

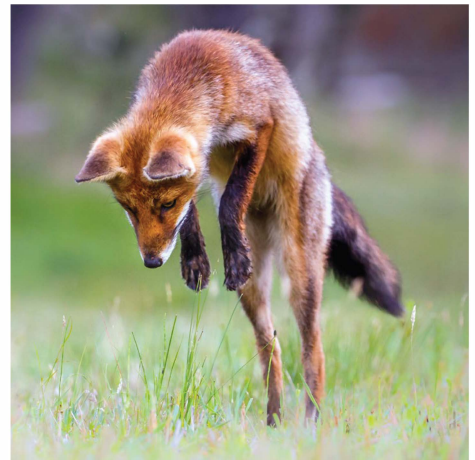
pick and place. ultra.



puma. ultra.



fox. ultra.



naturally adaptive.

Puma Ultra & Fox Ultra

High-Performance SMT Solutions, Naturally Adaptive

Essemtec’s Ultra combine speed, precision, and versatility to tackle the challenges of modern SMT production. The Puma Ultra delivers high-performance, high-mix assembly, while the Fox Ultra maximizes efficiency in a compact footprint. Designed to enhance productivity, improve yield, and ensure top-quality results, both machines adapt seamlessly to your evolving manufacturing needs. Whatever your production challenge, the Ultra provide the flexible, high-performance solution to keep you ahead in electronics manufacturing.



Productivity



- 1,2 or 4 axis
- Fox: 31'000 cph
- Puma: 30'000 cph

Solder Paste Jetting



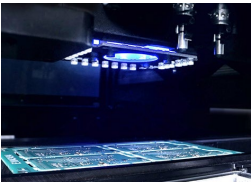
- Jet-on-the-Fly
- 780'000 dph Max
- 480'000 dph BGA
- 280'000 dph avg.

Non Stop Production



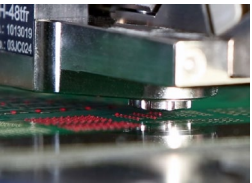
- “Hot-Swap” feeder change over
- Off-line recipe preparation

Integrated Inspection



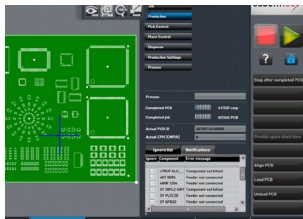
- 2D SPI
- 2D AOI
- Autocorrect

Glue Jetting



- Jet-on-the-Fly
- 2'000'000 dph Max
- 780'000 dph BGA

Falcon Software Suite: Smart Manufacturing for Industry 4.0



Our smart and flexible solutions empower our customers to meet inventory, manufacturing and process challenges with adaptability and ease. Falcon - The standard in advanced, integrated and agile automation. Best-in-class user-friendly software

Production flow Optimization

- Reduce cost of inventory
- Optimize component Flow
- Reduce machine downtime
- Real-time performance visibility
- Smart Material Management

Quality improvement

- Production yield increase
- Cost of quality reduction
- Minimize defects
- Traceability for product tracking and quality control



Naturally Adaptive Features



Placement Speed

- 31'000 cph Optimum speed with Fox
- 30'000 cph Optimum speed with Puma



Reliable and Repeatable Process

- QFP: $\pm 30\mu\text{m}$ at 3σ / Chip: $\pm 40\mu\text{m}$ at 3σ



High Feeder Density

- Up to 200 (140 inline) for Fox
- Up to 280 (160 inline) for Puma



All-in-One Capabilities

- Solder paste jetting, glue jetting, other dispensing, component placement, integrated inspection - 2D SPI & 2D AOI - in one space



Extended Component Range & Vision System

- Advanced vision system supports a wide component range from 008004 to 109 x 87 mm, ensuring precise and flexible placement.



Connectivity

- Easily connect with IPC-CFX, IPC-Hermes and other protocols ensures smart factory connectivity and streamlined production



Multi-Level Component Placement

- Precise dispensing & component placement at different Z-levels, supporting advanced PoP and SoP assembly



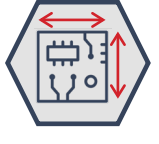
Component Placement in Cavities

- Precise dispensing and placement in complex geometries, enabling advanced PCB repair and rework with seamless integration.



Laser Height Mapping

- Fully integrated and parametrable laser height measurement to compensate any board warpage



Versatile PCB Board Size

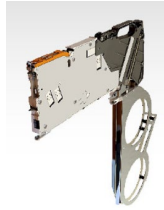
- From 20 x 20mm to 406 x 305mm with Fox and to 560 x 610 mm with Puma. Long board option enabling PCB up to 1.8m



Extended Feeder Solutions for your Needs

Evo and hyQ Feeder

Our high-speed tape feeder for lane 4 to 72mm, ensure precise, efficient component delivery for fast-paced production



- Evo Feeder
- Dual Lane
- 4 and 8 mm



- hyQ Feeders
- Single Lane Feeder
- 12, 16, 24, 32, 44, 56, 72 & 88mm

Evo Tape Strip



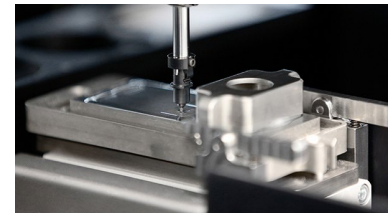
Evo Tape Strip Feeder enables robust handling of short tape strips, ideal for prototyping and NPI, with modular design and easy software.

Label Feeder



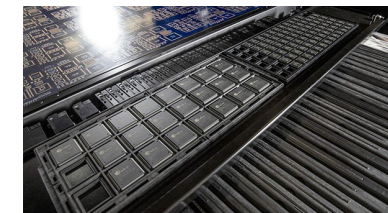
The Label Feeder enables precise label placement for traceability, ensuring accurate identification and tracking in SMT production.

Dipping Station



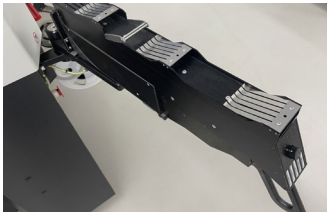
The dipping station for flux-dipping BGAs, ensuring better soldering, stronger joints, improved wetting, and reduced defects.

Tray and Tray Slider



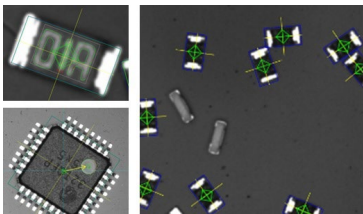
Trays support BGAs, QFNs, connectors, and custom components, with single tray or tray slider options for up to 2 trays available. Ensure secure handling, optimized feeding, and seamless SMT assembly.

Stick Feeder



The Stick Feeder enables seamless feeding of components supplied in stick format, ensuring efficient handling and placement.

Loose Component Solution



Loose Component Solution enables easy picking from a bulk carrier, ideal for prototyping and low quantities, with marking and orientation recognition.

Custom Solution



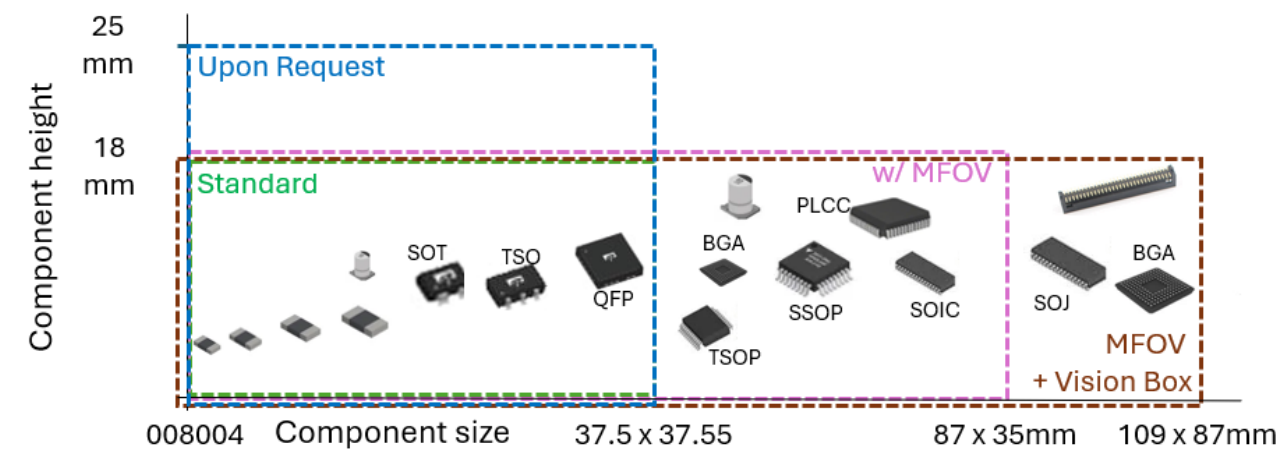
For custom feeding solutions, contact us! We tailor feeders to your needs, ensuring seamless integration and optimized component handling...

Automatic Tray Changer



Automatic Tray Changer holds up to 18 JEDEC trays, enabling uninterrupted production, higher throughput, and efficient large-component handling.

Component Range Versatility and Nozzle



- MFOV: Multi field of vision / Vision Box. Optional extended bottom camera

Large Nozzle Portfolio



A Nozzle for every of your needs.
ePlace automatic nozzle preselection based on component.



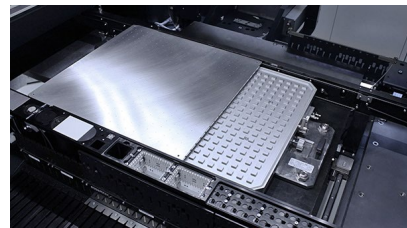
Nozzle Charger
36 Nozzle position maximum versatility.



2nd Tool Charger
Option for extra large nozzle for large size component.

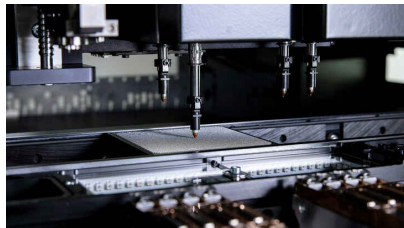
More Flexibility with additional options and capabilities

Printed Electronics



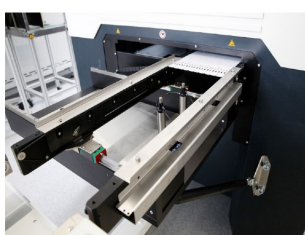
Integrated Vacuum table for substrate stability, enabling dispensing and placement on foil.

Reballing



All-in-One solution for Reballing: automated, accurate, full traceability.

Long board



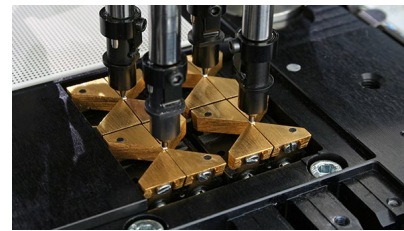
For extra large board, 1.2, 1.5 and 1.8m conveyor option.

Integrated Inspection System



- Inspection system:
- 2D SPI with autocorrect function
 - 2D AOI with bad marking & traceability
 - Improve yield and quality

Electrical testing



Test before placement:
Measure & verify resistance, capacity, inductance and polarity to ensure high quality control.



Technical Specification

	Fox 4	Fox 2	Fox 1	Puma 4	Puma 2	Puma 1
Optimum placement speed	31'000 cph (4-axes)	18'000 cph (2-axes)	9'500 cph (1-axes)	30'000 cph (4-axes)	17'600 cph (2-axes)	9'200 cph (1-axes)
Optimum jetting speed	Solder Paste Jetting: Max Frequency: 720'000 dots/h / BGA Pattern Jet-on-the-Fly: 480'000 dots/h Average Board Speed: 280'000 dots/h Piezo Jetting: Max Frequency: 2'000'000 dots/h / BGA Pattern Jet-on-the-Fly: 720'000 dots/h (glue) BGA Pattern Stop & Jet: 177'000 dots/h					
Feeder capacity 8 mm tape	200 (140 inline)	180 (120 inline)	180 (120 inline)	280 (160 inline)	260 (140 inline)	260 (140 inline)
Component size range	008004 imp (0201) up to 109 x 87 mm					
Placement accuracy (x, y)	Chip $\pm 40 \mu\text{m}$ (3σ) / QFP $\pm 30 \mu\text{m}$ (3σ)					
Max. PCB dimensions	406 x 305 mm (16 x 12")			560 x 610 mm (22 x 24") Up to 1800 x 610 mm (71 x 24")		
Machine footprint	880 x 1090 mm (34.7 x 43")			1557 x 1357 mm (61 x 53")		
Approx. machine weight (without / with full feeder)	875 kg (1929 lb) / 1020 kg (2249 lb)			1670 kg (3680 lb) / 1920 kg (4233 lb)		

Dimensions

