

Application Tooling Overview

Solutions for Your Most Demanding Applications





Worldwide Leadership in Wire and PCB Manufacturing Products

Leadership demands commitment and TE Connectivity is committed to meeting manufacturing needs worldwide with technology, products and systems, and service.

Application Tooling Division of TE Connectivity

TE Connectivity has long been recognized as a leader in providing the tools for wire harness and printed circuit manufacturing. There's a good reason. Our products are designed to meet and anticipate our customers' ever-changing requirements and built to the highest quality standards, for longest, most productive performance lifetimes.

Whatever your production volume and job mix, we can offer the tools to get it done. With a full range of tooling from hand tools to high volume, fully automated systems. TE is able to meet manufacturing demands worldwide. It's an ability that comes from our experience with manufacturers large and small, giving us a unique view of the trends and challenges in wire harness and PCB manufacturing. It all derives from our commitment to your manufacturing challenges, giving you the advantage in your marketplace.

This catalog is just a sampling of the kids of solutions that will make your job easier, faster, more productive and more profitable. Make tooling, assembly equipment, and service from TE part of your thinking, now and as you grow into the future.

TE Connectivity Service and Support

Few suppliers can match TE customer service and support. From helping you select the tooling for your requirements to maintenance and repair and analyzing your operation for maximum productivity, our worldwide capabilities and experience will make a real difference in your production and bottom line.

ProductionChek Service — In a consultative role, our field engineer will meet with you to determine your objectives and known production issues, then observe and record in detail each step in your operation. Based on this information, the engineer will be able to make recommendations for improvement, typically in people, process or equipment.

Tool Repair and Calibration — Our field engineers will set up, calibrate, and repair application tooling on site or recommend our factory-level service. Flexible plans, including options for premium access to parts and service, will keep your PCB assembly automation equipment running at peak performance.

For additional maintenance services, the TE Technical Support Center is dedicated to providing the answers you need, toll-free at 1-800-522-6752. Support contracts are available for preventive maintenance, training, emergency situations and other specific requirements.



For more information regarding the products and services shown in this brochure, visit our website at www.tooling.te.com

Need More Information?



TE Application Tooling Division Key Contacts

North America Key Contacts

Tooling Assistance Center - Call 1-800-722-1111

- Main source for application tooling questions & terminal to tool cross reference

Pricing - Call Customer Service at 1-800-526-5142 or 717-986-5536

Tool Repair and Calibration Services - Call 717-765-3607, toolrepair@te.com

- Ship to address: TE Connectivity, Tooling Service Center, 627 N. Grant St, Waynesboro, PA 17268-8643

Field Engineering Services- Contact Tooling Assistance at 1-800-722-1111

- Standard and Emergency Service (Tooling & equipment analysis & repairs)
- Equipment Installations & Training

European Key Contacts

Application Tooling Solutions website for Europe - http://tooling.te.com/europe

Product Information Centers:

Benelux - Tel: +31 (0) 73 6246 999, Fax: +31 (0) 73 6246 998

Germany - Tel: +49 (0) 6251 133 1999, Fax: +49 (0) 6251 133 1998

United Kingdom - Tel: +44 (0) 800 267 666, Fax: +44 (0) 208 420 8383

Repair / Calibration — Approved Service Centers

TE Tool Repair Amperestr 7-11 63225 Langen Germany Phone: +49 (0) 6103 709 1534 Fax: +49 (0) 6103 709 3076 gherzog@te.com

Asia/Pacific Key Contacts

Application Tooling Solutions website for China - http://tooling.te.com/china

Product Information Contacts:

Additional contacts online at http://tooling.te.com/country_contacts.asp

Shanghai - Tel: +86-21-24071588, Fax: +86-21-24071599 **Beijing** - Tel: +86-10-65693488, Fax: +86-10-65693208 **Hongkong** - Tel: +852-27351628, Fax: +852-27350243

Japan - Tel: +44-900-5027, Fax: +44-900-5037 **Korea** - Tel: +82-2-3415-4636, Fax: +82-2-3486-6873

Singapore - Tel: +65-64164567, Fax: +65-64821012 **Australia** - Tel: +61-2-95542612, Fax: +61-2-95543859

Need More Information?



Suitable for R & D, prototyping, field work or low volume production, these hands tools combine ease of use with reliability and precision.

PRO-CRIMPER III Hand Tools

PRO-CRIMPER III Hand Tools combine the versatility of general purpose, commercial tools with the reliability and features incorporated in our premium grade tools. They're ideally suited for R&D prototyping, networking applications, and commercial, industrial, and institutional maintenance work. **Request catalog 1773379-1 for more information.**

- · Angled head and optimized handle force, for easy operation in tight spaces.
- Releasable, adjustable ratchet, with emergency release, for a complete crimp cycle every time.
- PRO-CRIMPER tools are compatible with SDE die sets to allow the use of powered tool options, as your production grows.

CERTI-CRIMP Hand Tools

CERTI-CRIMP Hand Tools are premium, hand-operated tools for crimping a broad range of terminals, contacts and special wiring devices. All CERTI-CRIMP Hand Tools feature a reliable ratchet control that, when used properly, guarantees a complete crimp. These tools are well-suited for low production runs, prototype work and repairs. **Request catalog 65780 for more information.**

- · Manufactured using the highest quality materials
- · Adjustable insulation crimp feature avaliable on most models
- · Requires minimal user skill
- Powered options are available for all CERTI-CRIMP heads including pneumatic, electric and battery powered.

SDE SA Hand Tool

With a unique geometry and comfortable, easy-to-use handle design, this tool is optimized for easy accessibility in space constrained applications. The large crimp jaw arc minimizes "roll", particularly important when crimping open barrel terminals.

SDE DA Hand Tool

Specifically designed for closed barrel terminals with SDE compatibility, this tool incorporates the convenient operational features of other TE hand tools. The long handles give it excellent mechanical advantage, enhancing user comfort.



SDE DA Hand Tool

Need More Information?



Suitable for R & D, prototyping, field work or low volume production, these hands tools combine ease of use with reliability and precision.

Standard Die Envelope (SDE) Crimp Tooling

The SDE Tooling System allows use of the same dies across a range of application platforms. These crimping tools serve the purpose at the bench, in the lab, in production or in the field, without fitting dies for each tool required. **Request catalog 1773381-5 for more information.**

Choose from these SDE-Compatible tools:

PRO-CRIMPER III

- 6-26 Pneumatic Tool System
- BT3500 Battery-Hydraulic Tool
- SDE Benchtop Terminator

BT3500 Battery-Hydraulic Hand Tool

The BT3500 Hand Tool is designed to provide the ultimate in flexibility, modularity, and powered efficiency in a lightweight, ergonomic, powerful crimp unit. It is compatible with all SDE dies and CERTI-CRIMP II heads utilizing the appropriate adapters. **Request catalog 1773381-5 for more information.**

- Spring loaded terminal grip allows you to properly locate the terminal and before the final crimp, concentrate on the proper insertion of the wire
- Ram retract feature provides the capability to stop the crimp process and retract the ram
- Use as a portable bench top device positioned in the tool case, use with two shoulder strap options, a belt option or use the shoulder strap on the BT case.

SDE Electric Terminator

Offering an excellent price-to-performance ratio, the SDE Electric Benchtop Terminator incorporates features normally found on more expensive models. It is well suited for low- to medium-volume production and harness assembly. **Request catalog 1654714 for more information.**

- Compatible with over 100 SDE Dies, for maximum production versatility.
- Also compatible with CERTI-CRIMP II heads and large dies (with adapter).



Need More Information?



Maximize your productivity while minimizing your effort for crimping a broad range of terminals, by replacing your hand tools with pneumatic power.

6-26 Pneumatic Tool System

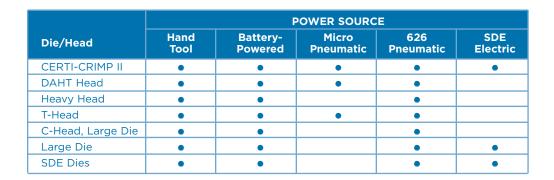
Replacing manual hand tools with the 626 Pneumatic Tool System maximizes productivity and minimizes effort. This system makes it easier to terminate wires from 26-6 AWG [0.12-13 mm²], while continuing to use most, if not all, existing TE-compatible crimp heads and die sets. **Request catalog 124208 for more information.**

- Minimize excessive handle force required by hand tools
- Flexible for hand- or foot-switch operations
- Rotating assembly reaches difficult termination locations

Micro-Pneumatic System

The Micro-Pneumatic System provides minimal weight and tool size with maximum production quality. Compatible with the small tool and adapter holders used in the 6-26 system, this unit and compatible heads terminate 26-14 AWG [012 - 2mm²] products. **Request catalog 124208 for more information.**

- Small size 5.75" [146.1mm]
- Lightweight 1.5 lb [0.7kg]





626 Pneumatic Tooling



Micro Pneumatic Tooling

Need More Information?



Achieve maximum crimping power for the largest wires with hydraulic tooling, featuring interchangeable U-dies or shank dies for force greater than 12 tons.

Hydraulic Crimp Tooling

The Hydraulic Crimp Tooling product line offers industry-standard 10,000 psi hydraulic compression crimp heads, pumps, and interchangeable U-dies for precision crimping at fixed or remote locations. **Request catalog 1654519 for more information.**

- U-dies for crimp force up to 12 tons [101 kN] and U-die stroke options of 25mm [1"] and 38mm [1.5"].
- Heads compatible with shank dies available for larger wires requiring crimp force greater than 12 tons [101 kN].
- Electro-hydraulic and manual-hydraulic pumps, producing optimal crimping at fixed locations.
- Battery-powered, rechargeable pump and tool options providing portability for remote crimping applications.

Pistol Grip Hand Tooling System for Insulation Displacement Connectors (IDC)

The Pistol Grip Hand Tooling System uses interchangeable terminating heads to apply a broad range of TE IDC products. The basic tool requires a pistol grip handle assembly and a terminating head; terminating force is provided by a manual-, pneumatic-, or electric-powered assembly. **Request catalog 296176 for more information.**

- · Power-assist and bench mount versions available
- No wire stripping needed, reducing applied cost
- Most terminating heads able to automatically index connectors to the next contact position or advance connectors by hand to the next position.



Hydraulic Tooling



Pistol Grip Tooling

Need More Information?



Intermediate Volume Wire Processing Products

Applicators and tooling from TE Connectivity can be your key to productive wire harness manufacturing. These applicators come from a long tradition of quality, reliability, and precision. Manufactured from high grade steel, and processed through state-of-the-art CNC equipment for tightest tolerances, our applicators are made for high repeatability and fast throughput.

New Applicator Series from TE

The lead and harness industry of today is more price and quality competitive than ever before. TE Applicators are designed specifically to meet these demands. We strive to keep our applicators competitively priced while providing the consistent, high-quality terminations you've come to expect from TE Connectivity.

Why a new TE Connectivity Applicator Design?

We standardized our applicator offerings to provide global design consistency and to offer you the ultimate flexibility with choices in feeding options.

The new applicator is designed so that all feed options are interchangeable with the common base applicator. Our pneumatic and mechanical feed options have been completely redesigned. They offer finer and more precise terminal positioning along with quicker adjustability while being much more user friendly. The interchangeability also makes it possible to upgrade to System III technology.

Advantages of the new applicator series:

- One applicator platform modular family design
 - Two styles with 3 feed options; Mechanical, Pneumatic and Servo
- Same wire crimper, insulation crimper and anvil used on both applicator styles
- Open architecture allows for design flexibility
- 60% tighter fit between the ram and housing for improved alignment and crimp consistency
- · Finer incremental crimp height adjustment
- Improved and simpler adjustments on all feed units

Request catalog 9-1773458-6 for more information.

Replacement Crimp Tooling

TE Replacement Tooling is made for longer replacement tool life, trouble-free operations, and high-yield crimping performance.

- Bell-mouth design on both ends of the crimp produces better crimp compliance and longer-lasting terminations
- Special alloy steel for maximum strength withstands shocks during crimping
- Precision finished surfaces, reducing friction and terminal sticking



Standard-Style Side-Feed Air Applicator



Standard-Style End-Feed Mechanical Applicator



Asian-Style Side-Feed Mechanical Applicator



Need More Information?



Intermediate Volume Wire Processing Products

We provide a range of equipment to meet most levels of production and efficiency. Our terminators have a long track record of dependable production and accept a variety of Heavy-Duty Mini Applicators.

AMP 3K/40 and AMP 5K/40 Terminators

The AMP 3K/40 and 5K/40 Terminators are powerful, economically-priced machines for terminating wire using reeled terminals and contacts. These terminators deliver the increased output and quality of a semiautomatic machine, while meeting specific production applications. **Request catalog 1654856 for more information.**

- 3,000 pound [13 kN] crimp force capacity in AMP-3K/40, capable of crimping 32-14 AWG [0.03-2 mm²] wire sizes.
- 5,000 pound [22 kN] crimp force capacity in AMP-5K/40, capable of crimping 32-10 AWG [0.03-6 mm²] wire sizes.

AMP-O-LECTRIC Model G Terminator

The Model G is the most advanced bench-top design in the AMP-O-LECTRIC Series. It features a reliable direct motor drive system and has modular construction to allow configuration for use either on the bench or in fully-automatic leadmaking equipment. **Request catalog 65828 for more information.**

 Precision adjustment for crimp height used with the optional Crimp Quality Monitor will maintain the tight tolerances required for high yields and productivity

Stripping Module for AMP 3K/40, AMP 5K/40 and Model G Terminators

The Stripping Module combined with the AMP 3K/40, AMP 3K/40 or AMP-O-LECTRIC Model G Terminators provides an economic and proficient method of stripping wire and crimping terminals on the same machine. The wires are stripped moments before crimping, meaning that there is virtually no chance of wire conductor damage during handling or storage. **Request catalog 1309085 for more information.**

Crimp Quality Monitor (CQM II)

The Crimp Quality Monitor II is an easy-to-use tool for measuring crimp height as part of a comprehensive quality management program. The CQM II utilizes a patented technology which is constantly measuring both ram position and force throughout the crimp cycle. Intuitive menus on a convenient touch screen give you complete control of your quality process. **Request catalog 82275 for more information.**



Need More Information?



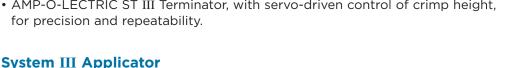
Based on the Alpha 433 leadmaker with easy-to-use TopWin software, the System III incorporates innovative, flexible subsystems, with choices to meet your specific requirements.

AMPOMATOR System III Leadmaker

The AMPOMATOR System III Termination System in response to the trend toward high mix/low volume harness manufacturing. Based on the familiar Alpha 433 leadmaker, with its easy-to-use TopWin®* software, this system incorporates innovative, flexible subsystems, with choices to meet your specific requirements. Request catalog 1654956-5 for more information.

The System III Leadmaker features:

- Revolutionary **System III Applicator**, that separates the crimp function from the feed, giving better control of the feed cycle for more dependable termination. Request catalog 1654956-8 for more information.
- · Crimping intelligence with the iButton, that transmits applicator crimping parameters to the terminator for confirmation of setup.
- AMP-O-LECTRIC ST III Terminator, with servo-driven control of crimp height, for precision and repeatability.



The System III Applicator helps you meet the evolving demands of high mix/low volume job environment with a separated crimp and feed for optimized operation of both, an iButton data module to store and transmit terminal and applicator information and a feed thats independent of ram stroke for more precise feeding requirements. Request catalog 1654956-8 for more information.

Precision Controller

Not ready to invest in a new leadmaker right now? The System III-FA Applicator combined with the Precision Controller can be installed in many of your leadmaker or terminators so you can take advantage of some of the production improvement technologies of the System III Leadmaker. Request catalog 1-1654956-0 for more information.



System III Leadmaker



System III Applicator



Precision Controller

Need More Information?



The automatic lead maker machine is one step above semi-automatic bench terminating equipment. However, this level of tooling presents the opportunity for significant cost savings in wire processing. In addition, lead makers are modular in design; thus, providing a common base to be used for a variety of wire applications, such as doubling wires, applying seals and tinning wire strains.

Alpha 355 Fully Automatic Crimping Machine

The Komax Alpha 355 Crimping Machine is designed for one and two-sided crimping and seal loading. It even handles double-crimp connections involving varying lengths and with the same wire without any problem. The dual channel cuthead allows for a large range of wire sizes without blade changes.

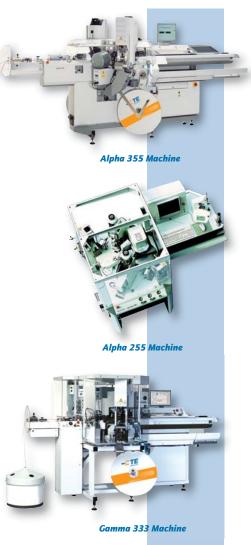
Request catalog 7-1773440-8 for more information.

Gamma 255 Fully Automatic Crimping Machine

This fully automatic crimping machine excels in simplicity of operation and flexibility. From crimp by crimp terminations to twisting, fluxing and tinning, the Gamma 255 Crimping Machine carries it out with compelling process control and minimal changeover times. In spite of its compactness, this device has fully integrated quality-monitoring and feed systems as part of its standard equipment. **Request catalog 8-1773440-9 for more information.**

Gamma 333 Fully Automatic Crimping Machine

The fully-automatic PC-controlled Gamma 333PC Lead Maker can be equipped with up to three processing stations enabling the crimping of both ends of the wire, double-crimp connections with three different contacts, single-ended seal applications, tinning or ink-jet marking. Features include ultrashort conversion times, easy-to-use graphic-based TopWin interface with multiple-language capability, crimp force analyzer with statistical analysis, seal monitoring, and integrated good/bad sorting. **Request catalog** 7-1773440-9 for more information.



Need More Information?



The new Cosmic series of strippers offer options including a model for jacket stripping and a precision micro-cable stripping machine. ** The Cosmic Series is sold and distributed only in North America.

Cosmic 32M Electric Wire Stripper **

The Cosmic 32M Stripper is the latest high-speed electric wire stripper. Achieving higher precision, more power, and a wider AWG range, all in quicker cycle time than its predecessor. Equipped with a digital stripping diameter display and a sensitive wire-tip touch sensor for easy operation.

Cosmic 42R Micro-Coaxial Cable Stripper **

The Cosmic 42R Stripper is our newest-developed cable stripper for ultra-micro coaxial cables. This ultra precision machine is made through state-of-the-art engineering and will be the perfect fit in your operation.

Cosmic 48R Coaxial Cable Stripper **

The Cosmic 48R Stripper is designed for quick cycle times whether stripping coaxial, multiconductor or standard wires. With these extremely versatile features, this will be the perfect machine for your operation.

Cosmic 60R Rotary-Jacket Stripper **

The Cosmic 60R Stripper is designed for jacket stripping of multi-conductor or single cable. Its patented rotary blade centralizer system can strip various insulation material cables without changing the blades.

Cosmic 927R and 927RX Micro-Cable Strippers **

The Cosmic 927R Stripper was designed to strip various insulation materials and micro-cable. The stripping diameter display can be set to within 0.1mm increments optimizing quality and practically eliminating conductor damage.

The Cosmic 927RX shares the features of the 927R but is recommended for hard to strip insulations.

Request catalog 1654956 for more Cosmic Stripper information.



Need More Information?



Power, performance and a new type of sensors are the key features of the fully automatic Kappa cutting and stripping machines. Simple, intuitive controls allow these machines to be used efficiently in daily operation.

Kappa 310

The Kappa 310 is an ultra-compact and reasonably priced high-speed machine designed for the reliable controlled processing of the finest wire sizes from 0.02mm² to 6mm². All process parameters can be saved along with applied pressure values.

Kappa 320

This machine processes wire sizes from 0.05 to 10mm². It features a powerful blade head and a number of options. From this machine type and higher, all fully automatic cutting and stripping machines can be controlled and networked via TopWin software to allow inkjet marking.

Kappa 321

The Kappa 321 features the patented swivel technique utilized in the wire drive axes. Two different processing positions can be approached with this feature. The machine is designed for a wide variety of special applications or the separation and processing of inside wires in multipole cables.

Kappa 330

This model is designed for processing cables with a cross section of up to 35mm², multi-core conductors with an outside diameter of up to 16mm or flat cables with a width of up to 40mm. The machine uses either a belt drive or various types of drive rollers depending on the customer's requirements.

Kappa 350

This powerhouse with its double blade design is built for processing round conductors with a cross section of up to $120m^2$ and a maximum outside diameter of up to 35mm. The powerful belt drive ensures gentle processing across the entire cross section range. The elimination of initial cut losses makes an especially big difference in this model for the top of the cross section range.

Request catalog 1654956 for more Kappa Stripper information.



Kappa 310 Stripper



Kappa 320 Stripper



Kappa 350 Stripper

Need More Information?



Assembly Automation Products

TE Connectivity Insertion Machine platforms combined with performance enhancing accessories provide the flexibility to meet a wide range of customer requirements in the manufacturing of printed circuit boards.

P100 Pin Insertion Machine

The semi-automatic P100 machine is the newest addition to the line of TE pin insertion systems. Designed and manufactured with a focus on mid-volume level production, the P100 machine provides a broad range of features at a very competitive price. *Note: The Accuserter 2 is not currently CE Approved.*

Request catalog 7-1773439-0 for more information.

P200 Semi-Automatic Bench Machine

The P200 is a stand-alone insertion machine targeted at low to medium volume production. Equipped with a rotary insertion finger, the P200 can apply products at up to 7 different angles without having to rotate or remove the board. **Request catalog 7-1773439-0 for more information.**

P300 Pin Insertion Machine

The P300 is a fully automatic insertion machine for processing reeled press-fit and thru-hole components into PCBs. Available in either a stand alone unit or integrated into a SMEMA compatible production line, the P300 can increase throughput by lowering cycle times and the scrap associated with human application errors. **Request catalog 7-1773439-0 for more information.**

P350 Pin Insertion Machine

The P350 is a fully automatic pin insertion machine capable of applying reeled products from TE or other manufacturers. With inline operation, an automatic tool changer and insertion rates up to 5 per second, it is focused at fully automatic high speed operation to maximize throughput while minimizing costly scrap. **Request catalog 7-1773439-0 for more information.**



P100 Pin Insertion Machine



P200 Semi-Automatic Bench Machine



P350 Pin Insertion Machine

Need More Information?



Assembly Automation Products

For over 15 years, the TE line of Servo Electric Presses has provided manufacturers with application tooling that takes advantage of compliant pin technology's solder free process for higher quality and lower applied cost.

CAP 6T Automatic Electric Press The CAP 6T Press provides the proven force control capabilities and quality assurance of the TE line in an automatic press. It provides greater control and simplified processing to help improve quality, lower rework and prevent rejects. This provides users with lower true applied cost and higher end profits. **Request catalog 1309329-3 for more information.**

CSM 5T Connector Seating Machine This machine provides end users with a faster, more reliable and less operator intensive method for processing compliant pin connectors. The heart of the CSM 5T is a CBP Servo Electric Press to allow for monitoring and control of force, distance and speed. . **Request catalog 7-1773439-1 for more information.**

CBP 5T Benchtop Electric Servo Press The CBP servo electric press provides the ability to process most compliant pin connector applications in a compact benchtop system. Board size capacity and press force range allow the system to handle a wide range of applications for low-to-medium production volume operations. **Request catalog 1309329-2 for more information.**

CMP 6T/12T Manual Electric Servo Press This manual Electric Servo Press, designed with a rigid 'H' frame to minimize deflection, is available in two models (6 ton and 12 ton). The operator can manually adjust the press head and/or the PCB between connector press cycles. Request catalog 1309329 for more information.

CSP 3T Shuttle Electric Press The CSP 3T Servo Electric Press incorporates an automatic shuttle system to the proven TE press line for fast and simple product presentation. Focused at the application of PCBs onto compliant pin housings, this system is provided with full control and monitoring of force, distance and speed for quality assurance of every product applied. **Request catalog 1309328-2 for more information.**



CAP 6T Automatic Electric Press



CBP 5T Benchtop Electric Servo Press



CSP 3T Shuttle Electric Press

Need More Information?

tooling.te.com/china tooling.te.com/europe

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Tyco Electronics Corp, Harrisburg, PA 17105, Phone: 717-564-0100; Fax 717-986-3316

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