NOTE

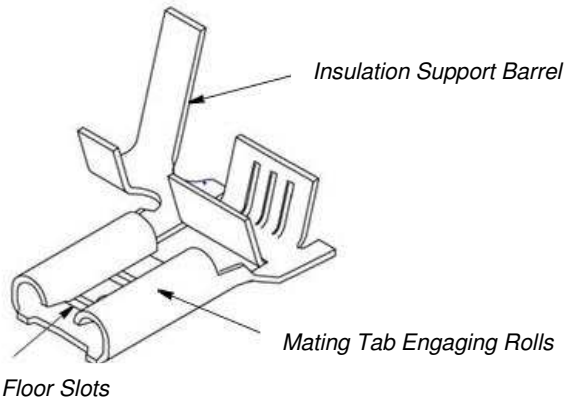
All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ±0.13 [±.005] and angles have a tolerance of ±2°. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

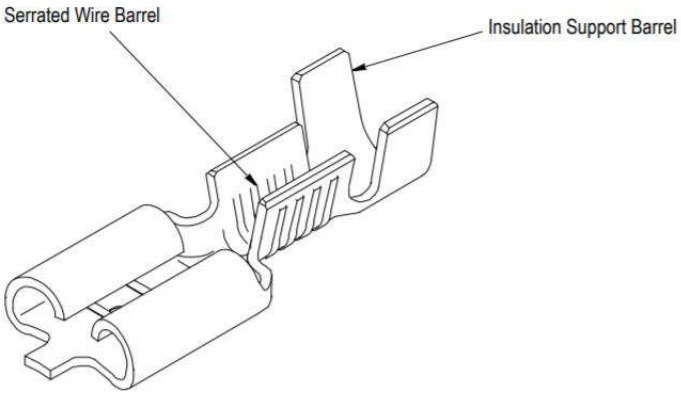
This specification covers the crimp requirements for application of 250 series FASTON Receptacles. The most common application of these receptacles is in the major appliance field, where multiple in-line splices would normally be required.

When corresponding with TE Connectivity 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.

Center-Strip Flag Receptacle With Insulation Support Barrel



Straight type Receptacle With Insulation Support Barrel



Tab-lok Flag type Receptacle With Insulation Support Barrel

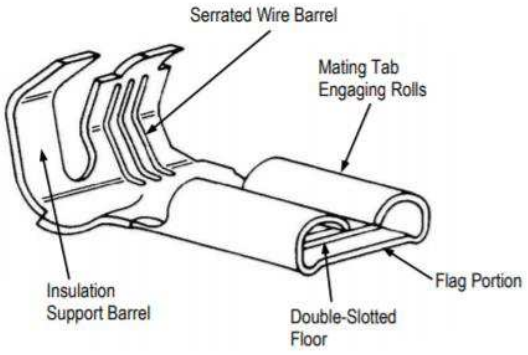


Figure 1

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2. REFERENCE MATERIAL

2.1. Revision Summary

Revisions to this application specification include:

- Updated tooling information in Section 4

2.2. Drawings

Customer drawings for each product part number are available from a service network. The information contained in customer drawings takes priority if there is a conflict with this specification or with any technical documentation supplied by TE.

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

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

B. Reeled Contacts

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

C. 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 signal transmissions.

D. Chemical Exposure

Do not store contacts near any chemicals listed below, as they may cause stress corrosion cracking in the contacts.

Alkalis	Ammonia	Citrates	Phosphates Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur Nitrites	Tartrates

NOTE

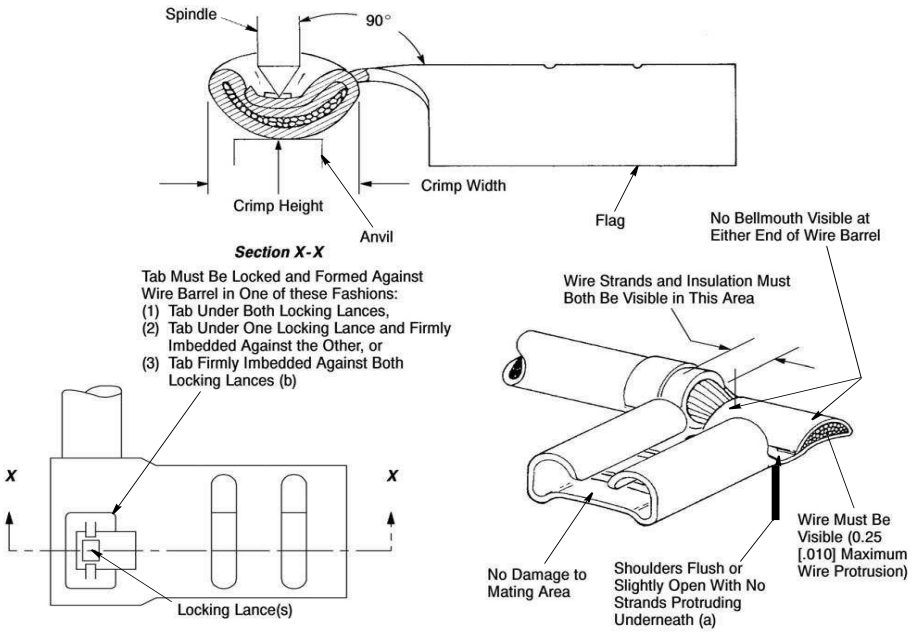
Where the above environmental conditions exist, phosphor-bronze contacts are recommended instead of brass if available.

3.2. Crimped Receptacle Requirements

Perform the crimping operation. Figure 2 shows a typical receptacle as it should appear after crimping.

CAUTION

Wire insulation shall NOT be cut or broken during the crimping operation except according to normal applicator operation. Exercise of reasonable care by tooling operators should be sufficient to provide undamaged terminations.

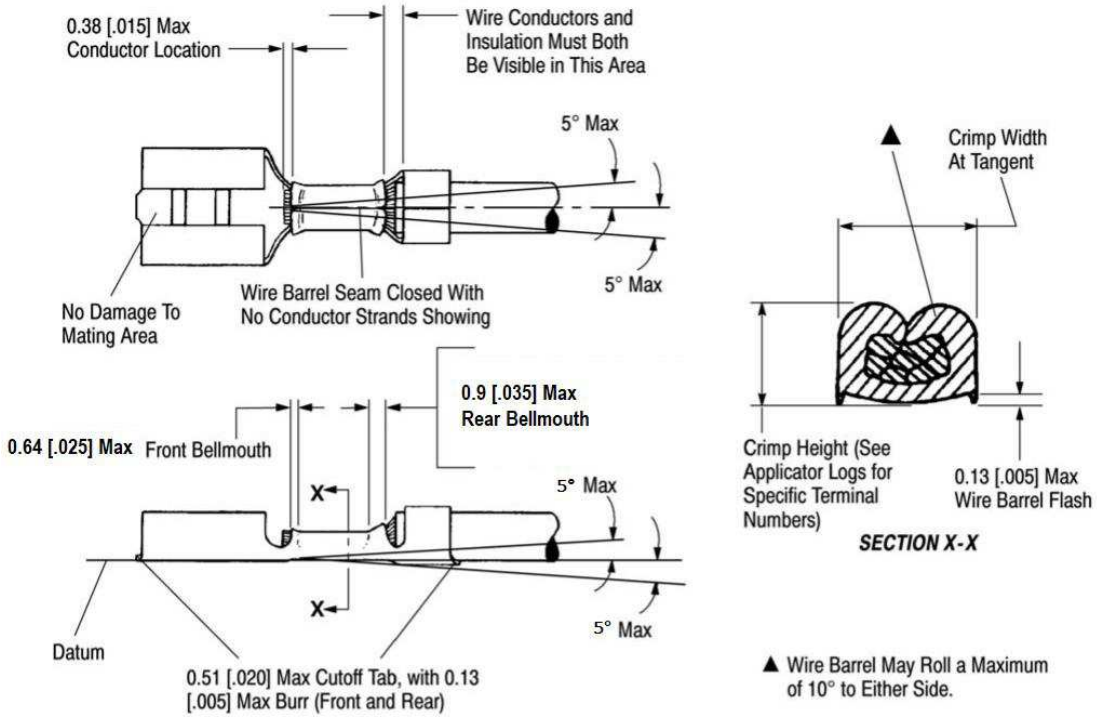


NOTES: (a) Hairline fracture allowable on floor at slot a *maximum* of half the distance from slot to terminal edge.

(b) Fractures on locking lances are NOT permitted. The lances may, however, be slightly extruded or flattened without affecting crimp reliability.

(c) The requirements are same except specified

Tab-lok Crimp



F-Crimp

Figure 2

3.3. Crimping data

Contact Part No.	Wire size		Wire barrel Crimp		Insulation Barrel width	Insulation Diameter (mm)
	No. of wires	AWG	Width (mm)	Crimp Height (mm)	Width (mm)	
X-41412-X X-41411-X	1	18AWG	3.56 “F”	2.41 ± 0.05	4.57 “F”	3.05 - 4.32
	1	16AWG		2.51 ± 0.05		
	1	14AWG		2.69 ± 0.05		
X-42770-X	1	18AWG	3.30 “F”	2.31 ± 0.05	4.57 “O”	2.03 - 4.06
	1	16AWG		2.44 ± 0.05		
	1	14AWG		2.62 ± 0.05		
X-180363-X	1	11AWG	4.06 “F”	2.41 ± 0.05	5.33 “F”	3.81 - 5.08
	1	09AWG		2.79 ± 0.05		
X-63963-X	1	18AWG	2.79 “F”	1.57 ± 0.05	4.57 “O”	2.79 - 5.08
	1	16AWG		1.73 ± 0.05		
	1	14AWG		1.96 ± 0.05		
X-2238197-X	1	18AWG	4.06 “Tab lok”	1.17 ± 0.05	4.57 “O”	2.79 - 5.33
	1	16AWG		1.27 ± 0.05		
	1	14AWG		1.47 ± 0.05		
X-346697-X	1	20AWG	2.54 “F”	1.30 ± 0.05	3.81 “F”	2.20 - 3.10
	1	18AWG		1.39 ± 0.05		
	1	16AWG		1.63 ± 0.05		
X-160301-X	1	10AWG	4.50 “F”	2.34 ± 0.05	5.30 “F”	3.80 – 5.10
X-1742915-X	1	14AWG	3.56 “F”	1.93 ± 0.05	7.87 “F”	5.72 - 6.99
	1	12AWG		2.24 ± 0.05		
	1	10AWG		2.67 ± 0.05		
X-880683-X	1	20AWG	2.03 “F”	1.45 ± 0.05	3.30 “F”	2.00 - 3.30
	1	18AWG		1.52 ± 0.05		
	1	17AWG		1.62 ± 0.05		
X-170046-X	1	16AWG	2.79 “F”	1.70 ± 0.05	4.57 “F”	2.54 - 4.32
	1	14AWG		1.96 ± 0.05		
X-61988-X	1	22AWG	2.29 “F”	1.14 ± 0.05	3.05 “O”	1.52 - 2.54
	1	20AWG		1.19 ± 0.05		
	1	18AWG		1.32 ± 0.05		
X-100645-X	1	17AWG	2.79 “F”	1.70 ± 0.05	4.57 “F”	3.05 - 4.32
	1	16AWG		1.80 ± 0.05		
	1	14AWG		1.93 ± 0.05		
X-170304-2	1	22AWG	2.29 “F”	1.05 ± 0.05	3.05 “F”	1.5 - 2.6
	1	20AWG		1.13 ± 0.05		
	1	18AWG		1.25 ± 0.05		
X-63314-X	1	18AWG	3.05 “F”	1.45 ± 0.05	4.57 “O”	1.52 - 3.81
	1	16AWG		1.60 ± 0.05		
	1	14AWG		1.80 ± 0.05		
X-626377-X	1	22AWG	2.03 “F”	1.13 ± 0.05	3.56 “F”	2.00 - 3.00
	1	20AWG	2.29 “F”	1.22 ± 0.05		
	1	19AWG		1.32 ± 0.05		
	1	18AWG		1.40 ± 0.05		
X-444335-X X-735220-X X-336236-X	1	18AWG	2.79 “F”	1.62 ± 0.05	4.57 “F”	3.00 - 4.30
	1	16AWG		1.78 ± 0.05		
	1	14AWG		2.08 ± 0.05		
X-737439-X	1	22AWG	2.29 “F”	1.24 ± 0.05	3.56 “F”	2.29 - 3.30
	1	20AWG		1.32 ± 0.05		
	1	18AWG		1.39 ± 0.05		
X-170213-X	1	18AWG	2.79 “F”	1.60 ± 0.05	4.57 “F”	2.54 - 4.32
	1	16AWG		1.70 ± 0.05		
	1	14AWG		1.96 ± 0.05		
X-735220-X	1	17AWG	3.05 “F”	1.47 ± 0.05	4.57 “F”	3.00 - 4.30
	1	16AWG		1.60 ± 0.05		
	1	14AWG		1.82 ± 0.05		
X-41772-X X-140760-X	1	22AWG	2.29 “F”	1.24 ± 0.05	3.30 “F”	2.30 - 3.30
	1	20AWG		1.30 ± 0.05		
	1	18AWG		1.42 ± 0.05		
X-928890-X	1	18AWG	2.54 “F”	1.38 ± 0.05	4.06 “F”	2.20 - 3.30
	1	16AWG		1.81 ± 0.05		
X-626378-X	1	18AWG	2.79 “F”	1.40 ± 0.05	4.57 “F”	2.80 - 3.80
	1	16AWG		1.52 ± 0.05		
	1	14AWG		1.75 ± 0.05		

Contact Part No.	Wire size		Wire barrel Crimp		Insulation Barrel width	Insulation Diameter (mm)
	No. of wires	AWG	Width (mm)	Crimp Height (mm)	Width (mm)	
X-61281-X X-61362-X	1	14AWG	3.05 "F"	1.91 ± 0.05	4.57 "F"	2.79 - 4.32
	1	12AWG		2.24 ± 0.05		
X-42475-X	1	22AWG	2.03 "F"	1.27 ± 0.05	3.30 "F"	2.03 - 3.05
	1	20AWG		1.35 ± 0.05		
	1	18AWG		1.45 ± 0.05		
X-61187-X	1	12AWG	3.56 "F"	2.21 ± 0.05	4.83 "F"	3.30 - 4.32
	1	10AWG		2.69 ± 0.05		
X-170046-X	1	16AWG	2.79 "F"	1.70 ± 0.05	4.70 "F"	2.54 - 4.32
	1	14AWG		1.96 ± 0.05		
X-60713-X	1	18AWG	2.79 "F"	1.47 ± 0.05	4.57 "F"	3.05 - 4.32
	1	16AWG		1.62 ± 0.05		
	1	14AWG		1.85 ± 0.05		
X-42563-X	1	12AWG	5.08 "Tab lok"	1.91 ± 0.05	5.59 "O"	2.79 - 5.33
	1	10AWG		2.26 ± 0.05		
X-63538-X	1	18AWG	2.79 "F"	1.58 ± 0.05	4.57 "F"	2.79 - 4.06
	1	16AWG		1.73 ± 0.05		
	1	14AWG		1.96 ± 0.05		
X-280050-X	1	20AWG	2.54 "F"	1.32 ± 0.05	3.56 "F"	2.00 - 3.30
	1	18AWG		1.40 ± 0.05		
	1	16AWG		1.55 ± 0.05		
X-160256-X X-100605-X	1	18AWG	2.80 "F"	1.63 ± 0.05	4.57 "F"	3.05 - 4.30
	1	16AWG		1.73 ± 0.05		
	1	14AWG		1.98 ± 0.05		

3.4. Notes

A. Care must be taken not to damage and nick the wire strands, when to strip the wire insulation. Stripped conductor strands must appear neat and straight without scratches.

B. Avoid foreign particles and greasy and oily matters from entering inside the wire barrel.

C. All the strands must be catch inside the wire barrel, and barrel seam must close neatly where any of mis caught strands must not protrude outside.

D. Any part of the insulation must not catch in the wire barrel.

E. After crimping, insulation must be held firmly inside the insulation crimping barrel.

F. The other crimping requirement refer to 114-18022.

3.5. Crimp Pull-Out Test

Crimped receptacles shall not be separated from their associated wires when subjected to forces as specified in the table in Figure 3.

NOTE

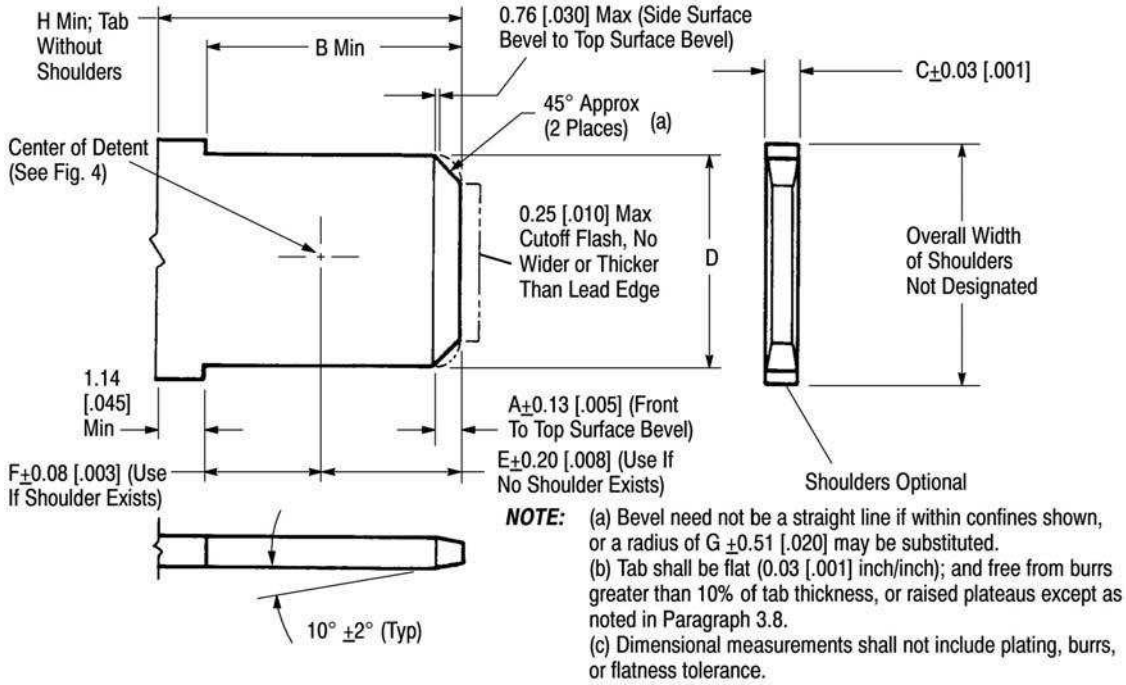
Adjust tensile testing machine for head travel of 25.4 mm [1 inch] per minute. Directly and gradually apply force for one minute.

CRIMP PULL-OUT TEST FORCES			
WIRE SIZE		MINIMUM FORCE	
AWG	mm^2	NEWTONS	POUNDS
22	0.32	36	8
20	0.52	58	13
18	0.82	89	20
16	1.30	133	30
14	2.10	223	50
12	3.30	311	70
10	5.30	356	80

Figure 3

3.6. Mating Tab Dimensions

Figures 4 and 5 shows features and dimensional requirements for tab terminals intended for mating with FASTON Receptacles.

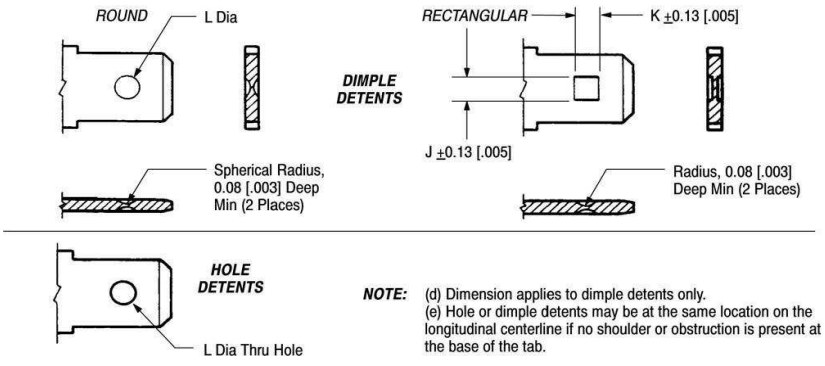


TAB SIZE (NOMINAL)	A	B	C	D	E	F	G	H
6.35 x 0.81 [.250 x .032] with Dimple	0.89 [.035]	7.80 [.307]	0.81 [.032]	6.35 [.250]	3.86 [.152]	4.06 [.160]	1.27 [.050]	8.94 [.352]
6.35 x 0.81 [.250 x .032] with Hole	0.89 [.035]	7.80 [.307]	0.81 [.032]	6.35 [.250]	4.52 [.178]	3.40[.134]	1.27 [.050]	8.94 [.352]

Figure 4

3.7. Tab Retention and Detent Configurations

A tab configuration having no locking feature may be used for applications where low mating retention forces are desirable. Where higher forces are sought, a tab with a detent meeting the requirements of Figure 5 should be used. Hole detents provide the greatest retention forces, while dimples provide acceptable medium-range forces.



TAB WIDTH (NOMINAL)	J (d)	K (d)	L
6.35 [.250]	2.36 [.093]	1.90 [.075]	1.78 +0.25/-0.13 [.070 +.010/-.005]

Figure 5

3.8. Repair/Replacement

CAUTION

Damaged product should not be used. If a damaged receptacle is evident, it should be cut from the wire and replaced with a new one. Do NOT reterminate receptacles.

4. TOOLING

Applicators contain the tooling for feeding and crimping strip-form terminals. Automatic machines provide the power to operate the applicator. See Figure 6 for representative images.

Tooling information for product part numbers is available from www.te.com or by calling the Product Information Center at the number at the bottom of page 1.

4.1. Machine (Power Unit)

The machine provides the force required to drive an applicator for crimping the contacts. These machines can be set up to automatically measure, cut, strip and terminate wire.

4.2. Applicator

Applicators for product part numbers are available from the Applicator Search Portal on www.te.com or by calling the Product Information Center at the bottom of page 1.

Ocean Applicator

Automatic Machine

Figure 6

5. 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.

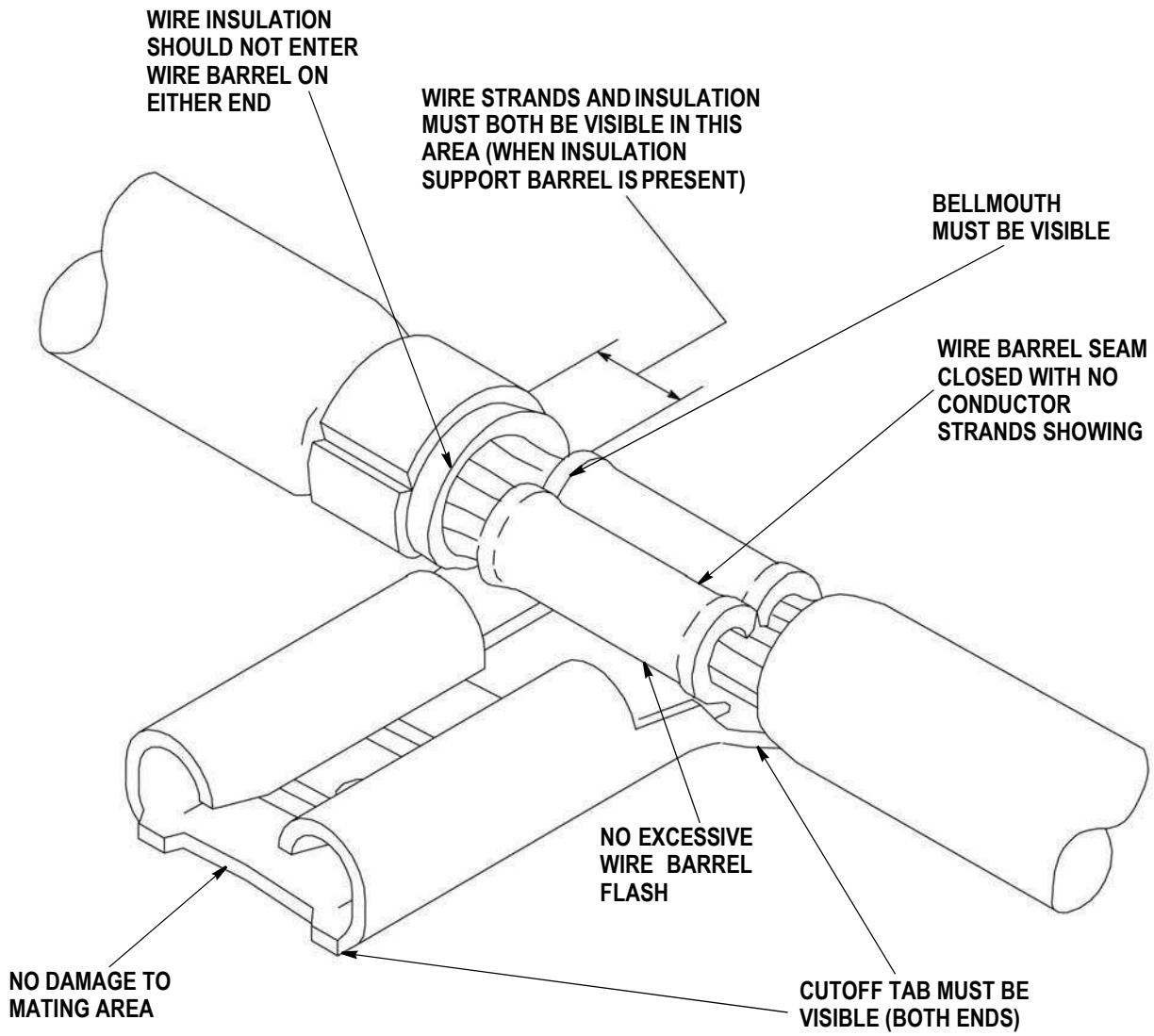


FIGURE 7. VISUAL AID for F crimp

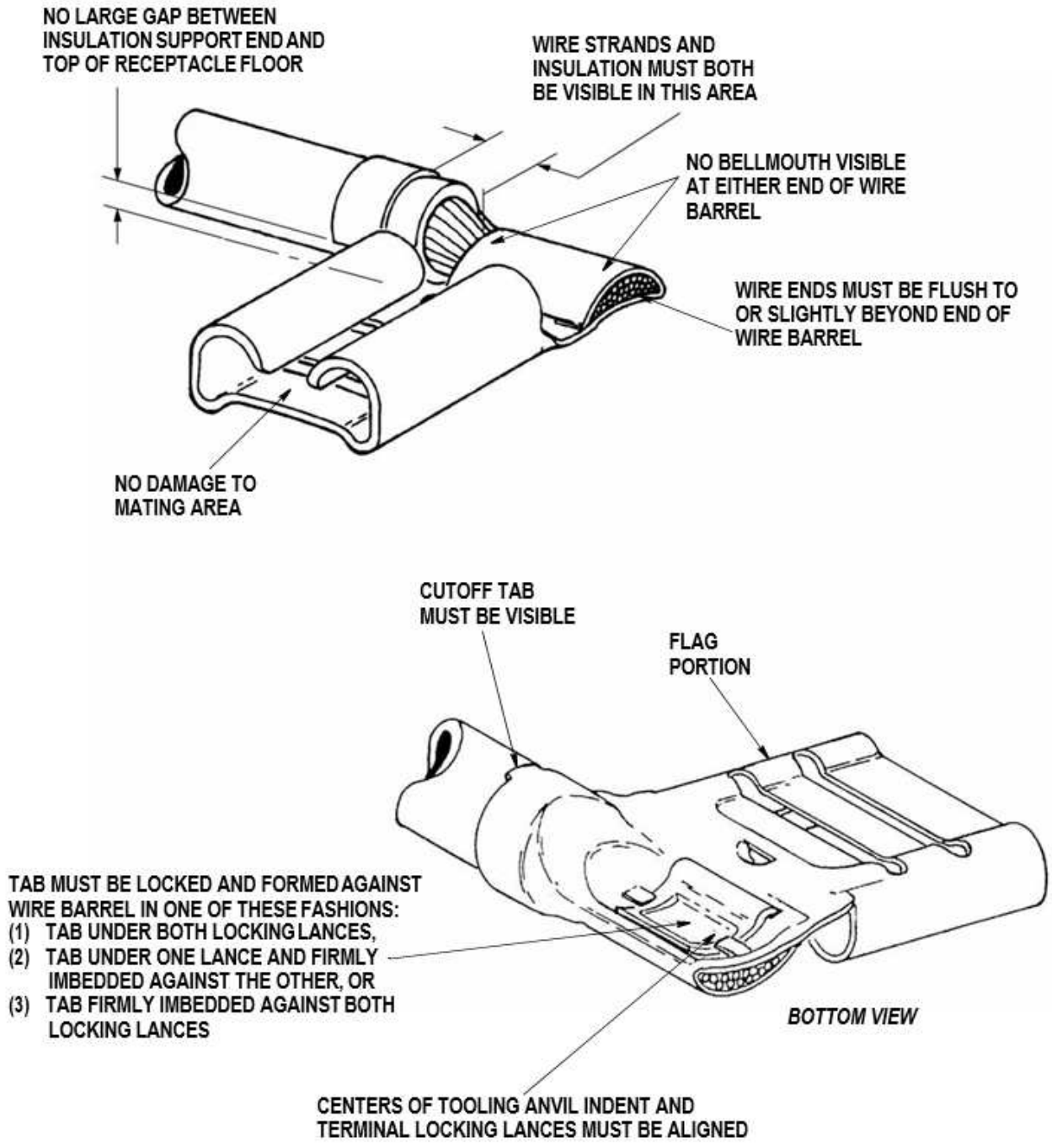


FIGURE 8. VISUAL AID for Tab lok crimp