QUALITY BY CONVICTION

BS Series

MODEL **BS551-10 / BS551-20**

Fored Air Convection Reflow Oven

This is Autotronik

Quality by conviction. It is our motto - but you can profit by it world-wide. To be on the winning team you rely on a partner who combines quality, flexibility and innovation.

Autotronik is a global company with approximately 200 employees. We are your specialist for SMT stencil printers, pick and place machines and reflow ovens of low-to medium-Series and complete SMT production lines.
Our global commitment allows us to bring together the best components of all continents into outstanding products.

www.autotronik.de

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

TECHNICAL DESCRIPTION

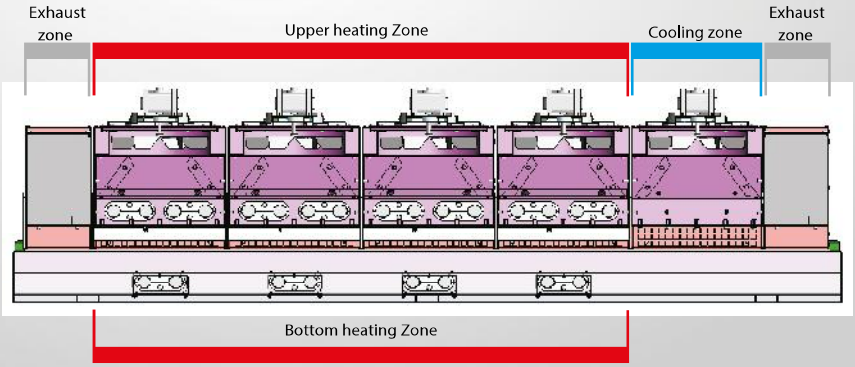
Technical description

The soldering system BS551-10 is equipped with modern requirements regarding usability, low power consumption and interfaces for the communication with other devices.

The basic system is designed as a desk top model and is equipped with eight heating zones, 4 upper and 4 bottom zones. The heating zones emit convection heat with the help of hot air fans. The upper part of the heating chamber contains additionally a cooling zone and an exhaust hood at the inlet area as well as at the outlet area.

The transport of the PCBs follows via a mesh belt. The operation of the soldering system is done with the help of a modern 7" touch panel. A 1-channel temperature profiler is integrated to check the soldering profile. The necessary thermocouple is included in the delivery

Functional scheme BS551-10



Individual personalization

The basic system can be upgraded with several options and thereby adapted to your personal requirements.

- **Cabinet,** height adjustable. Storage compartment can be closed with two doors
- **Lamp** (green, yellow, red) to show the status of the system
- **Pin chain conveyor** (optional)
- **Power Save package** with
  - **Single board recognition** and
  - **Power Down Mode** The system changes to standby mode with reduced heating power. When recognizing a board at the inlet, the conveyor stops, the oven is heating up to soldering temperature and then starts the conveyor again.
- **Communication package** consisting of SMEMA interface, PC interface, WLAN interface (optional)
- **Exhaust box** in case you don't have an in-house exhaustion system (optional)

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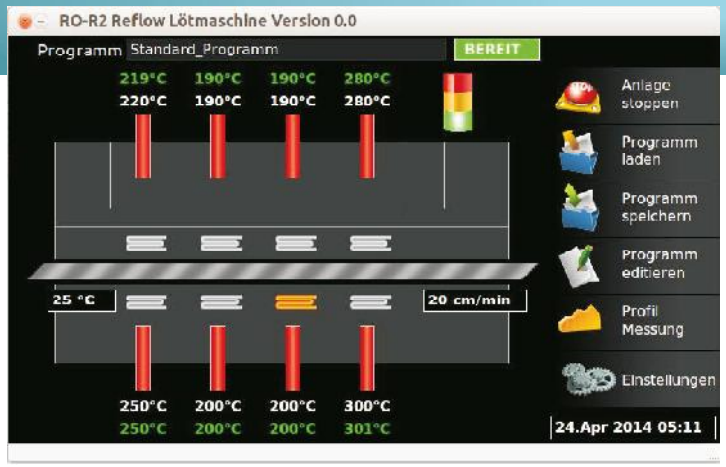
User interface, menu samples



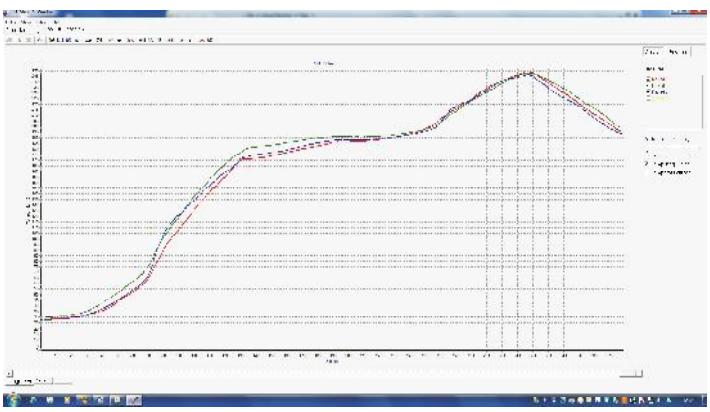
Additional Information

Also available as 20 Zone Oven. (BS551-20)

Technical data BS551-10

Length		2010 mm
Width		790 mm
Height -- inkl. Lamp		550 mm 710 mm
Weight		190 kg
Useable working width		405 mm
Active heating chamber length		850 mm
Inlet height		45 mm
Zones		4 Upper heating zones 4 Bottom heating zones additional 1 cooling zone 2 Exhaust zones
Conveyor speed -- typical		15 cm/min - 90 cm/min 20 cm/min
Heating power		Max. 12 kW
Connection values		3x 230/400 VAC/N/PE 50 Hz with 16A CEE Stecker
Operation		7" Touchpanel

Typical soldering profile BS551-1(



Worldwide at your side.
We have service partners all over the world.

Innovative Features
Our machines are using technical standards, which are normally used in bigger machines for mass production.

Unbeatable Service
In case of problems we are disposal almost around the clock.

Quality and Innovation at a fair price
Through global positions.

Everything from one source
We are your partner for all process steps.

A expert in small and medium-scale production.

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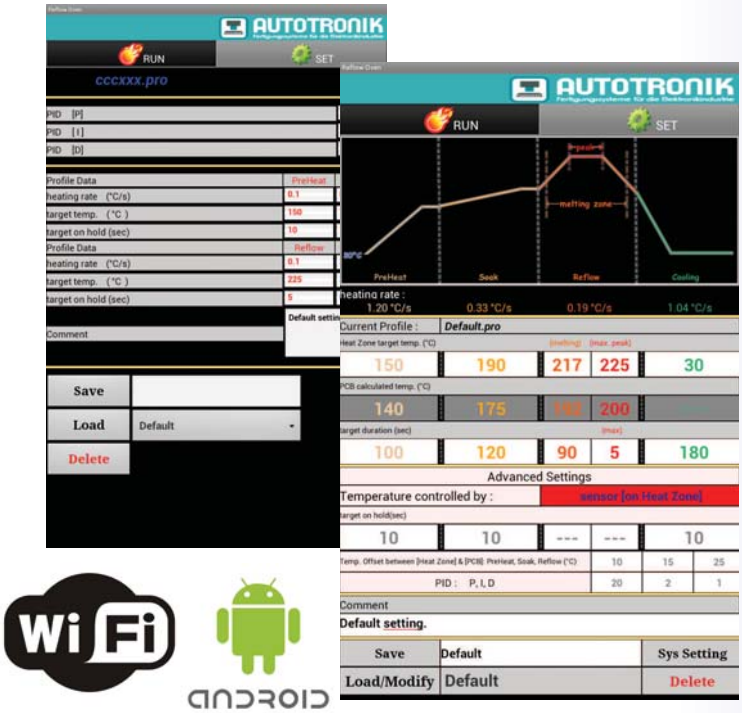
Bench-top / Batch Reflow Oven

BT301

Dynamic Thermal Profile using a Batch Reflow Oven with Android™ Operating System

Match your thermal process specifications for preheat, soak, reflow, and cooling on the first PCB you produce with by using revolutionary new BT301 Batch Reflow Oven. Having the thermal conditions of an inline reflow system in a bench-top unit with a full dynamic thermal process.



The BT301 is ideal for product development, prototyping, and small series production. Solder profiles are easily set-up and stored through the control app of the BT301's exclusive hardware control and Android operating system. The dynamic control system takes care of size and complexity of your assembly and makes it a closed loop process, something only large and costly thermal systems can normally offer.

Features

◎ Real time close loop PID temperature control for leadfree profile
◎ Quick Smart programming by rising rate control (degree change per second)
◎ Infrared and forced convection combine for efficient lead-free reflow
◎ Real time temperature profile display
◎ Android system on multi-core CPU platform
◎ 7" touch screen high resolution LCD display
◎ Compact design ideal for labs, schools, prototyping and low-volume job shops
◎ WiFi temperature profile printing and data storage

AUTOTRONIK
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BT301

Bench-top/Batch Reflow Oven

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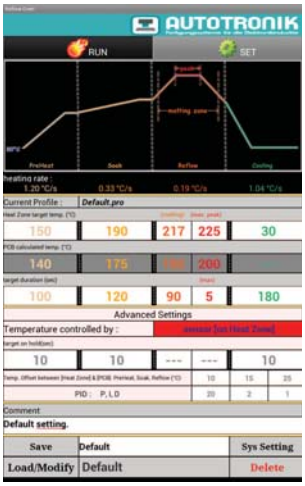

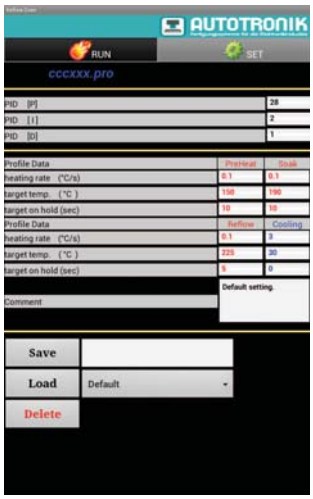

Real-Time dynamic thermal Control via On-Board measuring device

The BT301 has an advanced setting in which you can turn on the real time dynamic process. The unit can then via real-time feedback from the measuring system which is attached at a strategic location on the PCB surface.

The heater control and fan speed is based on the actual temperature measured on the product. The target temperature is equal to the dynamic measuring system temperature and there is no offset, making this a perfect tool for prototyping and small series.

Specification

Machine Model	**BT301**
Applicable solder types	Lead-Free and Leaded
PCB holding size	350 mm x 240 mm
PCB effective heating area	250 mm x 200 mm
Heating method	Quartz IR & Forced Hot Air Convection
Temperature range	Ambient - 310 °C
Temperature control method	Real time close loop PID temperature control for lead free profile
Warm-up time	approx. 2 min.
Computer control	Build-in dual core CPU on board computer
Display panel	7" touch screen high resolution LCD display
Temperature control setting	Quick smart profile programming by temperature rising rate control (degree change per second)
Temperature profile display	Real time temperature profile display
Temp profile printing	WiFi temperature profile printing
Storage	External data storage via WiFi connection
Electrical	230 V, Single Phase, 50/60 Hz, 30A
Power	3000W
Dimensions	690 mm L x 470 mm W x 270 mm H
Weight	approx. 45 Kg

* We reserve the right to make changes without notice.

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

Bench-top / Batch Reflow Oven

BT301N

Dynamic Thermal Profile using Nitrogen Batch Reflow Oven with Android™ Operating System

Match your thermal process specifications for preheat, soak, reflow, and cooling on the first PCB you produce with by using revolutionary new BT301 Batch Reflow Oven. Having the thermal conditions of an inline reflow system in a bench-top unit with a full dynamic thermal process.

The use of nitrogen for lead-free assembly in the reflow process improves solder joint strength and reduces oxidation. The BT301N is ideal for product development, prototyping, and small series production. Solder profiles are easily set-up and stored through the control app of the BT301N's exclusive hardware control and Android operating system. The dynamic control system takes care of size and complexity of your assembly and makes it a closed loop process, something only large and costly thermal systems can normally offer.

Features

- ◎ Real time close loop PID temperature control for leadfree profile
- ◎ Quick Smart programming by rising rate control (degree change per second)
- ◎ Infrared and forced convection combine for efficient lead-free reflow
- ◎ Nitrogen gas flow control produces better solder joint and reduces oxidation
- ◎ Real time temperature profile display
- ◎ Android system on multi-core CPU platform
- ◎ 7" touch screen high resolution LCD display
- ◎ Compact design ideal for labs, schools, prototyping and low-volume job shops
- ◎ WiFi temperature profile printing and data storage
- ◎ Rosin filter in nitrogen circulatoin

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BT301N

Bench-top/Batch Reflow Oven

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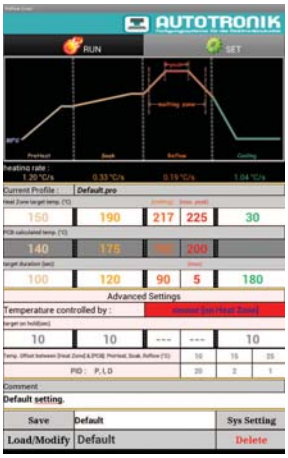

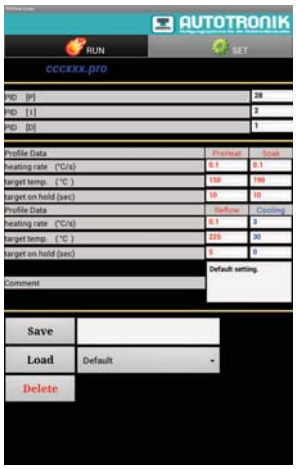

Wi Fi

android

Real-Time dynamic thermal Control via On-Board measuring device

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Specification

Machine Model	**BT301N**
Applicable solder types	Lead-Free and Leaded
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Heating method	Quartz IR & Forced Hot Air Convection
Temperature range	Ambient - 310 °C
Temperature control method	Real time close loop PID temperature control for lead free profile
Warm-up time	approx. 2 min.
Computer control	Build-in dual core CPU on board computer
Display panel	7" touch screen high resolution LCD display
Temperature control setting	Quick smart profile programming by temperature rising rate control (degree change per second)
Temperature profile display	Real time temperature profile display
Temp profile printing	WiFi temperature profile printing
Auto chamber	open / close
Storage	External data storage via WiFi connection
Electrical	230 V, Single Phase, 50/60 Hz, 30A
Power	3000W
Nitrogen pressure	0.3 MPa
Nitrogen flow rate	0 - 150L/min
Dimensions	780 mm L x 560 mm W x 370 mm H
Weight	approx. 82 Kg

* We reserve the right to make changes without notice.

MODEL: BA385V1 / BA385V2
SMT PICK & PLACE MACHINE

SUMMARY

- High Accuracy and high Flexibility for 01005, 0201, SOIC, PLCC, BGA, µBGA, 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 XP Software
- Universal CAD Conversion
- Placement rate: 6,400 cph
- Ball Screw Systems in X- and Y-Axes
- Suitable for 128 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.

BA385 is using KFTA series feeder same as the feeder used for our AUTOTRONIK 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 BA385 are using Cognex® Vision System, providing high accuracy and easy learning for all different kind of components.

MODEL: BA385V1 / BA385V2
SMT PICK & PLACE MACHINE

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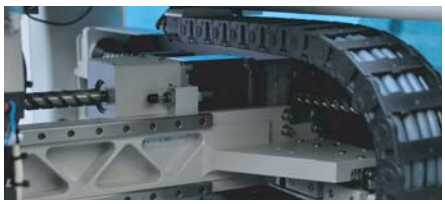
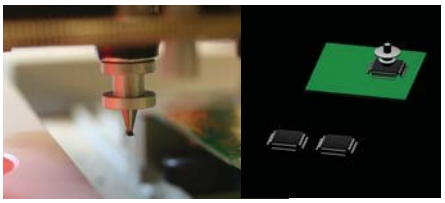
DETAILS

Strong and rigid mechanical design
BA385 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.

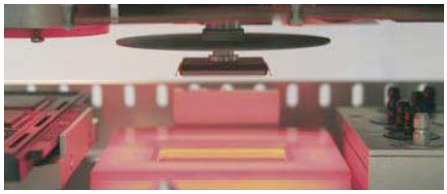


Non-contact Linear Encoder System (Option)
By using „Closed Loop“ Servo Motors with non-contact Linear Encoder System, provide extremely high Repeatability and Stability.

COGNEX® Alignment System "Vision on the Fly"
The BA385 feature COGNEX® vision processing and head-mounted for non-contact „Vision on the Fly” alignment. The machine BA385 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.

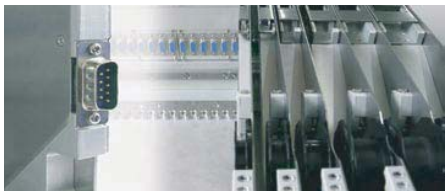


Dispenser System
Optional stand alone dispenser head for adhesive & solder paste dispensing. Perfect for quick, small volume production without making stencil.

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.

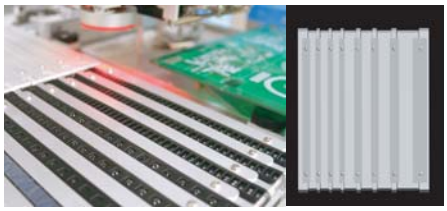
Universal CAD Conversion
Beside the direct input of data by teach-in camera, an optional CAD conversion program is available for directly transfer of CAD generated pick and place data.

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.



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

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).

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.

SPECIFICATION

- Number of Heads (Vision on the Fly):
  BA385V1: 1, BA385V2: 2
- Placement rate (under the optimum condition):
  BA385V1: 4000 cph, 3400 cph (IPC 9850)
  BA385V2: 6400 cph, 5500 cph (IPC 9850)
- Feeder capacity (8 mm)
  without conveyor: up to 128 Tape Feeders
  with conveyor: up to 64 Tape Feeders
- IC Tray capacity: up to 2 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 0.005 mm Servo Motor
  Z axis 0.02 mm Servo Motor
- Rotation: 0 to 360° (0.045°/step) Servo Motor
- Placement Accuracy: +/- 0.04 mm
  +/- 0.03 mm (by optional linear encoder)
- X-Y Repeatability: +/- 0.01 mm
- Placement Area
  Placement area without conveyor:
  Max. 435 x 350 mm without Waffle Trays
  Max. 435 x 210 mm with 1 Waffle Tray
  Max. 435 x 155 mm with 2 Waffle Trays
  Placement area with conveyor:
  Max. 435 x 350 mm without Waffle Trays
  Max. 435 x 160 mm with 1 Waffle Tray
- Programming:
  - Direct input
  - Vision teach-in
  - CAD Access (Option)
- Main Control: Industrial PC
- Power supply: 100V / 240V
- Power:
  BA385V1: 1510W, BA385V2: 2360W
- Pressure: 75 psi (5.5 bar)
- Machine Size: 990 x 1270 x 1320 mm (W x D x H)
- Weight: 660 kg

We reserve the right to make changes without notice.

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

MODEL: BA388V2
SMT PICK & PLACE MACHINE

SUMMARY

- Suitable for 256 intelligent Auto Tape Feeder
- Max. PCB-size: 1250 x 350 mm (with conveyor), 1100 x 410mm (without conveyor)
- High Accuracy and high Flexibility for 01005, 0201, 0402, 0603, LED, SOIC, PLCC, BGA, µBGA, CSP, QFP, up to fine-pitch 0.3mm
- Smart Feeder System provides Automatic feeder position checking, Automatic component counting, Production data Traceability
- Perfect for extra large PCB 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
- Dual conveyor system (option)
- Dispenser system
- Vision Inspection before and after production
- Windows XP Software
- Universal CAD Conversion
- Placement rate: up to 6,400 CPH

AUTOTRONIK BA388 is specially designed for long PCB board production with wide range of different feeders. With its extraordinary feeder capacity, fully loaded with as many as 256 Smart 8 mm Tape Feeders, BA388 is ideal for a wide variety of high-component mix product that will still fit within its massive 1250mm X 350mm placement area with conveyor, or 1100mm X 410mm placement area without conveyor.

For surface mount assembly contractors who build single component by utilizing multiple feeders, AUTOTRONIK BA388 which feature COGNEX® vision processing and headmounted for non-contact "Vision on the Fly" alignment, equipped with dual conveyorized system and intelligent operation software, ensures the high effectiveness in pick and place production run.

In respond to the increased use and variety of surface mount LEDs supplied in tube packing format, AUTOTRONIK has develop series of accessories, such as Smart Feeders and teflon made nozzle, resulting in the industry's most flexible, reliable, and cost-effective solution for presentation of LEDs package in tape.

MODEL: BA388V2
SMT PICK & PLACE MACHINE

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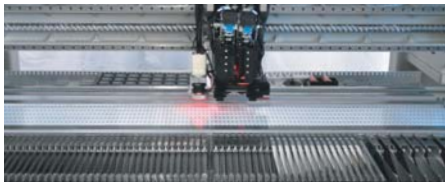
www.autotronik-smt.de

DETAILS

Strong and rigid mechanical design
BA388 using welded steel frame and also heavy duty high precision Linear Ball Rail system to provide strong, rigid and long life time mechanism.

Enormous 1100 mm x 410 mm Placement Area with 256 Smart Tape Feeders; 1250 mm x 350 mm Placement Area with 192 Feeders and Conveyor
48-Port Smart Feeder Bases can be mounted on both the front and rear of the BA388 and 32-Port Smart Feeder Bases can be mounted on the left and right sides of the machine for a maximum capacity of 256 feeders. In this stand-alone configuration, a huge 1100 mm x 410 mm can be shared by PCBs and waffle trays. Placement area increases to 1250 mm x 350 mm with feeder bases mounted on only the front and rear of the system and an in-line conveyor installed.



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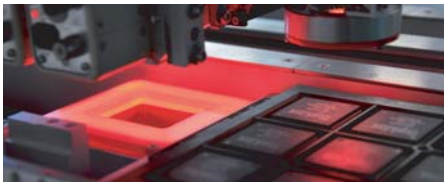
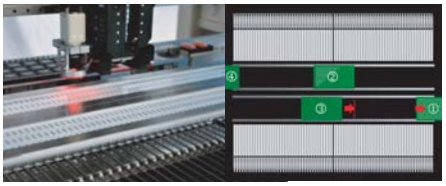
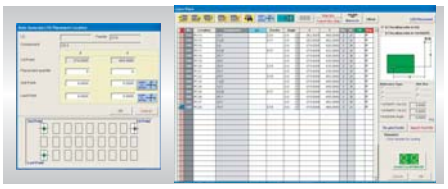


Smart Fiducial System
Besides the standard fiducial mark, either square SMD PCB pad or plate-through hole also can be trained as fiducial mark.

Dual-conveyor system available as option
Dual conveyor in action will shorten the machine idle time in PCB board loading / unloading. The overall placement speed will hence be increased effectively.



Powerful Windows®-Based Control Software
Intelligent software allows the easy set up for the complex and repeatable LED programming.



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

Auto Tape Feeder (KFTA)
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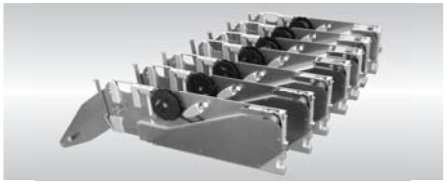

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Cut Strip Tape Holders
Cut Strip Tape Holders is a handy accessory for presenting components that are supplied in short lengths of tape due to their low quantity of usage. It can also prevent the waste of components in sections of tape that are too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

Bulk Pack Component Tray
Designed for bulk pack component, Bulk Pack Component Tray (TSD18) can handle any bulk pack component under the semi-auto production mode. A single tray contains 18 individual slots for maximum 18 types of components.

IC Tray Holder
The standard Waffle Tray Holder occupies approximately 330mm X 140mm of work area and is designed to hold a standard 316mm X 136mm JEDEC Matrix Tray. This provides adjustability for wide variety of smaller matrix tray and waffle pack combinations and can easily be modified for custom tray configurations. Up to 6 waffle trays or more can be installed.

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

TEFLON LED Nozzle
TEFLON made LED nozzle in Autotronik BA388 machine, together with the positive air outputting pressure, is specialized design for LED application. The innovative design of Nozzle ensures the effective landing of sticky LED components.

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.

SPECIFICATION

- Number of Heads (Vision on the Fly): 2
- Placement rate:
  6400 CPH (under the optimum condition)
  5500 CPH (IPC9850 Chip 1608)
- Feeder capacity (8 mm)
  without conveyer: up to 256 Tape Feeders
- Feeder capacity (8 mm)
  with conveyer: up to 192 Tape Feeders
- IC Tray capacity:
  up to 6 Waffle Trays
- Component Size (mm)
  Handled by head camera:
  - Smallest: 0.6 x 0.3 mm
  - 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:
  Max. 1100 x 410mm without conveyor
  Max. 1250 x 350mm with conveyor
- Programming:
  - Direct input
  - Vision teach-in
  - CAD Access (Option)
- Component Sense: Vision detection
- Main Control: Industrial PC
- Machine Size
  Main body: 1780 x 1370 x 1395 mm (L x W x H)
- Weight: 1200 kg
- Power: 230 V / AC, 2800W
- Pressure: 75 psi (5.5 bar)

We reserve the right to make changes without notice.

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

MODEL: BA389F3
SMT PICK & PLACE MACHINE

SUMMARY

- High Accuracy and high Flexibility for 01005, 0201, SOIC, PLCC, BGA, µBGA, 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.

MODEL: BA389F3
SMT PICK & PLACE MACHINE

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

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mail office@autotronik-smt.com
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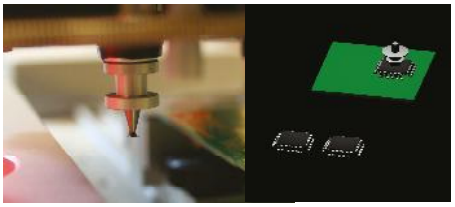
DETAILS

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.

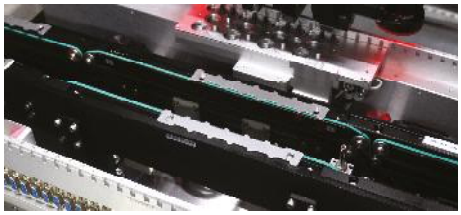
COGNEX® Alignment System "Vision on the Fly"
The BA389 feature COGNEX® vision processing and head-mounted for non-contact „Vision on the Fly” alignment. The machine BA389 assures high-precision placement of the full range of SMDs, from the smallest 0201 devices through CSPs, µBGAs, flip-chips, ultra-fine 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.

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

MODEL: BA392-LED
SMT PICK & PLACE MACHINE

SUMMARY

- Unique Dual Stage conveyor for 1.2m LED board application
- High Accuracy and high Flexibility for 01005, 0201, 0402, 0603, SOIC, PLCC, BGA, µBGA, CSP, QFP, up to fine-pitch 0.3mm
- 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 XP Software
- Universal CAD Conversion
- Placement rate: 6,400 cph
- Suitable for 96 intelligent Auto Tape Feeder
- Tray Handler access up to 10 Waffle Trays

The SMT Pick & Place machine BA392-LED is specially designed for LED board application in medium production batch sizes. Various options are provided for different applications.

Innovative two-stage conveyor design that handles 600mm board length in each stage, hence supports long PCB of 1.2m total length in automatic production.

Additionally, the BA392-LED features COGNEX® vision processing and head-mounted for non-contact "Vision-On-The-Fly" alignment.

MODEL: BA392-LED
SMT PICK & PLACE MACHINE

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

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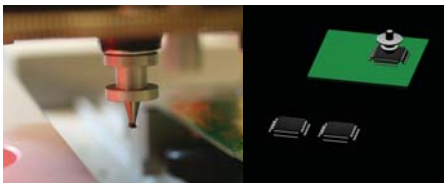
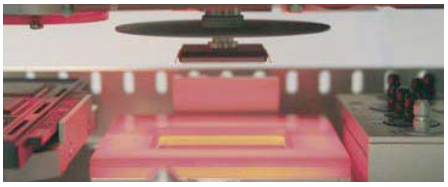
DETAILS

Strong and rigid mechanical design
BA392 using welded steel frame and also heavy duty high precision Linear Ball Rail system to provide strong, rigid and long life time mechanism.

COGNEX® Alignment System "Vision on the Fly"
The BA392 features COGNEX® vision processing and head-mounted for non-contact "Vision on the Fly" alignment. The machine BA392 assures high-precision placement of the full range of SMDs, from the smallest 0201 devices through CSPs, µBGAs, flip-chips, ultra-fine-pitch QFPs (0.3mm fine pitch), even odd-form components.



Bottom Vision Alignment System
A Bottom Vision Camera is used for large components up to 150 x 100 mm and devices with alignment features on their bottom side.

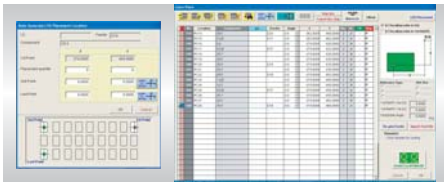


Smart Fiducial System
Besides the standard fiducial mark, either square SMD PCB pad or plate-through hole also can be trained as fiducial mark.

Unique Dual Stage conveyor for 1.2m LED board application
Innovative two-stage conveyor design that handles 600mm board length in each stage, hence supports long PCB of 1.2m total length in automatic production.

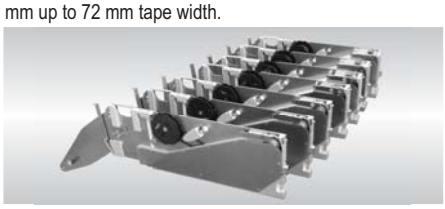
TEFLON LED Nozzle
TEFLON made LED nozzle in Autotronik BA392 machine, together with the positive air ejecting pressure, is specialized design for LED application. The innovative design of Nozzle ensures the effective landing of sticky LED components.

Powerful Windows®-Based Control Software
Intelligent software allows the easy set up for the complex and repeatable LED programming.



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

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 (KR-48K)
Included in delivery are 1 x FR-48K, each is suitable for 48 x 8 mm KFTA Feeders or 40 x 8 mm IC-Sticks.

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.

Bulk Pack Component Tray
Designed for bulk pack component, Bulk Pack Component Tray (TSD18) can handle any bulk pack component under the semi-auto production mode. A single tray contains 18 individual slots for maximum 18 types of components.

IC Tray Holder
The standard TS-1 Tray Holder occupies approximately 330mm X 140mm of work area and is designed to hold a standard 316mm X 136mm JEDEC Matrix Tray. The TS-1 provides adjustability for wide variety of smaller matrix tray and waffle pack combinations and can easily be modified for custom tray configurations.

Tray Handler System
Optional IC tray handler system can access up to 10 sets of waffle Trays automatically.

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

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.

SPECIFICATION

- Number of Heads (Vision on the Fly): 2
- Placement rate:
  6400 CPH (under the optimum condition)
  5500 CPH (IPC9850 Chip 1608)
- Feeder capacity (8 mm)
  with conveyer: up to 96 Tape Feeders
- IC Tray capacity:
  up to 4 Waffle Trays
  up to 10 Waffle Trays with TH-10 Tray (option)
- Component Size (mm)
  Handled by head camera:
  - Smallest: 0.6 x 0.3 mm
  - 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 with conveyor:
  Max. 650 x 315 mm without Waffle Trays
  Max. 650 x 300 mm with 1 Waffle Tray
  Max. 650 x 160 mm with 2 Waffle Trays
- Programming:
  - Direct input
  - Vision teach-in
  - CAD Access (Option)
- Component Sense: Vision detection
- Main Control: Industrial PC
- Machine Size
  Main body: 1150 x 1100 x 1350 mm (L x W x H)
  With conveyor: 1150 x 1970 x 1350 mm (L x W x H)
- Weight: 550 kg
- Power: 230 V / AC, 2100W
- Pressure: 75 psi (5.5 bar)

We reserve the right to make changes without notice.

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

MODEL: BA392V1 / BA392V2
SMT PICK & PLACE MACHINE

SUMMARY

- Large 650 mm x 350 mm placement area
- Suitable for 160 intelligent Auto Tape Feeder
- High Accuracy and high Flexibility for 01005, 0201, 0402, 0603, SOIC, PLCC, BGA, µBGA, CSP, QFP, up to fine-pitch 0.3mm
- 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 XP Software
- Universal CAD Conversion
- Placement rate: 6,400 cph
- Tray Handler access up to 10 Waffle Trays

AUTOTRONIK BA392 features high-precision, direct-drive ball screw and linear encoder technology in the X and Y axes, contributing to its 30 µm, 3 Sigma placement accuracy. With high-power AC servo motors allowing placement rates approaching 6400 cph.

With feeder bases on all four sides, BA392 has maximum 8mm smart type feeder capacity of 160, and 650 mm x 350 mm of payload area can be shared by PCBs and waffle trays. Placement area increases to 660 mm x 330 mm with feeder bases mounted on only the front and rear of the system and an in-line conveyor installed. BA392 with stand-alone or In/Out conveyor configurations is suitable for any In-Line or "Work Cell" manufacturing environment.

The head-mounted, upward-aimed cameras with Cognex® vision processing and programmable illumination of BA392 allow easy set-up for a wide range of SMDs, including odd form components and BGAs. Base mounted cameras with a wider optical range and diagonal split-vision image processing can even be used for alignment of large components up to 150 mm x 100 mm.

MODEL: BA392V1 / BA392V2
SMT PICK & PLACE MACHINE

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

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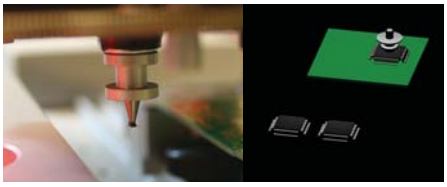
mail office@autotronik-smt.com
www.autotronik-smt.de

DETAILS

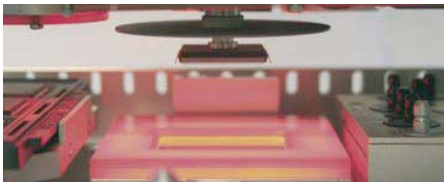
Strong and rigid mechanical design
BA392 using welded steel frame and also heavy duty high precision Linear Ball Rail system to provide strong, rigid and long life time mechanism.

High-Precision, Direct-Drive, Ballscrew and Linear Encoder Technology
BA392 base system features high-precision, direct-drive ballscrew and linear encoder technology in the X and Y axes, contributing to its 30 µm, 3 Sigma placement accuracy.

COGNEX® Alignment System "Vision on the Fly"
The BA392 features COGNEX® vision processing and head-mounted for non-contact "Vision on the Fly" alignment. The machine BA392 assures high-precision placement of the full range of SMDs, from the smallest 0201 devices through CSPs, µBGAs, flip-chips, ultra-fine-pitch QFPs (0.3mm fine pitch), even odd-form components.



Bottom Vision Alignment System
A Bottom Vision Camera is used for large components up to 150 x 100 mm and devices with alignment features on their bottom side.



Extensive Placement Area
BA392 with stand-alone configurations has maximum 650 mm x 350 mm of payload area can be shared by PCBs and waffle trays. Placement area increases to 660 mm x 330 mm for in-line setting.

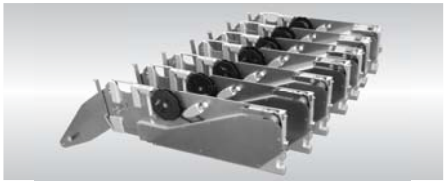
Feeder Rack
Included in delivery are 2 x FR-48K, each is suitable for 48 x 8mm KFTA Feeders or 40 x 8mm IC-Sticks. 2 x FR32K can also be mounted on the left and right sides of the machine for a total capacity of 160 8 mm tape feeders.

LED application
In respond to the increased use and variety of surface mount LEDs application, BA392 has the upgrade capacity for LED application.

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

Smart Fiducial System
Besides the standard fiducial mark, either square SMD PCB pad or plate-through hole also can be trained as fiducial mark.

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.

Bulk Pack Component Tray
Designed for bulk pack component, Bulk Pack Component Tray (TSD18) can handle any bulk pack component under the semi-auto production mode. A single tray contains 18 individual slots for maximum 18 types of components.

IC Tray Holder
The standard TS-1 Tray Holder occupies approximately 330mm X 140mm of work area and is designed to hold a standard 316mm X 136mm JEDEC Matrix Tray. The TS-1 provides adjustability for wide variety of smaller matrix tray and waffle pack combinations and can easily be modified for custom tray configurations.

Tray Handler System
Optional IC tray handler system can access up to 10 sets of waffle Trays automatically.

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

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 for directly transfer of CAD generated pick and place data is available.

SPECIFICATION

- Number of Heads (Vision on the Fly):
  BA392V1: 1, BA392V2: 2
- Placement rate:
  BA392V1: 4500 CPH (under the optimum condition)
  4000 CPH (IPC9850 Chip 1608)
  BA392V2: 6400 CPH (under the optimum condition)
  5500 CPH (IPC9850 Chip 1608)
- Feeder capacity (8 mm)
  without conveyer: up to 160 Tape Feeders
  with conveyer: up to 96 Tape Feeders
- IC Tray capacity:
  up to 4 Waffle Trays
  up to 10 Waffle Trays with TH-10 Tray (option)
- Component Size (mm)
  Handled by head camera:
  - Smallest: 0.6 x 0.3 mm
  - 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 without conveyor:
  Max. 650 x 350 mm without Waffle Trays
  Max. 650 x 330 mm with 1 Waffle Tray
  Max. 455 x 330 mm with 2 Waffle Trays
  Max. 275 x 320 mm with 3 Waffle Trays
- Placement area with conveyor:
  Max. 660 x 330 mm without Waffle Trays
  Max. 650 x 295 mm with 1 Waffle Tray
  Max. 650 x 175 mm with 2 Waffle Trays
  Max. 650 x 145 mm with 3 Waffle Trays
- Programming:
  - Direct input
  - Vision teach-in
  - CAD Access (Option)
- Component Sense: Vision detection
- Main Control: Industrial PC
- Machine Size
  Main body: 1080 x 1050 x 1350 mm (L x W x H)
- Weight: 550 kg
- Power supply: 240 V
- Power:
  BA392V1: 1810 W, BA392V2: 2360 W
- Pressure: 75 psi (5.5 bar)

We reserve the right to make changes without notice.

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

MODEL: BS281
BENCH-TOP PICK & PLACE MACHINE

FEATURES

- Flying Vision for components from 0.6 mm x 0.3 mm (0201) to 16 mm x 14 mm
- Bottom Vision Camera for alignment of 01005, up to 0.5 fine pitch QFP & BGAs (option)
- 32 lane feeder bases mount at left and right of system for maximum capacity of 64 automatic 8 mm Tape Feeders
- Optional feeders and accessories allow a wide variety of configurations for full and partial reels of Tape, strips of Cut Tape, Stick / Tube, and IC Tray Packaging
- Programming via CAD Conversion, Direct Input, or Teaching/Fiducial Recognition Camera
- PC controller, monitor, and keyboard included with Easy-to-Use, Windows®XP-based control software
- Optional Dispensing system

SPECIFICATION

- Number of Heads (Vision on the Fly): 1
- Placement rate (under the optimum condition): 3000 cph, 2500 cph (IPC 9850)
- Feeder capacity (8 mm): up to 64 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 (option):
  - Smallest: 0.4 x 0.2 mm
  - Largest: 150 x 100 mm
- Resolution:
  X / Y axis 0.005 mm
  Z axis 0.01 mm
- Rotation: 0 to 360° (0.09°/step)
- Placement Accuracy: +/- 0.05 mm
- X-Y Repeatability: +/- 0.01 mm
- Placement Area
  - without Waffle Tray
    Max. 320 x 415 mm
  - with 1 Waffle Trays
    Max. 320 x 270 mm
- Programming:
  - Direct input
  - Vision teach-in
  - CAD Access (Option)
- Main Control: Industrial PC
- Power supply: 100V - 240V
- Power: 1200W
- Pressure: 75 psi (5.5 bar), 100L/min
- Machine Size: 825 x 1060 x 590mm (L x W x H)
- Weight: 165 kg

We reserve the right to make changes without notice.

AUTOTRONIK 281 model is especially designed for small volume batch sizes. This model features vision processing and head-mounted camera for non-contact “Vision on the Fly” alignment. It assures high-precision placement of a full range of SMDs, from the smallest 0201 devices through CSPs, µBGAs, flip-chips, ultra-fine pitch 0.5mm for QFPs, even odd-form components.

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

Optional Feeders and Accessories allow a wide variety of configurations for Full and Partial Reels of Tape, Strips of Cut Tape, Stick/Tube, and IC Tray Packaging.

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

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AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

LED Board Assembly

Pick and Place Solutions

LD812V4/LD812W3
LD806V4/LD806W3

for LED Board Assembly

Applicable for:

Long LED board

Flexible PCB board

Circular LED light bulb board

Features

- ◎ True 'Vision On the Fly' Alignment
- ◎ Fiducial recognition and coordinate correction
- ◎ Assembles LED boards up to 1200 mm long in a single pass (option for 1800mm long)
- ◎ Positive air puffing at the pick-up nozzle ensures release of 'sticky' LED components during placement
- ◎ Large working platform allows multiply PCB production in one stage (for same type of PCB)
- ◎ Uninterrupted production by auto-selection for alternative when feeder is empty
- ◎ High-precision ballscrew drive
- ◎ Tape feeder allows tape connection to minimize production interruption
- ◎ Heavy-duty welded frame provides stability for precision placements even at high speeds
- ◎ Option Teflon® nozzles available for sticky LED components; customized nozzles available on request
- ◎ Three heads for high placement rates

Non-contact alignment algorithms performed during head travel

Single pass assembly

← LED boards up to 1800 mm long →

LED nozzle

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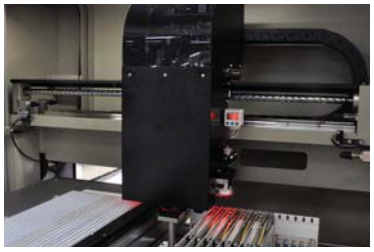
Pick and Place Solutions

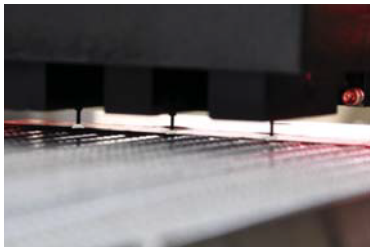
LD812V4/LD812W3
LD806V4/LD806W3

for LED Board Assembly

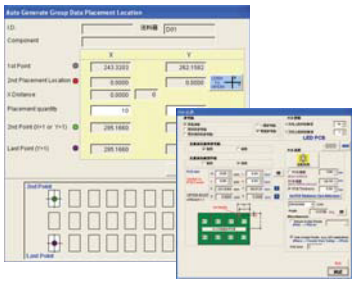
AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie



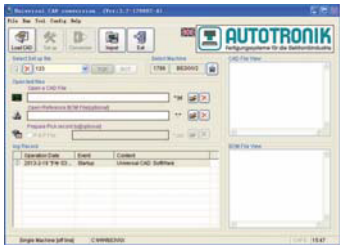
Heavy-duty welded, uni-body steel frame provides stability for precision placements even at high speeds



Upward-aimed true 'Vision On the Fly' Alignment cameras on the pick & place heads allow easy set-up for a wide range of LED components



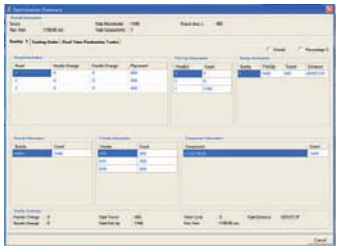
With simply parameters inputs, the Windows-based software calculate the component coordination automatically



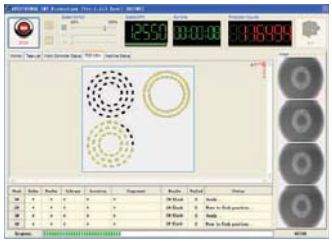
UCAD® universal CAD import and conversion for direct transfer of PCB data from ASCII, AutoCAD and Excel data formats

Support various PCB board type, includes, LED boards up to 1200 mm long (or option to 1800mm), flexible PCB , or circular PCB

Flying vision alignment on various LED components as well as SMDs. Teflon® nozzles also available for sticky LED components



Software tools analyze placement data and component mix to provide optimum feeder arrangement that minimizes head travel and tool changes



Real time monitoring screen for previewing production progress, production speed and production quantity during production

Specification

Machine Model	LD812V4	LD812W3	LD806V4	LD806W3
PCB specification				
Max. board size (standard)	1200mm X 300mm	1200mm X 300mm	600mm X 300mm	600mm X 300mm
(option conveyor)	1200mm X 260mm	1200mm X 260mm	600mm X 260mm	600mm X 260mm
Board thickness	0.2mm to 3mm	0.2mm to 3mm	0.2mm to 3mm	0.2mm to 3mm
Board fixing principle	Magnetic fixture (option conveyor)	Magnetic fixture (option conveyor)	Magnetic fixture (option conveyor)	Magnetic fixture (option conveyor)
Placement Specification				
Alignment principle	Vision on the fly camera	Vision on the fly camera	Vision on the fly camera	Vision on the fly camera
No. of placement heads	4	3	4	3
Placement rate	15 000 / hour	10 000 / hour	15 000 / hour	10 000 / hour
Component size	1mm x 0.5mm to 8mm x 8mm	1mm x 0.5mm to 16mm x 14mm	1mm x 0.5mm to 8mm x 8mm	1mm x 0.5mm to 16mm x 14mm
Feeder capacity				
Feeding capacity	Max. 16 feeder ports (8mm tape)	Max. 16 feeder ports (8mm tape)	Max. 16 feeder ports (8mm tape)	Max. 16 feeder ports (8mm tape)
Mechanical Specification				
XY axis drive mechanism	X axis: placement head; Y axis: board transport	X axis: placement head; Y axis: board transport	X axis: placement head; Y axis: board transport	X axis: placement head; Y axis: board transport
Board loading method	Working stage (option conveyor)	Working stage (option conveyor)	Working stage (option conveyor)	Working stage (option conveyor)
In line production	Supported by option conveyor system	Supported by option conveyor system	Supported by option conveyor system	Supported by option conveyor system
Placement accuracy	+/-0.05mm	+/-0.05mm	+/-0.05mm	+/-0.05mm
X-Y Axis Resolution	0.02mm	0.02mm	0.02mm	0.02mm
Z Axis Resolution	0.02mm	0.02mm	0.02mm	0.02mm
R Axis Resolution	0.18 degree	0.18 degree	0.18 degree	0.18 degree
Programming				
Operation system	Windows 7 based	Windows 7 based	Windows 7 based	Windows 7 based
Support language	English (mult language support)	English (mult language support)	English (mult language support)	English (mult language support)
Programming	Easy programming (option CAD import)	Easy programming (option CAD import)	Easy programming (option CAD import)	Easy programming (option CAD import)
Physical specification				
Approximate Net Weight	450KG	445KG	380KG	375KG
Machine dimension (LxWxH)	2630mm X 1130mm X 1490mm	2630mm X 1130mm X 1490mm	1230mm X 1130mm X 1491mm	1230mm X 1130mm X 1491mm
Facility Requirements				
Air Pressure	5.5 bar	5.5 bar	5.5 bar	5.5 bar
Standard Voltage	220V(AC)	220V(AC)	220V(AC)	220V(AC)
Power	2200W	2200W	2200W	2200W

* We reserve the right to make changes without notice.

QUALITY BY CONVICTION

AP series

MODEL **AP430/AP1200/AP1500**

Automatic SMT Inline Printer

This is Autotronik

Quality by conviction. It is our motto - but you can profit by it world-wide. To be on the winning team you rely on a partner who combines quality, flexibility and innovation.

Autotronik is a global company with approximately 200 employees. We are your specialist for SMD stencil printers, pick and place machines and reflow ovens of low-to medium-Series and complete SMT production lines.
Our global commitment allows us to bring together the best components of all continents into an outstanding product.

www.autotronik.de

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

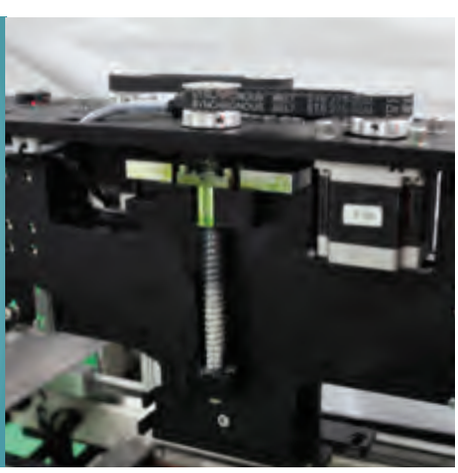
STRONG AND RIGID MECHANICAL DESIGN

Strong and rigid mechanical design

AP series with welded steel frame guaranteed a strong and rigid mechanical design. High quality printing is guaranteed by preloaded 4-point ball screws, which drives with an excellent parallel separation of stencil and PCB.

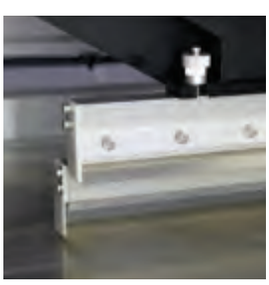
▲ 4 point ball screw drives excellent parallel separation of stencil and PCB

DUAL, INDEPENDENT PRINT HEADS INCREASE THROUGHPUT



Dual, independent print heads increase throughput

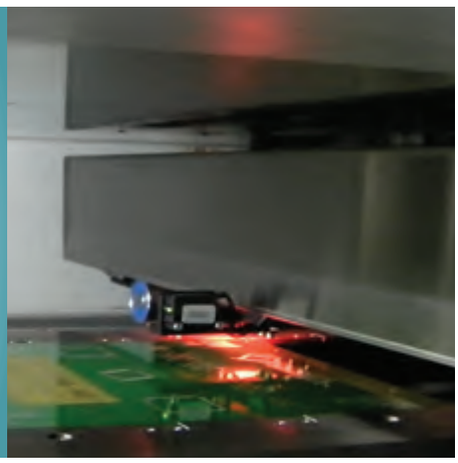
AP series two print heads are independently controlled by high-precision ball-screw drives with a programmable transport speed and closed loop stepped motor. Print pressure is uniformly and accurately controlled.



◀ AP series come standardly with a dual squeegee / dual stroke control system for the most economic use of solder paste.

◀ Self-leveling squeegees automatically adjust to the stencil surface to ensure perfect registration on every print.

ADVANCED VISION ALIGNMENT



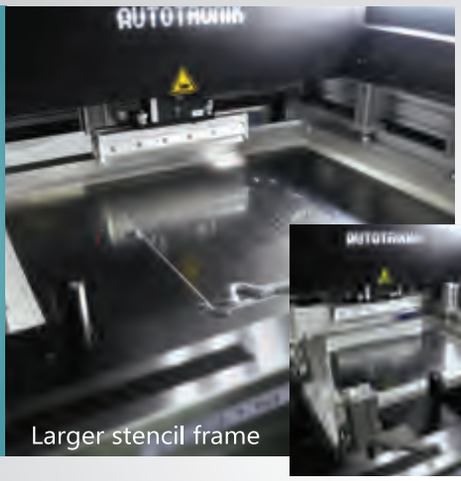
Advanced Easy-Align-Check (EAC)

AP series advanced imaging system eliminates the need for specialized fiducial marks—any pad, from 0.5 mm to 3 mm, can be used as a fidcuial mark. Multiple light source selection allows the vision system to work with a range of PCB substrate colors when learning fiducial reference points.

◀ Dual camera module allows upward and downward vision and facilitates the imaging speed

◀ Easy alignment checking by dual fidcuial marks

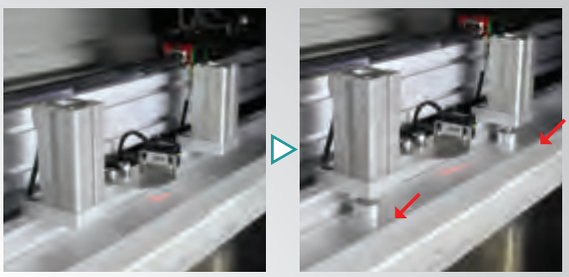
FAST, EASY JOB CHANGEOVER



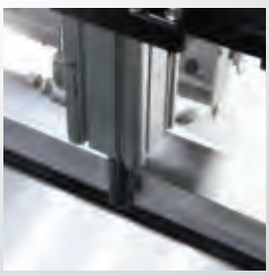
Smaller stencil frame

Fast, easy job changeover

Autotronik AP series Stencil printer makes job set up simple: input the stencil size, insert the stencil into the frame mounter until it reaches the stopper and the system software will handle the rest. Be ready for the next production assignment in a matter of seconds.

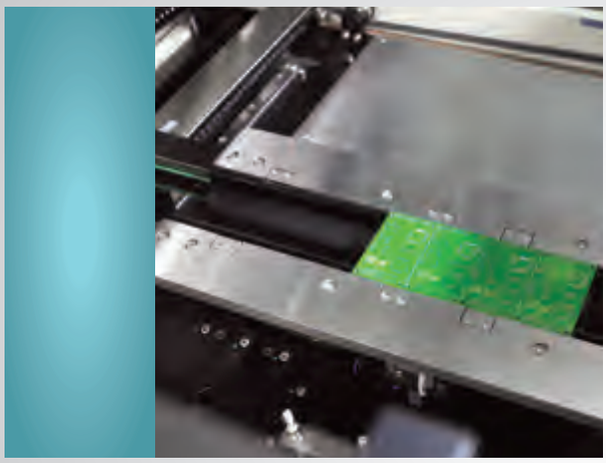


▲ Highly adaptable stencil frame clamping system



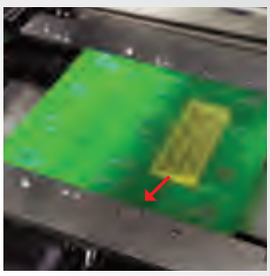
◀ Automatic adjustment for stencil frame in Y-axis

UNIQUE CLAMPING DEVICE FOR INLINE INTEGRATION



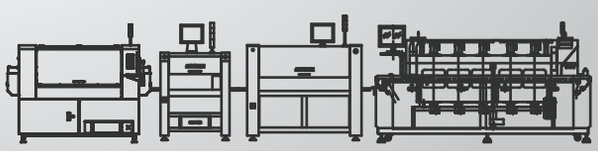
Unique clamping device for inline integration

The efficient single-stage PCB transport system is SMEMA-compatible to interface with the other production equipment on your line.



▲ The unique clamping device prevents flexible boards from bending. The vacuum table holding fixture ensures that PCBs lay flat. The table moves to align the PCB to the stencil.

Sample production line



AP stencil printer | Pick & Place machine | Reflow oven

INTEGRATED UNDERSTENCIL WIPING

Integrated understencil wiping

Automatic wet/dry/vacuum understencil cleaning is included with the AP series printer. The system can be programmed to clean the stencil using any combination of dry wipe, wipe with solvent ("wet wiping"), or wipe followed by vacuum to draw material out from the apertures.

◀ Connected with the vacuum pump to enhance the cleaning performance

◀ Flexible cleaning option (wet / dry / vacuum) is available for variety of real situation

FULLY PROGRAMMABLE

Fully programmable

Windows-based AP series is easy to program, allowing the printer to be up and running quickly after install. All parameters, including print speed (programmable from 20 to 120 mm/s), stroke length, squeegee pressure, etc., are fully programmable via the graphical user interface. During operation, all details, including process status, of the current job are displayed on screen. Multiple user permission levels prevents important machine parameters from being accidentally changed.

▲ Fiducial learning could be controlled by multiple parameter, such as shape, color, brightness, contract, etc. or completed automatically.

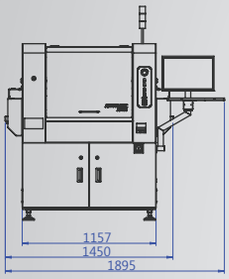
▲ **2D inspection** function allow the inspection of short circuit, deviation and coverage rate of the solder paste.

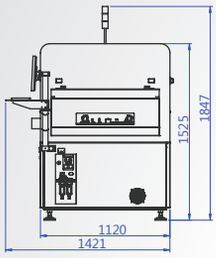
▲ Auto Production panel displays recent production status, camera image and related information.

▲ Conveyor control interface display multiple parameters control, such as in/out direction, PCB width, X/Y/Z position.

▲ Conveyor production control allows speed control, run option, SMEMA signal setting

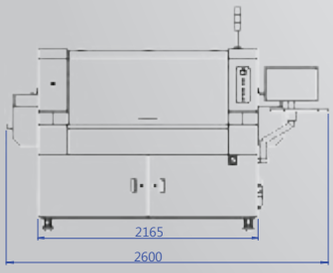
AP series
Automatic SMT Inline Printer

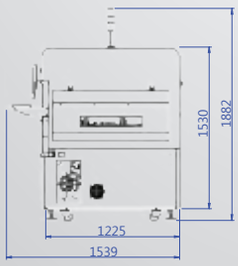




MODEL **AP430/AP430L/AP660**
Key Features

- Dual-camera vision for fast PCB orientation
- Print repeatability of ±0.008mm
- Dual squeegees with dual-stroke control for efficient solder paste use
- Flexible mounting for single- or double-sided boards
- Fast job setup and changes
- Excellent parallel separation of stencil and PCB with programmable speed control for well-defined prints
- Accepts stencils size from min. 470 x 300 mm (AP430), 520 x 300 mm (AP430L), 736 x 736 mm (AP660) to max. 736 x 736 mm, 900 x 900mm (AP660)
- Accommodates PCBs to 400 x 300 mm (AP430), 450 x 350 mm (AP430L), 600 x 600 mm (AP660)





MODEL **AP1200/AP1500**
Key Features

- Dual-camera vision for fast PCB orientation
- Print repeatability of ±0.01mm
- Dual squeegees with dual-stroke control for efficient solder paste use
- Flexible mounting for single- or double-sided boards
  Fast job setup and changes
- Excellent parallel separation of stencil and PCB with programmable speed control for well-defined prints
- Custom-designed clamping device holds long PCBs straight and suppresses the bending of flexible boards
- Vacuum table holding fixture keeps PCB flat for best printing result Automatic conveyor width adjustment for convenient board loading
- Accepts stencils size from min. 400 x 300 mm to max. 1600 x 300 mm (AP1200), 1900 x 300 mm (AP1500)
- Accommodates PCBs to 1200 x 300 mm (AP1200), 1500 x 300 mm (AP1500)

	AP430 / AP430 L / AP660	AP1200	AP1500
Printing Speed	10 to 120mm/s	10 to 120mm/s	10 to 120mm/s
Vision Alignment System	Automatic (any shape)	Automatic (any shape)	Automatic (any shape)
Stencil Frame Size (External Dimensions)	AP430) 470 x 300 mm to 736 x 736 mm AP430L) 520 x 300 mm to 736 x 736 mm AP660) 736 x 736 mm to 900 x 900 mm	400 x 300 mm to 1600 x 630 mm	400 x 300 mm to 1900 x 630 mm
Board Size	AP430) 50 x 50mm to 400 x 300mm AP430L) 50 x 50mm to 450 x 350mm AP660) 50 x 50mm to 600 x 600mm	100 x 50mm to 1200 x 300mm	100 x 50mm to 1500 x 300mm
Board Thickness	0.4 to 5 mm	0.4 to 5 mm	0.4 to 5 mm
Board Warpage	Max PCB 1% of diagonal line	Max PCB 1% of diagonal line	
Blade Type	Metal or plastic, 45° or 60°	Metal or plastic, 45° or 60°	Metal or plastic, 45° or 60°
XY Adjustment	±10mm	±10mm	±10mm
Radial Adjustment	±2°	±2°	±2°
Registration Repeatability	±0.008mm	±0.01mm	±0.01mm
Transport cycle time	15s (exclude printing & cleaning)	15s (exclude printing & cleaning)	15s (exclude printing & cleaning)
Transport Height	900±20mm	900±20mm	900±20mm
Transport Direction	Left-Right / Right - Left / Left - Left / Right - Right	Left-Right / Right - Left / Left - Left / Right - Right	Left-Right / Right - Left / Left - Left / Right - Right
PCB Fixation	Screw clamping system and vacuum	Screw clamping system and vacuum	Screw clamping system and vacuum
Print mode	Single or double side printing	Single or double side printing	Single or double side printing
CCD FOV	5 x 7 mm	5 x 7 mm	5 x 7 mm
Vision Fiducial	Standard fiducial and any pads, 0.5 to 3 mm	Standard fiducial and any pads, 0.5 to 3 mm	Standard fiducial and any pads, 0.5 to 3 mm
Air & Power Requirements	220VAC 50 - 60 Hz power, 75psi (5 bar) air	220VAC 50 - 60 Hz power, 75psi (5 bar) air	220VAC 50 - 60 Hz power, 75psi (5 bar) air
Operating system	Windows 7	Windows 7	Windows 7
Dimensions (L x W x H)	1450x1120x1525(AP430), 1900x1506x1550(AP660)	2300 x 1704 x 1878 mm	2600 x 1539 x 1883 mm
Weight	780 kg(AP430), 1000 kg(AP660)	1200 kg	1500 kg

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

Worldwide at your side.
We have service partners all over the world.

Innovative Features
Our machines are using technical standards, which are normally used in bigger machines for mass production.

Unbeatable Service
In case of problems we are disposal almost around the clock.

Quality and Innovation at a fair price
Through global positions.

Everything from one source
We are your partner for all process steps.

A expert in small and medium-scale production.

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AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

MODEL: BS110
MANUAL SCREEN & STENCIL PRINTER

SUMMARY

- Fast print alignment and repeatability
- Applicable for most standard SMT screens
- Large print-area capability
- Easy set-up and clean-up

Precise, reliable and easy-to-use Autotronik BS110 stencil printer is ideally suitable for the needs of prototype and low-to-medium volume production.

MODEL: BS110
MANUAL SCREEN & STENCIL PRINTER

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

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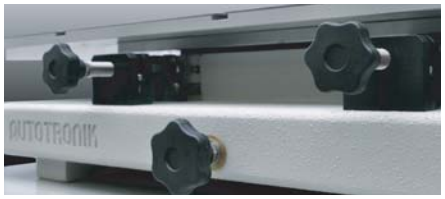
www.autotronik.de

DETAILS

High repeatability
In order to provide fast print alignment and high repeatability, the X, Y and Theta adjustment are self-locking. The highly functional design provides fine pitch capability for boards with registration repeatability +/- 0.02 mm.

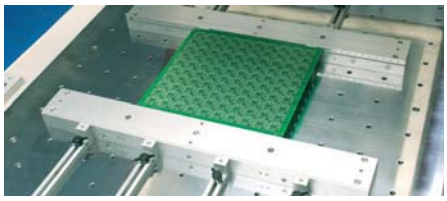


Large print area capability
The large print area capability allows printing up to 610 mm x 610 mm. It accepts standard SMT frame sizes from 300 x 300 mm to 736 x 736 mm. Both obverse and reserve sides of screen are also applicable.

Ready for double-sided PCB
The PCB board is supported by a universal frame holder, no extra tool is needed for double-sided printing. The ease universal frame holder also allows the fast stencil and screen mounting and removal.

Easy set up
Step 1:
Install the stencil frame
* Support frame types: Screw lock frame or Clamp frame

Step 2: Set up the PCB board



Step 3: Apply the paste and scrape the squeegee

SPECIFICATION

- Stencil frame size:
  300 x 300 mm - 740 x 740 mm
- Work table size:
  610 mm x 610 mm
  1250 mm x 410 mm (by option FIX-ST-L120)
- X- and Y-Axes range: +/- 13 mm
- Theta rotation: +/- 3,5°
- Underside Clearance: 25 mm
- Z-axis range: 0 - 35 mm
- Registration Repeatability: +/- 0.02 mm
- Overall dimensions:
  900 mm x 1050 mm x 300 mm (L x D x H)
- Machine weight: 90 kg

We reserve the right to make changes without notice.

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

MODEL: BS1300 / BS1400
SEMI / FULLY AUTOMATIC
SMT STENCIL PRINTER

SUMMARY

- Precision Printing for 0.3 mm fine pitch QFP
- Built in Overlay Pattern Vision Alignment Software
- AT-align fully automatic fiducial finding and PCB board offset adjustment system (for Model BS1400)
- Flexible Mounting Table for Single & Double side PCB
- High Accuracy & Repeatable Printing
- Double Squeegee with dual stroke control
- Windows XP Software

The **Model BS1300** is a economic and accurate semi-automatic SMT stencil printer, suitable for small and medium volume production. Including the dual camera system with OPVA software, the ultra-fine pitch printing for 0.3 mm QFP IC is easy to obtain.

The **Model BS1400** is a very accurate fully automatic SMT stencil printer. It includes a powerful AT-align automatic fiducial finding and PCB board offset adjustment system. After pressing the start key, the PCB alignment and printing process will be fully automatic, which is very suitable for precision batch printing.

MODEL: B1300 / BS1400
SEMI / FULLY AUTOMATIC
SMT STENCIL PRINTER

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

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DETAILS

Overlay Pattern Vision Alignment (OPVA) Software

OPVA software is specially design for BS1300, the user can align the live image of the PCB to a computer generated overlay pattern. Any fiducial point or PCB pad can be selected as the reference for the overlay pattern, the shape and size of the overlay pattern is selectable, the center of the overlay pattern can be high accurately located by simple single step movement on the computer screen with the resolution of 0.0085 mm per step. PCB can be aligned easily within a few seconds by user.

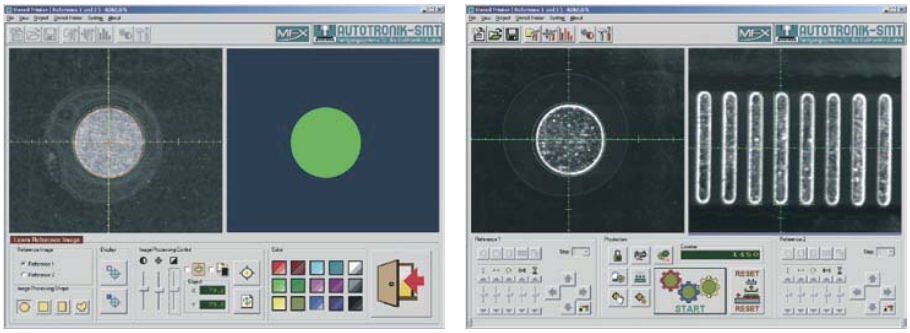
High Accuracy & Repeatable Printing

PCB is fixed on a flexible mounting table which is suitable for single side and double PCB. Adjustment of PCB position, movement of Mounting table and squeegee are all moving on precision linear guides to provide high accuracy & repeatable movement. Double squeegee with dual stroke control system provide efficient saving of solder paste during printing.

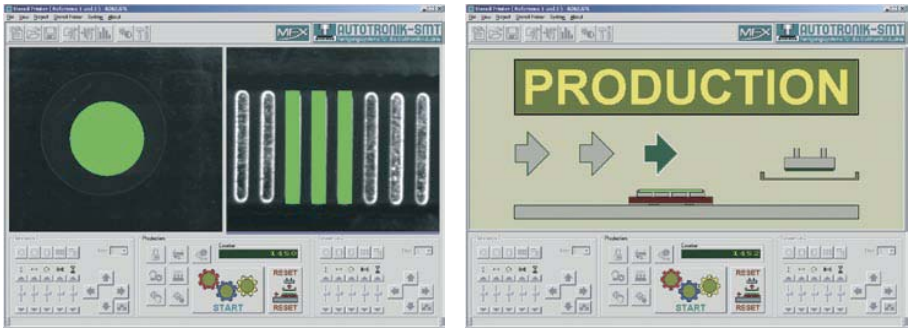
Control System

The main control of BS1300/BS1400 is by Industrial computer with LCD monitor, the software is working under Windows XP operating system and it is a graphical user friendly software, easy and simple operation.

With OPVA Software for PCB alignment, users can align the PCB within few seconds



The on-screen process status shows the detail of operation by graphic, simple operation and user friendly.



AT-align powerful software can auto finding fiducial points and auto adjust PCB offset.

SPECIFICATION

- Printing Speed: 10 - 100 mm/s (Servo Control)
- Table Up/Down Speed:
  0,5 mm/s - 5 mm/s (Servo Control)
- Cycle Time: 15 - 25 sec./PCB
- Vision Alignment System:
  BS1300: Semi-auto PCB Alignment (OPVA)
  BS1400: fully-auto PCB Alignment (AT- Align)
- Stencil Frame Size:
  450 x 450 mm – 736 x 736 mm
- Printing Area:
  Max. 400 x 400 mm, 500 x 400 mm (optional)
- Board size:
  Min. 20 x 20 mm,
  Max. 400 x 380 mm, 500 x 380 mm (optional)
- Board thickness:
  0,2 mm - 8 mm
- Underside Clearance: Max. 26 mm
- Printing Stroke: Max. 450 mm
- Squeegee Pressure: 0 -15 kg
- Blade Type:
  Standard Length: 250 mm
  Optional Length: 200 mm - 500 mm)
- XY Adjustment: ± 5 mm
- Radial Adjustment: ±2°
- Registration Repeatability: ± 0.01 mm
- Support Tooling: Magnetic pin & Vacuum Block
- Camera: 2 set of B/W CCD camera
- Vision Alignment Resolution:
- 0,0085 mm / step
- Vision Fiducial:
- Standard Fiducial, any Pads, IC foot Pads
- Main Control: Industrial PC
- Machine Size: 1550 x 900 x 1350 mm (L x W x H)
- Weight: 400 kg
- Power: 230 V / AC, 500 W
- Pressure: 75psi (5,5 bar)

We reserve the right to make changes without notice.

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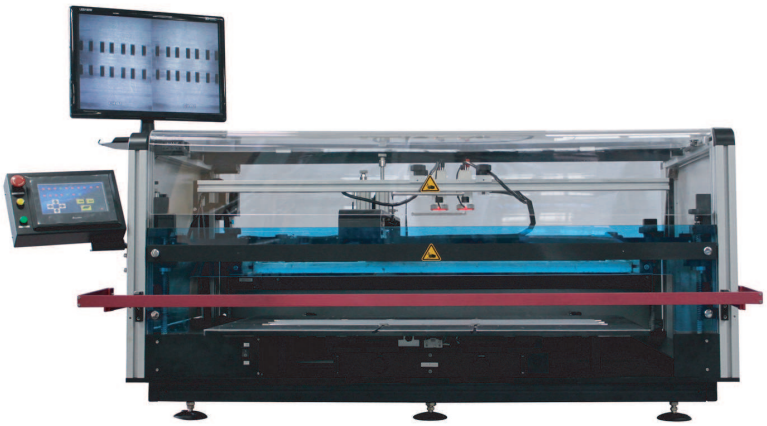
MODEL: SP900 / SP900L
SEMI-AUTOMATIC STENCIL PRINTER



FEATURES

- **Huge print area capability**
  The huge print area capability allows printing up to 900mm x 600 mm (SP900L), or up to 900mm x 400mm (SP900). It accepts standard SMT frame sizes from 350mm x 350mm to 1140mm x 750mm (SP900L), or to 1140mm x 550mm (SP900)

- **Vertical Seperation of Stencil from PCB**
  4 corner ball screw system provides excellent seperation control of stencil for high quality solder paste printing

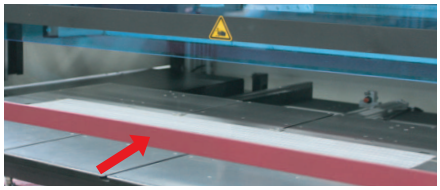
- **Programable Speed Control for both squeegee movement and stencil separation**

- **Dual Camera system for quick PCB alignment (optional)**

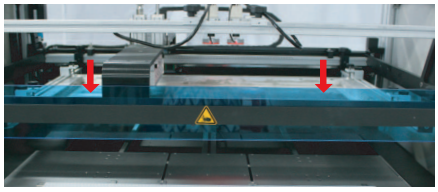
EASY STEPS

Step 1: Place the PCB board on the slidable working table

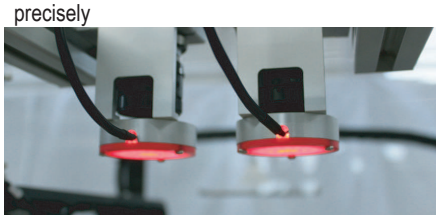
Step 2: By pressing IN button, the working table will move toward inside automatically



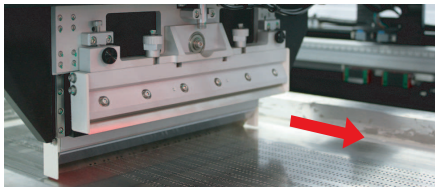
Step 3: By pressing DOWN button, the stencil screen will move downward automatically



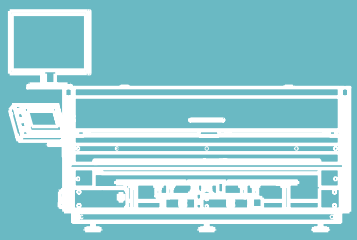
Step 4: By using magnifying camera, the operator can adjust the X, Y, Theta aligment easily and precisely



Step 5: By pressing START button, the squeegee will spread the solder paste steadily and automatically



SPECIFICATION



SP900L

- Stencil frame size:
  350 x 350mm to 1140 x 750mm
- Printing Area:
  Max.900mm x 600mm
- Board size:
  Max.910mm x 610mm
- X- and Y-Axes range: +/- 13 mm
- Theta rotation: +/- 3.5°
- Underside Clearance: 25 mm
- Z-axis range: 0 - 45 mm
- Registration Repeatability: +/- 0.01 mm
- Overall dimensions(L x W x H):
  1702mm x 1323mm x 1051mm
- Machine weight: 185kg

SP900

- Stencil frame size:
  350 x 350mm to 1140 x 550mm
- Printing Area:
  Max.900mm x 400mm
- Board size:
  Max.910mm x 410mm
- X- and Y-Axes range: +/- 13 mm
- Theta rotation: +/- 3.5°
- Underside Clearance: 25 mm
- Z-axis range: 0 - 45 mm
- Registration Repeatability: +/- 0.01 mm
- Overall dimensions(L x W x H):
  1702mm x 1123mm x 1051mm
- Machine weight: 155kg

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MODEL: SP600 / SP600L / SP1200
SEMI-AUTOMATIC STENCIL PRINTER

FEATURES

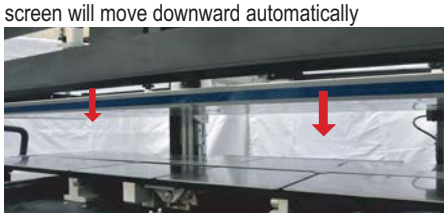
- **Huge print area capability**
  The huge print area capability allows printing up to 1200mm x 400mm. It accepts standard SMT frame sizes from 350 x 350 mm to 1480 x 500 mm (for SP1200), or 350 x 350 mm to 838 x 736 mm (for SP600L)
- **Vertical Seperation of Stencil from PCB**
  4 corner ball screw system provides excellent seperation control of stencil for high quality solder paste printing
- **Programable Speed Control for both squeegee movement and stencil separation**
- **Dual Camera system for quick PCB alignment (optional)**

EASY STEPS

Step 1: Place the PCB board on the slidable working table

Step 2: By pressing IN button, the working table will move toward inside automatically

Step 3: By pressing DOWN button, the stencil screen will move downward automatically

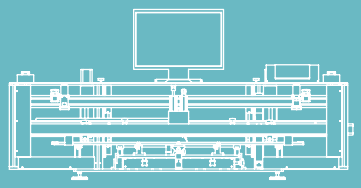


Step 4: By using magnifying camera, the operator can adjust the X, Y, Theta aligment easily and precisely

Step 5: By pressing START button, the squeegee will spread the solder paste steadily and automatically

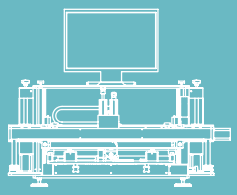
SPECIFICATION

SP1200



- Stencil Frame Size :
  350 x 350mm to 1480 x 500mm
- Printing Area :
  Max.1200mm x 400mm
- Board size :
  Max.1250mm x 410mm
- X- and Y-Axes range: +/- 13 mm
- Theta rotation: +/- 3.5°
- Underside Clearance: 25 mm
- Z-axis range: 0 - 35 mm
- Registration Repeatability: +/- 0.01 mm
- Overall dimensions (L x W x H):
  1719mm x 1006mm x 851mm
- Machine weight: 162kg

SP600 / SP600L



- Stencil Frame Size :
  350 x 350mm to 838 x 500mm (SP600)
  350 x 350mm to 838 x 736mm (SP600L)
- Printing Area :
  Max.600mm x 400mm (SP600)
  Max.600mm x 600mm (SP600L)
- Board size :
  Max.650mm x 410mm (SP600)
  Max.650mm x 650mm (SP600L)
- X- and Y-Axes range: +/- 13 mm
- Theta rotation: +/- 3.5°
- Underside Clearance: 25 mm
- Z-axis range: 0 - 35 mm
- Registration Repeatability: +/- 0.01 mm
- Overall dimensions (L x W x H):
  1064mm x 1006mm x 851mm (SP600)
  1100mm x 1100mm x 851mm (SP600L)
- Machine weight:
  108kg (SP600)
  135kg (SP600L)

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MODEL: SP600 / SP600L / SP1200
SEMI-AUTOMATIC STENCIL PRINTER

FEATURES

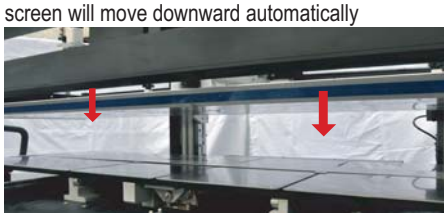
- **Huge print area capability**
  The huge print area capability allows printing up to 1200mm x 400mm. It accepts standard SMT frame sizes from 350 x 350 mm to 1480 x 500 mm (for SP1200), or 350 x 350 mm to 838 x 736 mm (for SP600L)
- **Vertical Seperation of Stencil from PCB**
  4 corner ball screw system provides excellent seperation control of stencil for high quality solder paste printing
- **Programable Speed Control for both squeegee movement and stencil separation**
- **Dual Camera system for quick PCB alignment (optional)**

EASY STEPS

Step 1: Place the PCB board on the slidable working table

Step 2: By pressing IN button, the working table will move toward inside automatically

Step 3: By pressing DOWN button, the stencil screen will move downward automatically

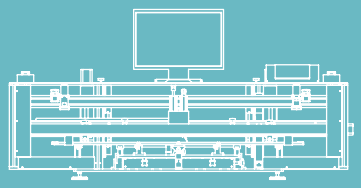


Step 4: By using magnifying camera, the operator can adjust the X, Y, Theta aligment easily and precisely

Step 5: By pressing START button, the squeegee will spread the solder paste steadily and automatically

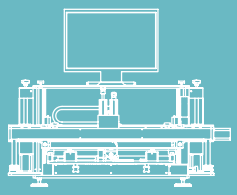
SPECIFICATION

SP1200



- Stencil Frame Size :
  350 x 350mm to 1480 x 500mm
- Printing Area :
  Max.1200mm x 400mm
- Board size :
  Max.1250mm x 410mm
- X- and Y-Axes range: +/- 13 mm
- Theta rotation: +/- 3.5°
- Underside Clearance: 25 mm
- Z-axis range: 0 - 35 mm
- Registration Repeatability: +/- 0.01 mm
- Overall dimensions (L x W x H):
  1719mm x 1006mm x 851mm
- Machine weight: 162kg

SP600 / SP600L



- Stencil Frame Size :
  350 x 350mm to 838 x 500mm (SP600)
  350 x 350mm to 838 x 736mm (SP600L)
- Printing Area :
  Max.600mm x 400mm (SP600)
  Max.600mm x 600mm (SP600L)
- Board size :
  Max.650mm x 410mm (SP600)
  Max.650mm x 650mm (SP600L)
- X- and Y-Axes range: +/- 13 mm
- Theta rotation: +/- 3.5°
- Underside Clearance: 25 mm
- Z-axis range: 0 - 35 mm
- Registration Repeatability: +/- 0.01 mm
- Overall dimensions (L x W x H):
  1064mm x 1006mm x 851mm (SP600)
  1100mm x 1100mm x 851mm (SP600L)
- Machine weight:
  108kg (SP600)
  135kg (SP600L)

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QUALITY BY CONVICTION

AP series

MODEL **AP430/AP1200/AP1500**

Automatic SMT Inline Printer

This is Autotronik

Quality by conviction. It is our motto - but you can profit by it world-wide. To be on the winning team you rely on a partner who combines quality, flexibility and innovation.

Autotronik is a global company with approximately 200 employees. We are your specialist for SMD stencil printers, pick and place machines and reflow ovens of low-to medium-Series and complete SMT production lines.
Our global commitment allows us to bring together the best components of all continents into an outstanding product.

www.autotronik.de

AUTOTRONIK
Fertigungssysteme für die Elektronikindustrie

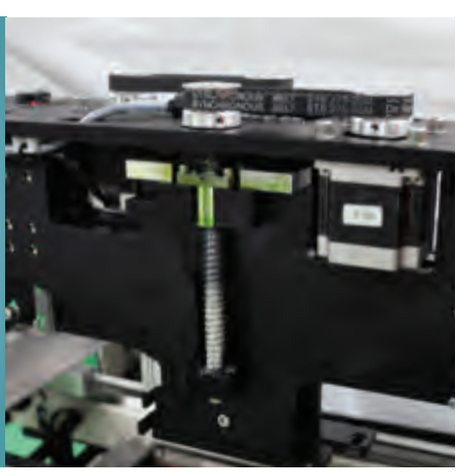
STRONG AND RIGID MECHANICAL DESIGN

Strong and rigid mechanical design

AP series with welded steel frame guaranteed a strong and rigid mechanical design. High quality printing is guaranteed by preloaded 4-point ball screws, which drives with an excellent parallel separation of stencil and PCB.

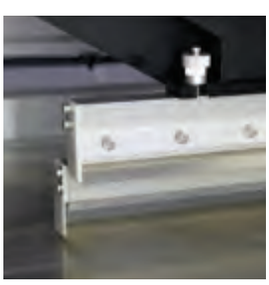
▲ 4 point ball screw drives excellent parallel separation of stencil and PCB

DUAL, INDEPENDENT PRINT HEADS INCREASE THROUGHPUT



Dual, independent print heads increase throughput

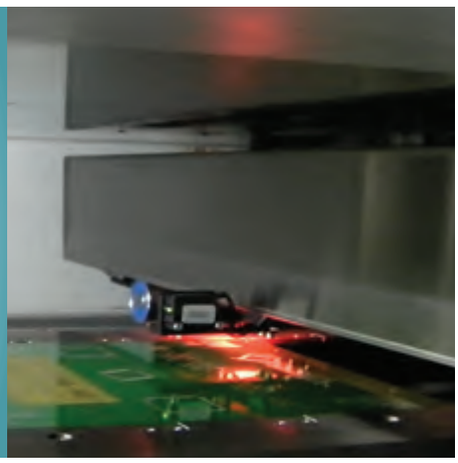
AP series two print heads are independently controlled by high-precision ball-screw drives with a programmable transport speed and closed loop stepped motor. Print pressure is uniformly and accurately controlled.



◀ AP series come standardly with a dual squeegee / dual stroke control system for the most economic use of solder paste.

◀ Self-leveling squeegees automatically adjust to the stencil surface to ensure perfect registration on every print.

ADVANCED VISION ALIGNMENT



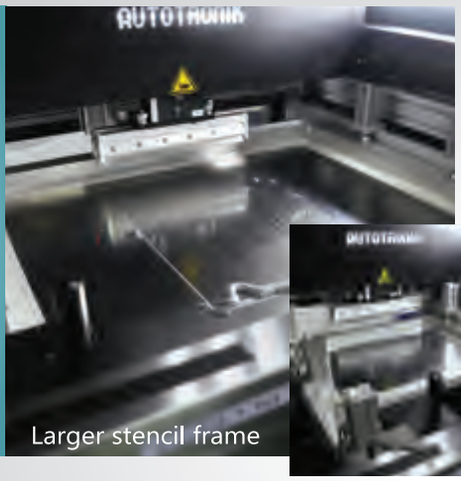
Advanced Easy-Align-Check (EAC)

AP series advanced imaging system eliminates the need for specialized fiducial marks—any pad, from 0.5 mm to 3 mm, can be used as a fidcuial mark. Multiple light source selection allows the vision system to work with a range of PCB substrate colors when learning fiducial reference points.

◀ Dual camera module allows upward and downward vision and facilitates the imaging speed

◀ Easy alignment checking by dual fidcuial marks

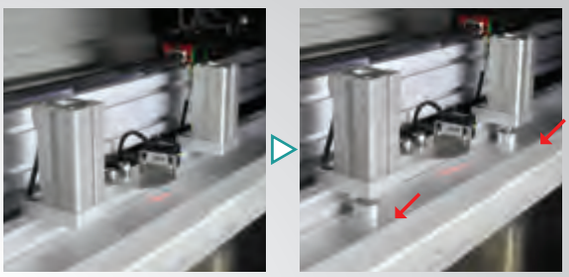
FAST, EASY JOB CHANGEOVER



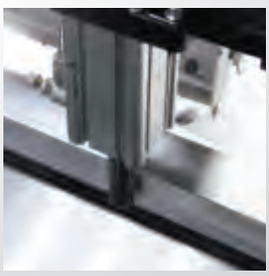
Smaller stencil frame

Fast, easy job changeover

Autotronik AP series Stencil printer makes job set up simple: input the stencil size, insert the stencil into the frame mounter until it reaches the stopper and the system software will handle the rest. Be ready for the next production assignment in a matter of seconds.

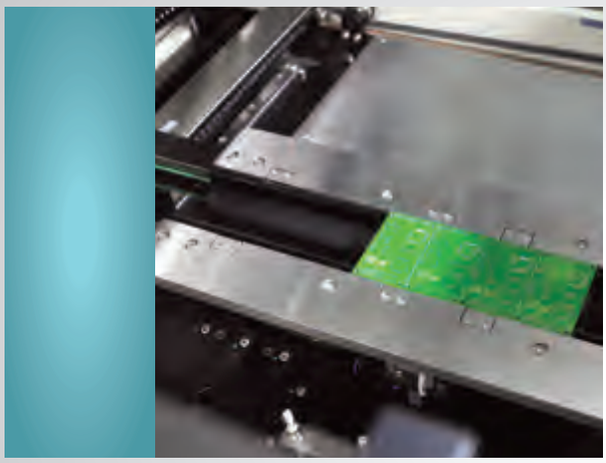


▲ Highly adaptable stencil frame clamping system



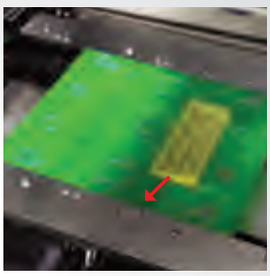
◀ Automatic adjustment for stencil frame in Y-axis

UNIQUE CLAMPING DEVICE FOR INLINE INTEGRATION



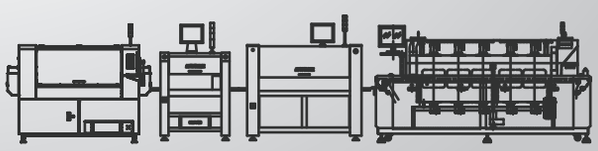
Unique clamping device for inline integration

The efficient single-stage PCB transport system is SMEMA-compatible to interface with the other production equipment on your line.



▲ The unique clamping device prevents flexible boards from bending. The vacuum table holding fixture ensures that PCBs lay flat. The table moves to align the PCB to the stencil.

Sample production line



AP stencil printer | Pick & Place machine | Reflow oven

INTEGRATED UNDERSTENCIL WIPING

Integrated understencil wiping

Automatic wet/dry/vacuum understencil cleaning is included with the AP series printer. The system can be programmed to clean the stencil using any combination of dry wipe, wipe with solvent ("wet wiping"), or wipe followed by vacuum to draw material out from the apertures.

◀ Connected with the vacuum pump to enhance the cleaning performance

◀ Flexible cleaning option (wet / dry / vacuum) is available for variety of real situation

FULLY PROGRAMMABLE

Fully programmable

Windows-based AP series is easy to program, allowing the printer to be up and running quickly after install. All parameters, including print speed (programmable from 20 to 120 mm/s), stroke length, squeegee pressure, etc., are fully programmable via the graphical user interface. During operation, all details, including process status, of the current job are displayed on screen. Multiple user permission levels prevents important machine parameters from being accidentally changed.

▲ Fiducial learning could be controlled by multiple parameter, such as shape, color, brightness, contract, etc. or completed automatically.

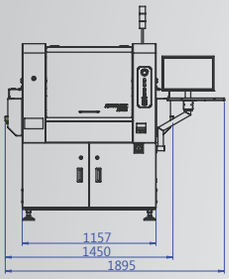
▲ **2D inspection** function allow the inspection of short circuit, deviation and coverage rate of the solder paste.

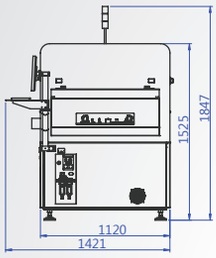
▲ Auto Production panel displays recent production status, camera image and related information.

▲ Conveyor control interface display multiple parameters control, such as in/out direction, PCB width, X/Y/Z position.

▲ Conveyor production control allows speed control, run option, SMEMA signal setting

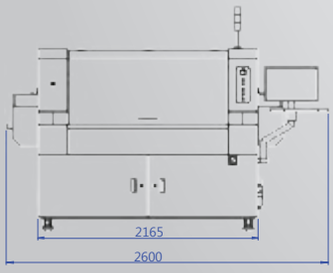
AP series
Automatic SMT Inline Printer

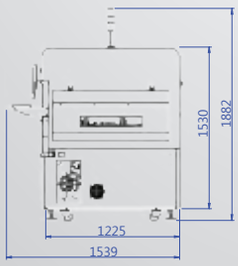




MODEL **AP430/AP430L/AP660**
Key Features

- Dual-camera vision for fast PCB orientation
- Print repeatability of ±0.008mm
- Dual squeegees with dual-stroke control for efficient solder paste use
- Flexible mounting for single- or double-sided boards
- Fast job setup and changes
- Excellent parallel separation of stencil and PCB with programmable speed control for well-defined prints
- Accepts stencils size from min. 470 x 300 mm (AP430), 520 x 300 mm (AP430L), 736 x 736 mm (AP660) to max. 736 x 736 mm, 900 x 900mm (AP660)
- Accommodates PCBs to 400 x 300 mm (AP430), 450 x 350 mm (AP430L), 600 x 600 mm (AP660)





MODEL **AP1200/AP1500**
Key Features

- Dual-camera vision for fast PCB orientation
- Print repeatability of ±0.01mm
- Dual squeegees with dual-stroke control for efficient solder paste use
- Flexible mounting for single- or double-sided boards
  Fast job setup and changes
- Excellent parallel separation of stencil and PCB with programmable speed control for well-defined prints
- Custom-designed clamping device holds long PCBs straight and suppresses the bending of flexible boards
- Vacuum table holding fixture keeps PCB flat for best printing result Automatic conveyor width adjustment for convenient board loading
- Accepts stencils size from min. 400 x 300 mm to max. 1600 x 300 mm (AP1200), 1900 x 300 mm (AP1500)
- Accommodates PCBs to 1200 x 300 mm (AP1200), 1500 x 300 mm (AP1500)

	AP430 / AP430 L / AP660	AP1200	AP1500
Printing Speed	10 to 120mm/s	10 to 120mm/s	10 to 120mm/s
Vision Alignment System	Automatic (any shape)	Automatic (any shape)	Automatic (any shape)
Stencil Frame Size (External Dimensions)	AP430) 470 x 300 mm to 736 x 736 mm AP430L) 520 x 300 mm to 736 x 736 mm AP660) 736 x 736 mm to 900 x 900 mm	400 x 300 mm to 1600 x 630 mm	400 x 300 mm to 1900 x 630 mm
Board Size	AP430) 50 x 50mm to 400 x 300mm AP430L) 50 x 50mm to 450 x 350mm AP660) 50 x 50mm to 600 x 600mm	100 x 50mm to 1200 x 300mm	100 x 50mm to 1500 x 300mm
Board Thickness	0.4 to 5 mm	0.4 to 5 mm	0.4 to 5 mm
Board Warpage	Max PCB 1% of diagonal line	Max PCB 1% of diagonal line	
Blade Type	Metal or plastic, 45° or 60°	Metal or plastic, 45° or 60°	Metal or plastic, 45° or 60°
XY Adjustment	±10mm	±10mm	±10mm
Radial Adjustment	±2°	±2°	±2°
Registration Repeatability	±0.008mm	±0.01mm	±0.01mm
Transport cycle time	15s (exclude printing & cleaning)	15s (exclude printing & cleaning)	15s (exclude printing & cleaning)
Transport Height	900±20mm	900±20mm	900±20mm
Transport Direction	Left-Right / Right - Left / Left - Left / Right - Right	Left-Right / Right - Left / Left - Left / Right - Right	Left-Right / Right - Left / Left - Left / Right - Right
PCB Fixation	Screw clamping system and vacuum	Screw clamping system and vacuum	Screw clamping system and vacuum
Print mode	Single or double side printing	Single or double side printing	Single or double side printing
CCD FOV	5 x 7 mm	5 x 7 mm	5 x 7 mm
Vision Fiducial	Standard fiducial and any pads, 0.5 to 3 mm	Standard fiducial and any pads, 0.5 to 3 mm	Standard fiducial and any pads, 0.5 to 3 mm
Air & Power Requirements	220VAC 50 - 60 Hz power, 75psi (5 bar) air	220VAC 50 - 60 Hz power, 75psi (5 bar) air	220VAC 50 - 60 Hz power, 75psi (5 bar) air
Operating system	Windows 7	Windows 7	Windows 7
Dimensions (L x W x H)	1450x1120x1525(AP430), 1900x1506x1550(AP660)	2300 x 1704 x 1878 mm	2600 x 1539 x 1883 mm
Weight	780 kg(AP430), 1000 kg(AP660)	1200 kg	1500 kg

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