

**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  $\pm 0.13$  [ $\pm .005$ ] and angles have a tolerance of  $\pm 2^\circ$ . Figures and illustrations are for identification only and are not drawn to scale.*

## 1. INTRODUCTION

This specification covers the requirements for application of GET 0.64 mm Pin and Socket Contacts. These contacts will accept a wire size range of 22 to 18 AWG and a metric size range of 0.75 to 0.22 mm<sup>2</sup> as listed in Figure 2. The application requirements are applicable to automatic machine crimping tools.

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

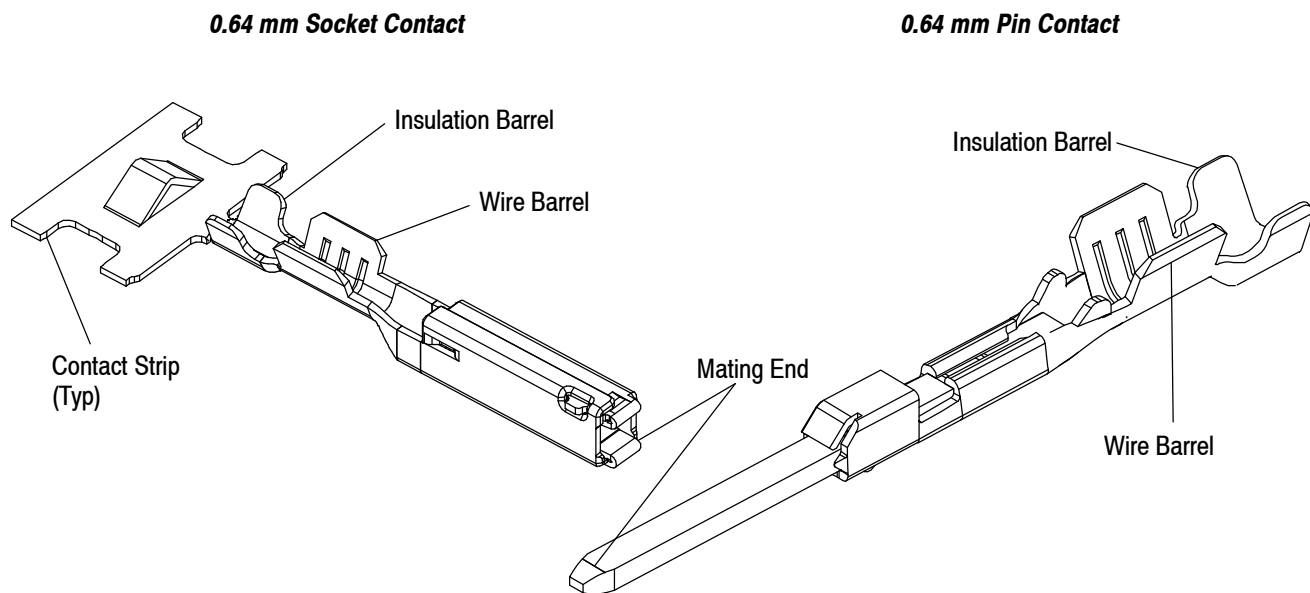


Figure 1

## 2. REFERENCE MATERIAL

### 2.1. Revision Summary

- Updated document to corporate requirements

### 2.2. Customer Assistance

Reference Part Number 1393364 and Product Code D355 are representative numbers of the GET 0.64 mm Pin and Socket Contacts. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local TE Representative or, after purchase, by calling the Product Information Center at the number at the bottom of this page.

### 2.3. Drawings

Customer Drawings for product part numbers 1393364 and 3-1419158-1 are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied by TE, call Product Information at the number at the bottom of this page.

## 2.4. Instructional Material

The following list includes available instruction sheets (408-series) that provide assembly procedures for operation, maintenance and repair of tooling; and customer manuals (409-series) that provide setup, operation, and maintenance of machines.

<u>Document Number</u>	<u>Document Title</u>
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
408-8598	GET Market Connector Mounting and Dismounting Instructions Female (Sealed)
408-8599	GET Market Connector Mounting and Dismounting Instructions Female (Unsealed)
408-8599-1	Positioning Contact Locking Spacer
408-8600	GET Market Connector Mounting and Dismounting Instructions Male (Unsealed)
408-9816	Handling of Reeled Products

## 3. REQUIREMENTS

### 3.1. Storage

#### A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the contact materials.

#### B. Reeled Contacts

When using reeled contacts, store coil wound reels horizontally and traverse wound reels vertically.

#### C. Shelf Life

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

#### D. Chemical Exposure

Do not store contacts near any chemicals listed below, as they may cause stress corrosion cracking in the contacts.

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 if available.



### 3.2. Materials

The socket contact is made from 7025 copper alloy. The pin contact is made from 425 brass. Socket contacts are available in gold, tin, or silver plating. Pin contacts are available in gold or tin plating.

### 3.3. Wire Size and Preparation

The contacts will accept stranded metric and AWG wire sizes as shown in Figure 2.

#### NOTE

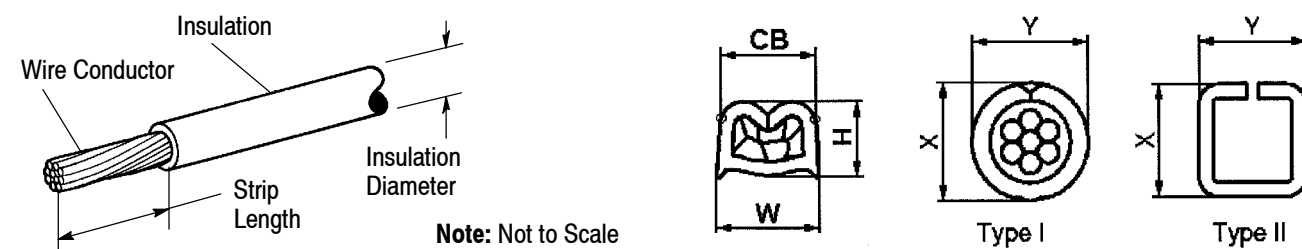
The applied crimp dimension (within the functional range of the product) is dependent on the termination tooling being used. Refer to the documentation (applicator logs and instruction sheets) supplied with the termination tooling for the applied crimp height. See Section 5, TOOLING.



#### CAUTION

DO NOT nick, scrape, or cut the wire conductor during the stripping operation.





WIRE SIZE		INSUL DIA.	STRIP LENGTH	TYCO ELECTRONICS MACHINE CRIMP TOOLING				
AWG	mm <sup>2</sup>			WIRE BARREL		INSULATION BARREL		
				THEORETICAL CRIMP WIDTH (CB) REF	CRIMP HEIGHT (H)	CRIMP TYPE	CRIMP HEIGHT (X)	CRIMP WIDTH (Y) REF
---	0.22	1.2 <sub>-0.1</sub>	4.4	1.4 (0.055F) 1.4 +0.1/-0◀	0.89 ±0.04	I	1.9 Max.	1.78 (0.070O) 1.78 ±0.15◀
---	0.35	1.4 <sub>-0.1</sub>			0.97 ±0.04			
22	---	1.65 Max.			0.95 ±0.04			
---	0.5	1.6 <sub>-0.2</sub>	4.4	1.78 (0.070F) 1.78 +0.15/-0◀	1.02 ±0.04	II	2.1 Max.	1.73 (0.068S) 2.05 Max.◀
---	0.75	1.9 <sub>-0.2</sub>			1.10 ±0.04			
20	---	1.9 Max.			1.02 ±0.04			
18	---	2.06 Max.			1.12 ±0.04			

◀ Width (W) and (Y) may deviate from REF up to the values given.

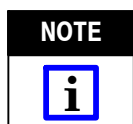
Figure 2

### 3.4. Crimped Contact Requirements

The contact 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.



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



**NOTE** Wire stripping tool jaws may leave corrugated indentations on the surface of the wire insulation. This is especially severe with cross-linked polyethylene (high temperature) insulation.

#### A. Wire Barrel Crimp

The crimp applied to the wire portion of the contact is the most compressed area and is most critical in ensuring optimum electrical and mechanical performance of the crimped contact. The contact wire barrel crimp height must be within the dimension provided in Figure 2.

#### B. Effective Crimp Length

For optimum crimp effectiveness, the crimp must be within the area shown and must meet the crimp dimensions provided in Figure 3. 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. See Section 5, TOOLING.

#### C. Bellmouths

The rear bellmouth shall be as shown and conform to the dimensions given in Figure 3. Front bellmouths are not allowed.

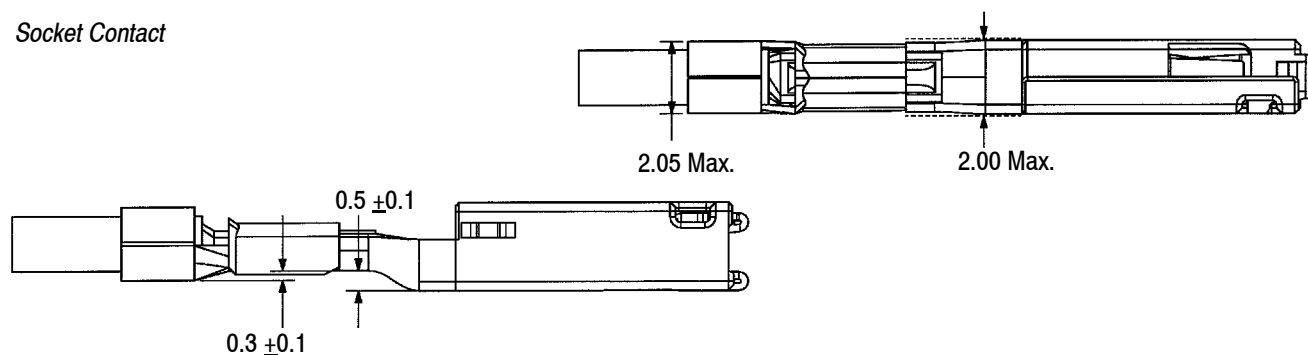
#### D. Cutoff Tabs

The cutoff tab shall be cut to the dimensions shown in Figure 3.

#### E. Burrs

The cutoff burr shall not exceed the dimensions shown in Figure 3.

### Socket Contact



### Pin Contact

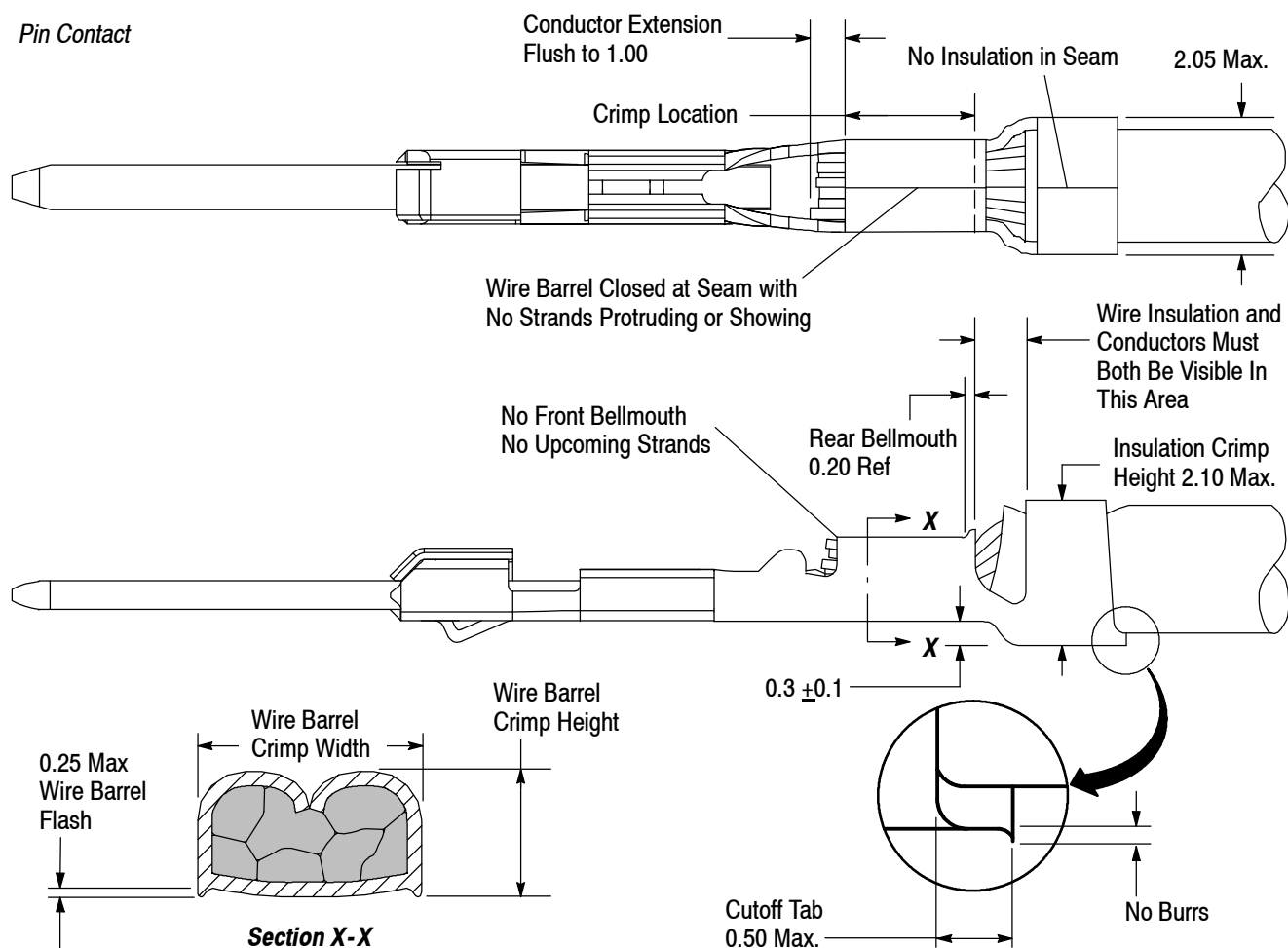


Figure 3

### F. Wire Barrel Flash

The wire barrel flash shall not exceed the dimensions shown in Figure 3, 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 Figure 3. Light piercing of the insulation may occur for insulation diameters of 1.7 mm or larger. The insulation crimp height may not exceed 2.10 mm.

### H. Wire Location

The wire conductor and insulation must be visible in the transition area between the wire and insulation barrels.

## 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.

## J. Wire Barrel Seam

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

## K. Twist and Roll

There shall be no twist, roll, deformation or other damage to the mating portion of the crimped contact that will impair usage of the contact. See Figure 4.

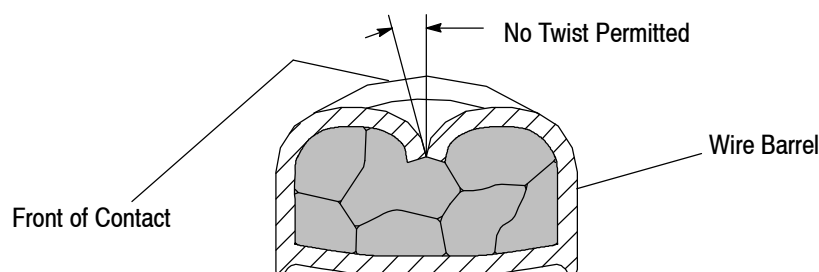


Figure 4

## L. Straightness

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

1. The up and down bend of the crimped contact, 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 contact may not exceed the limits provided.

### NOTE

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



## M. Mountability

When inserting the contact into the connector cavity, the insulation crimp width shall not exceed 2.05 mm.

**NOTE:** Pin contact shown, socket contact has the same requirements.

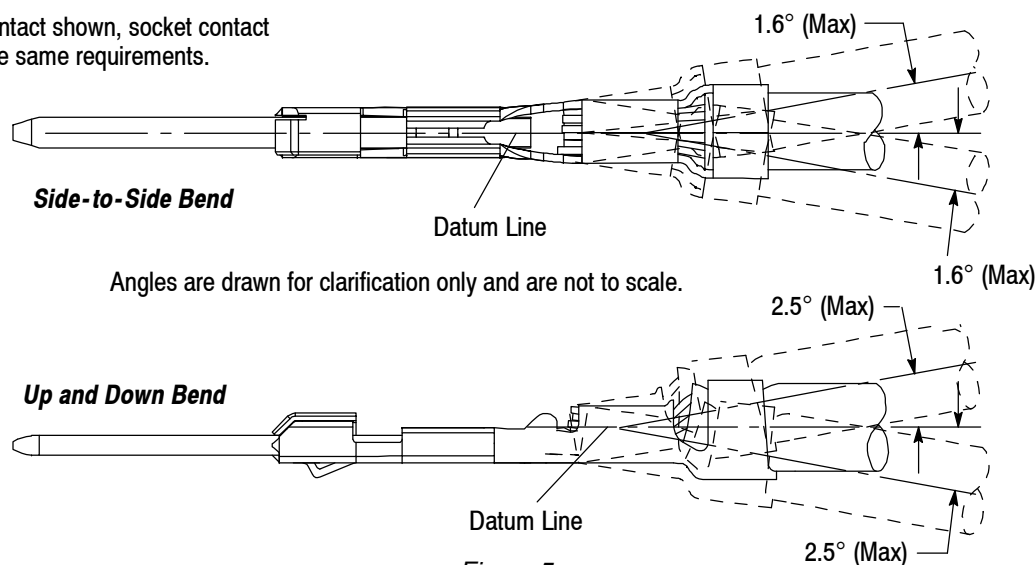


Figure 5

### 3.5. Contact Repair



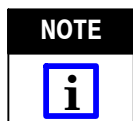
Once a contact has been damaged, it can not be used. It must be cut from the wire and replaced with a new contact. Remove the damaged contacts from the connectors using Extraction Tool 3-1579007-6.

### 4. QUALIFICATIONS

GET 0.64 mm Pin and Socket Contacts are not required to be agency evaluated.

### 5. TOOLING (See Figure 6)

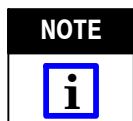
This section provides a selection of tools for various application requirements. Modified designs and additional tooling concepts may be available to meet other application requirements.



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.

- **Applicators**

Applicators are designed for the full wire size range of strip-fed, precision formed contacts, and provide for high volume, heavy duty production requirements. The applicators can be used in bench or floor model power units.



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.

- **Hand Tools**

Hand crimping tools are designed for prototype and repair. Contact the TE Tooling Assistance Center number at the bottom of page 1 for information about available automated termination applicators and machines for low- and high-volume production requirements.

- **Extraction Tools**

Extraction tools are designed to release the locking lance inside the connector housing without damaging the housing or contacts. Refer to Instruction Sheets 408-8598 and 408-8599 for use of Extraction Tool 3-1579007-6.

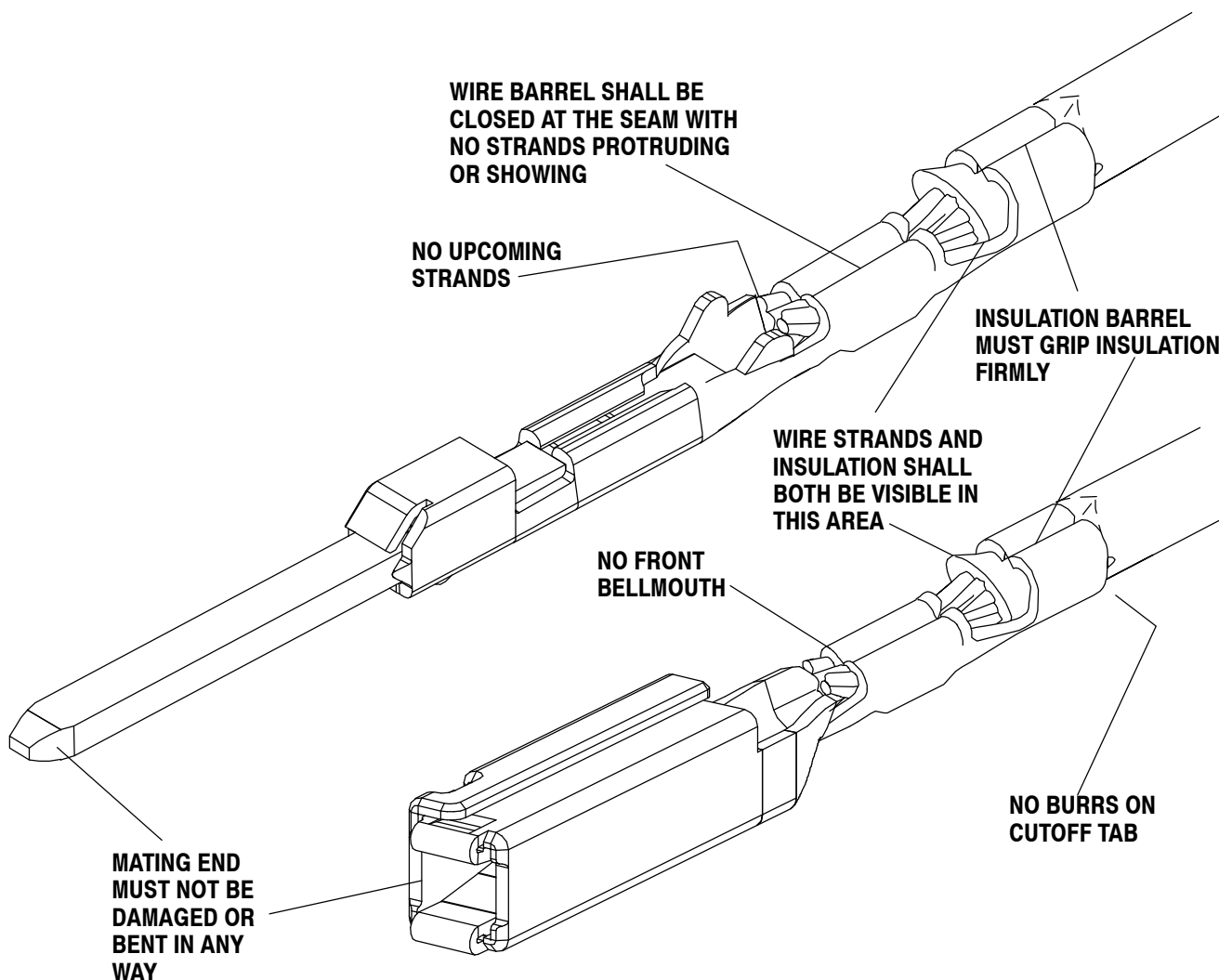
**NOTE: BECAUSE OF THE LARGE AMOUNT OF DOMESTIC AND INTERNATIONAL APPLICATION TOOLING AVAILABLE, IT IS NOT FEASIBLE TO LIST ALL THE TOOLING ON THIS DOCUMENT. CONTACT TYCO ELECTRONICS USING THE PHONE NUMBERS LISTED AT THE BOTTOM OF PAGE 1 FOR SPECIFIC APPLICATORS AND POWER UNITS TO FIT YOUR PRODUCTION NEEDS AND REQUIREMENTS.**

CONTACT PLATING	WIRE			HAND CRIMP TOOLING
	AWG	mm <sup>2</sup>	INSULATION DIAMETER RANGE	
GOLD, SILVER, or TIN	22	0.22-0.35	1.4-1.1	6-1393462-4
	20-18	0.5-0.75	2.06-1.4	6-1393462-5

Figure 6

## 6. VISUAL AID

Figure 7 shows a typical application of GET 0.64 mm Pin and Socket Contacts. 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 7. VISUAL AID**