FUJI
innovative spirit

Create the Future

NXTR
FUJI Smart Factory Platform

Evolve to create a new future

NXTR offers a truly modular design for the optimal line configuration that caters to your production. Real-time sensing placement, optimized placement actions, and part handling checks after placement are just a few examples. This high end model machine supports new functions that preserve a high level of QCD performance.

NXTR is the next step toward the smart factory of the future.

Modular concept

Exchange heads in a single action

Fuji's original compact lightweight heads can be easily exchanged without using tools. This allows operators to perform maintenance and troubleshoot unexpected problems.

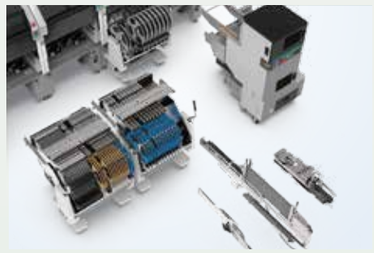
Build module configurations to be optimal for your production

The quantity of robots per module and types of heads used can be selected to match your product, giving you the optimal production equipment.

2R module 1R module

Units for supporting various usages

You can select the optimum supply units to match the production type and parts used. Feeders and other supply devices from other Fuji products you may have can also be used, encouraging efficient use of the units in your assets.



Minimal investment per module

Additional investment can be made on the scale of single modules. You can gradually increase the production capacity to the necessary extent with minimal investment for each.

Simple work paths for efficiency

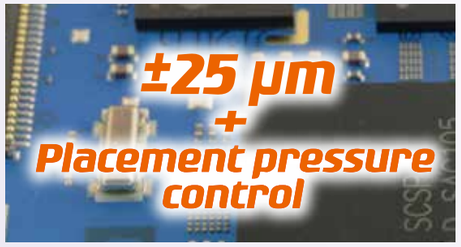
The modules are designed for single side operation that streamlines and optimizes the operation traffic. This increases efficiency in supplying materials and performing maintenance work.

Automatic, easy, and reliable maintenance offline

Nozzles, feeders, and also heads are applicable for offline maintenance. Using automation units ensures reliable maintenance without requiring any skills. Linking these units with Nexim improves maintenance management.

Offers high accuracy placement as standard

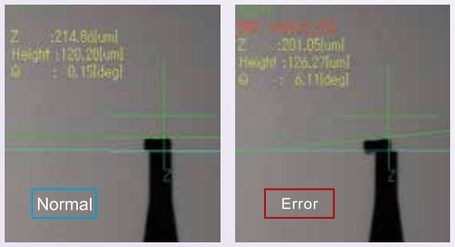
Placements can be performed with a high accuracy of ±25 µm at all times; there are no constraints for the head type or the part to be placed. Additionally, controlling the push-in amount during placement allows for placement with the appropriate pressure.



Checks for tombstoned, missing, and upside-down parts

The installed IPS system can cater to a wide range of checks, from part pickup stance to parts remaining on nozzles, as well as upside-down checks for minimold parts. It prevents placement defects attributed to packaging, nozzles, and parts.

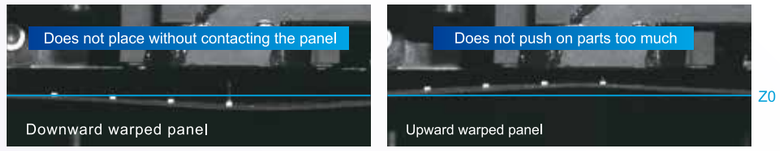
- Check for dropped parts
- Check of the part height
- Check for parts presence
- Check for parts remaining on nozzle
- Check for stuck nozzles



Intelligent parts sensor (IPS)

Places parts in a way that they are not affected by changes in the placement surface height

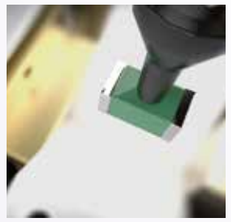
The placement stroke follows changes in the place ment height due to panel warpage and distortions, which allows the machine to control the appropriate push-in amount and moreover prevents placement deviations and excess stress on parts and panels.



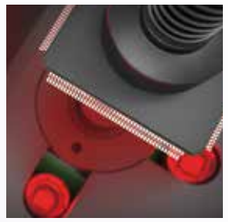
Adjusting the placement height

Prevents defects associated with part properties

Placement defects caused by operation errors and defective parts are prevented by checking the electrical properties of chip parts with LCR checks and by checking the leads and bumps on IC parts with coplanarity checks. (Option)



LCR check



3D coplanarity check

Checks placement within placement machines

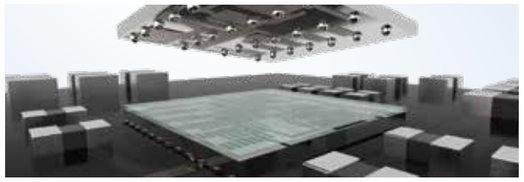
Various checks are available within placement machines to verify the process result shortly after that process: Checking placement immediately following placement, and checking placed parts before placing shield parts, for example. This prevents production of defective products and reduces wasted time and parts.

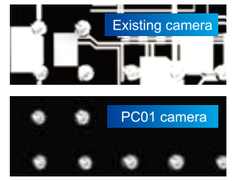
- Part presence check
- Misaligned placement check
- Part direction check

Mark and parts inspection (MPI)

Places WL-CSPs with high accuracy

The camera, equipped with advanced lighting technology, ensures vision processing of WL-CSPs and other parts for which the structural context of parts are likely captured in the acquired images. This results in high accuracy placement.





High quality placement

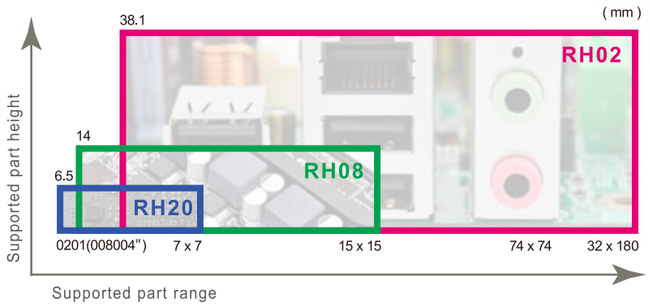
Maintaining a high level of quality on all placements

Support for various production types

Building production lines with the flexibility to handle various types of production

Heads that demonstrate strong capability in production

The three newly-developed heads are capable of handling an expanded part range. They contribute to line balancing and flexible production without drops in production rates even when a different set of parts is used in the next production.



World-class speed of placement

Fuji's unique rotary head technology with simultaneous pickup and improved indexing accuracy provides 50,000 cph per robot. This industry-leading placement speed takes productivity to the next level.

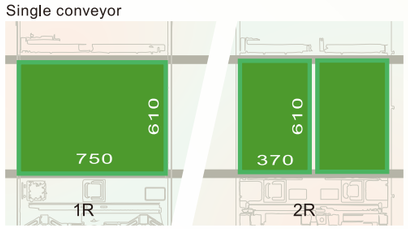
* This is the cph in productivity priority mode for the two robots combined.

Expanded conveyable panel size

The panel size coverage is expanded so that panels up to 750 x 610 mm are supported "with single conveyors" and up to 370 x 280 mm "with double conveyors" when using dual lane production. From large panel production to highly-efficient production of producing panels in the same size, NXTR line configurations are capable of supporting a greater variety of production.

(mm)

Single conveyor

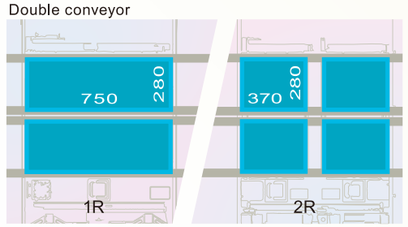


Single conveyance

Double conveyor

Single conveyance

Double conveyor

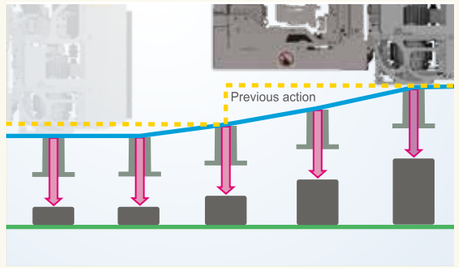


Dual conveyance

Optimal placement actions tailored to the part

Operation can be optimized in various ways to suit the part being placed, such as by selecting stable and optimal operation speeds and streamlining Z direction strokes in view of the part height. In addition to making it possible to support various parts, this also improves cycle time as well.

- Multi-level transfer speed
- Shortest Z stroke control



Automatic pin allocation even for soft backup pins

The appropriate hard-type or soft-type backup pins are allocated automatically. This function comes as a standard option and is an effective measure to reduce work and prevent mistakes during changeover.

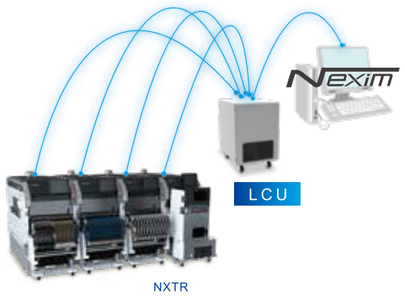
- Program-based positioning
- Auto allocation position check

Support for evolving placement processes

Responding to evolving parts and production models, and advancing total line efficiency

Non-stop production

By automatically saving logs and image data, signs of issues that would cause machine stops and information that would lead to problem solving is not missed, leading to faster recovery times. Network conditions are monitored constantly, which prevents production stops associated with network issues from occurring.



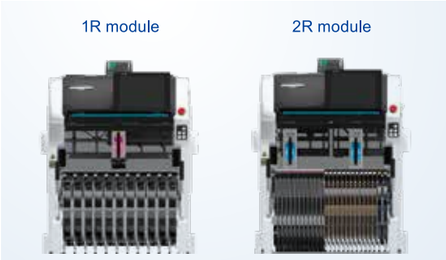
LCU functions

- Collects logs automatically
- Saves all images
- Responds to network issues
- On-machine editing
- Self-diagnosis*
- Multiple language support*
- Remote control*

* Under development

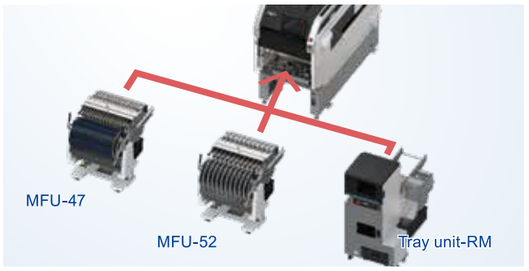
Optimal production line configurations

The most appropriate modules can be selected from the two module types based on the panel size and quantity of feeders to set. It is possible to change modules after the line has been set up.



Support for a variety of operation types

A wide variety of supply units are available to support various parts including the smallest parts up to large odd-form parts. The MFU is available with a choice between the bucket type and bucket reel type.



Easy maintenance

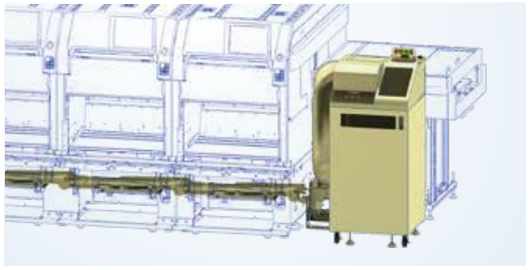
Pulling forward the module opens up access to the inside the machine with ease from both sides. This makes it possible to exchange heads and other units and perform maintenance work with a comfortable posture.

High-speed flux transfer

The high-speed type dip flux unit transfers flux onto the bumps of small parts. This leads to high-speed placement. (Option)

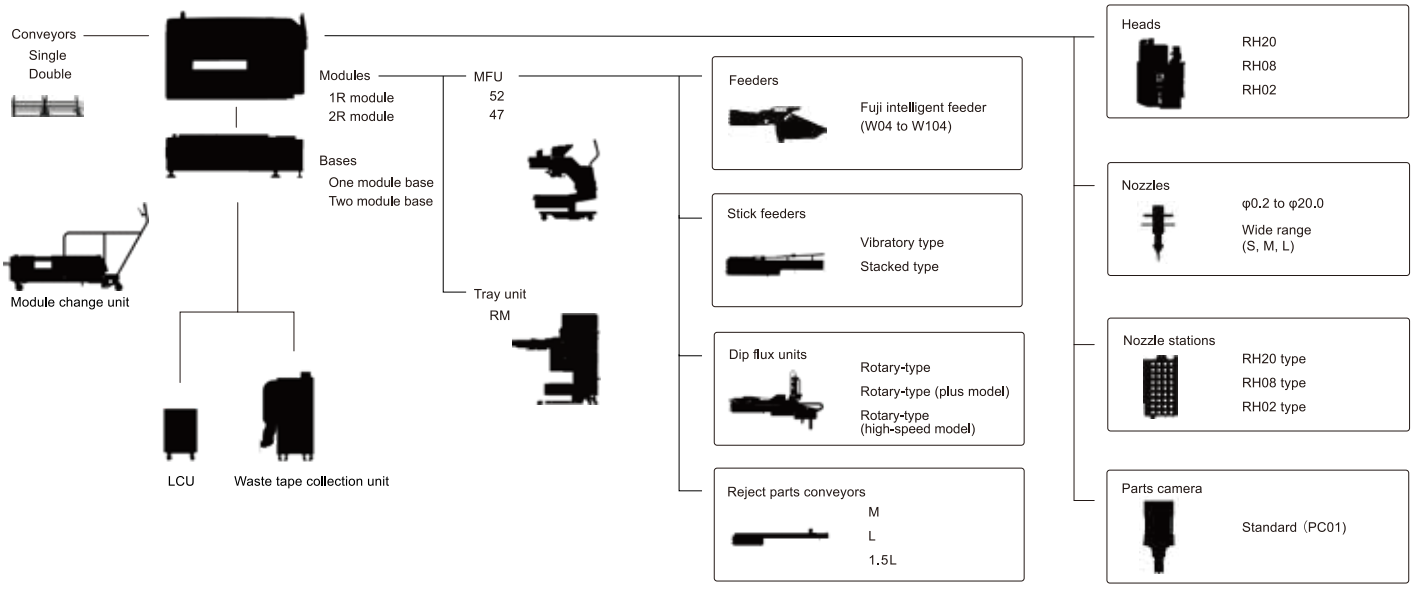
Collects waste tape automatically

Waste tape is collected automatically into one place to reduce operator work that previously needed to be performed regularly for each module. (Option)



Manufacturing sites are all unique, and they have different ways of production that involve a variety of issues.
Fuji Smart Factory aims to solve these issues, which in turn improves factory productivity and flexibility as well as maximizes the QCD performance of manufacturing.

System overview



External dimensions

(mm)

Specifications NXTR (S model)

Module			1R module	2R module	
Panel size (L x W)	Single conveyor		48 x 48 to 750 x 610 mm	48 x 48 to 370 x 610 mm	
	Double conveyor	Single conveyance	48 x 48 to 750 x 510 mm	48 x 48 to 370 x 510 mm	
		Dual conveyance	48 x 48 to 750 x 280 mm	48 x 48 to 370 x 280 mm	
Weight			610 kg	730 kg	
Base			One module base	Two module base	
Air consumption			50 L/min (ANR)	100 L/min (ANR)	
Weight			430 kg	800 kg	
Head			RH20	RH08	RH02
Throughput *1			46,000 cph	24,000 cph	8,000 cph
	Productivity priority mode		50,000 cph	-	-
Placing accuracy *1			±0.025 mm Cpk ≥ 1.00		
Power			3-phase AC 200 to 230 V ±10 V (50/60 Hz)		
Air			0.4 MPa		

*1 Under optimum Fuji conditions.

FUJI CORPORATION
19 Chausuyama, Yamamachi, Chiryu, Aichi 472-8686 Japan
Tel: +81 566 81 2110
Fax: +81 566 83 1140