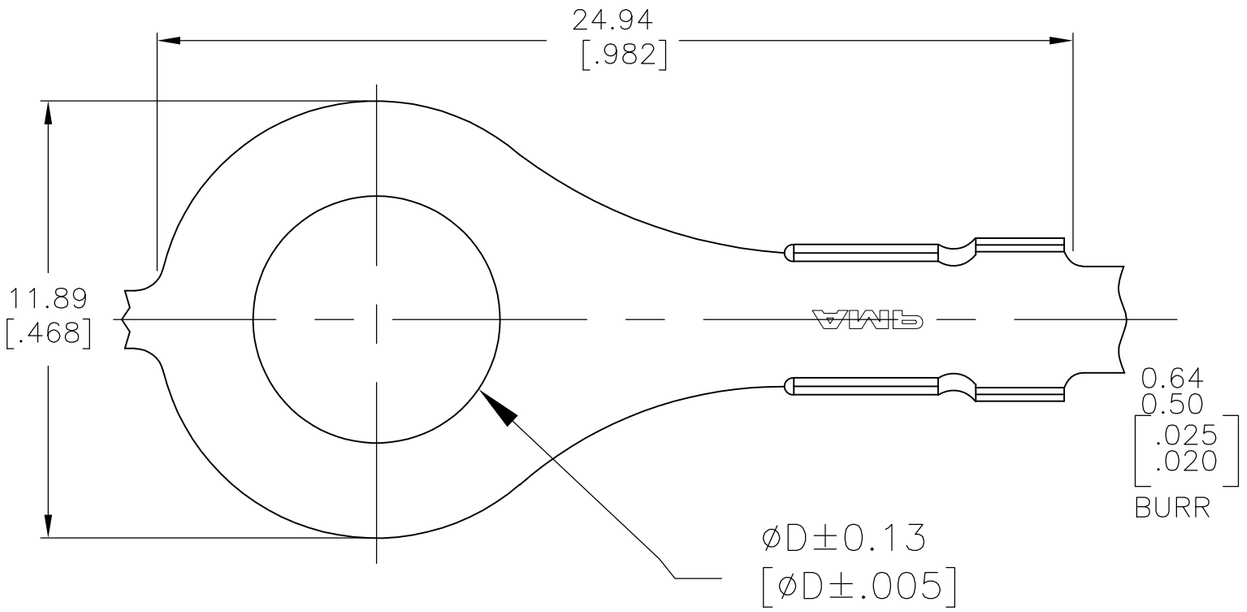
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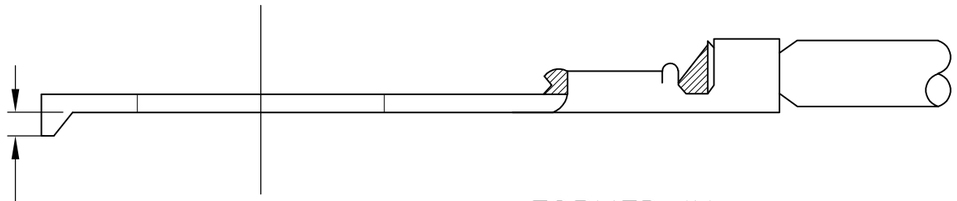
LOC	DIST
AF	50

REVISIONS

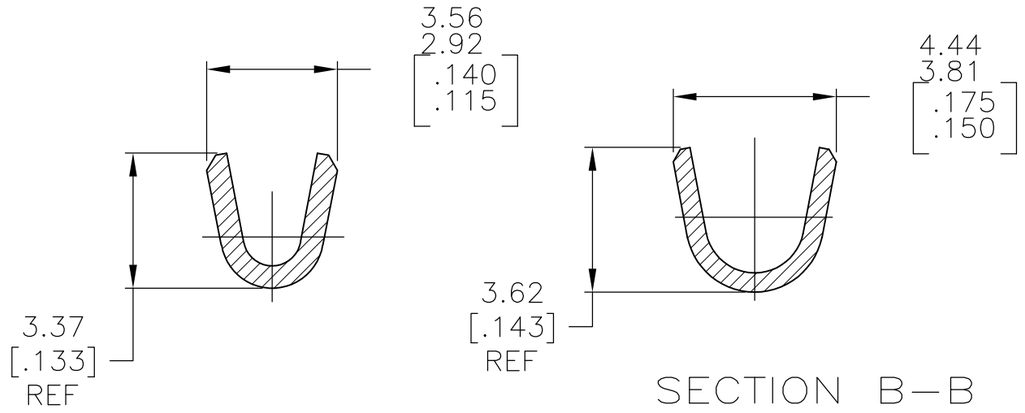
P	LTR	DESCRIPTION	DATE	DWN	APVD
	C1	REVISED PER ECR-07-030301	09MAY08	HMR	JR

1 CONTINUOUS STRIP ON REELS





FORMED IN
APPLICATOR
60700-1-S ONLY



	6.73 [.265]	M6 1/4	0.5-1.4 mm² [20-16]	2.03-3.05 [.080-.120] DIA	NONE	BRASS	60700-3
					TIN		60700-2
OBSOLETE	8.76 [.345]	---			TIN	STEEL	60700-1
	DIM 'D'	STUD SIZE	WIRE RANGE	INSULATION RANGE	FINISH	MATERIAL	PART NO.

勝特力電材超市-龍山店 886-3-5773766
勝特力電材超市-光復店 886-3-5729570
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
http://www.100y.com.tw

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS: mm [INCHES]

TOLERANCES UNLESS OTHERWISE SPECIFIED:

0 PLC	± -
1 PLC	± -
2 PLC	± 0.38 [.015]
3 PLC	± -
4 PLC	± -
ANGLES	± 1° 0'

MATERIAL: SEE TABLE

FINISH: SEE TABLE

DWN	RAGHAVENDRA	09MAY08
CHK	JEFF RUTH	09MAY08
APVD	JEFF RUTH	09MAY08
PRODUCT SPEC	—	
APPLICATION SPEC	—	
WEIGHT	—	

CUSTOMER DRAWING

Tyco Electronics
Tyco Electronics Corporation
Harrisburg, PA 17105-3608

NAME: RING

SIZE	CAGE CODE	DRAWING NO	RESTRICTED TO
A3	00779	C-60700	—

SCALE	SHEET	REV
6:1	1 OF 1	C1

NOTE
All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ±0.13 [±.005] and angles have a tolerance of ±2°. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of Standard Ring and Spade Terminals, Flanged Spade Terminals, and Insulation Piercing Ring and Spade Terminals. These requirements are applicable to hand or automatic machine crimping tools.

When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate your inquiries for information. Basic terms and features of this product are provided in Figure 1.

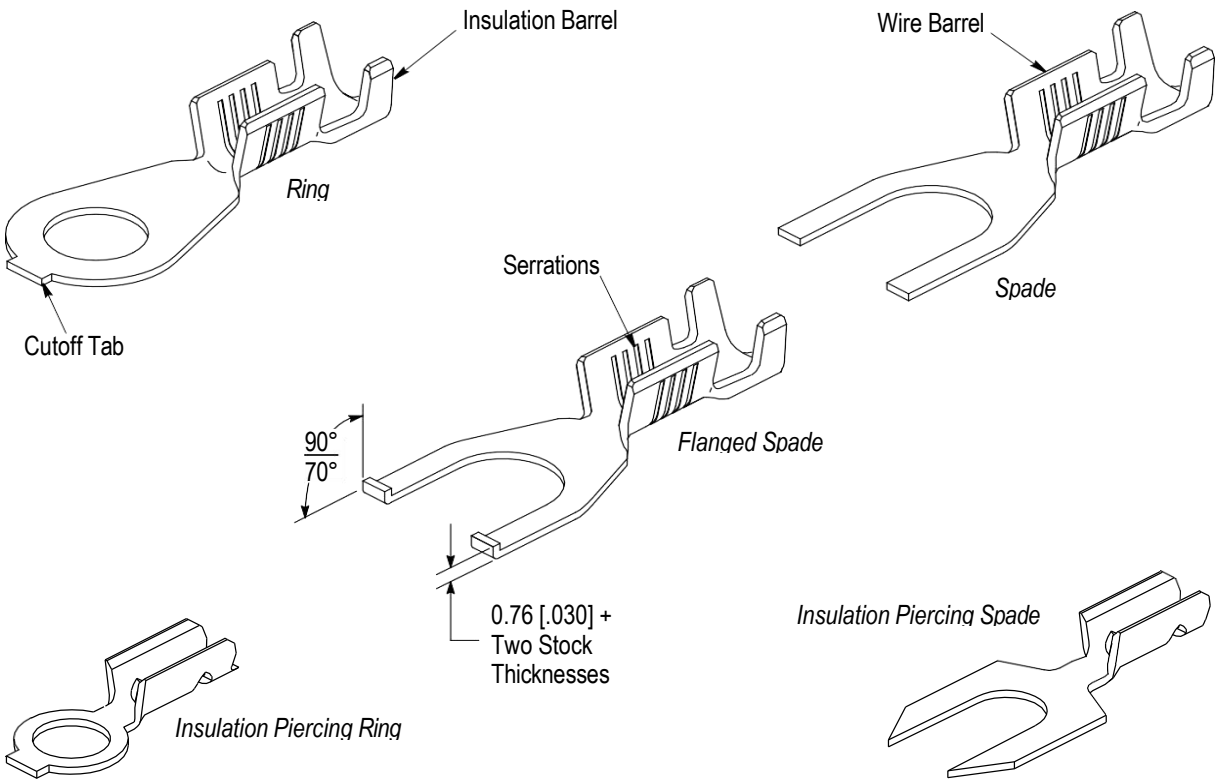


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements
- Added new notes to Section 5, Tooling and Section 2.2, Customer Assistance
- Section 2.6 added

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2.2. Customer Assistance

To ensure consistent and high-quality terminations, TE Connectivity (TE) product engineering has analyzed and tested the design factors of numerous terminal crimp connections with varying wire ranges defined by the terminals. As a result, TE product engineering has defined five criteria necessary to achieve a reliable crimp: be sure to 1) use the TE product only for an application it was designed for, 2) always use the TE recommended application tooling, 3) use an appropriately selected and prepared wire, 4) adhere to the application specification described in the associated TE product print and application documentation (such as the TE 114- Application Specification, and TE Applicator "Log Sheet" print), and 5) have the product handled by trained operators only. TE product performance according to TE product specification can be achieved using the methods described in this application specification with the use of the recommended, properly maintained tooling and applicator.

If tooling or termination equipment is used other than what is recommended by TE, where such tooling or equipment was not used for agency validation and/or the product qualification process, TE does not make any representation or warranty, expressed or implied, and disclaims liability for non-performance per TE product specification. Customer accepts the sole responsibility for the evaluation, application, and use of the terminals in such circumstances.

Reference Product Base Part Number 41409 (Insulation Piercing), 60771 (Standard), 60775 (Flanged Spade), and Product Code 1170 are representative of Ring and Spade Terminals. Use of these numbers will identify the product line and help you to obtain product and tooling information. Such information can be obtained through a local Representative, by visiting our website at www.te.com, or by calling PRODUCT INFORMATION or the TOOLING ASSISTANCE CENTER at the numbers at the bottom of page 1.

2.3. Drawings

Customer drawings for product part numbers are available from www.te.com. Information contained in the customer drawing takes priority.

2.4. Instructional Material

Instruction sheets (408-series) provide product assembly instructions or tooling setup and operation procedures and customer manuals (409-series) provide machine setup and operating procedures. Instructional material that pertain to this product are:

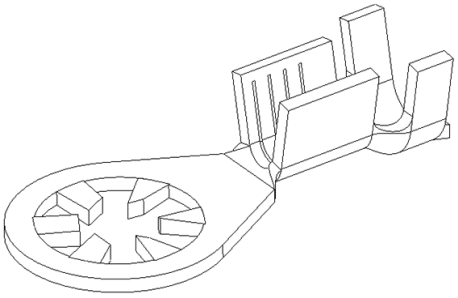
Document Number	Document Title
408-3295	Preparing Reel of Contacts for Application Tooling
408-7424	Checking Terminal Crimp Height or Gaging Die Closure
408-8053	Conversion Guide for Miniature Quick-Change Applicators
408-8059	General Preventative Maintenance for Applicators
408-9816	Handling of Reeled Products

2.5. Terminal Voltage Rating

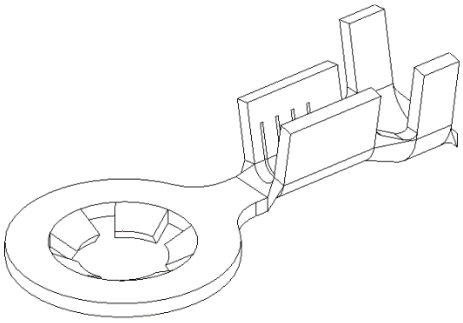
Voltage rating is based upon dielectric strength between the terminal and other voltage potential conductors. For these un-insulated terminals, this dielectric strength is determined by 1) the wire insulation used, 2) the housing used (if any), and 3) the application spacings. These appliance business unit terminals with an insulation barrel crimp are designed for UL 1015 wire with insulation rated for 600 volts; so, this is the voltage rating assigned to these terminals. Clearly, if higher dielectric strength wire insulation, larger spacings, and possibly an optional housing are used, larger voltages can be used.

2.6. Terminal Interference Features

Some ring tongue terminals have features inside of the stud hole for anti-rotation or stud retaining. The anti-rotational style terminals have teeth that twist above and below the tongue of the terminal, and the stud retaining style terminals have teeth that all extend in one direction (either above or below the tongue of the terminal).



Example of Anti-Rotational Style Terminal



Example of Stud Retaining Style Terminal

Figure 2

3. REQUIREMENTS

3.1. Safety

Do not stack product shipping containers so high that the containers buckle or deform.

3.2. Storage

A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the product material.

B. Shelf Life

The product should remain in the shipping containers until ready for use to prevent deformation to components. The product should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

C. Chemical Exposure

Do not store product near any chemical listed below as they may cause stress corrosion cracking in the material.

Alkalies	Ammonia	Citrates	Phosphates Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur Nitrites	Tartrates

NOTE
Where the above environmental conditions exist, phosphor-bronze contacts are recommended instead of brass if available.

3.3. Materials

A variety of materials are available in this product line. Contact the Product Information Center at the number at the bottom of page 1 for specific metals and platings available for your production needs.

3.4. Wire Size and Preparation

The terminals will accept a wide range of stranded wire sizes. Contact the Product Information Center at the number at the bottom of page 1 for specific wire size ranges available for your production needs.

A. Standard and Flanged Spade Wire Preparation

Insulation shall be stripped as indicated in Figure 3 and is based on wire barrel length which may be found on the product customer drawing.

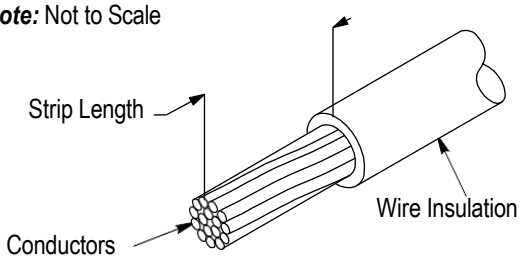
CAUTION

DO NOT nick, scrape, or cut the wire conductors during the stripping operation. Filaments of insulation material remaining after stripping should be avoided and shall never extend among the bare conductors.

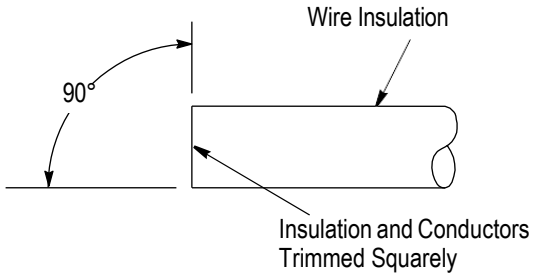
B. Insulation Piercing Wire Preparation

C. Wire shall be trimmed cleanly and squarely. Due to the insulation piercing technique employed in crimping the terminal, it is not necessary to strip the insulation from the wire. See Figure 3.

Note: Not to Scale



Standard Ring and Spade or Flanged Spade Terminals



Insulation Piercing Ring and Spade Terminals

TERMINAL STYLE	WIRE BARREL LENGTH	WIRE STRIP LENGTH
STANDARD RING AND SPADE TERMINALS OR FLANGED SPADE TERMINALS	2.36-2.74 [.093-.108]	3.18 [.125]
	2.77-3.58 [.109-.141]	3.96 [.156]
	3.61-4.42 [.142-.174]	4.78 [.188]
	4.44-5.26 [.175-.207]	5.56 [.219]
	5.28-6.10 [.208-.240]	6.35 [.250]
	6.12-6.93 [.241-.273]	7.14 [.281]
INSULATION PIERCING TERMINALS	---	---

Figure 3

3.4 Crimped Terminal Requirements

The terminal shall be located in desired tooling and crimped according to the instructions packaged with that tooling. See Section 5, TOOLING, of this document for details on tooling options.

NOTE

The applied crimp dimension (within the functional range of the product) is dependent on the termination tooling being used. Refer to the documentation (applicator logs and instruction sheets) supplied with the termination tooling for the applied crimp height.

CAUTION

Wire insulation shall NOT be fully cut or broken during the crimping operation, nor shall the insulation be crimped into the terminal wire barrel. Reasonable care should be taken by tooling operators to provide undamaged wire terminations.

A. Wire Barrel Crimp

The crimp applied to the wire portion of the terminal is the most compressed area and is most critical in ensuring optimum electrical and mechanical performance of the crimped terminal. The terminal wire barrel crimp height must be within the dimension provided on the application tooling documentation.

B. Effective Crimp Length

For optimum crimp effectiveness, the crimp must be within the area shown in Figure 4 and must meet the crimp dimensions provided in the application tooling documentation. Effective crimp length shall be defined

as that portion of the wire barrel, excluding bellmouth(s), fully formed by the crimping tool. Instructions for adjusting, repairing, and inspecting tools are packaged with the tools.

C. Bellmouths

Front and rear bellmouth shall be as shown and conform to the dimensions given in Figure 4.

D. Cutoff Tab

The cutoff tab shall be cut to the dimensions shown in Figure 4.

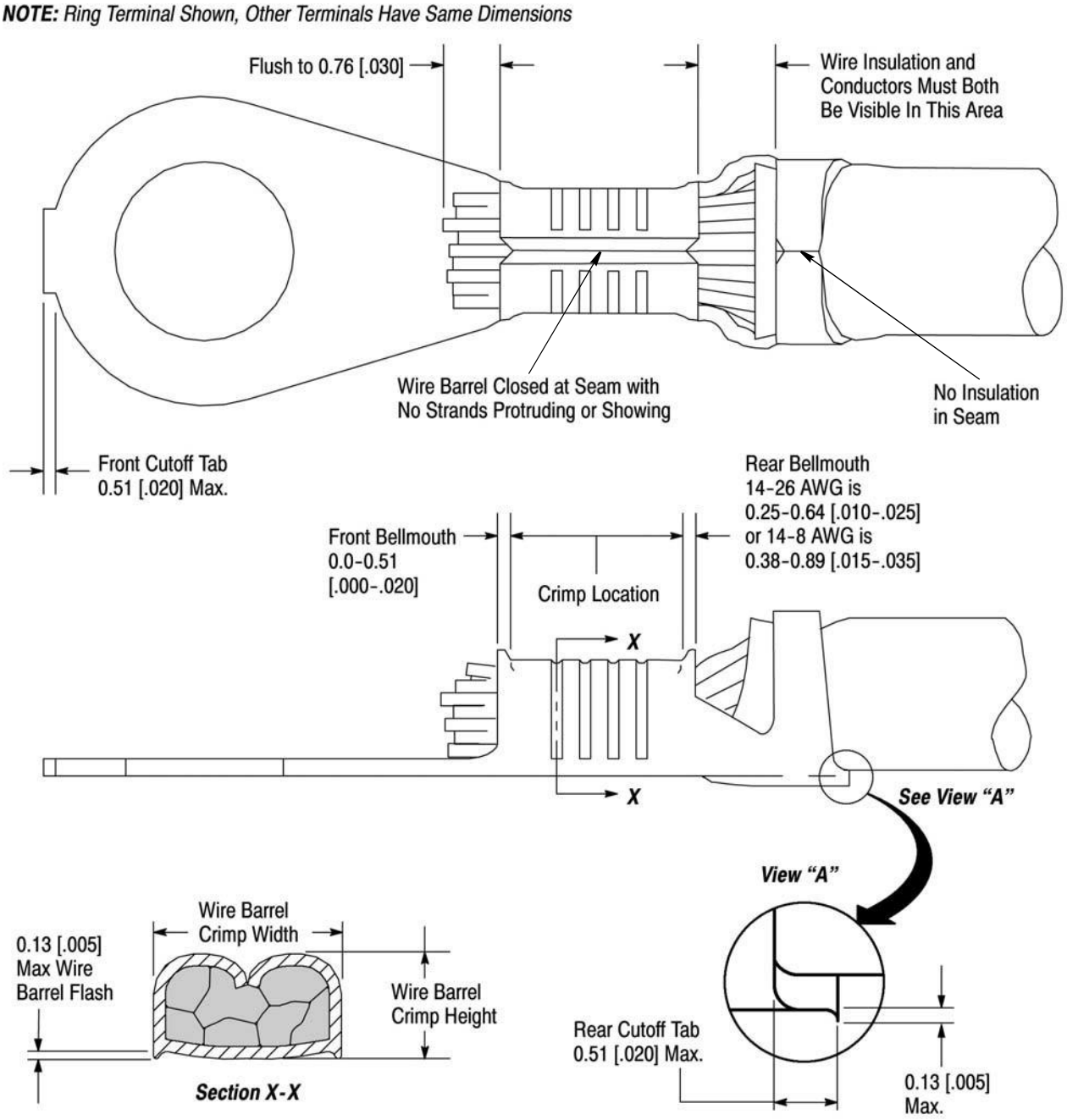


Figure 4

E. Burrs

The cutoff burr shall not exceed the dimensions shown in Figure 4.

F. Wire Barrel Flash

The wire barrel flash shall not exceed the dimensions shown in Figure 4, Section X-X.

G. Insulation Barrel Crimp

The insulation barrel shall grip the insulation firmly without fully cutting into it. Care must be taken to prevent cutting, nicking, or scraping of the insulation. Insulation crimp shall comply to width dimensions provided in the application tooling documentation.

H. Wire Location

The wire conductor and insulation must be visible in the transition area between the wire and insulation barrels as shown in Figure 4.

I. Conductor Extension

The conductor may extend beyond the wire barrel to the maximum shown. No strands may extrude over the height of the conductor crimp. See Figure 4.

J. Wire Barrel Seam

The wire barrel seam must be closed with no evidence of loose wire strands visible in the seam. See Figure 4.

K. Straightness

The force applied during crimping may cause some bending between the crimped wire barrel and the mating portion of the terminal. Such deformation is acceptable within the limits provided in Figure 5.

1. The up and down bend of the crimped terminal, including cutoff tab and burr, shall not be bent above or below the datum line more than the amount shown.
2. The side-to-side bend of the terminal may not exceed the limits provided.

CAUTION

Damaged terminals may not be used. If a damaged terminal is evident, it must be removed from the wire and replaced with a new one.

NOTE

Periodic inspections must be made to ensure crimped terminal formation is consistent as shown.

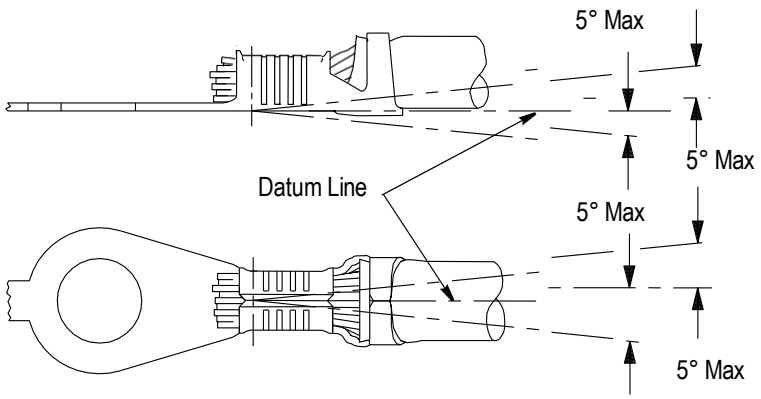


Figure 5

4. QUALIFICATION

Contact TE Product Engineering for agency approval information.

5. TOOLING

NOTE

Because of the large amount of product variations and application tooling available, it is not feasible to list all the tooling on this document. Contact TE using the phone numbers listed at the bottom of page 1 for specific dies, hand tools, applicators, and power units to fit your production needs and requirements.

NOTE

Lubrication is required when terminating any steel or stainless steel terminals.

CAUTION

Tool life may be significantly reduced when crimping comparable stainless steel/steel/nickel plated steel terminals.

This section provides information on tools for various application requirements.

- **Crimping Die Assemblies**
  Crimping Die Assemblies for crimping the terminals are available for the full wire size range. They are designed for easy installation and removal in hand crimping tool frame assemblies or applicators.
- **Hand Tools**
  Hand crimping tools are designed for prototype, low-volume applications, and repair.
- **Applicators**
  Applicators are designed for the full wire size range of terminals, and provide for high volume, heavy duty production requirements. The applicators can be used in bench or floor model power units.

NOTE

Each applicator is shipped with a metal identification tag attached. DO NOT remove this tag or disregard the information on it. Also, a packet of associated paperwork is included in each applicator shipment. This information should be read before using the applicator; then it should be stored in a clean, dry area near the applicator for future reference. Some changes may have to be made to the applicators to run in all related power units. Contact the Tooling Assistance Center number at the bottom of page 1 for specific changes.

- **Power Units**
  A power unit is an automatic or semi-automatic device used to assist in the application of a product. Power unit includes the power source used to supply the force or power to an applicator.

NOTE

Tool Engineers have designed machines for a variety of application requirements. For assistance in setting up prototype and production line equipment, contact Tool Engineering through your local TE Representative or call the Tooling Assistance Center number at the bottom of page 1.

6. VISUAL AID

The illustration below shows a typical application of this product. This illustration should be used by production personnel to ensure a correctly applied product. Applications which do not appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

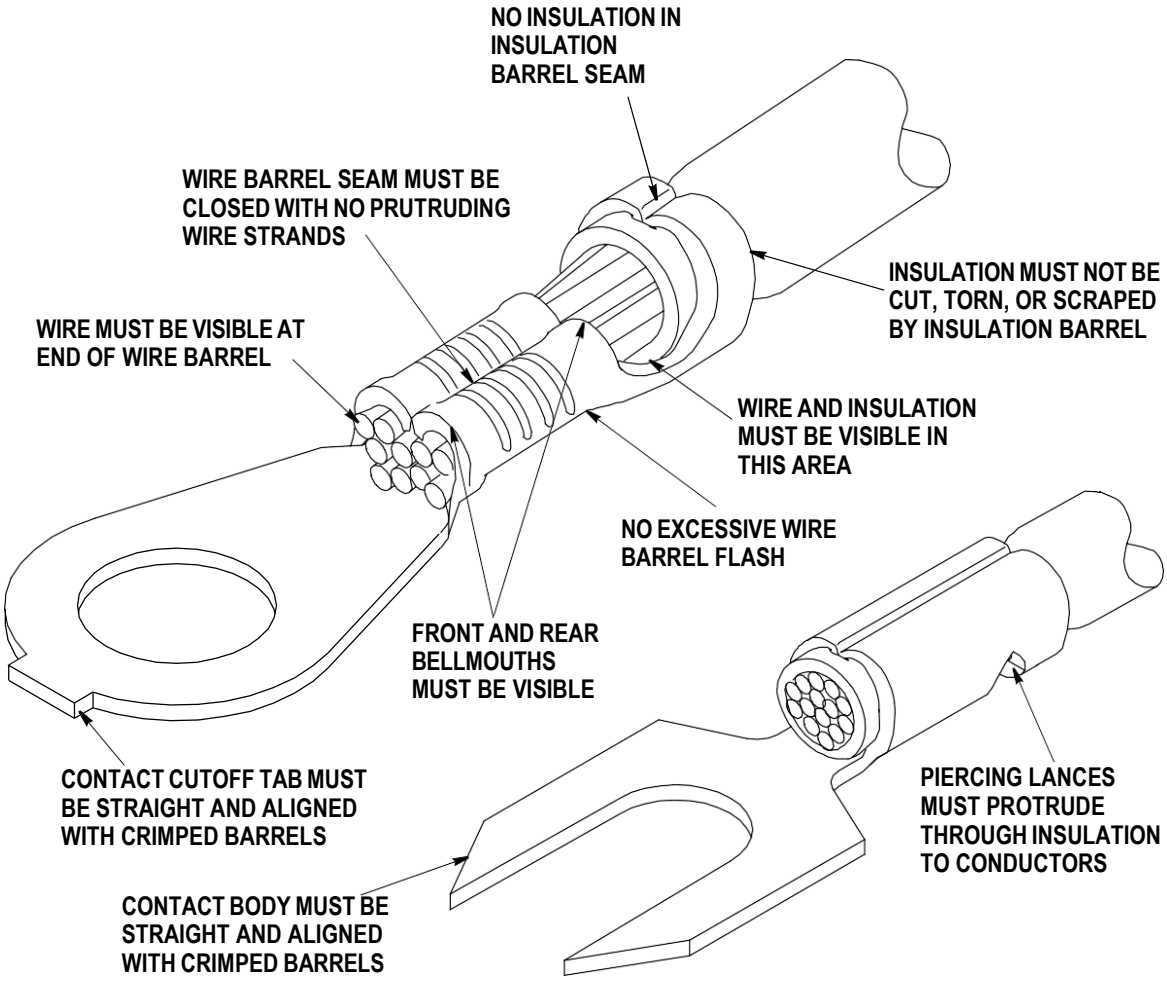


Figure 6