

PIN INSERTION MACHINES

A WIDE RANGE OF PRODUCTION EQUIPMENT
FOR COMPLIANT PIN TECHNOLOGY



LINE OF PIN INSERTION MACHINES

Table of Contents

- Line of Pin Insertion Machines
 - P360 Modular High Speed Pin Insertion Machine
 - P550 Flexible High Speed Pin Insertion Machine
- Spare and Wear Parts
- Maintenance & Service
- Request for Quote including Questionnaire for Insertion Machines

Quality Management

- Fitting into Industry 4.0 trend of automation
- Customized for individual Manufacturing Execution Systems (MES) solutions
- Tool management to support optimum quality management
- Quality monitoring functions, like
 - Pin penetration sensing
 - Pin presence detection
 - Electrical continuity sensing
 - Force vs. distance monitoring
 - Vision system for accuracy
- Quality control data stored in the system for future traceability
- No loss in time, since going parallel to pin insertion

Flexibility for Production

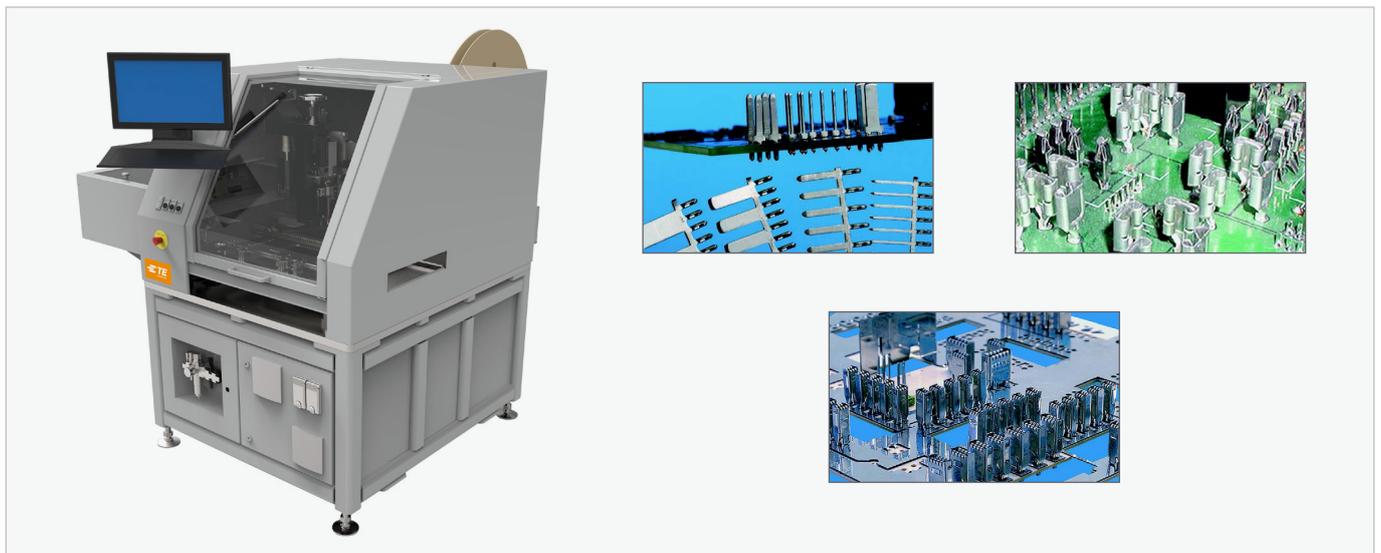
- Modular machine concept
- Modular tool concept
- Extremely wide range of conversion kits available
- Application of up to 6 different contacts on one machine
- Easy and quick change product tool pack

TE Connectivity (TE) insertion machines

- Flexible configuration of machines
- Full range of machine portfolio from manual repair and low volume systems up to highly configurable systems with all grades of automation and max performance of up to 15 pins per second
- Accessories enhancing flexibility and productivity
- Highest performance and quality
- World wide field service available to maximize uptime

Applied Cost Savings

- Rotary insertion finger applies products at different angles without decreasing insertion rate
- Product specific tooling
- Easy change from one product to another



LINE OF PIN INSERTION MACHINES

P360 Pin Insertion Machine

Machine

- Modular high speed insertion machine
- Available as stand alone unit or integrated into production line
- Fully automatic and flexible
- For high volume level production (up to 25 million insertions/shift and year)
- Ideal for broad variety of line configurations
- Single insertion head (up to 2 different contacts with twin feed)
- Double and triple pin insertion

Standard Features

- Servo driven base insertion head
- Conversion kits compatible with P100/P300/P550
- Freely programmable insertion angle (Rotation has no influence on insertion range)
- Easy changeover of the conversion kits within < 10 minutes
- Adjustable PCB support to provide production flexibility
- Lower support tool equipped with pin presence check
- Clinching in lower tooling possible
- Easy-to-use touch screen allowing simple programming

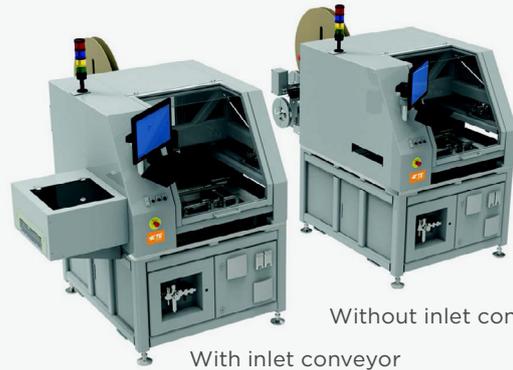
Options for P360

- 5 insertion cycles per second at a distance of 30mm from position to position (.2 in) pitch
- Fixed base tool
- Max number of base tools: 1
- Motor driven feed
- Twin feed tool
- Triple pin mode
- PCB transfer/in-line
- Servo anvil
- Servo anvil with rotation
- Vision system
- PCB thickness measurement
- Insertion force monitoring
- Force vs distance monitoring



Line Configurations

Stand alone



Modular line



Line Configurations

Extension of 3 Head Machine



Extension of 4 head Machine



Quality Management

- Fulfilling Industry 4.0 requirements
- Customized MES solutions
- Force monitoring and Force vs distance monitoring
- Pin presence detection
- Vision system for accuracy
- Tool management
- Machine capability study



Machine Performance of P360

- Insertion force max 900 N
- PCB size max: 420 x 360 mm (16.5 x 14.2 in)
- PCB size min: 80 x 80 mm (3.15 x 3.15 in)
- PCB size max with flip unit: 200 x 200 mm (7.85 x 7.85 in)
- Insertion area (P300 without flip unit): 410 x 340 mm (16.15 x 13.4 in)
- Camera inspection area with tool changer: 410 x 340 mm (16.15 x 13.4 in)
- Camera inspection area without tool changer: 330 mm x 340 mm (13 x 13.4 in)
- PCB thickness: 1 - 4 mm (.04 - .157 in)
- Max height of components/top side: 30 mm (1.2 in)
- Max height of components/bottom side: 25 mm (.985 in)
- Insertion cycles per second in a pitch of max 5.08 mm (.2 in): 4.5
- Insertion speed of pin: 0 - max 450 mm/sec (0 - 17.7 in/sec)
- Reel/outer diameter: < 800 mm (31.5 in)

Machine Data of P360

- Supply voltage: 400 V
- System frequency 50/60 Hz
- 3 Phases
- Power consumption during production: 2.8 kW
- Power consumption during standby: 700 W
- Air pressure: 500 - 800 kPa
- Air consumption: 100 liters/min
- Operating temperature: 10 - 35 °C
- Storage temperature: 10 - 50 °C
- Humidity: 10 - 60 % (non-condensing)
- Footprint: W x D x H: 240 x 190 x 220 mm (9.5 x 7.5 x 8.7 in)
- Sound pressure level (machines with light curtain): < 75 dB (A)
- Painted surfaces: RAL 7035

Products processed by P360

- Press-fit contacts
- Solder contacts
- Pins and tabs
- Sockets
- Spring contacts
- Continuous wire
- F-post

LINE OF PIN INSERTION MACHINES

P550 Pin Insertion Machine

Machine

- Flexible and fully automatic high speed operation machine for application of reeled components
- For integration into production line
- For high volume level production
 - Up to 4 insertion heads
 - Up to 6 different contacts with Twin Feed
- Double and triple pin insertion

Standard Features

- Servo driven base insertion head
- Conversion kits compatible with P100/P300/P360
- Freely programmable insertion angle (Rotation has no influence on insertion range)
- Easy changeover of the conversion kits within < 10 minutes
- Adjustable PCB support to provide production flexibility
- Lower support tool equipped with pin presence check
- Clinching in lower tooling possible
- Easy-to-use touch screen allowing simple programming

Quality Management

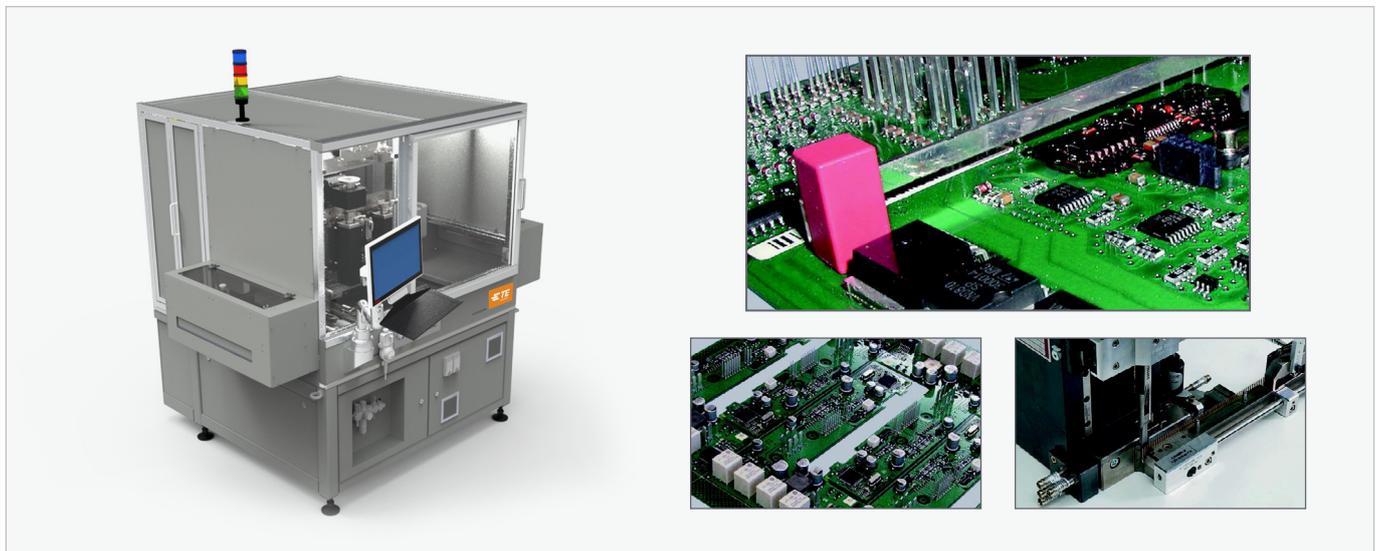
- Fulfilling Industry 4.0 requirements
- Customized MES solutions
- Force monitoring and Force vs distance monitoring
- Pin presence detection
- Vision system for accuracy
- Tool management
- Machine capability study

Component Capability

Reeled components. Can be press-fit or through-hole solder components such as pins, tabs and receptacles. Can apply products from TE Connectivity or other manufacturers. Processing of loose piece components and continuous wire is available upon request.

Physical Dimensions

- Width: 2.400 mm (102 in)
- Depth: 3.000 mm (118 in)
- Height: 2.200 mm (87 in)
- Weight: Approx. 2.200 kg (4410 lb)



Options for P550

- 4.5 insertion cycles per second at 5.08 mm pitch
- Tool changer
- Fixed base tool
- Max number of base tools: 4
- Motor driven feed
- Twin feed tool
- Triple pin mode
- PCB flip unit
- Simultaneous PCB transfer/in-line
- Servo anvil
- Servo anvil with rotation
- Anvil changer
- Vision system
- PCB thickness measurement
- Insertion force monitoring
- Force vs distance monitoring

Machine Performance of P550

- Insertion force max 900 N
- PCB size max: 420 x 360 mm (16.5 x 14.2 in)
- PCB size min: 80 x 80 mm (3.15 x 3.15 in)
- Insertion area (P300 without flip unit): 410 x 340 mm (16.15 x 13.4 in)
- Camera inspection area with tool changer: 410 x 340 mm (16.15 x 13.4 in)
- Camera inspection area without tool changer: 330 mm x 340 mm (13 x 13.4 in)
- PCB thickness: 1 - 4 mm (.04 - .157 in)
- Max height of components/top side: 30 mm (1.2 in)
- Max height of components/bottom side: 25 mm (.985 in)
- 5 insertion cycles per second at a distance of 30mm from position to position (.2 in) pitch
- Insertion speed of pin: 0 - max 500 mm/sec (0 - 17.7 in/sec)
- Reel/outer diameter: < 800 mm (31.5 in)

Machine Data of P550

- Supply voltage: 400 V
- System frequency 50/60 Hz
- 3 Phases
- Power consumption during production: 2.8 kW
- Power consumption during standby: 700 W
- Air pressure: 500 - 800 kPa
- Air consumption: 100 liters/min
- Operating temperature: 10 - 35 °C
- Storage temperature: 10 - 50 °C
- Humidity: 10 - 60 % (non-condensing)
- Footprint: W x D x H: 240 x 190 x 220 mm (9.5 x 7.5 x 8.7 in)
- Sound pressure level (machines with light curtain): < 75 dB (A)
- Painted surfaces: RAL 7035

Products processed by P550

- Press-fit contacts
- Solder contacts
- Pins and tabs
- Sockets
- Spring contacts
- Continuous wire
- F-post

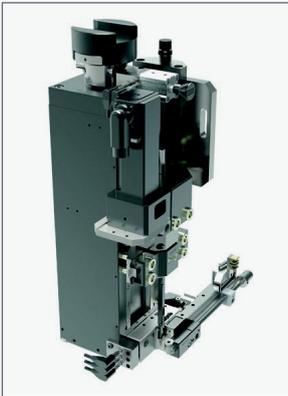
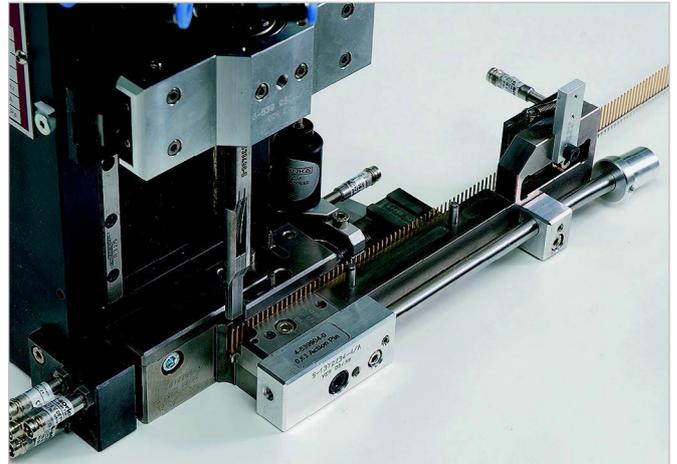
Tools designed for wide range of reeled components (TE and non-TE contacts.) Processing of loose piece components and continuous wire is also possible and available upon request.



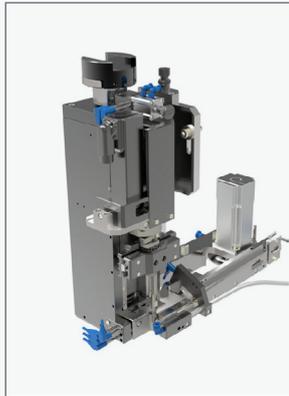
LINE OF PIN INSERTION MACHINES

Insertion Heads - Conversion Kits

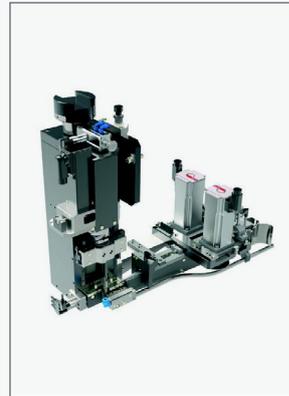
- Modular insertion tools for P100/P300/P350/P550
- Quick tooling change on the insertion head possible by concept of product specific conversion kits
- Conversion kit consisting of cutting unit and feeding mechanism
- Product specific insertion finger mounted onto base head
- Base tool provides the power for all movements of the conversion kit
- Simple coding system for automatic identification by the machine control
- Wide range of conversion kits for various TE Connectivity and non TE Connectivity products



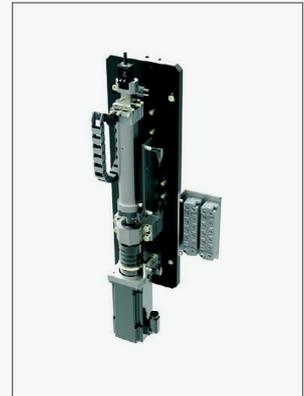
Conversion Kit Mechanical Feed



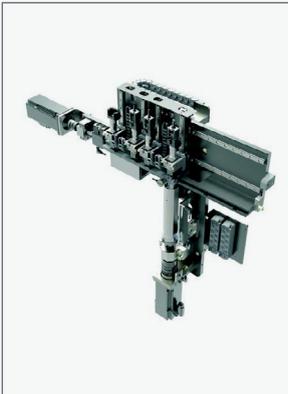
Conversion Kit Motor Feed



Conversion Kit Twin Feed for 2 Contacts



Servo Anvil



Servo Anvil with Anvil Changer



Servo Anvil with Rotation



Pneumatic Anvil

REQUEST FOR QUOTE

Details of requested Insertion Machines

Machine Specification	Requested (x)	Comments
Servo driven anvil with freely programmable rotation		
Anvil changer for 3(4) anvils		
Insertion force monitoring		
Force vs distance monitoring		
PCB thickness measuring (inlet)		
PCB thickness measuring (XY)		
Vision system		
PCB transfer belts		
PCB flip unit		
Cata collect		
PCB bar-code scan		
Reel scan		
Connection to MES system		
Production Data Acquisition		
i-Button for conversion kits		
Tool setup check		
Off-line programming tool		
Transformer (if 3 x 400 V supply not available at final location)		
Translation into other Language		
Warranty extension to 24 month		
Packaging		
Transport		
Training in Feuchtwangen		
Training on site in final location		
Installation on site		
Same side in-out PCB pallet handling (P360 & P550 only)		
Automatic first cut		
Reel changeover without process interruption (P360 only)		
Contact bending (90°)		

REQUEST FOR QUOTE

Questionnaire for Insertion Machines

To get a budgetary quote for an insertion machine P100/P300/P350/P360, please answer the following questions and fax the questionnaire to **TE Connectivity Europe +49(0)7964-201-6002 or - 6004** or email a copy to our **Tooling Assistance Center**, email address: **tac-emea@te.com**.

Company Name			
Customer Contact		Title	
Address			
City	State	ZIP Code	Country
Phone Number		Fax Number	
TE Customer Acct Number		E-Mail Address	
TE Representative			
Product to apply:		P/N:	
Product to apply:		P/N:	
Product to apply:		P/N:	
Size of PCB(s):		Please attach drawings , CAD models (stp files) of printed circuit boards and contacts	
Number of printed circuit boards per year or expected cycle time:			
Position of the PCB in the panel, positions of the contacts to be placed (x,y,rotation, height), clamping hole positions, position of PCB bar-code, position of thickness measuring, already existing components with their dimensions (might interfere with tools), flow direction of PCB.			
Height of components already on PCB: Application side:		[mm]	Solder side: [mm]
Number of products per PCB:		Number of PCBs per year:	

Maintenance and Service

Customer Service

- Error/Malfunction Diagnosis and Repair
- On site support
- Software upgrades and updates

Maintenance

- Contracts for regular maintenance on yearly basis
- Base insertion head maintenance and reconditioning
- Analysis and documentation of machine condition
- Frame contracts about maintenance on request

Training Service

- Training for operators
- Training for process and production engineering
- Training for maintenance personnel

Calibratio

- Calibration check of force meters by comparative measurement
- ESD Audit
- Machine capability studies based on standardized procedures

Upgrading Service

- Upgrade of operation system up to complete change of computer system
- Upgrade of waste disposal system
- Upgrade double pin feeder system
- Upgrade to simultaneous transport

Spare Parts Service

Field Service

TE Application Tooling has a broad network of field service engineers who cover almost all the countries worldwide. The engineers have all the knowledge to help you on a professional level with your equipment and may be able to improve the manufacturing efficiency. In addition to installation and repair service, we can assist with equipment selection, training, troubleshooting, service contracts and spare parts.

Field Service Main Categories

- Standard Service
- Express Service
- Installations
- Operating, Maintenance and Training
- Repair
- Contract Service
- Standard Training Courses

Technical questions or problems?

Contact the EMEA Field Service Hotline.

Opening Hours

Monday - Thursday 08:00 - 16:00

Friday 08 - 14:00

Phone: +49-6151-607-1518

E-Mail: FieldServiceEMEA@te.com

Please note that the service hotline staff speaks English or German.

Let's Connect

To learn more about the right TE tooling for your needs, call us at 717-810-2082 or email ToolingSales@te.com

TE Technical Support Center

USA:	1.800.522.6752	UK:	+44.0800.267666
Canada:	1.800.522.6752	France:	+33.1.34.20.8686
Mexico:	+52.55.11.06.0800	Netherlands:	+31.73.624.6999
Latin/S. America	+55.11.3404.6261	China:	+86.400.820.6015
Germany:	+49.6151.607.1999		

Connect With Us

We make it easy to connect with our experts and are ready to provide all the support you need. Visit te.com/support to chat with a Product Information Specialist.

te.com

TE, TE Connectivity, TE connectivity (logo), and EVERY CONNECTION COUNTS are trademarks owned or licensed by the TE Connectivity plc family of companies. Other product names, logos, and company names mentioned herein may be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

©2024 TE Connectivity. All Rights Reserved.

2338136-1 (Published) 11-24