

NEXT-GEN PIN INSERTION MACHINES

THE NEWEST PRODUCTION EQUIPMENT
FOR COMPLIANT PIN TECHNOLOGY



PRECISION TODAY. PERFORMANCE TOMORROW. PIN INSERTION SOLUTIONS THAT POWER PROGRESS.

Our best-in-class pin insertion machines anticipate tomorrow's challenges, driving efficiency, sustainability, and cost savings across your manufacturing process. With unmatched precision, they maximize throughput and minimize downtime, achieving higher productivity without compromising quality providing best contact perpendicularity on PCBs in market. Designed for reduced energy use and extended tool life, these machines lower operational costs while supporting environmental goals. With easy changeovers, built-in traceability, and a portfolio tailored to diverse industries, our machines adapt to evolving needs. Industry leaders are already experiencing significant cost reductions and efficiency gains—future-proof your operations with a pin insertion solution built to power growth.

TE REDEFINES PIN INSERTION MACHINERY

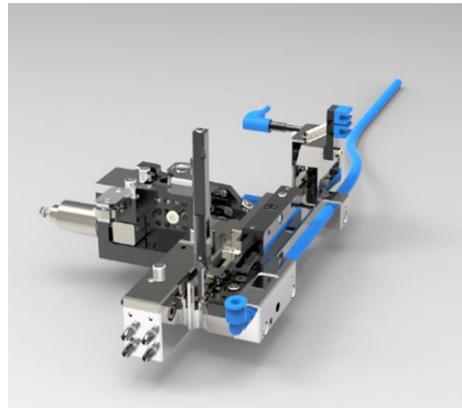
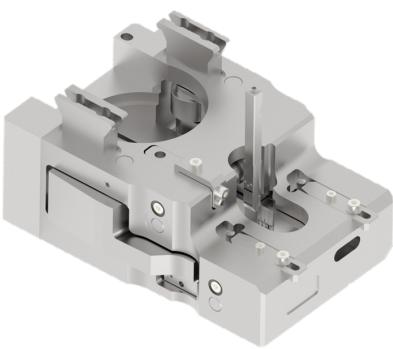
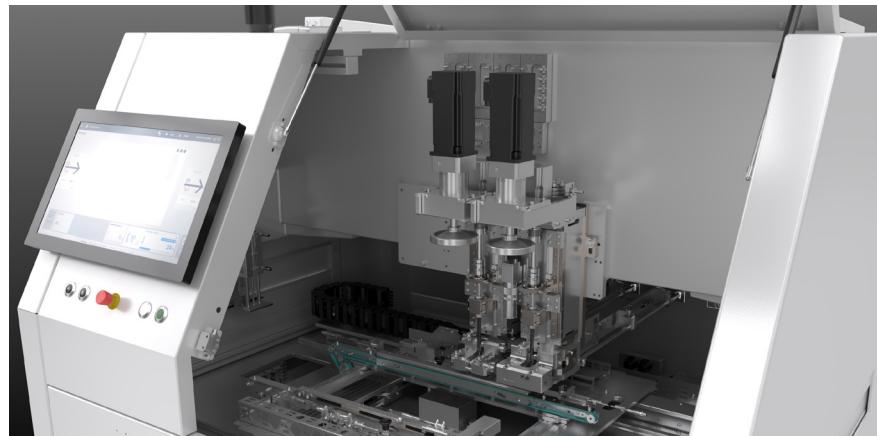
P8



P4/P4HI



P2



LINE OF PIN INSERTION MACHINES

Pin Insertion Machines

- Automatic pin insertion machine for the application of reeled pins, tabs, receptacle and similar products into PCBs and plastic housing.
- P8/P4: Flexible and fully automatic insertion machine
- P2: Flexible and semi-automatic insertion machine
- Available either as stand-alone unit or integrated into a production line
- Up to 4 insertion heads (up to 6 different contacts with Twin Feed)
- Double and Triple pin insertion
- P8: For high-volume level production
- P4/P4 HI: For medium-volume level production
- P2: For low-volume level production and laboratories

Standard Features

- Servo driven base insertion head
- Insertion tools with free programmable rotation
- Easy changeover of the conversion kits within < 10 minutes
- Adjustable PCB support to provide production flexibility
- True Pin Tip Position
- Pin Presence Detection
- 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 PCB error correction
- Tool management
- Machine capability study

Options

- Tools Setup Check
- Twin feed tool
- Double/Triple pin mode
- Anvil Pin Detection
- Servo Anvil with Rotation
- Vision System for PCB error correction
- PCB thickness measurement
- Pin Straightness Camera (2D)
- Traceability Reel and PCB Scan
- Force vs. distance monitoring
- Transformer to different voltage
- Remote Access (VPN Router)

Machine Performance

- Insertion force max 1000 N
- PCB size max: 420 mm x 360 mm (16.5 x 14 in)
- PCB max thickness: 4 mm (.19 in)
- Max height of components/top side: 25 mm (.985 in)
- Max height of components/bottom side: 25 mm (.985 in)
- Reel / outer diameter: 800 mm (31.5 in)
- P8 - Max insertion rate (1/s): 6.6
- P8 - Insertion speed of pin: 660 mm/s (26 mm/s)
- P4/P4 HI - Insertion rate 4 / sec with motorized feed
- P4/P4 HI - Insertion rate 3,3 / sec with mechanical feed

Machine Data

- Supply voltage: 3x400 V
- System frequency 50/60 Hz
- 3 Phases
- Air pressure: bar/PSI: 5-6 / 70-90
- Operating temperature: 15 – 30 °C
- Sound pressure level (average): < 75 dB

Physical Dimensions of P8

- Length: 1600 mm (63 in)
- Width: 2410 mm (95 in)
- Height: 2000 mm (78 in)
- Weight: Approx.: 2300 kg (5070 lb)

Physical Dimensions of P4/P4 HI

- Length: 2200 mm (86in)
- Width: 2410 mm (95 in)
- Height: 2000 mm (78 in)
- Weight: Approx.: 1800 kg (3968 lb)

Physical Dimensions of P2

- Length: 1560 mm (61 in)
- Width: 1200 mm (47 in)
- Height: 1700 mm (66 in)
- Weight: Approx.: 700 kg (1543 lb)

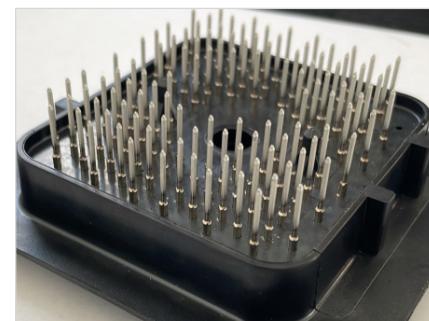
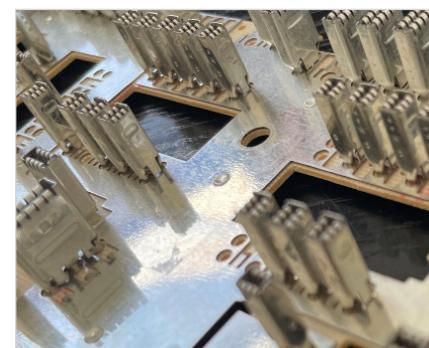
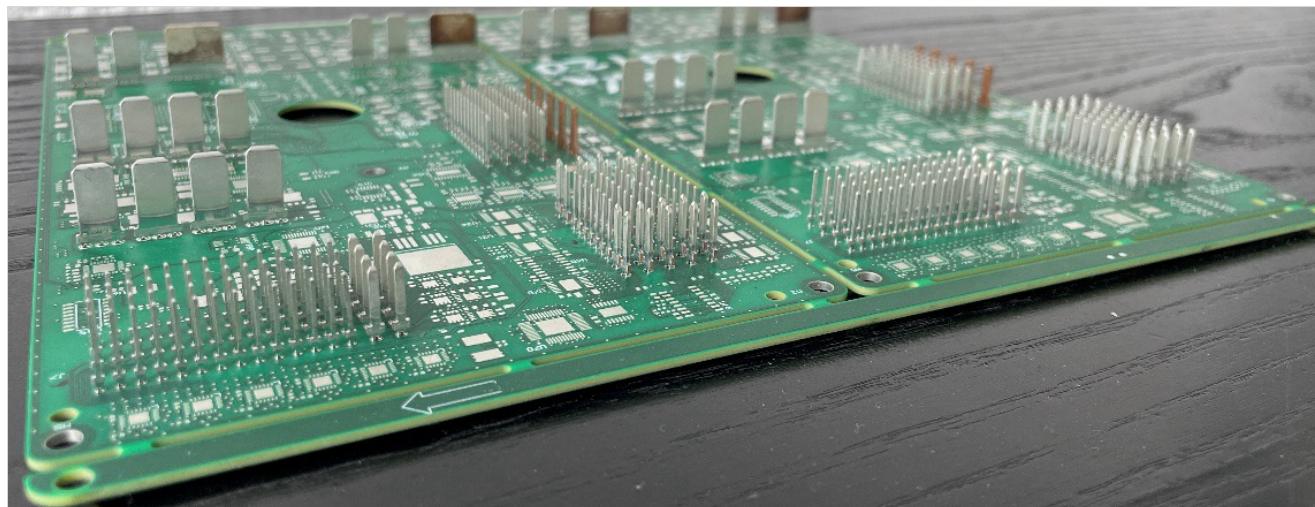
Contacts Processed

- Press-fit and Non- Press-fit
- Male & Female
- Continuous wire
- Fuse holders & Forks
- Board to Board contacts
- Power contacts
- Reeled & loose piece

Inserting Into

- PCBs
- Connector Stitching
- Plastic Housings
- Shunts
- Power Modules e.g. IGBTs

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.



Px Machine Specification						
Group Info	Parameter	Description /Units	P2	P4	P4 HI	P8
Dimensions Box size	Height	mm	2000	2000	2000	2000
Dimensions Box size	Length (X)	mm	1500	2200	2200	2000
Dimensions Box size	Width (Y)	mm	1500	2200	2200	2200
Dimensions Machine size	Height	mm	1700	2000	2000	2000
Dimensions Machine size	Length (X) [(*) with reel holder and reel]	mm	2000 (*)	2000	2000	1600
Dimensions Machine size	Width (Y, with reel holders)	mm	1200	2410	tbd. For different feeder types	2410
Dimensions Machine weight	incl. Box	kg	-700	1800	tbd. For different feeder types	2300
Machine	Color RAL7035	Standard/Optional	Standard	Standard	Standard	Standard
Machine	PCB Flow Upline/Downline Interface SMEMA	Standard/Optional	N/A	Standard	Standard	standard
Machine	PCB Handling	Manual/Conveyor	Manual	Conveyor	Conveyor	Conveyor
Machine Compliance	CE	Standard/Optional	Optional	Standard	Standard	Standard
Machine Compliance	EMC Electromagnetic Compatibility	Standard/Optional	Standard	Standard	Standard	Standard
Machine Compliance	ESD conformity	Standard/Optional	Standard	Standard	Standard	Standard
Machine Environment Conditions	Operating Temperature	°C	15-30	15-30	15-30	15-30
Machine Environment Conditions	Relative Humidity (non-condensing)	%	10 - 60	10 - 60	10 - 60	10 - 60
Machine HMI/PC/Control System	Configurable User Levels	-	3	3	3	3
Machine Performance Output	Max. Insertion Force (1)	N	900 (1)	1300 (1)	12kN	1300 (1)
Machine Performance Output	Max. Insertion Rate	1/s	1.5	"3,3 (Mech. Feed) 4 (Mot. Feed)"	"0,33 w/o Rotation 0,25 with Rotation"	6.6
Machine Performance Output	Technical Availability (VDI 3423 standard)	%	98%	98%	98%	99%

Px Machine Specification						
Group Info	Parameter	Description /Units	P2	P4	P4 HI	P8
Machine Power Supply	Height	bar/PSI	5-6 / 70-90	5-6 / 70-90	5-6 / 70-90	5-6 / 70-90
Machine Power Supply	Length (X)	Hz	50 - 60	50 - 60	50 - 60	50 - 60
Machine Power Supply	Width (Y)	V	1 x 230	3 x 400	3 x 400	3 x 400
Machine Setup Time	Height	min	<10	<10	N/A	<10
Options / Features	Length (X) [(*) with reel holder and reel]	-	Optional	Optional	Optional (one pin only)	Optional
Options / Features	Width (Y, with reel holders)	-	N/A	Optional	N/A	Optional
Options / Features	incl. Box	-	Optional	Optional	Optional	Standard
Options / Features	Color RAL7035		Optional	Optional	Optional	Optional
Options / Features	PCB Flow Upline/Downline Interface SMEMA		N/A	Optional	Optional	Optional
Options / Features	PCB Handling	-	Optional	Optional	N/A	Optional
Options / Features	CE	-	Optional	Optional	Optional	Optional
Options / Features	EMC Electromagnetic compatibility	-	Optional	Optional	N/A	Optional
Options / Features	ESD conformity	-	Optional	Optional	N/A	Optional
Options / Features	Operating Temperature	-	Optional	Optional	N/A	Optional
Options / Features (Tool)	Relative Humidity (non-condensing)	-	Optional	Optional	N/A	No
Options / Features (Tool)	Configurable User Levels	-	Optional	Standard	Optional	Standard
Options / Features (Tool)	Max. Insertion Force (1)	-	2	4	4	4
Options / Features (Tool)	Max. Insertion Rate	-	Single only	Single/Double	N/A	Single
Options / Features (Tool)	Technical Availability (VDI 3423 standard)	-	N/A	Optional	N/A	Optional
Product Definition PCB	Cmk	mm	35	35	60	25

Px Machine Specification						
Group Info	Parameter	Description /Units	P2	P4	P4 HI	P8
Product Definition PCB	PCB size X	mm	420	420	420	420
Product Definition PCB	PCB size y	mm	360	360	360	360
Product Definition PCB	PCB size y (with auto first cut feature)	mm	330	330	330	330
Product Definition PCB	Bigger PCB size	-	-/-	Available upon request	Available upon request	-/-
Service	Remote Trouble Shooting Support	-	Optional	Optional	Optional	Optional
Service	Warranty Optional	Months	24 or 36	24 or 36	25 or 36	24 or 36
Service	Warranty Standard	Months	12	12	13	12

Maintenance and Service

Customer Service

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

Maintenance

- Contracts for regular maintenance yearly
- 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

Calibration

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

Upgrading Service

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

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 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, contact us at

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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.

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2338136-1 (Published) 08-25