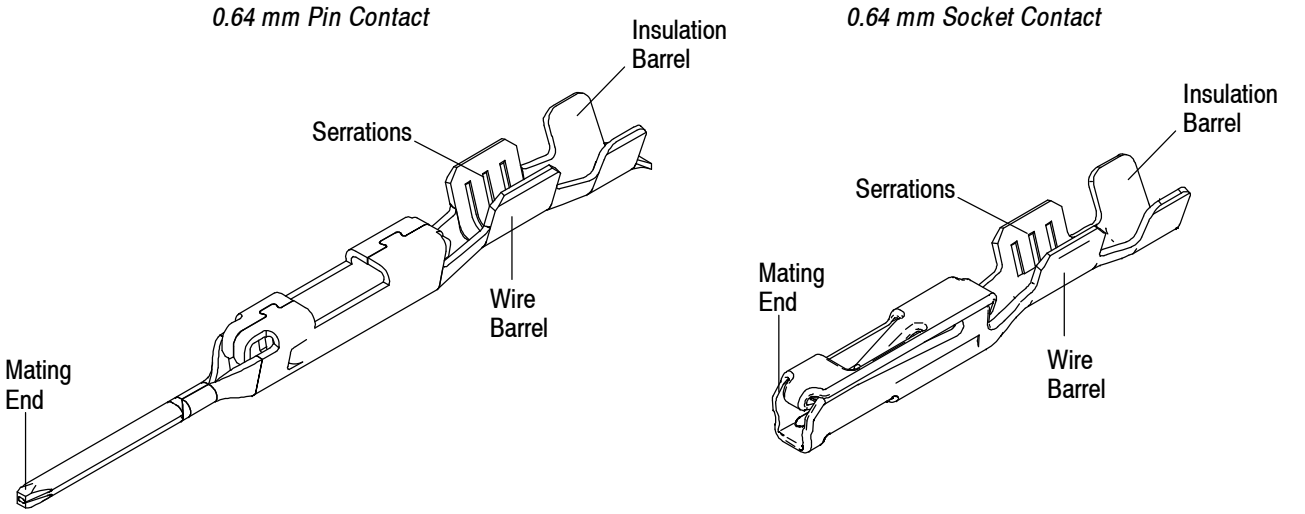
NOTE

All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ±0.13 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 application of the 0.64 mm Contact System. These requirements are applicable to hand or automatic machine crimping tools.

When corresponding with TE Connectivity 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.



NOTE: Product part numbers which apply to this document are: 638551-[ ], 1326028-[ ], 1488208-[ ], and 1488220-[ ]

Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements
- New logo

2.2. Customer Assistance

Reference Base Part Number 1326028 and Product Code A446 are representative numbers of the 0.64 mm Contact System. 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 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 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 the Product Information Center at the number at the bottom of this page.

2.4. Instructional Material

Instruction Sheets (408-series) provide assembly instructions and Customer Manuals (409-series) provide machine setup and operation procedures. Documents available which pertain to this product are:

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TE logo is a trademark.
*Trademark. Other product names, logos, or company names might be trademarks of their respective owners.

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 Type) with Mechanical
408-8059	General Preventive Maintenance for Applicators
408-8377	PRO-CRIMPER* III Hand Tool Assembly 91338-1 with Die Assembly 91338-2
408-8662	0.64 mm Lever Assist Connector
408-9816	Handling of Reeled Products
409-5842	AMP-O-LECTRIC* Model "G" Terminating Machines 354500-[ ]
409-5852	AMPOMATOR* CLS III-G Lead Making Machine 122500-[ ]
409-5866	AMPOMATOR CLS IV Lead-Making Machine 217500-[ ]
409-5878	AMPOMATOR CLS IV+ Lead-making Machine 356500-[ ]
409-10016	Entry Level Terminator (ELT) Machine 1338600-[ ]

3. REQUIREMENTS

3.1. Storage

A. Reeled Contacts

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

B. Shelf Life

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

C. 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 instead of brass.

3.2. Wire Size and Preparation

The contacts will accept a wire size range of 22 to 18 AWG and wire sizes 0.35 mm^2, 0.50 mm^2, and 0.75 mm^2, and may be terminated to either stranded or solid wire. See 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.

3.3. Crimped Contact Requirements

The contact must be crimped onto the wire according to instructions packaged with applicable tooling. After crimping, the contact should appear as shown in Figure 3.

CAUTION

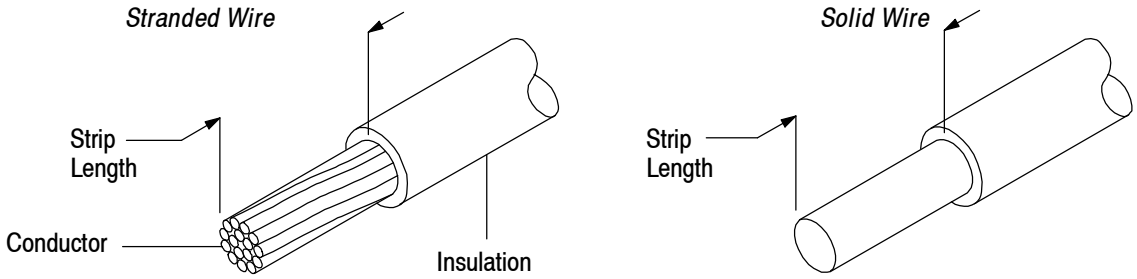
The wire insulation must not be damaged during the crimping process.

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 2. 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.



WIRE				CONTACT						
SIZE		INSUL DIA RANGE	STRIP LENGTH	WIRE BARREL CRIMP RANGE		INSULATION BARREL "O" CRIMP		INSULATION BARREL CRIMP‡		TENSILE STRENGTH kg (Min)
mm^2	AWG			HEIGHT	TANGENT WIDTH†	WIDTH ±0.05	HEIGHT ±0.10	WIDTH (Max)	HEIGHT	
0.35	—	1.20-1.70	3.96-4.75	0.81-0.91	1.375-1.425	1.70	1.70	1.90	1.55-1.80	5.85
—	22	1.20-1.75	3.96-4.75	0.84-0.94	1.375-1.425	1.70	1.70	1.90	1.55-1.80	5.85
0.50	—	1.40-1.90	3.96-4.75	1.02-1.12	1.545-1.595	1.90	1.90	1.90	1.80-2.05	8.60
—	20	1.32-1.93	3.96-4.75	1.02-1.12	1.545-1.595	1.90	1.90	1.90	1.80-2.05	8.60
0.75	—	1.60-2.13	3.96-4.75	1.10-1.20	1.545-1.595	1.90	2.20	1.90	2.05-2.30	9.20
—	18	1.60-2.13	3.96-4.75	1.15-1.25	1.545-1.595	1.90	2.20	1.90	2.05-2.30	11.75

†When using TE hand tools or applicators, (see Figure 5), this dimension is provided for reference only.
‡These two columns provided for the insulation crimp produced with TE hand tools or applicators. See Figure 5

Figure 2

C. Bellmouths

Front and rear bellmouths shall be evident 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 the dimensions shown in 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. A slight cut in the insulation by the insulation barrel is permissible as this causes no problems in actual use. Insulation crimp shall comply to width and height provided in Figure 2.

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.

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 3.

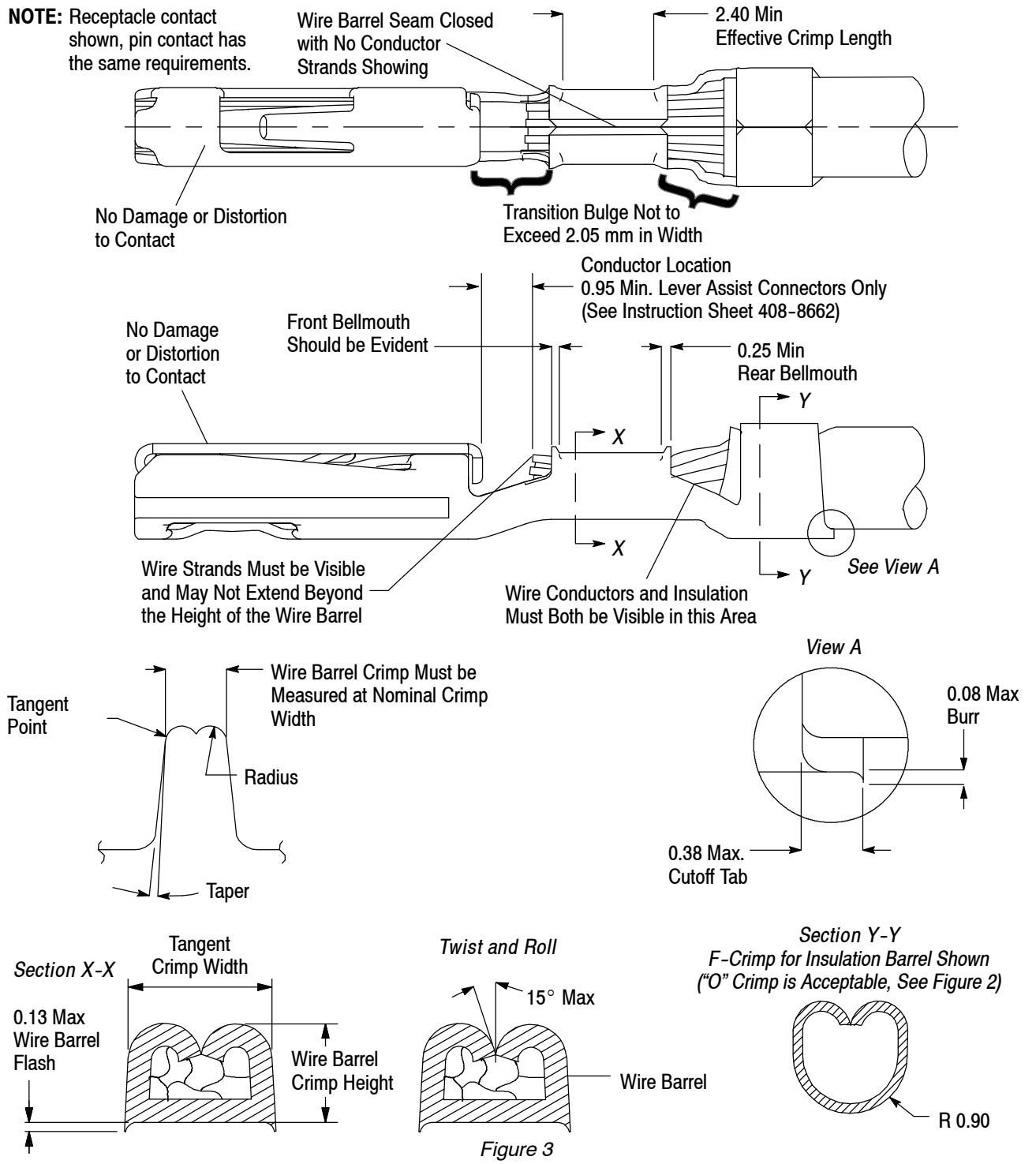


Figure 3

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 4.

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 be such that it exceeds the effective terminal width shown in Figure 4.

NOTE

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

NOTE

Deformation of male blade tip in excess of limits provided below may effect terminal insertion into the housing and/or lead to potential stubbing.

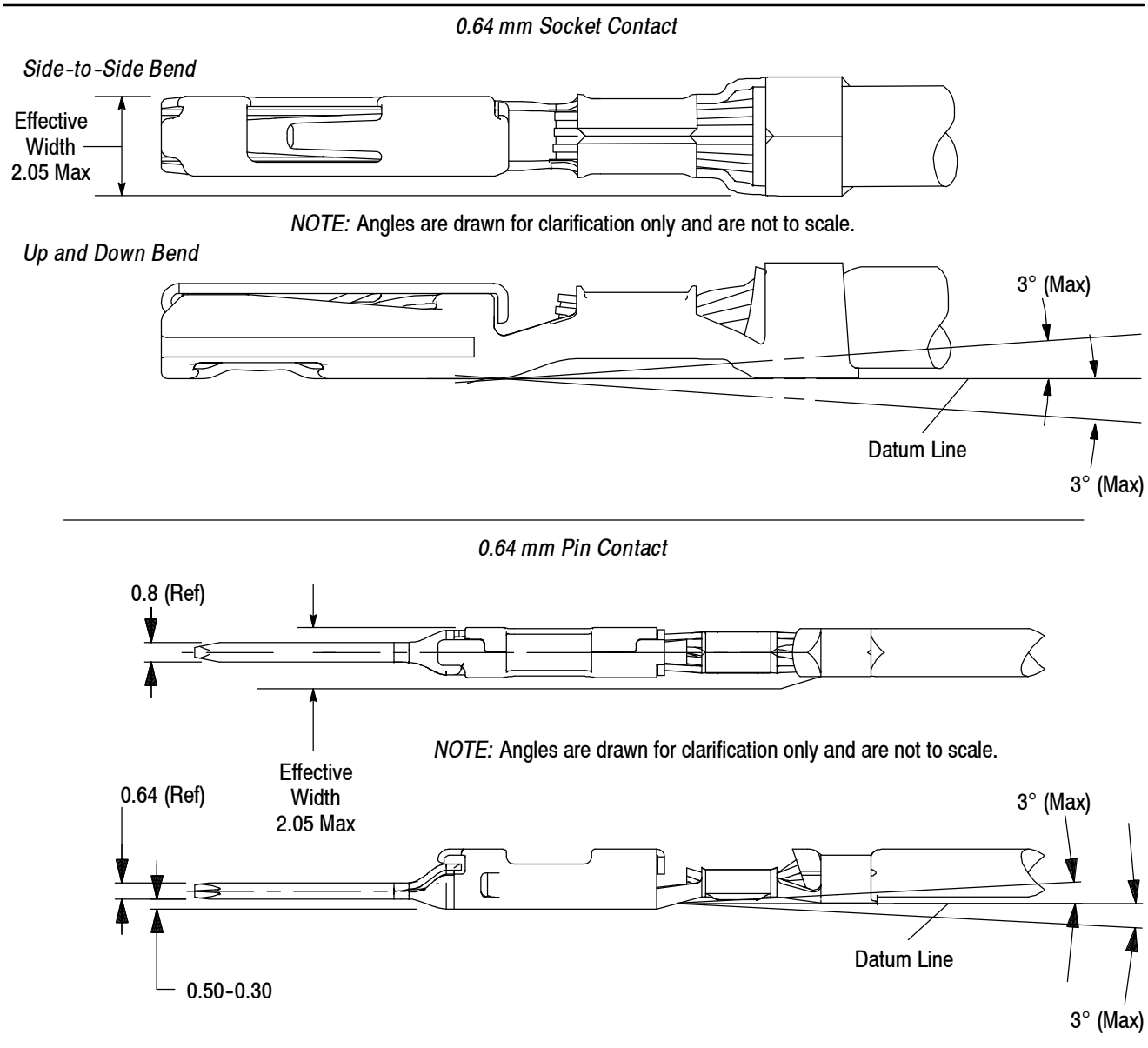


Figure 4

3.4. Contact Repair

CAUTION

Once a contact has been damaged, it can not be used. It must be cut from the wire and replaced with a new one.

4. QUALIFICATIONS

The 0.64 mm Contact System is not required to be agency evaluated.

5. TOOLING

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. A list of tooling recommendations and instructional material packaged with the tooling covering the full wire size range is provided in Figure 5.

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 representative or call the Tooling Assistance Center number at the bottom of page 1.

5.1. 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.

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 located at the bottom of page 1 for specific changes.

5.2. Power Units

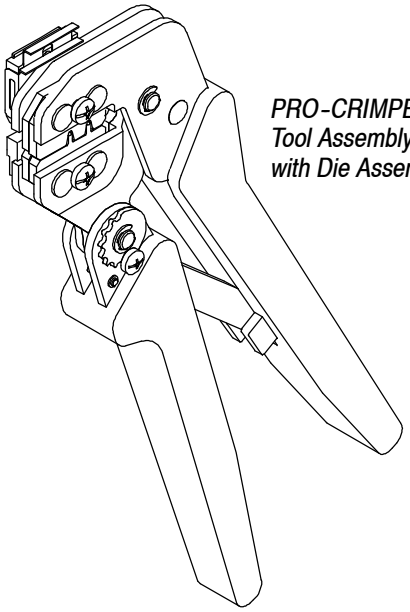
A power unit is an automatic or semi–automatic machine used to assist in the application of a product. Power units provide the force required to drive the applicator.

5.3. Hand Tools

Hand crimping tools that accommodate wire sizes 0.50 mm^2, 0.75 mm^2, 20 AWG, and 18 AWG are designed for prototype and low–volume applications.

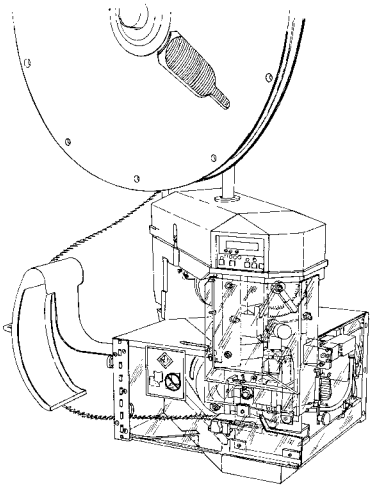
WIRE SIZE		WIRE INSULATION DIAMETER RANGE	HAND TOOL ASSEMBLY (DOCUMENT)	APPLICATOR (DOCUMENT) for POWER UNIT (DOCUMENT)	
mm^2	AWG			CLS 122500-[ ] (409-5852) 217500-[ ] (409-5866) 356500-[ ] (409-5878)	MODEL "G" 354500-[ ] (409-5842) or "ELT" 1338600-[ ] (409-10016)
0.35	—	1.20-1.70	—	680647-1 (408-8040)	680647-3 (408-8040)
—	22	1.20-1.75			
0.50	—	1.40-1.90	91338-1 (408-8377)	680637-1 (408-8040)	680637-3 (408-8040)
—	20	1.32-1.93			
0.75	—	1.60-2.13			
—	18	1.60-2.13			

Figure 5 (cont'd)

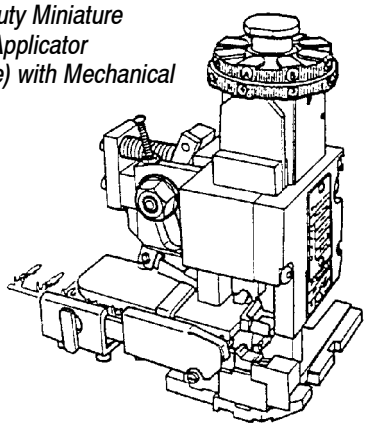


PRO-CRIMPER III Hand Tool Assembly 91338-1 with Die Assembly 91338-2

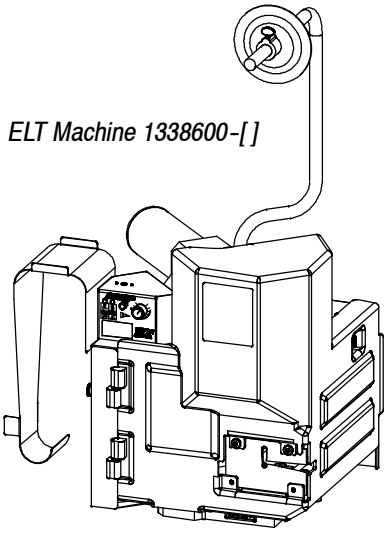
AMP-O-LECTRIC Model "G" Terminating Machine 354500-[ ]

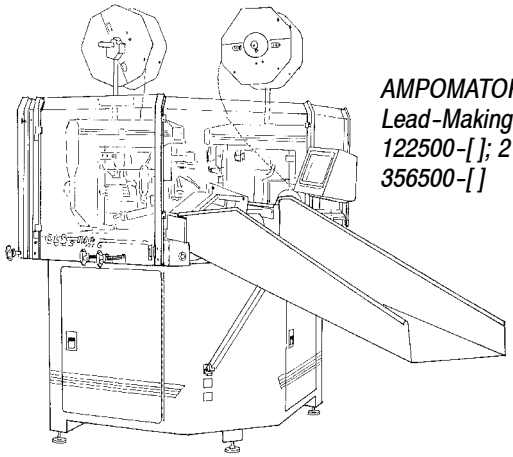


Typical Heavy Duty Miniature Quick-Change Applicator (Side-Feed Type) with Mechanical Feed System



ELT Machine 1338600-[ ]





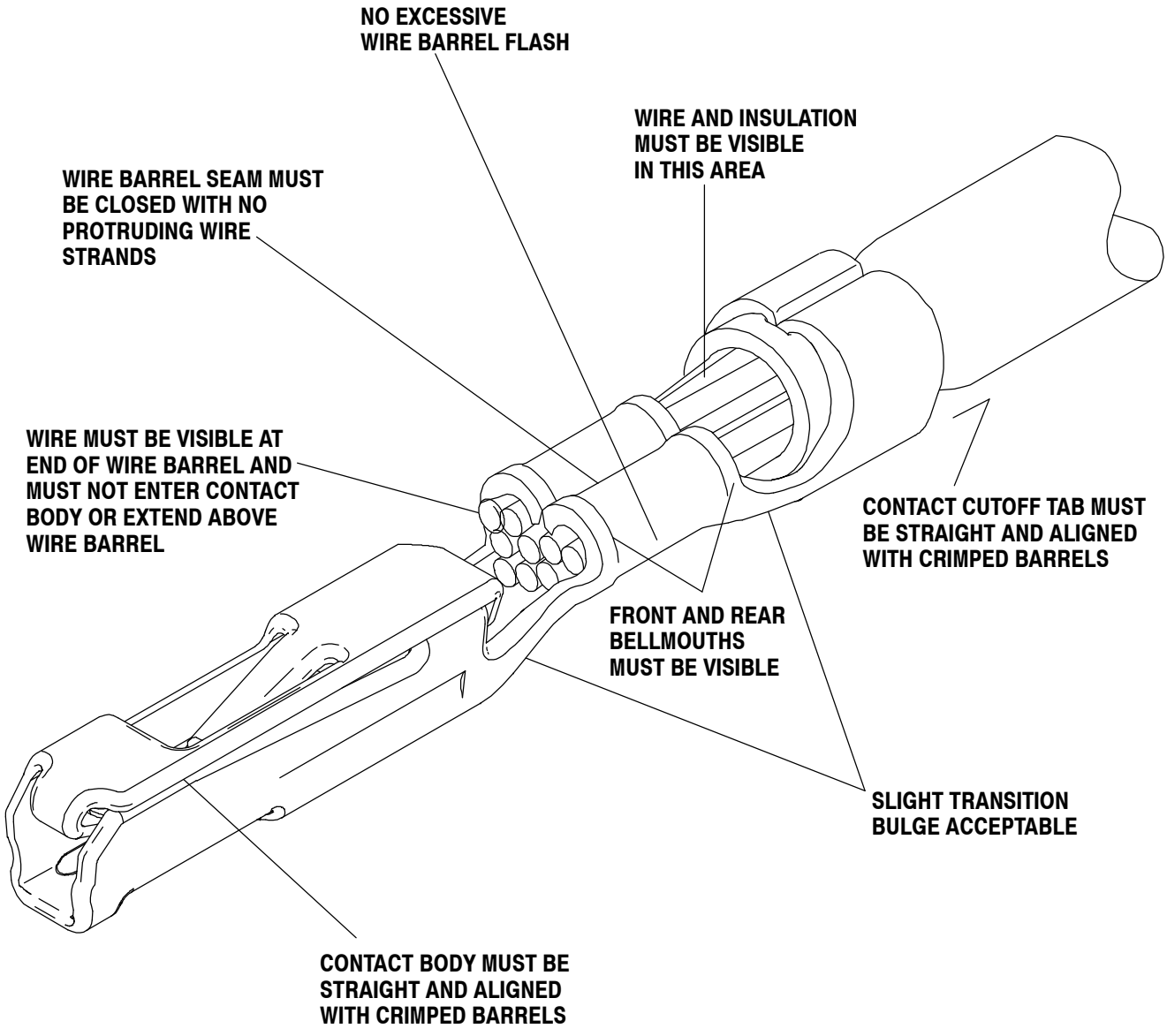
AMPOMATOR CLS Lead-Making Machines 122500-[ ]; 217500-[ ]; 356500-[ ]

Figure 5 (end)

6. VISUAL AID

Figure 6 shows a typical application of a 0.64 mm contact. 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.

RECEPTACLE CONTACT SHOWN
PIN CONTACT HAS SAME REQUIREMENTS



NOTE: **REFER TO INSTRUCTION SHEET 408-8662 FOR CONTACT AND CONNECTOR ASSEMBLY INSTRUCTIONS AND PROCEDURES.**

FIGURE 6. VISUAL AID