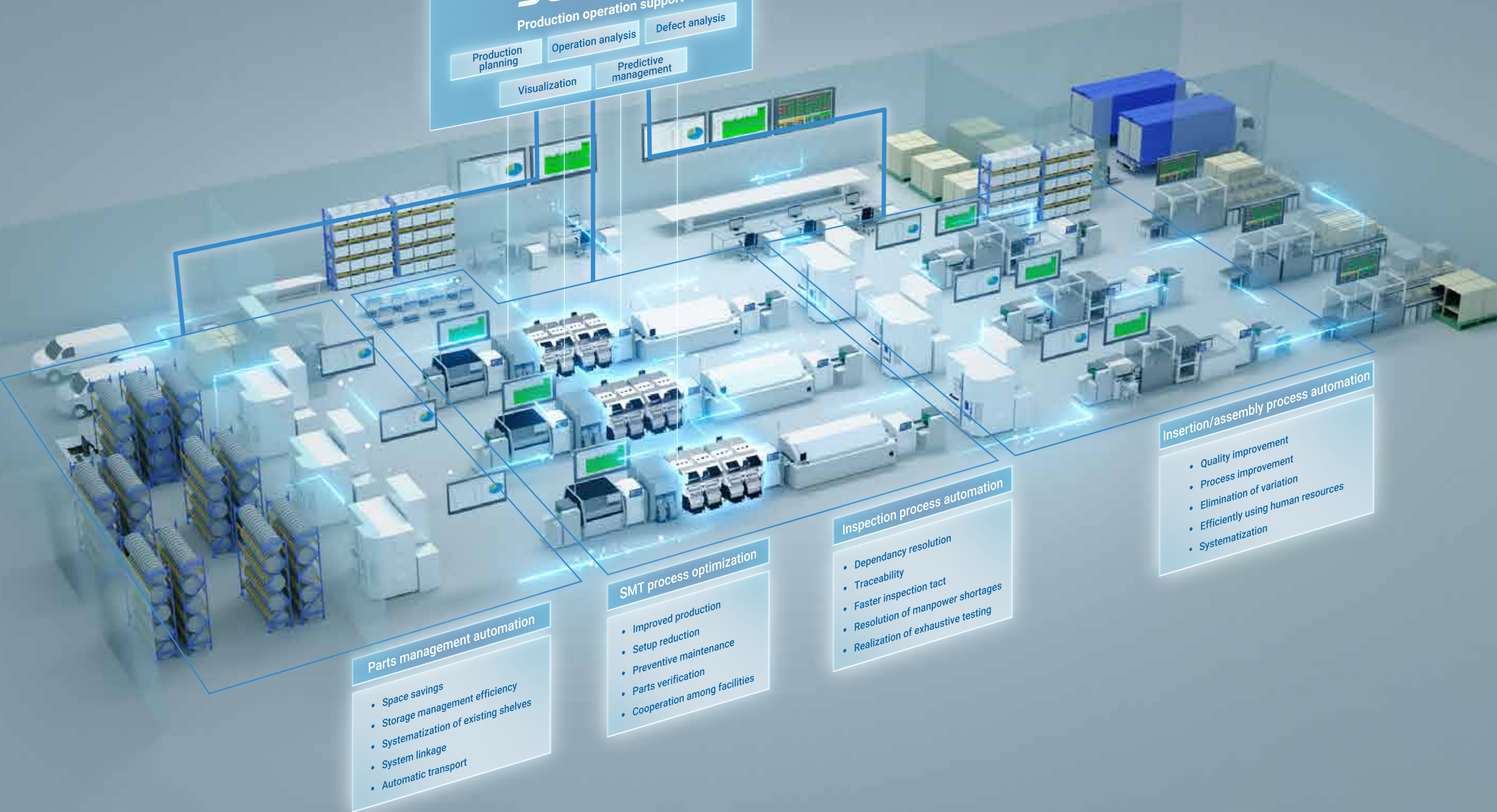
JUKI Smart Solutions

THE FUSION CONCEPT

We want to simultaneously realize high-speed performance that overturns common sense and amazing versatility, and to raise the productivity of our customers to the utmost.

Advanced Flexible Mounter LX-8 was born from such strong wishes.

JUKI will constantly approach customers, evolve our customers' factories, and innovate in manufacturing as a partner that can dramatically advance our business.

ERP

MES

SMT Total System Software

JaNets
Production operation support

Production planning

Operation analysis

Defect analysis

Visualization

Predictive management

Parts management automation
- Space savings
- Storage management efficiency
- Systematization of existing shelves
- System linkage
- Automatic transport

SMT process optimization
- Improved production
- Setup reduction
- Preventive maintenance
- Parts verification
- Cooperation among facilities

Inspection process automation
- Dependancy resolution
- Traceability
- Faster inspection tact
- Resolution of manpower shortages
- Realization of exhaustive testing

Insertion/assembly process automation
- Quality improvement
- Process improvement
- Elimination of variation
- Efficiently using human resources
- Systematization

High Productivity

Achieves high-efficiency production through high area productivity and ultra-high speed equipment of the highest level in its class

It boasts the highest 105,000CPH in its class*, and is equipped with ultra-high speed, space-saving features, while boasting high area productivity and achieving highly efficient production.

The Planet P20S head supports mounting of 0201 very small parts.

In addition, even large components and other highly versatile design heads can be equipped with ultra-high speed 94,000CPH that are among the highest in their class.

*For P20S head × 2

Planet P20S head/Takumi head, selectable for each characteristic

P20S head

Planet P20S head has a planet-head construction that sucks continuously with 20 nozzles. Even a very small part of 0201 achieves stable suction reliability. In addition, the head height is variable (0.5 mm /2 mm/3 mm) according to the component to achieve high-speed mounting in order to mount the component at the highest speed.

Takumi head

Takumi head, which realizes high-precision recognition by laser, has a variable centering unit according to the height of mounted parts. High-speed mounting is realized at the optimum height from very small parts to large parts.

【Variable height of the laser sensor in accordance with the component height】

LT HEAD ex：component height 20 mm　Component height
25 mm
20 mm
LT HEAD ex：component height 6 mm
12 mm
6 mm
3 mm
1 mm
PWB
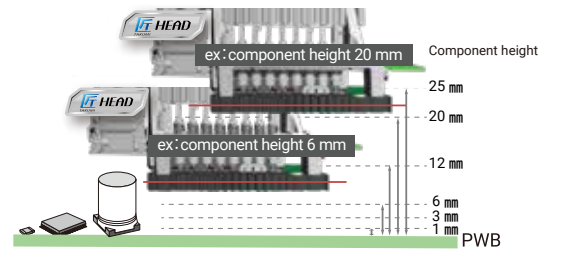
Front operation possible

LX-8 allows front-side banks to operate without loss of productivity.

Feeder　Feeder

Y　PWB　Y　PWB　Y
X(right)
Head (right)
X(left)
Head (left)
Feeder　Feeder
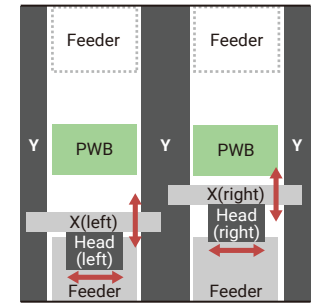
Independent head configuration with minimized tact loss

The complete independent head configuration and buffer station installation also reduces the latency-dependent tact loss.

X(right)
Head (right)
Y　PWB　Y　PWB　Y
X(left)
Head (left)
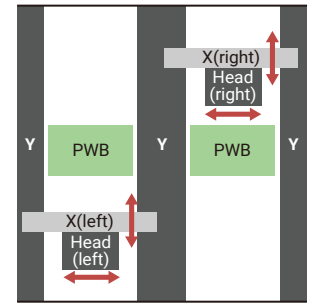
Feeder-mounted number-class No.1

The number of feeder slots is 160 or more, the highest in the class.* Since it is possible to set the next feeder for production in the feeder bank beforehand, the setup change time can be drastically shortened, and production preparation can be simplified and made more efficient.

*Contact us for details.

40　40
X(right)
Head (right)
Y　PWB　Y　PWB　Y
X(left)
Head (left)
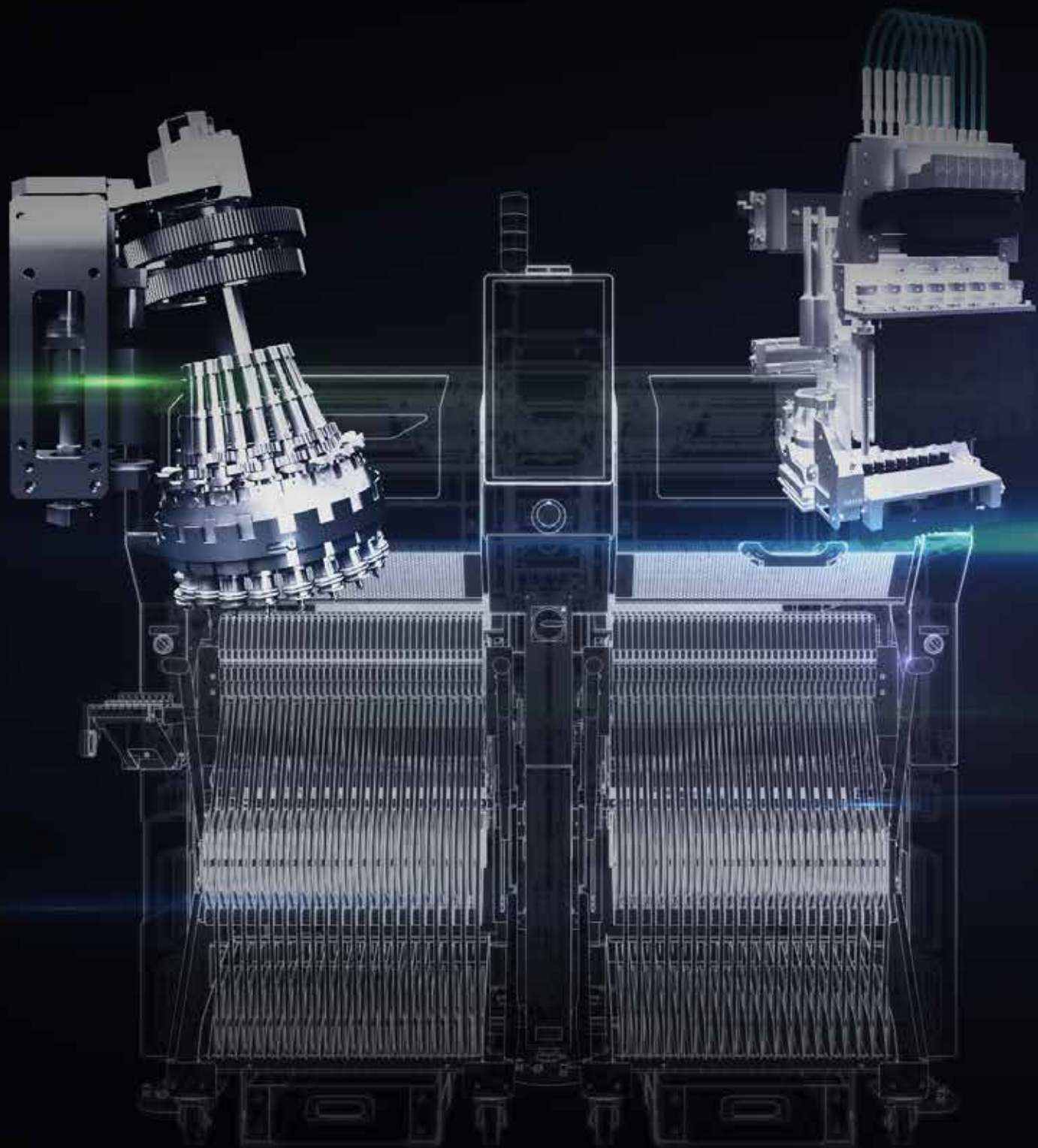40　40
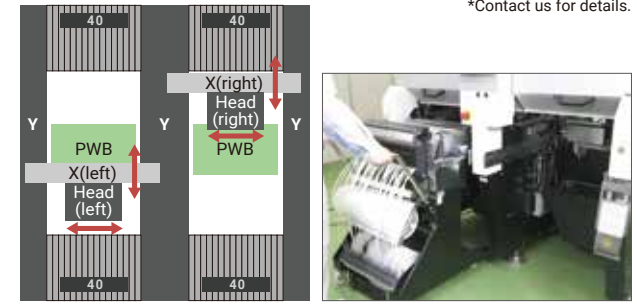
New User Interface pursuing ease of use

A smartphone-like operating feel that can be operated with intuition, color-conscious for all users and easy-to-view screens in dark themes, and high-priority functions have been placed on the top screen. This is a new type of operation panel that pursues ease of use. **NEW**

*Please contact us for P20S

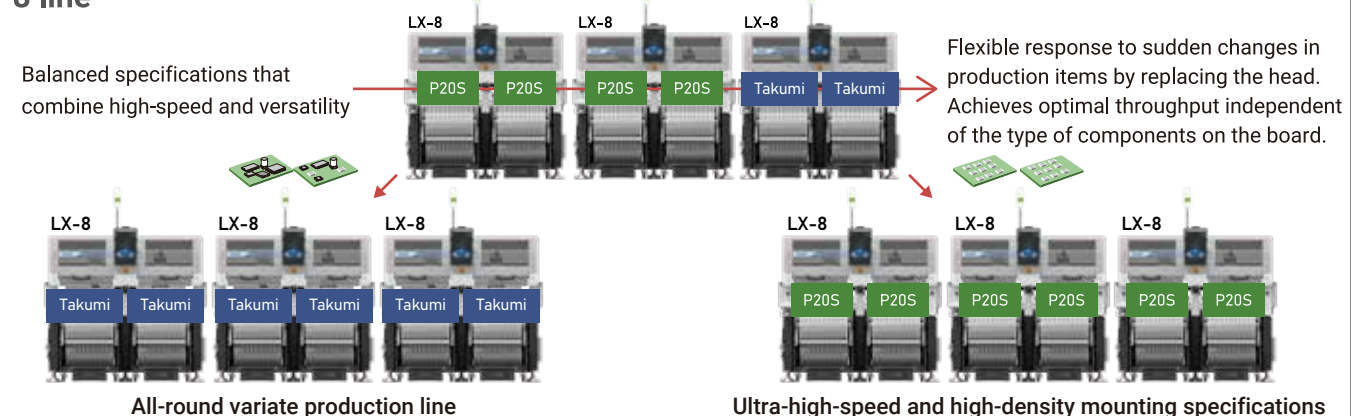# High Flexibility

Easy head replacement

The head of LX-8 can be easily replaced in a short time.
By simply placing the heads optimally without changing the line layout, the machine can flexibly respond to variable and variable-quantity production.

Flexible head configuration

Head can be replaced by the user. It can flexibly respond to changes in production boards.

LX-8 line

Balanced specifications that combine high-speed and versatility

Flexible response to sudden changes in production items by replacing the head. Achieves optimal throughput independent of the type of components on the board.

LX-8 | LX-8 | LX-8
P20S P20S | P20S P20S | Takumi Takumi

LX-8 | LX-8 | LX-8
Takumi Takumi | Takumi Takumi | Takumi Takumi

All-round variate production line

LX-8 | LX-8 | LX-8
P20S P20S | P20S P20S | P20S P20S

**Ultra-high-speed and high-density mounting specifications**

Line-up with the current JUKI mounter

By adding LX-8 to existing JUKI mounters, flexible line construction can be realized, including high-speed lines, high-speed general-purpose lines, and ultra-general lines.

■When LX-8 design head is mounted on the pre-existing RX-8

High-production general-purpose line with enhanced high-speed and general-purpose capabilities

RX-8 | RX-8 | LX-8
Takumi Takumi
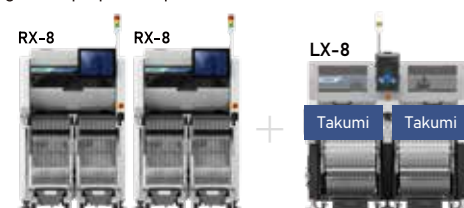
RX-8+LX-8 mixing line

■When LX-8 planet P20S head is added to a pre-existing RS-1R

Flexible and high-efficiency high-b1alance line that can be mounted on irregular shaped parts

LX-8 | RS-1R | RS-1R
P20S P20S

LX-8+RS-1R mixing line

Wide component range

Supports components from 0201 (metric) up to 65 mm square or 10 x 90 mm.
In addition, component height up to 25 mm, so it is possible to mount a wide range of components.

□20 □33.5 □50 □65

Advanced functionality

Component range

FBGA BGA
Big QFP
Lead Long CN
SOT SOP QFP
QFN
Dl mm CN
1608
0402 1005 AL CN Card Slot
0201 0603 Big AL CN

← Component density
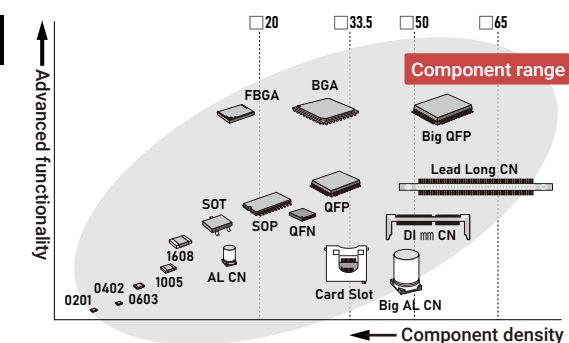
Large parts are supplied in trays

By using a tray server TR8 in which the main unit head sucks parts directly from the tray, it is possible to suck irregularly shaped parts such as connectors and heavy parts directly with the head.
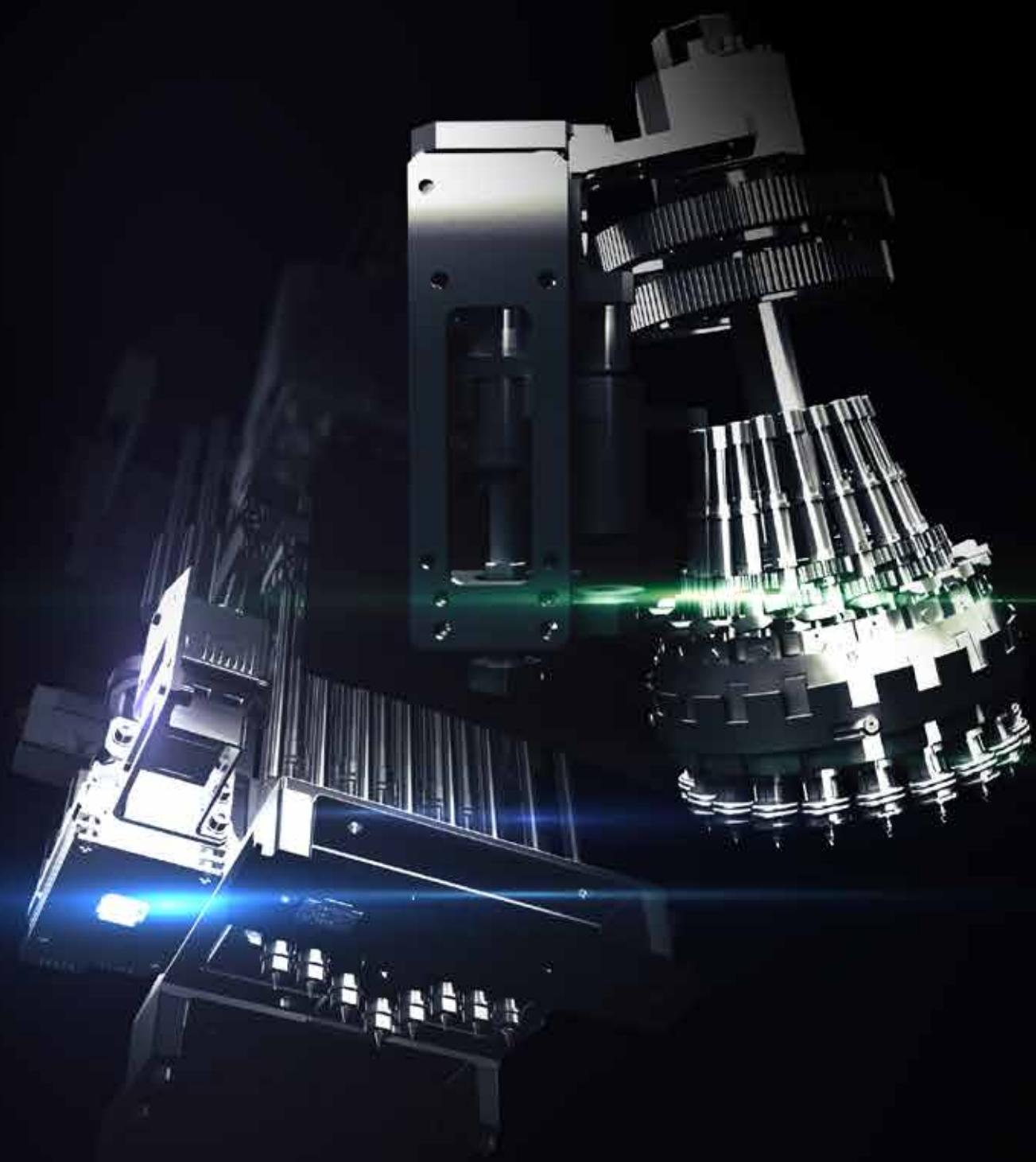
Optimal for LED placement

With Planet P20S head, stable recognition can be achieved even with continuous-mounting, enabling high-quality mounting for producing LED indicator lamps.
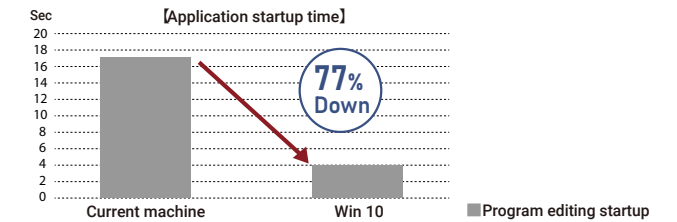
*Please contact us for P20S

High Quality

Low impact placement for flexible circuits

Low impact feature allows separately adjusting the down and up speed of the nozzle during placement. This minimizes the load on the part and on the board during placement. This is optimal for placing very small parts that require a lot of accuracy.


Typical design　Low impact placement

Speed switching
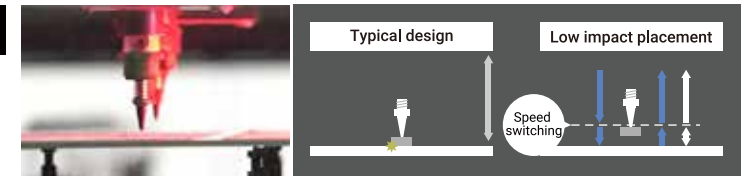
Operation rate improvement

High-performance CPU + Windows 10 has reduced the application startup time to about 1/4 compared to conventional machines.

【Application startup time】

Sec
20
18
16
14
12
10
8
6
4
2
0

77% Down

Current machine　　　　Win 10　　　■Program editing startup

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P20S head

State-of-the-art centering and inspection vision system

With planet P20S head, it is possible to detect the reversal of the front and back sides, inspect the tip standing, and detect the presence or absence of components. Realizes high-quality mounting of extremely small parts.

Front/back reversal detection　　　　Tip standing inspection
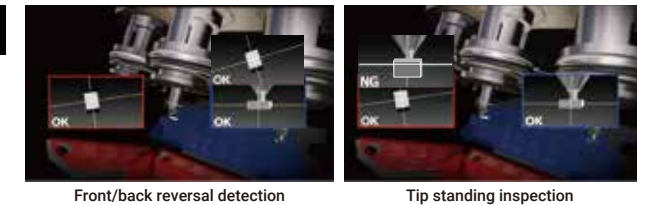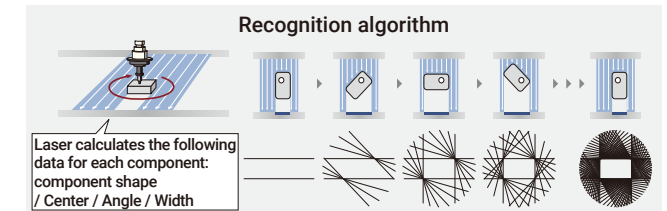
New high accuracy image-recognition for inspection and centering

Coaxial lighting technology with a new structure enables clearer imaging and realizes high-precision onboard recognition.

0402 chip (metric)　Right angle LED　Small BGA　Glass Jig
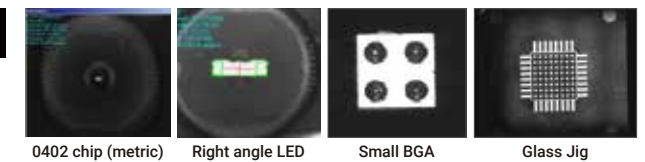

Takumi head

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

Various component shape can be recognized, such as SOP, QFP, BGA from 03015 minimal component to □50mm. Laser recognition realizes stable recognition and mounting without being affected by component variations such as electrode-shape and gloss.

Recognition algorithm

Laser calculates the following data for each component: component shape / Center / Angle / Width

Reduction of VCS image-recognition times

The adoption of an image-processing library HALCON has greatly reduced image-recognition times using VCS. It realizes high-speed recognition and mounting in not only chip components but also large components.
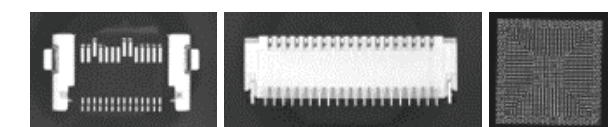
Component image-recognition technology

Component shape, lead and ball details are accurately captured using our VCS camera. Component problems such as missing ball detection or bent leads are also detected. We can deal with not only QFP and BGA, but also irregular components in individual pattern-recognition.

Reflection recognition

Reflection recognition

Transmission recognition

360 degree part recognition technology

Components that are supplied incorrectly can be corrected and accurately placed using 360 degree recognition technology.
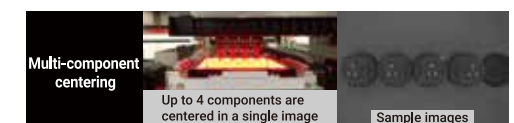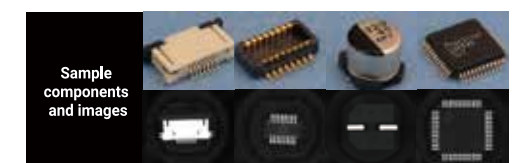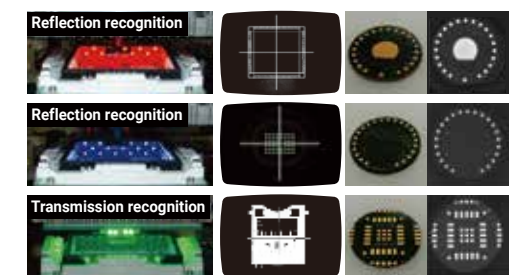
Three color recognition lighting

The color of lighting can be changed to match the component requirements for stable, accurate centering.

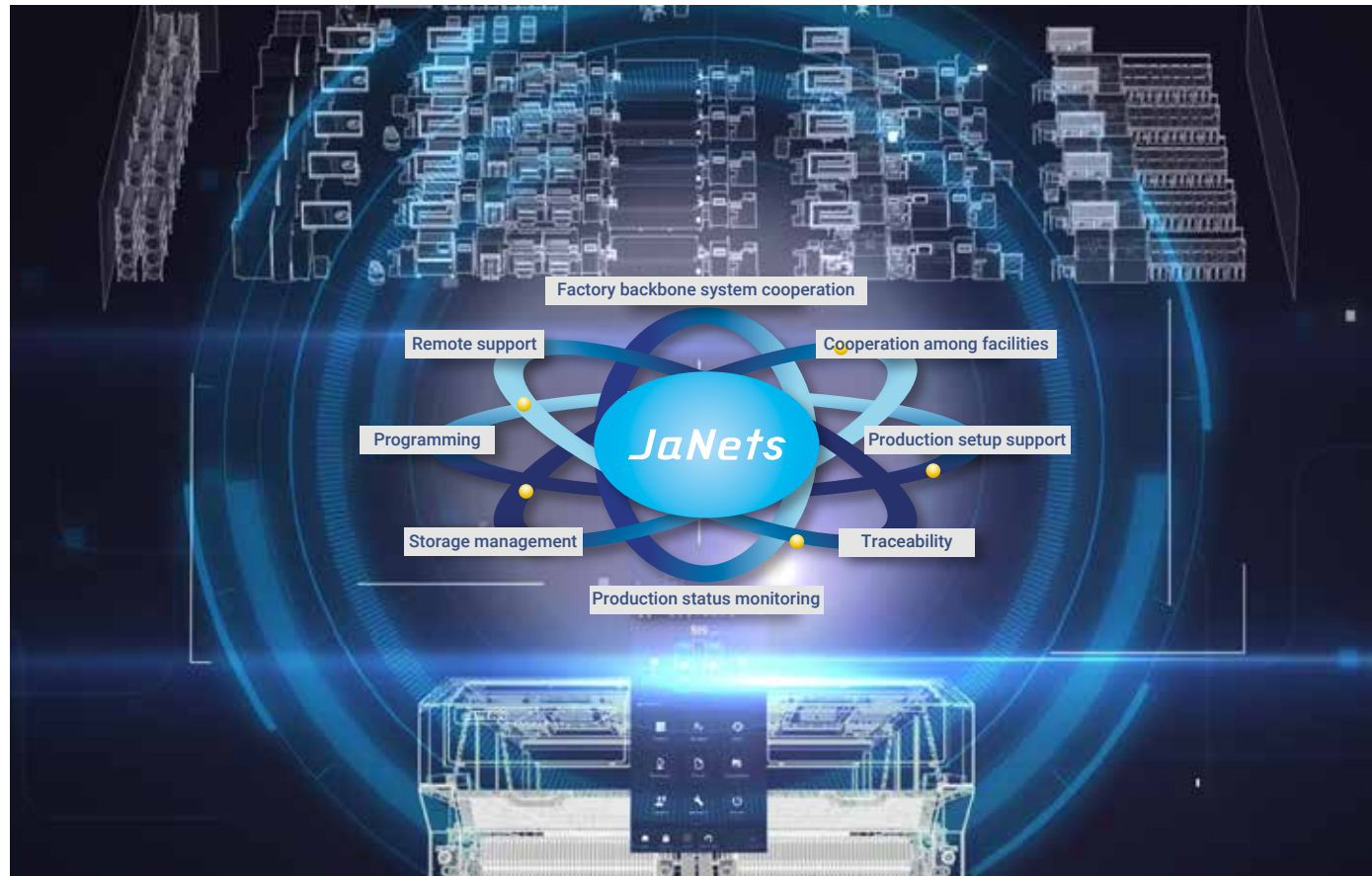Sample components and images

Wide component range

Hundreds of nozzles to choose from and flexible vision to support difficult parts. Simplified data creation make it easy to handle complex components.

Faster image recognition

Reduction of image-recognition times through collective recognition of four nozzles using 54mm viewing angles

Multi-component centering

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

*Please contact us for P20S

### Integrates seamlessly with the production enviroment

SMT total system software JaNets and the system connected via JaNets help improve production effi ciency across the entire plant by monitoring production status, storage-management, and remote-support. In addition, IFS-NX option enables high-quality production, such as traceability and component mis-mounting protection.

Trace Monitor

The production status of boards can be checked hourly, and the operation rate, error occurrence status, etc. can be visually confirmed.
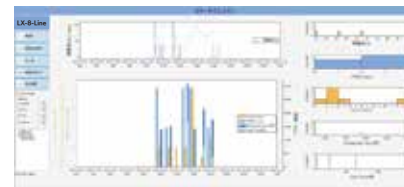
#### Communicates and shares informaton with other equipment

Bad mark information of the circuit detected by the inspection machine or a machine upstream of the line can be propagated to the LX-8 in order to reduce the bad mark recognition timed and improve productivity.
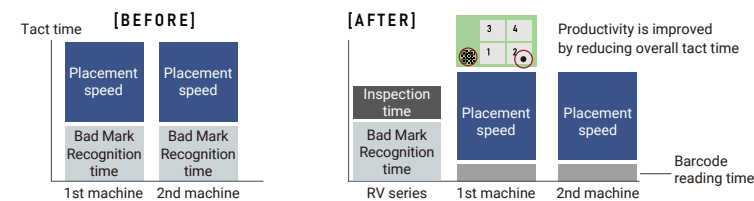
Feed forward for printing misalignment*

The SPI results can be fed forward to the mounter and applied as a placement offset to reduce defects.

* Applicable models are RV series and LX-8
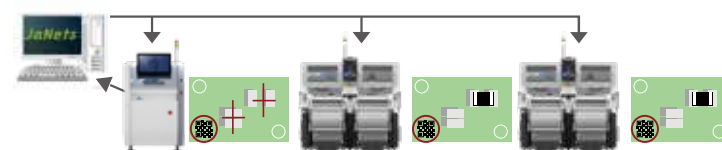
Component Management with Auto replenishment

Efficient production can be achieved through various linkages, including parts management processes, such as automatic shipping of parts from automatic warehouses at the time of setup, as well as automatic shipping with warnings of parts shortage during production.
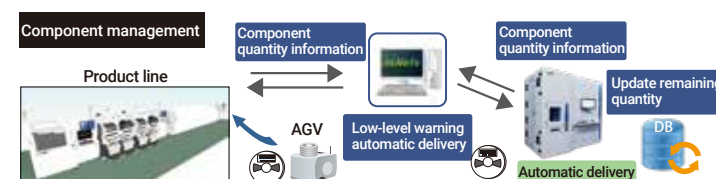
Specifications

Advanced Flexible Mounter LX-8				
		P20S*¹×2	P20S*¹×Takumi	Takumi×Takumi
Board size	Minimum	50×50 ㎜		
	Single clamping	410×400 ㎜		
	Double clamping*¹	810×400 ㎜ *²		
Component height		3 ㎜	25 ㎜	
Component size	Minimum	0201		03015
	Maximum	□5 ㎜	□65 ㎜ /10 ㎜ ×90 ㎜ /50 ㎜ ×75 ㎜	
Placement speed (optimum)		105,000CPH / IPC: 65,000CPH	99,500CPH / IPC: 63,500CPH	94,000CPH / IPC: 62,000CPH
Placement accuracy		±40µm (25µm*³) (Cpk≧1)	±35µm (Cpk≧1)*⁴	
Feeder capacity	Tape	Max. 136	Max. 148	Max. 160
	Tray*⁵	—	Max. 30	Max. 60
Power		3-phase AC200V (standard) AC200V ～ AC415V (when optional transformer is selected)		
Apparent power		2.49 kVA		
Operating air pressure		0.5±0.05MPa		
Air consumption (standard)		50L /min (ANR)		
Machine dimensions (W×D×H)*⁶		1,600 ㎜ ×1,924 ㎜ ×1,440 ㎜		
Mass (approximately)		2,400kg or less		

*1　Please contact for detail
*2　Factory default
*3　Image recognition, high-precision mode
*4　For laser recognition
*5　For TR8SR
*6　D dimension does not include the front operation monitor. H dimension does not include signal tower.

Options

Advanced Flexible Mounter LX-8	
Recognitions system	54 ㎜ view camera
Inspection function	Coplanarity sensor / Component Verification System(CVS)*
Conveyor	Support pin
Electrical protection	CE compatible specification / Ground-fault interrupter
Software	JaNets / IFS-NX* / Flexline CAD
Component handling and feeders	Electric tape feeder (RF)
Others	Electric stick feeder (Type-N) / Matrix tray server TR8SR / Matrix tray changer TR6DNV / Dual tray server TR1RB / Tray Holder / Tape reel mounting base(for RF) / Splicing jig / Electric Trolley Power Station (PW02)* / RS-1R・RS-1 nozzles(with RFID tags) / Big foot / FCS calibration jig

* Please contact for detail

JUKI ┃TRONIK®

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.

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