

# MODEL: BS387V1 / BS387V2 SMT PICK & PLACE MACHINE



## SUMMARY

- Suitable for 224 intelligent Auto Tape Feeder
- Max. PCB-size: 380 x 990 mm
- High Accuracy and high Flexibility for 01005, 0201, 0402, 0603, SOIC, PLCC, BGA,  $\mu$ BGA, CSP, QFP, up to fine-pitch 0.3mm
- Non-contact Linear Encoder System for high Repeatability and Stability
- Smart Feeder System provides Automatic feeder Position Checking, Automatic Component Counting, Production Data Traceability
- Perfect for small & medium volume Production
- COGNEX® Alignment System "Vision on the Fly"
- Bottom Vision Alignment System for fine pitch QFP & BGA
- Built in Camera System with Auto Smart Fiducial Mark Learning
- Dispenser System
- Vision Inspection before and after Production
- Windows 2000 Software
- Universal CAD Conversion
- Placement rate: 6400 CP/H

The SMT Pick & Place Machines of BS387-series were especially designed for small volume and sample production with wide range of different feeders. Various models are provided for different applications. Two different models are available, which distinguish between their placement speeds.

BS387 is fully compatible with AUTOTRONIK Pick & Place series and all the feeders are interchangeable. Due to this fact, most reliability and easy maintenance for all models is guaranteed. Preloaded Ball Screws with "Closed Loop" Servo motor system provides high repeatability and stability.

Additionally, the BS387 series feature COGNEX vision processing and head-mounted for non-contact "Vision on the Fly" alignment.

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SMT PICK & PLACE MACHINE



AUTOTRONIK-SMT GmbH  
Sulzbacher Str. 111  
92224 Amberg, Germany  
tel +49 (0) 9621-600 691  
fax +49 (0) 9621-600 692  
mail office@autotronic-smt.com  
www.autotronic.de

## DETAILS

### Strong and rigid mechanical design

BS387 using welded steel frame which guaranteed a strong and rigid mechanical design. Preloaded Ball Screws with Servo Motor system provides high Speed, Repeatability and Stability.



### Non-contact Linear Encoder System

By using „Closed Loop“ Servo Motors with non-contact Linear Encoder System, provide extremely high Repeatability and Stability.

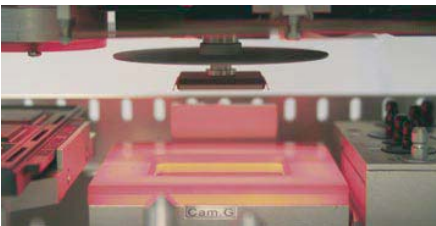
### COGNEX® Alignment System "Vision on the Fly"

The BS387-series feature COGNEX® vision processing and head-mounted for non-contact "Vision on the Fly" alignment. The machine BS387 assures high-precision placement of the full range of SMDs, from the smallest 0201 devices through CSPs, µBGAs, flip-chips, ultra-fine pitch 0.3mm QFPs, even odd-form components.



### Bottom Vision Alignment System (Option)

A Bottom Vision Camera is used for large components up to 150 x 100 mm and devices with alignment features on their bottom side. Due to additional Bottom Vision Camera, the alignment of 01005 components is guaranteed.



### Dispenser System

Optional stand alone dispenser head for adhesive & solder paste dispensing. Perfect for quick, small volume production without making stencil.

### Smart Fiducial System

Beside the standard fiducial mark, either square SMD PCB pad or plate-through hole also can be trained as fiducial mark. For more precise placement of fine pitch components, additional Local fiducial recognition is provided.

### Universal CAD Conversion

Beside the direct input of data by teach-in camera, an optional CAD conversion program is available for directly transfer of CAD generated pick and place data.

### Remote Service Kit

Optional Remote Service Kit allows a remote access to machine by Internet, so that programming, calibration and service can be done by our worldwide remote service center.

### Auto Tape Feeder (KFTA)

The innovative design of KFTA feeder bases and mounting hardware allows almost limitless flexibility in feeder combinations and arrangement schemes, as almost every feeder can be ordered, loaded, programmed and mounted independently. KFTAs are available from 8 mm up to 72 mm tape width.



### Feeder Rack (FR-32K)

FR-32K is suitable for 32 x 8 mm KFTA Feeders or for 30 x 8 mm IC-Sticks (1x KFTB-2 / 1x KFTB-4).

### Feeder Rack (FR-48K)

FR-48K is suitable for 48 x 8 mm KFTA Feeders or for 40 x 8 mm IC-Sticks (2x KFTB-4).

### Conveyor System

The optional conveyor system with SMEMA Interface and motor-driven-width-control speeds up the handling of PCB and in-line production.



### Universal IC Tube Feeder

KFTB universal tube feeder combines vibration driven technique. It is able to handle IC-Sticks with max. 50 mm width.

KFTB-2 (10 pcs of 8 mm IC-Sticks)

KFTB-4 (20 pcs of 8 mm IC-Sticks)



### Tray-Table (Option)

Tray-Table allows to load and unload 4 or 6 Trays at one time, without losing any Feeder positions.



### Buffering Nozzle

The spring buffering design of Nozzle adjust the placement pressure for different heights of components automatically.

### Vision Inspection

With the built-in software, the camera can automatically move and display the image in the computer screen. User can manually check the printing accuracy of solder paste, quality of the soldering, accuracy of component placement, etc...

## SPECIFICATION

- Number of Heads (Vision on the Fly):  
BS387V1: 1 / BS387V2: 2
- Placement rate (under the optimum condition):  
BS387V1: 4000 CP/H, 3400 CP/H (IPC 9850)  
BS387V2: 6400 CP/H, 4600 CP/H (IPC 9850)
- Feeder capacity (8 mm)  
without conveyor: up to 224 Tape Feeders
- Feeder capacity (8 mm)  
with conveyor: up to 160 Tape Feeders
- IC Tray capacity: up to 6 Waffle Trays
- Component Sense: Vision detection
- Handled by head camera:
  - Smallest: 0.6 x 0.3mm
  - Largest: 16 x 14 mm
- Handled by fixed Bottom Vision Camera:
  - Smallest: 0.4 x 0.2 mm (option)
  - Largest: 150 x 100 mm (option)
- Resolution:
  - X / Y axis 0.005 mm Servo Motor
  - Z axis 0.02 mm Servo Motor
- Rotation: 0 to 360° (0.045°/step) Servo Motor
- Placement Accuracy: +/- 0.03 mm
- X-Y Repeatability: +/- 0.01 mm
- Placement Area:
  - 4x 32 port Feeder Rack, 2x 48 port Feeder Rack
  - Max. 380 x 990 mm (w/o IC-Tray)
  - Max. 380 x 302 mm (with IC-Tray)
  - With conveyor + 2x 32 port Feeder Rack, 2x 48 port Feeder Rack, 4x IC-Tray
  - Max. 440 x 277 mm
- by optional PCB fixture
- Standard PCB fixture:
  - For max. PCB size 270 x 350 mm (w/o IC-Tray)
- Programming:
  - Direct input
  - Vision teach-in
  - CAD Access (Option)
- Main Control: Industrial PC
- Power: 230 V / AC  
BS387V1: 1800W / BS387V2: 2100W
- Pressure: 75 psi (5.5 bar)
- Machine Size: 1700 x 940 x 1426 mm (L x W x H)
- Weight: 1000 kg

We reserve the right to make changes without notice.



**AUTOTRONIK**

Fertigungssysteme für die Elektronikindustrie