### Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>KE-3020L / KE-3020XL / KE-3020R / KE-3020XR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board size</td>
<td>L size (410×360mm) □</td>
</tr>
<tr>
<td></td>
<td>L-Wide size (510×360mm) □</td>
</tr>
<tr>
<td></td>
<td>XL size (610×560mm) □</td>
</tr>
<tr>
<td>Component height</td>
<td>12mm □</td>
</tr>
<tr>
<td></td>
<td>20mm □</td>
</tr>
<tr>
<td></td>
<td>25mm (XL size only) □</td>
</tr>
<tr>
<td>Component size</td>
<td>Laser recognition 0402mm (01005 inch) □</td>
</tr>
<tr>
<td></td>
<td>Visor recognition 1.0×0.5mm □</td>
</tr>
<tr>
<td></td>
<td>1.5×1.5mm □</td>
</tr>
<tr>
<td></td>
<td>2.0×2.0mm □</td>
</tr>
<tr>
<td>Placement speed</td>
<td>Chp (Optimum) 25,000CPS □</td>
</tr>
<tr>
<td></td>
<td>(PCB555B) 17,100CPS □</td>
</tr>
<tr>
<td></td>
<td>IC 5,800CPS □</td>
</tr>
<tr>
<td></td>
<td>2,000CPS □</td>
</tr>
<tr>
<td>Placement accuracy</td>
<td>Laser recognition ±0.05mm (±0.002&quot;) □</td>
</tr>
<tr>
<td></td>
<td>Visor recognition ±0.02mm (±0.001&quot;) □</td>
</tr>
<tr>
<td>Feeder inputs</td>
<td>Max: 80 on direct □</td>
</tr>
<tr>
<td>Power supply</td>
<td>300 to 415VAC, 3-phase □</td>
</tr>
<tr>
<td>Instrument power</td>
<td>2.2kVA □</td>
</tr>
<tr>
<td>Operating air pressure</td>
<td>0.5×0.05kpa □</td>
</tr>
<tr>
<td>Air consumption</td>
<td>360 L/min □</td>
</tr>
<tr>
<td>Machine dimensions(Width/Height)</td>
<td>1.675×1.660×1.500mm □</td>
</tr>
<tr>
<td></td>
<td>L-Wide size □</td>
</tr>
<tr>
<td></td>
<td>1.975×1.660×1.500mm □</td>
</tr>
<tr>
<td></td>
<td>XL size □</td>
</tr>
<tr>
<td></td>
<td>2.131×1.890×1.500mm □</td>
</tr>
<tr>
<td>Mass (approximate)</td>
<td>L, L-Wide size 2110kg □</td>
</tr>
<tr>
<td></td>
<td>XL size 2250kg □</td>
</tr>
</tbody>
</table>

\* Specifications and appearance may be changed without notice.
\* Please refer to the product specifications for details.

### Options

- **Recognition system:** MNVC / BAD mark reader / High-resolution camera
- **Operation system:** Self-stand operation unit / Touch panel
- **Inspection function:** "Cognitron sensor" / Component Verification System (CVS) / SGT detection check function
- **Conveyor:** Automatic board width adjustment / Conveyor extension
- **Electrical protection:** Ground fault interrupter
- **Others:** FCS calibration jig / Feeder position indicator / Offset placement after solder screen-printing / Non-stop operation / Center / Super limit / Signal light tower / Isolator
- **Software:** IS/ERP
- **Component handling unit options:** Matrix tray server TR-5 / Matrix tray changer TR-6 / Matrix tray holder / Dual tray server TR-1 / Tape feeder / Bulk feeder / Stock feeder / Feeder trolley / Cylinder auto belt / Feederอน / Tape cutter / Feeder booster

\* Component supply units are different by mechanical or electrical type. These units can be combined or changed. Follow the accessories. Stock capacity size of our sales representatives.
High-speed flexible mounter

**KE-3020 / KE-3020R**

New KE series marks further evolution!

Easier to operate highly advanced and more flexible, high speed mounter.

In combination with FX-3, the high-speed modular mounter, the KE series builds a production line with electric tape feeders.

**Evolution 1**

Compatible with mechanical and electronic feeders.

Mechanical and electronic feeders trolleys are completely interchangeable allowing companies with previous generations of mechanical feeders to continue to get the most from their investment.

**Evolution 2**

Options for better product quality

- **IONIZER**
  - The ionizer (option) adjusts the ion balance inside the machine and removes static electricity from the board and/or components.

- **Component Verification System (CVS)**
  - Component verification (option) measures the resistance, capacitance or polarity of each component before the start of production or after replacing components. This option prevents placement of incorrect components.
  - The new inspection unit features simultaneous measurement of six components, reducing changeover time.

**Evolution 3**

Easy operation

- **Operator’s Setup Checklist**
  - This function assists operators in the preparation of a new production. By simply following a checklist of setup items from “1. Automatic width adjustment” to “8. Production program check,” an operator can be sure they have performed the necessary steps and see which have not been completed.

- **Ease-of-operation improved by automatic component measurement**
  - Component data can be programmed simply by typing approximate dimensions, type and packaging information. Accurate dimensions, number of leads and lead pitch are measured and programmed automatically by the machine.

- **Flexible vision teaching**
  - Complicated programming of odd-shaped components is made easier by following step-by-step guidelines, reducing programming time significantly.

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3E EVOLUTION

JUKI introduced the 3E Modular Concept in 1993. JUKI will continue from now on to evolve to be Easier, More Economical and More expandable.

**3E EVOLUTION**

- **Easy**
  - Easier to use
- **Economy**
  - More economical, more productive
- **Expansion**
  - Greater expandability, heightened compatibility
Placement technology with superior flexibility and quality using electronic tape feeders and feeder trolleys

Wide range of supportive parts

KE-3020 recognizes and places a wide range of components from 0402 (01005) to 74 mm square or 50 x 150 mm.

High-speed flexible mounter

KE-3020 (LNC60 + Vision head)

High-precision and quality placement with electronic feeders

Electronic tape feeder ETF Series

A motor-driven electronic feeder capable of feeding components reliably and quickly.

Additional flexibility

KE-3020XL accepts larger size boards up to 610 x 560 mm.

Status is displayed on a seven segment LED

Before production, electronic feeders communicate with the mounter to verify consistency with the production program: type of feeder and feed pitch. Should there be any discrepancy, the LED display flashes a warning. The LED display also alerts the operator of wrong feeder position and when components are running low.

High quality and precision placement

Component density

Highly flexible vision system for a wide range of components

Vision centering technology

Centering method can be selected based on component type, shape, size and material. Laser centering is used for high-speed placement of smaller components. Vision is used when lead or ball inspection is needed or when the component is too large for the laser. Many nozzles are available for odd-shaped components providing unsurpassed component handling.

Laser centering technology

JUKI’s original technologies for high-speed and high-quality placement.

Digital vision centering

Component centering technology

Vision centering by the multi-nozzle head nearly doubles the placement rate for smaller components, including CSPs, BGAs and smaller QFPs (Option).

Low loss ratio

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 visually confirmed by the laser.

Component release confirmed after placement

Tombstone pick easily detected.

JUKI’s original technologies for high-speed and high-quality placement.
Available options for a wide variety of needs

**Options**

- **Coplanarity Sensor**
  - Measures true coplanarity for both fedded components and BGAs, reducing the chance of a bad solder joint.
  - For availability, please contact one of our sales representatives.

- **Placement Force Control**
  - Using a built-in load cell, the placement force of each nozzle can be measured and controlled during the placement process. The placement force can be set individually for every component.

- **Fluxer**
  - The fluxer is a device used to apply flux or dippable solder paste to CSP and leadless chip components before placement. The linear fluxer uses a precise cavity to ensure the proper depth of flux.

- **FCS (Flex Calibration System)**
  - JUKI's highly regarded easy 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 jig components, then measures the error and adjusts all necessary calibrations. (optional)

- **Nonstop Operation**
  - Non-stop operation (NSO) allows the operator to replace feeders while the machine continues to run at full speed. The TRS0 and TR6D matrix tray changers function in NSO mode, allowing uninterrupted production for tray components.

- **Mini Signal Light Tower**
  - In addition to the standard signal tower, this shows the operator which side of the machine a component has run out on.

- **Feeder Position Indicator**
  - LEDs on the feeder bank indicate which feeder needs to be replaced, which feeder has an alarm, location of feeders to be set during changeover, and helps simplify feeder setup.

- **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**
  - The SOT direction check station uses the fiducial camera to check the orientation of 3 fedded SOTs after real replacement to ensure the orientation has not changed.

- **IC Collection Belt**
  - A conveyor belt provides a safe way to handle valuable rejected components. Components gradually index away from the machine and the operator is notified when the belt is full.

**Production efficiency is improved by affluent product variation**

**Feeders**

- **Mechanical feeders**
  - Tape Feeders
  - Stick Feeders

- **Electronic feeders**
  - Tape Feeders
  - Stick Feeders

**Tray feed device**

- **Matrix Tray Server (Rear Type)**
- **Dual Tray Server**
- **Matrix Tray Holder**

**Software**

- **FLOOR productivity improvement support system**
  - IS (Intelligent Shopfloor Solutions)
  - IS raises production preparation, scheduling, quality and monitoring to a new level by bringing together several related functions into one comprehensive software package. IS gives managers, supervisors, and engineers the tools they need to run the most efficient production possible, thus reducing cost and improving productivity. Various tools allow workers at different levels to perform the tasks they need within a single software package.

- **FLEXLINE CAD**
  - JUKI's FLEXLINE CAD is a data conversion application that reads a text file output by various CAD systems or other assembly machines and converts it to the format used by HLC, FX series, KE series machines, or CX-1. There are several supported CAD formats, but users may also define their own format using an interactive “wizard” and save that definition for later use.

- **EPU**
  - EPU is offline programming software designed for a single machine.
  - Using EPU software, the best feeder layout and optimized placement order can be achieved with the highest production efficiency. Like the FX series and the KE-2000 series, it has a component database to further decrease programming time.