

**3.18-mm [.125-in.] POWERBAND\* Contacts**
**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 3.18-mm [.125-in.] POWERBAND pin and socket contacts. These contacts are specifically designed for Metrimate connectors and Series 5 and 6 circular plastic connectors (CPC). The contacts offer the performance of the military (MIL) specification screw machine size 8 contact with the economy of a precision formed strip-form contact.

Each contact features a wire barrel with serrations that help retain the wire in the wire barrel after crimping and a retention clip that helps retain the contact in the connector after insertion. These contacts can be terminated using either hand-held tooling or automatic machine tooling.

When corresponding with 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.

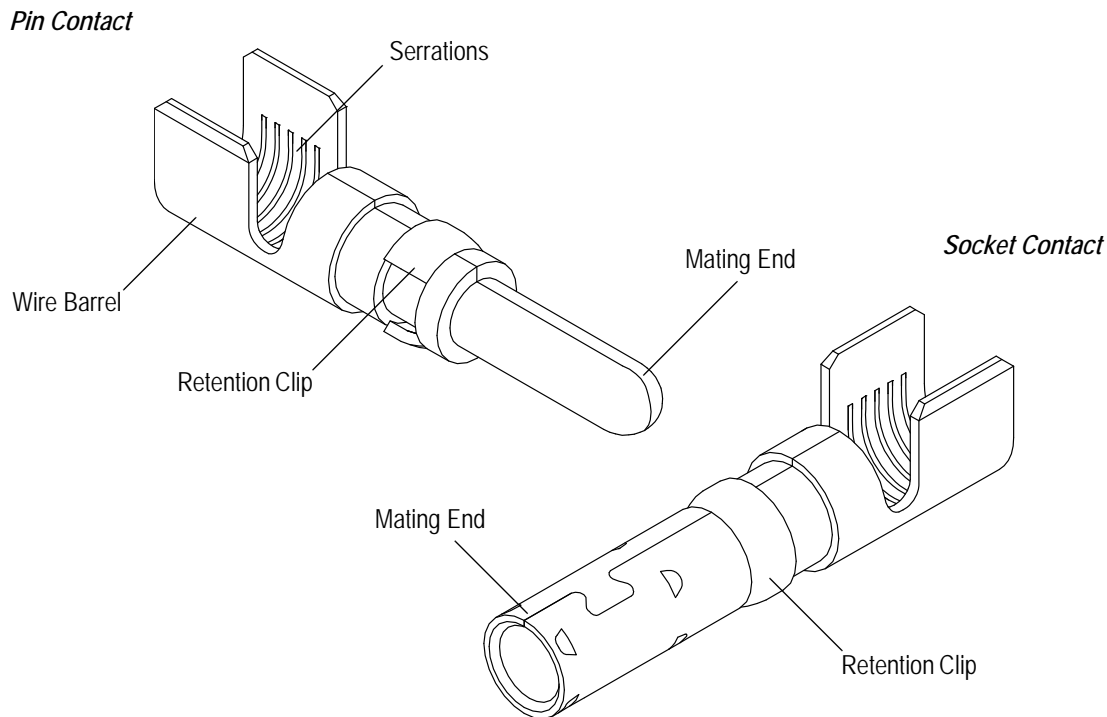


Figure 1

**2. REFERENCE MATERIAL**
**2.1. Revision Summary**

Revisions to this application specification include:

- Changed company name and logo
- Removed obsolete flange removal tool from Paragraph 2.5, and replaced superceded extraction tool
- Re-positioned location of arrows in Figure 4

## 2.2. Customer Assistance

Reference Product Base Part Number 213841 and Product Code 3885 are representative of 3.18-mm [.125-in.] POWERBAND 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 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, the information contained in Customer Drawings takes priority.

## 2.4. Specifications

Product Specification 108-1579 provides performance and test information for these contacts used in sealed CPC Series 5 and 6.

## 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 that pertain to this product are:

- 408-2095 "C" Head Straight Action Hand Tool (SAHT) 69710-1
- 408-3295 Preparing Reel of Contacts for Application Tooling
- 408-4324 Crimping Die Assemblies 356611-1, 356611 -2, and 356612-1 for POWERBAND Contacts
- 408-4374 Extraction Tool 318813-1
- 408-7424 Checking Crimp Height and Gaging Die Closure
- 408-8040 Heavy-Duty Quick-Change Applicators (Side-Feed Type) with Mechanical Feed System
- 408-9816 Handling of Reeled Products
- 409-5128 AMP-O-LECTRIC\* Model "K" Terminating Machine 565435-5
- 409-5842 AMP-O-LECTRIC Model "G" Terminating Machines 354500-[ ]

## 3. REQUIREMENTS

### 3.1. Safety

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

### 3.2. Storage

#### A. 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 performance.

#### B. Reeled Products

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

#### C. Chemical Exposure

Do not store contacts near any chemical 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

### 3.3. Wire Selection and Preparation

The contacts will accept stranded or solid wire sizes 14 through 8 AWG with a maximum insulation diameter of 6.6 [.260]. Wire stripping length for the contacts is given in Figure 2.

**NOTE**

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

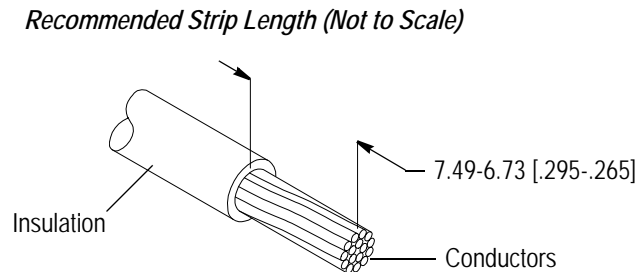


Figure 2

### 3.4. Crimp Requirements

All requirements apply to both pin and socket contacts.

#### A. Wire Insulation

The wire insulation must not be cut or broken. The wire insulation must not enter the contact wire barrel.

#### B. Wire Barrel

The crimp height and width must be within the dimensions provided in Figure 3.

#### C. Crimp Length

Effective crimp length, defined as the portion of the wire barrel, excluding bellmouth(s), that is fully formed by the crimping tool. For optimum crimp effectiveness, the crimp must be within the area shown in Figure 3.

#### D. Conductor Location

The conductor may extend beyond the wire barrel to the maximum given in Figure 3.

#### E. Wire Barrel Seam

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

#### F. Bellmouth

Front and rear bellmouths shall be formed and adhere to the dimensions given in Figure 3.

#### G. Cutoff Tab

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

#### H. Burrs

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

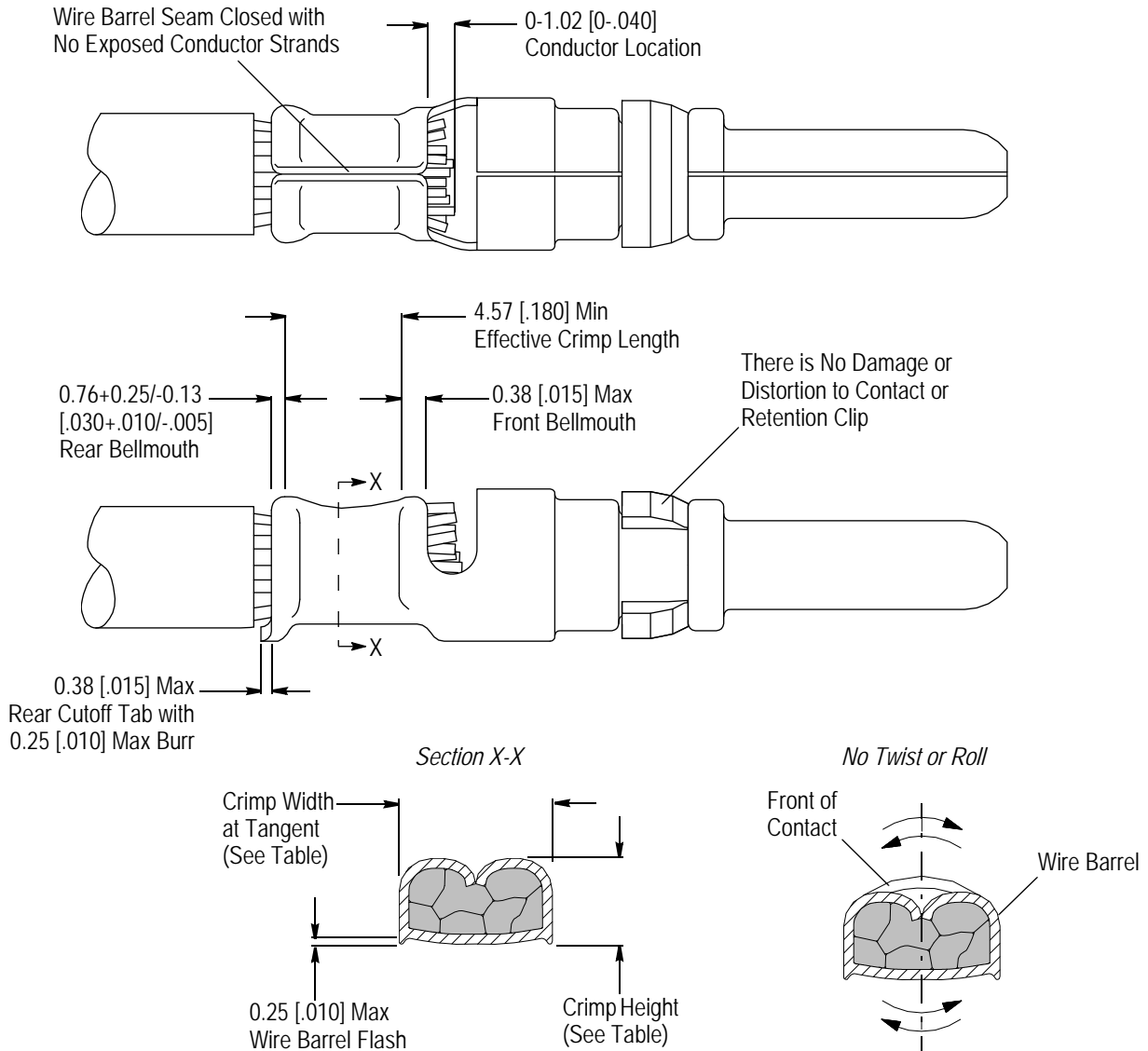
#### I. Flash

The wire barrel flash shall not exceed the dimensions given in Figure 3.

#### J. Twist and Roll

There should be no twist or roll of the wire barrel or mating portion of the crimped contact that would cause overstress or impair usage. See Figure 3.

### Crimp Requirements



WIRE SIZE (AWG)	CONTACT WIRE BARREL CRIMP	
	HEIGHT	WIDTH
14	2.16-1.98 [.085-.078]	3.43-3.18 [.135-.125]
12	2.39-2.06 [.094-.081]	
10	2.72-2.49 [.107-.098]	4.7-4.45 [.185-.175]
8	3.12-2.74 [.123-.108]	

Figure 3

### 3.5. Bend Allowance

The force applied during crimping may cause some bending between the wire barrel and wire. Such deformation is acceptable within the following limits.

1. Up and Down — the crimped portion must not be bent beyond the limits given in Figure 4.
2. Side-to-Side — the crimped portion must not be bent from one side to the other beyond the limits given in Figure 4.

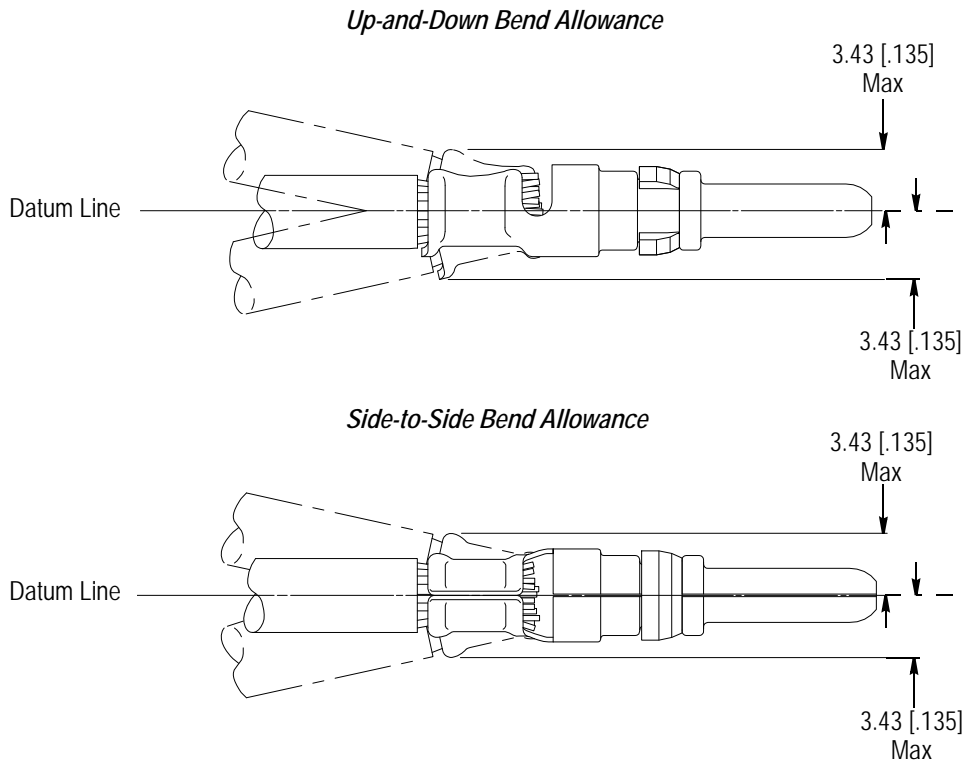


Figure 4

### 3.6. Repair

Individual contacts can be removed from the housing for replacement or relocation using an extraction tool. Damaged or worn contacts may be replaced provided there is sufficient slack after re-stripping the wire to insert the new contact. Contacts must not be re-used after removal.

Damaged or defective contacts must not be used.

## 4. QUALIFICATION

3.18-mm [.125-in.] POWERBAND contacts do not require agency approval.

## 5. TOOLING

Tooling part numbers and instructional material packaged with the tooling are shown in Figure 5.

### 5.1. Hand Tool

This hand tool accepts interchangeable crimping die assemblies and is used to crimp the contacts. This hand tool features a ratchet that ensures full crimping of the contact.

### 5.2. Power Unit

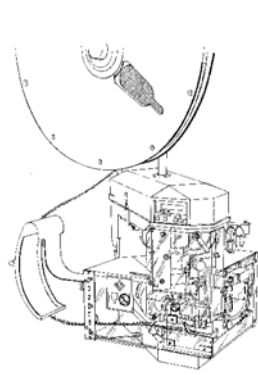
The terminating machine is designed to be used as a stand-alone semi-automatic bench power unit. The machine provides the force required to crimp contacts in an applicator.

### 5.3. Applicator

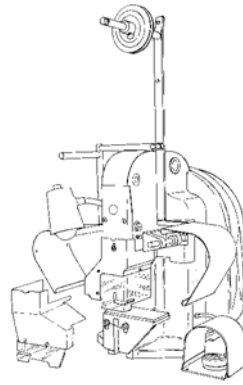
Each applicator is designed to crimp tape-mounted contacts onto pre-stripped wire, and provides for high volume, heavy duty production requirements. The applicator accepts interchangeable crimping dies and must be installed onto a power unit.

### 5.4. Extraction Tool

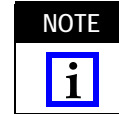
The extraction tool is designed to remove individual contacts from the housing by releasing the housing retention feature from the retention clip of the contact.



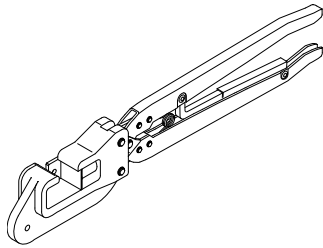
AMP-O-ELECTRIC Model "G"  
Terminating Machine  
354500-1 (409-5842)



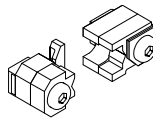
AMP-O-ELECTRIC Model "K"  
Terminating Machine 565435-5  
(409-5128)



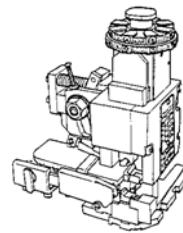
*The Model "K" machine has been superseded by Model "G" Terminating Machine 354500-1 for new applications. For existing applications, the Model "K" machine can still be used.*



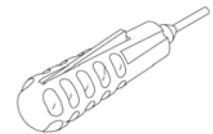
"C" Head Straight Action  
Hand Tool (SAHT) 69710-1  
(408-2095)



Crimping Die Assemblies  
356611-1, 356611-2, and  
356612-1 (408-4324)



Heavy-Duty Quick-Change  
Applicators (Side-Feed  
Type) (See Table)  
(408-8040)



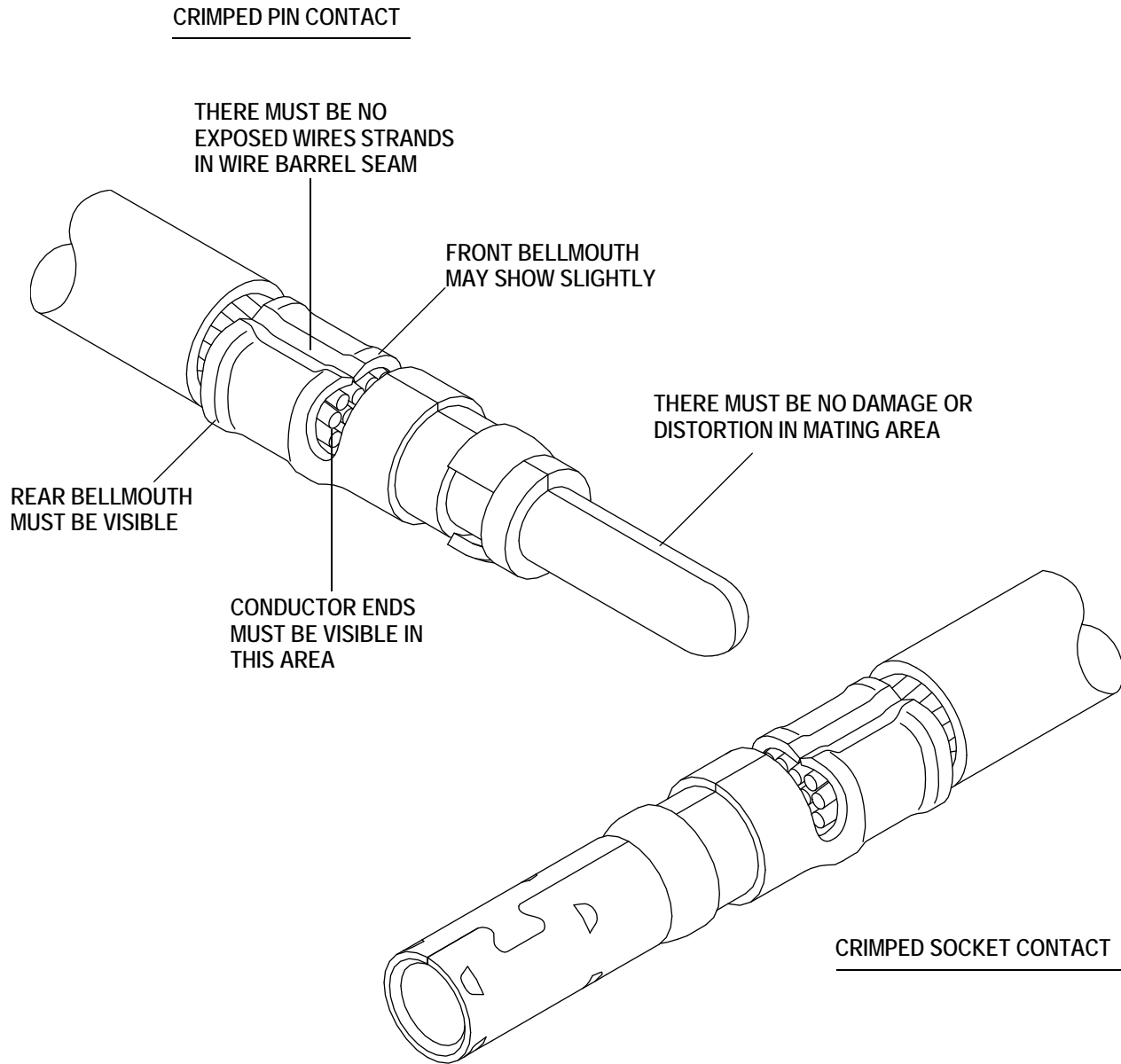
Extraction Tool 318813-1  
(408-4374)

WIRE SIZE (AWG) With Maximum Insulation Diameter of 6.6 [.260]	DIE ASSEMBLY (Used in Hand Tool and Applicator)	APPLICATOR (Used in Power Unit)
14	356612-1	680195-2
12		
10	356611-2	680197-2
8	356611-1	

Figure 5

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. VISUAL AID**