



MANUAL & SEMI-AUTOMATIC TOOLING SOLUTIONS

A Quick Guide to TE Application Tooling Product Offerings



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CONTRACTOR HAND TOOLING

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INSERTION / EXTRACTION TOOLING

INSERTION / EXTRACTION TOOLING

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SDE BENCHTOP TOOLING

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BENCHTOP TOOLING

BENCHTOP TOOLING

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INTRODUCTION TO TOOLING SOLUTIONS

Choices at Any Production Level

We can offer performance continuity in tools, so customers have the same crimp functionality and quality whether they are developing, building, or servicing a product. In many cases they can use the same die set in tooling ranging from hand operation through battery, pneumatic, and even electrically powered tools.

MANUAL HAND TOOLS

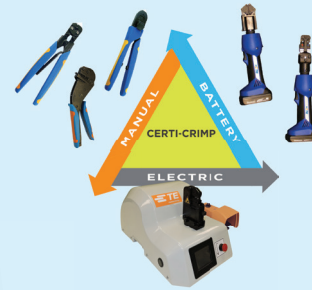
Certified

- Designed to exacting specifications
- Requires minimum skill
- Meets military, UL and CSA requirements as applicable



Heading Text

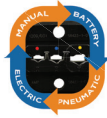
- Flexible design allows crimp heads to be used in select manual, battery and electric benchtop units.



MANUAL HAND TOOLS

Commercial

- Flexible standard die envelope design
- Adjustable ratchet control system
- Ergonomic design



Standard Die Envelope

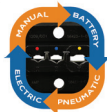
- Over 100 interchangeable die sets
- By removing just 2 screws you can easily swap dies between your SDE compatible manual, battery, pneumatic and electric TE tools.



POWERED ASSIST HAND TOOLS

Battery

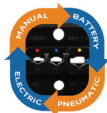
- Lithium-Ion
- Ergonomic design
- Short charge times
- Completely portable
- 2,600 - 24,000 lb crimp force capability
- Large range of die options



POWERED ASSIST HAND TOOLS

626 Pneumatic

- Lightweight designs
- Hand or foot operated
- Ratcheted control
- Rotating heads
- Accepts SDE die sets



Hydraulic

- 8,200 & 10,000 psi
- Shank & U-dies
- Heads, pumps & hoses
- Among industry leaders in reliability



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INTRODUCTION TO TOOLING SOLUTIONS

Choices at Any Production Level

KITS

Insertion & Extraction

- Compatible with most manufacturers' wiring harnesses
- Tool kits & individual tools available



Hand Tools

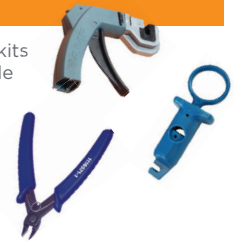
- Customizable kits
- Includes sample terminals
- Cost effective
- Portable



SERVICE TOOLING

Contractor

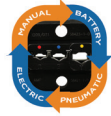
- Customizable kits
- Includes sample terminals
- Cost effective
- Portable



BENCH EQUIPMENT

AT-300

- Compatible with over 100 SDE die sets
- Small footprint
- Foot actuated



AT-SC MK II Pneumatic

- Straight action machine
- Pneumatic crimping
- Safe, ergonomic design



AT-66 Hydraulic

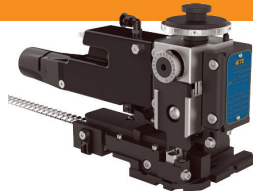
- Programmable
- Adaptive crimp force
- Fast changeover times
- Compact design



APPLICATORS

OCEAN

- Mechanical, pneumatic and servo feed
- One applicator platform - modular family design
- Fine adjustment control



SPARE TOOLING

Replacement Tooling

- Precision ground, chrome plated
- Engineered for compliance to meet OEM specifications
- UL Listed
- CSA certified



TERMINATORS

AMP 3K and 5K

- Small footprint
- Open architecture for flexibility
- Fast, quiet design
- Optional stripping module available



G II

- Improved lighting and safety features
- Open architecture for design flexibility
- Fast, quiet design
- Optional stripping module available



APT 5A

- Fast, efficient system, with no need to strip mag-wire insulation
- CQM II controlled
- CE approved
- Connects up to three wires in one splice



HEAT SHRINK

RBK ILS MK4

- Semi-automatic unit
- Long life heating elements
- Compliant with latest CE and RoHs requirements



Model 17 Belt Heater

- Closed-loop temperature and belt speed control
- Suitable for continuous running with minimum maintenance and downtime



LEADMAKERS

UNIQA-PRO

- Single ended wire processor
- 20% smaller footprint than traditional lead makers
- 4x faster thruput than standard wire prep and benchtop units



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INTRODUCTION TO TOOLING SOLUTIONS

TE Connectivity. The Leader in Crimp Quality.

Anyone can make a tool to crimp terminals onto a wire. But not everyone can manufacture a tool to crimp the terminals properly. Crimp termination of wires isn't easy. At least, doing it right isn't easy. We know. We started it. TE Connectivity developed the technology of hand crimping over 75 years ago.

Why is this experience important to you? As the pioneer in crimping technology our highly trained engineers have studied how the forces of crimping can affect how a tool works, whether it meets specifications, and even whether it reaches its expected service life. As a result we have led the way, with tool frames and die sets that maintain their geometry and produce consistent crimps time after time.

There are differences that aren't readily apparent: the materials, the manufacturing processes, the designs to diverse requirements for different applications. These are all part of what we've known and practiced for years.

The Secret to a Successful Crimp

Matching the Terminal to the Tooling - Among the many factors that are critical in producing a quality crimp, matching the terminal to the tooling is crucial.

Unlike inferior tooling options, TE offers engineered solutions that are designed to match the exact crimp geometry of the terminal to be applied on the wire. To create a proper crimp you need to follow these important steps:

Associated Selling = Terminals + Tooling



Wire Selection - AWG and wire insulation thickness varies from wire to wire. Just because two wires are listed at the same AWG, it doesn't mean their insulation thickness is the same. If you don't take into account both factors the copper or aluminum strands may not fit in the wire barrel correctly, or the terminal's insulation support may be too large or small for the wire strand.

Insulation Thickness



AWG

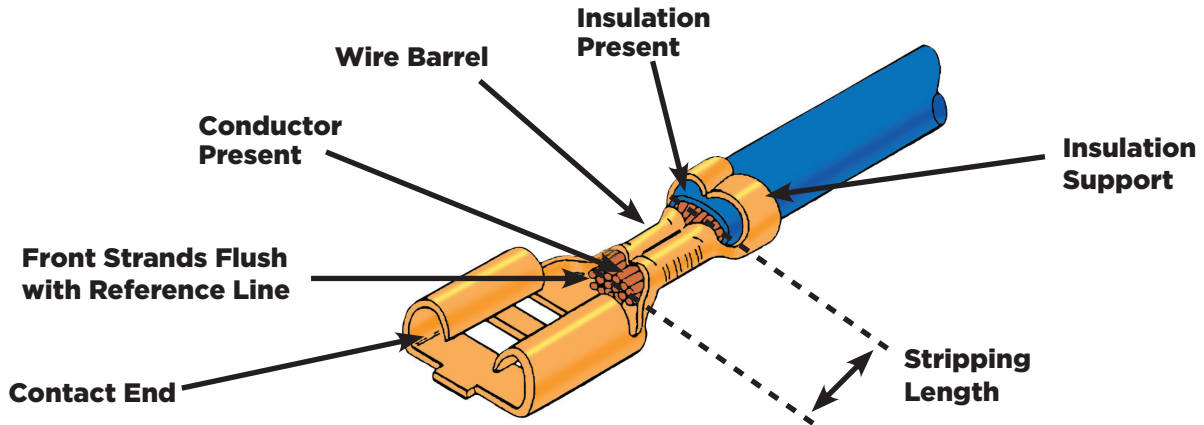
www.tooling.te.com

INTRODUCTION TO TOOLING SOLUTIONS

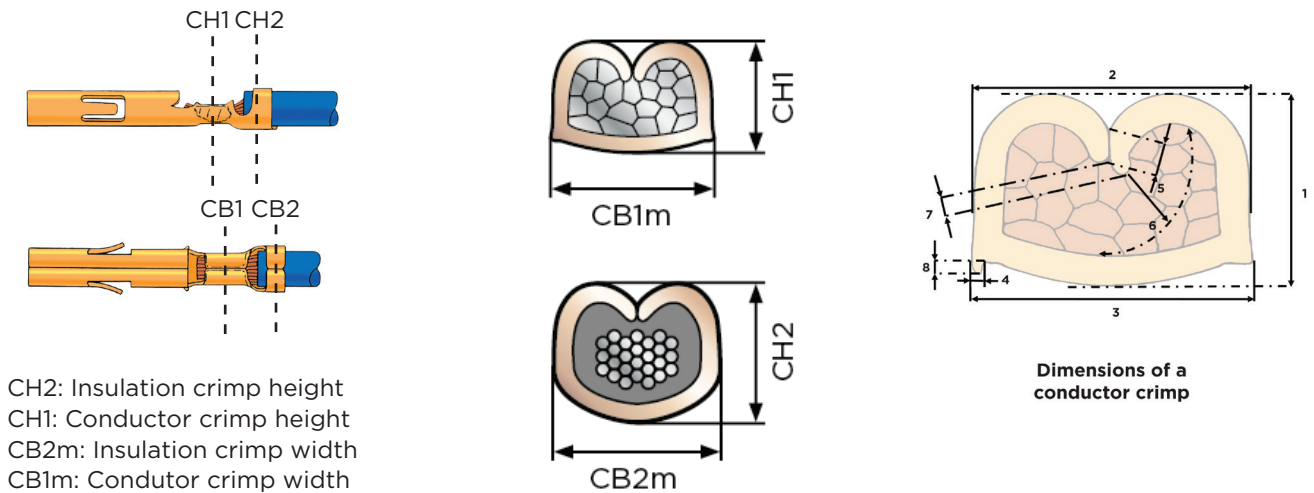
The Secret to a Successful Crimp



Wire Prep - In order to properly place a wire in a terminal, the wire insulation must first be stripped to the proper length based on the terminal specifications. If the insulation is cut too short or too long, the wire will not be seated properly into the wire barrel, causing terminal separations or shorting.



Crimp Specifications - To ensure a proper crimp for a TE connector or terminal you should be using a TE Connectivity tooling solution that is specifically engineered to the proper Crimp Height, Width, and Crimp Geometry of the selected terminal or contact.



Selecting the Right Tool Based on Production Level - Are you in the prototype phase of your project? Will you soon be ramping up production? Do your tools need to be mobile, or is a bench top unit more applicable? Are you producing 100's - 1,000's of crimps per day?

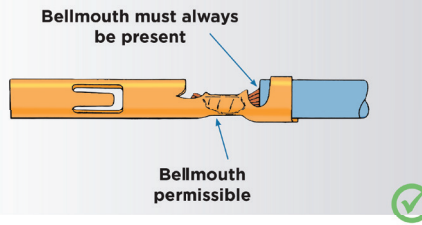
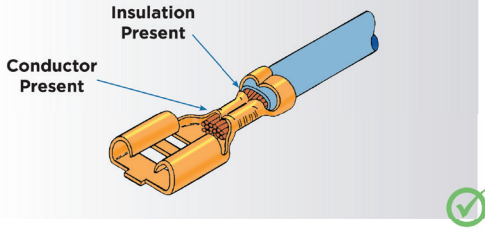
Once you know the answers to these questions, selecting the right TE Connectivity tool to meet your needs is simple. (Please refer to pages 4-5 for tooling options.)

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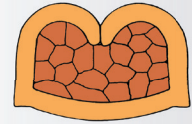
CRIMP QUALITY GUIDELINES

Good Crimp Quality

WIRE CRIMP



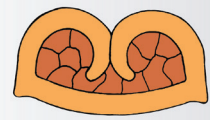
Correct selection of wire, terminal and applicator



Crimp barrel is closed, legs support each other. All strands are equally distributed and deformed.

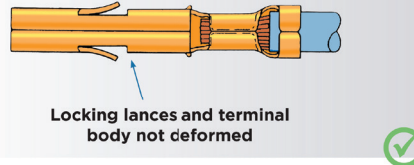
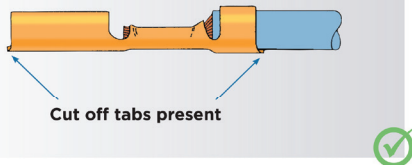
✓

Correct selection of wire, terminal and applicator



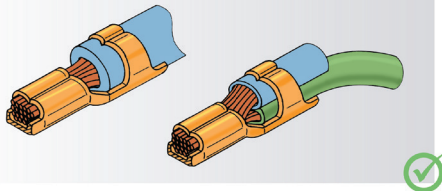
Sufficient gap between legs and bottom of crimp. All strands are equally distributed and deformed.

✓

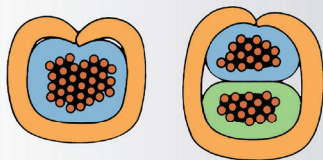


INSULATION CRIMP 'F'

Correct selection of wire, terminal and applicator

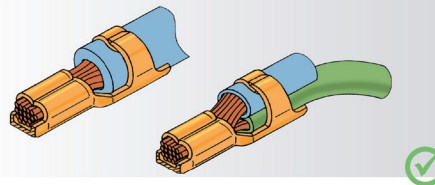


Insulation is securely held. Crimp barrel closed.

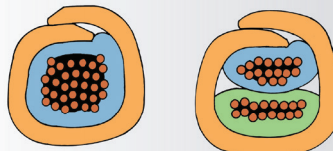


INSULATION CRIMP 'OVERLAP'

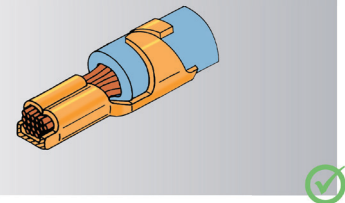
For double wire applications with different size wires always place wire with smallest outer diameter in the bottom



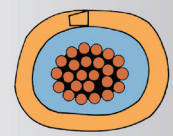
Insulation is securely held. Legs overlap.



INSULATION CRIMP 'WRAP OVER'



Insulation is securely held. Legs must pass each other.



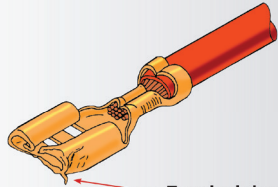
Correct



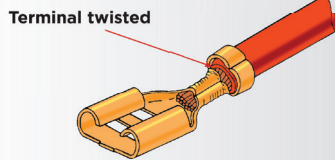
Incorrect

Incorrect Crimp Quality

WIRE CRIMP



Terminal damaged



Terminal twisted

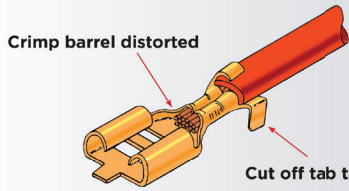
Crimp height too tight



Insulation inside the wire crimp

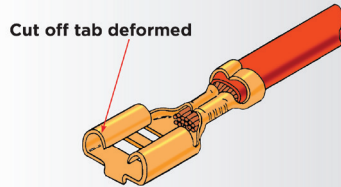


Conductor brush protruding into terminal body



Crimp barrel distorted

Cut off tab too long



Cut off tab deformed

Bellmouth on wrong end



Terminal bend

Incorrect applicator adjustment

Asymmetric crimp

Unacceptable formation excessive flash and/or cracks



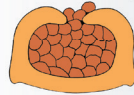
Terminal feed incorrectly adjusted



Anvil and crimper not aligned or worn

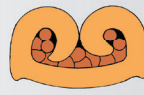
Incorrect terminal / wire selection

Wire size too large



Crimp barrel does not close

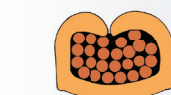
Wire size too small



Legs too close to bottom of crimp. Insufficient deformation of strands, showing voids.

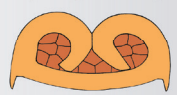
Incorrect applicator adjustment

Crimp height too loose



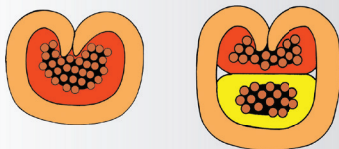
Insufficient deformation, showing voids

Crimp height too tight



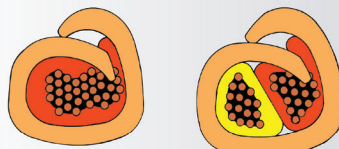
Flash at underside of crimp, due to over crimping

INSULATION CRIMP 'F'



Insulation is pierced and could damage conductor

INSULATION CRIMP 'OVERLAP'



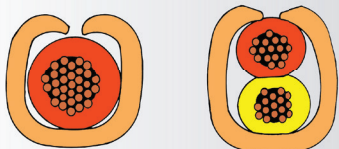
Insulation material is pierced

INSULATION CRIMP 'WRAP OVER'

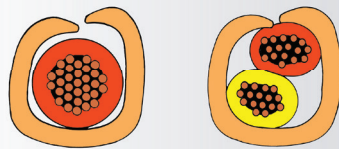


Insulation is not securely held

Insulation is over crimped



Insulation legs are not closed



Insulation is not securely held. Legs do not overlap.

Training & Service

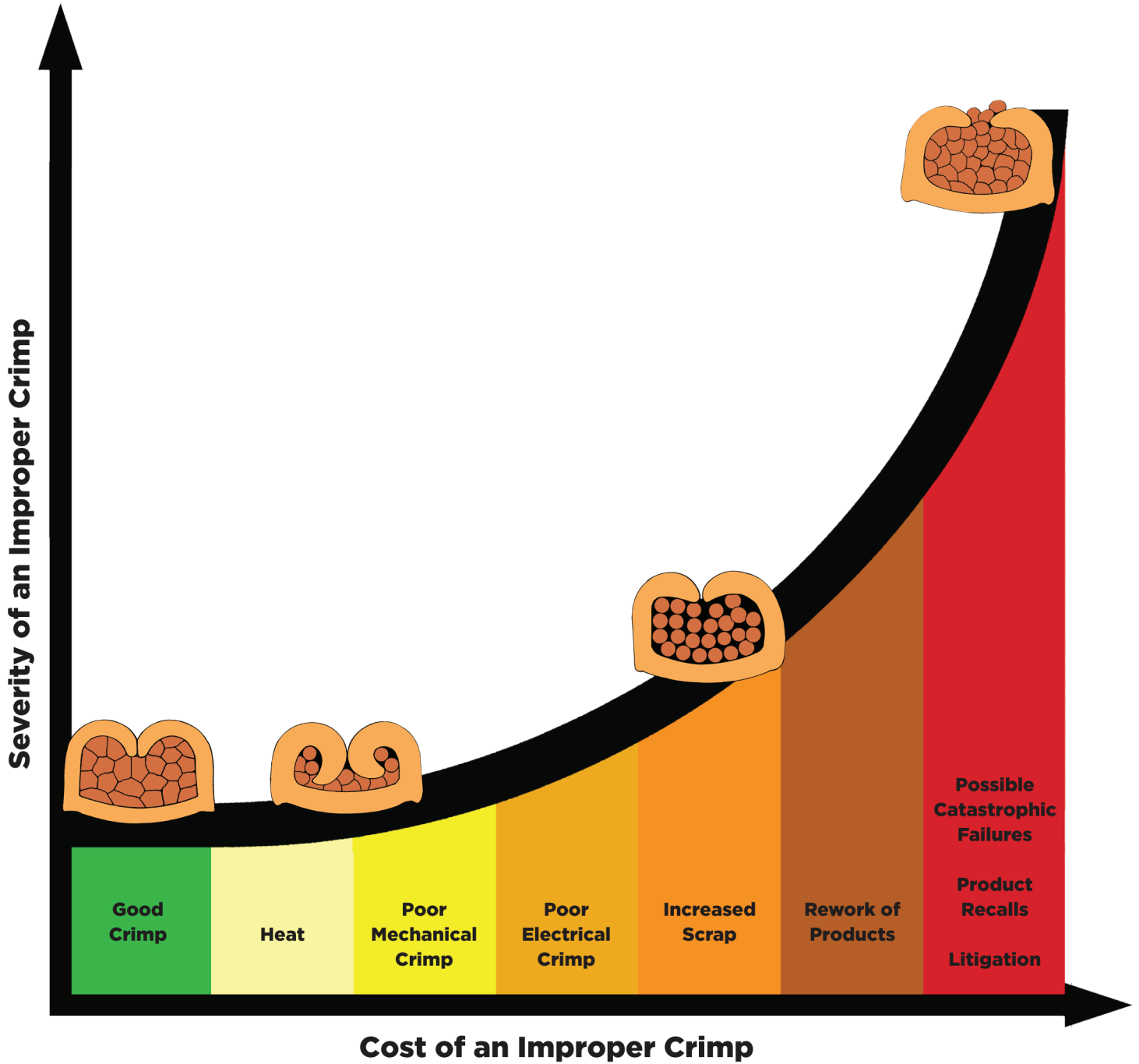
Please contact our service hotline for information.
Tel: 1.800.722.1111

The above images of crimp failures are only shown as examples and are by no means exhaustive of all possible failures. In every case, relevant product and application specification take precedence.

INTRODUCTION TO TOOLING SOLUTIONS

Dangers of Improperly Crimped Terminals

From wasted time & scrap all the way up to product recalls and possible litigation, the cost of poor crimp quality can be expensive. If customers are not using the proper crimp tooling, ie. incorrectly matching the terminal to the crimp tooling, the end results can be dramatic.



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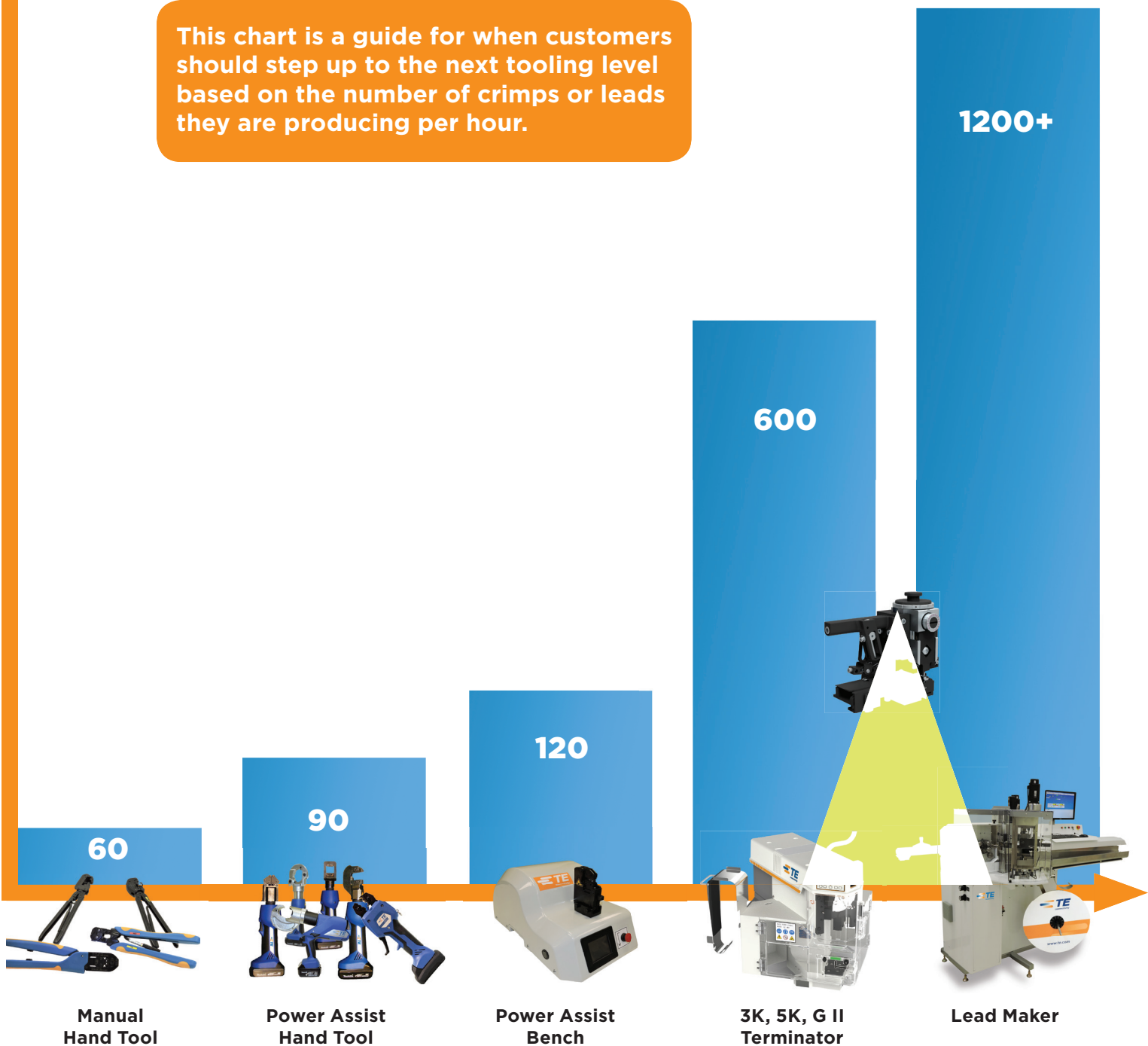
INTRODUCTION TO TOOLING SOLUTIONS

The Power of Automation

TE Connectivity offers a complete product offering of termination solutions that begin with hand tools and continues to benchtop terminators and fully automatic wire processing machines.

As your production demands increase over time, you can gain greater capability by incorporating various types of terminal crimping methods into your manufacturing process.

This chart is a guide for when customers should step up to the next tooling level based on the number of crimps or leads they are producing per hour.



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INTRODUCTION TO TOOLING SOLUTIONS

What You Need to Know About TE Hand Tools

Tool Grade

Tool grade is a prime consideration when choosing the appropriate tool for an application. Our hand tools are categorized into three levels: Service, Commercial and Certified. The higher the grade of the tool, the less operator skill is required to repeatedly meet the specified parameters of the crimp.

Certified (CERTI-CRIMP Tool)

Certified tools include the appropriate crimp die configuration, integral locating, and integral straightening features that permit terminals or contacts crimped in these tools to meet all feature requirements in applicable TEC application (114-) specifications. Most certified tools include an adjustable insulation crimp height feature and the CERTI-CRIMP ratcheting feature, set at the factory, which prevents the ratchet from releasing until the wire crimp jaws bottom within .001. This helps provide consistent repeatability of the crimp. Certified hand tools require the least amount of user dexterity.

Commercial (PRO-CRIMPER III Tool)

Commercial die assemblies are designed to meet the wire crimp height requirements per the applicable TEC application (114-) specifications. Other feature requirements may or may not be met. Commercial handle assemblies permit the interchange of die assemblies and an adjustable ratcheting feature. Users are responsible for adjusting the ratchet to obtain the correct crimp height. Commercial tools require a greater amount of user dexterity than certified crimp tools.

Service

Service tools are generally single thickness, stamped tools. They are not intended to meet any specifications and require a higher level of user dexterity to obtain acceptable results.



Tool Type

Choosing a tool type may be driven by several factors: simply by type preference, or by the application needs itself, i.e. heavy duty crimp, industry specification requirements, etc. The overall wire range is also a key consideration when choosing the appropriate tool for an application. Often there will be several tools referenced to the same product which have different wire ranges.

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INTRODUCTION TO TOOLING SOLUTIONS

The Tools to Choose Your Tooling

Once you've identified the wire and the terminal you need to crimp, there's a convenient selection process on our web site, **tooling.te.com**. Just type the terminal part number in the search box at the upper right, click on search, and you're on your way.

If you don't find the tooling you need for your application, we usually can make it to your specification. This capability is made possible by our experience and our engineering and manufacturing resources.

Discover our full range of tooling and equipment at www.tooling.te.com.

MAXIMIZE UPTIME
TE has a long legacy of pioneering wire harness production and printed circuit board processing. From crimping a terminal onto a wire or pressing a connector onto a board, TE offers a full range of equipment optimized for your production needs and budget. Our equipment and services are designed to maximize production uptime, extend tooling life, and minimize manufacturing waste.

CRIMP THEORY FUNDAMENTALS
Video: Increase your knowledge of electrical terminations to improve your crimps.

APPLICATION TOOLING SEARCH
Looking for the right Hand Tool, Applicator, or Applicator Spare Part? Try our easy-to-use Hand Tool search app, Applicator Cross Reference Tool, or Applicator Spare Parts search app.

SERVICE AND REPAIR
Our well-established field service organization is located around the globe for timely response to customer service and repair needs.

3 Easy Steps

- 1. Determine the terminal.**
- 2. Search for tooling.** Click on the tooling search link.
- 3. Double check all your options:** hand tools, applicators, spare tooling, bench equipment, etc.

www.tooling.te.com

CERTIFIED CRIMP: POWER OF AUTOMATION

Certified CERTI-CRIMP Hand Tools

FAST FACTS

- Designed to exacting specifications
- Ratchet control provides complete crimping cycle
- For most military, UL and CSA applications
- Manufactured using the highest quality materials
- Requires minimum skill
- Repairable
- Calibrated; recalibration recommended every 6 months or 5,000 cycles
- Many SAHT and DAHT crimping heads and many die sets can be adapted for use with the 626 pneumatic tool system (Request catalog # 124208)
- Produced under a quality management system certified to ISO 9001.



If you know the terminal - this tool will help you find the die set.

Go to **www.tooling.te.com** and look for the magnifying glass.



www.tooling.te.com

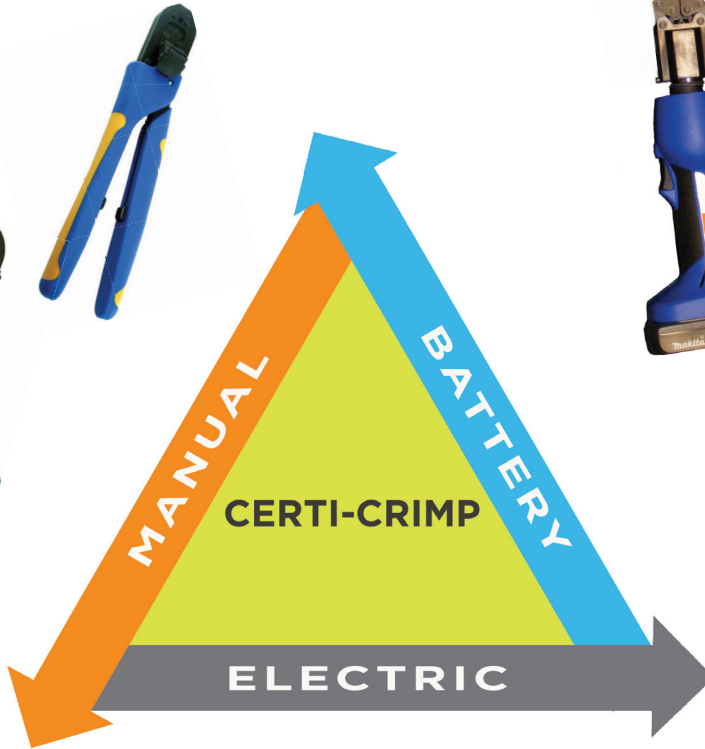
CERTIFIED CRIMP: POWER OF AUTOMATION

Certified CERTI-CRIMP Hand Tools

Premium tools include the appropriate crimp die configuration, integral locating, and integral straightening features that permit terminals or contacts crimped in these tools to meet all feature requirements in applicable TEC application (114-) specifications. Most premium tools include an adjustable insulation crimp height feature and the CERTI-CRIMP ratcheting feature, set at the factory, which prevents the ratchet from releasing until the wire crimp jaws bottom within .025mm. This helps provide consistent repeatability of the crimp and requires the least amount of user dexterity.



See pages 16-21



See pages 32-37



See pages 68-71

www.tooling.te.com

CERTIFIED CRIMP: MANUAL HAND TOOLING

Certified CERTI-CRIMP Hand Tools

FAST FACTS

- Designed to exacting specifications
- Ratchet control provides complete crimping cycle
- For most military, UL and CSA applications
- Manufactured using the highest quality materials
- Requires minimum skill
- Repairable
- Calibrated; recalibration recommended every 6 months or 5,000 cycles
- Many SAHT and DAHT crimping heads and many die sets can be adapted for use with the 626 pneumatic tool system (Request catalog # 124208)
- Produced under a quality management system certified to ISO 9001.



Consistent High Quality Terminations

CERTI-CRIMP hand tools are top-of-the-line, certified hand-operated tools for crimping a broad array of terminals, contacts and special wiring devices. They are designed to exacting specifications to produce consistent, high-quality terminations. A potential service life of over 50,000 cycles is possible, depending on operator care.



CERTI-CRIMP Tooling Options

There are currently seven basic styles of CERTI-CRIMP hand tools. The choice depends on the product being applied and/or your preferred method of application. For example, open barrel contacts typically require straight-action die movement to minimize possible rotation during crimping. Or, if your application requires crimping different sizes of terminals, you may prefer using a single tool with a combination of crimping nests rather than two or three separate tools.

Other options include insulation crimp adjustment for different insulation thicknesses, a locator for properly positioning and supporting the terminal or contact in the tool, a wire stop, and color-coding and/or wire size information on the head of the tool or on the handles.

Ratchet Control

All CERTI-CRIMP hand tools feature our reliable ratchet control system. The ratchet will not release until the handles are fully closed and the dies bottomed. This helps eliminate partial crimps.

CERTI-CRIMP hand tools are well suited for low production runs, prototype work, and repairs—almost any application requiring consistent, highly-reliable terminations.

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CERTIFIED CRIMP: MANUAL HAND TOOLING

Characteristics of a Certified Crimping Tool

Every CERTI-CRIMP hand tool incorporates features for optimum performance. They include locating, straightening, and insulation crimp adjustment features—quality options that sets TE apart from our competitors.

Crimp Designs—Optimum Performance

It's more than squeezing a terminal over a wire. Our crimp designs incorporate percent of compression that optimizes electrical and mechanical performance.

Bottoming Dies—Repeatable Performance

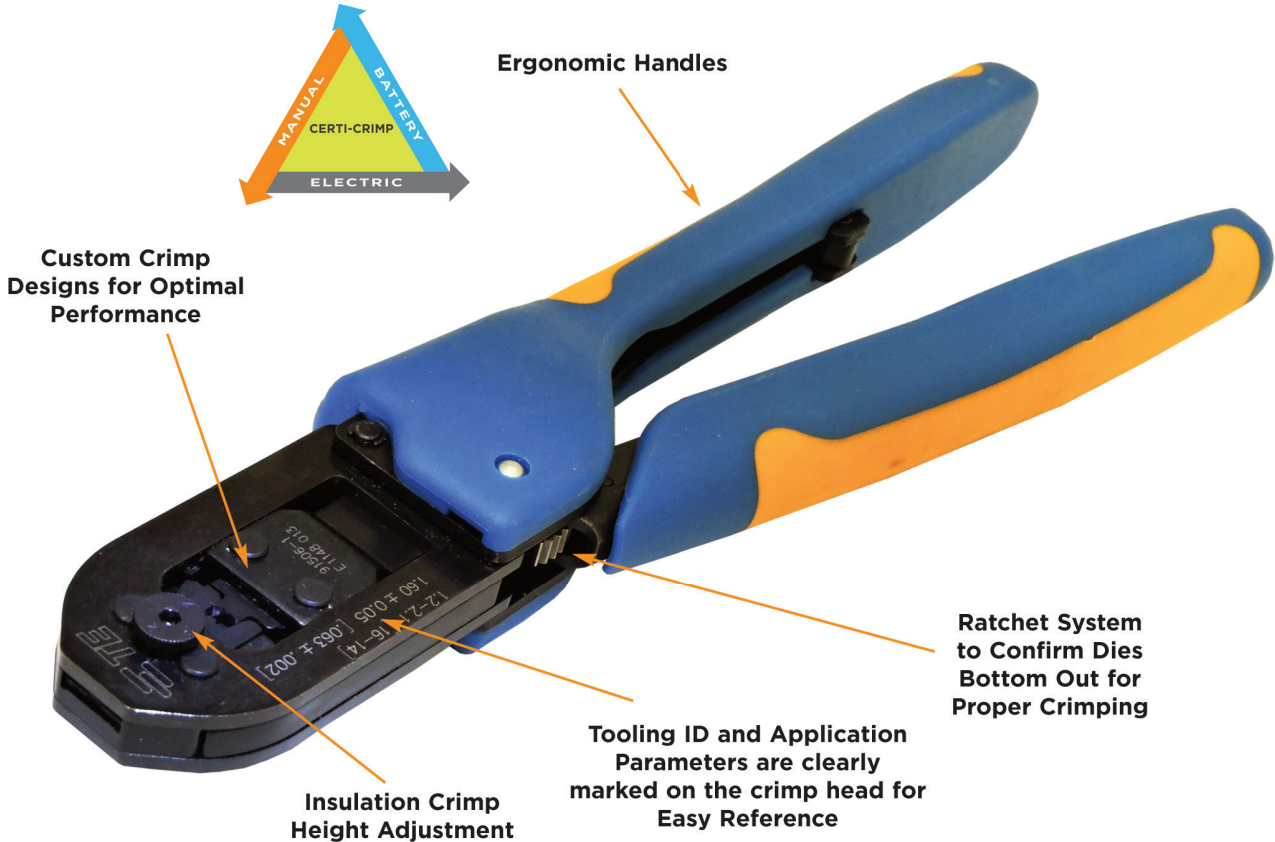
Repeatability in consistently reducing Circular Mil Area is the real measure of a crimp tool. The entire design of the tool—crimp form, force application, materials, and manufacturing tolerances—confirms that dies fully bottom, independent of operator technique or fatigue, or tool wear.

Applying the Crimp Force

Handle force is a key factor for any combination of hand tool, crimp die, terminal, and wire to crimp successfully. The design of the tool must take into account the crimp force requirement, as well as friction in the linkage and the need to bottom the dies. CERTI-CRIMP tools are set to specific handle pressures at our factory; a Certificate of Calibration allows tracking and performance verification.

Ratchet System to Improve Repeatability

The reliable ratchet system in all the CERTI-CRIMP tools is an aid to the operator, making sure the die bottoms before the tool opens. It complements the actual tool and die design in confirming crimp repeatability.



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CERTIFIED CRIMP: MANUAL HAND TOOLING

Certified CERTI-CRIMP Tooling Options

CERTI-CRIMP II Straight Action Hand Tool (SAHT)

- Dies close in a straight line
- Contact locator and support
- Wire stop
- Insulation crimp adjustment (4 positions)
- Ejects crimped contact
- Approx. weight 1.3 lb [0.59 kg]



Double Action Hand Tool (DAHT)

- Dies travel in arc-like path
- Locator on tools for FASTON, MATE-N-LOK, PIDG and PLASTI-GRIP terminals
- Insulation adjustment on tools for FASTON, MATE-N-LOK, PIDG and PLASTI-GRIP terminals
- Approx. weight 1.2 lb [0.54 kg]



T-HEAD Hand Tool (T-HEAD)

- Dies close in a straight line
- Locator
- Quick take-up on handle for holding terminal or splice in place
- Adjust insulation crimp with a 4-position screw
- Color-coded
- Approx. weight 1.3 lb [0.59 kg]



TETRA-CRIMP Hand Tool (TETRA) Part No. 59824-1

- Dies travel in arc-like path
- Multiple color-coded crimping cavities
- Terminal locator and wire stop
- Ratchet control release
- Approx. weight 1.4 lb [0.64 kg]



Platform Die Hand Tool (UFHT) Part No. 58078-3

- Same frame configuration as TETRA-CRIMP hand tool
- Dies are interchangeable
- Adjustable terminal locator
- Approx. weight 1.4 lb [0.64 kg]



Heavy Head Hand Tool (HHHT)

- Terminates most large coaxial cable and heavy-gage wire
- Dies close in a straight line
- Locator and wire stop when applicable
- Insulation adjustment on tools for AMPLI-BOND, PIDG and PLASTI-GRIP terminals
- Approx. weight 2.1 lb [0.95 kg]



C Head Straight Action Hand Tool Part No. 69710-1

- Dies close in a straight line
- Dies are interchangeable
- Locators and other applicable features included with dies
- Approx. weight 1.9 lb [0.86 kg]



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CERTIFIED CRIMP: MANUAL HAND TOOLING

Flip Locator for Certified CERTI-CRIMP II Hand Tools

FAST FACTS

- Configured for CERTI-CRIMP II heads
- Accurately locates the terminal for a more consistent crimp termination
- Highly visible, easy to load terminal into locator
- Spring loaded retention feature
- Available with short and long handle tools

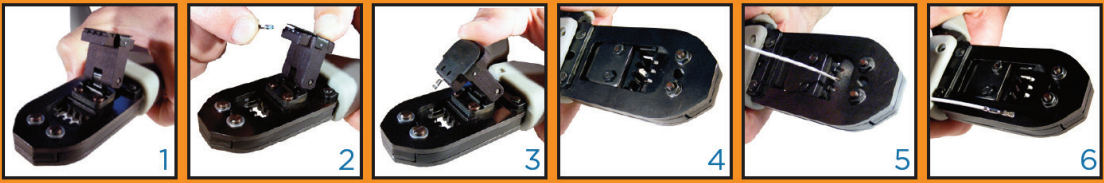
The flip locator on our CERTI-CRIMP II hand tool is designed to provide the ultimate in terminal placement accuracy, increased efficiency and ease of use.

Function

The new wire size trends have translated into new operator, tooling, and application challenges. Small terminal handling is a particular challenge as terminals continue to miniaturize. To address this challenge, the TE flip locator system allows the operator to flip the locator approx. 150 degrees, to provide for exact placement of small terminals. After loading, the locator is flipped back into position and the terminal is properly located automatically. Now, with the terminal held in place, the operator can concentrate on proper wire placement and complete the termination process.



Step-by-Step



LightKnack Accessory for CERTI-CRIMP Hand Tools

FAST FACTS

- High-intensity, long-life LED bulb
- Eases the termination process
- Magnetic for a secure placement while maintaining flexibility
- Applicable for any metallic tool surface
- Available separately in packs of 3
- Up to 8 hours of battery life
- Replaceable CR12166 batteries

This portable, magnetic LightKnack accessory is designed to provide light anywhere you need it.

How it works

Simply place the light on any magnetic surface, point the light to where light is needed and turn on the switch. The high-intensity LED provides hours of bright light onto the work surface. The magnets provide hands-free use.



Part # 2119700-1

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CERTIFIED CRIMP: MANUAL HAND TOOLING

Tooling-to-Terminal Cross Reference

CERTIFIED TOOLS

CERTI-CRIMP II Hand Tools (SAHT)


Double Action Hand Tools (DAHT)





T-HEAD Hand Tools (T-HEAD)


TETRA-CRIMP Hand Tool (TETRA)

ULTRA-FAST Hand Tool (UFHT)

Heavy Head Hand Tools (HHHT)

UNINSULATED TERMINALS	Wire Range		Max.		Hand Tools	Tool Type
	AWG	mm ²	Insul.	Dia.	Certified	Certified
 SOLISTRAND Terminals and Splices	22-16	0.3-1.25	-	-	49935	DAHT
	16-14	1.25-2	-	-	49935	DAHT
	12-10	3-5	-	-	49935	DAHT
	8	7	-	-	69355	HHHT

INSULATED TERMINALS	Wire Range		Max.		Hand Tools	Tool Type
	AWG	mm ²	Insul.	Dia.	Certified	Certified
 PIDG FASTON Receptacles (6409□□ Series)	22-18	0.3-0.8	.100	2.54	59824-1	TETRA
	16-14	1.25-2	.170	4.32		
	12-10	3-5	.250	6.35		
 PIDG Terminals and Splices, PLASTI-GRIP Terminals	26-22	0.12-0.3	.082	2.08	46121 59275	DAHT T-HEAD
	22-16	0.3-1.25	.125	3.18	47386 59824-1 59250	DAHT TETRA T-HEAD
	16-14	1.25-2	.150	3.81	47387 59824-1 59250	DAHT TETRA T-HEAD
	12-10	3-5	.230	5.84	59824-1 59239-4	TETRA HHHT
 PLASTI-GRIP Butt Splices	26-22	0.12-0.3	.080	2.03	46121	DAHT
	22-16	0.3-1.25	.170	4.32	45160	DAHT
	16-14	1.25-2	.215	5.46	45575-1	DAHT
 PLASTI-GRIP Terminals	8	7	.377	9.58	69959	HHHT

FULLY-INSULATED TERMINALS	Wire Range		Max.		Hand Tools	Tool Type
	AWG	mm ²	Insul.	Dia.	Certified	Certified
 Ultra-Fast Plus FASTON Receptacles	22-18	0.3-0.8	.135	3.43	58079-3*	UFHT
	16-14	1.25-2	.160	4.06	58080-3*	UFHT
 Ultra-Fast FASTON Tabs and Receptacles	22-18	0.3-0.8	.230	5.84	90390-3*	UFHT
	16-14	1.25-2	.260	6.60	90391-3*	UFHT

* Die sets for Ultra-Fast hand tool frame PN 58078-3.

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CERTIFIED CRIMP: MANUAL HAND TOOLING

Tooling-to-Terminal Cross Reference

INSULATED TERMINALS	Style	Wire Range		Max.		Hand Tools	Tool Type
		AWG	mm ²	Insul.	Dia.	Certified	Certified
 AMPLIMITE D-Sub. Connectors	Size 20 DF Contacts	28-24	0.08-0.2	.040	1.02	91503-1	SAHT
		24-20	0.2-0.5	0.60	1.52		
 AMPMODU Connectors	Mod. IV Contact	26-22	0.12-0.3	.061	1.55	91517-1	SAHT
		24-20	0.2-0.5	.069	1.75	91516-1	SAHT
	Locking Clip Contacts	26-22	0.12-0.3	.062	1.58	91533-1	SAHT
	MTE & Tandem Spring Contacts	32-28	0.03-0.08	.054	1.37	1901786-1	SAHT
		26-22	0.12-0.3	.065	1.65	91531-1	SAHT
	Short Point Contacts	32-22	0.03-0.3	.060	1.52	91518-1	SAHT
24-20		0.2-0.5	.060	1.52	91551-1	SAHT	
 CPC Connectors, M Series Connectors	Type II Contacts	28-24	0.08-0.2	.055	1.40	91538-1	SAHT
		24-20	0.2-0.6	.062	1.57	91538-1	SAHT
		18-16	0.8-1.4	-	-	91538-1	SAHT
		14	2	-	-	91539-1	SAHT
	Type III+ Contacts	30-26	0.05-0.15	.060	1.52	91515-1	SAHT
		26-24	0.12-0.2	.055	1.40	91515-1	SAHT
		24-20	0.2-0.6	.080	2.03	91515-1	SAHT
		24-20	0.2-0.6	.100	2.54	91523-1	SAHT
		24-20	0.2-0.6	.120	3.05	91542-1	SAHT
		18-16	0.8-1.25	.100	2.54	91505-1	SAHT
	Type XII Contacts	18-14	0.8-2	.100	2.54	91519-1	SAHT
		16	1.25	.160	4.06	90382-2	HHHT
14-12		2-3	.160	4.06	90382-2	HHHT	
10-8		5-7	.220	5.59	90384-1	HHHT	
 FASTON Straight Receptacles (Premier Line Only)	250 Series	22-18	0.3-0.8	.130	3.30	90166-1	DAHT
		18-14	0.8-2	.170	4.32	90165-1	DAHT
		14-10	2-5	.200	5.08	90120	DAHT
 MATE-N-LOK Connectors	Commercial Contacts	30-22	0.05-0.3	.075	1.91	91515-1	SAHT
		24-18	0.2-0.8	.100	2.54	91512-1	SAHT
		20-14	0.5-2	.130	3.30	91504-1	SAHT
	Universal & Universal II Contacts	24-18	0.2-0.8	.100	2.54	91510-1	SAHT
		20-14	0.5-2	.130	3.30	91500-1	SAHT
		20-18	0.5-0.8	.200	5.08	91508-1	SAHT
		16-14	1.25-2	.200	5.08	91506-1	SAHT
	Mini-Universal	20-16	0.5-1.25	.126	3.20	91536-1	SAHT
	Mini-Universal II Contacts	26-22	0.12-0.3	.069	1.75	91529-1	SAHT
		22-18	0.3-0.8	.094	2.39	91522-1	SAHT
20-16		0.5-1.25	.126	3.20	91594-1	SAHT	

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COMMERCIAL: MANUAL HAND TOOLING

Standard Die Envelope (SDE)

FAST FACTS

- Dies meet wire crimp requirements per specification
- Over 100 interchangeable SDE die sets for crimping over 4,000 different connectors
- Ability to handle multiple wire and terminal sizes in one die set



SDE dies can be moved from one hand tool to the next, as your crimping needs grow.

Standard Die Envelope (SDE)

Standard Die Envelope (SDE) technology is a new, flexible approach to crimp tooling, that allows use of the same dies on tooling across a range of application platforms. Dies are interchangeable in tools from portable hand tools — manual or battery-powered — to pneumatic hand tools and electric bench terminators. It's a family of tools that you can take from bench to production or into the field, without the need for dies fitted to each kind of tool. They're suited for R & D, networking applications and on-site maintenance work.

Customers can be sure their dies will fit their long-term needs, because they are completely compatible with all tools in the SDE system. They move with a customer as their needs grow.



If you know the terminal - this tool will help you find the die set.

Go to **www.tooling.te.com** and look for the magnifying glass.



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COMMERCIAL: MANUAL HAND TOOLING

Standard Die Envelope (SDE)

By removing just 2 screws you can easily swap dies between your SDE compatible manual, battery, pneumatic and electric TE tools.



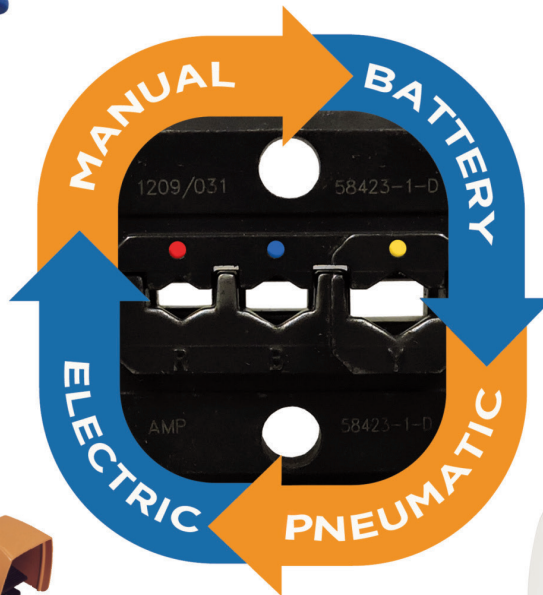
The SDE* Advantage!
*Standard Die Envelope



See pages 24-29



See pages 68-71



See pages 30-37



See pages 38-41

See pages 69-71

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COMMERCIAL: MANUAL HAND TOOLING

Commercial Standard Die Envelope (SDE) Manual Hands Tools

FAST FACTS

- Ratchet control provides complete crimping cycle
- Emergency ratchet release
- Angled head provides a comfortable hand and wrist position
- One tool with over 75 interchangeable die sets can crimp many different types of connectors
- Accommodates multiple terminal sizes in one die set
- Precision construction of durable high-carbon steel
- Extra strength pivot pins provide greater durability
- Produced under a quality management system certified to ISO 9001



SDE dies can be moved from one hand tool to the next, as your crimping needs grow.

SDE Standard Die Envelope Tooling - Smoothing Your Growth Path

Crimp dies can be a significant investment, so you shouldn't have to buy new ones when your crimping requirements change. There can be lots of reasons it could happen. You might be moving up from prototyping and R&D to production. You might need to do the crimping on the factory floor or in the field, in tight spaces or customer sites where a faster crimp means a return to production.

These are all good reasons, and TE Connectivity has responded with the SDE Standard Die Envelope system of interchangeable crimp dies. Start with a hand-operated tool. Then move up to a powered portable option, or even a benchtop terminator. You can move the dies you have from one tool to another, with only a screwdriver needed to make the change. It's a long-term solution that lets your dies move with your application, as your volume demands grow.

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.

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.

www.tooling.te.com

COMMERCIAL: MANUAL HAND TOOLING

Characteristics of a Commercial Crimping Tool

Maintaining the high engineering standards that are the TE Connectivity tradition, our complete family of commercial hand tools offers the best combination of easier operation, crimping precision, and cost effectiveness. All include ratchet adjustment, ratchet release, and interchangeable dies.

Ratchet System for Improved Repeatability

Ratchet control is provided for complete crimp cycling; this helps eliminate partial crimps. Also, an emergency ratchet release allows the user to open the tool jaws at any time during the crimp cycle.

Applying the Crimp Force

To reduce handle force, the linkage was designed to match the forces required to crimp our largest insulated terminal. The result is dramatically less handle force than comparable tools. Also, the angled head and specially designed handles reduce hand stretch and provide comfortable operation.

Support to Create a Proper Crimp

Locators are mounted on pin-and-socket style tools. They help properly locate the contact in the die set, provide a wire stop, and help minimize contact rotation and bending during crimping.



By removing just 2 screws you can easily swap dies between your SDE compatible manual, battery, pneumatic and electric TE tools.

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COMMERCIAL: MANUAL HAND TOOLING

Commercial SDE Tooling Options

PRO-CRIMPER III Hand Tool Part No. 354940-1 (frame only)

The PRO-CRIMPER III hand tool is ideally suited for R&D prototyping, networking applications, and commercial, industrial, and institutional maintenance work.

- Enhanced ergonomics, with a thin, comfortable handle profile
- Manufactured with precision stamping that permits close tolerance controls on critical parts, for better performance and repeatability
- Improved tool geometry for a longer life, stronger tool frame
- Fits industry's largest selection of crimp die options



SDE SA Hand Tool Part No. 9-1478240-0 (frame only)

The unique geometry of this tool results in a comfortable, easy-to-use handle design that is unmatched in the market.

- Large crimp jaw arc, minimizing roll in open barrel applications
- Easy accessibility for space-constrained applications
- User-adjustable ratchet control and emergency ratchet release



ERGOCRIMP Hand Tool Part No. 539635-1

- Interchangeable dies
- Straight action jaw closure
- Ratchet mechanism ensures complete crimp cycle
- Easy access ratchet release
- Handle pressure adjustment with locking device
- Ergonomic non-slip handles
- Approximate weight 1.4 lb [0.64 kg]



ERGOCRIMP Hand Tool Part No. 539635-1

- Interchangeable dies
- Virtually a straight action jaw closure
- Ratchet mechanism ensures complete crimp cycle
- Easy access ratchet release
- Handle pressure adjustment with locking device
- Ergonomic non-slip handles



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COMMERCIAL: MANUAL HAND TOOLING

Customized Hand Tool Kits

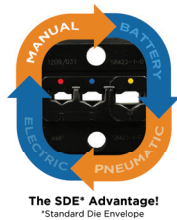
FAST FACTS

- Portability
- Customization
- Cost effectiveness
- Flexibility in the factory as well as in service and repair garages
- Consist of well-proven hand tools and dies as well as accessories matched to special applications
- A selection of sample terminals enables the technician to start work immediately

In addition to providing standard kits, TE Connectivity is also able to provide custom kits for volume requirements containing only tools, or a combination of tools, dies and terminals tailored to your specific requirements.

The kit shown is an example designed specifically for the Automotive Industry. However, we can also provide kits for promotion and product support as well as application support and repair.

The flexibility in creation of these individual kits enables the customer to help both control and ensure quality.



PRO-CRIMPER Hand Tool Kits

TE Specialty hand tools are available in convenient kits that contain the tooling, terminations, and spare parts you need for your crimping operations.

PRO-CRIMPER III Hand Tool PIDG and PLASTI-GRIP Terminal Kit Part No. 55823-1

Includes hand tool (part no. 58433-3), 225 insulated ring and spade terminals in 12-10, 16-14 and 22-16 AWG [3.0-5.0, 1.3-2.0 and 0.3-1.3 mm²] wire sizes.

BNC Premises Wiring Kit Part No. 58477-1

Includes hand tool (part no. 58433-1); plugs—5 RG-58, 10 RG-59/62, 5 RG-58 plenum and RG-59/62 plenum sizes; adapters—2 jack-to-jack and 2 T.

PRO-CRIMPER III Hand Tool Repair Kit Part No. 679221-1


Includes retaining rings, handle return spring, pawl spring, pivot pins, pawl pin, ratchet pawl, die pins, nut and die set screws.



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COMMERCIAL: MANUAL HAND TOOLING

Tooling-to-Terminal Cross Reference



		Wire Range		Max.		Hand Tools Commercial	Tool Type Commercial
		AWG	mm ²	Insul.	Dia.		
SOLISTRAND Terminals and Splices 	22-16	0.3-1.25	-	-	58546-1	PC	
	16-14	1.25-2	-	-	58546-1	PC	
	12-10	3-5	-	-	58546-1	PC	

		Wire Range		Max.		Hand Tools Commercial	Tool Type Commercial
		AWG	mm ²	Insul.	Dia.		
PIDG FASTON Receptacles (6409□□ Series) 	22-18	0.3-0.8	.100	2.54	58433-3	PC	
	16-14	1.25-2	.170	4.32			
PIDG Terminals and Splices, PLASTI-GRIP Terminals 	22-16	0.3-1.25	.125	3.18	58433-3	PC	
	16-14	1.25-2	.150	3.81	58433-3	PC	
	12-10	3-5	.230	5.84	58433-3	PC	

		Wire Range		Max.		Hand Tools Commercial	Tool Type Commercial
		AWG	mm ²	Insul.	Dia.		
Ultra-Fast FASTON Tabs and Receptacles 	22-18	0.3-0.8	.230	5.84	58628-1	PC	
	16-14	1.25-2	.260	6.60	58628-1	PC	

COMMERCIAL: MANUAL HAND TOOLING

Tooling-to-Terminal Cross Reference

OPEN-BARREL TERMINALS	Style	Wire Range		Max.		Hand Tools	Tool Type
		AWG	mm ²	Insul.	Dia.	Commercial	Commercial
 AMPLIMITE D-Sub. Connectors	Size 20 DF Contacts	28-24	0.08-0.2	.040	1.02	58448-2	PC
		24-20	0.2-0.5	0.60	1.52		
 AMPMODU Connectors	Mod. IV Contact	26-22	0.12-0.3	.061	1.55	58641-1	PC
		24-20	0.2-0.5	.069	1.75	-	-
 CPC Connectors, M Series Connectors	Type II Contacts	28-24	0.08-0.2	.055	1.40	-	-
		24-20	0.2-0.6	.062	1.57	58541-1	PC
		18-16	0.8-1.4	-	-	58541-1	PC
		14	2	-	-	58541-1	PC
	Type III+ Contacts	30-26	0.05-0.15	.060	1.52	-	-
		26-24	0.12-0.2	.055	1.40	58495-1	PC
		24-20	0.2-0.6	.080	2.03	58495-1	PC
		24-20	0.2-0.6	.100	2.54	-	-
		24-20	0.2-0.6	.120	3.05	-	-
		18-16	0.8-1.25	.100	2.54	58495-1	PC
 FASTON Straight Receptacles (Premier Line Only)	250 Series	22-18	0.3-0.8	.130	3.30	-	-
		18-14	0.8-2	.170	4.32	58524-1	PC
		14-10	2-5	.200	5.08	58525-1	PC
 MATE-N-LOK Connectors	Commercial Contacts	30-22	0.05-0.3	.075	1.91	-	-
		24-18	0.2-0.8	.100	2.54	90574-1	PC
		20-14	0.5-2	.130	3.30	90575-1	PC
	Universal & Universal II Contacts	24-18	0.2-0.8	.100	2.54	90548-1	PC
		20-14	0.5-2	.130	3.30	90546-1	PC
		20-18	0.5-0.8	.200	5.08	90547-1	PC
	Mini-Universal	16-14	1.25-2	.200	5.08	90547-1	PC
		20-16	0.5-1.25	.126	3.20	90760-1	PC
	Mini-Universal II Contacts	26-22	0.12-0.3	.069	1.75	90758-1	PC
		22-18	0.3-0.8	.094	2.39	90759-1	PC
20-16		0.5-1.25	.126	3.20	58707-1	PC	
 Power Triple Lock Connectors	Power Triple Lock	22-20	0.3-0.6	.106	2.70	2217267-1	SDE-SA
		20-16	0.6-1.25	.130	3.30	2217208-1	SDE-SA
		18-14	0.9-2.1	.146	3.70	2217266-1	SDE-SA
		12	3.3	.167	4.25	2217268-1	SDE-SA

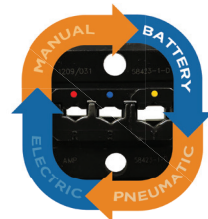
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POWER HAND TOOLING

Standard Micro Crimp Hand Tool Kit, 10.8V, 2,600 lb

FAST FACTS

- Lightweight, ergonomic design is only 2.2 lbs
- Uses 90% less force, thereby reducing operator muscle fatigue
- Contains built in LED light for illuminating crimping point and work area
- Contains mounting lugs for use with a balancer or as fall protection when used outdoors
- 10.8V Lithium-Ion battery
- USB adapter to download crimp cycle information to a computer
- Higher crimp force capability than comparable tools



The SDE[®] Advantage!
*Standard Die Envelope



Maximum Power. Minimum Effort.

The SDE Micro Crimp hand tool provides maximum crimping results for minimum effort with its one-lever operation for controlling all tool functions. Unlike other 2-handed manual crimping tools, the intuitive Quick Takeup technology built into the SDE Micro Crimp hand tool allows the operator to keep one hand free to place the wire while crimping with the other hand.

Compared to a manual hand tool the SDE Micro Crimp hand tool:

- Utilizes an electronic control with lock function to monitor complete closing of the dies
- Automatically retracts when the crimping is complete
- Features motor stall protection in case of faulty operation

CRIMP FASTER IN 3 EASY STEPS



Quick takeup: Pull trigger part way and adjust terminal and wire to the proper position before crimping.

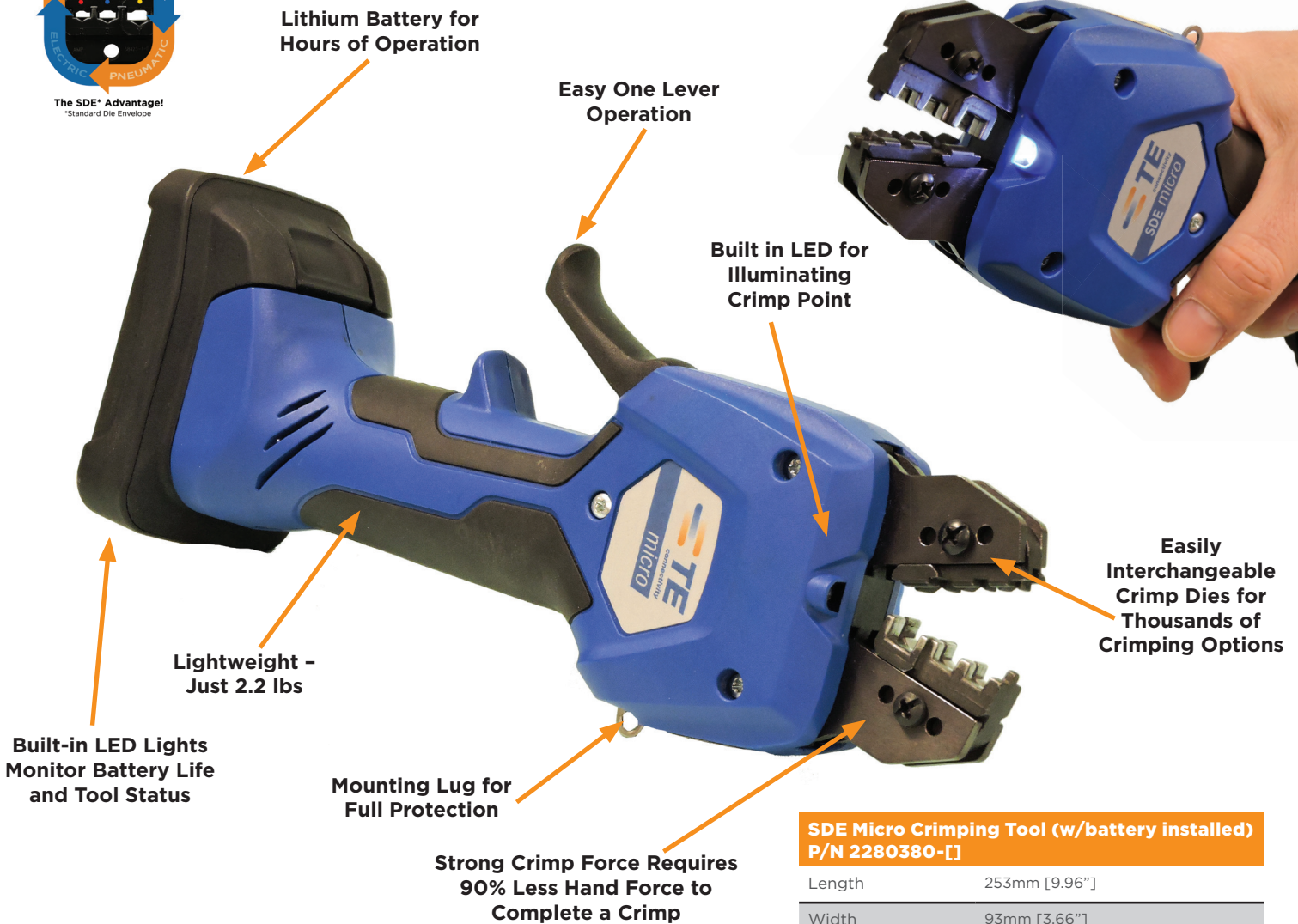
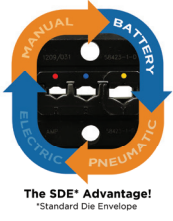


Depress trigger completely to activate the motorized crimp feature.



Release trigger and the jaws will open automatically.

Standard Micro Crimp Hand Tool Kit, 10.8V, 2,600 lb



SDE Micro Crimping Tool (w/battery installed) P/N 2280380-[]

Length	253mm [9.96"]
Width	93mm [3.66"]
Depth	64mm [2.52"]
Weight (w/battery)	0.96kg [2.12 lb]
Sound Level	70 dBA at 1 meter
Vibration	< 2.5 m/s ²

Crimping Capacities

Max. Crimping Force	15 kn	[2,600 lbs] max.]
(1.53 metric tons)		
Avg. Crimping Force	2 sec.	
Avg. Crimps Per Charge	Approx. 350	

P/N	Description
2280380-1*	SDE Micro Tool Kit, 110-120 Volt Charger, Battery
2280380-2*	SDE Micro Tool Kit, 220-240 Volt Charger, Battery
2280381-1*	SDE Micro Tool Battery, 10.8 Volts
2280382-1*	SDE Micro Tool Charger, 110-120 Volts
2280382-2*	SDE Micro Tool Charger, 220-240 Volts
2217896-1*	SDE Micro USB Adapter Module

* CE Certified

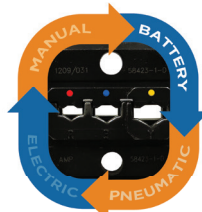
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POWER HAND TOOLING

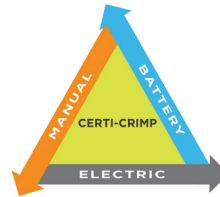
Lithium-Ion Battery-Powered Crimp Tool Kits, 18V, 3,500 lb

FAST FACTS

- Fast, ergonomically-designed tools suitable for use at the bench, on the line, or in the field
- Maximum wire size depending on terminal type: 10 AWG
- Completely portable - Over 150 crimps per charge
- Pressure-sensitive cycle control
- On-board pressure monitoring with visual (LED) and audible warnings of an incomplete crimp
- Crimp cycle information can be downloaded to a computer via optional USB adapter
- Lightweight and compact
- Kits include tool, 2 batteries, charger case
- Lithium-Ion batteries - no memory effects
- 20 minute charging time



The SDE* Advantage!
*Standard Die Envelope



3500 lb Crimping Tool (w/battery installed, w/o head)

Length	254mm [10.00"]
Width	73mm [2.87"]
Depth	114mm [4.50"]
Mass Weight (w/battery)	1.3kg [2.9 lb]
Sound Level	75 dBA at 1 meter
Vibration	< 2.5 m/s ²
Hydraulic Oil	Shell Tellus T15

3500 lb Crimping Capacities

Maximum Crimping Force	15.6 kn [1.75 ton]
Average Crimping Force	2 sec
Average Crimps Per Charge	Approx. 150



*Makita is a trademark.

Each battery tool kit includes a tool, 2 batteries and a charger in a rugged carrying case.

www.tooling.te.com

Lithium-Ion Battery-Powered Crimp Tool Kits, 18V, 3,500 lb Tooling Options

SDE Open Head Battery Powered Crimp Tool Kit

PN 2217480-1, 110 volts
PN 2217480-2, 220 volts

This battery powered crimp tool kit accepts TE's SDE shoulder mounted die sets like the one shown. For a partial list of SDE die sets, please refer to catalog 1773379-1.

Customer Manual 409-32031



SDE Closed Head Battery Powered Crimp Tool Kit

PN 2217481-1, 110 volts
PN 2217481-2, 220 volts

This battery powered crimp tool kit accepts TE's SDE shoulder and pin mounted die sets like the ones shown. This tool kit can not be used to crimp butt splices. For a partial list of SDE die sets, please refer to catalog 1773379-1.

Customer Manual 409-32032



CERTI-CRIMP II, Battery Powered Crimp Tool Kit

PN 2217482-1, 110 volts
PN 2217482-2, 220 volts

This battery powered crimp tool kit accepts heads from TE's CERTI-CRIMP II straight action hand tools like the one shown. For a partial list of CERTI-CRIMP II straight action hand tools, please refer to catalog 65780.

Customer Manual 409-32033



Double Action Battery Powered Crimp Tool Kit

PN 2217483-1, 110 volts
PN 2217483-2, 220 volts

This battery powered crimp tool kit accepts heads from TE's double action hand tools like the one shown. For a partial list of double action hand tools, please refer to catalog 65780.

Customer Manual 409-32028



Heavy-Head Battery Powered Crimp Tool Kit

PN 2217484-1, 110 volts
PN 2217484-2, 220 volts

This battery powered crimp tool kit accepts heads from TE's heavy head hand tools like the one shown. For a list of heavy head hand tools, please refer to customer manual 409-32039.

Customer Manual 409-32029



T-Head Battery Powered Crimp Tool Kit*

PN 2217485-1, 110 volts
PN 2217485-2, 220 volts

This battery powered crimp tool kit can be used to crimp 22-16 and 16-14 AWG PIDG terminals and splices. The kit can also crimp 22-16 and 16-14 AWG PLASTI-GRIP terminals.

***Crimp head is included.**

Customer Manual 409-32030



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POWER HAND TOOLING

Lithium-Ion Battery-Powered Crimp Tool Kits, 18V, 8,000 lb, 12,000 lb, 24,000 lb

FAST FACTS

- Fast, ergonomically-designed tools suitable for use at the bench, on the line, or in the field
- Pressure-sensitive cycle control
- On-board pressure monitoring with visual (LED) and audible warnings of an incomplete crimp
- Crimp cycle information can be downloaded to a computer via optional USB adapter
- Kits include tool, 2 batteries, charger, case
- Lithium-Ion batteries - no memory effects
- 20 minute charging time



8,000 lb Crimping Tool (with Battery Installed) P/N 2217330-[]		12,000 lb Inline Crimping Tool (with Battery Installed) P/N 2280116-[]		12,000 lb Pistol Grip Crimping Tool (with Battery Installed) P/N 2161171-[]		24,000 lb Pistol Grip Crimping Tool (with Battery Installed) P/N 2280308-[]	
Length	337mm [13.25"]	Length	413mm [16.26"]	Length	327mm [12.9"]	Length	412mm [16.2"]
Width	73mm [2.87"]	Width	75mm [2.95"]	Width	75mm [2.95"]	Width	75mm [2.95"]
Depth	114mm [4.5"]	Depth	116mm [4.56"]	Depth	325mm [12.8"]	Depth	319mm [12.6"]
Weight (w/battery)	1.8kg [4.0 lb]	Weight (w/battery)	3.08kg [6.8 lb]	Weight (w/battery)	4.2kg [9.6 lb]	Weight (w/battery)	6.8kg [15.0 lb]
Sound Level	75 dBA at 1 meter	Sound Level	75 dBA at 1 meter	Sound Level	75 dBA at 1 meter	Sound Level	75 dBA at 1 meter
Vibration	< 2.5 m/s ²	Vibration	< 2.5 m/s ²	Vibration	< 2.5 m/s ²	Vibration	< 2.5 m/s ²
Hydraulic Oil	Shell Tellus T15	Hydraulic Oil	Shell Tellus T15s or RIVOLTA S.B.H. 11	Hydraulic Oil	Shell Tellus T15s or RIVOLTA S.B.H. 11	Hydraulic Oil	Shell Tellus T15s or RIVOLTA S.B.H. 11
Crimping Capacities		Crimping Capacities		Crimping Capacities		Crimping Capacities	
Max. Crimping Force	35 kn [4 ton]	Max. Crimping Force	60 kn (6 metric ton) [13,500 lb]	Max. Crimping Force	60 kn (6 metric ton) [13,500 lb]	Max. Crimping Force	106.6 kn [12 ton]
Avg. Crimping Time	4 sec	Avg. Crimping Time	2-5 sec	Avg. Crimping Time	3-6 sec	Avg. Crimping Time	10-15 sec
Avg. Crimps/Charge	Approx. 85	Avg. Crimps/Charge	Approx. 100-300	Avg. Crimps/Charge	Approx. 100-300	Avg. Crimps/Charge	Approx. 110

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Lithium-Ion Battery-Powered Crimp Tool Kits, 18V, 8,000 lb, 12,000 lb, 24,000 lb Tooling Options

8,000 lb Latch Head Battery Powered Crimp Tool Kit

PN 2217330-1, 110 volts
PN 2217330-2, 220 volts

This battery powered crimp tool kit can be used to crimp the following terminals and splices:

8 to 6 AWG TERMINYL and PLASTI-GRIP

See instruction sheet 408-10051 for a list of available die sets

8-4 AWG SOLISTRAND

See instruction sheet 408-10050 for a list of available die sets

12-10 AWG STRATO-THERM

See instruction sheet 408-10228 for a list of available die sets

Customer Manual 409-32026



12,000 lb Inline & Pistol Grip Battery Powered Crimp Tool Kits

PN 2280116-1, 110 volts (Inline),
PN 2280116-2, 220 volts (Inline)
PN 2161171-1, 110 volts (Pistol Grip)
PN 2161171-2 220 volts (Pistol Grip)

These battery powered crimp tool kits can be used to crimp the following terminals and splices:

SOLISTRAND 8, 6, 4, 2 AWG only

See instruction sheet 408-8691

STRATO-THERM 8, 6, 4 only per TE Instruction Sheet 408-8691 (Ring Tongue Terminals, Butt Splices, and Parallel Splice)

Customer Manual 409-32039 (Inline)

Customer Manual 409-32040 (Pistol Grip)



24,000 lb Pistol Grip Battery Powered Crimp Tool Kit

PN 2280308-1, 110 volts
PN 2280308-2, 220 volts

This battery powered crimp tool kit can be used to crimp the following terminals and splices:

SOLISTRAND 8, 6, 4, 2, 1/0, 2/0, 3/0 and 4/0 AWG only.

See instruction sheet 408-8691

STRATO-THERM 8, 6, 4, 2 and 1/0 only per TE Instruction Sheet 408-8691 (Ring Tongue Terminals, Butt Splices, and Parallel Splice)

Customer Manual 409-32041





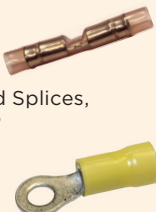
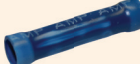

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POWER HAND TOOLING

Tooling-to-Terminal Cross Reference




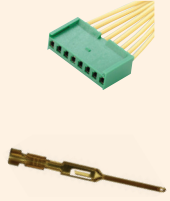


UNINSULATED TERMINALS	Wire Range		Max.		Battery Tools
	AWG	mm ²	Insul.	Dia.	Powered
 SOLISTRAND Terminals and Splices	22-16	0.3-1.25	-	-	X
	16-14	1.25-2	-	-	X
	12-10	3-5	-	-	X
	8	7	-	-	X

INSULATED TERMINALS	Wire Range		Max.		Battery Tools
	AWG	mm ²	Insul.	Dia.	Powered
 PIDG FASTON Receptacles (6409□□ Series)	22-18	0.3-0.8	.100	2.54	X
	16-14	1.25-2	.170	4.32	X
	12-10	3-5	.250	6.35	X
 PIDG Terminals and Splices, PLASTI-GRIP Terminals	26-22	0.12-0.3	.082	2.08	X
	22-16	0.3-1.25	.125	3.18	X
	16-14	1.25-2	.150	3.81	X
	12-10	3-5	.230	5.84	X
 PLASTI-GRIP Butt Splices	26-22	0.12-0.3	.080	2.03	X
	22-16	0.3-1.25	.170	4.32	X
	16-14	1.25-2	.215	5.46	X
 PLASTI-GRIP Terminals	8	7	.377	9.58	X

FULLY-INSULATED TERMINALS	Wire Range		Max.		Battery Tools
	AWG	mm ²	Insul.	Dia.	Powered
 Ultra-Fast Plus FASTON Receptacles	22-18	0.3-0.8	.135	3.43	X
	16-14	1.25-2	.160	4.06	X
 Ultra-Fast FASTON Tabs and Receptacles	22-18	0.3-0.8	.230	5.84	X
	16-14	1.25-2	.260	6.60	X

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Tooling-to-Terminal Cross Reference

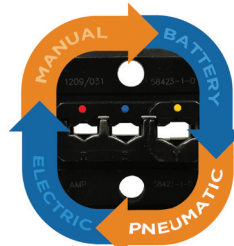
INSULATED TERMINALS	Style	Wire Range		Max.		Battery Tools
		AWG	mm ²	Insul.	Dia.	Commercial
 AMPLIMITE D-Sub. Connectors	Size 20 DF Contacts	28-24	0.08-0.2	.040	1.02	X
		24-20	0.2-0.5	0.60	1.52	X
	Size 22 DF Contacts	28-22	0.08-0.3	.040	1.02	X
 AMPMODU Connectors	Mod. IV Contact	26-22	0.12-0.3	.061	1.55	X
		24-20	0.2-0.5	.069	1.75	X
	Locking Clip Contacts	26-22	0.12-0.3	.062	1.58	X
	MTE & Tandem Spring Contacts	32-28	0.03-0.08	.054	1.37	X
		26-22	0.12-0.3	.065	1.65	X
	Short Point Contacts	32-22	0.03-0.3	.060	1.52	X
24-20		0.2-0.5	.060	1.52	X	
 CPC Connectors, M Series Connectors	Type II Contacts	28-24	0.08-0.2	.055	1.40	X
		24-20	0.2-0.6	.062	1.57	X
		18-16	0.8-1.4	-	-	X
		14	2	-	-	X
	Type III+ Contacts	30-26	0.05-0.15	.060	1.52	X
		26-24	0.12-0.2	.055	1.40	X
		24-20	0.2-0.6	.080	2.03	X
		24-20	0.2-0.6	.100	2.54	X
	Type XII Contacts	24-20	0.2-0.6	.120	3.05	X
		18-16	0.8-1.25	.100	2.54	X
		18-14	0.8-2	.100	2.54	X
		16	1.25	.160	4.06	X
FASTON Straight Receptacles (Premier Line Only)	250 Series	14-12	2-3	.160	4.06	X
		10-8	5-7	.220	5.59	X
		22-18	0.3-0.8	.130	3.30	X
 MATE-N-LOK Connectors	Commercial Contacts	18-14	0.8-2	.170	4.32	X
		14-10	2-5	.200	5.08	X
		30-22	0.05-0.3	.075	1.91	X
	Universal & Universal II Contacts	24-18	0.2-0.8	.100	2.54	X
		20-14	0.5-2	.130	3.30	X
		24-18	0.2-0.8	.100	2.54	X
		20-14	0.5-2	.130	3.30	X
		20-18	0.5-0.8	.200	5.08	X
	Mini-Universal	16-14	1.25-2	.200	5.08	X
	Mini-Universal II Contacts	20-16	0.5-1.25	.126	3.20	X
26-22		0.12-0.3	.069	1.75	X	
22-18		0.3-0.8	.094	2.39	X	
Power Triple Lock Connectors	Power Triple Lock	20-16	0.5-1.25	.126	3.20	X
		22-20	0.3-0.6	.106	2.70	X
		18-14	0.9-2.1	.146	3.70	X
		12	3.3	.167	4.25	X

POWER HAND TOOLING

626 Pneumatic System Power Unit

FAST FACTS

- Effortless crimping for a broad range of terminals, either bench-mounted or hand-held for working in cramped quarters
- Lightweight; eliminates physical force required by hand tools
- Hand- or foot-switch operation
- Works with existing TE-compatible crimp heads and die sets
- Ratchet control option provides complete crimp cycle, eliminating partial crimps
- Rotating head reaches difficult termination locations
- Engineered and manufactured using processes independently certified to internationally recognized standards ISO-9001:2000 and telecommunications industry standard TL 9000



The SDE* Advantage!
*Standard Die Envelope

Maximize your productivity while minimizing your effort — replace your manual hand tools with the 626 pneumatic tool system. Terminating wires from 26–6 AWG [0.12–13.0 mm²] has never been easier. And you can continue to use most, if not all, of your existing TE compatible crimp heads and die sets from TE Connectivity.

Stop Working So Hard

The powerful 626 pneumatic tool system makes crimping as easy as pressing a hand or foot switch. Besides reducing operator fatigue, this means you don't have to design your production bench around your tool. Include the fully adjustable bench mount assembly with the foot switch, and you're completely free to concentrate on aligning the wire and terminal. Now you can crimp faster and with fewer mistakes.

The 626 System Works Where and How You Need It

Using 626 adapters, tools previously restricted to prototype or limited production applications can now be used in low to medium bench production and harness assembly operations. Because the 626 crimp head can be rotated to any angle, you can also work on those difficult terminations in confined tooling cabinets or enclosures.

Looking for the complete crimp cycle control provided by the mechanical ratchet in CERTI-CRIMP hand tools? The available 626 System ratchet tool holders produce a complete crimp cycle by simply pressing a switch. Dies will fully bottom before you can open the jaws to release the crimped product.

Protect Your Investment

The 626 system's power unit works with a variety of adapters and tool holders, so you can continue to work with your existing crimp heads and die sets.

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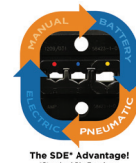
626 Pneumatic System Tooling Options

626 Pneumatic System Power Unit

PN 189721-1 Hand Actuated Power Unit

PN 189722-1 Foot Actuated Power Unit

Outside Diameter	45mm [1.8 in]
Length	225mm [8.88 in] for foot actuated unit 230mm [9.0 in] for hand actuated unit
Grip Span	55mm [2.19 in] over button/handle
Mass	0.60kg [1.32 lbm] for foot actuated unit 0.72kg [1.58lbm] for hand actuated unit
Air Pressure	6.21-6.89 bar [90-100 psi]
Air Displacement	0.00018 m ² [11.14 in ²]
Air Supply Hose	3.05 m [10 ft] long, 4.8mm [3/16] I.D. with 1/8 in NPT fitting
Cycle Time	0.7-0.8s (for 16-14 AWG [1.3-2mm ²] PIDG Terminals)



Tool and Adapter Holders* (includes head assembly)

Large Tool Holder	100mm [3.88 in] Length	0.76 kg [1.68 lb] Weight
Small Tool Holder	70mm [2.75 in] Length	0.44 kg [0.97 lb] Weight
Adapter Holder	70mm [2.75 in] Length	0.44 kg [0.96 lb] Weight



Bench Mount Assembly*, PN 856402-1

Base Size	200mm x 200mm [8 in x 8 in]
Weight	2.9kg [6.5 lb]
Bench Mounting Dimensions	Base has two, 1/4-20 tapped holes on 150mm [6 in] centerlines

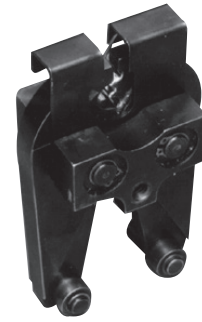
PRO-CRIMPER III Die Set Adapter, PN 679304-1

Request catalog 82276 for a listing of over 75 die sets
Instruction Sheet 408-4070

* Not for use in the European Community.

POWER HAND TOOLING

626 System Crimping Heads and Die Sets



**Crimping Heads for
Large Tool Holders**

626 SYSTEM CRIMPING HEADS AND DIE SETS								
Products Applied	Wire Size Range		Crimping Head Part Number	Instruction Sheet Number	Die Set Part Number			
	AWG	mm ²						
PIDG FASTON Receptacles (P/N Series 6409 Only)		22-18	0.3-0.9	679305-1 [†] (TETRA-CRIMP)	408-4099	—		
		16-14	1.3-2					
		12-10	3-6					
PIDG Terminals and Splices, PLASTI-GRIP Terminals		22-16	0.3-1.3					
		16-14	1.3-2					
		12-10	3-6					
PIDG Terminals and Splices, PLASTI-GRIP Terminals		16-14 HD, 12-10	1.3-2 HD, 3-6	679300-1 CE	408-4071	—		
PLASTI-STRIP Terminals, Ultra-Fast Plus FASTON Receptacles		22-18	0.3-0.9	679992-1 ^{††}	408-4098	58079-3		
		16-14	1.3-2			58080-3		
Ultra-Fast FASTON Tabs and Receptacles		22-18	0.3-0.9			90390-3		
		16-14	1.3-2			90391-3		
SOLISTRAND Uninsulated Terminals and Splices		22-10	0.3-6			679301-1 CE	408-4072	—
		8	8			1338757-1 CE		
		6	13	1338758-1 CE				
Closed End Splices (Insulated)		ECV 18-8	0.9-8	189896-1 CE	408-4111	—		
		CES 18-10	0.9-6	189466-1 CE	408-4175	—		
STRATO-THERM Terminals		22-10	0.3-6	217206-1 CE	408-4110	—		
COPALUM Terminals and Splices		16-14	1.3-2	189447-1 CE	408-9989	—		
		12-10	3-6	189444-1 CE				
TERMINYL Terminals		8	8	904395-1 CE	408-4451	—		
TERMI-FOIL Barrel Terminals, Strip Tap Terminals and Splices		8	8	217923-1 CE	408-4171	305956-3 (0.016 [0.40] Max. Foil Thk.)		
						305956-8 (0.030 [0.75] Max. Foil Thk.)		






[†] Equivalent to TETRA-CRIMP Hand Tool Part No. 59824-1; die set is NOT interchangeable.

^{††} Uses same die sets as Platform Die Hand Tool Part No. 58078-3.

626 System Crimping Heads and Die Sets



**Crimping Heads for
Small Tool Holders**

Crimping Heads and Die Sets for Small Tool Holders					
Products Applied		Wire Size Range		Crimping Head Part Number	Instruction Sheet Number
		AWG	mm ²		
PIDG Terminals and Splices		22-16	0.3-1.3	314270-3 	408-9586
PLASTI-GRIP Terminals		16-14	1.3-2	314269-1 	408-9586
SOLISTRAND Uninsulated Terminals and Splices		22-10	0.3-6	189989-1	408-9285

POWER HAND TOOLING

Hydraulic Powered Crimp Tooling for 10,000 psi

FAST FACTS

- Industry standard 10,000 psi hydraulic system pumps and crimp heads
- Electric & manual hydraulic pumps for crimping at fixed locations
- 10,000 psi crimp heads compatible with shank dies available for wire sizes requiring a crimp force up to 33 tons
- 10,000 psi crimp heads compatible with U-dies for wire sizes requiring a crimp force up to 14 tons
- U-die crimp head stroke options of 1" and 1.5"
- Hand-held pistol grip tools with rechargeable battery for U-dies
- Portable battery operated hydraulic pump for 10,000 psi crimp heads
- Integrated crimp head/die combinations for crimping #8-2 AWG SOLISTRAND terminals



TE Connectivity's line of quality tooling includes industry-standard 10,000 psi [68,950 kPa] hydraulic tool systems. The basic hydraulic tool system requires a pump, hose (multiple lengths are available with all configurations), crimp head, and crimp die. There is a TE hydraulic pump to meet the demands of any crimping application. For fixed crimping locations, you can choose

between a 110V or 220V Electric Hydraulic Pump (with optional remote hand control), or manual foot and hand hydraulic pumps. For maximum portability, 10,000 psi hand-held pistol grip crimp tools with rechargeable battery are an effective solution. Or, to power a 10,000 psi crimp head at any location, order a portable battery hydraulic unit.

U-dies for a 10,000 psi hydraulic system are well suited for applications requiring a crimp force of up to 14 tons [125 kN]. For wire sizes requiring up to 33 tons [294 kN], TE offers crimp heads for 10,000 psi that are compatible with shank dies.

For a 10,000 psi hydraulic system, there are three medium duty and one heavy duty U-die crimp heads available. U-die crimp heads are available in two types, with 1 in [25 mm] and 1.5 in [38 mm] strokes, respectively. Two 12 ton [101 kN] crimp heads have a 1 in [25 mm] stroke. Two 14 ton [125 kN] crimp heads are for larger products that require a 1.5 in [38 mm] stroke. Four heavy duty crimp heads for shank dies are available for wire sizes requiring between 14 and 33 tons of crimp force.

An integrated head/die for crimping #8 to #2 SOLISTRAND terminals is available. There are also manual hand held hydraulic tools available for both U and shank die sets.

Note: 10,000 psi hydraulic pumps are not compatible with 8,200 psi crimp heads. 8,200 psi hydraulic pumps are not compatible with 10,000 psi crimp heads.

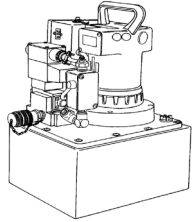
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POWER HAND TOOLING

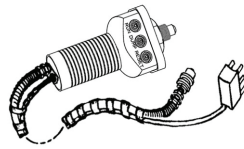
HYDRAULIC TOOLING SELECTION GUIDE for 10,000 psi

Hydraulic Pumps, Controls and Hoses

The Heavy-duty Pump is designed for higher crimp cycle frequency.



WITH



OR



AND



Heavy Duty Electric Hydraulic Pump (110V)^{1,2} **P/N 1804700-1**
OR
Heavy Duty Electric Hydraulic Pump (220V)^{1,2} **P/N 1804700-2**
CM 409-10081

Remote Hand Control³ (for Heavy-Duty pump) w/hose attached
P/N 1901775-1 (7 ft hose)
P/N 1901776-1 (15 ft hose)
P/N 1901777-1 (21 ft hose)

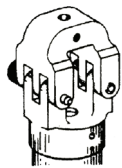
Remote Foot Control³ (for Heavy-Duty pump)
P/N 68284-1

Hydraulic Hoses⁴ (not required for hand control)
P/N 1583662-1 (6 ft)
P/N 1583662-2 (10 ft)
P/N 1583662-3 (20 ft)

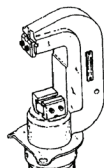
Heavy-Duty Crimp Heads (Shank Dies)

(> 25,000 cycles)

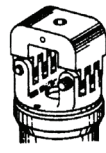
Shank Dies



8 - 4/0 AWG
22 ton output force
16 lbs
P/N 1752877-1
IS 408-8956



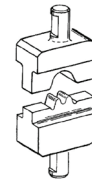
4/0 AWG - 1000 MCM
26 ton output force
29 lbs
P/N 1752786-1
IS 408-8958



8 - 4/0 AWG
33 ton output force
28 lbs
P/N 1752787-1
IS 408-8914



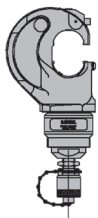
12-10 AWG - 350 MCM
18 ton output force
13 lbs
P/N 1752868-1
IS 408-8959



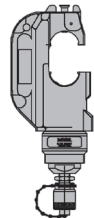
PLASTI-GRIP	8 AWG - 4/0 AWG
AMPOWER	6 AWG - 1500 MCM
AMPOWER Quick Disconnect	1/0 AWG - 600 MCM
Insulation Piercing COPALUM	10 AWG (Cu) - 3/0 AWG
Sealed COPALUM	10 AWG - 3/0 AWG
Bar COPALUM	10 AWG (Cu) - 400 MCM
SOLISTRAND	8 AWG - 600 MCM
STRATO-THERM	8 AWG - 2/0 AWG
TERMINYL	1/0 AWG thru 4/0 AWG

Medium- & Heavy-Duty Crimp Heads & Hand Tools (U-Dies)

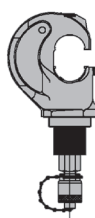
U-Dies



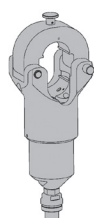
12 ton output force
1 stroke;
20,000 cycle
Light Duty
Compression Head²
U-Die Compatible
P/N 1490745-1
IS 408-10111



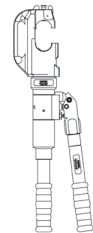
12 ton output force
1.5 stroke;
20,000 cycle
Light Duty
Compression Head
U-Die Compatible
P/N 1490746-1
IS 408-10112



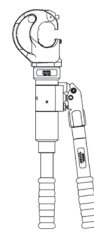
12 ton output force
1 stroke Titanium
Compression Head
U-Die Compatible
P/N 1490747-1
IS 408-8715



14 ton output force
1.5 stroke;
Heavy-Duty
Compression Head
U-Die Compatible
P/N 1976230-1
IS 408-10145



14 ton output force
1.5 stroke
Compression Tool
U-Die Compatible
P/N 1490749-1
IS 408-8717



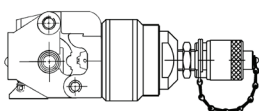
1 stroke Hand
Compression Tool
U-Die Compatible
P/N 1490748-1
IS 408-8716



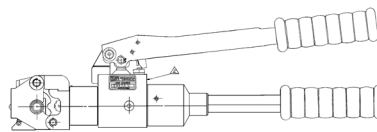
PLASTI-GRIP	8 AWG - 2 AWG
AMPOWER	6 AWG - 4/0 AWG
SOLISTRAND	8 AWG - 4/0 AWG
TERMINYL	8 AWG - 1/0 AWG

- Powered systems require a pump, hand or foot control, hose, crimp head and die except with **1673672-1**.
- The portable battery pump, **180411-1**, includes a hand control.
- Manual systems require hand tools and the battery hand tool requires only dies.

SOLISTRAND (Integrated Crimp Dies)



#8-#2 AWG SOLISTRAND
Compression Head
(No crimp dies required)
P/N 1673672-1
IS 408-8910



#8-#2 AWG SOLISTRAND
Compression Tool
(No crimp dies required)
P/N 59975-1
IS 408-6758

www.tooling.te.com

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 10,000 psi

The TE Connectivity hydraulic crimping tool line offers a wide array of die, hand tool, and hydraulic head configurations. Use the following tables to determine the configuration that best matches your requirements.

SOLISTRAND Terminals



Hydraulic Crimp Tooling 10,000 psi Operating Pressure						
Wire Size in AWG [mm ²]	Hand Tools (U-Die)	Hydraulic Heads (U-Die)	Hydraulic Heads (Shank Die)			
		1490748-1 1490749-1	1490745-1 1490746-1 1490747-1 1976230-1	1673672-1▲	1752868-1	1752788-1
8 [7-8.5]	1490413-1 ** 1490414-1 ○	1490413-1 ** 1490414-1 ○	▲	69216		
6 [13-15]	1490413-2 ** 1490414-2 ○	1490413-2 ** 1490414-2 ○	▲	69217		
4 [21]	1490413-3 ** 1490414-2 ○	1490413-3 ** 1490414-2 ○	▲	69218		
2 [34-35]	1490413-4 ** 1490414-2 ○	1490413-4 ** 1490414-2 ○	▲	45433		
1/0 [50-60]	1490413-5 ** 1490414-3 ○	1490413-5 ** 1490414-3 ○		45436		
2/0 [67-70]	1490413-6 ** 1490414-3 ○	1490413-6 ** 1490414-3 ○		45439		
3/0 [80-95]	1490413-7 ** 1490414-3 ○	1490413-7 ** 1490414-3 ○		45442		
4/0 [100-125]	1490413-8 ** 1490414-3 ○	1490413-8 ** 1490414-3 ○		45445		
250-300 MCM [127-152]					48816	69911
300-350 MCM [152-177]					48817	69912
400 MCM [203]					48818	69913
500-600 MCM [253-304]					48819	69914

**	Stationary die
○	Moving die
▲	Self-Contained die

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 10,000 psi

Heavy Duty SOLISTRAND Terminals



Wire Size in AWG [mm ²]	Hydraulic Crimp Tooling 10,000 psi Operating Pressure	
	Hand Tools (U-Die)	Hydraulic Heads (U-Die)
		1490748-1 1490749-1
8 [7-8.5]	1490413-9 * 1490413-2 ○	1490413-9 * 1490414-2 ○
6 [13-15]	1-1490413-0 * 1490414-2 ○	1-1490413-0 * 1490414-2 ○
4 [21]	1-1490413-1 * 1490414-2 ○	1-1490413-1 * 1490414-2 ○
2 [34-35]	1-1490413-2 * 1490414-3 ○	1-1490413-2 * 1490414-3 ○
1/0 [50-60]	1-1490413-3 * 1490414-3 ○	1-1490413-3 * 1490414-3 ○



SOLISTRAND Flag Terminals

Wire Size in AWG [mm ²]	Hydraulic Crimp Tooling 10,000 psi Operating Pressure	
	Hand Tools (U-Die)	Hydraulic Heads (U-Die)
		1490749-1
8 [7-8.5]	1752680-8 * 1752681-2 ○	1752680-8 * 1752681-2 ○
6 [13-15]	1752680-7 * 1752681-3 ○	1752680-7 * 1752681-3 ○
4 [21]	1752680-6 * 1752681-3 ○	1752680-6 * 1752681-3 ○
2 [34-35]	1752680-5 * 1752681-3 ○	1752680-5 * 1752681-3 ○
1/0 [50-60]	1752680-4 * 1752681-1 ○	1752680-4 * 1752681-1 ○
2/0 [67-70]	1752680-3 * 1752681-1 ○	1752680-3 * 1752681-1 ○
3/0 [80-95]	1752680-2 * 1752681-1 ○	1752680-2 * 1752681-1 ○
4/0 [100-125]	1752680-1 * 1752681-1 ○	1752680-1 * 1752681-1 ○

*	Stationary Die
○	Moving Die

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 10,000 psi

TERMINYL Terminals and Splices



Wire Size in AWG [mm²]	Hydraulic Crimp Tooling 10,000 psi Operating Pressure					
	Hand Tools (U-Die)		Hydraulic Heads (U-Die)		Hydraulic Heads (Shank-Die)	
	1490748-1	1490749-1	1490745-1 1490747-1	1490746-1 1976230-1	1752877-1	1752787-1
8 [7-8.5]	1490597-1	1490597-1	1490597-1	1490597-1		
6 [13-15]	1490598-1	1490598-1	1490598-1	1490598-1		
4 [21]	1490599-1	1490599-1	1490599-1	1490599-1		
4HD					69463	69463
2 [34-35]		1490406-1		1490406-1		
1/0 [50-60]		1490700-1		1490700-1	47824	47824
2/0 [67-70]					47825	47825
3/0 [80-95]					47915	47915
4/0 [100-125]					47918	47918

PLASTI-GRIP Terminals and Splices



Wire Size in AWG [mm²]	Hydraulic Crimp Tooling 10,000 psi Operating Pressure			
	Hand Tool (U-Die)	Hydraulic Head (U-Die)	Hydraulic Heads (Shank Die)	
	1490749-1	1490746-1 1976230-1	1752877-1	1752787-1
8 [7-8.5]	1490534-1	1490534-1	48858-1	48858-1
6 [13-15]	1490535-1	1490535-1	48859-1	48859-1
4 [21]	1490536-1	1490536-1	48860-1	48860-1
2 [34-35]	1490410-1	1490410-1	48861-1	48861-1
1/0 [50-60]			48756-1	48756-1
2/0 [67-70]			48757-1	48757-1
3/0 [80-95]			48758-1	48758-1
4/0 [100-125]			48759-1	48759-1

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 10,000 psi

STRATO-THERM Terminals and Splices



Wire Size in AWG [mm²]	Hydraulic Crimp Tooling 10,000 psi Operating Pressure	
	Hydraulic Head (Shank Die)	
	1752868-1	
8 [7-8.5]	69211-1	
6 [13-15]	69212-1	
4 [21]	69213-1	
2 [34-35]	69214-1	
1/0 [50-60]	69215-1	
2/0 [67-70]	69254-1	

AMPOWER Quick Disconnect Terminals



Wire Size in AWG [mm²]	Hydraulic Crimp Tooling 10,000 psi Operating Pressure	
	Hydraulic Heads (Shank Die)	
	1752868-1	1752786-1
1/0 [50-60]	68361-1 ○ / 68200-1	
2/0 [67-70]	68253-1 ○ / 68201-1	
3/0 [80-95]	59867-1 ○	
4/0 [100-125]	68304-1 ○	
250 MCM [127]	68203-1	
350 MCM [177]		68204-1
400 MCM [203]		68332-1 ●
500 MCM [253]		68206-1 ●
600 MCM [304]		46757-3

○	With Locator
●	Dual Crimp

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 10,000 psi

AMPOWER Terminals and Splices



Wire Size in AWG [mm²]	Hydraulic Crimp Tooling 10,000 psi Operating Pressure						
	Hand Tools (U-Die)		Hydraulic Heads (U-Die)		Hydraulic Heads (Shank Die)		
	1490748-1	1490749-1	1490745-1 1490747-1	1490746-1 1976230-1	1752868-1	1752788-1	1752786-1
6 [13-15]	1583092-1	1583092-1	1583092-1	1583092-1	69133-1		
4 [21]	1583093-1	1583093-1	1583093-1	1583093-1	69134-2		
2 [34-35]	1583094-1	1583094-1	1583094-1	1583094-1	46765-3		
1/0 [50-60]	1583095-1	1583095-1	1583095-1	1583095-1	46766-2		
2/0 [67-70]	1583096-1	1583096-1	1583096-1	1583096-1	46767-2		
3/0 [80-95]				1583097-1♦	46749-2		
4/0 [100-125]				1583098-1♦	46750-2		
250 MCM [127]					46751-2	46326-2	
300 MCM [152]					46752-2		
350 MCM [177]					46753-2		69653
400 MCM [203]							46754-2
500 MCM [253]							46755-2
600 MCM [304]							46756-2
600 HD							59870-1
700 MCM [355]							46757-2
800 MCM [405]							46758-2
900 MCM [456]							46759-2
1000 MCM [507]							46760-2

♦	1976230-1 only
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POWER HAND TOOLING

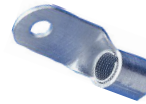
Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 10,000 psi

Sealed Crimp COPALUM Terminals and Splices



Wire Size in AWG [mm²]		Hydraulic Crimp Tooling 10,000 psi Operating Pressure			
		Hand Tool (U-Die)	Hydraulic Head (U-Die)	Hydraulic Heads (Shank Die)	
Al	Cu				
		1490749-1	1490746-1 1976230-1	1752877-1	1752787-1
8 [7-8.5]	10 [5-6]	1490555-1	1490555-1	68006	68006
6 [13-15]	8 [7-8.5]	1490556-1	1490556-1	68007	68007
4 [21]	6 [13-15]	1490557-1	1490557-1	68008	68008
2 [34-35]	4 [21]			68009	68009
1/0 [50-60]	2 [34-35]			68010	68010
2/0 [67-70]	1/0 [50-60]			314964-1	68011-1
3/0 [80-95]	2/0 [67-70]				59877-1
4/0 [100-125]	3/0 [80-95]				314948-1

Bar Crimp COPALUM Terminals and Splices

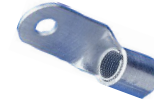


Wire Size in AWG [mm²]		Hydraulic Crimp Tooling 10,000 psi Operating Pressure			
		Hand Tool (U-Die)	Hydraulic Head (U-Die)	Hydraulic Heads (Shank Die)	
Al	Cu				
		1490749-1	1490746-1 1976230-1	1752868-1	1752786-1
8 [7-8.5]	10 [5-6]	1490572-1	1490572-1	68043	
6 [13-15]	8 [7-8.5]	1490573-1	1490573-1	68044	
4 [21]	6 [13-15]	1490574-1	1490574-1	68045	
2 [34-35]	4 [21]	1490575-1	1490575-1	68046	
1/0 [50-60]	2 [34-35]			68047	
2/0 [67-70]	1/0 [50-60]			68048	
3/0 [80-95]	2/0 [67-70]			68049	
4/0 [100-125]	3/0 [80-95]				68050
250 MCM [127]	4/0 [100-125]				68034
300 MCM [152]	250 MCM [127]				68035
400 MCM [203]	300 MCM [152]				68036
500 MCM [253]	400 MCM [203]				68037

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 10,000 psi

Insulation Piercing Crimp COPALUM Terminals and Splices



Wire Size in AWG [mm²]		Hydraulic Crimp Tooling 10,000 psi Operating Pressure			
		Hand Tool (U-Die)	Hydraulic Head (U-Die)	Hydraulic Heads (Shank Die)	
Al	Cu				
8 [7-8.5]	10 [5-6]	1490749-1	1490746-1 1976230-1	1752868-1	1752786-1
6 [13-15]	8 [7-8.5]	1490714-1	1490714-1	68084	
4 [21]	6 [13-15]	1490715-1	1490715-1	68085	
2 [34-35]	4 [21]	1490716-1	1490716-1	68086	
1/0 [50-60]	2 [34-35]	1490717-1	1490717-1	68130	
2/0 [67-70]	1/0 [50-60]	1490718-1	1490718-1	68131	
3/0 [80-95]	2/0 [67-70]			68132	
4/0 [100-125]	3/0 [80-95]			68133	
				318106-1	68129

Hydraulic Equipment Options for 68,950 kPa / 10,000 psi

Pistol Grip Battery Tool Kit

PN **1213875-1** (12 ton 1 stroke, 110V)
PN **1213875-2** (12 ton 1 stroke, 220V)

PN **1976505-1** (14 ton 1/2 stroke, 110V)
PN **1976505-2** (14 ton 1/2 stroke, 220V)

- Complete kit with batteries and battery charger
- Accepts U-Dies
- Rotating head 320°
- Excellent power to weight ratio
- Cycle life: 10,000 cycles



Hydraulic Foot Pump, manual

PN **1583659-1**



Hydraulic Hand Pump, manual

PN **1583661-1**



Portability Options for 10,000 psi

Portable Battery Hydraulic Unit

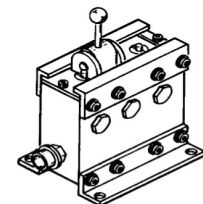
Portable tools and pump units allow you to perform crimping where its needed - in the factory or in the field.

PN **1804111-1** - Portable Battery Unit (10,000 psi (68,950 kPa))



3-Way Multidirectional Valve

PN **1901782-1** (manual)



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Hydraulic Powered Crimp Tooling for 8,200 psi

FAST FACTS

- TE legacy 8,200 psi hydraulic system pumps and crimp heads
- Electric & manual hydraulic pumps for crimping at fixed locations
- 8,200 psi crimp heads compatible with shank dies available for wire sizes requiring a crimp force up to 33 tons
- U-die crimp head stroke options of 1" and 1.5"
- Hand-held pistol grip tools with rechargeable battery for U-dies
- Integrated crimp head/die combinations for crimping #8-2 AWG SOLISTRAND terminals



TE Connectivity's line of quality tooling TE legacy 8,200 psi [56,540 kPa] hydraulic tool systems. The basic hydraulic tool system requires a pump, hose (multiple lengths are available with all configurations), crimp head, and crimp die. There is a TE hydraulic pump to meet the demands of any crimping application. For fixed crimping locations, you can choose between a 110V or 220V Electric Hydraulic Pump (with optional remote hand control), or manual foot and hand hydraulic pumps.

For wire sizes requiring up to 33 tons [294 kN], TE offers crimp heads for 8,200 psi pumps that are compatible with shank dies. For an 8,200 psi hydraulic system, there are eight crimp heads available. These crimp heads accept shank dies. The crimp heads are available for wire sizes requiring up to 33 tons of crimp force.

For both hydraulic systems, an integrated head/die for crimping #8 to #2 SOLISTRAND terminals is available. There are also manual hand held hydraulic tools available for both U and shank die sets.

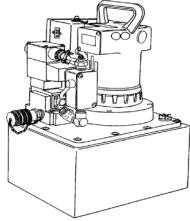
Note: 10,000 psi hydraulic pumps are not compatible with 8,200 psi crimp heads. 8,200 psi hydraulic pumps are not compatible with 10,000 crimp heads.

POWER HAND TOOLING

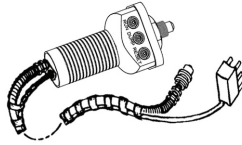
HYDRAULIC TOOLING SELECTION GUIDE for 8,200 psi

Hydraulic Pumps, Controls and Hoses

The Heavy-duty Pump is designed for higher crimp cycle frequency.



WITH



OR



AND



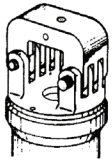
Heavy Duty Electric Hydraulic Pump
(110V)^{1,2} **P/N 69120-1**
OR
Heavy Duty Electric Hydraulic Pump
(220V)^{1,2} **P/N 69120-2**
CM 409-1950

Remote Hand Control³
(for Heavy-Duty pump)
w/hose attached
P/N 59907-7 (7 ft hose)
P/N 1-59907-5 (15 ft hose)
P/N 2-59907-1 (21 ft hose)

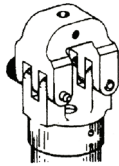
Remote Foot Control³
(for Heavy-Duty pump)
P/N 68284-1

Hydraulic Hoses⁴
(not required for hand control)
P/N 59909-3 (3 ft)
P/N 59909-7 (7 ft)
P/N 1-59909-5 (15 ft)
P/N 2-59909-1 (21 ft)

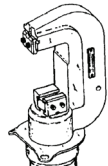
Heavy-Duty Crimp Heads (Shank Dies) (> 25,000 cycles)



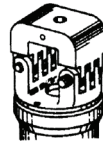
250 MCM - 600 MCM
33 ton output force
28 lbs
P/N 58445-1
IS 408-9598



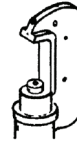
8 - 4/0 AWG
22 ton output force
16 lbs
P/N 69066
IS 408-2453



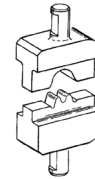
4/0 AWG - 1000 MCM
26 ton output force
29 lbs
P/N 69082
IS 408-2456



8 - 4/0 AWG
33 ton output force
28 lbs
P/N 58422-1
IS 408-9535

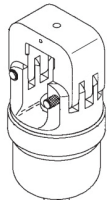


12-10 AWG - 350 MCM
18 ton output force
13 lbs
P/N 69099
IS 408-2458

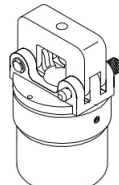


PLASTI-GRIP	8 AWG - 4/0 AWG
AMPOWER	6 AWG - 1500 MCM
AMPOWER Quick Disconnect	1/0 AWG - 600 MCM
Insulation Piercing COPALUM	10 AWG (Cu) - 3/0 AWG
Sealed COPALUM	10 AWG - 3/0 AWG
Bar COPALUM	10 AWG (Cu) - 400 MCM
SOLISTRAND	8 AWG - 600 MCM
STRATO-THERM	8 AWG - 2/0 AWG
TERMINYL	1/0 AWG thru 4/0 AWG

Hydraulic Hand Tools



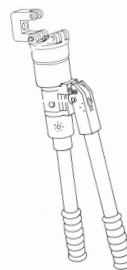
8 - 2 AWG
8 ton output force
5 lbs
P/N 69051
IS 408-2450



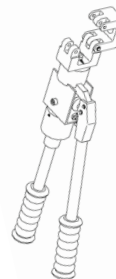
8 - 4/0 AWG
12 ton output force
10 lbs
P/N 69065
IS 408-2452



8 - 4/0 AWG
12 ton output force
10 lbs
P/N 69067
IS 408-2454



8-4/0 AWG
12.5 lbs
P/N 59973-1
IS 408-6803

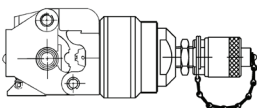


8-2 AWG
8 lbs
P/N 59974-1
IS 408-6757

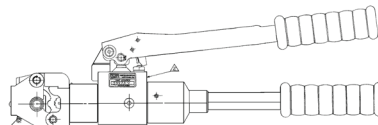
- Powered systems require a pump, hand or foot control, hose, crimp head and die except with **69069**.
- Manual systems require hand tools and the battery hand tool requires only dies.

- Hand Pump **314979-1** can be substituted as manual options for Electro-Hydraulic Pumps.
- Includes female screw-to-connect, ³/₈ NPT quick couplers.
- Not required with manual pump options.
- Includes male screw-to-connect, ³/₈ NPT quick couplers.

SOLISTRAND (Integrated Crimp Dies)



#8-#2 AWG SOLISTRAND
Compression Head
(No crimp dies required)
P/N 69069
IS 408-1745



#8-#2 AWG SOLISTRAND
Compression Tool
(No crimp dies required)
P/N 59975-1
IS 408-6758

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MANUAL & SEMI AUTOMATIC TOOLING SOLUTIONS

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 8,200 psi

The TE Connectivity hydraulic crimping tool line offers a wide array of die, hand tool, and hydraulic head configurations. Use the following tables to determine the configuration that best matches your requirements.

SOLISTRAND Terminals



DYNA-CRIMP System 8,200 psi Operating Pressure						
Wire Size in AWG [mm ²]	Hand Tool	Hydraulic Heads	Hydraulic Heads (Shank Dies)			
		59973-1	69065 69067	69069▲	69099	58445-1
8 [7-8.5]	48126** 48355○	48126** 48355○	▲	69216		
6 [13-15]	48128** 48127○	48128** 48127○	▲	69217		
4 [21]	48129** 48127○	48129** 48127○	▲	69218		
2 [34-35]	48130** 48127○	48130** 48127○	▲	45433		
1/0 [50-60]	48132** 48131○	48132** 48131○		45436		
2/0 [67-70]	48133** 48131○	48133** 48131○		45439		
3/0 [80-95]	48134** 48131○	48134** 48131○		45442		
4/0 [100-125]	300430** 48131○	300430** 48131○		45445		
250-300 MCM [127-152]					48816	69911
300-350 MCM [152-177]					48817	69912
400 MCM [203]					48818	69913
500-600 MCM [253-304]					48819	69914

**	Stationary Die
○	Moving Die
▲	Self-Contained Die

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 8,200 psi

Heavy Duty SOLISTRAND Terminals



Wire Size in AWG [mm ²]	DYNA-CRIMP System 8,200 psi Operating Pressure	
	Hand Tools (U-Die)	Hydraulic Heads (U-Die)
		59973-1
8 [7-8.5]	48128-1 ✱ 48127-1 ○	48128-1 ✱ 48127-1 ○
6 [13-15]	48129-1 ✱ 48127-1 ○	48129-1 ✱ 48127-1 ○
4 [21]	48130-1 ✱ 48127-1 ○	48130-1 ✱ 48127-1 ○
2 [34-35]	48132-1 ✱ 48131-1 ○	48132-1 ✱ 48131-1 ○
1/0 [50-60]	48133-1 ✱ 48131-1 ○	48133-1 ✱ 48131-1 ○

SOLISTRAND Flag Terminals



Wire Size in AWG [mm ²]	DYNA-CRIMP System 8,200 psi Operating Pressure
	Hydraulic Heads (U-Die)
	69067
8 [7-8.5]	48506 ✱ 48505 ○
6 [13-15]	48508 ✱ 48507 ○
4 [21]	48509 ✱ 48507 ○
2 [34-35]	48510 ✱ 48507 ○
1/0 [50-60]	48652 ✱ 48511 ○
2/0 [67-70]	48805 ✱ 48511 ○
3/0 [80-95]	48806 ✱ 48511 ○
4/0 [100-125]	48807 ✱ 48511 ○

✱	Stationary Die
○	Moving Die

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 8,200 psi

TERMINYL Terminals and Splices

Wire Size in AWG [mm ²]	DYNA-CRIMP System 8,200 psi Operating Pressure			
	Hand Tool	Hydraulic Heads (Shank Die)		
	59974-1	69051	69066	58422-1
8 [7-8.5]	47820	47820		
6 [13-15]	47821	47821		
4 [21]	47822	47822		
4HD			69463	69463
2 [34-35]	47823	47823		
1/0 [50-60]			47824	47824
2/0 [67-70]			47825	47825
3/0 [80-95]			47915	47915
4/0 [100-125]			47918	47918

PLASTI-GRIP Terminals and Splices

Wire Size in AWG [mm ²]	DYNA-CRIMP System 8,200 psi Operating Pressure			
	Hand Tool	Hydraulic Heads (Shank Die)		
	59974-1	69051	69066	58422-1
8 [7-8.5]	48752-1	48752-1	48858-1	48858-1
6 [13-15]	48753-1	48753-1	48859-1	48859-1
4 [21]	48754-1	48754-1	48860-1	48860-1
2 [34-35]	48755-1	48755-1	48861-1	48861-1
1/0 [50-60]			48756-1	48756-1
2/0 [67-70]			48757-1	48757-1
3/0 [80-95]			48758-1	48758-1
4/0 [100-125]			48759-1	48759-1

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 8,200 psi

STRATO-THERM Terminals and Splices



Wire Size in AWG [mm²]	DYNA-CRIMP System 8,200 psi Operating Pressure	
	Hydraulic Head (Shank Die)	
	69099	
8 [7-8.5]	69211-1	
6 [13-15]	69212-1	
4 [21]	69213-1	
2 [34-35]	69214-1	
1/0 [50-60]	69215-1	
2/0 [67-70]	69254-1	

AMPOWER Quick Disconnect Terminals



Wire Size in AWG [mm²]	DYNA-CRIMP System 8,200 psi Operating Pressure	
	Hydraulic Heads (Shank Die)	
	69099	69082
1/0 [50-60]	68361-1 ○ / 68200-1	
2/0 [67-70]	68253-1 ○ / 68201-1	
3/0 [80-95]	59867-1 ○	
4/0 [100-125]	68304-1 ○	
250 MCM [127]	68203-1	
350 MCM [177]		68204-1
400 MCM [203]		68332-1 ●
500 MCM [253]		68206-●
600 MCM [304]		46757-3

○	With Locator
●	Dual Crimp

POWER HAND TOOLING

Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 8,200 psi

AMPOWER Terminals and Splices



Wire Size in AWG [mm²]	DYNA-CRIMP System 8,200 psi Operating Pressure				
	Hand Tool	Hydraulic Heads (Shank Die)			
	59973-1	69065 69067	69099	58445-1	69082
6 [13-15]			69133-1		
4 [21]			69134-2		
2 [34-35]	46321-3	46321-3	46765-3		
1/0 [50-60]	46322-2	46322-2	46766-2		
2/0 [67-70]	46323-2	46323-2	46767-2		
3/0 [80-95]	46324-2	46324-2	46749-2		
4/0 [100-125]	46325-2	46325-2	46750-2		
250 MCM [127]			46751-2	46326-2	
300 MCM [152]			46752-2		
350 MCM [177]			46753-2		69653
400 MCM [203]					46754-2
500 MCM [253]					46755-2
600 MCM [304]					46756-2
600 HD					59870-1
700 MCM [355]					46757-2
800 MCM [405]					46758-2
900 MCM [456]					46759-2
1000 MCM [507]					46760-2

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POWER HAND TOOLING

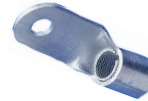
Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 8,200 psi

Sealed Crimp COPALUM Terminals and Splices



Wire Size in AWG [mm²]		DYNA-CRIMP System 8,200 psi Operating Pressure	
		Hydraulic Heads (Shank Die)	
Al	Cu	69066	58422-1
8 [7-8.5]	10 (5-6)	68006	68006
6 [13-15]	8 [7-8.5]	68007	68007
4 [21]	6 [13-15]	68008	68008
2 [34-35]	4 [21]	68009	68009
1/0 [50-60]	2 [34-35]	68010	68010
2/0 [67-70]	1/0 [50-60]	314964-1	68011-1
3/0 [80-95]	2/0 [67-70]		59877-1
4/0 [100-125]	3/0 [80-95]		314948-1

Bar Crimp COPALUM Terminals and Splices

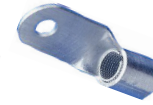


Wire Size in AWG [mm²]		DYNA-CRIMP System 8,200 psi Operating Pressure	
		Hydraulic Heads (Shank Die)	
Al	Cu	69099	69082
8 [7-8.5]	10 [5-6]	68043	
6 [13-15]	8 [7-8.5]	68044	
4 [21]	6 [13-15]	68045	
2 [34-35]	4 [21]	68046	
1/0 [50-60]	2 [34-35]	68047	
2/0 [67-70]	1/0 [50-60]	68048	
3/0 [80-95]	2/0 [67-70]	68049	
4/0 [100-125]	3/0 [80-95]		68050
250 MCM [127]	4/0 [100-125]		68034
300 MCM [152]	250 MCM [127]		68035
400 MCM [203]	300 MCM [152]		68036
500 MCM [253]	400 MCM [203]		68037

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Dies, Hand Tools, and Hydraulic Heads – Configuration Options for 8,200 psi

Insulation Piercing Crimp COPALUM Terminals and Splices



Wire Size in AWG [mm²]		DYNA-CRIMP System 8,200 psi Operating Pressure	
		Hydraulic Heads (Shank Die)	
Al	Cu	69099	69082
8 [7-8.5]	10 [5-6]	68084	
6 [13-15]	8 [7-8.5]	68085	
4 [21]	6 [13-15]	68086	
2 [34-35]	4 [21]	68130	
1/0 [50-60]	2 [34-35]	68131	
2/0 [67-70]	1/0 [50-60]	68132	
3/0 [80-95]	2/0 [67-70]	68133	
4/0 [100-125]	3/0 [80-95]	318106-1	68129

Hydraulic Equipment Options for 56,540 kPa / 8,200 psi

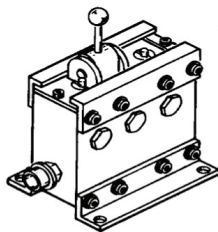
Hydraulic Hand Pump, manual

PN **314979-1**



3-Way Multidirectional Valve

PN **59920** (manual)



CONTRACTOR HAND TOOLING

Pistol Grip Hand Tool System for IDCs

FAST FACTS

- Terminates 28-16 AWG [0.08-1.2 mm²] wires
- No wire stripping needed for lower applied cost
- Pistol grip (manual or air) or bench mount (air or electric) power units
- Lightweight; easy to operate
- For prototypes or low- to medium-volume production
- Small size; useful in confined work areas
- Interchangeable terminating heads:
 1. Pin and socket connectors (AMPLIMITE HDE and MATE-N-LOK)
 2. Printed circuit board connectors (AMPMODU, MT-6/MT-7, 2 mm CT, and MTA)
 3. Category 5 connectors (CHAMP)
 4. Card edge connectors
- Most terminating heads can be rotated to any angle
- Adjustment available for proper wire insertion depth
- Most terminating heads automatically index connectors to the next contact position, or connectors can be advanced by hand to any position
- Anti-backup pawl prevents connectors from moving in the wrong direction
- Produced under a quality management system certified to ISO 9001



The pistol grip hand tool 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; power-assist and bench mount versions are available to suit your specific needs.

This system is well suited for low- to medium-volume production. Simply order the standard or extended-wear terminating heads based on your anticipated needs. Since most terminating heads can be rotated to any angle, the operator can also tackle more difficult terminations in confined work areas.

The terminating force is provided by a manual-, pneumatic- or electric-powered assembly. The wire inserter, inside each head, pushes the end of an unstripped wire into the insulation displacement contact. Then, most tools automatically index the connector to the next contact. The tools offer precise termination depth control.

For maximum productivity, a bench mount power unit (pneumatic or electric) is recommended. Optional feed tracks can increase application rates further. Actual production rate depends on the IDC product, discrete wire or ribbon cable, and operator dexterity.

Technical Documents

Customer Manual

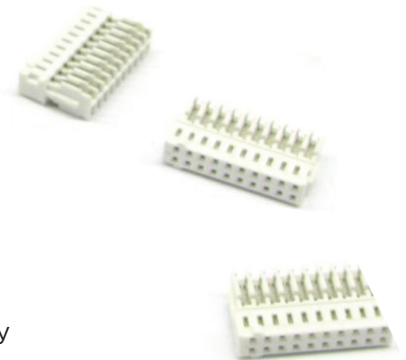
409-5746—
Electric Power Unit

Instruction Sheets

408-6790—
Pistol Grip Manual Handle Assembly

408-6789—
Pistol Grip Pneumatic Handle Assembly

408-9393— Bench Mount Pneumatic Power Unit



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Pistol Grip Power Tooling Options

Pistol Grip Manual Handle Assembly, PN 58074-1

A basic hand tool requires a handle assembly and a terminating head, ordered separately.

- Lightweight, easy to use
- Ratchet control will not release cam trigger until it is fully bottomed
- Ratchet release
- U-shaped key slides into handle to hold interchangeable heads securely
- Material (handle) — molded nylon



Pistol Grip Pneumatic Handle Assembly, PN 58075-1

- Lightweight
- Power assist for less operator effort
- Push-button trigger actuated
- Quiet — 78 dB max.
- U-shaped key slides into handle to secure interchangeable heads
- Material (handle) — molded nylon



Bench Mount Pneumatic Power Unit, PN 58338-1

Assembly consists of a bench mount with attached pneumatic power unit, a foot switch, and two air lines which connect the switch to the power unit and the air source to the switch. Mounting hardware is not included.

- Mounting bracket allows interchangeable heads to be pointed up or down
- Power assist for greater productivity
- Actuated by foot switch
- Key retains heads, or heads and feed tracks



Notes: 1. Interchangeable terminating heads must be ordered separately.
2. Loose-piece or tape (reel) feed track accessories are available.

CONTRACTOR HAND TOOLING

Wire & Cable Cutting Tools

Diagonal Cutter, PN 1116571-1

- Cut wires flush
- Spring loaded handles



500 MCM Cable Cutter, PN 605742-1

- 21 overall length
- Fiberglass handles
- Not for steel or ACSR



Group Cutter, PN 1490498-1

- Ideal for cutting cable up to 2/0
- Also cuts coax cable up to RG-9



350 MCM Cable Cutter, PN 605744-1

- Steel handles
- Not for steel or ACSR cable



Ratcheted Cable Cutter - Compact, PN 1490489-1

- Ratchet mechanism keeps handle force low
- Handles lock together for safety/storage
- Compact design for easy fit into tight places
- Quick release lever for easy take-up



See page 64-65 for information on the JackKnack Cable Prep Tool.

Wire & Cable Stripping Tools — Standard

Economy Wire Stripper and Cutter, PN 1490491-1

- Strips 10-24 AWG
- Adjustable to any of 8 wire sizes



Automatic Wire Stripper, PN 734185-1

- Strips PVC, THHN, and THHW
- Adjustable wire stop
- Built-in cutter



Coax Stripper, PN 1490490-1

- 3 blades designed to strip RTG-6, 58, 59 cable in one step
- Replaceable blade cartridges



Rotary Cable Stripper, PN 606700-1

- Round cable tool can be used on single or multiple conductor cable up to 1.75 in diameter



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All Purpose Tools

Cable Tie Gun, PN 734587-1

- For cable ties 2.2 - 4.8 mm
- Thickness up to 1.6 mm
- Automatic cut-off
- Adjustable tension setting



BNC Connector Removal Tool, PN 1725122-1 F Connector Removal Tool, PN 1725123-1

- For security system use
- Remove BNC/F connectors in high density or hard-to-reach locations



4-Way Indent Tool, PN 1490492-1

- Full ratchet cycle
- Contact locator
- Used for closed-barrel D-Sub contacts



Telecom Products Termination Tools

Butterfly Tool, PN 229378-1 (50 pos), PN 231880-1 (64 pos)

- Mass terminates and shears all wires in a single operation
- Portable, comes with carrying case
- Base can be bench mounted
- Used for CHAMP connectors



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CONTRACTOR HAND TOOLING

JackKnack Telecommunications Cable Prep Tool

FAST FACTS

- Cable Jacket Stripper
- Cable Filler Shear
- JackKnack Clamp
- Wire Placement Tool
- Lightweight Design
- Ergonomic Design
- Portable
- Convenient



PN 2119000-1

Integrated Tool for Cable Stripping, Cutting and Untwisting

The JackKnack Telecommunications Cable Preparation Tool (PN 2119000-1) is designed to strip the cable jacket, cut the cable filler, and untwist twisted wire pairs in most Category 5 and Category 6 telecommunications cable.

Cable Preparation and Termination Process

The JackKnack tool consists of an outer housing, a plunger, a cable jacket stripping cavity, a cable filler shear cavity, and a wire hook. The plunger has a loop that is designed to accept a user's finger and the outer housing has two flanges to accept user's fingers. When the plunger is depressed, the cable jacket stripping cavity opens, the cable filler shear blade actuates, and the wire hook extends. The tool is designed to fit comfortably on a user's hand throughout the entire preparation and termination process.

JackKnack Telecommunications Tool

Network installers and anyone who works in the telecommunications industry can quickly understand the amount of time required to prepare Category 5, 5e, or 6 cables for termination. First, the cable jacket must be stripped, then the rip cord and cable filler are trimmed and then comes the untwisting and lacing of the wires. Finally, the termination is made. In total, the process can take 3-4 minutes. Some people will claim it can be done in 1-2 minutes, but this is rarely a pace that can be maintained for an entire day's work. That is, until now.

The JackKnack Tool provides a simple method to perform all the basic cable preparation functions including the time consuming untwisting of wires.



Keep the JackKnack tool hanging around while performing other tasks.

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JackNack Telecommunications Cable Prep Tool

A. Stripping the Cable Jacket

1. To strip the cable jacket, depress the plunger using the finger loop and the housing flanges.
2. While the plunger is extended, place the cable in the cable jacket stripping cavity
3. Release the plunger, allowing the plunger to retract and the cable jacket stripping blade to pierce the cable jacket
4. Rotate the tool around the wire in either direction. Rotating the tool toward the larger arrow provides a deeper cut while rotating the tool toward the smaller arrow provides a shallower cut.
5. After the cable jacket is cut, depress the plunger again to allow the cable to be removed from the cable jacket stripping cavity.
6. Remove the cable jacket portion from the cable.

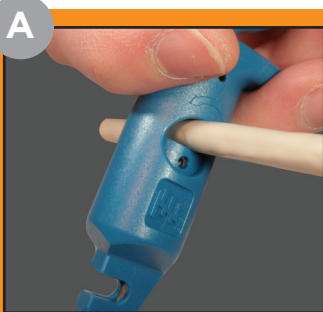
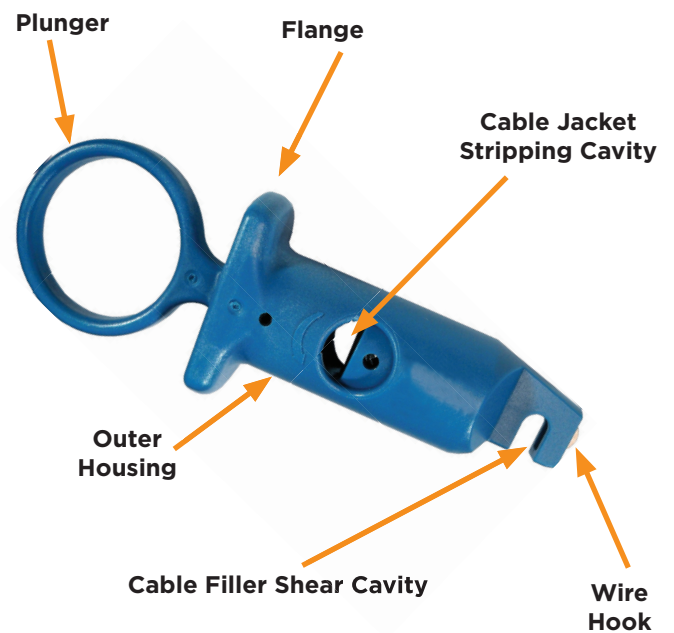
B. Cutting the Cable Filler

1. Bend the twisted pairs away from the cable filler.
2. To cut the cable filler, place the cable filler into the cable filler shear cavity
3. Depress the plunger using the finger loop and the housing flanges to extend the shear blade and cut the cable filler

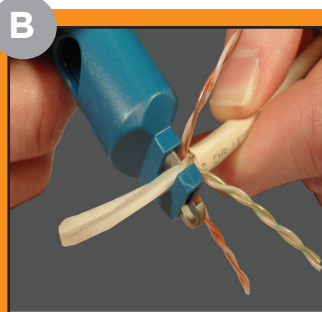
C. Untwisting Twisted Wire Pairs

1. To untwist a twisted wire pair, depress the plunger using the finger loop and the housing flanges to extend the wire hook.
2. Place the twisted wire pair in the wire hook and release the plunger to clamp the wires.
3. Twirl the tool around a finger using the finger loop to untwist the twisted wire pair.
4. To release the wires from the wire hook, depress the plunger and remove the wires.

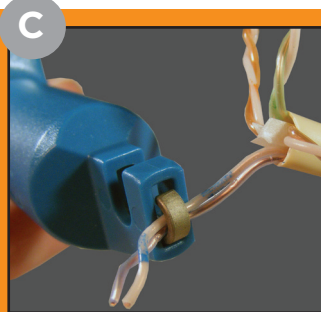
D. Placing wire in SL Mod Jack Lacing Fixture.



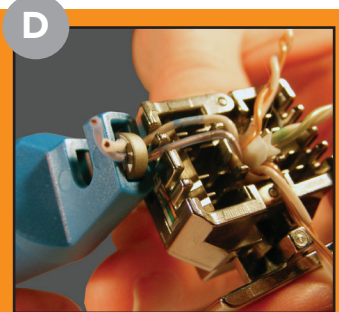
A
Strips cable jacket on cables with diameters ranging from 4.83-10.16mm [.190-.400 in].



B
Easily cuts the cable filler with the cable filler shear.



C
Untwists wire pairs with the innovative wire hook.



D
Easily places wire in SL mod jack lacing fixture.

INSERTION/EXTRACTION TOOLING

Insertion/Extraction Tools

FAST FACTS

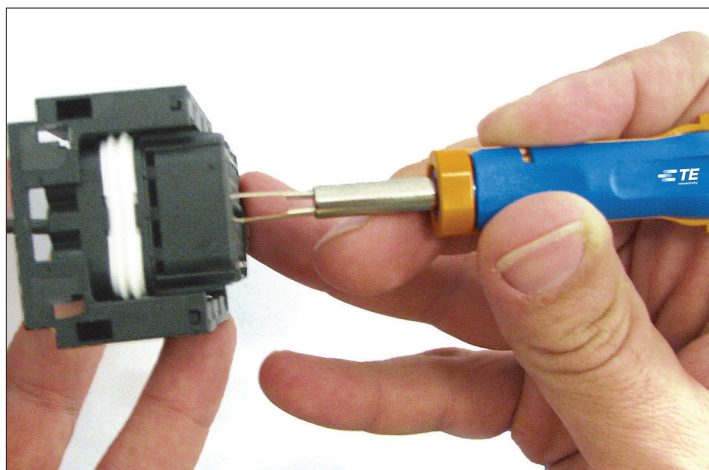
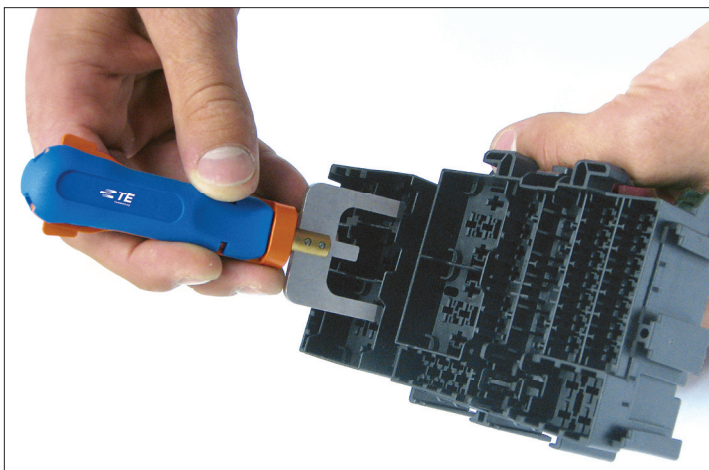
- Insertion / extraction tools are compatible with the vast majority of connectors used by most manufacturers wiring harnesses.
- Tool kits can be customized for further special requirements.
- These tools are used not only for TE Connectivity products but also those from other connector manufacturers.



Insertion/extraction tools are used for inserting discrete terminals into connector housings or removing them, without causing damage to either the terminals or housings.

Our new standard design features a comfortable handle and snap-in/out protective cover that allows users to stow the business end of the tool to help protect from inadvertent personal injury when the tools are not in use.

Many different design types currently exist for our vast terminal product range, which we continue to convert. If you would like the tool you use converted to the new design, want a custom kit or tools in this design for other manufacturers' products - contact us, and where volumes permit, we will be pleased to provide you with a quotation for your requirement.



Insertion/Extraction Tools

Universal Handle, PN 465629-[]

*For universal handle (with adjustable strap) with short tip holder (1.87 [47.5]), specify -1 suffix; with long tip holder (5.87 [149]), specify -2 suffix.

Requires installation tip: Part no. **465468-1** (> .185 [4.7] insul. dia. and/or crimp width) or part no. **465488-1** (> .185 [4.7] insul. dia. and/or crimp width).



Insertion/Extraction Tool, PN 91285-1

The tool is designed to insert and extract HD-22 and HD-20 contacts used in AMPLIMITE High Density (HD) Connectors.



Extraction Tool, PN 305183

Extraction Tools **1-305183-1** and **1-305183-2** are designed to remove contacts from MATE-N-LOK connectors. Tool **1-305183-1** is used for the pin contacts, and tool **1-305183-2** for the socket contacts.



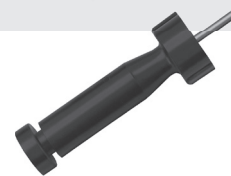
Extraction Tool, PN 318851-1

Designed to remove AMP Universal MATE-N-LOK and Universal MATE-N-LOK II pin and socket contacts from the connectors.



Extraction Tool, PN 455822-2

For use with rectangular connector contacts.



Extraction Tool, PN 465644-1

For use in MATE-N-LOK rectangular connector contacts.



Extraction/Lance Reset Tool, PN 843996-3

These tools are designed to remove MTE, Mod IV, Tandem Spring, and Mini Tandem Spring contacts from housings and reset the overly depressed contact locking lances of the removed contact.



SDE BENCHTOP TOOLING (for loose piece terminals)

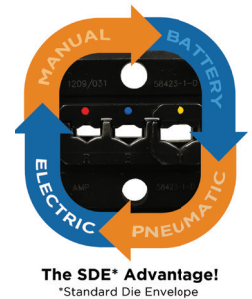
SDE Electric Benchtop Terminator

FAST FACTS

- This convenient, powerful terminator is a dependable asset for small-scale bench production or wire harness assembly
- Compatible with over 100 SDE dies
- Terminates wires to 10 AWG [6mm²]
- Small footprint - 390 x 260 x 200mm [15.5 x 10 x 8 in]; lightweight - 13 kg [29 lb]
- Foot actuated, with jog cycle
- Crimp jaws normally closed
- Power requirement: 110/120V or 220/240V; 0.7 kVA



Machine PN 539630-2



The SDE* Advantage!
*Standard Die Envelope

The SDE electric terminator offers excellent price to performance ratio in a compact benchtop unit with the features normally found on more expensive models. It is ideally suited for low to medium volume bench production and harness assembly. As part of the SDE family, it is compatible with a broad range of crimp dies that are fully interchangeable among tools and tool platforms.

Versatile. As an SDE tool, the system accommodates dozens of interchangeable dies in an ever expanding range, including those for open-barrel contacts and terminals. Many die sets have multiple cavities for crimping more than one wire or terminal size. The tool can terminate wires up to and including 10 AWG [6mm²].

Convenient. A completely logical, simple arrangement of control switches and connections provides easy setup and requires only minimal operator training. Operator safety is enhanced by a safety reverse switch and safety lock foot pedal.

In addition, crimp jaws are normally closed. The sprung shut jaws grip the terminal prior to wire insertion, to ensure precise positioning. A cycle counter tracks operation, for maintenance planning.

Quality. Every SDE terminator crimps with precision, incorporating the traditional quality of all TE products.

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SDE BENCHTOP TOOLING (for loose piece terminals)

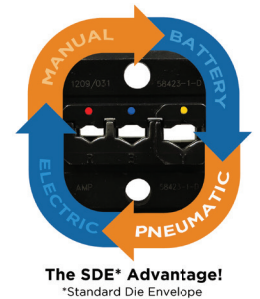
AT-SC MK II Pneumatic Safety Crimping Machine

FAST FACTS

- Pneumatic crimping machine
- Straight action machine
- Parallel closing mechanism
- Safety system / working without protection cover
- Tool less adapter change
- LED work light
- Variable closing speed
- Terminal pre-centering system
- Short cycle time
- Electronics piece counter
- Ergonomic design



Machine PN 1-528050-0



The AT-SC MK II Pneumatic Safety Crimping Machine provides maximum ease of use with optimum safety when using this machine for crimping loose contacts.

This pneumatic crimping machine features a newly developed safety mechanism. Due to a special safety valve, crimping is not permitted if the size of the opening between the dies exceeds 5.9 mm². Due to this special feature it is not necessary to fit safety guards to protect the operator and is in accordance with legal requirements.

Applications

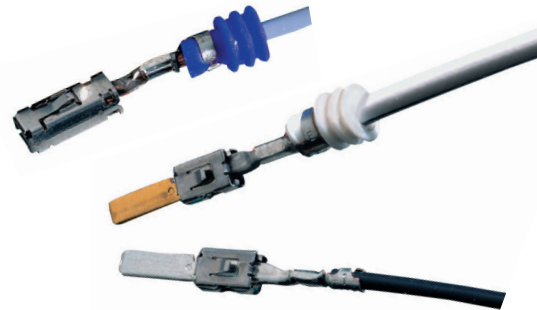
Crimping of insulated and non-insulated LP connectors with stranded wire. Max. crimpforce at 35 kN / 7868 lbs.

Applicable Die Adapters (die holder)

Standard adapter - included with AT-SC MK II Machine

- 2-528051-8* / AT-SC MK II, SDE die holder

* Accepts SDE die sets (for a list of available SDE die sets, refer to the chart on the following two pages.)



Die sets and special equipment available upon request.

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SDE BENCHTOP TOOLING (for loose piece terminals)

Tooling-to-Terminal Cross Reference


ELECTRIC TERMINATOR POWERED TOOLS








AT-SC MK II Pneumatic Safety Crimping Machine



SDE Electric Benchtop Terminator

UNINSULATED TERMINALS	Wire Range		Max.		Bench Tools Powered
	AWG	mm ²	Insul.	Dia.	
 SOLISTRAND Terminals and Splices	22-16	0.3-1.25	-	-	X
	16-14	1.25-2	-	-	X
	12-10	3-5	-	-	X
	8	7	-	-	X

INSULATED TERMINALS	Wire Range		Max.		Bench Tools Powered
	AWG	mm ²	Insul.	Dia.	
 PIDG FASTON Receptacles (6409 ₀₀ Series)	22-18	0.3-0.8	.100	2.54	X
	16-14	1.25-2	.170	4.32	X
	12-10	3-5	.250	6.35	X
 PIDG Terminals and Splices, PLASTI-GRIP Terminals	26-22	0.12-0.3	.082	2.08	X
	22-16	0.3-1.25	.125	3.18	X
	16-14	1.25-2	.150	3.81	X
	12-10	3-5	.230	5.84	X
 PLASTI-GRIP Butt Splices	26-22	0.12-0.3	.080	2.03	X
	22-16	0.3-1.25	.170	4.32	X
	16-14	1.25-2	.215	5.46	X
 PLASTI-GRIP Terminals	8	7	.377	9.58	X

FULLY-INSULATED TERMINALS	Wire Range		Max.		Bench Tools Powered
	AWG	mm ²	Insul.	Dia.	
 Ultra-Fast Plus FASTON Receptacles	22-18	0.3-0.8	.135	3.43	X
	16-14	1.25-2	.160	4.06	X
 Ultra-Fast FASTON Tabs and Receptacles	22-18	0.3-0.8	.230	5.84	X
	16-14	1.25-2	.260	6.60	X

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SDE BENCHTOP TOOLING (for loose piece terminals)

Tooling-to-Terminal Cross Reference

OPEN BARREL TERMINALS	Style	Wire Range		Max.		Bench Tools Powered
		AWG	mm ²	Insul.	Dia.	
 AMPLIMITE D-Sub. Connectors	Size 20 DF Contacts	28-24	0.08-0.2	.040	1.02	X
		24-20	0.2-0.5	0.60	1.52	X
 AMPMODU Connectors	Mod. IV Contact	26-22	0.12-0.3	.061	1.55	X
		24-20	0.2-0.5	.069	1.75	X
	Locking Clip Contacts	26-22	0.12-0.3	.062	1.58	X
		MTE & Tandem Spring Contacts	32-28	0.03-0.08	.054	1.37
	Share Point Contacts	26-22	0.12-0.3	.065	1.65	X
		32-22	0.03-0.3	.060	1.52	X
 CPC Connectors, M Series Connectors	Type II Contacts	28-24	0.08-0.2	.055	1.40	X
		24-20	0.2-0.6	.062	1.57	X
		18-16	0.8-1.4	-	-	X
		14	2	-	-	X
	Type III+ Contacts	30-26	0.05-0.15	.060	1.52	X
		26-24	0.12-0.2	.055	1.40	X
		24-20	0.2-0.6	.080	2.03	X
		24-20	0.2-0.6	.100	2.54	X
		24-20	0.2-0.6	.120	3.05	X
		18-16	0.8-1.25	.100	2.54	X
 FASTON Straight Receptacles (Premier Line Only)	250 Series	22-18	0.3-0.8	.130	3.30	X
		18-14	0.8-2	.170	4.32	X
		14-10	2-5	.200	5.08	X
 MATE-N-LOK Connectors	Commercial Contacts	30-22	0.05-0.3	.075	1.91	X
		24-18	0.2-0.8	.100	2.54	X
		20-14	0.5-2	.130	3.30	X
	Universal & Universal II Contacts	24-18	0.2-0.8	.100	2.54	X
		20-14	0.5-2	.130	3.30	X
		20-18	0.5-0.8	.200	5.08	X
	Mini-Universal	16-14	1.25-2	.200	5.08	X
		20-16	0.5-1.25	.126	3.20	X
		Mini-Universal II Contacts	26-22	0.12-0.3	.069	1.75
22-18	0.3-0.8		.094	2.39	X	
20-16	0.5-1.25		.126	3.20	X	
 Power Triple Lock Connectors	Power Triple Lock	22-20	0.3-0.6	.106	2.70	X
		20-16	0.6-1.25	.130	3.30	X
		18-14	0.9-2.1	.146	3.70	X
		12	3.3	.167	4.25	X

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BENCHTOP TOOLING

AT-60 Pneumatic Crimping Machine

FAST FACTS

- Controlled back stroke
- Straight action machine
- Pneumatic safety control mechanism
- Tool less adapter change
- Short cycle time with reduced energy
- Sequence control system
- Electronic work piece counter
- Ergonomic design
- Handy quick-exchange system of the adapter
- LED illumination of the working area



The AT-60 machine is a powerful pneumatic machine with a handy quick change system. Due to the control of the return stroke, cycle times are shorter with the benefit of reduced energy consumption.

With increased productivity and an operation simplified with the use of a foot pedal, the operators hands remain free to terminate the contacts and wire.

Adapter changeover is easy and quick as no tools are required. A strategically placed LED worklight illuminates the work area, with this feature failures can be avoided. The AT-60 offers many application possibilities.

Applications

Crimping of insulated and non-insulated LP connectors with stranded wire. Maximum crimpforce of 75kN / 16,860 lbs

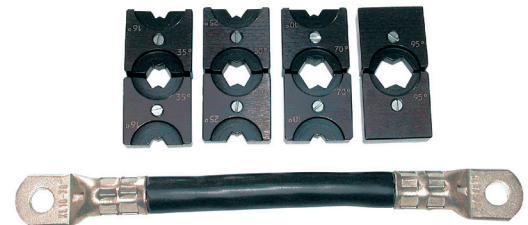
Applicable Die Adapters (die holder)

Standard adapter

- **2-528051-3** / AT-60, U Die Holder 22mm (standard)
- This adapter with the appropriate U die set (ordered separately) can be used to crimp the following:
 - 8-2 SOLISTRAND terminals and splices (no flag terminals)
 - 6-2 AMPPOWER terminals

Die sets and special equipment available upon request.

Machine PN 528050-9



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AT-66 Hydraulic Crimping Machine

FAST FACTS

- Programmable
- Adaptive crimp force
- Fast changeover times
- Compact design
- Lockable user interface
- Short cycle time

The AT-66 hydraulic crimping machine features an extremely compact design for low space requirement. The hydraulic power is provided by a separate hydraulic unit with main switch, power distribution and pump.

The AT-66 machine offers possibilities for various applications with a crimp force of 150 kN and an open operating space of 100.0 mm in height. This machine can be easily used for wire sizes from 0.14 mm² up to 300.0 mm².



Machine PN 528050-5 EUROPE version
Machine PN 528050-6 USA version

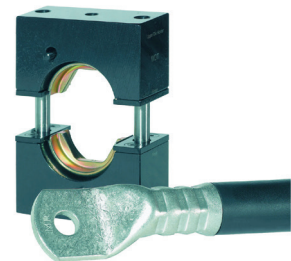
Technical Data

Applications

Crimping of insulated and non-insulated LP connectors with stranded wire. Maximum crimpforce of 150 kN / 33721 lbs.

Standard adapter

- **528051-4** / AT-66, U-Die Adapter
- This adapter with the appropriate U die set (ordered separately) can be used to crimp the following:
 - 8-4/0 SOLISTRAND terminals and splices (no flag terminals)
 - 8-2 TERMINYL terminals
 - 6-4/0 AMPPOWER terminals



Die sets and special equipment available upon request.

www.tooling.te.com

BENCHTOP TOOLING

OCEAN Applicators

FAST FACTS

- 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



The lead and harness industry of today is more price and quality competitive than ever before. TE Connectivity OCEAN applicators are designed 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 the ultimate flexibility with choices in feeding options.

The OCEAN 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, more precise terminal positioning along with quicker adjustability while being much more user friendly. The interchangeability also makes it possible to upgrade to smart applicator technology.

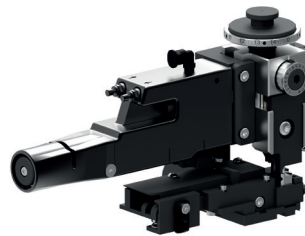
Request catalog 9-1773458-6 for more information.



**OCEAN Applicator
Mechanical Feed**



**OCEAN Applicator
Servo Feed**



**OCEAN Applicator
Pneumatic Feed**



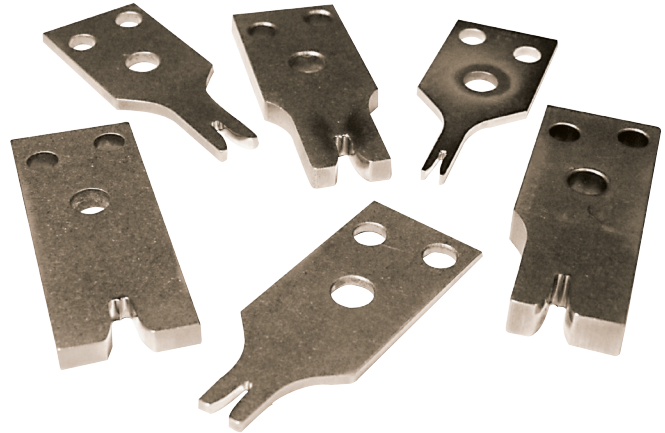
**OCEAN Applicator
Pacific Style**

www.tooling.te.com

Replacement Crimp Tooling from TE Connectivity

FAST FACTS

- Precision ground, chrome plated working surfaces to reduce jams and improve quality
- Made from specialty alloy steel for maximum strength
- Engineered for compliance with tight specifications
- Bell-mouth shaping to remove a high stress point and allow better metal flow into the crimp area
- Meets OEM specifications
- Designed to meet Tyco 108 series specifications, UL listed, listed by CSA international as certified
- Engineered and manufactured using processes independently certified to internally recognized quality standards ISO-9001:2000 and Telecommunications Industry Standard TL 9000



The Confident Choice for Manufacturing Success

Reliable, high yield crimping performance can be the difference between profit and loss for wire harness builders, whether independent or part of a larger manufacturing operation. Only by using genuine TE replacement crimp tooling can you be assured of optimum performance. This tooling is designed for longer life, more reliable, trouble-free operation, and best conformance to crimp specifications. It is the real system solution for crimp quality and productivity.

Reliability

TE replacement tooling is machined to tight tolerances, with working surfaces ground and polished for a smooth terminal interface. Chrome plating on critical surfaces results in a cleaner crimp and virtually eliminates terminal sticking or jamming in the tool.

Quality

These parts are highly engineered, with dimensional tolerances that guarantee higher crimp yields. Bell-mouth design relieves a high stress point and allows better metal flow into the crimp area, reducing terminal weakness and potential for damage. While a well-maintained applicator is an important part of the system for total success, only TE replacement tooling gives the best performance.

Compliance

Crimping with genuine TE tooling as part of a total system approach ensures compliance with many OEM specifications. These replacement tooling parts are designed to meet TE 108 series specifications, and are UL listed and listed by CSA International as certified.

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BENCHTOP TOOLING

AMP-O-LECTRIC Model G II Terminator

FAST FACTS

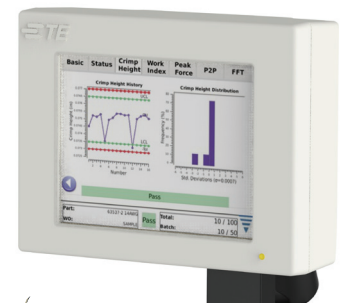
- Quiet operation
- Improved lighting
- Tool less changeover of applicators
- Precision manual adjust for crimp height
- Total and batch counter
- Accepts all existing TE applicators, with minor modifications
- Reduced maintenance requirements
- Split-cycle operation
- Standardized 1⁵/₈ [41.3] stroke
- Operates on either 120 or 220 VAC, 50 or 60 Hz



The Model G II is the latest and most advanced design in the long-standing series of AMP-O-LECTRIC machines for terminating wire using reeled terminals and contacts. It features a reliable and long lasting brush-less motor drive. This unit is designed and built to continue the tradition of work-horse terminators from TE.

For operator convenience and increased visibility of the work area, we've improved access to, and significantly updated lighting in the under cabinet and target area. The Crimp Quality Monitor (CQM II) continues to be located at eye level for bench-top use. The Model G II is one of the quietest machines available, plus improved guarding meets applicable European and domestic safety requirements.

G II Terminator	Part No.
Base unit	2217000-1
Base unit, with CQM II	2217000-2
Base unit, with stripper module	2217001-1
Base unit, with stripper module and CQM II	2217001-2
Base unit, splice machine for end- and side-feed splice applicators	2217002-1
Base unit, splice machine for end- and side-feed splice applicators, with CQM II	2217002-2



Crimp Quality Monitor (CQM II). Optional with many TE Terminators.



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AMP 3K and AMP 5K Terminators

FAST FACTS

- Crimp force for AMP 3K 13.3 kN [3,000 lb]; for AMP 5K 22.2 kN [5,000 lb]
- Accepts TE applicators
- Tool-less removal of applicators and guards for maintenance and product changeover
- Jog capability
- DC motor with gearbox drive, for small footprint and quiet operation
- Air feed available
- Available equipped with stripping module
- Available equipped with CQM II
- Light weight—68 kg [150 lb]



These value-oriented terminators are based on the field-proven AMP-O-LECTRIC Model G terminator. They are the latest in the series of machines for terminating wire using reeled terminals and contacts. The AMP 3K and AMP 5K terminators are designed for customers that require the increased output and quality of a benchtop, semi-automatic machine at a competitive price. Reliability is evident in features like the direct motor drive system and robust construction.

AMP 3K	Part No.
Manual precision crimp height adjust	1725950-2
Manual precision crimp height adj. w/CQM II	3-1725950-0
Manual precision crimp height adj. w/stripping module	1725910-2
Manual crimp height adj. w/stripping module & CQM II	1-1725910-9
AMP 5K	Part No.
Manual precision crimp height adjust	1725900-2
Manual precision crimp height adj. w/CQM II	3-1725910-1
Manual precision crimp height adj. w/stripping module	1725910-6
Manual precision crimp height adj. w/stripping module & CQM II	2-1725910-0
Air feed kit for AMP 3K or AMP 5K	1424266-1



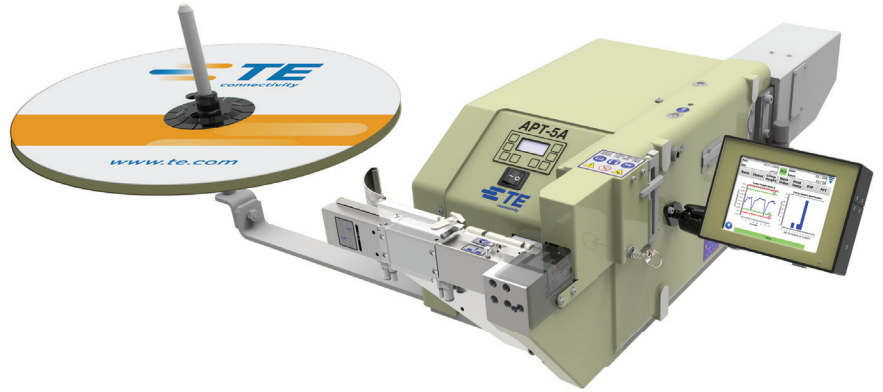
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BENCHTOP TOOLING

AMPLIVAR Product Terminators (APT 5A and APT 5E)

FAST FACTS

- CE approved
- No need to strip magnet wire
- Improved feed adjustments
- Connects up to 3 wires in 1 splice
- Crimp Quality Monitoring (CQM), auto crimp height adjust and auto sequencing enable 6 Sigma Process Quality
- Quick-change tooling without major shut-height adjustments

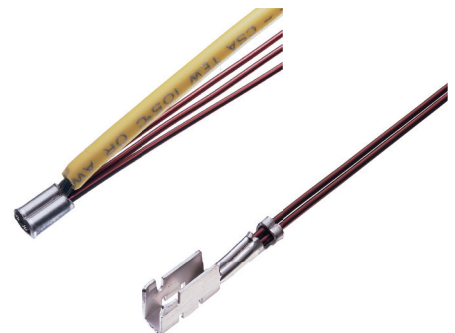


Machine PN 1-2161800-1

The new APT 5A magnet wire pigtail splice machine offers a fast, efficient system, with no need to strip mag-wire insulation. Simply place the wires in the target area and depress the foot switch. The machine automatically shears the splice or Direct Connect contact from the strip, crimps it, shears off excess wire, and advances the next splice or contact into position.

APT bench machines are available in two versions: the APT 5A with automatic precision adjustment controlled by the crimp quality monitor (CQM) and the APT 5E with manual precision adjustment. Using CQM, the APT 5A provides 100% inspection and automatic adjustment of crimp height. If a questionable crimp is detected, visual and audible alarms alert the operator.

The lower cost, manual adjust APT 5E is a simpler version with the advantage of faster set-up times but without CQM capability.



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AMPLIVAR Product Terminators (APT 5A and APT 5E)



AMPLIVAR Pigtail-Type Splice Suffix and Prefix Dash Numbers

Pigtail-type Splice Base Number	AWG [mm.]	Wire Range	CMA	Stock Thickness	Crimp Width	APT 5A □-2161800-□	APT 5E □-2161900-□
62000	22-15.5 0.38-1.54	.028-.055 0.70-1.40	600-3000	0.02 0.51	.110[2.79]	1-[-]2	1-[-]2
62001	15.5-12 1.54-3.46	.055-.083 1.40-2.10	3000-7000	0.02 0.51	.140[3.56]	[-]7	[-]7
62001	15.5-12 1.54-3.46	.055-.083 1.40-2.10	3000-7000	0.02 0.51	.180[4.57]	[-]6	[-]6
62201	15.5-12 1.54-3.46	.055-.083 1.40-2.10	3000-7000	0.02 0.51	.140[3.56]	[-]8	[-]8
62002	12-9 3.46-6.38	.083-.112 2.10-2.85	7000-13,000	0.025 0.64	.180[4.57]	[-]3	[-]3
62040	18.5-13.5 0.80-2.54	.039-.071 1.00-1.80	1500-5000	0.02 0.51	.110[2.79]	1-[-]1	1-[-]1
62157	22-15.5 0.38-1.54	.028-.055 0.70-1.40	600-3000	0.02 0.51	.110[2.79]	1-[-]2	1-[-]2
62200	22-15.5 0.38-1.54	.028-.055 0.70-1.40	600-3000	0.02 0.51	.110[2.79]	1-[-]2	1-[-]2
62295	12-10 2.10-6.0	.085-.110 2.10-2.85	7000-12,000	0.025 0.64	.250[6.35]	[-]1	[-]1
62303*	24-18.5 0.26-0.80	.020-.039 0.55-1.00	400-1500	0.016 0.41	.080[2.03]	1-[-]3	1-[-]3
62304*	22-15.5 0.38-1.54	.028-.055 0.70-1.40	600-3000	0.02 0.51	.110[2.79]	1-[-]2	1-[-]2
62305*	22-15.5 0.38-1.54	.028-.055 0.70-1.40	600-3000	0.016 0.41	.110[2.79]	1-[-]2	1[-]2
62306*	18.5-13.5 0.80-2.54	.039-.071 1.00-1.80	1500-5000	0.02 0.51	.140[3.56]	1-[-]0	1-[-]0
62306*	18.5-13.5 0.80-2.54	.039-.071 1.00-1.80	1500-5000	0.02 0.51	.110[2.79]	1-[-]1	1-[-]1
62307*	18.5-13.5 0.80-2.54	.039-.071 1.00-1.80	1500-5000	0.016 0.41	.110[2.79]	1-[-]1	1-[-]1
62308*	15.5-12 1.54-3.46	.055-.083 1.40-2.10	3000-7000	0.02 0.51	.140[3.56]	[-]9	[-]9
62308*	15.5-12 1.54-3.46	.055-.083 1.40-2.10	3000-7000	0.02 0.51	.180[4.57]	1-[-]5	1-[-]5
62309*	13.5-10 2.54-4.90	.071-.098 1.80-2.50	5000-10,000	0.025 0.64	.220[5.59]	1-[-]4	1-[-]4
62309*	13.5-10 2.54-4.90	.071-.098 1.80-2.50	5000-10,000	0.025 0.64	.180[4.57]	[-]5	[-]5
62310*	12-9 3.46-6.38	.083-.112 2.10-2.85	7000-13,000	0.025 0.64	.220[5.59]	[-]2	[-]2
62310*	12-9 3.46-6.38	.083-.112 2.10-2.85	7000-13,000	0.025 0.64	.180[4.57]	[-]4	[-]4

* recommended part number

RBK ILS Processor MK4

FAST FACTS

- Industrial PC controlled machine
- Touch screen monitor (ergonomic user interface)
- Long life heating elements
- Installation times, temperatures, quantities and product information (type, size, picture)
- Sequenced installations (up to 200)
- Different user levels (Operator, Process engineer, Maintenance) / Password protected
- Automatic heater retraction on mains failure
- Automatic calibration (single cycle)
- RS232 interface allows communication with a remote machine (e.g. an ultrasonic welding tool)
- Barcode scanning option
- Integrated Data base (Process parameters, product info, date, time, user, machine hours, installation cycles)
- Ethernet RJ-45 connection for remote access
- 2 x USB-port for data exchange and Barcode scanner
- Optional retrofitable air-cooling device
- Optional retrofit able tube centering device
- Software upgradeable to support special applications
- Integrated SW-safety-features to provide high of safeness during processing
- Compliant with latest CE and RoHs requirements

The RBK-ILS processor MK 4 is a semi-automatic unit driven by an industrial PC and controlled via a touch panel designed to install splice sealing products onto ultrasonically welded or crimped splice joints used in automotive harnesses.

The tool can operate in several modes:

- Manually – operator sets time and temperature.
- Sequenced – preset times and temperatures can be sequenced automatically (and can also be randomly selected from sequence stored.)
The selection of up to 200 references can be done automatically using a barcode reader or an USB-stick or manually using either the touch panel or an external keyboard.
- Automatic communication with upstream ultrasonic and resistance welders can allow time and temperature to be automatically set without operator intervention.

In this way the operator is able to efficiently load both machines and so minimize “dead time”. Installing TE RAYCHEM and other 3rd party splice sealing products immediately after welding gives reduced installation time and early possible mechanical protection for the welded joint.

The operator positions the splice sealing product centrally over the splice joint and then locates the assembly into the gripper mechanism.

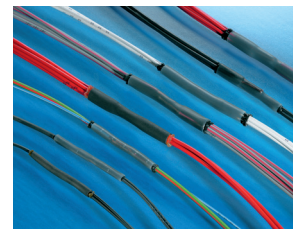
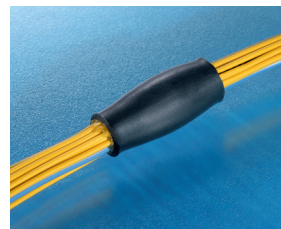
Pushing the two start buttons initiates the machine cycle thus bringing the heating chamber into place over the joint area. The heating chamber remains in place for the set period and then returns to the rest position.

The wire assembly is automatically ejected, with the splice sealing product installed and the joint area sealed, insulated and strain relieved.

There are also tools for Stub-/End-splices available to provide a perfect shrink-result.



Machine PN 529535-2



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RBK ILS Processor MK4

Specifications and Dimensions

Electrical

Power Requirements	220-240 VAC, 50 Hz
Power Consumption	1.7 A (max)
Operating temperature	500°C recommended
Cycle times	6 - 20 sec depending on wire size and number of wires used
Total system noise	<80 dB

Dimensions

Dimensions	340 [13.4] x 380 [15] x 430 [16.9] mm
Weight	18 kg

Product Range / Sizes

QSZH-125 Products	Sizes 1 to 3A
RBK-ILS-125 Products	Sizes 1 to 3A
RBK-ILS-85 Products	Sizes 6/1 to 12/3

For other Raychem products (e.g. RBK-VWS, RBK-ESS, etc) contact TE Application Tooling

Ordering Information

RBK-Proc-MK4-Processor	PN 529535-2
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Accessories

Hand Scanner	PN 537230-1
Stub splice fixture	PN 981721-000 (RBK-ILS-Proc-Stub-Sp-Fix)
8mm ring terminal fixture	PN 049857-000 (RBK-ILS-Proc-Term-fix-08mm)

Model 17 Belt Heater

FAST FACTS

- Closed-loop time and temperature control
- Continuous controlled process
- Adaptable for different applications
- Benchtop design
- Heater operation and over temperature alarm lights

Safety Features

- Circuit breaker for current surges
- Pinch points protected by the housing
- An over temperature switch that shuts off all power in the event of an overheat condition
- Automatic cool-down circuit to prevent heat damage to components

Easy Operation

Introducing the Model 17 Belt Heater from TE. The reliable, safer and faster alternative to heat guns for heat shrink applications. The Model 17 Belt Heater is our smallest (tabletop) conveyor style

processor which provides a controlled process for a wide variety of heat-shrinkable tubing products. Double-sided timing belts on the top and bottom of the processing chamber draw the assemblies through a thermally controlled infrared heat zone and through a fan-cooled zone before depositing them safely into an unloading bin.

Controlled Heating Zone

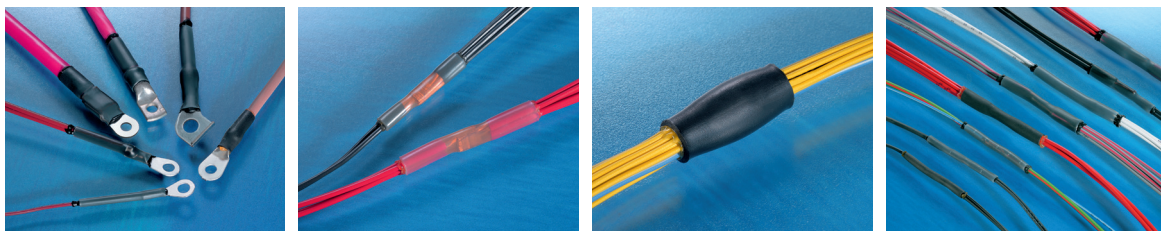
The Model 17 processor has two stamped foil heating elements that are manufactured to a strict wattage specification. Consistent temperatures (ambient to 650° C) are controlled by a thermocouple embedded into the upper heating element connected to a closed-loop temperature controller. An alarm light illuminates whenever the actual heating element temperature varies from the set point temperature.

Speed Control

The belt speed is selected using a 3-digit thumb wheel via a closed-loop motor controller and DC gear motor. There are clearly marked guides for aligning the assembly as well as the tubing or device being processed. The operator only has to center the assembly then the tubing and slide it into the belts. The belts grip and carry the assembly through the heating and cooling zone, depositing them into the unloading bin. Labor costs are reduced significantly because once an operator loads an assembly, that operator can begin preparing another assembly. The throughput rate is usually limited by the rate at which the operator can load assemblies into the processor.

Versatile Design

The processor is designed to process a broad range of heat shrinkable products up to 19 mm [0.75 in] in diameter and 90 mm [3.5 in] in length. The infrared energy source is well-suited to efficient processing of either single-wall or adhesive-lined tubing. Heat output can be controlled to accommodate a wide variety of products and substrates.



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Model 17 Belt Heater

Specifications and Dimensions

Electrical

Power Requirements	120 VAC, 1Ø, 50/60 Hz, 20 A (PN 2280355-3) 220 VAC, 1 Ø, 208-240 VAC, 15 A (PN 2280355-1)
Heating Elements	2 ea. 1000 watt stamped foil infrared with quartz face
Drive system	DC gear motor with closed loop motor controller, 3-digit thumbwheel
Air flow (cooling)	2 - 100 CFM fans in the upper heater housing

Mechanical

Conveyor belt system	Double sided timing belts; two on each side of the processor - pitch 9.5 mm [0.375 in]
Belt Speed	Up to 243 cm / min [8 ft / min]

Dimensions cm [in.]

Processor dimensions	48 cm [19 in] W x 109 cm [43 in] L x 37 cm [14.5 in] H
Processor weight	41 Kg [90 lbs]
Shipping dimensions	61 cm [24 in] W x 122 cm [48 in] L x 56 cm [22 in] H
Shipping weight	68 Kg [150 lbs]

Tubing Sizes

Tubing diameter (max)	Up to 19 mm [0.75 in]
Tubing length (max)	Up to 90 mm [3.5 in]

Version

Part No.

Model 17 - 120 volt	2280355-3
Model 17 - 220 volt	2280355-1

Lead Maker Machine

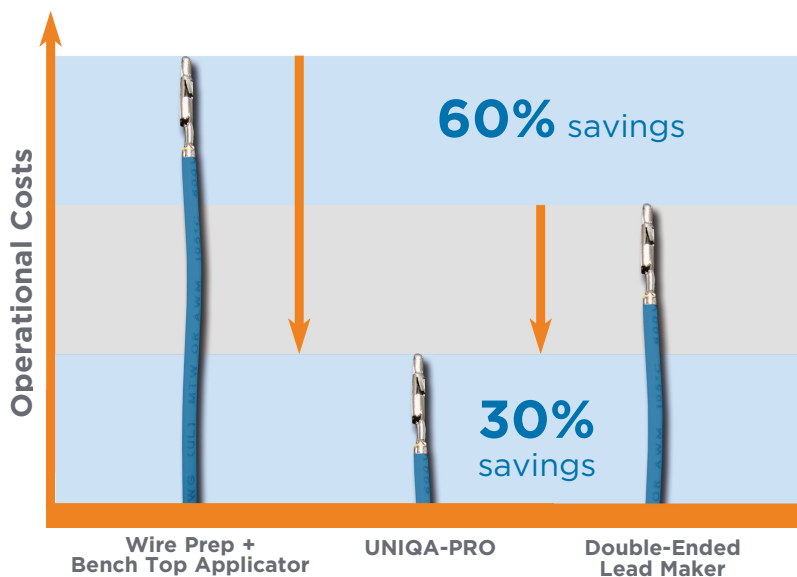
UNIQA-PRO Single Crimp Wire Processor

FAST FACTS

- 20% smaller footprint than a typical double-ended leadmaker
- Achieves a 4x higher throughput over a standard wire prep and benchtop applicator
- Processes wires ranging from 4mm² [12 AWG] - 0.13mm² [26 AWG]
- Accepts TE applicators
- Equipped with user-friendly PC control system



The UNIQA-PRO Single Crimp Wire Processor is an ideal cost-effective solution for companies looking to ramp up production from multiple bench top machines without making the large capital investment of a double ended leadmaker. With this single ended leadmaker, you will be able to save labor costs by measuring, cutting, stripping both ends, and crimping one end of a wire lead all with a single machine.



The Power of Automation Without the Cost.

In many regions measuring, cutting, stripping and crimping a lead requires either overspending on a double ended leadmaker to process single ended leads, or spending twice as much on labor costs to run enough wire prep and bench top applicator stations to meet demand. With the UNIQA-PRO, companies now have a cost effective option to automate their wire processing without overspending on labor and equipment costs.

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UNIQA-PRO Single Crimp Wire Processor

The Power of Three.

The UNIQA-PRO is available in three different models to fit your needs:

- Basic machine with a passive wire collection system, **PN 2280800-1**
- Intermediate machine with a passive wire collection system, crimp force monitor, and terminal scrap chopper, **PN 2280800-2**
- High force machine with an active wire collection system, crimp force monitor, and terminal scrap chopper, **PN 2280800-3**

Technical Data

Length Range	21 - 100,000mm [1.18" - 328 ft]**
Strip Length	0 - 35mm [0 - 1.38"]
Partial Strip	1 - 35mm [.04 - 1.38"]
Wire Range	4mm ² [12 AWG] - 0.13mm ² [26 AWG]*
Operating Diameter	5mm [.210"]
Wire Feed Speed	5 m/s
Noise Level	Less than 70 dB
Electrical Requirements (base machine)	230 ± 10% VAC, 1 Phase, 50/60 Hz, 16 Amps
Electrical Requirements (intermediate transformer)	200/208/230 ± 10% VAC, 1 Phase, 50/60 Hz, 16 Amps
Electrical Requirements (high force machine)	380/415/440 ± 10% VAC, 1 Phase, 50/60 Hz, 10 Amps
Pneumatic Requirements	5 - 6 bar [70-90 psi], 2.5m ³ /h [1.5 CFM]
Physical Environment	4-35° C [43-95° F]
Relative Humidity	Less than 95% non-condensing
Programmable Press Stroke	1-40mm

* 5mm² [10 AWG] possible with optional heavy duty press

** Practical length capability is dependent on collector system. 1.5m passive collector is standard.

Physical Weights & Dimensions

Weight	590kg [1300 lb] (uncrated) 820kg [1800 lb] (w/crate)
Height (guard up)	1854mm [73"]
Height (guard down)	1676mm [66"]
Length x Width (uncrated)	2718mm [107"] x 889mm [35"]
Width w/end feed terminal reels	1270mm [50"]
Length x Width x Height (crated)	2975mm [117"] x 1452mm [56"] x 1990mm [78"]

Accessories

Manual Crimp Height Adjustment	Micrometer
Automatic Crimp Height Adjust	Manual pull force tester
Terminal scrap chopper	Automatic pull force tester
Powered paper winder	Production batch label printer
Ink jet printer interface	Ram centering calibration tool
1.5 meter motorized conveyor	Gripper jaws for difficult wire
4m conveyor*	Radius blades
Wire splice detector	JAM ram adapter
Line voltage conversion kits**	Sencor
Crimp Quality Monitoring	Gripper flow control kit
Hot Stamp Marker	

* Not immediately available

** Multi-tap transformer for 200, 208, 230V 50/60Hz, potential for 400/440/480 with panel change and multitap transformer.

GLOSSARY OF TERMS

ACTION PIN Contact (connector): Manufactured exclusively by TE Connectivity, having a split pin to provide gas tight retention in a printed circuit board plated-thru hole without solder.

Anvil (tooling): Most commonly used to identify that part of the crimping die — normally stationary — which positions and supports the terminal during crimping. Sometimes referred to as nest.

Arc Voltage: Voltage that continues to pass through a surge protector during activation of GDT (approx. 20 volts).

ASTM (American Society for Testing and Materials): A nonprofit industry-wide organization that formulates test methods and material specifications, and publishes standards, testing methods, recommended practices, definitions and other materials.

AWG (American Wire Gauge): The recognized method (in the United States) of specifying conductor size. The higher the gauge number, the smaller the conductor size.

Bare Conductor: A conductor not covered with insulating material.

Barrel: 1.) Connector Barrel: The section of the terminal, splice, or contact that accommodates the stripped conductor. **2.) Insulation Barrel:** The section of the terminal, splice, or contact that accommodates the conductor insulation. **3.) Open Barrel:** The section of a cap that accommodates the conductor.

Bellmouth: Flared at the mouth. The rear of a properly crimped wire barrel will have a slight flare (bellmouth) to relieve the strain on the wire strands as they leave the area of high compression and take their natural lay. A bellmouth may also be present in front of the wire barrel.

Breakdown Voltage: The voltage at which an insulator or dielectric fails to maintain the applied voltage.

Breakout: A region in a harness assembly where a wire or a group of wires is detached to form a separate, terminated branch. Also known as a transition.

Bunch Stranding: A method of twisting individual strands to form a finished stranded conductor. Specifically, a number of strands twisted together in a common direction and with a uniform pitch (or twist) per inch.

Butt Splice (electrical): A splice wherein two wires from opposite ends butt against each other, or against a stop, in the center of the splice.

Cable: Two or more wires in a twisted or parallel configuration. Also, a shielded wire.

Cabler: A machine that mechanically assembles a group of insulated wires.

Cabling: The act of twisting together two or more insulated components to form a cable.

Capacitance: The property of an electrical conductor (dielectric in a capacitor) that permits the storage of energy as a result of electrical displacement. The basic unit of capacitance is the farad, however, measurement is more commonly in microfarads or picofarads.

Carrier: A group of strands or ends used to form a finished braid.

Circular Mil Area (CMA): A unit of area equal to the area of a circle whose diameter is 1 mil (0.001 inch). Used chiefly in specifying cross-sectional areas of conductors.

Closed Entry Contact: Female contact designed to prevent entry of a pin or probing device having a cross-sectional dimension (diameter) greater than the mating pin.

Component: A wire or cable that is combined with other wires or cables to make a multi-component cable.

Concentric Stranding: A method of stranding conductor. Specifically, the final conductor is built up in layers so that the inner diameter of a succeeding layer is always equal to the outer diameter of the underlying layer.

Conductivity: The capability of a material to carry electrical current, usually expressed as a percentage of copper conductivity (copper being 100%). Specifically, the ratio of the current flow to the potential difference causing the flow. The reciprocal of resistance.

Conductor: The metallic strand or strands used to carry an electric current.

Conductor Resistance: The resistance to flow of the electrical current along a conductor. Expressed in ohms/1,000 feet (usually referenced to 20°C).

Conduit: A tubular raceway for holding wires or cables.

Connector: A device used to physically and electrically connect two or more conductors.

Contact: The element in a connector that makes the actual electrical connection. Also the parts of a connector that actually carry the electrical current, and are touched together or separated to control the flow.

Contact Crimp: A contact whose rear portion is a hollow cylinder that accepts the conductor. A crimping tool is applied to swage or form the contact metal firmly against the conductor. Sometimes referred to as a solderless contact.

Contact Engaging and Separating Force: Force required to either engage or separate contacts. Values are generally established for maximum and minimum forces.

Contact Resistance: Measurement of electrical resistance of mated contacts when assembled in a connector under typical service use. Electrical resistance is determined by measuring from the rear of the electrical area of one contact to the rear of the contact area of the mating contact (excluding both crimps) while carrying a specified test current.

Contact Size: The diameter of the engagement end of a pin contact; also related to the current carrying capacity of a contact.

Continuity: A continuous path for the flow of current in an electrical circuit.

Core: 1.) In cables, a component or assembly of components over which additional components, such as a shield or a sheath, are applied. 2.) Inner wall of dual-wall heat-shrinkable tubing.

Crimp: The final configuration of a terminal barrel after the necessary compression forces have been applied to cause a functional union between the terminal barrel and the wire.

Crimper (tooling): Often used to identify that part of the crimping die — usually the moving part — which indents or compresses the terminal barrel. Also called indenter.

Crimp Height: A top to bottom measurement of the crimped barrel, using a crimp height comparator in the prescribed manner.

Crimping Chamber: Area of a crimping tool in which a contact or terminal is crimped; the crimping enclosure formed by the mating of the anvil (nest) and crimper (indenter). When the dies or jaws are fully closed or bottomed, it is the crimping chamber that is checked with a go no-go plug gauge to confirm that the crimp produced by the tooling satisfies the crimp height specification.

Crimping Dies: A term used to identify the shaping tools that, when moved toward each other, produce a certain desirable shape to the barrel of the terminal or contact that has been placed between them. Crimping dies are often referred to as die sets or as die inserts.

Crimping Head: Tooling containing jaws and linkage for use in pneumatic or hydraulic powered units to crimp loose-piece contacts/terminals that may be too large for hand tool applications.

Crimping Tool: A term commonly used to identify a hand held mechanical device that is used to crimp a contact, terminal or splice.

Cross Crimp: A crimp that deforms the terminal by exerting on the top and bottom of the terminal barrel without confining the sides. Usually identified by a raised crescent (moon) shaped form on the surface of the crimp.

Current: A movement or flow of electrons. Also, the measure of this flow, expressed in amperes.

Current-carrying Capacity: The maximum current an insulated conductor is capable of carrying without exceeding its insulation- and/or jacket temperature limitations under specified ambient conditions.

Current Rating: The maximum continuous electrical flow of current recommended for a given situation. It is expressed in amperes.

Die: See crimping dies.

Die Closure: Term used to designate a crimping area (crimping chamber) when the dies are fully closed or bottomed. Die closure is checked with go/no go plug gauge to confirm that the crimp produced by the tooling satisfies the crimp height specification.

Dielectric: A material that serves as an insulator. The amount of resistance to voltage in a given insulation.

Dielectric Isolation (IC): Most silicon integrated circuits depend on back biased semiconductor junctions to provide isolation between components on the chip. Dielectric isolation involves a number of additional process steps, which result in silicon dioxide rather than a junction surrounding each component to be isolated. The silicon dioxide, a dielectric, provides the necessary isolation.

Dielectric Strength: Maximum voltage a dielectric can withstand without rupture. Expressed as volts per mil.

Discontinuity: Rated interconnection: broken connection (open circuit) or loss of a specified connection characteristic. Transient phenomena: Short-term interruption or unacceptable variation in current or voltage.

Drain Wire: In a cable, an un-insulated conductor laid over the component, or components, in a foil-shield cable. Used as a ground connection.

Electromagnetic Compatibility (EMC): The ability of an electronic device to operate in its intended environment without its performance being affected by EMI and without generating EMI that will affect other tooling.

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Electromagnetic Interference (EMI): Unwanted electrical or electromagnetic energy that causes undesirable responses, degrading performance or complete malfunctions in electronic tooling.

Electromotive Force (emf): See voltage.

EMI: Abbreviation for electro magnetic interference.

Extraction Tool: A tool used for removing contacts from a connector body.

F Crimp: A crimp that brings the center of the barrel along an open seam downward into a V.

Ferrule: A short tube used to make solderless connections to shielded or coaxial cable. Also molded into the plastic inserts of multiple contact connectors to provide strong, wear-resistant shoulders on which contact retaining springs can bear.

FFC: Flexible flat cable; flat flexible cable; or flexible flat conductor. A form of multiple conductor cable consisting of parallel flat metal strips imbedded in a flat flexible insulating material.

Flat Braid: A braided shield composed of flatstrands.

Flat Cable: A cable with each component in a single, flat plane.

Flat Conductor: A conductor having a rectangular cross section, as opposed to a round or square cross section.

Fretting Corrosion: A form of accelerated oxidation that appears at the interface of contacting materials undergoing slight cyclic relative motion. All non-noble metals (tin) are susceptible to some degree of fretting corrosion and will suffer contact resistance increases.

Gauge: A term used to denote the physical size of a wire. See also AWG.

Ground: A connection, intentional or accidental, between an electrical circuit and the earth or some conducting body (e.g. chassis) serving in place of earth.

Grounding Conductor: A conductor that provides a current return path from an electrical device to ground.

Hardness: A general term that correlates with strength, rigidity, and resistance to abrasion or penetration. Measured on Shore or Rockwell scales.

Harness: A system providing electrical connection between two or more points.

Hertz (Hz): International standard term for cycles per second. Named after the German physicist Heinrich R. Hertz (e.g., 60 cycles per second is equal to 60 hertz or 60 Hz).

Inductance: One cause of reactance. An electromagnetic phenomenon in which the expanding and collapsing of a magnetic field surrounding a conductor or device tends to impede changes in current. The effects of inductance become greater as frequencies increase. The basic unit for inductance is the henry.

Insertion Tool: A tool used to insert removable contacts into a connector.

Insulation Barrel: See barrel.

Insulation Crimp: The area of a terminal splice or contact that has been formed around the insulation of a wire.

Insulation Displacement: A terminating technique whereby an insulated wire is forced into a restrictive slot in a terminal, during which time the wire insulation is displaced, and the bare wire engages the sides of the slot.

Insulation Grip: The ability of certain crimped terminals to hold firmly in place both the conductor and a small portion of insulation. This prevents the

conductor from being exposed due to insulation receding away from the terminal.

Insulation Resistance: The electrical resistance between two conductors separated by an insulating material.

Interference: Electrical or electromagnetic disturbance causing undesirable response in electronic tooling.

Jack: A connecting device into which a plug can be inserted to make circuit connections. The jack may also have contacts which open or close to perform switching functions when the plug is inserted or removed. See also: receptacle.

Jacket: 1.) A material covering over a wire or cable assembly. 2.) Outer covering of a dual-wall heat-shrinkable tubing.

Jackscrew: A screw attached to one half of a two-piece, multiple-contact connector and used to draw both halves together and to separate them.

kV (kilovolt): A unit equal to 1,000 volts.

Mega (M): A prefix meaning one million (10⁶).

Multiconductor: More than one component within a single-cable complex.

Nominal: A descriptor applied to a dimension representing the center of the range of tolerance or a value if no tolerance is applied.

O Crimp: An insulation support crimp for open barrel terminals and contacts. In its crimped form it resembles an O and conforms to the shape of the round wire insulation. O crimp is also used to describe the circumferential crimps used on COAXICON ferrules.

Open Barrel: See barrel.

Peripheral Seal: A seal provided around the periphery of connector inserts to prevent the ingress of fluids or contaminants at the perimeter of mated connectors.

Pigtail: A short conductor or wire extending from an electrical or electronic device to serve as a jumper or ground connection.

Pin Contact: Electrical terminal, usually in a connector. Normally smaller termination than a lug.

Pretinned: Description of an electrical component to which solder has been applied prior to soldering.

Primary Insulation: The inner member of a dual wall wire insulation. The insulation applied directly on the conductor.

Printed Circuit Board (PCB): An insulating board serving as a base for a printed circuit. When the printing process is completed, the board may include printed components and printed wiring.

Rated Voltage: The maximum voltage at which an electric component can operate for extended periods without undue degradation.

Receptacle: Usually the fixed or stationary half of a two-piece multiple contact connector. Also the connector half usually mounted on a panel and containing socket contacts.

Removable Contact: A contact that can be mechanically joined to or removed from an insert. Usually special tools are required to lock the contact in place or remove it for repair or replacement.

Resistance: A measure of the difficulty in moving electrical current through a conductor or insulation when voltage is applied. Measured in ohms.

Resonance: A frequency at which captive reactance and inductive reactance

Ribbon Cable: Flat cable with conductors that have been individually insulated together. Its structure is

usually characterized by individual colors of insulation for each conductor, although a single color may be used for all conductors.

Serrations: Small grooves or indentations within a terminal wire barrel. The serrations increase the tensile strength and improve the electrical conductivity of the crimped termination.

Sleeve: The insulated or metallic covering over the barrel of a terminal.

Solid Conductor: A conductor composed of one single strand.

Splice: A joint connecting conductors with good mechanical strength and conductivity; a terminal that permanently joins two or more wires.

Strand: A single unit of a conductor.

Strip: To remove insulation from a wire or cable.

Surface Resistance: The ratio of the direct current applied to an insulation system to the current that passes across the surface of the system.

Surface Resistance: Ratio of the direct current applied to an insulation system to the current that passes across the surface of the system.

Tab: Used to scribe the flat blade portion of certain terminals (e.g. FASTON tab, taper tab, solder tab).

Tab-lok Crimp: A type of crimp used on FASTON flag terminals whereby a tab on the wire barrel is inserted through a slot in the terminal. The crimping action flattens the tab between two lances, which in turn are locked over the tab.

Terminal: An electrically conductive item designed to be attached to a circuit or device for convenience in making electrical connections.

Terminal Area: The portion of a printed circuit - usually along the edge - used for making the input-output connections. Sometimes this term is used synonymously with pad.

Terminal Barrel: See barrel.

Trimming: The adjustment of resistor or capacitor values in thick or thin film circuits by pattern changes, irreversible thermally induced changes, or removal of portions of material by laser or abrasive techniques. Dynamic trim is unique to these technologies, and of great value to circuit design and manufacture.

Volt (V): The unit of measurement for electromotive force (emf). It is equivalent to the force required to produce 1 ampere through a resistance of 1 ohm.

Voltage (E): The term most often used to designate electrical pressure that exists between two points and is capable of producing a flow of current when a closed circuit is connected between the two points. Voltage is measured in volts, millivolts, microvolts and kilovolts. The terms electromotive force (emf), potential, potential difference and voltage drop are often referred to as voltage.

Voltage Drop: The voltage developed across a component or conductor by the flow of current through the resistance or impedance of that component or conductor.

Voltage Rating: The voltage that may be continuously applied to wire.

W Crimp: A confined type of crimp that makes two longitudinal indentations which form a W cross section. Used on SOLISTRAND terminals.

Wall Thickness: The thickness of the applied insulation or jacket.

Wire: A single conductor covered with insulation.

Wire Barrel: See barrel.

Wire Crimp: See crimp.

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TE Connectivity provides global field service support on our application tooling. Field Specialists are located across every continent to provide timely response to customer needs.

In addition to installation, warranty, and repair service, TE field specialists can help you with tooling choices, training of maintenance and operation personnel, troubleshooting and spare parts. Service contracts to cover all your application tooling needs are also available.

We have implemented a service management tool that provides standardization of reporting that gives us the ability to continuously improve our global service organization. Throughout the year we educate our field service engineers on the latest industry technologies and tooling solutions.

Service Offerings:

Standard Service

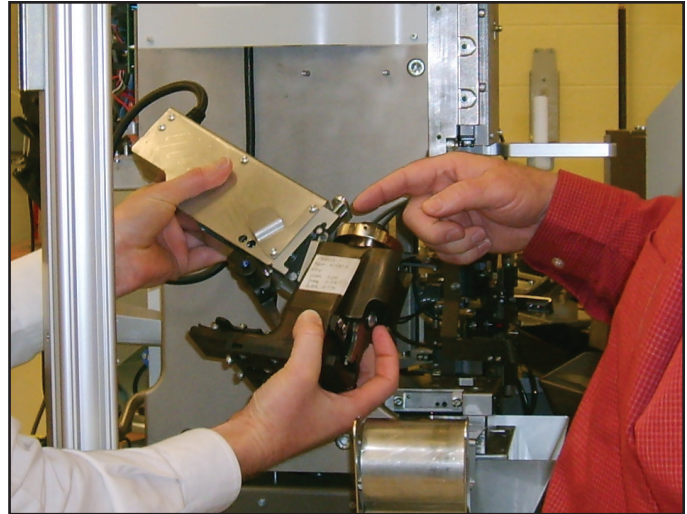
Includes troubleshooting issues, making repairs, and/or installing parts.

Machine Installations

Providing installation, set-up, and training of application tooling at the time of delivery.

Training

Providing customers with practical training programs addressing machine operation, set-up, maintenance, inspection, and connector application. Training programs can be scheduled at the customer's site or at a



TE Connectivity training center. A training certificate will be issued upon the completion of each formal training course.

We are proud to be able to offer a comprehensive range of customer training programs. The following are some of the standard training programs we offer:

- Basic Crimp Theory
- Hand tool, applicator and equipment set-up, operation and maintenance
- A-620 Certification, General Instructor and Operator/Inspector
- And more!

Service Contracts

Preventive Maintenance and/or Inspection Certification

Provides service for periodic visits to perform preventive maintenance and/or inspection certification service on hand tools, applicators, bench and automatic machines.

Comprehensive Service

Provides for a specified number of field specialist visits. A visit can be used for services such as standard service, installation, set-up and training for all application tooling, preventive maintenance and/or inspection certification, spare parts management, tooling process evaluation, and technical assistance on application tooling and/or product related issues or concerns.

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FIELD ENGINEERING SERVICES

The Key to Crimp Performance

You've already made the right choice in crimp tooling - TE Connectivity quality tooling. TE Connectivity quality certification and maintenance are also the right choices to keep your crimp tooling operating at peak performance. In this catalog you'll find details on the most popular services available at TE Connectivity service centers, complementing our on-site services. To request more information or to schedule a service, refer to the contact information on last cover page.

Applicator and Terminator Service

Services include:

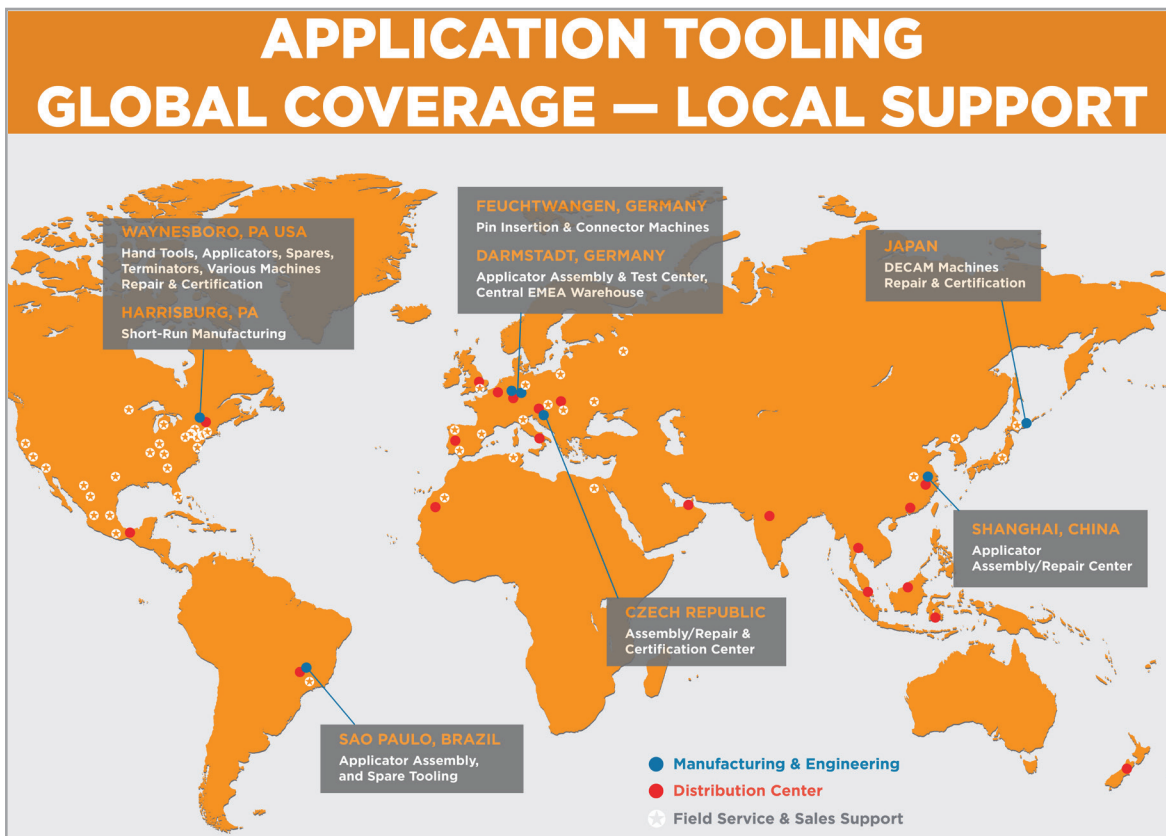
- Warranty services - with no charge for labor or parts
- Certification services
- Tooling repair - to application specifications
- Quick turnaround
- 90-day warranty on repairs

Hand Tool Repair and Certification

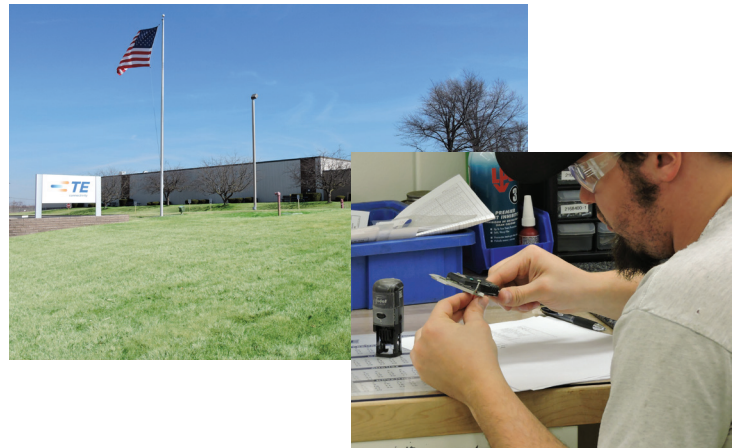
CERTI-CRIMP hand tools and die sets; pneumatic crimping heads and die sets; and hydraulic hand tools, crimping heads, and die sets all benefit from factory or on-site service.

Services include:

- Recertification - promotes quality improvement per ISO 9000. Recommended every 6 months or 5,000 cycles to verify that tools meet TE Connectivity's application specification.
- Visual inspection - checks tool operation and looks for missing or damaged parts.
- Handle pressure check - measures pressure with calibrated machine or gauge; adjusts to match design specification.
- Quality inspection plan (QIP)
- 90-day warranty on repairs



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Product + Process = Solution

Ensuring optimal performance for your solution doesn't end with the purchase of the proper component. Every application requires the right tool to confirm that proper connections are being made. Our flexible solutions range from hand tools for prototyping and low production needs up to state-of-the-art lead making equipment that can produce millions of crimps a year. Our OCEAN applicator platform represents the industry's best in accuracy & quality in crimping.

Thanks to our standard die sets customers can easily step up production by switching from our ergonomically designed hand tools to a faster bench machine without purchasing new die sets. And to complete the bundle, we offer field service and customer support that can keep your equipment running smoothly for years. For more information about your tooling options visit tooling.te.com.

Quality Starts Here

The Waynesboro Manufacturing & Assembly Facility uses state of the art equipment and processes to maintain superior quality and ensure expedient delivery. Our in-house support functions can handle both large and small equipment with the flexibility to adapt to changing business needs.

IMPORTANT: INFORMATION ABOUT OUR PRODUCTS

Should any issues arise when the customer first tries to use this tool:

Please verify that they are using the correct wire type, wire size (AWG or MM2), insulation diameter, and terminal combination for their application.

This information can be found on the following documents:

Terminal Application Specification (114-XXXXX)

Hand Tool Instruction Sheet (408-XXXXX) or (409-XXXXX)

Applicator Drawing (TE Part Number)

If not enclosed with the tooling this information can be found on our website www.te.com/help by typing the terminal number being applied into the search bar located at the top right of our website.

After verifying the above information should the customer still have questions or concerns regarding their tool, they can contact our Technical Assistance Center at 800-522-6752, or 717-986-7777.

Tools outside of the warranty period can be repaired by one of our TE Tool Repair Centers.

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Disclaimer

While TE Connectivity has made every reasonable effort to confirm the accuracy of the information in this catalog, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current.

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The dimensions in this catalog are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.

