



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 mm [± 0.005 in.] 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 Level V Connector System and the Insulation Displacement and Crimp/Snap Replacement Contacts. This system includes both the Insulation Displacement Connector (IDC) and a 2.54 mm [.100 in.] centerline connector designed for the Crimp/Snap Contact. These requirements apply to hand, bench, and semi-automatic application tooling.

These double-row connector housings are designed to mate with 0.64 mm [.025 in.] sq. posts. Use of either the Insulation Displacement Contact or the Crimp/Snap Replacement Contact makes them field repairable. Snap-on hermaphroditic covers with or without cable tie paddles are available; they are simply snapped into the housing after the connector has been terminated. Both connector housings and covers are available with and without alignment ribs.

When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate inquiries for information. Basic terms and features of this product are provided in Figure 1.

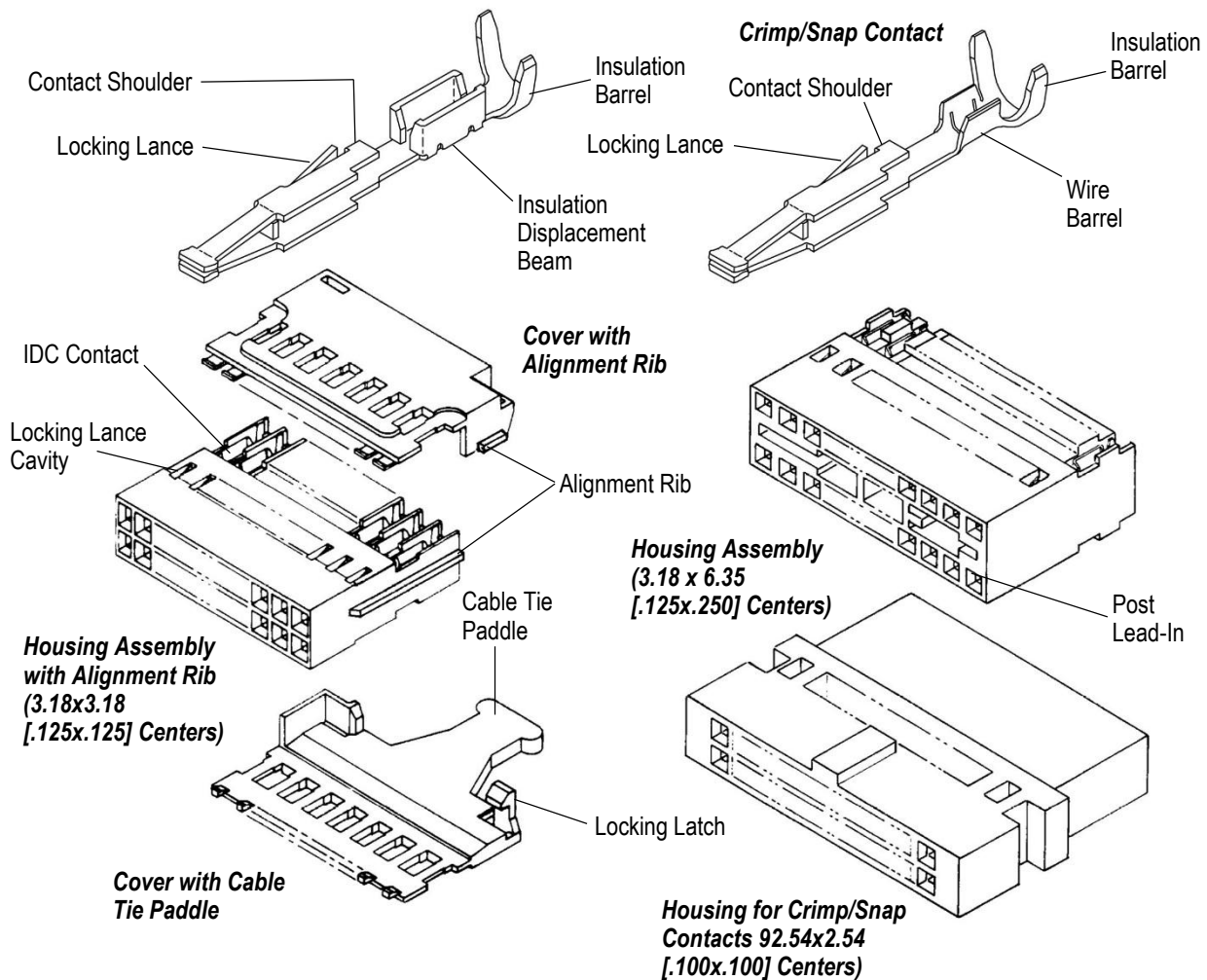


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements
- Updated Paragraph 2.5

2.2. Customer Assistance

Reference Product Base Part Number 104626 and Product Code 0222 are representative of AMPMODU Level V Connectors. Use of these numbers will identify the product line and help you to obtain product and tooling information. Such information can be obtained through a local TE Representative, by visiting our website at www.te.com, or by calling PRODUCT INFORMATION or the TOOLING ASSISTANCE CENTER at the numbers 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 the Customer Drawings takes priority.

2.4. Specifications

Product Specification [108-25028](#) provides information about performance, tests, and quality requirements for the TE Level V IDC Interconnection System.

2.5. Instructional Material

The following list includes TE 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 provides setup, operation, and maintenance of TE machines.

408-3295	Preparing Reel Of Contacts For Application Tooling
408-6732	Pneumatic Auto-Cycle Unit 91112-3
408-6746	Pneumatic Pistol Grip Tool 91408-1
408-6747	Manual Pistol Grip Tool 91407-1
408-6843	Extraction/Lance Reset Tool 91409-1
408-6863	AMPMODU Level V Insulation Displacement Connector (IDC) System
408-7763	Pneumatic Unit 91112-2
408-7777	Manual Arbor Frame Assembly 91085-2
408-8040	HDM Quick-Change Applicators (Side-Feed), Mechanical Feed System
408-9028	Tooling Assembly 91411-2 AMPMODU MT Connectors
408-9138	Accessory Tooling 527085-1 and 527145-1 For AMPMODU Tooling 91411-2
408-9229	Tooling Assembly 91415-1 For AMPMODU Level V Connectors
408-9635	Hand Crimping Tool 90501-1
408-9655	Tooling Kit 1-762661-3
408-9677	Tooling Kit 1-762661-1
408-9773	Tooling Kit 1-762661-2
408-9816	Handling Of Reeled Products
409-5128	AMP-O-LECTRIC Model "K" Terminating Machine 565435-5
409-5343	AMP-O-MATIC* Side Feed Stripper-Crimper Machine 463345-1
409-5496	Electric Discrete Wire Machine 58020-5
409-5651	AMP-O-MATIC Stripper-Crimper Machine 463345-2
409-5771	CHAMPOMATOR* 3A Semi-Automatic Cable Terminating Machine 761420
409-5786	CHAMPOMATOR 2.5 Bench Terminating Machine 762734-[]
409-5791	CHAMPOMATOR 2.5 Terminating Machine Control Module 852423-[]
409-5806	AMPOMATOR* CLS III Lead Making Machine 854400-[]
409-5807	AMP-O-MATIC Stripper-Crimper Side Feed Model II 854040-[]

3. REQUIREMENTS

3.1. Storage

- A. The heat limitation for the Level V housing assemblies is -65°C to 105°C [-85°F to 221°F].
- B. The contacts should remain in the shipping containers until ready for use to prevent damage to the contact. The contacts should be used on a first-in, first-out basis to avoid storage contamination that could adversely affect signal transmissions. These contacts have a shelf life of two years from date of manufacture.

3.2. Product Selection (Figure 2)

Use wire with seven or fewer strands with the IDC Contacts. The wire insulation should be of PTFE (polytetrafluoroethylene) or PVC (polyvinyl chloride) with a maximum thickness of 0.38 mm [.015 in.] and an outer diameter of 1.27 mm [.050 in.] max.

CONNECTOR HOUSING		CONTACT	REPLACEMENT CONTACT	SOLID OR STRANDED WIRE		
Centerline Spacing	Number of Positions			Type	Range (AWG)	Size (AWG)
2.54 x 2.54 [.100 x .100]	20, 50, 72	Crimp/Snap	Crimp/Snap	Discrete Jacketed Cable	30-20	N/A
3.18 x 3.18 [.125 x .125]	6, 8, 10, 12, 16, 20, 24, 32, 40	IDC	IDC	Discrete Jacketed Cable Ribbon Cable	30-20	22-20 26-22 30-26
3.18 x 6.35 [.125 x .250]	12, 24, 30, 36, 40, 50, 66	IDC	Crimp/Snap	Discrete Jacketed Cable Ribbon Cable●	30-20	22-20 26-22 30-26

●For use with IDC Contacts, NOT Crimp/Snap Contacts

Figure 2

3.3. Wire Preparation

A. IDC Contact

1. Discrete Wire

Discrete wire requires no preparation.

2. Jacketed Cable

Cable insulating jacket must be stripped as shown in Figure 3.



CAUTION

DO NOT cut individual conductor insulation while stripping jacket.

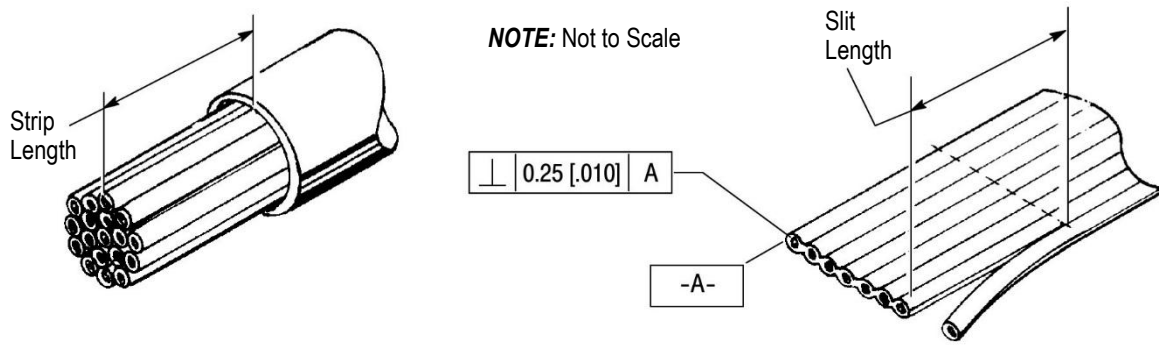
3. Round Conductor Flat Cable

- a. Ends of cable must be cut perpendicular to the edge of the cable within the limits given in Figure 3.
- b. Cable must be slit into individual wires as specified in Figure 3.



CAUTION

DO NOT cut individual conductor insulation while slitting cable.



TOOL TYPE	TERMINATIONS PER CYCLE	JACKETED CABLE STRIP LENGTH	RIBBON CABLE SLIT LENGTH
Self-Indexing Manual Pistol Grip	1	38.1 [1.50]	50.8 [2.00]
Self-Indexing Pneumatic Pistol Grip			
Discrete Wire Bench Terminator			
Jacketed Cable Terminator	2	127 [5.00]	152.4 [6.00]

Figure 3

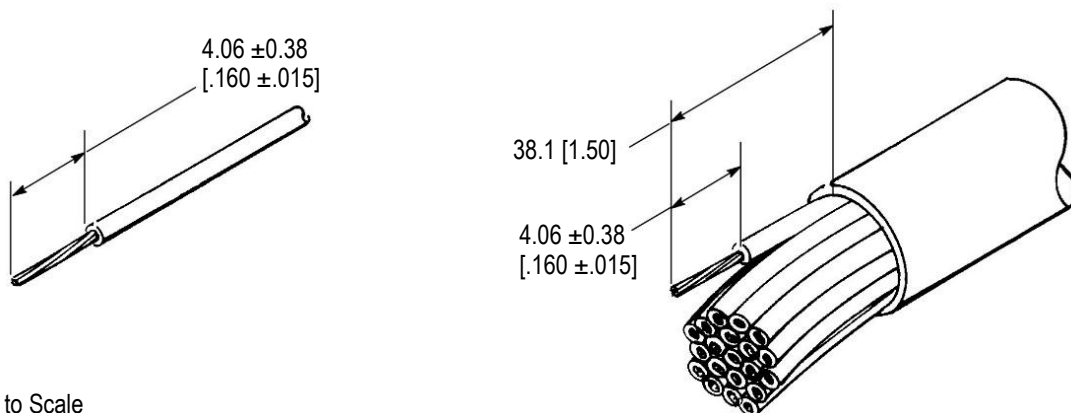
B. Crimp/Snap Contact

1. Discrete Wire

Wire insulation must be stripped according to dimensions in Figure 4.

2. Jacketed Cable

Cable and wire insulation must be stripped according to dimensions in Figure 4.



NOTE: Not to Scale

Figure 4

3.4. Termination

A. IDC Contact (Preloaded in Housing)

During termination, the wire enters the two slots of the insulation displacement beams, and the insulation barrel is formed around the wire insulation. Detailed instructions for terminating are included with available tooling which is listed in Section 5 of this specification.

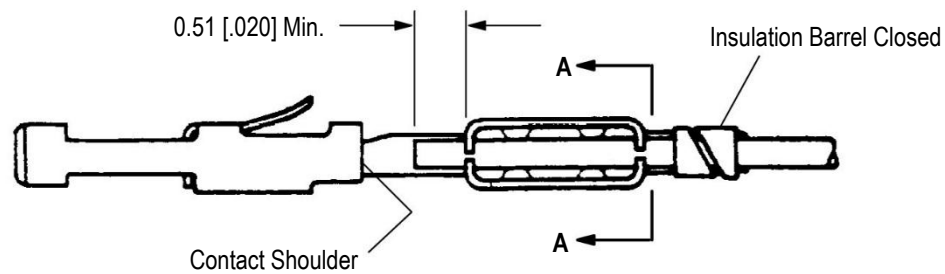
B. Crimp/Snap Contact

This contact is terminated by crimping through use of hand or automated tooling, then snapped into connector housing. Instructional material, which is packaged with tooling, contains information on crimping. See Section 5 of this specification.

3.5. Terminated Conductor Requirements

A. IDC Contact

1. Terminated conductors shall meet the requirements in Figure 5.
2. There may NOT be any damage to the wire slots after termination.
3. The primary function of the insulation barrel is to prevent the conductor from lifting from the wire slots. It must be closed adequately to confine conductor insulation.



NOTE: End of wire should be between minimum limits and contact shoulder.

Section A-A

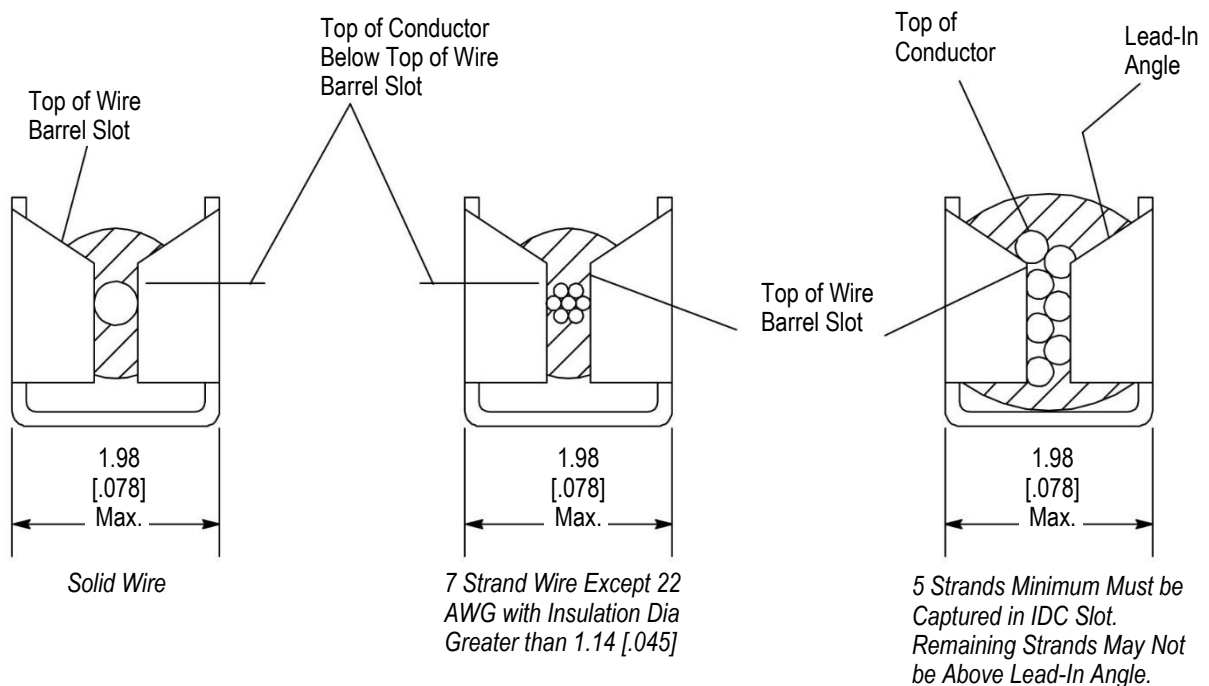


Figure 5

B. Crimp/Snap Contact

1. Carrier Cutoff Tab and Burr

The cutoff tab and burr shall not exceed the dimensions given in Figure 6.

2. Wire Barrel Crimp

a. Crimp Dimensions

Crimp height and width are given in Figure 6.

b. Tensile Strength

Required crimp tensile strength is given in Figure 6.

c. Effective Crimp Length

Effective crimp length, defined as that portion of the barrel, excluding bellmouth, fully formed by the crimping tool, is shown in Figure 6.

d. Wire Barrel Flash

The wire barrel flash shall not exceed the dimension given in Figure 6.

e. Wire Barrel Seam

Wire barrel seam must be completely closed and with no evidence of loose wire or wire strands visible in the seam.

f. Bellmouth

Rear bellmouth length is given in Figure 6

g. Conductor Location

End of the wire must be flush with the front end of wire barrel or extend slightly according to dimensions in Figure 6. Both insulation and conductor must be visible between the insulation barrel crimp and wire barrel crimp.



CAUTION

DO NOT crimp insulation in the wire barrel.

3. Insulation Barrel Crimp

Crimp height and width are given in Figure 6.

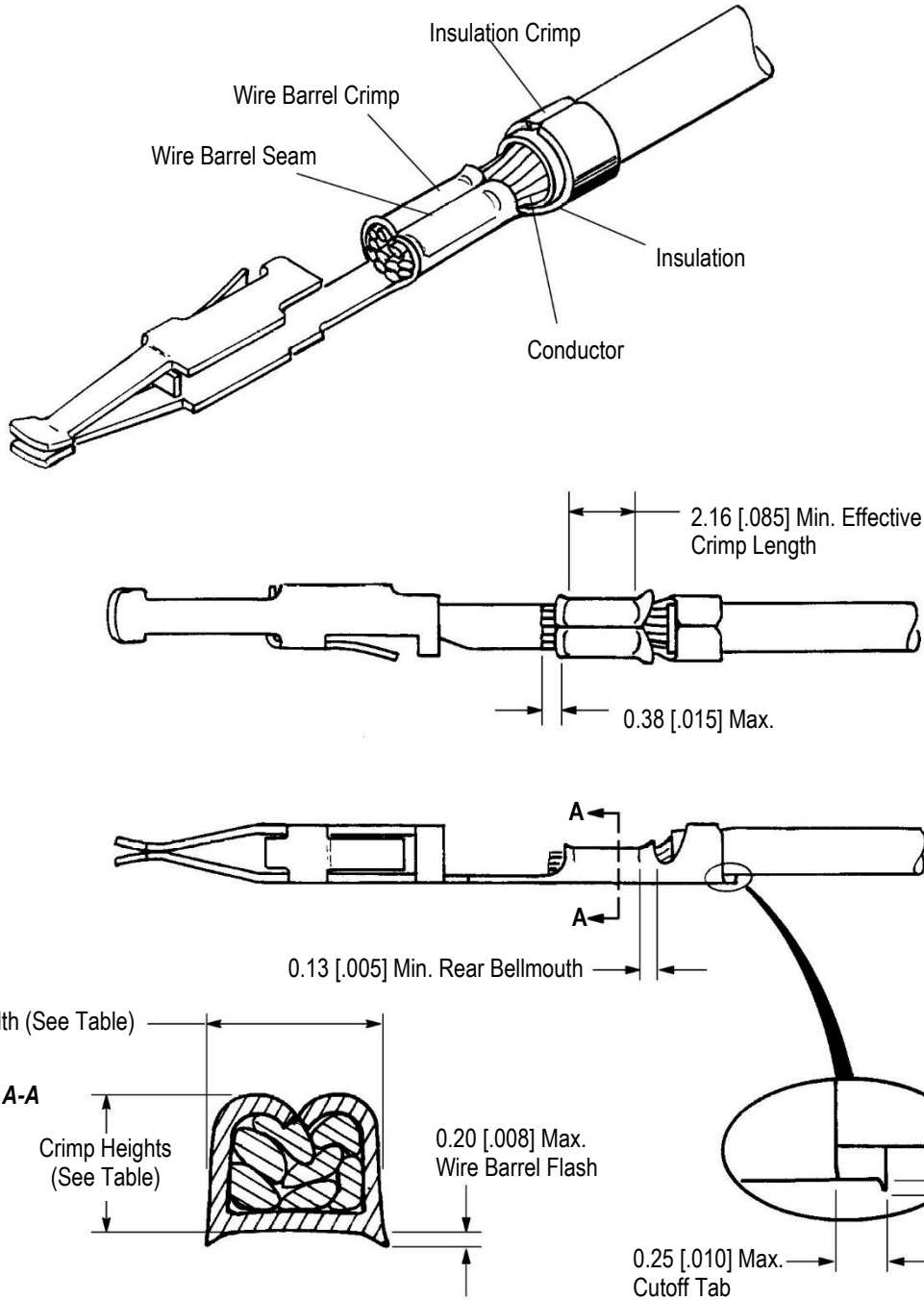


CAUTION

DO NOT cut or break the insulation while crimping contact.

4. Locking Lance

Locking lance may not be deformed or damaged.



WIRE SIZE (AWG)	WIRE BARREL (F) CRIMP		INSULATION (F) CRIMP		INSULATION DIAMETER	WIDTH
	HEIGHT	TENSILE STRENGTH N [lbs]	WIDTH	MAX HEIGHT		
22	0.74 - 0.84 [.029 - .033]	48.93 [11.0]	1.78 [.070]	1.83 [.072]	1.02 - 1.37 [.040 - .054]	1.40 [.055]
24	0.66 - 0.79 [.026 - .031]	31.14 [7.0]				
26	0.66 - 0.76 [.026 - .030]	17.79 [4.0]				

Figure 6

5. Alignment

a. Straightness

(1) The contact, including the cutoff tab and burr, may not be bent below the datum line or more than 0.51 mm [.020 in.] above the datum line as shown in Figure 7.

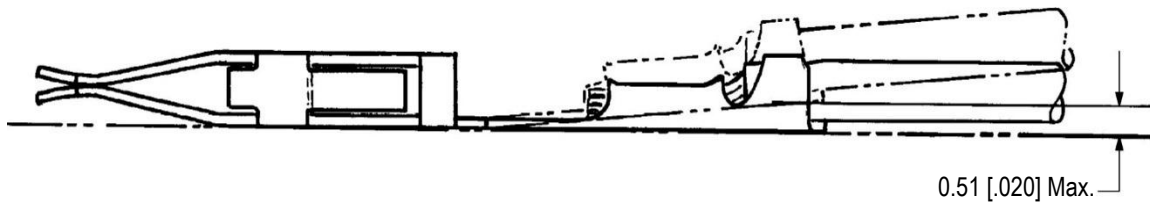


Figure 7

(2) The side to side bending of the contact may not exceed the limits shown in Figure 8.

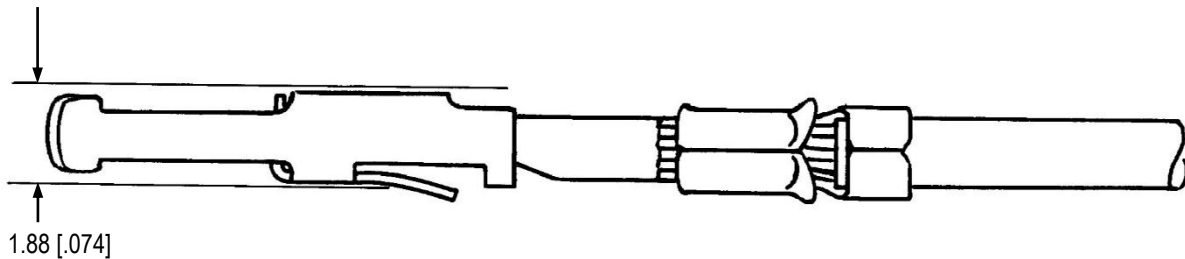


Figure 8

b. Twist or Roll

(1) There may not be any twist or roll in crimped portion of contact that could impair its use. See Figure 9 for limits.

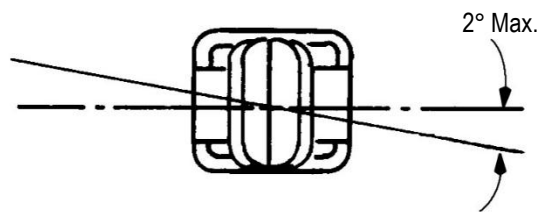


Figure 9

3.6. Repair

Replacement contacts allow complete serviceability. See Figure 2 to determine correct replacement contact type.

4. QUALIFICATIONS

The AMPMODU Level V Connectors are Recognized in the Component Program of Underwriters' Laboratories, Inc. (UL) File No. E28476 and Certified by CSA International in File Number LR7189.

5. TOOLING

Various tools are available for your production needs. Some typical tools are shown in Figure 10.

The use of Extraction/Lance Reset Tool 91409-1, designed to remove contacts from connectors, is covered in instruction sheet 408-6843.

The table in Figure 10 shows tools and instructional material related to wire size. Hand tools and applicators include integral dies. Automatic machines that hold the applicators are also listed.

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

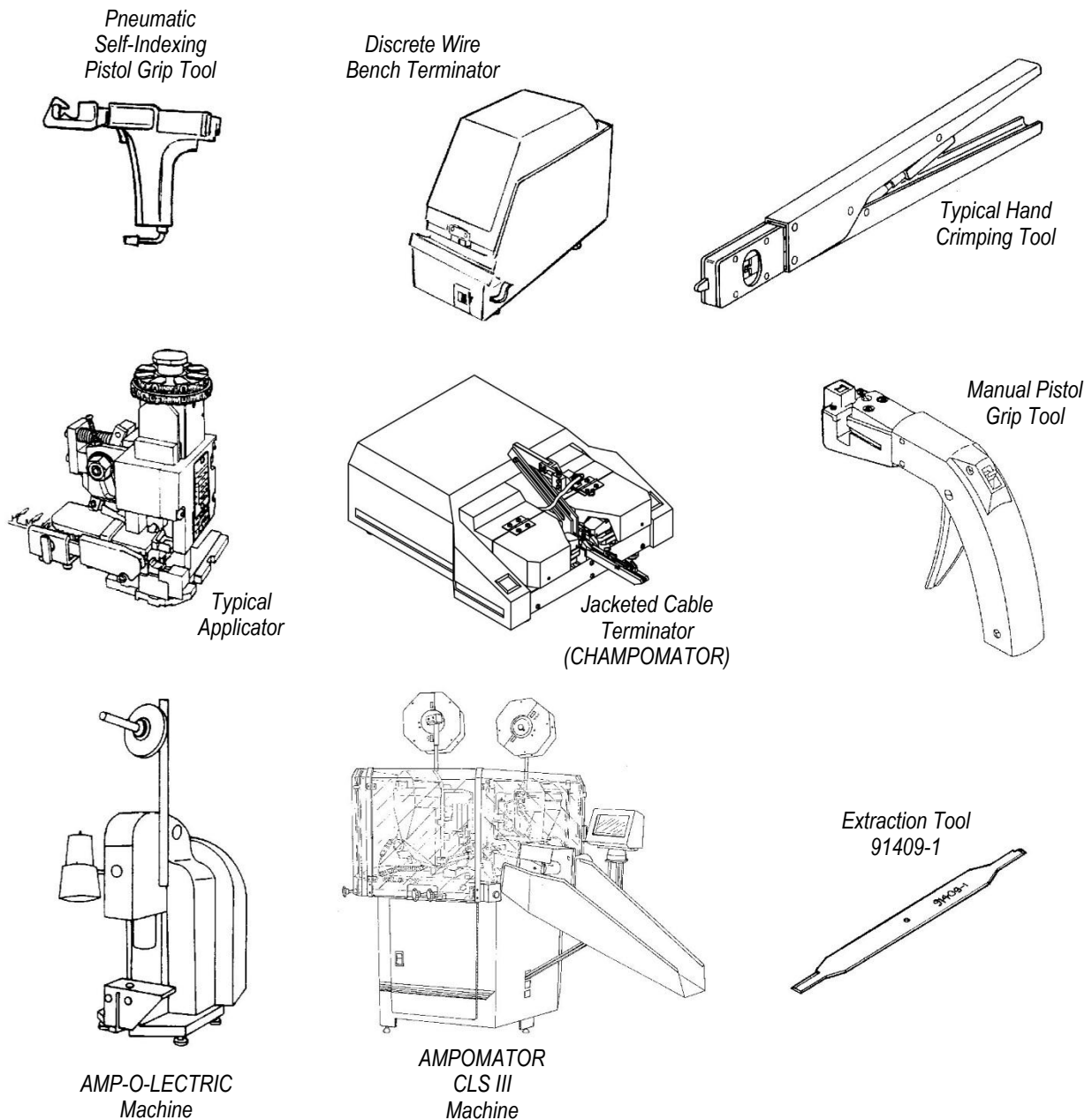


Figure 10 (cont'd)

CONTACT TYPE	WIRE SIZE (AWG)	DIES (DOCUMENT)	APPLICATOR (DOCUMENT)	MACHINE (DOCUMENT)	HAND TOOL (DOCUMENT)
Level V (Crimp-type)	22-26	---	567365-1 (408-8040)	854400-[] (409-5806)	---
			567365-2 (408-8040)	565435-5 (409-5128)	
			466992-1	463345-1 (409-5343)	
				463345-2 (409-5651)	
				854040-3 (409-5807)	
---	---	90501-1 (408-9635)			
Level V (IDC)	20-30	91411-2T (408-9028)	---	91085-2 (408-7777)	---
				91112-2 (408-7763)	
				91112-3 (408-6732)	
		1-762661-1 (408-9677)	---	•762734-1, -2 (409-5786)	
		1-762661-2 (408-9773)	---	1-761420-3 (409-5771)	
				2-761420-3 (409-5771)	
		1-762661-3 (408-9655)	---	•762734-1, -2 (409-5786)	
	---	---	1-231496-0		
	---	---	58020-5 (409-5496)		
	---	---	---	91408-1 (408-6746)	
	22-26	91415-1 (408-9229)	---	91085-2 (408-7777)	
91112-2 (408-7763)					
91112-3 (408-6732)					
---		---	---	91407-1 (408-6747)	

T Tool mount 527085-1 or 527145-1 (408-9138) must be used with 91411-2.

•Used with Machine Controller 852423-1, -2, -3.

Figure 10 (end)

6. VISUAL AID

The illustration below shows a typical application of this product line. 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.

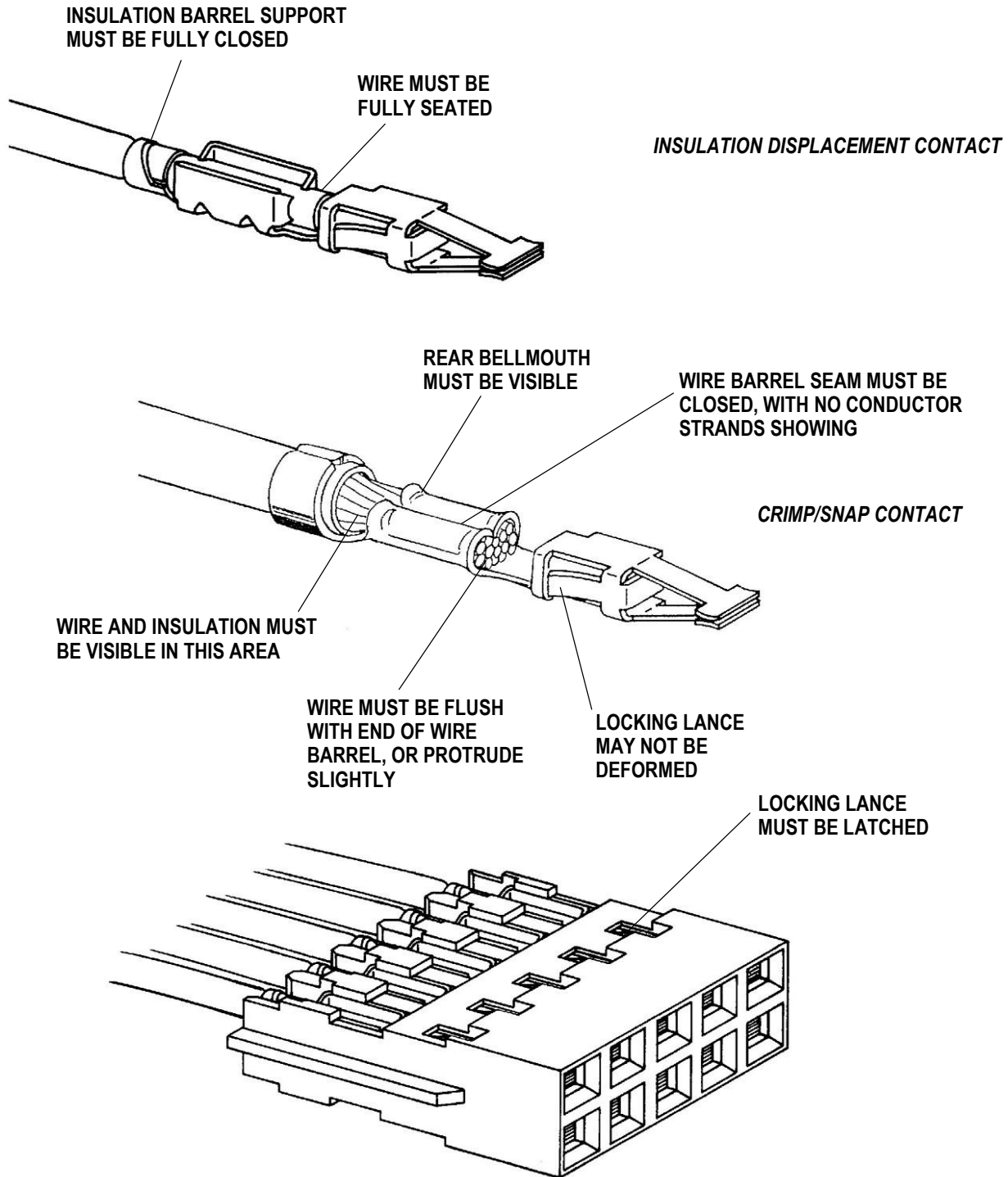


FIGURE 11. VISUAL AID