

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 [$\pm .005$] 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 AMPLIVAR FASTIN-FASTON Series 187 and 250 Tab Contacts. The series designator is the width dimension of the contact tab. There are five crimp barrel designs to accommodate a wire size range of 25 through 12 AWG or 400 through 7000 CMA. The contacts are precision formed, strip fed for machine application. They feature AMPLIVAR Serrations in the wire barrel designed to pierce the coating of magnet wire for direct metal-to-metal contact, and a locking lance and panel stops designed to position and retain the contact in a panel. The contacts are available in continuous strip form for automatic machine application.

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

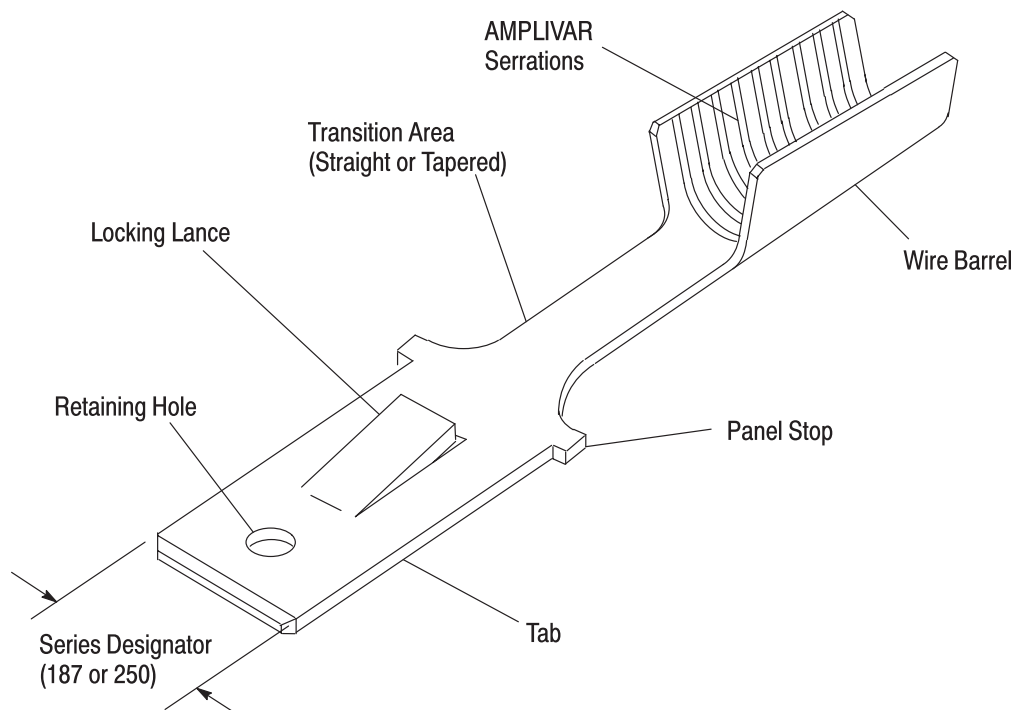


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

This paragraph is reserved for a revision summary of changes and additions made to this specification. The following changes were made to this revision.

- Updated document to corporate requirements
- Added or changed information to Section 1, INTRODUCTION; and Paragraph 2.4
- Added new information to tables in Figures 2 and 7 and new artwork to Figure 7

2.2. Customer Assistance

Reference Base Part Number 62447 and Product Code 1106 are representative numbers of AMPLIVAR FASTIN-FASTON Series 187 and 250 Tab 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 Tyco Electronics Representative or, after purchase, by calling the Tooling Assistance Center or Product Information number at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network.

2.4. Instructional Material

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

<u>Document Number</u>	<u>Document Title</u>
408-8039	Heavy Duty Miniature Quick-Change Applicators (End-Feed Type)
408-9640	Crimp Quality Monitor Applicators for Side-Feed and End-Feed Applications
409-5128	Basic AMP-O-ELECTRIC* Model "K" Terminating Machine 471273-[]
409-5842	AMP-O-ELECTRIC Model "G" Terminating Machines 354500-[] and 1213127-[]
409-5878	AMPOMATOR* CLS IV+ Lead-Making Machine
409-10027	Stripping Module 1490502-[], 1490500-[], and 1725910-[]
409-10029	Stripping Module 1490503-[] and 1490501-[]
409-10047	AMP-3K Terminating Machines 1725950-[]

3. REQUIREMENTS

3.1. Material

The contacts are manufactured from brass alloy and are tin plated.

3.2. Storage

The contacts should remain in their shipping containers and on the reels until ready for use. The coiled contact reels should be stored horizontally to prevent deformation during storage that could prevent proper feeding through the applicator. The contacts should be used on a first in, first out basis to prevent storage contamination that could occur over an extended period of time.

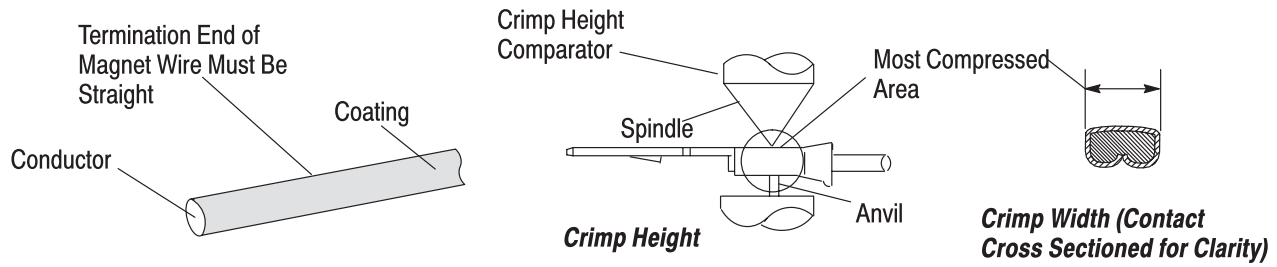
3.3. Special Characteristics

The contact wire barrel has serrations designed to penetrate the exterior coating of magnet wire and form a good air-tight termination. There are contacts available for 22 through 12 AWG or for 600 through 7000 CMA. Contacts are available as standard and reverse coil reeled. They are designed to mate with a variety of FASTON* Series 187 and 250 Receptacle Contacts. There are mini-applicators and machine power units to accommodate the contact reeling designs and contact crimp requirements.

The basic contact designs are shown in Figure 1. Others can be made available to accommodate specific design requirements. To keep pace with industry needs, part number assignments can change daily. All design changes affecting the application requirements will be added to this document. However, maintaining a current listing of all part numbers on this document could necessitate a revision that would remove the document from availability yet have no effect on the design requirements for which this document is intended. Current status of product part numbers is maintained in the Tyco Electronics database system and can be obtained by calling one of the referenced telephone numbers at the bottom of page 1.

3.4. Wire

The wire conductor shall be solid and evenly covered with a lacquer coating. No special preparation of magnet wire is necessary. The only requirement is that the wire end must be straight and without deformations. There are contact designs for single and multiple wire applications. Individual wire sizes and crimp dimensions for which contact designs are available are provided in Figure 2.



CONTACT WIRE SIZE RANGE	APPLIED WIRE SIZE		CONTACT CRIMP	
	AWG	CMA	HEIGHT (± 0.06 [± .002])	WIDTH (Reference)
22 – 16	22	600	1.37 [.054]	2.79 [.110]
	2 (22)	1200	1.47 [.058]	2.79 [.110]
	21 ■	1000	1.37 [.054]	2.79 [.110]
	1 (21) and 1 (22)	1600	1.50 [.059]	2.79 [.110]
	20	1200	1.45 [.057]	2.79 [.110]
	2 (20)	2400	1.58 [.062]	2.79 [.110]
	19	1500	1.45 [.057]	2.79 [.110]
	18 ■	1400	1.50 [.059]	2.79 [.110]
	17	2200	1.58 [.062]	2.79 [.110]
	16 ■	3000	1.65 [.065]	2.79 [.110]
21 – 16	21	1000	1.45 [.057]	2.29 [.090]
	18	1400	1.58 [.062]	2.29 [.090]
	16	3000	1.70 [.067]	2.29 [.090]
15 – 12	15 ■	3600	1.88 [.074]	3.56 [.140]
	14 ■	4500	2.01 [.079]	3.56 [.140]
	13	5000	2.06 [.081]	3.56 [.140]
	12	7000	2.26 [.089]	3.56 [.140]
25–19	25	400	1.04 [.041]	2.03 [.080]
	24	500	1.06 [.042]	2.03 [.080]
	23	600	1.08 [.043]	2.03 [.080]
	22	750	1.11 [.044]	2.03 [.080]
	21	1000	1.15 [.045]	2.03 [.080]
	2 (24)	1000	1.15 [.045]	2.03 [.080]
	20	1200	1.19 [.047]	2.03 [.080]
	2 (23)	1200	1.19 [.047]	2.03 [.080]
	19	1500	1.24 [.049]	2.03 [.080]
	2 (22)	1500	1.24 [.049]	2.03 [.080]

■ Larger wire barrel (see crimp width reference)

Figure 2

3.5. Crimped Contact Criteria

A. Crimp Height

The crimp applied to the wire barrel portion of the contact is measured within 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 and crimp width must be within the dimensions provided in Figure 2.

B. Effective Crimp Length

The effective crimp length is the area where the optimum crimp pressure is applied over the length of the wire barrel. It does not include the bellmouth area. The crimp should be measured in the approximate center of the effective crimp length area. See Figure 3.

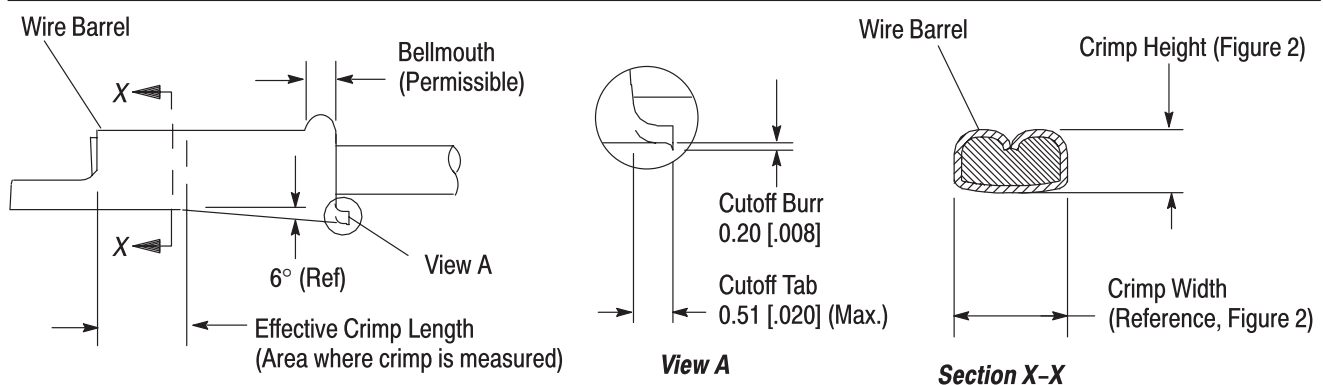


Figure 3

C. Bellmouth

A bellmouth caused by the extrusion of metal during crimping is permissible.

D. Cutoff Tab and Burr

The cutoff tab and burr resulting from the contact being cut from the carrier strip must be within limits shown in Figure 3, View A.

E. Wire Location

After crimping, the end of the magnet wire must be at least flush with the end of the wire barrel. It may extend beyond the end of the wire barrel. The extension from the end of the wire barrel will depend on your application requirements. See Figure 4.

F. Wire Barrel Seam

Wire barrel seam shall be completely closed with no conductor slivers protruding from it. See Figure 4.

G. Twist or Roll

The crimped wire must be aligned with uncrimped portion of contact to within the limit shown in Figure 4.

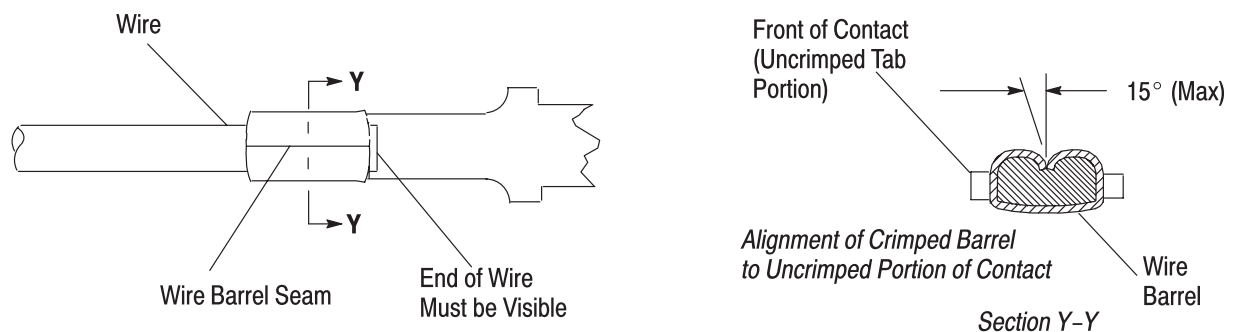


Figure 4

H. Straightness

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

1. Up and Down

The crimped contact, including cutoff tab and burr, shall not be bent above or below the datum line more than the amount shown in Figure 5.

2. Side-to-Side

The side-to-side bending of the contact may not exceed the limits provided in Figure 5.

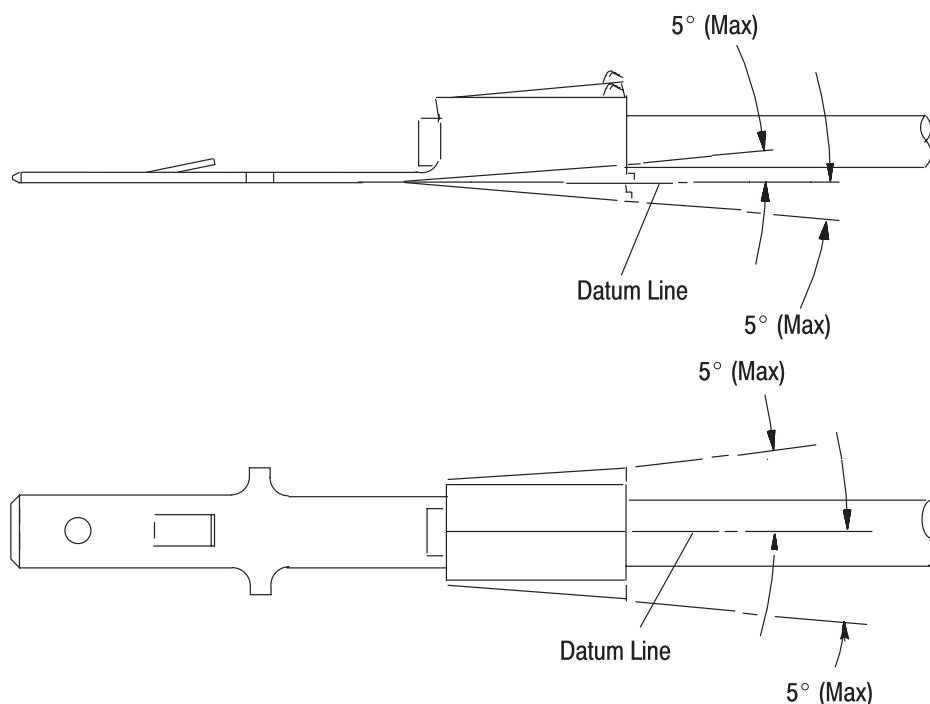


Figure 5

3.6. Panel Mounting

Contacts are designed to be mounted in nonmetallic panels. If a right-angle application is required, the contact may be bent 90° at the transition area so that the wire barrel seam is opposite the tab end of the contact. See Figure 6.

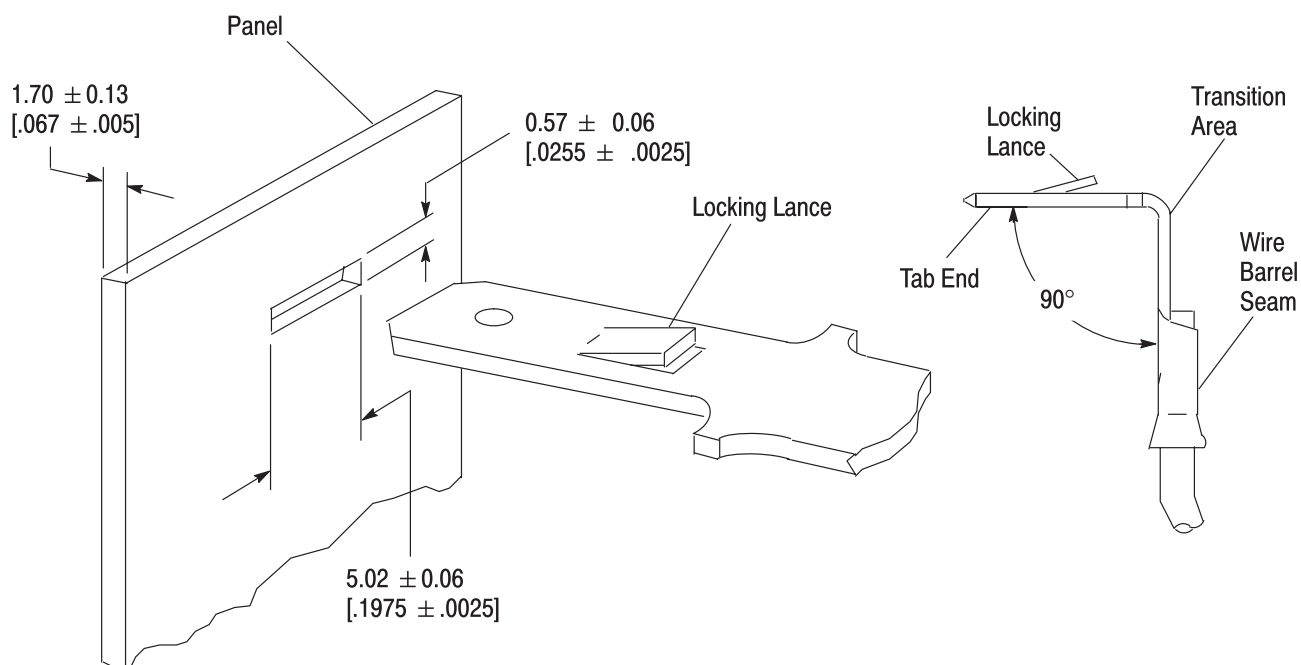


Figure 6

3.7. Repair

A damaged contact, or a contact attached to damaged wire, must be cut from the conductor and replaced with a new one using the tools shown in Figure 7. The locking lance of a contact installed in a panel will need to be depressed to remove it from a panel.

4. QUALIFICATION

AMPLIVAR FASTIN-FASTON Series 187 and 250 Tab Contacts are not required to be agency approved.

5. TOOLING

Contacts are designed to be crimped with Miniature Quick-Change Applicators, which can be used in Machine Power Units. The recommended tooling and instructional material is provided in Figure 7.

NOTE



Each power unit part number provided in Figure 7 represents a modification – represented by a dash number – which is built for a specific application requirement. Some modifications are adaptable to a large variety of applications and some are for very specific applications. We recommend that you call and discuss your specific requirements with one of our representative from the Tooling Assistance Center Number listed on page 1.

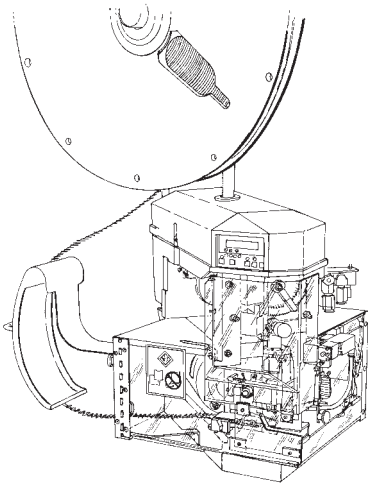
NOTE



The full wire size range and available application tooling is provided in Figure 7. Contact part numbers are listed and maintained in the Tyco Electronics tooling engineering database. For additional information, call the number of the Tooling Assistance Center provided at the bottom of page 1.

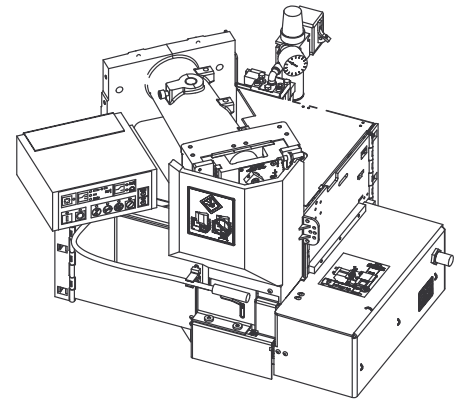
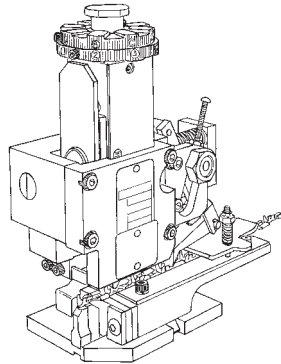
WIRE SIZE		APPLICATOR	APPLICATOR DOCUMENT	POWER UNIT	POWER UNIT DOCUMENT
AWG	CMA				
22-16	600/3000	566222-1	---	1-471273-3	409-5128
		567469-2	408-8039	354500-1	409-5842
				1725950-3, -4, -8	409-10047
		680000-1	408-8039	354500-1	409-5842
				1725950-3, -4, -8	409-10047
21-16	800/3000	565485-1	---	1-471273-3	409-5128
		567645-2	408-8039 408-9640	354500-1	409-5842
				1725950-3, -4, -8	409-10047
		687848-2	408-8039	354500-1	409-5842
				1725950-3, -4, -8	409-10047
15-12	3000/7000	566223-1	---	1-471273-3	409-5128
		567438-1	408-8039	354500-1, -9, -11	409-5842
				1490501-1, -9, -11	409-10029
				1725910-1, -2, -3, -4	409-10027
				1725950-1, -2, -5, -6, -7, -9	409-10047
		567603-2	408-8039 408-9640	354500-1	409-5842
				1725950-3, -4, -8	409-10047
25-19	400/1500	1852411-2	408-8039	354500-1	409-5842
		1852411-1	408-8039	356500-1	409-5878

Figure 7 (cont'd)

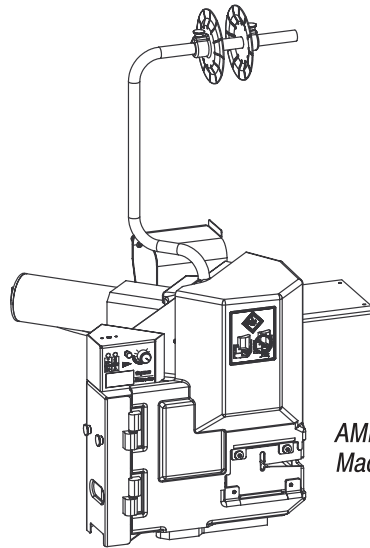


*AMP-O-LECTRIC Model "G"
Terminating Machine 354500-[]*

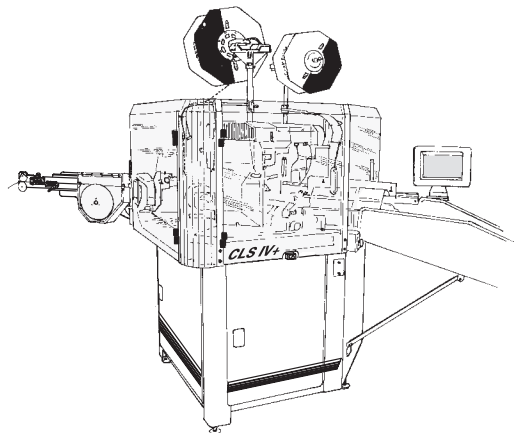
*Heavy Duty Miniature
Quick-Change
(End-Feed Type Applicator)*



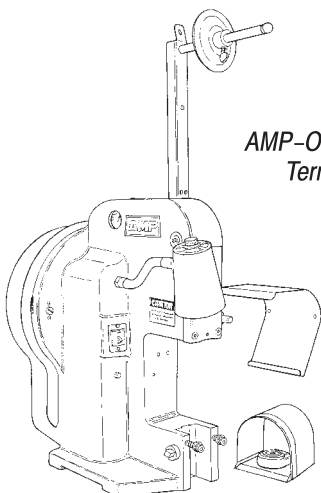
*Stripping Module
1490501-[]*



*AMP-3K Terminating
Machine 1725950-[]*



*AMPOMATOR CLS IV
Lead-Making Machine*



*AMP-O-LECTRIC Model "K"
Terminating Machine
471273-[]*

*Stripping Module
1725910-[]*

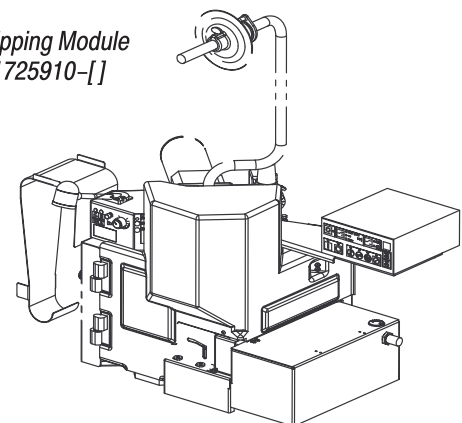


Figure 7 (end)

6. VISUAL AID

Figure 8 shows a typical application of AMPLIVAR FASTIN-FASTON Series 187 and 250 Tab 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.

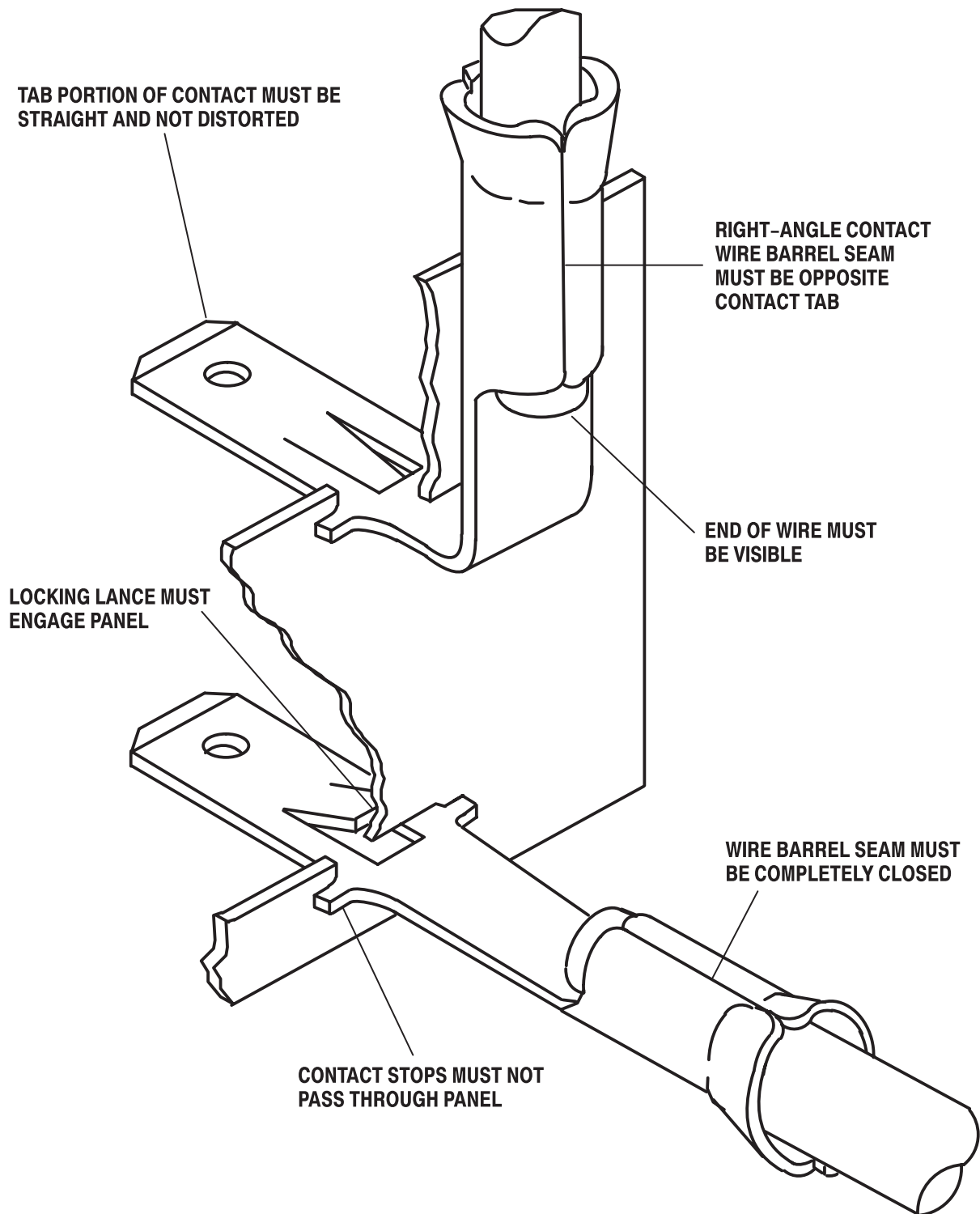


FIGURE 8. VISUAL AID