Our modular production line sets new standards for productivity, flexibility and reliability.

KE-2070
High-speed Chip Shooter

KE-2080
High-speed Flexible Mounter
From high-speed, high-accuracy mounting down to very small parts – ultra-flexible performance assures the best return on investment for any application

High-speed Chip Shooter  
**KE-2070**

A chip shooter optimal for high-speed mounting of small parts. With the addition of the optional MNVC (multi-nozzle vision centering), the component range can be increased even more for greater flexibility.

- **Placement head:**
  - multi-nozzle laser head (6 nozzles)
- **Placement rate (max.):**
  - 18,300 cph laser centering (IPC 9850)
  - 4,600 cph vision centering with MNVC (optional)
- **Component range:**
  - 01005 - 33.5 x 33.5 mm
- **Component height (max.):**
  - 12 mm
- **Placement accuracy:**
  - ±50 µm (Cpk ≥ 1) laser centering
  - ±30 µm (Cpk ≥ 1) vision centering
- **Board dimension (max.):**
  - 800 x 460 mm (with long board option)

High-speed Flexible Mounter  
**KE-2080**

The best flexible placement system for high-density placements. The ultra-flexible KE-2080 can place a wide range of components from 01005 and ICs, to odd-form, all at industry leading accuracy and speed.

- **Placement head:**
  - multi-nozzle laser head (6 nozzles)
  - high-precision head vision centering (1 nozzle)
- **Placement rate (max.):**
  - 16,700 cph laser centering (IPC 9850)
  - 1,850 cph vision centering
  - 4,860 cph vision centering with MNVC (optional)
- **Component range:**
  - 01005 - 74 x 74 mm or 50 x 150 mm
- **Component height (max.):**
  - 25 mm
- **Placement accuracy:**
  - ±50 µm (Cpk ≥ 1) laser centering
  - ±30 µm (Cpk ≥ 1) vision centering
- **Board dimension (max.):**
  - 800 x 460 mm (with long board option)
Premium flexibility and quality

Wide component range

The KE-2070 and KE-2080 recognize and place a wide range of components from 01005 to 33.5 x 33.5 mm respectively 74 x 74 mm or 50 x 150 mm.

Flexible board size

The KE-2070 / 80 (E size) accept with the long board option boards up to max 800 x 460 mm.

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 their nozzles.

No-blow placement technology

JUKI’s original vacuum self-calibration function eliminates the need for a vacuum ‘blow-off’ during placement, which can disturb neighboring components or solder paste.
Laser centering technology

JUKI’s LNC60 laser sensor for high-speed & high quality placement

The LNC60 laser sensor has the unique ability to center components from 01005 to 33.5 x 33.5 mm. From ultra-small, ultra-thin, chip-shaped parts to small QFPs, CSPs, BGAs, a wide range of parts can be precisely centered by the laser recognition system at high-speed.

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.

Vision centering technology

High-precision head or MNVC (multi-nozzle vision centering) option

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.
Selection of available options

**Mechanical feeders**
- Tape feeder
- Stick feeder
- Bulk feeder
- ATF (splicing tape feeders)

**Antivirus software**
The antivirus software based on the ‘white list’ method uses very low resources and protects any JUKI pick and place machine running Windows XP embedded.
The ‘white list’ allows only registered software to be executed and protects the machine for an unlimited time without an update.

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

**Coplanarity sensor**
Measures true complanarity for both leaded components and BGAs, reducing the chance of a bad solder joint.

**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.

**Component verification system (CVS)**
Component verification measures the resistance, capacitance or polarity of each component before the start of production or after replacing the components. This option prevents placement of incorrect components.

**Flex calibration system (FCS)**
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.

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

**Offset placement after solder screen printing**
Offset Placement After Solder Screen-printing is a system to offset placements to correct for solder paste misalignment, which promotes the self-alignment effect and reduces the defect rate.

**Long board**
The long board option allows to extend the possible board size of the KE-2070 / 80 (L size) from standard 410 x 360 mm to 800 x 360 mm and the KE-2070 / 80 (E size) from standard 510 x 460 mm to 800 x 460 mm.

Selection of tray feed devices

- **Matrix tray server (rear type)**
- **Matrix tray changer (in-line type)**
- **Dual tray server (rear type)**
- **Matrix tray holder**
### Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>High-speed Chip Shooter KE-2070L / KE-2070E</th>
<th>High-speed Flexible Mounter KE-2080L / KE-2080E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L-size</td>
<td></td>
<td>○</td>
<td>(410 × 360 mm)</td>
</tr>
<tr>
<td>E-size</td>
<td></td>
<td>○</td>
<td>(510 × 360 mm)</td>
</tr>
<tr>
<td>Long board 1*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L-size</td>
<td></td>
<td>○</td>
<td>(800 × 460 mm)</td>
</tr>
<tr>
<td>E-size</td>
<td></td>
<td>○</td>
<td>(880 × 460 mm)</td>
</tr>
<tr>
<td>Component height</td>
<td></td>
<td>6 mm</td>
<td>−</td>
</tr>
<tr>
<td>12 mm</td>
<td></td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>20 mm</td>
<td></td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>Component size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laser recognition</td>
<td></td>
<td>01005 to 33.5 × 33.5 mm</td>
<td></td>
</tr>
<tr>
<td>Vision recognition</td>
<td></td>
<td>1.0 x 0.5 mm to 33.5 × 33.5 mm</td>
<td>1.0 x 0.5 mm to 74 mm or 50 x 150 mm</td>
</tr>
<tr>
<td>Placement speed</td>
<td>Chip (IPC9850)</td>
<td>18,300 cph</td>
<td>16,700 cph</td>
</tr>
<tr>
<td></td>
<td>IC</td>
<td>4,600 cph</td>
<td>1,850 cph</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>4,860 cph</td>
</tr>
<tr>
<td>Placement accuracy</td>
<td>Laser recognition</td>
<td>±50 µm (Cpk ³)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vision recognition</td>
<td>±40 µm (±30 µm)</td>
<td></td>
</tr>
<tr>
<td>Feeder inputs</td>
<td></td>
<td>max. 80 (8 mm tape feeder)</td>
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<tr>
<td>Power supply</td>
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<td>200 to 415 VAC, 3 phases</td>
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<td>Apparent power</td>
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<td>3 kVA</td>
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<tr>
<td>Operating air pressure</td>
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<td>0.5 ±0.05 Mpa</td>
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<tr>
<td>Air consumption</td>
<td></td>
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<td>345 l/min</td>
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<tr>
<td></td>
<td></td>
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<td>403 l/min</td>
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<tr>
<td>Machine dimensions</td>
<td>L-size</td>
<td>1,500 x 1,500 x 1,490 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-size</td>
<td>1,730 x 1,600 x 1,490 mm</td>
<td></td>
</tr>
<tr>
<td>Mass</td>
<td>L-size</td>
<td>1,590 kg</td>
<td>1,660 kg</td>
</tr>
<tr>
<td></td>
<td>E-size</td>
<td>1,600 kg</td>
<td>1,670 kg</td>
</tr>
</tbody>
</table>

1) L-Wide size and long board are optional
2) Dimensions of machine described are for conveyor height 950 mm

### A leading supplier

JUKI is one of the leading worldwide suppliers for SMT assembly systems. Our innovative and reliable customer solutions are developed to meet customers’ individual demands and are designed to give ‘Lowest Cost of Ownership’. With this philosophy JUKI strives to reach the highest standard of customer satisfaction.

### Our understanding of Lowest Cost of Ownership

Often when deciding on the purchase of a new placement system, only the initial investment cost and the theoretical placement rate are considered. This overlooks many other factors that make up the overall production cost: consumables, spare parts and service can also be a big cost factor. Such things as changeover times, machine breakdowns and the difference between the theoretical and actual throughput rate significantly affect productivity. Maintenance, programming and operator training account for additional personnel cost. Thanks to our many years of experience building flexible modular placement systems JUKI has gained an outstanding reputation. Data from the market has shown that, compared to systems from other manufacturers, JUKI clearly provides the highest reliability and lowest cost of ownership in the industry.

### Selection of available options

<table>
<thead>
<tr>
<th>Recognition system</th>
<th>Multi-nozzle vision centering (MNVC) / Bad mark reader / High-resolution camera (HRC) / Lighting unit for solder recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection function</td>
<td>Coplanarity sensor / Component verification system (CVS) / SOT direction check function</td>
</tr>
<tr>
<td>Conveyor</td>
<td>Automatic board width adjustment (AWA)</td>
</tr>
<tr>
<td>Others</td>
<td>Flex calibration system (FCS) jig / Feeder position indicator (FPI) / Placement force control / Fluxer unit / L-Wide option / Long board option / Offset placement after solder screen-printing / Placement monitor (EPV)* 1) / Blue light kit</td>
</tr>
<tr>
<td>Software</td>
<td>Intelligent shopfloor solutions (IS) / Intelligent feeder system (IFS-X2) / External programming unit (EPU) / Host line computer software (HLC) / Data conversion software (Flexline CAD) / Antivirus</td>
</tr>
<tr>
<td>Component handling and feeders 1)</td>
<td>Matrix tray server TR-5 / Matrix tray changer TR-6 / Matrix tray holder / Dual tray server TR-1 / Tape feeder / Bulk feeder / Sock feeder (SF/SW/MBF) / ATF (spliceable tape feeder) / Feeder trolley / IC collection belt / Trash box</td>
</tr>
</tbody>
</table>

1) For KE-2070 only
* Please refer to the product specifications for details.

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