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 the application of 3.18 mm [.125 in.] Diameter Pin Receptacle Terminals. These requirements are applicable to hand or automatic machine crimping tools.

When corresponding with Tyco Electronics 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.

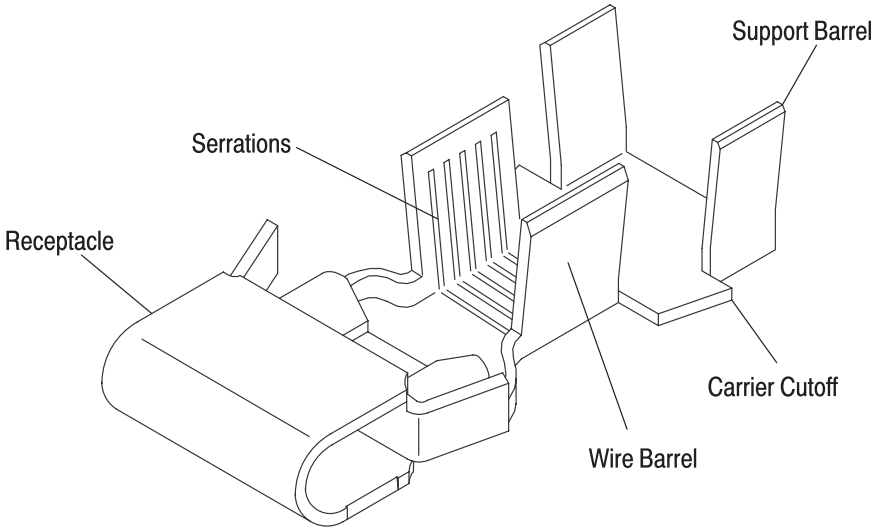


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Initial release of document

2.2. Customer Assistance

Reference Product Part Numbers 1742539 and Product Code 1397 are representative of 3.18 mm [.125 in.] Diameter Pin Receptacle Terminals. 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 Tyco Electronics Representative or, after purchase, by calling the Product Information Center at the number at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network. The information contained in the Customer Drawing takes priority if there is a conflict with this specification or any other technical documentation supplied by Tyco Electronics.

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.

Document Number	Document Title
408–3295	Preparing Reel of Contacts for Application Tooling
408–7424	Checking Terminal Crimp Height or Gaging Die Closure
408–8040	Heavy Duty Miniature Quick–Change Applicators (Side–Feed)
408–8053	Conversion Guide for Miniature Quick–Change Applicators
408–8059	General Preventative Maintenance for Applicators
408–9816	Handling of Reeled Products
409–5128	Basic AMP–O–LECTRIC* Model “K” Terminating Machine 471273–[ ]
409–5842	AMP–O–LECTRIC Model “G” Terminating Machine 354500–[ ]
409–5878	AMPOMATOR* CLS IV+ Lead–Making Machine 356500–[ ]

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

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

B. Reeled Terminals

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

C. Shelf Life

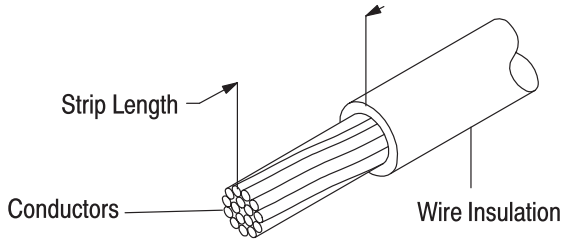
The terminals should remain in the shipping containers until ready for use to prevent deformation to the terminals. The terminals should be used on a first in, first out basis to avoid storage contamination that could adversely affect signal transmissions.

3.2. Materials

Consult Tyco Electronics customer drawings for the specific metals and platings used.

3.3. Wire Size and Preparation

The terminals will accept a wide range of stranded wire sizes as shown in Figure 2. Insulation shall be stripped as indicated in table in Figure 2.



WIRE SIZE (mm^2 [AWG])	INSULATION DIAMETER	STRIP LENGTH ±0.38 [±.015]	WIRE BARREL CRIMP			SUPPORT BARREL CRIMP	
			HEIGHT ±0.05 [±.002]	WIDTH	TYPE	WIDTH	TYPE
2.0 [14]	1.90–4.32 [.075–.170]	7.62 [.300]	1.96 [.077]	5.33 [.210] Ref	F	7.11 [.280] Ref	F
2.5 [13.5]			2.00 [.079]				
3.3 [12]			2.11 [.083]				
4.0 [11.5]			2.24 [.088]				
5.3 [10]			2.36 [.093]				
6.0 [9.5]			2.51 [.099]				
8.3 [8]	---	14.50 [.570]●	2.79 [.110]				

●This longer strip length does not provide insulation support (i.e. Only the strands will be inside the support barrel.)

Figure 2

3.4. Crimped Terminal Requirements

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 in Figure 2.

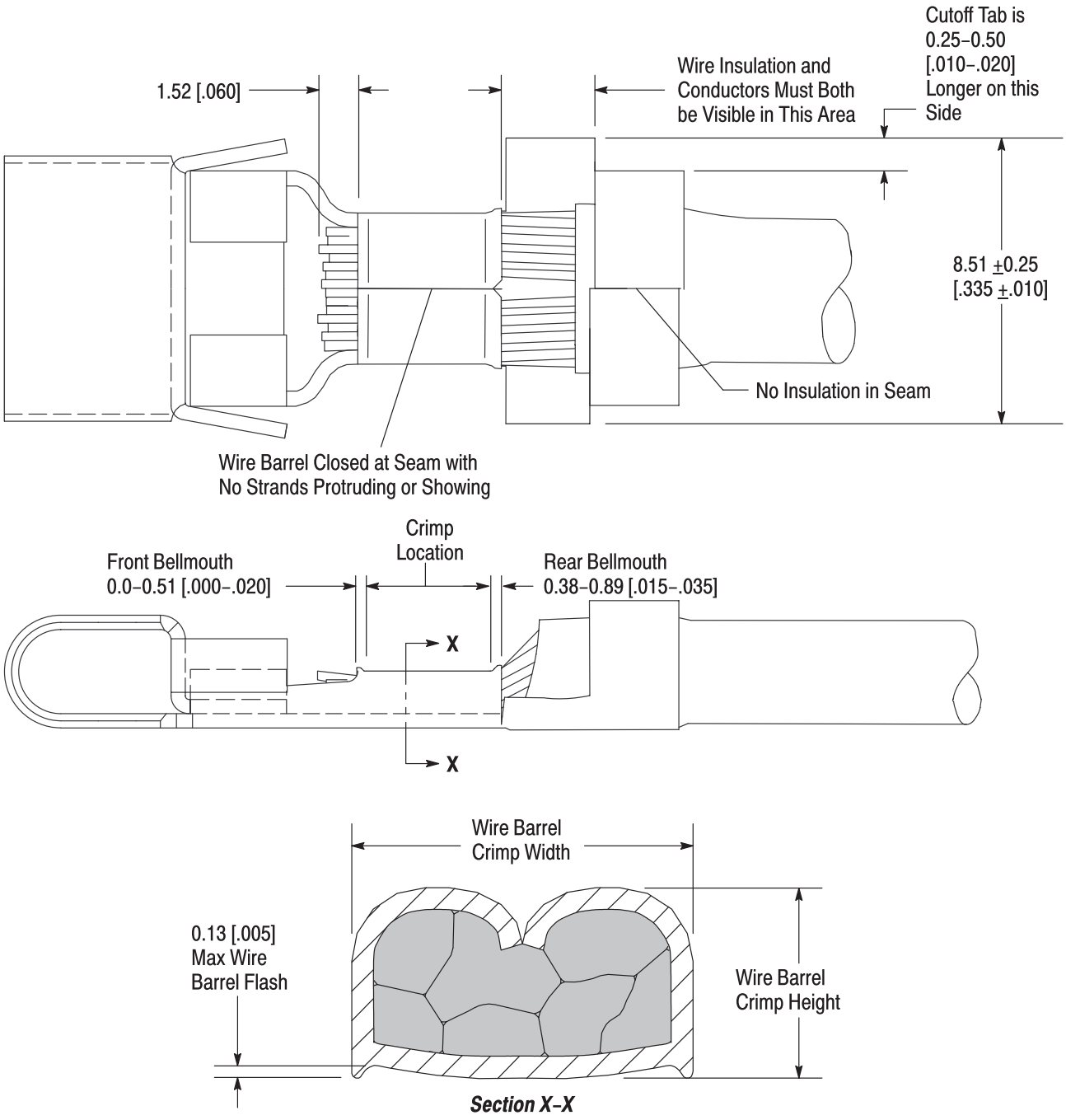


Figure 3

B. Effective Crimp Length

For optimum crimp effectiveness, the crimp must be within the area shown 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.

C. Bellmouths

Front and rear bellmouth shall be as shown and conform to the dimensions given in Figure 3.

D. Cutoff Tabs

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

E. Burrs

The cutoff burr shall not exceed 0.13 mm [.005 in.].

F. Wire Barrel Flash

The wire barrel flash shall not exceed the dimensions shown in Figure 3, Section X–X.

G. Support Barrel Crimp

The support barrel shall grip the insulation firmly without fully cutting into it. Care must be taken to prevent cutting, nicking, or scraping of the insulation. Support crimp shall comply to width dimensions provided in Figure 2.

H. Wire Location

The wire conductor and insulation must be visible in the transition area between the wire and support barrels as shown in Figure 3. The exception to this is the 8.35 mm^2 [8 AWG] wire with extended strip length as indicated in the table in Figure 2.

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 3.

J. Wire Barrel Seam

The wire barrel seam must be closed with no evidence of loose wire strands visible in the seam. See Figure 3.

K. Twist and Roll

Twist or roll of the crimped terminal shall not exceed the limits specified in Figure 4.

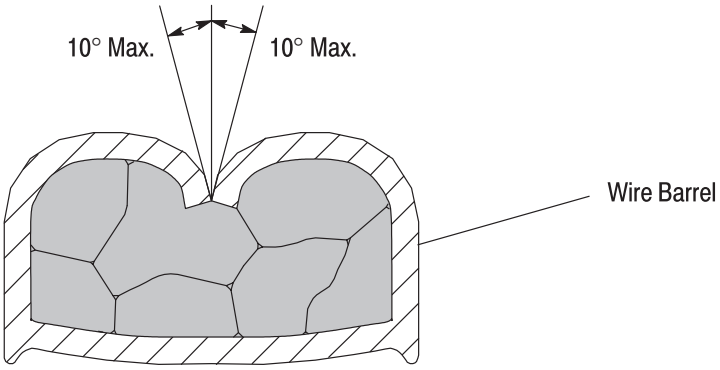


Figure 4

L. Straightness

The force applied during crimping may cause some bending between the crimped wire barrel and the mating portion of the 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.

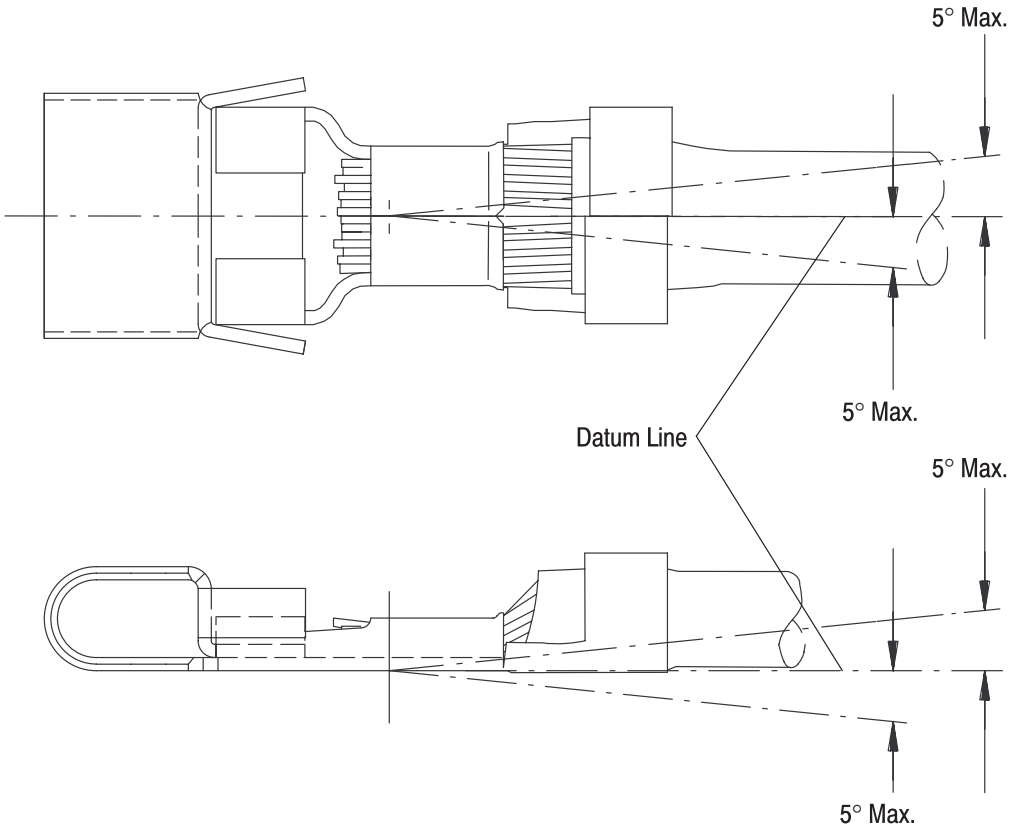


Figure 5

4. QUALIFICATION

Contact the Product Information number at the bottom of page 1 for agency approval information.

5. TOOLING (Figure 6)

- **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.

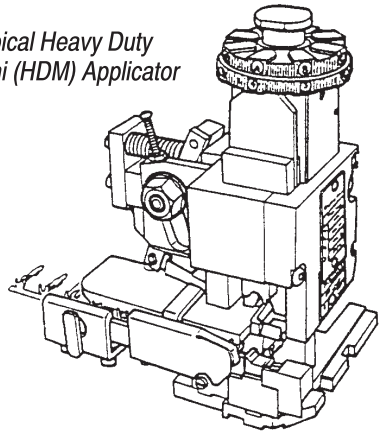
- **Power Units**

  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.

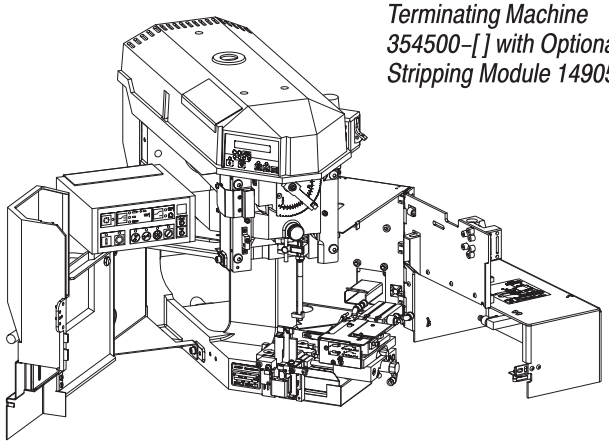
NOTE

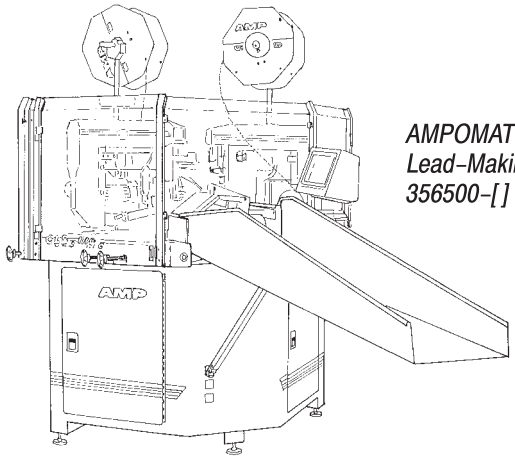
Tool Engineers have designed machines for a variety of application requirements. For assistance in setting up prototype and production line equipment, contact Tool Engineering through your local Tyco Electronics Representative or call the Tooling Assistance Center number at the bottom of page 1.

Typical Heavy Duty Mini (HDM) Applicator

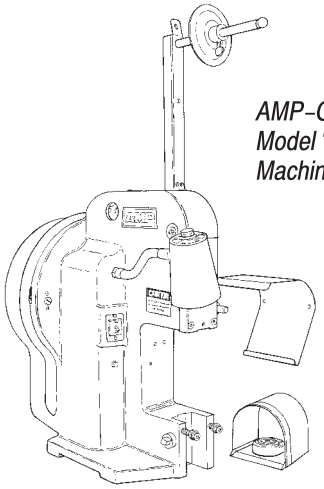


AMP–O–LECTRIC Model “G” Terminating Machine 354500–[ ] with Optional Stripping Module 1490501–[ ]





AMPOMATOR CLS Lead–Making Machine 356500–[ ]



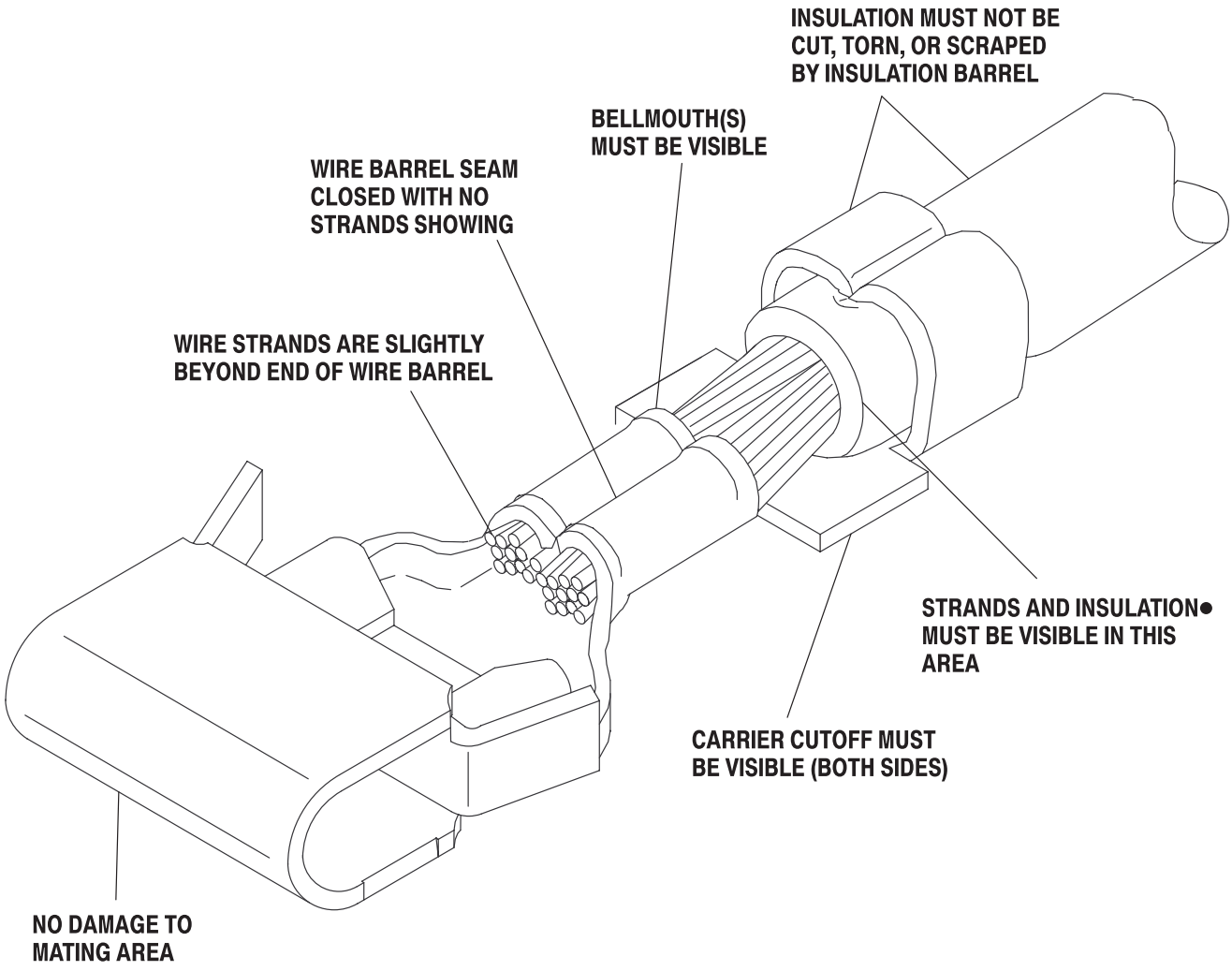
AMP–O–LECTRIC Model “K” Terminating Machine 471273–[ ]

WIRE			APPLICATORS FOR TERMINATING POWER UNIT (DOCUMENT)		
mm^2	AWG	INSULATION DIAMETER	“CLS” LEADMAKER 356500–[ ] (409–5878)	“K” TERMINATOR 471273–[ ] (409–5128)	“G” TERMINATOR 354500–[ ] (409–5842)
2.0	14	1.90–4.32 [.075–.170]	1855463–1 (408–8040)	1855463–2 (408–8040)	1855463–3 (408–8040)
2.5	13.5				
3.3	12				
4.0	11.5				
5.3	10				
6.0	9.5				
8.3	8	---			

Figure 6

6. VISUAL AID

Figure 7 shows a typical application of a 3.18 mm [.125 in.] Diameter Pin Receptacle Terminal. 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.



●EXCEPTION: 8.35 MM^2 [NO. 8 AWG} WIRE WITH EXTENDED STRIP LENGTH WILL HAVE STRANDS ONLY IN THIS AREA

FIGURE 7. VISUAL AID