Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>FX-3R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board size</td>
<td>L size</td>
<td>410x360mm</td>
</tr>
<tr>
<td></td>
<td>L-Wide size</td>
<td>510x360mm*1</td>
</tr>
<tr>
<td></td>
<td>XL size</td>
<td>610x560mm</td>
</tr>
<tr>
<td>Component height</td>
<td>6mm</td>
<td></td>
</tr>
<tr>
<td>Component size</td>
<td>Laser recognition</td>
<td>01005 (0402 metric) to 32.5mm square</td>
</tr>
<tr>
<td>Placement speed (CPH)</td>
<td>IPC9850</td>
<td>66,000 CPH*3</td>
</tr>
<tr>
<td>Placement accuracy</td>
<td>Laser recognition</td>
<td>±50µm [Cpk ≥ 1]</td>
</tr>
<tr>
<td>Feeder inputs</td>
<td>Max. 240 8mm tape feeders (using dual lane electronic)</td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>300 to 415 VAC, 3-phase</td>
<td></td>
</tr>
<tr>
<td>Apparent power</td>
<td>7.6kVA / 9kVA</td>
<td></td>
</tr>
<tr>
<td>Operating air pressure</td>
<td>0.5±0.05Mpa</td>
<td></td>
</tr>
<tr>
<td>Air consumption</td>
<td>Max. 160L/min</td>
<td></td>
</tr>
<tr>
<td>Machine Dimensions</td>
<td>(WxDxH)*2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L size</td>
<td>2,880 x 1,650 x 1,530mm</td>
</tr>
<tr>
<td></td>
<td>L-Wide size</td>
<td>2,880 x 1,650 x 1,530mm</td>
</tr>
<tr>
<td></td>
<td>XL size</td>
<td>2,880 x 1,650 x 1,530mm</td>
</tr>
<tr>
<td>Mass (approximately)</td>
<td>L, L-Wide size</td>
<td>3,200kg</td>
</tr>
<tr>
<td></td>
<td>XL size</td>
<td>3,750kg</td>
</tr>
</tbody>
</table>

*1: L-Wide size is optional
*2: Height described is for conveyor height 900mm
*3: This speed does not apply to XL board size.
*4: With mechanical feeder bank
*5: With electric feeder bank

FX-3R Features:
- 66,000 CPH (IPC9850)
- Electronic & Mechanical Tape Feeders
- 22” x 24” Board Size

Options

- Laser recognition
-电商平台
- IPC9850
- Mechanical Feeder Trolley
- Mechanical Tape Feeder 8~56mm
- Mechanical Adhesive Tape Feeder 32mm
- Mechanical Stick Feeder
- Mechanical Bulk Feeder
- IC Collection Belt
- Connector Bracket
- Electric Feeder Trolley

* Please refer to the product specifications for details.
From the pioneer of the modular assembly line comes the latest technology in high volume production at the lowest cost of ownership. Offering an interchangeable electronic and mechanical feeder solution combined with a new 22” x 24” board size, the continuously evolving FX-3R offers the utmost in flexibility, reliability, and ease of use for both high speed and high mix manufacturing environments.

- IPC9850 (chip): 66,000 CPH*
- Components 01005 (0402 metric) to 33.5mm square
- Feeder inputs: Max. 240 8mm tape feeders when using Electronic Dual Lane

*Actual throughput may vary.

From the pioneer of the modular assembly line comes the latest technology in high volume production at the lowest cost of ownership. Offering an interchangeable electronic and mechanical feeder solution combined with a new 22” x 24” board size, the continuously evolving FX-3R offers the utmost in flexibility, reliability, and ease of use for both high speed and high mix manufacturing environments.

- IPC9850 (chip): 66,000 CPH*
- Four multi-nozzle laser heads (24 total nozzles)

User-friendly Operation

15-inch Touch-panel Color LCD Display

- Easy teaching using touch screen while looking at the component
- The graphical user interface is designed for simple operation
- The language can be changed at any time

High-speed Modular Placement System

Supporting Electronic & Mechanical Tape Feeders and 22” x 24” Board Size

High-speed Placement: Supporting Customer Needs

Placement Speed

66,000 CPH

(IPC9850)

Two Stations - 4 Beams - 4 Head Configuration

The FX-3R can reach placement rates of up to 66,000 CPH (IPC9850) using four independent beams, each with a 6 nozzle placement head at two placement stations.

X-Y Linear Servomotors

Linear servomotors are used for all of the X-Y axes. Best-in-class performance is achieved by using high-accuracy, incredibly responsive cutting-edge axis control technology.

On-the-fly Simultaneous Centering using the 6-nozzle Multi-laser Head

Up to six components can be picked and then centered simultaneously using high-resolution on-the-fly laser centering for high-speed placement.

Independent Z / θ control

Each nozzle has independent Z and θ motors for high reliability and high accuracy. Precise control of each nozzle is possible without affecting components on other nozzles.

Note: The right station parts shown as an enhanced view.
Before production, electronic feeders communicate with the production program to verify the type of feeder and feeder pitch. An LED flashes if there is a discrepancy. The LED display also alerts the operator to running out of components and incorrect feeder position. During machine operation the LED display shows its feeder position.

**Tangential Line Centering™** achieves both a wider component range and higher accuracy all at the same time. The LNC60 accurately measures the component’s center, dimensions, and angular correction all in a single sweep. The optical design has been simplified to give higher reliability in a thinner and lighter package.

**A New Concept in Component Centering that is Capable of On-the-Fly Centering of 6 Components Simultaneously.**

**Unrivaled placement range from 01005 (0402 metric) to 33.5mm square components**

The LNC60 brings a new concept in laser centering to the market. This sensor has the unique ability to center components from 01005 (0402 metric) to 33.5mm square parts. From ultra-small, ultra-thin, chip-shaped parts to small QFP, CSP, BGA, a wide range of parts can be mounted by the laser recognition system at high-speed and with high-accuracy.

**Component Check Function Improves Placement Reliability**

Since the laser is mounted on the head, it can be used to monitor the presence of components the entire time from pick to placement. This is difficult to accomplish with vacuum detection only. The placement reliability is also improved because the release of the component is confirmed after placement.

**Low Loss Ratio**

A New Concept in Component Centering that is Capable of On-the-Fly Centering of 6 Components Simultaneously.

**Equipped with Standard Features that Support Diverse Manufacturing Requirements**

- **Fast and Easy Setup, Low Defect Ratio**
  - **Auto Teaching of Pick Position**
  - **HMS (Height Measurement System)**
  - **Flexible**
  - **Fiducial Recognition**
  - **Camera Bad Mark Detection**

**Electronic and Mechanical Tape Feeders can be Switched by the Feeder Trolley**

Mechanical and Electronic feeder trolleys are completely interchangeable allowing the customer to make effective use of existing assets. Using only necessary components fed through an electronic tape feeder (fully interchanged) produces superior cost performance.

When feeder trolleys are installed, the placement system automatically recognizes whether electronic tape feeders or mechanical tape feeders are used.

**Electronic Tape Feeders - ETF Series / High Precision, High Quality**

The motor driven electronic feeder tape feeder is designed for fast, smooth and reliable component feeding.

A new electronic double tape feeder allows up to 240 different components to be loaded, the biggest capacity in the industry. It is ideal for low volume/high mix environments where more families could be clustered into one setup to dramatically reduce change-over time.

**Tombstone pick easily detected.**

Simultaneous picking and on-the-fly parallel recognition with six nozzles are achieved by using the high resolution LNC60 laser sensor.

The motor driven electronic feeder tape feeder is designed for fast, smooth and reliable component feeding.

The LNC60 brings a new concept in laser centering to the market. This sensor has the unique ability to center components from 01005 (0402 metric) to 33.5mm square parts. From ultra-small, ultra-thin, chip-shaped parts to small QFP, CSP, BGA, a wide range of parts can be mounted by the laser recognition system at high-speed and with high-accuracy.

**Fiducial Recognition**

The OCC lighting system supports a wide variety of board materials including FPC (Flexible Printed Circuit board). Programmable brightness and directional lighting improves fiducial recognition.

**Camera Bad Mark Detection**

Bad mark detection is performed using the machine’s standard downward looking camera (also used for fiducials and teaching), which accurately detects a wide range of marks on various substrates, including flex circuits.

**Mechanical Feeders**

- **Tape Feeders**
- **Stick Feeders**
- **Bulk Feeders**
- **ATF (Splicing tape feeder)**
Wide Range of Components Supported / Results in Flexible Production Lines

FX-3R can widely recognize and place angular parts ranging from 01005 (0402 metric) to 33.5mm square. By combining it with a High-speed Flexible Placement System KE2080 or KE3020V, placement parts are effectively sorted supporting highly flexible production capability.

Wide Variety of Options

Options for LED Placement

- **Capable of producing long boards (800mm)**
  - JUKI has a variety of nozzles for placing LED components. Contact our sales personnel for details.

- **Nozzles for LED components**

- **Solder Recognition Lighting Option**
  - The Solder Recognition Lighting Option can be used to view pasted pads as fiducial marks. This option is most commonly used when building a PCB that requires multiple indexing that does not have valid fiducial marks.

- **Component Quantity Control**
  - The Component Quantity Control Option calculates the number of LEDs required to build the PCB versus what is remaining on the existing reel and will not allow production to begin if there are not enough components.

Easy to Operate and Train New Operators

Operator’s Setup Checklist

This function assists operators in the preparation of a new production program. By simply following a checklist of setup items listed in the menu, an operator can be sure that the necessary steps for production have been completed.

Simplified Programming

Ease-of-Operation Improved by Automatic Component Measurement

Component data can be programmed just by typing approximate dimensions, type and packaging information. Accurate dimensions, number of leads and lead pitch are measured and programmed by the machine automatically.

Compatibility / Reduced Costs by Maintaining Compatibility

Many parts and accessories are compatible between the FX-3R and other JUKI placement machines.

**Supported by IS NPI+ and IFS-X2 Verification System which includes:**

- CAD, Gerber and ASCII or centroid data software package that automatically and efficiently creates complete JUKI program files in seconds
- Employs a client-server architecture that connects the IS server throughout the factory via Ethernet for factory wide control to:
  - CAD, Gerber and ASCII or centroid data software package
  - ISR (Intelligent Shop Floor Solutions) Software

- **FCS (Flex Calibration System)**
  - JUKI’s superior ease of maintenance just got even easier! The optional FCS calibration jig is a simple to use system to re-calibrate placement accuracy. The machine automatically picks and places components, then measures the error and adjusts all necessary calibrations.

- **Component Verification System (CVS)**
  - Measures electrical resistance, capacitance or polarity to verify components have been loaded correctly on the machine.

- **Feeder Trolley**
  - Industry leading design for easy replacement of an entire bank of feeders in seconds. Single switch release / lock and no feeder reteaching required.

- **Bad Mark Reader**
  - Detects “bad circuit” marks on matrix type boards and skips placement of parts on all defective circuits, preventing waste.

- **SOT Direction Check Function**
  - When the 3-terminal SOT is placed on the SOT direction check table, the part feeding angle is checked by the OCR.

*Please ask for details.*