

# MODEL: BA389F3 SMT PICK & PLACE MACHINE



## SUMMARY

- High Accuracy and high Flexibility for 01005, 0201, 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 7 Software
- Universal CAD Conversion
- Placement rate: 10,500 cph (IPC 9850)
- Ball Screw Systems in X- and Y-Axes
- Suitable for 160 intelligent Auto Tape Feeder

The SMT Pick & Place Machines of AUTOTRONIK series were especially designed for small and medium volume batch sizes. Various models are provided for different applications.

BA389 is using KFTA series feeder same as the feeder used for our AUTOTRONIK BA385, BA388, BA392 and BA684 series Pick & Place Machines. By this means most reliability and easy maintenance for all models is guaranteed. Preloaded Ball Screws with Servo Motor system provides high Speed, Repeatability and Stability.

Additionally, the "Vision on the Fly" alignment heads in BA389 are using Cognex® Vision System, providing high accuracy and easy learning for all different kind of components.

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SMT PICK & PLACE MACHINE



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## DETAILS

### Strong and rigid mechanical design

BA389 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.

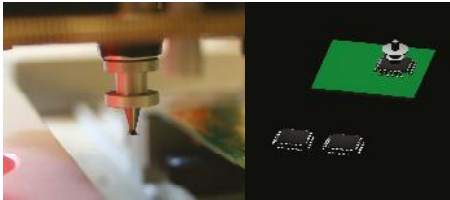


### Non-contact Linear Encoder System (Option)

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 BA389 feature COGNEX® vision processing and head-mounted for non-contact „Vision on the Fly“ alignment. The machine BA389 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 for 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.



### Conveyor System

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



### 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.



### Universal IC Tube Feeder

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



### Cut Strip Tape Holders

Cut Strip Tape Holders is a handy accessory for presenting components that are supplied in short lengths of tape due to their low quantity of usage. It can also prevent the waste of components in sections of tape that are too short to be loaded into tape feeders.

### Feeder Rack

2 x FR-48K can be mounted on the front and rear side. Each FR-48K is suitable for 48 x 8mm KFTA Feeders or 40 x 8mm IC-Sticks. 2 x FR32K can also be mounted on the left and right sides of the machine for a total capacity of 160 x 8 mm tape feeders.



### 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.

### 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.

### 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.

### 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.

## SPECIFICATION

- Number of Heads (Vision on the Fly):  
BA389F3: 3
- Placement rate (under the optimum condition):  
BA389F3: 10,500 cph (IPC 9850)
- Feeder capacity (8 mm)  
without conveyor: up to 160 Tape Feeders  
with conveyor: up to 96 Tape Feeders
- IC Tray capacity: up to 3 Waffle Trays
- Component Sense: Vision detection
- Component Sizes  
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 0.01 mm Servo Motor  
Z axis 0.015 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  
Max. 320 x 270 mm (standard option)  
Placement area without conveyor:  
Max. 650 x 460 mm without Waffle Trays  
Max. 650 x 400 mm with 1 Waffle Tray / Bottom vision camera  
Max. 650 x 250 mm with 2 to 3 Waffle Tray  
Placement area with conveyor:  
Max. 650 x 440 mm without Waffle Trays  
Max. 650 x 380 mm with 1 Waffle Tray / Bottom vision camera  
Max. 650 x 230 mm with 2 to 3 Waffle Tray
- Programming:  
- Direct input  
- Vision teach-in  
- CAD Access (Option)
- Main Control: Industrial PC
- Power supply: 100V / 240V
- Power: 4310W
- Pressure: 75 psi (5.5 bar)
- Machine Size: 1300 x 1420 x 1460mm (W x D x H)
- Weight: 1100 kg

We reserve the right to make changes without notice.

