

**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 AMPMODU Short Point contacts and housings for cable-mount applications. These components mate with printed circuit (pc) board mounted 0.64 [.025] square or round posts that are 4.29 to 6.58 [.169 to .259] in length.

The contacts are available in duplex 30 $\mu$  gold, 15 $\mu$  gold, or 100 $\mu$  tin. Each contact features a locking lance to engage the housing and two spring members to engage the mating post contact. The contact is available in three sizes: 32-28, 26-22, and 24-20. Strip-form contacts are designed for automatic machine application and loose-piece contacts are designed for hand tool application.

The housing is made of flame retardant black thermoplastic. Each housing has double row contact cavities with in-row and row-to-row centerline spacing on 2.54 [.100], and are available in 4- to 52-position configurations. They can be mounted side-to-side or end-to-end while maintaining the same centerline spacing.

**NOTE**



AMPMODU Short Point contacts can also be used in single row, 2- through 25-position AMPMODU MTE housings. These housings are available with plain exterior surfaces which allow for continuous 2.54 [.100] centerline spacing with guiding ribs to mate with shrouded pc board headers or with polarizing ribs and latches for free-hanging assemblies. For more information on the MTE housing, see Application Specification 114-25026.

When corresponding with TE Connectivity (TE) 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.

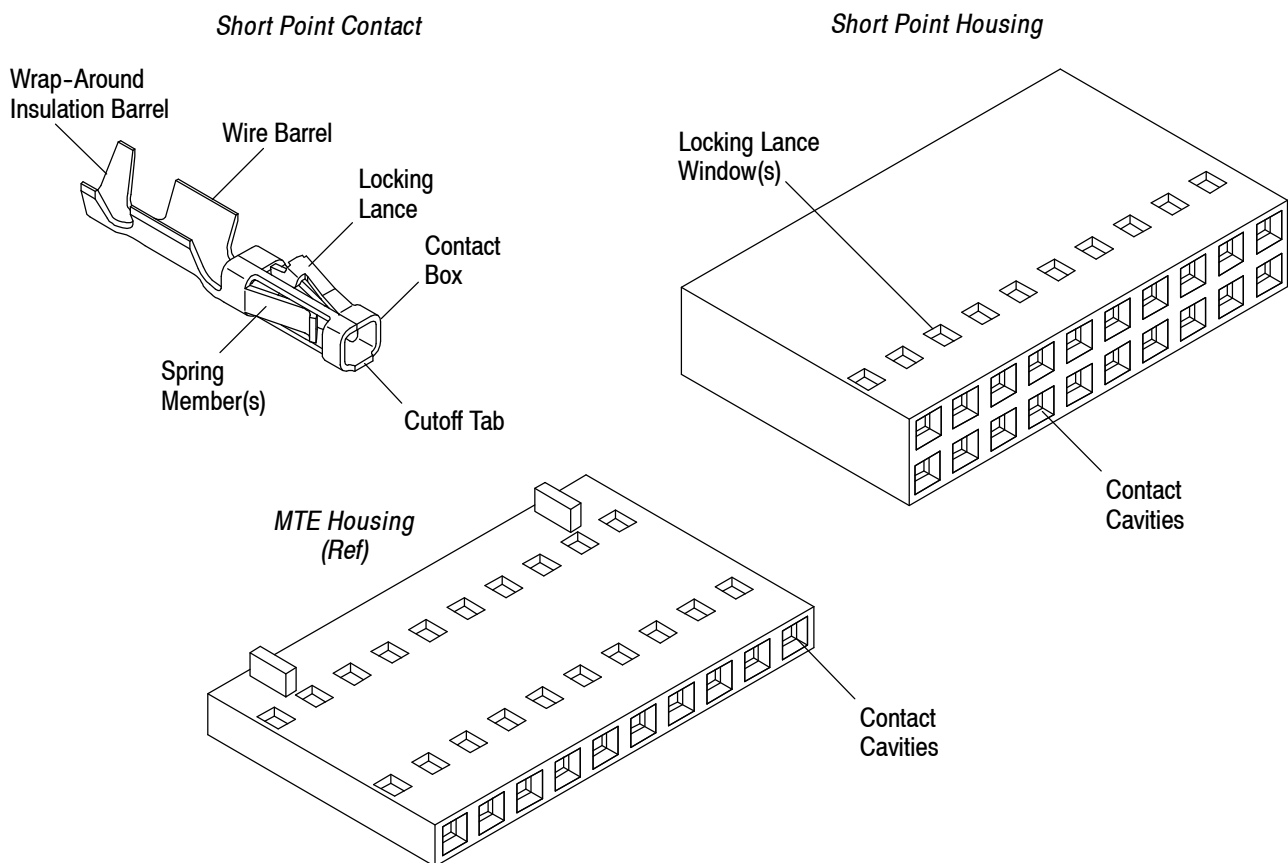


Figure 1

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## 2. REFERENCE MATERIAL

### 2.1. Revision Summary

- Updated document to corporate requirements
- New logo

### 2.2. Customer Assistance

Reference Product Base Part Number 104479 and Product Code 0548 are representative of AMPMODU Short Point contacts and housings. 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 Representative or, after purchase, by calling PRODUCT INFORMATION at the number at the bottom of page 1.

### 2.3. Drawings

Customer Drawings for product part numbers 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, call PRODUCT INFORMATION at the number at the bottom of page 1.

### 2.4. Specifications

Application Specification 114-25026 provides product description and application requirements for AMPMODU MTE housings which can be used with AMPMODU Short Point contacts.

Product Specification 108-1472 provides product performance and test information.

### 2.5. 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. Documents available which pertain to this product are:

408-3295	Preparing Reel of Contacts for Applicator Tooling
408-7424	Checking Terminal Crimp Height or Gaging Die Closure
408-7497	Recommended Procedures for "Crush" Crimp Technique
408-8040	Heavy Duty Miniature Quick-Change Applicators (Side-Feed Type)
408-8059	General Preventative Maintenance for Applicators
408-8547	CERTI-CRIMP* II Straight Action Hand Tools
408-9453	Extraction/Lance Reset Tools 843996-2, -3, -4, and -5
408-9816	Handling Reeled Products
409-5842	AMP-O-LECTRIC* Model "G" Terminating Machines 354500-[ ]
409-5852	AMPOMATOR* CLS III-G Lead-Making Machine 122500-[ ]
409-5878	AMPOMATOR CLS IV+ Lead-Making Machine 356500-[ ]
409-10012	AMP-O-MATIC* Side-Feed Stripper-Crimper III Machine 1320895-[ ]
409-10029	Stripping Modules 1490501-[ ] and 1490503-[ ]
409-10047	AMP-3K Terminating Machines 1725950

## 3. REQUIREMENTS

### 3.1. Storage

#### A. Ultraviolet Light

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

#### B. Reeled Contacts

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

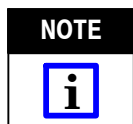
**C. Shelf Life**

The contacts and housings should remain in the shipping containers until ready for use to prevent deformation. The contacts and housings 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 or housings near any chemicals listed below, as they may cause stress corrosion cracking.

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



Where the above environmental conditions exist, phosphor-bronze contacts are recommended.

**3.2. Wire Selection and Preparation**

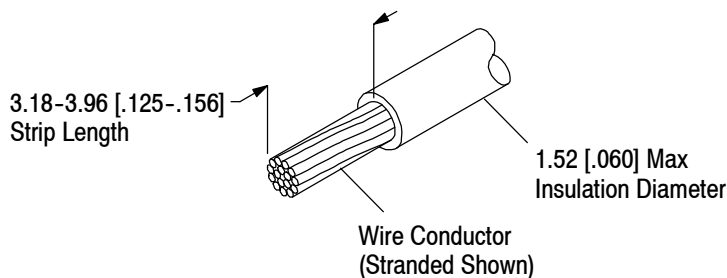
The contacts will accept solid or stranded wire sizes 32 through 20 AWG with a maximum insulation diameter of 1.52 [.060]. Note that there are overlapping wire sizes for two of the contact sizes.

Proper strip length is necessary to properly insert the wire into the contact. The strip length of the wire is shown in Figure 2.



When stripping the wire, care must be used to avoid scraping, nicking, or cutting the conductor. Care must also be used when handling the wire during stripping and crimping to prevent cracking or breaking of the conductor and insulation.

**Note:** Not to Scale



CONTACT SIZE	WIRE SIZE (AWG)
32-28	32
	30
	28
26-22	26
	24
	22
24-20	24
	22
	20

Figure 2

### 3.3. Crimped Contact Requirements

The contact must be crimped to the wire according to instructions packaged with applicable tooling.

**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. If these indentations occur at the location of the wire seal, leakage may result. Insulation surface within 8.89 [.350] from the tip of the contact must be smooth and free of indentations. See Figure 3.*

#### A. Crimped Configuration and Location

The wire barrel will be crimped in the F-crimp configuration where the tips of the wire barrel will turn inward and capture all wire strands. The insulation barrel will be crimped to the O-crimp configuration where the tips of the insulation barrel will overlap and capture the wire insulation and form the insulation support. The effective crimp length (excluding bellmouths) over the length of the wire barrel shall be within the limits shown in Figure 3.

#### B. Wire Barrel Seam

The wire barrel seam shall be completely closed with no portion of the conductors protruding from the seam. See Figure 3.

#### C. Crimp Height and Width

The crimp applied to the wire portion of the contact is the most compressed area and is the most critical in assuring optimum performance. The crimp applied to the contact must be within the range specified for each wire size as specified in Figure 3.

#### D. Bellmouth

The front and rear bellmouths caused by extrusion of the contact metal during the crimping process shall be within the limits provided in Figure 3.

#### E. Cutoff Tab and Burr

The front cutoff tab must not extend beyond the contact box and the rear cutoff tab must not extend beyond the insulation barrel more than the limits specified in Figure 3.

Burrs resulting from the shearing of the cutoffs must not exceed the limits shown in Figure 3.

#### F. Flash

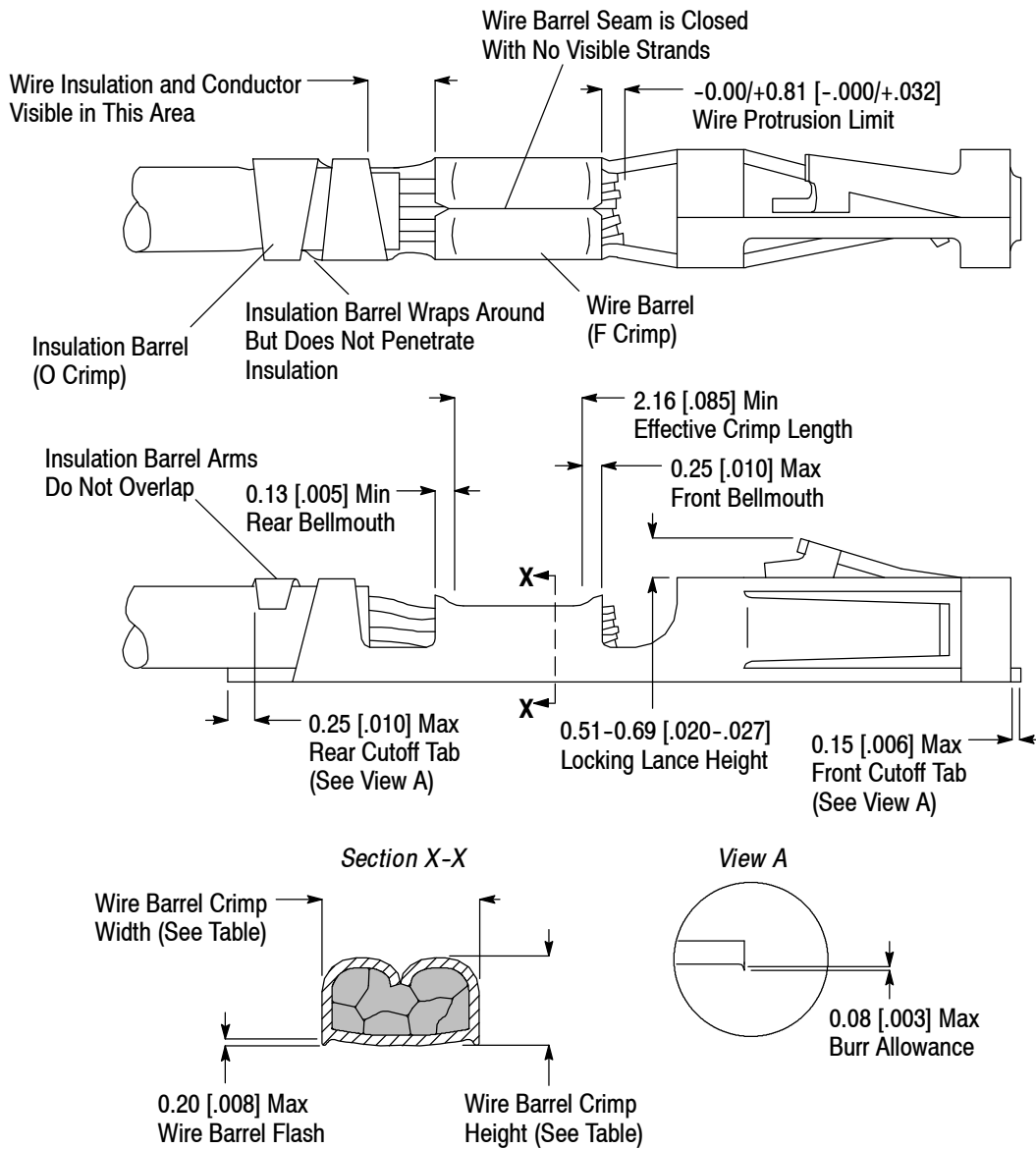
Flash that may appear on either side of the crimped contact shall not exceed the maximum limit specified in Figure 3.

#### G. Conductor Location

The conductor of the wire must be flush or within the protrusion limit specified from the front of the wire barrel. Both insulation and conductor must be visible in the transition area between the insulation barrel and wire barrel. No insulation must be in the wire barrel. See Figure 3.

#### H. Locking Lance

Inspection of several uncrimped contacts will provide a visual reference for the contact. The height of the locking lance, measuring from the contact box, must be within the specified limit provided in Figure 3.



CONTACT SIZE	WIRE SIZE (AWG)	CONTACT		
		WIRE BARREL CRIMP HEIGHT ( $\pm 0.05 [\pm 0.002]$ )	CRIMP WIDTH (Ref)	
			WIRE BARREL	INSULATION BARREL
32-28	32	0.61 [.024]	0.84 [.033]	1.40 [.055]
	30	0.61 [.024]		
	28	0.66 [.026]		
26-22	26	0.76 [.030]	1.07 [.042]	1.58 [.062]
	24	0.81 [.032]		
	22	0.91 [.036]		
24-20	24	0.69 [.027]	1.40 [.055]	1.58 [.062]
	22	0.79 [.031]		
	20	0.89 [.035]		

Figure 3

**I. Vertical and Horizontal Straightness**

Crimped contacts must be straight and aligned within the tolerance shown in Figure 4.

**J. Twist or Roll**

The twist or roll of the crimped portion of the contact in relation to the uncrimped portion of the contact may not exceed the limits shown in Figure 4.

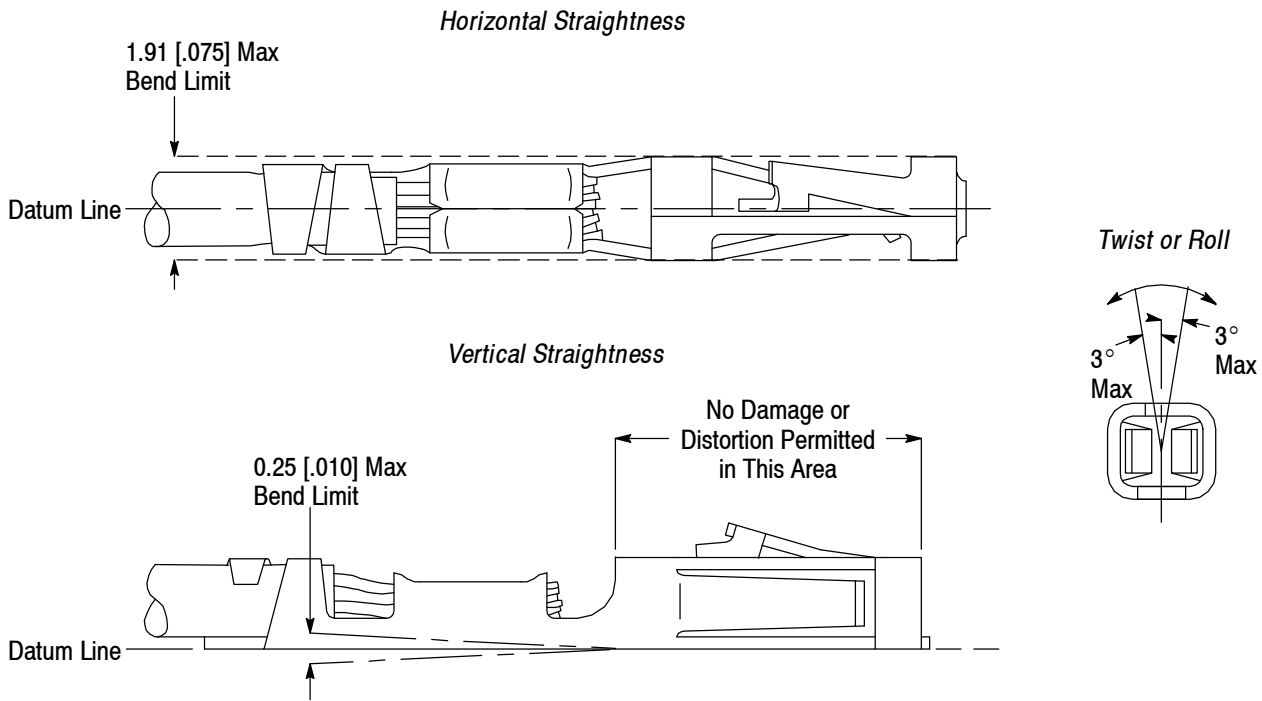


Figure 4

**3.4. Placement of Crimped Contact in Housing**

The contact must be inserted into the contact cavity of the housing with the locking lance oriented toward the locking lance window of the housing. When fully inserted, the locking lance will engage the housing and prevent backing out during mating of the connectors. See Figure 5.

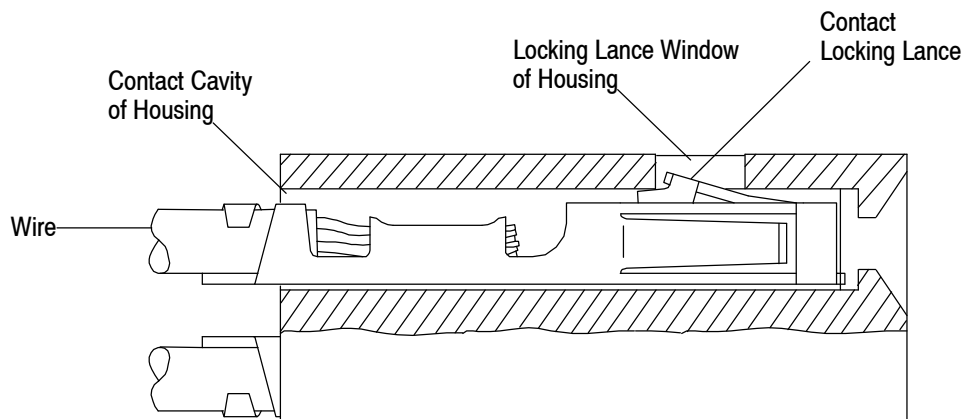


Figure 5

### 3.5. Repair and Replacement

The contacts and housings are not repairable. Any defective or damaged contacts or housings must be discarded. Contacts must not be reused by removing the wire.

**NOTE**

*If a damaged contact is apparent before the contacts are inserted into the housing, cut the wire in back of the contact and reterminate the wire end. If contacts or housing are damaged after insertion, the wire must be cut directly in back of the housing and reterminated with new contacts and housing. See Section 5, TOOLING.*

## 4. QUALIFICATIONS

AMPMODU Short Point contacts and housings do not require agency evaluation.

## 5. TOOLING

The contacts can be terminated to wire using a hand crimping tool or semi-automatic machine. The wire size range of the contact will determine the tooling to be used. After a contact is crimped, it can be inserted into the housing without the use of a tool. Tooling part numbers and instructional material packaged with the tooling are shown in Figure 6.

### 5.1. Extraction/Lance Reset Tool

This tool is designed to release the contact locking lance through the locking lance window of the housing without overstressing the locking lance. It can also be used to reset locking lances that have been deformed.

### 5.2. Hand Crimping Tools

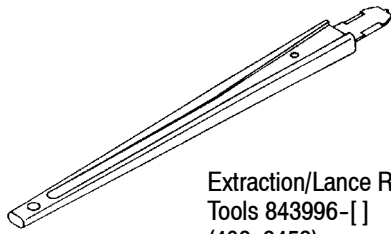
Hand crimping tools have been designed for prototype and low-volume application of loose-piece contacts.

### 5.3. Power Units

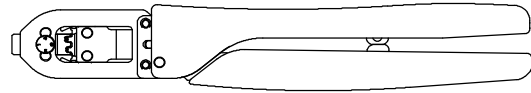
The power units are semi-automatic machines used to assist in the application of the strip-form contacts. Power unit includes the power source used to supply the force or power to the applicator.

### 5.4. Applicators

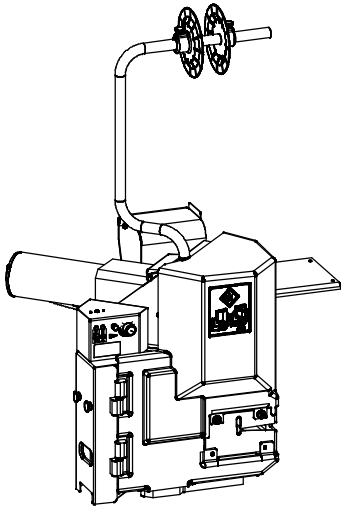
Heavy-duty quick-change miniature applicators have been designed for high-volume production. The applicators are adjustable for the full wire size range of strip-form contacts.



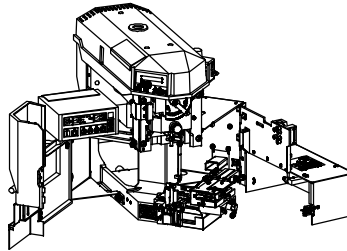
Extraction/Lance Reset  
Tools 843996-[]  
(408-9453)



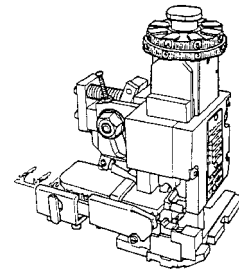
WIRE SIZE RANGE (AWG)	HAND CRIMPING TOOL
32-28	91518-1 (408-8547)
26-22	
24-20	91551-1 (408-8547)



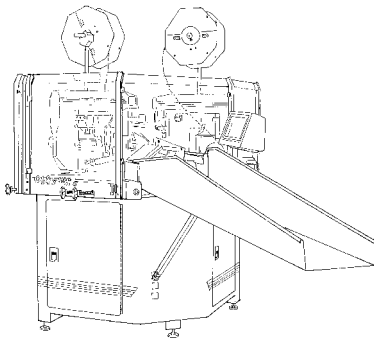
AMP-3K Terminating Machines  
1725950-[] (409-10047)



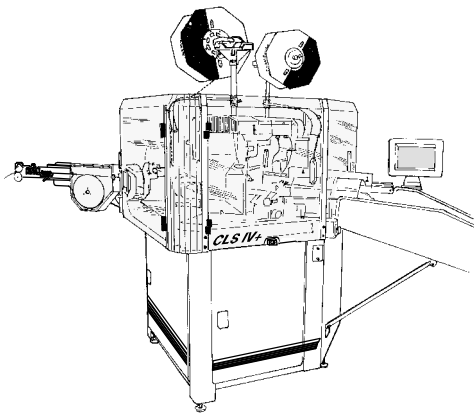
AMP-O-LECTRIC Model "G"  
Terminating Machines 354500-[]  
(409-5842)  
With Stripping Module 1490501-[]  
or 1490503-[] (409-10029)



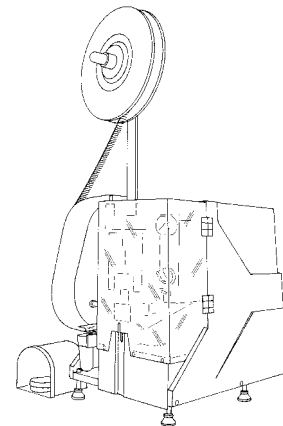
Heavy-Duty Miniature  
Quick-Change Applicator  
(408-8040) (Refer to Table)



AMPOMATOR CLS III-G  
Lead-Making Machines  
122500-[] (409-5852)



AMPOMATOR CLS IV+  
Lead-Making Machines  
356500-[] (409-5878)



AMP-O-MATIC Side-Feed  
Stripper-Crimper III Machines  
1320895-[] (409-10012)

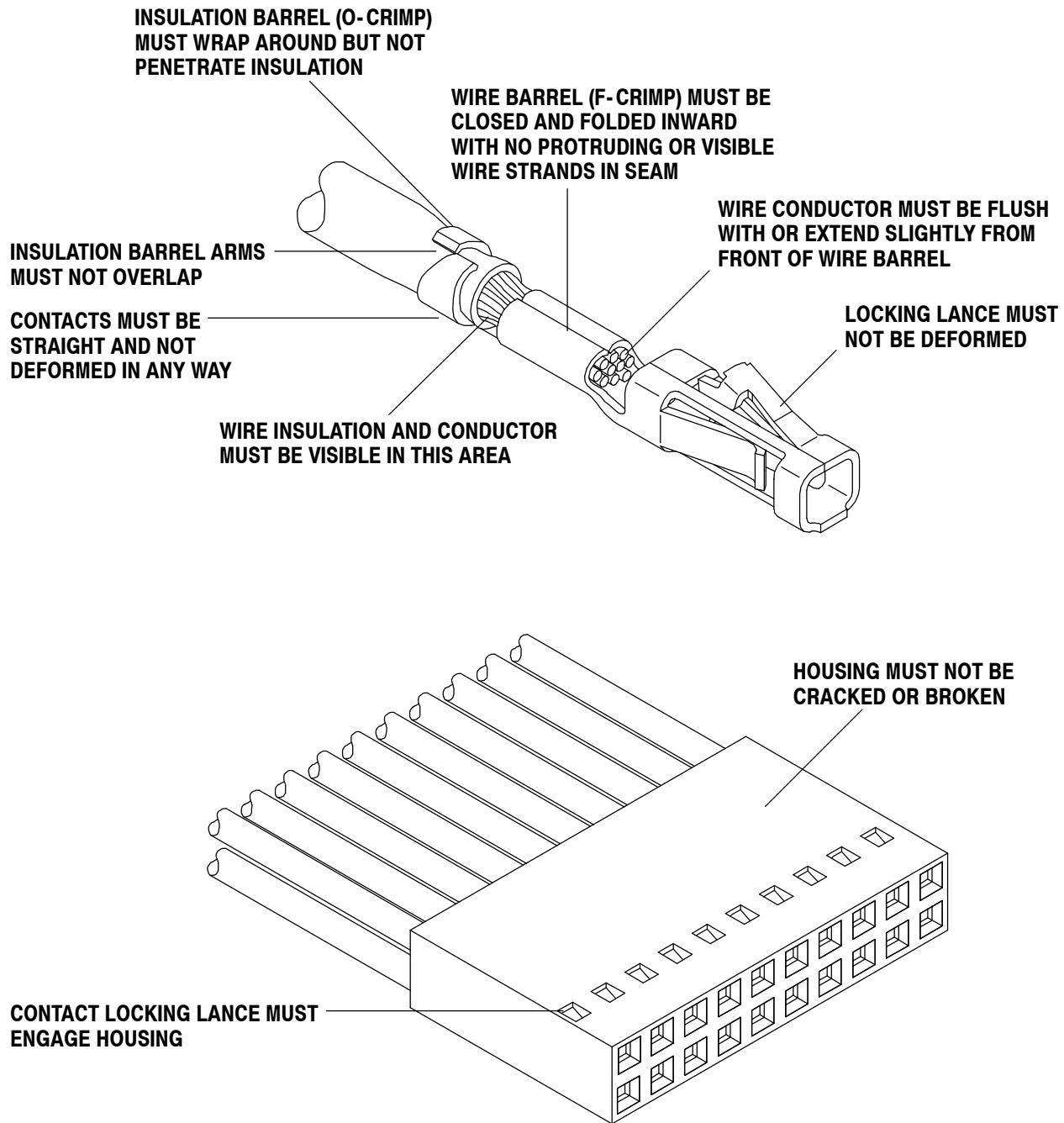
WIRE SIZE RANGE (AWG)	APPLICATOR FOR POWER UNIT						
	AMP-O-MATIC Stripper-Crimper III Machine		AMPOMATOR CLS III-G Machine	AMP-O-LECTRIC Model "G" Machine		AMPOMATOR CLS IV+ Machine	AMP-3K Machine
	-1 and -3	-2	-2 and -3	-1	-[]	-1 and -2	-[]
32-28	466980-1	NA	567296-1	567296-2	567296-3	567296-1	567296-3
26-22	466981-1	567879-1	567297-1	NA	567297-3	567297-1	567297-3
24-20	466982-1	NA	567298-1	567298-2	567298-3	567298-1	567298-3

Figure 6



**6. VISUAL AID**

The illustration below shows a typical application of AMPMODU Short Point contacts and housings. 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**