FUJI NXTR-S (S MODEL)

NEXT-GENERATION HIGH-END MODULAR SMT PLACEMENT PLATFORM

PRODUCT DATA SHEET

Smart Factory SMT Assembly Lines • NXTR-S 1R / 2R / 2RV

The **Fuji NXTR-S** is Fuji's premier next-generation high-end modular placement platform, engineered as the cornerstone of autonomous, zero-stop smart factory electronics manufacturing. Continuing Fuji's hallmark single-sided operation and true toolless modularity, the NXTR-S introduces real-time pressure sensing, dynamic part checks, and an industry-leading throughput of up to 120,000 cph in dual-robot (2RV) configuration with RH28 rotary heads. Engineered for sub-miniature 0201 metric (008004") passives up to 150 × 25 mm odd-form packages, the platform achieves standard ±0.025 mm (and ±0.015 mm heightened) mounting accuracy with ultra-low 0.5 N placement impact, ensuring zero solder bridge defects on high-density assemblies.

≤ 120,000 cph	±0.015 mm	0.5 N	750×610 mm
MAX THROUGHPUT (2RV + RH28)	HEIGHTENED ACCURACY MODE	ULTRA-LOW IMPACT PLACEMENT	MAX PANEL (SINGLE CONVEYOR)

Key Technological Innovations of the NXTR-S Platform

World-Class Rotary Head Performance

Next-generation RH20 (50,000 cph/robot) and RH28 (60,000 cph/robot) rotary heads feature simultaneous pickup and enhanced feeder indexing. Delivers unmatched line balancing without throughput degradation when changing product recipes.

0.5 N Placement & IPS Quality Control

In-house low-impact nozzles apply controlled 0.5 N pressure to eliminate solder squash and part cracking on 0201/0402 parts. Intelligent Part Sensors (IPS) inspect part posture, height, tombstoning, and missing/upside-down components in real-time.

+30% Feeder Capacity & Automatic Pins

Accommodates up to 52 tape feeders (8 mm equivalent) with MFU-63 carts and W08t feeders per module. Automated backup pin allocation positions hard and soft support pins directly from CAD data, eliminating human error during changeover.

Predictive Maintenance & Zero Stops

Maintains true tool-less head exchanges in a single manual motion. Embedded self-diagnostics continuously predict maintenance thresholds, while dedicated offline maintenance units clean and calibrate heads and feeders without line interruption.

NXTR-S Modular Architecture & Dual-Lane Flow

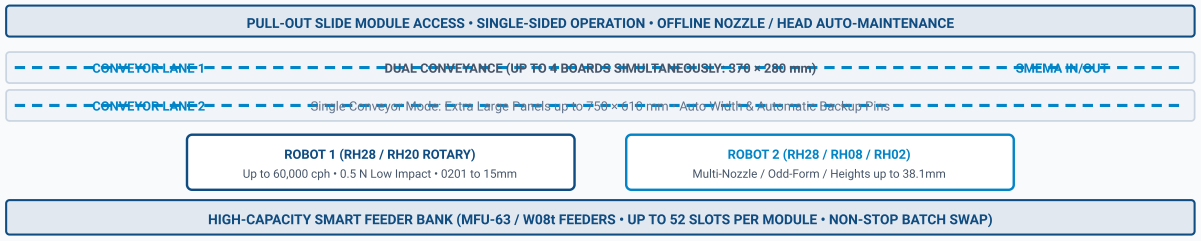

Fig. 1: Modular dual-robot layout, dual conveyance lanes, and high-density smart feeder interfaces on Fuji NXTR-S.

Technical Specifications & Engineering Parameters

1. PLACEMENT PERFORMANCE & NEXT-GEN HEAD CONFIGURATIONS (RH28, RH20, RH08, RH02)	
Throughput (Maximum Line Rate)	2RV Module (RH28 × 2): up to 120,000 cph • 1R/2R Module (RH20): up to 50,000 cph per robot
Standard Placement Accuracy	±0.025 mm (3σ, Cpk ≥ 1.00) maintained across all head types and standard chip packages
Heightened Accuracy Mode	±0.015 mm (3σ, Cpk ≥ 1.00) dedicated for ultra-fine-pitch devices, micro-BGA, and CSPs
Low-Impact Placement Force	Controlled 0.5 N ultra-low impact force with real-time push-in sensor control
Head Exchange Mechanism	Toolless, single-action manual exchange with automatic calibration and electrical lock
2. COMPONENT HANDLING & SMART FEEDER SYSTEMS	
Applicable Component Range	0201 metric (008004") passives up to 150 × 25 mm or 102 × 102 mm odd-form packages
Maximum Component Height	RH20: 6.5 mm • RH08: up to 14.0 mm • RH02: up to 38.1 mm (expandable for connectors)
Feeder Capacity per Module	Up to 52 parts (8 mm tape equivalent) with high-density W08t feeders (+30% vs NXT III)
Supported Feeder Standards	W-series intelligent electric tape feeders (8 to 104 mm), MFU-63 carts, stick, and multi-magazine tray
Parts Verification & Pickup Check	Intelligent Part Sensor (IPS): stance, dropped parts, missing, tombstoned & upside-down detection
3. PCB CONVEYOR TRANSPORT & MODULAR BASE CONFIGURATIONS	
Single Conveyor Mode (1R Module)	Min. 48 × 48 mm — Max. 750 × 610 mm (large panel industrial and server boards)
Single Conveyor Mode (2R Module)	Min. 48 × 48 mm — Max. 370 × 610 mm
Dual Conveyance (2RV / 2R Modules)	Up to 4 panels concurrently (max. panel size 370 × 280 mm; placement area 330 × 274 mm)
PCB Thickness & Max. Weight	0.4 to 5.0 mm thickness / Standard board weight up to 3.0 kg (carrier support options available)
Backup Pin Positioning	Automated backup pin allocation system (supports both hard-type and soft-type magnetic pins)
4. UTILITY FACILITIES, DIMENSIONS & MACHINE WEIGHTS	
Machine Dimensions (1R Module)	795 mm (W) × 1,740 mm (D) × 1,480 mm (H) [excluding signaling tower and projections]
Machine Dimensions (2R / 2RV Module)	1,590 mm (W) × 1,740 mm (D) × 1,480 mm (H) [excluding signaling tower and projections]
Machine Weight (Net)	1R Module: Approx. 1,600 kg • 2R Module: Approx. 2,900 kg
Power Supply Requirements	3-phase AC 200 to 230 V ±10%, 50/60 Hz
Air Supply & Flow Consumption	0.5 MPa (ANR); Flow: 60 to 132 L/min (ANR) depending on installed head configuration

Real-Time Sensing & Post-Placement Checks

- **Laser & 3D Coplanarity:** In-line 3D coplanarity checks inspect BGA spheres and gull-wing leads, eliminating coplanarity defects prior to board touch.
- **Wafer-Level CSP Imaging:** PC01 high-definition camera with multi-angle lighting accurately recognizes WL-CSP features and reflective silicon surfaces.
- **Post-Placement Inspection:** In-machine sensors verify placement stability and component presence prior to shield-can or second-pass component placement.

Smart Factory Connectivity & Nexim Automation

- **Nexim Intelligent Software:** Direct interface with Fuji Nexim MES and SMT software suites for automated line balancing and complete lot traceability.
- **Offline Automation Units:** Seamless integration with automated nozzle and feeder maintenance units ensures factory-calibrated precision with zero line downtime.
- **Single-Sided Ergonomic Operation:** Operators manage setup, reel replenishments, and module servicing entirely from the front of the production line.