

Changing the Manufacturing Process with Speed



Multi-Purpose Automated Fabrication Machine

Smart FAB

Fine Tuning Optimization, Creating Productivity

Multi-Purpose Automated Fabrication Machine SmartFAB



Faster and Easier

A modular concept that allows the line to be quickly started

The SmartFAB modularizes factors required for assembly work such as the parts supply, work conveyor and assembly head.

Units can be connected to the base machine to build the perfect line that meets the customer's needs.

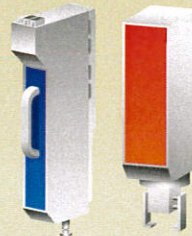
Debug and startup time for the SmartFAB is largely reduced in comparison with a general purpose line built with dedicated machines and multipurpose robots.

The SmartFAB displays its power when starting up new production lines and changing production types. It provides the maximum benefit for a minimum investment.

Twin Head Construction

•Carrier head

A high spec carrier head that picks and places assembly parts at high speed.



- sH01
- sH02
- sG04

•Processing head

Combines additional functions such as dispensing and screw tightening to allow the customer to create a compact assembly line.



- Dispensing
- Screw tightening (note 1)

Parts Supply Units

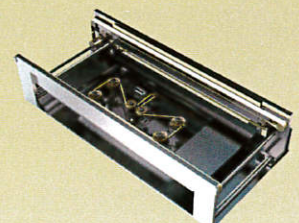
•Tray unit



- Application base
- Radial tape feeders
- Stick feeders
- Bowl feeders (note 1)
- Axial tape feeders (note 1)

Work Conveyor Unit

•Single conveyor



- Conveyor with cut and clinch

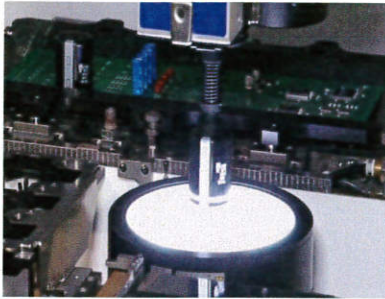
Faster and More Accurate

Maintains assembly accuracy with vision processing

Assembly accuracy, not robot positioning accuracy or repeatable accuracy, is a necessity when assembling products.

The base camera and robot camera, equipped as standard on the SmartFAB, check positioning and perform offsets at high speed and with high accuracy. This achieves an assembly accuracy of $\pm 50 \mu\text{m}(3\sigma)$

(note 2)
Note 2: Based on Fuji measurements.

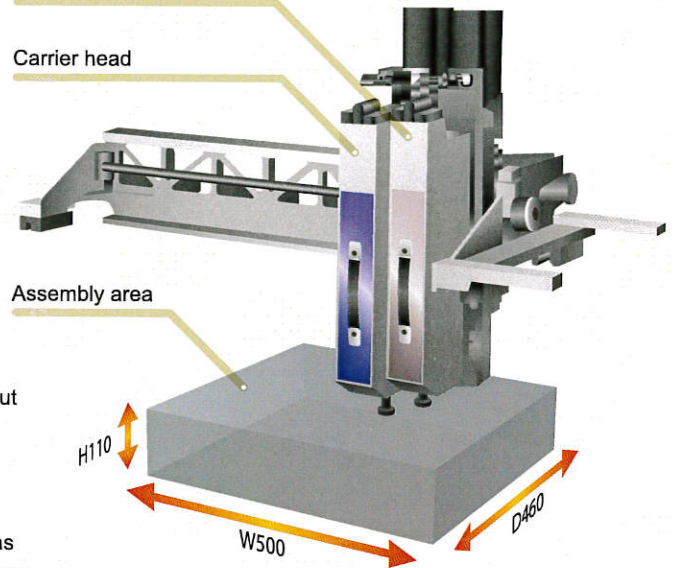


Twin Head Construction

Processing head

Carrier head

Assembly area



Orthogonal robot supports high speed and accuracy

The SmartFAB with its orthogonal robot is spacious and has an intuitively easy to understand assembly area. Within this area, the machine can assemble parts without experiencing changes in positioning accuracy or conveyor performance.

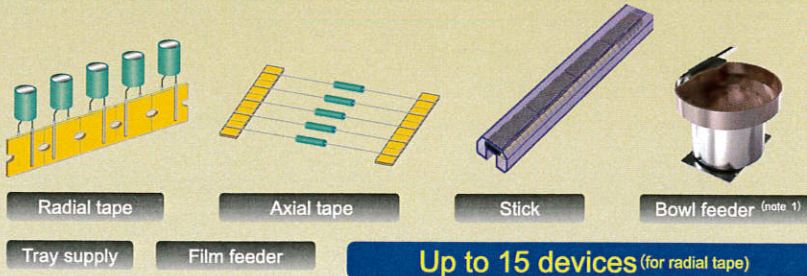
Twin head construction

The XY-robot is equipped with 2 heads; a processing head and a carrier head. These heads can work in a large space of up to 110 mm in height. Each head has its own up and down axis to allow cooperative work similar to a human working with both hands.

Supports a Variety of Supply Methods and Part Types

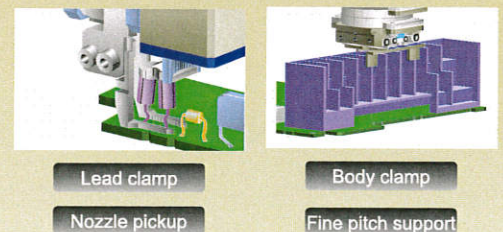
Supply units

A wide range of supply units. Supports the following packaging types.



Parts handling

A variety of nozzle and mechanical chucks are available as standard. A nozzle changer used with the nozzles allows multiple nozzles to be selected and used.



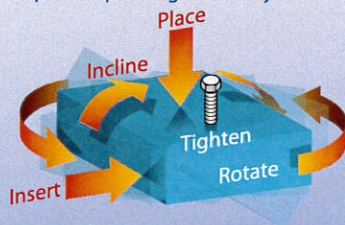
The best line setup can be created by freely combining units from the large selection available. All parts such as leaded parts, SMDs and large connectors can be assembled together on the SmartFAB.

Eliminating non-operation time



Reducing changeover time has a huge effect on improving productivity. The processing and carrier heads can be exchanged in under a minute without tools. The SmartFAB has been designed to minimize changeover time using such things as a conveyor system that automatically changes the width using production data, and a tool changer system that exchanges tools automatically.

Simple setup for high accuracy assembly



Place, insert, tighten, dispense, rotate and incline. A simple setup provides the fundamentals for high accuracy positioning. Combining these features can achieve high functionality assembly work.

Easy operation



At production sites where the amount of equipment for a single operator is increasing due to the promotion of workers performing multiple jobs, easy operability and immediate recovery from problems is important. The SmartFAB's user friendly interface can be easily operated by anyone and when problems occur, operators can follow the displayed guidance to minimize downtime.

Consolidates production data



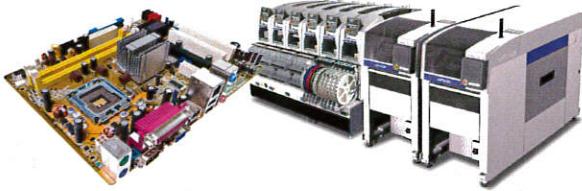
The current urgent need to set up a system to guarantee product quality means that it is vital to keep logs on the manufacturing process. SmartFAB uses Fujitrax, which has a long proven record of use with SMT equipment, to gather together important production data. (Option)

Applications

Electronic parts and odd-form parts insertion

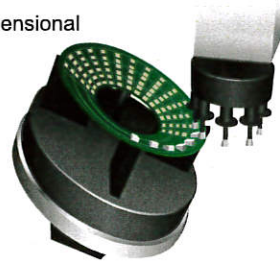
Leaded parts, surface mount parts and large connectors can all be assembled on the SmartFAB.

Fuji's surface mounting machines can also be easily linked up with the SmartFaB.



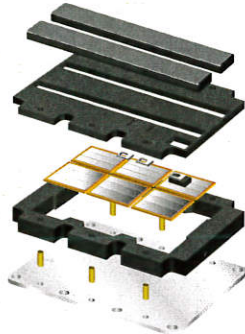
Curved surface placement (CuSP)

The SmartFAB provides a new surface placement method on three-dimensional surfaces.



Power module assembly

The SmartFAB assembles stacked parts, dispenses flux and handles dies at high speed and with high precision in a clean environment.



Solar panel assembly

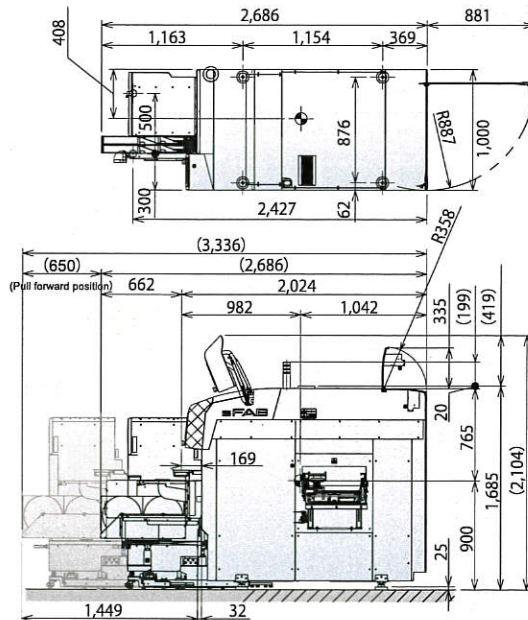
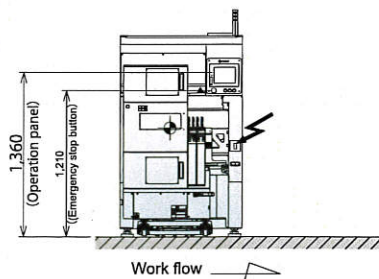
High speed versatile stringing.

A versatile stringer that not only strings full cell sizes at high speed but can also support cut cells such as half-size cells.



Machine Specifications

sFAB50



(Note 3) The above diagram includes a tray unit and radial tape feeder (options).

sFAB50			
Assembly parts	Size	mm	W100×D100×H110
	Weight	g	200 (sH01/sH02) /40 (sG04)
Assembly range		mm	W500×D460×H110
Machine size	Footprint	mm	W1,000×D2,024
	Height	mm	1,685
	Weight	kg	1,700
Power supply capacity		KVA	8 (see note 4)

(Note 4) Value may change depending on specification selected.

FUJI FUJI MACHINE MFG. CO., LTD.
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Electronics Assembly Equipment Division, Sales Section 5

TEL 0566-81-8307 FAX 0566-81-8298

E-MAIL marketdev@fuji.co.jp HP http://www.fuji.co.jp/

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

● Contact your Fuji representative for further details or view the specifications.

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