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 stage 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 types of modules and heads to be used can be selected to match your product, and modules can be switched out even after setting up production lines, giving you the optimal production equipment.

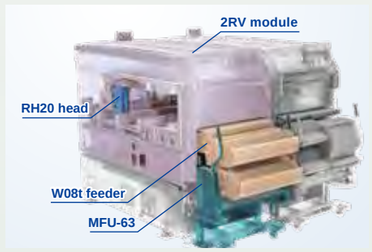
2R(V) module　　1R module

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.

Even greater improvements in productivity

The 2RV module allows for production enhancement focused on high-speed placement of small parts (productivity priority mode: 60,000 cph).



Simple work paths for efficiency

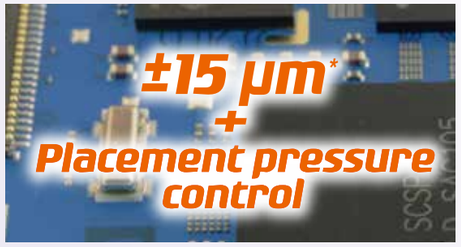
The modules are designed for single side operation that streamlines and optimizes the operation traffic. This increases efficiency in supplying materials and performing maintenance work.

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.

Offers high accuracy placement

Placements can be performed with an accuracy of ±25 µm at all times without constraints for the head type or the parts to be placed. For parts requiring higher accuracy, placement with an accuracy of ±15 µm is possible by using heightened accuracy mode. Additionally, controlling the push-in amount during placement allows for placement with the appropriate pressure.

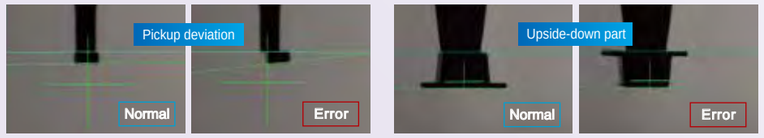


* Heightened accuracy mode

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)

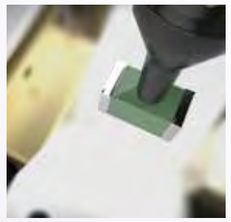
Not affected by changes in the surface height

The placement stroke follows changes in the placement 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.

Placement height adjustment

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.

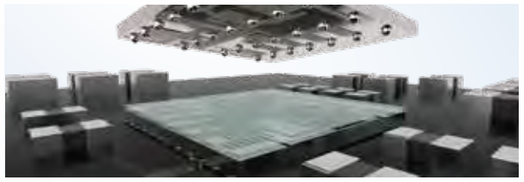
- Part presence check
- Misaligned placement check
- Part direction check*

* Under development

Mark and parts inspection (MPI)

Places WL-CSPs with high accuracy

The camera equipped with advanced lighting technology, ensures reliable vision processing of WL-CSPs and other parts for which the background of parts are likely to be captured in acquired images. Using a high-resolution camera enables reliable recognition of bumps as small as 45 µm in diameter. This results in high accuracy placement.

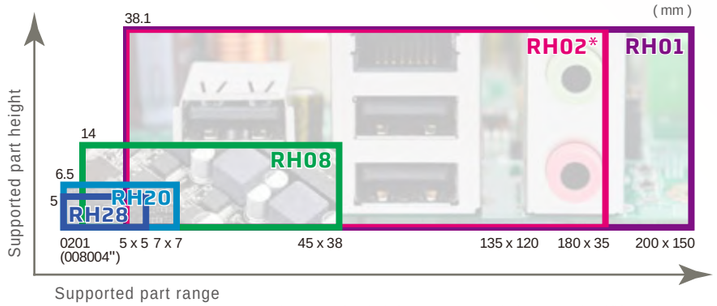


High quality placement

Maintaining a high level of quality on all placements

Placement heads that demonstrate strong capability in production

The 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.



* Maximum part sizes include 175 x 50 mm and 167 x 74 mm in addition to the above.

World-class speed of placement

Fuji's unique rotary head technology with simultaneous pickup and improved feeder indexing speed provides 60,000 cph per robot.This industry-leading placement speed takes productivity to the next level.

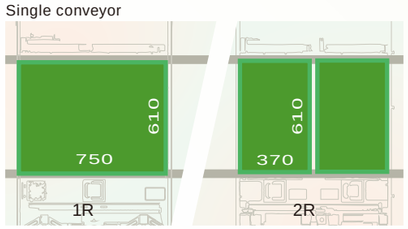
* This is the throughput in productivity priority mode when loaded in a 2RV module (two robots).

Expanded conveyable panel size

The panel size coverage is expanded so that panels up to and up to 370 x 280 mm "with double conveyors" when to highly-efficient production of producing panels in the supporting a greater variety of production.

750 x 610 mm are supported "with single conveyors" using dual lane production. From large panel production same size, NXTR line configurations are capable of

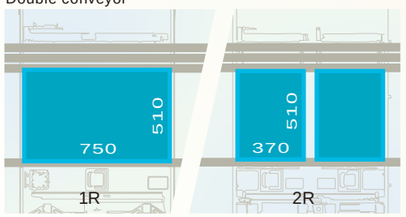
Single conveyor



Single conveyance

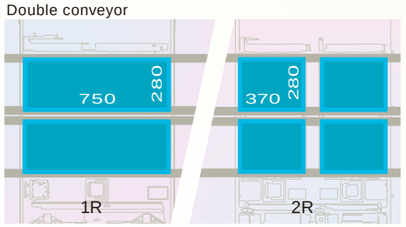
(mm)

Double conveyor



Single conveyance

Double conveyor



Dual conveyance

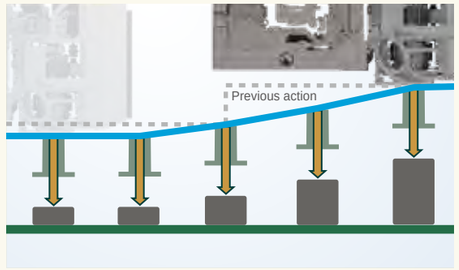
Support for various production types

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

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 is an effective measure to reduce work and prevent mistakes during changeover. (Option)

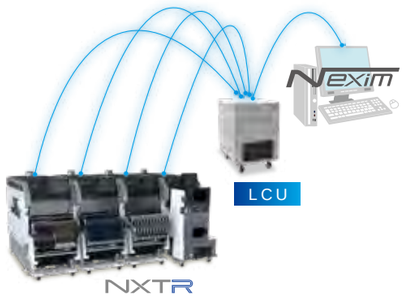
- Program-based positioning
- Auto allocation position check

Evolving manufacturing

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

Towards 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 error prevention and faster recovery times.



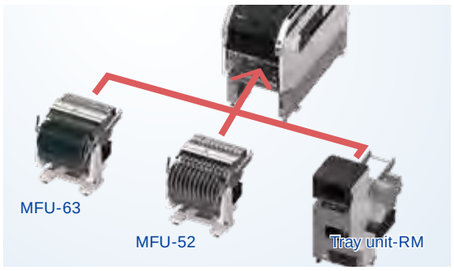
LCU functions

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

* Under development

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.

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.

High-speed flux transfer

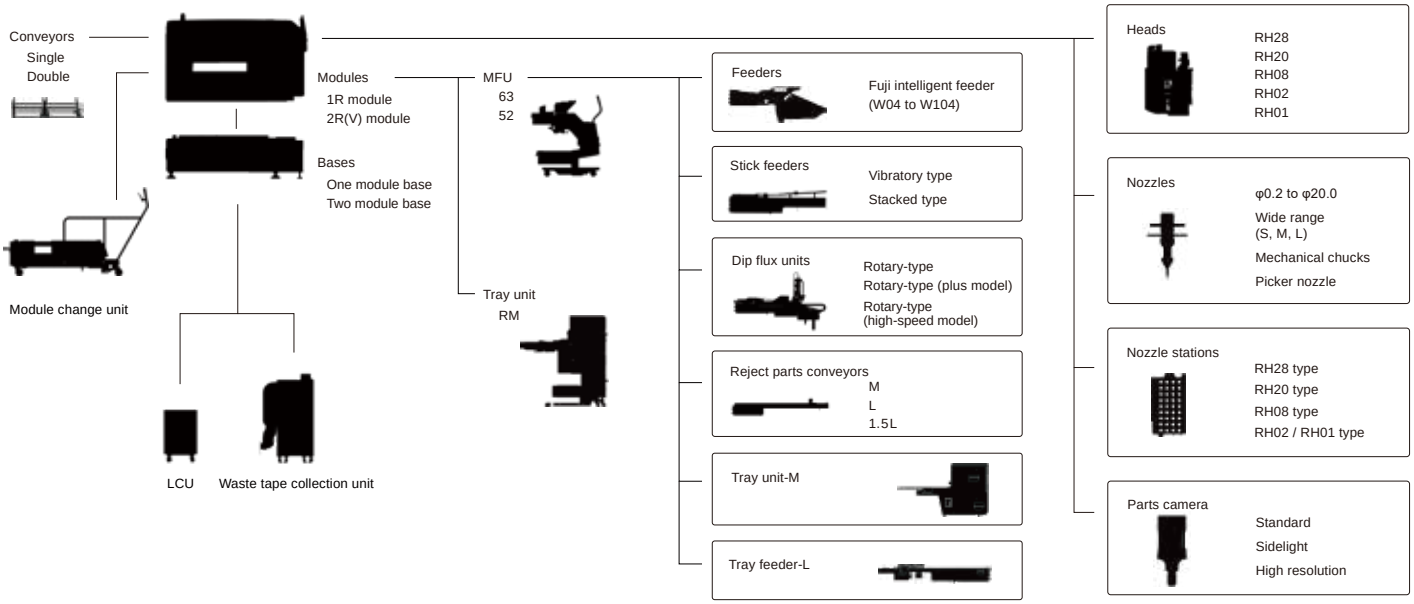
The high-speed type dip flux unit transfers flux onto the bumps of small parts. This leads to high-speed placement. (Option)

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)

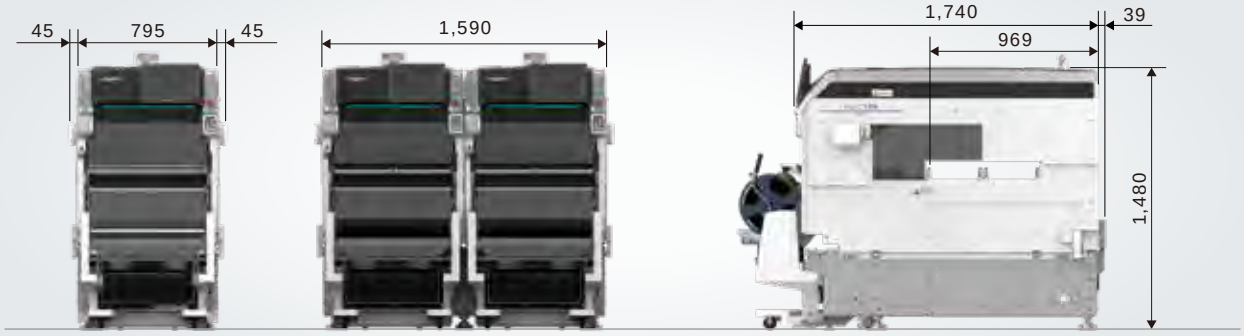
Manufacturing sites are all unique, and they have different ways of production that involve a variety of issues.
Fuji Smart Factory aims to solve these issues, which in turn improves factory productivity and flexibility as well as maximizes the QCD performance of manufacturing.

System overview



External dimensions

(mm)



Specifications NXTR S model

Module			1R module	2RV 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	Double conveyor		610 kg	640 kg	730 kg
Base			One module base	Two module base	
Air consumption			50 L/min (ANR)	100 L/min (ANR)	
Weight *1			430 kg	800 kg	

Head			RH28	RH20	RH08	RH02	RH01
Throughput *2	2RV module with MFU-63		55,000 cph	46,000 cph	27,000 cph	-	-
		Productivity priority mode	60,000 cph	50,000 cph	-	-	-
	1R/2R module with MFU-63		52,000 cph	46,000 cph	27,000 cph	8,000 cph	5,200 cph
		Productivity priority mode	57,000 cph	50,000 cph	-	-	-
Placing accuracy *2			±0.025 mm Cpk ≥ 1.00				
		Heightened accuracy mode	±0.015 mm 3σ		-		

Power	3-phase AC 200 to 230 V ±10 V (50/60 Hz)
Air	0.4 MPa

*1 The two module base dedicated for 1R modules is 780 kg.
*2 Under optimum Fuji conditions.

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- The contents of this catalog are subject to change without notice due to constant product development.
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