



SMT-ASSEMBLY

SMT (Surface Mounted Technology) assembly is one of our production's core competencies.

NOTE

- SMD – Surface Mounted Device
- SMT – Surface Mounted Technology



SMT PRODUCTION ASSEMBLY

We assemble a wide variety of custom assemblies on our two assembly lines.

- 2 assembly lines, including reflow ovens
- Line 1: Fuji 7x NXT III
- Line 2: Fuji 7x NXT-R
- 2 DEK NeoHorizon stencil printers (paste and adhesive)
- 2 SPI Viscom
- Mycronics Jetprinter (prototype production + paste printing optimization)
- Pin-in-paste technology
- Reflow ovens: SMT-R360, JUKI

Key Specifications:

- Placement accuracy: up to 25 μ m
- Smallest component size: 01005
- Largest component size: up to 74 x 74 x 25 mm
- Component height: 30 mm including lead (anything taller can be soldered by hand)
- Smallest PCB size: 48 x 48 mm; smaller sizes available upon request (manual assembly, special fixtures)
- Largest PCB size: 510 x 460 mm
- Max. PCB thickness: 3.5 mm
- Optimal placement throughput: approx. 110,000 components per hour

SIDE NOTE

Why do we solder under nitrogen?

Nitrogen is used as a so-called shielding gas to improve the soldering result. A shielding gas reduces the oxygen content and prevents oxidation at the solder joint. This results in better, residue-free wetting of the solder joints. This effect produces a visually superior solder joint, which is particularly important for analysis by the AOI.

AOI

In AOI (Automated Optical Inspection), the following defects can be identified using a high-resolution camera system and image processing techniques:

- defective solder joints
- components with reversed polarity
- misalignment of components relative to the pad geometry
- Additional option (component-dependent): OCR (optical character recognition) for component markings

The AOI system stores detected defects in a database, noting the assembly's serial number (DMC—data matrix code—label) and the production order.

Key Specifications:

- AOI Viscom 3088flex (12 cameras, 2592x1944 pixels, 5 megapixels)
- AOI Viscom 3088ultra (9 cameras, 5120x5120 pixels, 26 megapixels, 3D capable)
- AOI area: 505 mm x 390 mm and max. component height 30 mm, including LP

SIDE NOTE

How does the AOI detect defective solder joints?

The assembly is illuminated with light of various colors. The AOI's cameras are arranged in a circular pattern at right angles to the assembly at an angle of inclination and capture the light reflected from the solder joints. Based on the brightness of the reflected light, the image processing software can detect, for example, a so-called cold solder joint.

SMD-INSPECTION

During the SMD inspection, qualified employees evaluate the AOI defects.

- Scan the assembly's DMC—a photo of the detected defect appears at the workstation
- The operator distinguishes between actual defects and pseudodefects; actual defects are corrected using soldering tools and an Ersa BGA rework station

Key Specifications:

- One stereo microscope per workstation Vision Lynx EVO

X-RAY INSPECTION

We use X-ray inspection to ensure the quality of our soldering process for components with hidden solder joints.

Key Specifications:

- YXLON Cheetah X-ray Inspection System