FUJI AIMEX III / AIMEX IIIC

ALL-IN-ONE FLEXIBLE MULTI-FUNCTION PLACEMENT PLATFORM

PRODUCT DATA SHEET

High-Mix & High-Volume SMT Lines • AIMEX III & IIIc

The **Fuji AIMEX III and AIMEX IIIc** are industry-standard, high-flexibility surface mount placement systems engineered to satisfy the rigorous demands of high-mix, variable-volume SMT manufacturing. Built around Fuji's proven modular architecture with single- or twin-robot gantries, the AIMEX III series scales effortlessly up to 80,000 cph throughput while supporting an expansive component spectrum—from micro 0201 metric (008004") chips up to 150 × 25 mm odd-form connectors and 38.1 mm tall components. Incorporating Fuji's revolutionary DynaHead (DX) dynamic tool exchanger, massive 130-slot feeder banks, and panels up to 1,068 × 710 mm, the platform delivers zero setup bottlenecks and certified ±0.025 mm Cpk ≥ 1.00 placement accuracy.

≤ 80,000 cph	±0.025 mm	130 Slots	1,068×710 mm
MAX THROUGHPUT (TWIN H24S)	PLACEMENT ACCURACY (CPK ≥ 1.0)	FEEDER CAPACITY (8MM TAPE)	MAX PCB PANEL (AIMEX III)

Key Technological Innovations of the AIMEX III Series

DynaHead (DX) Dynamic Exchange

Revolutionary DynaHead technology dynamically swaps dedicated placement tools mid-cycle in one continuous action—switching between 12-nozzle, 4-nozzle, and single-nozzle configurations without mechanical head replacement or cycle interruption.

Scalable Twin-Robot Gantry System

Available in Single-Root (1 robot) or Twin-Root (2 independent X-Y robots) layouts. Dual gantries work simultaneously on a single board or asynchronously across independent lanes, boosting line balanced line rates up to 80,000 cph.

Massive 130-Slot Feeder Capacity

Equipped with front and rear feeder banks hosting up to 130 8mm tape reels. Compatible with Multi-Feeder Units (MFU) for rapid one-touch batch changeovers, smart W-series feeders, stick feeders, and multi-magazine auto-tray units.

Large Panel & Dual-Lane Flexibility

Supports large-format industrial and automotive boards up to 1,068 × 710 mm (optionally 1,500 mm long). Dual conveyor configuration enables concurrent production of two completely distinct assemblies without setup stoppage.

AIMEX III System Architecture & Production Flow

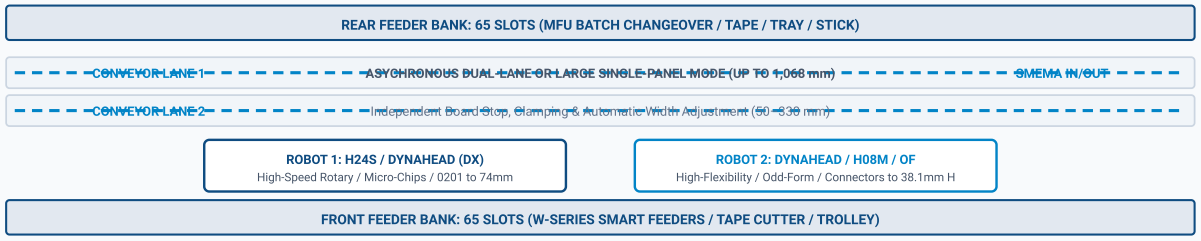

Fig. 1: Modular dual-gantry motion envelope, 130-slot dual feeder banks, and flexible conveyor line options on Fuji AIMEX III.

Technical Specifications & Engineering Parameters

1. PLACEMENT PERFORMANCE & PLACEMENT HEAD CONFIGURATIONS (SINGLE & TWIN ROBOT)	
Robot Gantry Architecture	Single Root (1 robot gantry) or Twin Root (2 independent X-Y robot gantries)
H24S High-Speed Rotary Head	1 Robot: 35,000 cph (Normal) / 40,000 cph (Productivity) • 2 Robots: up to 80,000 cph; Accuracy: ±0.025 mm
DynaHead (DX) Dynamic Exchange	R12 Tool: 27,000 cph (±0.038 mm) • R4 Tool: 12,000 cph (±0.040 mm) • S1 Tool: 5,800 cph (±0.030 mm)
Medium & Odd-Form Heads	V12: 26,000 cph (±0.038 mm) • H08M: 13,000 cph (±0.040 mm) • H02F: 7,300 cph • OF Head: 3,000 cph
Placement Repeatability & CPK	±0.025 mm (3σ, Cpk ≥ 1.00) based on fiducial mark referencing under optimum Fuji conditions
2. COMPONENT HANDLING CAPABILITIES & FEEDER INFRASTRUCTURE	
Applicable Component Range	0201 metric (008004") chips up to 102 × 102 mm packages, odd-form connectors up to 150 × 25 mm
Maximum Component Height	Standard up to 25.4 mm (with H02F / DX S1); Expandable up to 38.1 mm (with H01 / OF heads)
Total Feeder Capacity	Up to 130 slots (8 mm tape input equivalent) on both AIMEX III and AIMEX IIIc models
Feeder Packaging Types	Intelligent W-series tape feeders (8 to 88 mm), stick feeders, multi-tray feeders, bulk feeders
Setup & Changeover Systems	Multi-Feeder Unit (MFU) batch exchange carts; automated tape cutter option; barcode verification
3. PCB CONVEYOR TRANSPORT & MODEL COMPARISON (AIMEX III VS. AIMEX IIIC)	
AIMEX III Panel Dimensions (Single)	48 × 48 mm up to 1,068 × 710 mm (Optional expansion available up to 1,500 × 710 mm)
AIMEX III Panel Dimensions (Dual)	Single-lane mode: 48 × 48 to 1,068 × 610 mm • Dual-lane mode: 48 × 48 to 1,068 × 330 mm (each lane)
AIMEX IIIc Panel Dimensions (Compact)	Single conveyor: 48 × 48 mm up to 508 × 400 mm (High-density compact factory footprint)
PCB Thickness & Max. Board Weight	0.4 to 5.0 mm thickness / Standard board weight up to 3.0 kg (carrier support options available)
Transport Height & Direction	Conveyor height: 900 ± 20 mm (or 950 mm option); Standard Left → Right (Option: Right → Left)
4. MACHINE DIMENSIONS, WEIGHTS & FACILITY REQUIREMENTS	
External Dimensions (L × W × H)	AIMEX III: 1,280 × 2,656 × 1,465 mm • AIMEX IIIc: 1,280 × 2,346 × 1,465 mm (excl. projections)
Machine Weight (Net)	AIMEX III: 1,490 kg (Single root) / 1,720 kg (Twin root) • AIMEX IIIc: 1,370 kg (Single) / 1,530 kg (Twin)
Power Supply Requirements	3-phase AC 200 to 230 V ±10%, 50/60 Hz
Air Supply & Flow Consumption	0.5 MPa (ANR); Consumption: 40 L/min (Single robot) / 60 L/min (Twin robot)
Software & Interface Standards	Fuji Nexim SMT Software System; High-resolution Touchscreen GUI; Full SMEMA protocol

DynaHead (DX) & Zero-Downtime NPI Ramp-Up

- **Autonomous Tool Switching:** DynaHead eliminates production re-balancing by switching nozzles dynamically between small passives and connectors in seconds.
- **On-Machine Touchscreen Teaching:** Large swiveling touchscreen interface enables rapid vision fine-tuning, fiducial teaching, and real-time program editing.
- **Fuji Nexim Integration:** Seamless integration with Fuji's Nexim software suite enables intelligent line balancing, automated setup verification, and complete component traceability.

Quality Assurance, Sensing & Coplanarity

- **3D Coplanarity & Bent-Lead Check:** Laser and optical sensors verify lead coplanarity and BGA ball integrity before placement, preventing latent solder defects.
- **Intelligent Part Sensing (IPS):** Confirms component presence, pickup orientation, and release status at every cycle, preventing drops and misplacements.
- **Continuous Dual-Lane Loading:** Asynchronous conveyor lanes transfer fresh boards into placement position while the alternate lane is populated, driving cycle efficiency.