



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 [$\pm .005$ 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 AMPLIMITE HDE-20 Shielding Hardware Kits with and without Enclosure. The recommended insulation ranges covered in this specification are 4.19-14.27 mm [.165-.562 in.] for the outside diameter of the jacketed cable, and a maximum individual conductor insulation diameter of 1.52 mm [.060 in.]. Shielding hardware kits include an inner shield, outer shield, and connector. Shielding hardware kits with enclosure include the same components plus the enclosure and two jackscrews. See Figure 1. Ferrules are purchased separately to match the outer diameter of the cable being used.

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.

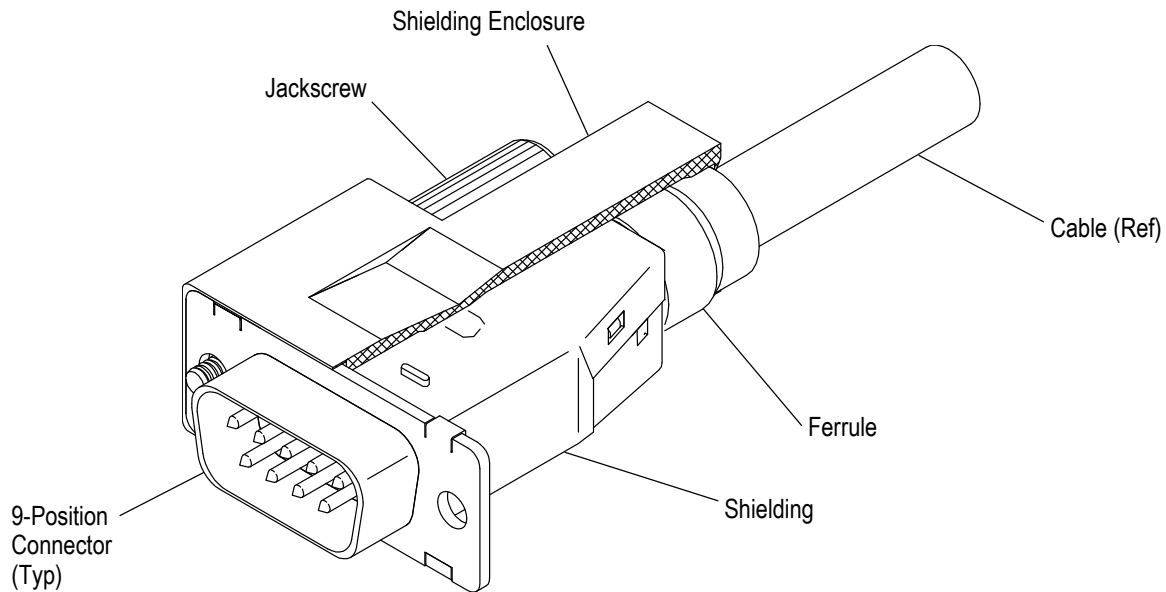


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements
- Updated text in Paragraph 2.2

2.2. Customer Assistance

Reference Product Base Part Numbers 747548, 747948, and Product Code 5849 are representative numbers of AMPLIMITE HDE-20 Shielding Hardware Kits With and Without Enclosures. 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. Instructional Material

The following list includes available instruction sheets (408-series) that provide assembly procedures for product, operation, maintenance and repair of tooling; and customer manuals (409-series) that provide setup, operation, and maintenance of machines.

<u>Document Number</u>	<u>Document Title</u>
408-6645	AMPLIMITE HDE-20 Insulation Displacement Metal Shell Connectors
408-6769	AMPLIMITE HDE-20 Right-Angle Metal Shielded Cable Clamp Kits
408-9010	Shielding Hardware Kits for AMPLIMITE HDP-20 and HDE-20 Connectors
408-9172	Shielding Hardware Enclosure Kits for AMPLIMITE Connectors
408-9199	Shielding Enclosure Expansion Tool Kits 58241-1, -2, and -4
408-9242	Die Assemblies 58237-1 and 58237-2
408-9243	Crimping Die Assembly 58238-1 for AMPLIMITE Connectors
408-9315	Hand Crimping Tool 543344-1
408-9507	Crimping Die Assemblies 543424-1 Through -8 for AMPLIMITE Connectors
408-9508	Crimping Die Assemblies 543425-1 and 543425-2 for AMPLIMITE Connectors
408-9721	Die Holder Assemblies 58449-1, -2, and -3
409-5843	2700-Lb. Pneumatic Power Unit 312522-[]

2.5. Specifications

A. Product Specifications

Product Specifications [108-40011](#) and [108-40030](#) provide product performance requirements and test information.

B. Application Specifications

Application Specification [114-40002](#) contains design, inspection, and assembly procedures for AMPLIMITE HDE-20 IDC Connectors.

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the product material.

B. Shelf Life

The product should remain in the shipping containers until ready for use to prevent deformation to components. The product should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

C. Chemical Exposure

Do not store product near any chemical listed below as they may cause stress corrosion cracking in the material.

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 if available.

3.2. Cable Preparation

A. With Enclosure

1. If an enclosure is included with the kit, push the enclosure over the shielding enclosure expansion tool as shown in Figure 2. Refer to Section 5, TOOLING. If no enclosure is included, go to Paragraph 3.2.B.

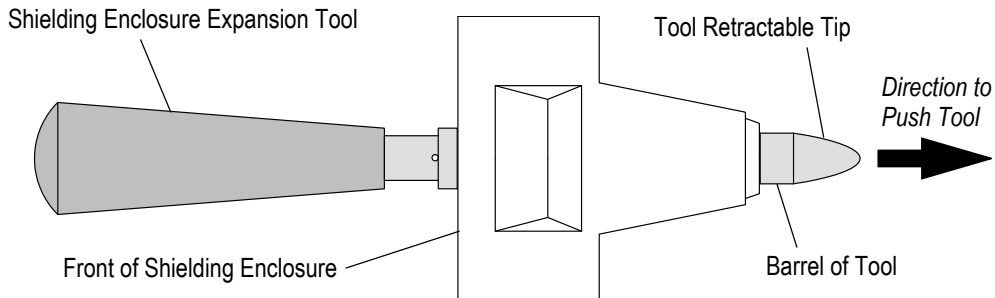


Figure 2

2. Retract the center part of the tool, insert the cable, and slide the enclosure over the cable as shown in Figure 3.

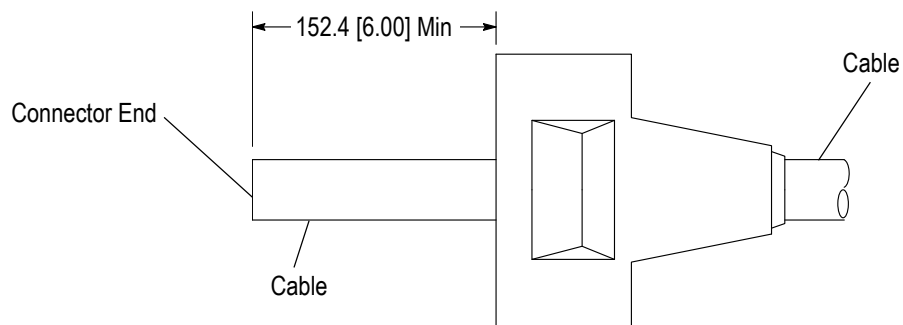


Figure 3

B. With or Without Enclosure

Select the correct ferrule from the customer drawings of ferrule part numbers related to this specification. See Figure 12. Slide the ferrule onto the cable, keeping the larger diameter of the ferrule towards the end to be terminated. See Figure 4. If the ferrule has only one diameter, no orientation is required.

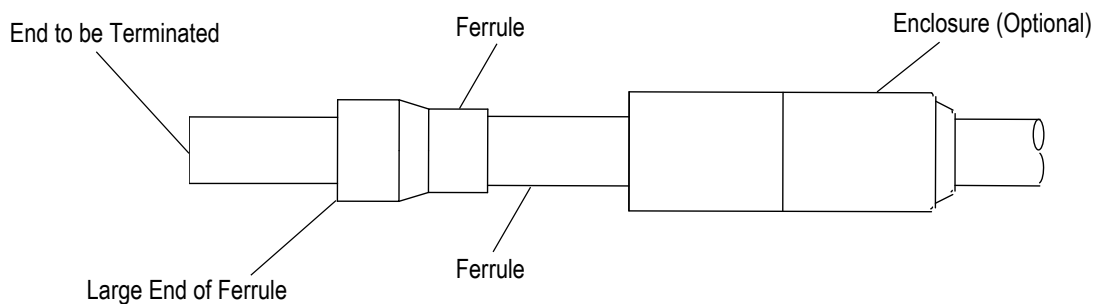


Figure 4

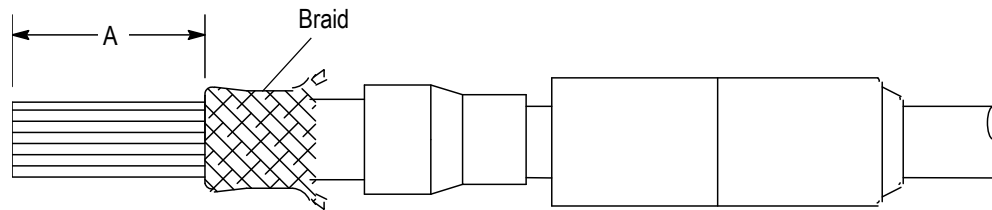
C. Strip Length

1. Remove the outer cable jacket as shown in Figure 5. Fold the braid back over the cable jacket.



CAUTION

Care shall be taken not to cut, nick, or scrape the braid strands during the jacket removal process.



CONTACT POSITION	DIMENSION A ± 0.38 [.015]
9	33.02 [1.300]
15	
25	
37	43.18 [1.700]

Figure 5

2. For semi-automatic and automatic machine termination tooling, adjust the tool to produce terminated strip lengths to the dimensions provided in Figure 6.
3. Fold the exposed foil, if present, back over the braid and trim off.

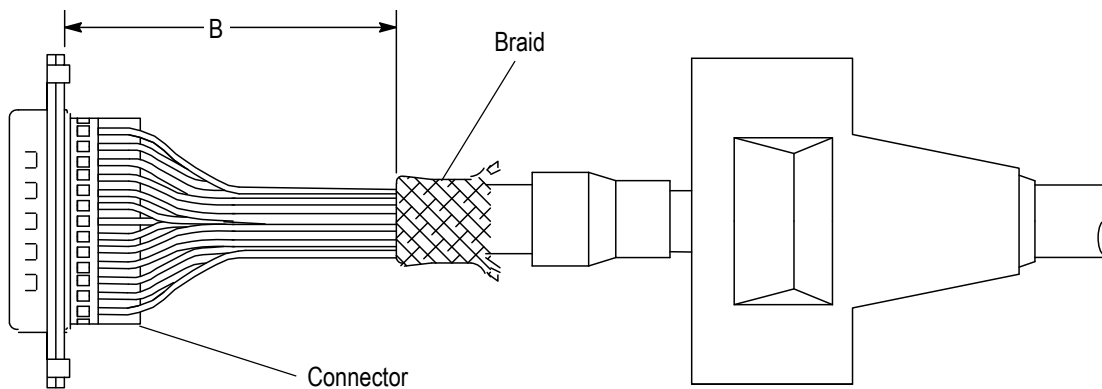


CAUTION

Care shall be taken not to cut, nick, or scrape the individual conductor insulation during the foil trimming operation.

3.3. Termination

Refer to Application Specification 114-40002 for termination tooling procedures and tooling references. The terminated strip length shall be as indicated in Figure 6.



CONTACT POSITION	DIMENSION B ± 0.38 [.015]
9	33.02 [1.300]
15	
25	
37	38.10 [1.500]

Figure 6



NOTE

The housing and contacts shall be carefully examined, both prior to and after wire application, to determine that it meets the requirements of this and related specifications. The contacts shall remain firmly located in the housing channels to provide good electrical separation.

3.4. Shield Assembly

1. Position the hinge tabs of the inner shield into corresponding slots in the connector shell, and move the shield towards the connector as shown in Figure 7.

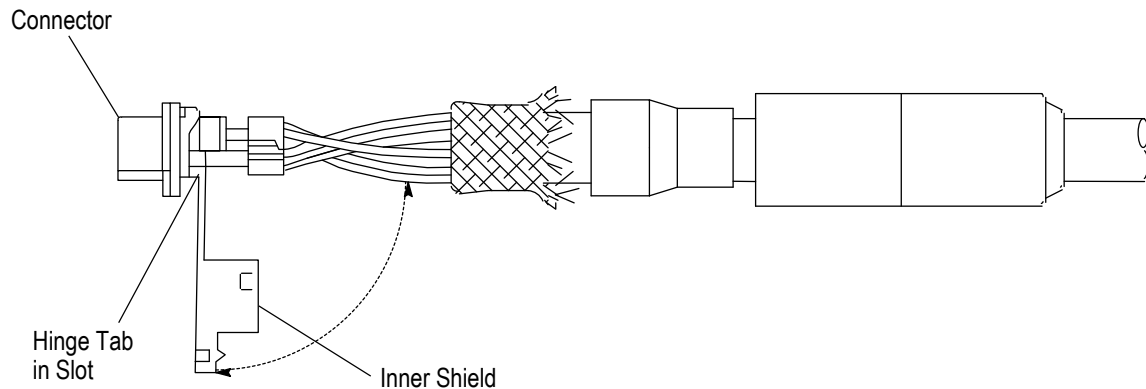


Figure 7

2. Position the hinge tabs of the outer shield into the corresponding slots of the connector shell as shown in Figure 8.

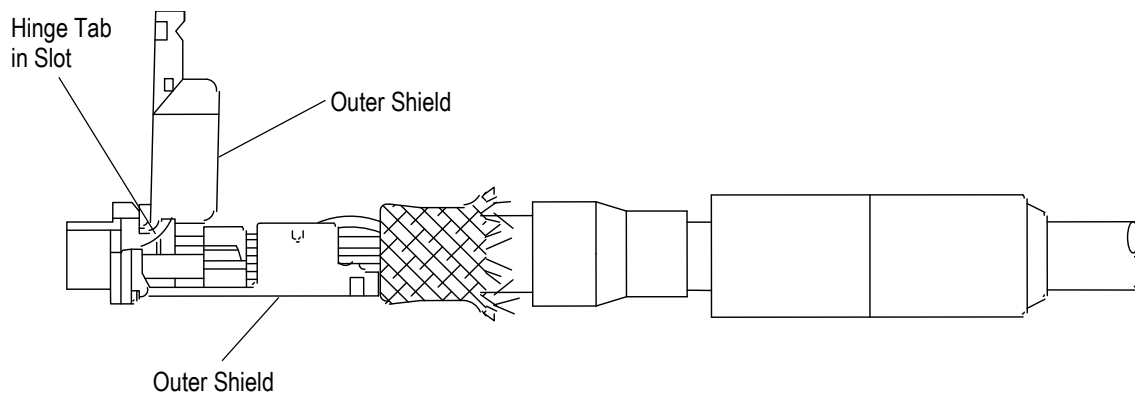


Figure 8

3. Close the outer shield towards the connector while maintaining position of the inner shield until the locking tabs engage the windows as shown in Figure 9.



CAUTION

Care shall be taken not to pinch the individual conductors between the shield halves.

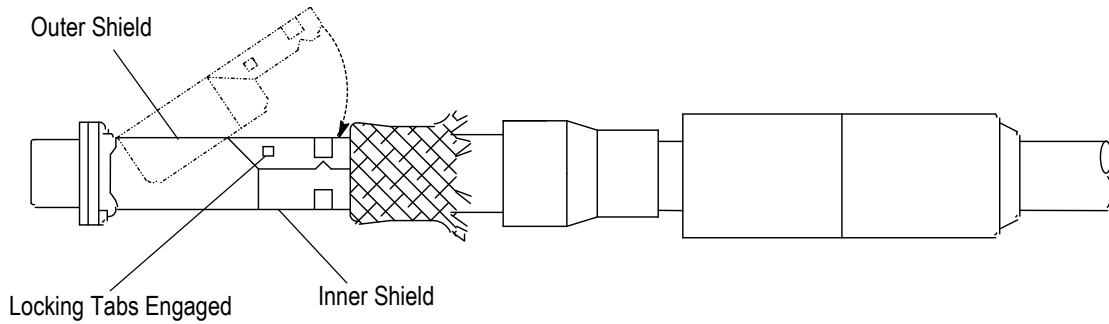


Figure 9

4. Fold the braid forward over the cable outlet as shown in Figure 10.

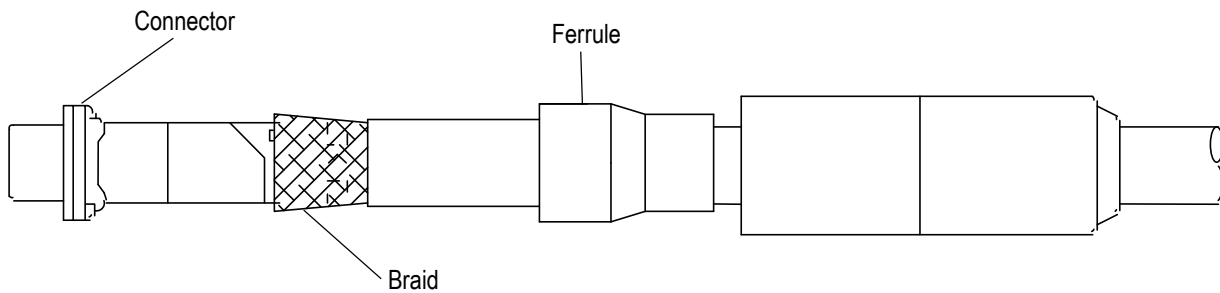


Figure 10



NOTE

The braid shall be spread evenly around the circumference of the outlet and shall remain interwoven to provide proper electrical and mechanical properties.

5. Slide the ferrule forward over the braid until it is butted against the shield assembly as shown in Figure 11.

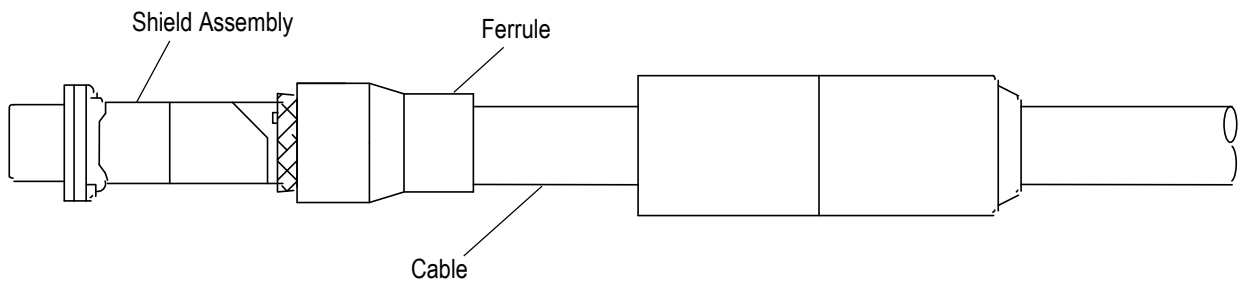
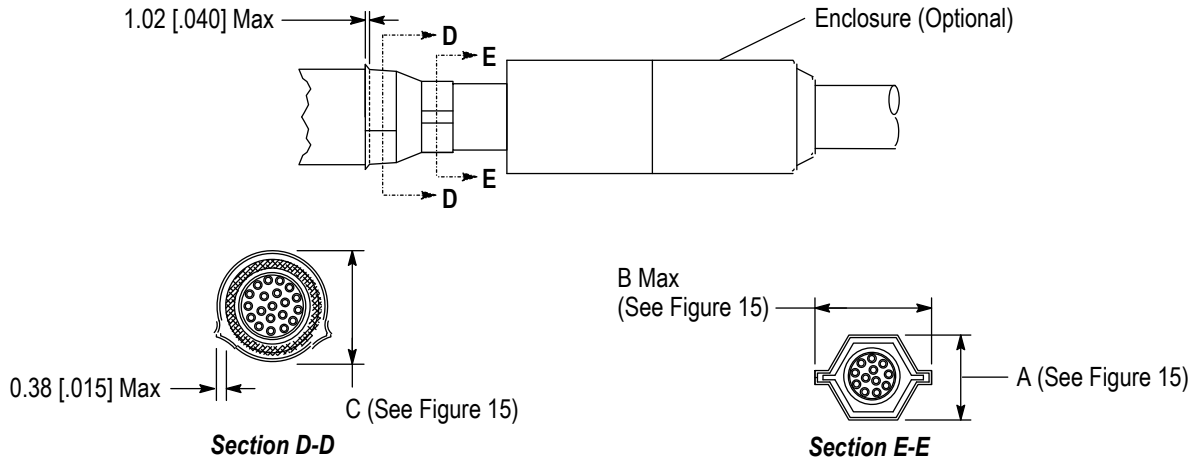


Figure 11

6. Crimp the ferrule using the tooling and crimp die kit specified in Section 5, TOOLING. Crimp requirements shall be as specified as shown in Figure 12.

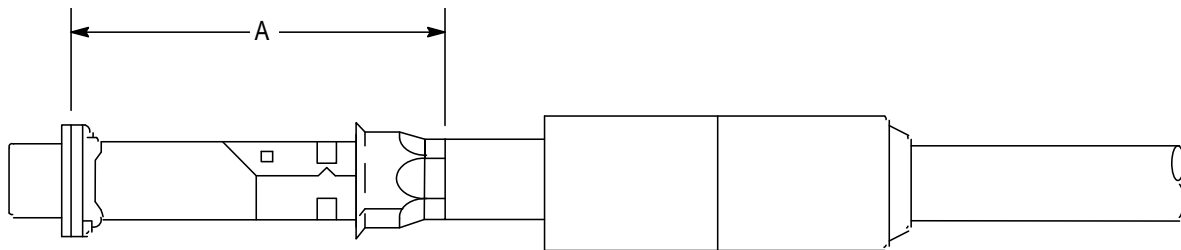


CONTACT POSITION	CABLE (O.D.) OUTSIDE DIAMETER●	DIMENSION		
		A ±0.05 [.002]	B (MAX)	C ±0.05 [.002]
9 15 25	4.19-4.83 [.165-.190]	4.47 [.176]	10.21 [.402]	10.92 [.430]
	4.83-5.51 [.190-.217]	5.38 [.212]	9.58 [.377]	
	5.51-6.25 [.217-.246]	6.05 [.238]	---	
	6.25-7.21 [.246-.284]	6.65 [.262]	10.85 [.427]	
	7.21-8.23 [.284-.324]	7.62 [.300]	---	
	8.23-9.52 [.324-.375]	8.64 [.340]	---	
	9.52-11.05 [.375-.435]	9.96 [.392]	---	
37	8.59-9.78 [.338-.385]	8.99 [.354]	11.84 [.466]	13.46 [.530]
	9.52-10.97 [.375-.432]	9.96 [.392]	12.95 [.510]	
	10.72-12.45 [.422-.490]	10.57 [.416]	16.00 [.630]	
	12.19-14.27 [.480-.562]	12.04 [.474]	16.00 [.630]	

●Ferrule choice is dependent upon cable O.D. used. See ferrule customer drawings 747579 and 747580.

Figure 12

7. The length of the terminated assembly shall be as indicated in Figure 13.



CONTACT POSITION	DIMENSION A ±0.38 [.015]
9	38.61 [1.520]
15	
25	
37	47.42 [1.867]

Figure 13

8. If included, push the enclosure over the connector until it is located as shown in Figure 14 and install the jackscrews.

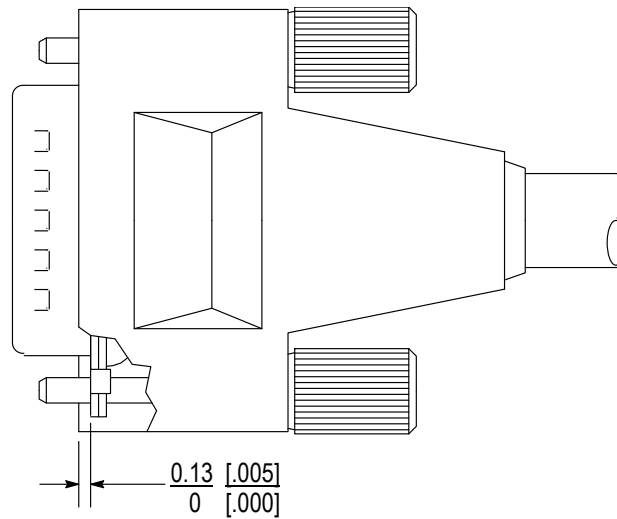


Figure 14



CAUTION

Damaged product must not be used. If damaged contacts, housings, or connector shielding is evident, it must be replaced. Contacts must not be reterminated.

4. QUALIFICATIONS

AMPLIMITE HDE-20 Shielding Hardware Kits With and Without Enclosures are not required to be agency evaluated.

5. TOOLING

AMPLIMITE HDE-20 Connector ferrules can be terminated to cable using hand or pneumatic crimping tools. Recommended tooling, and instructional material, is provided in Figure 15.

CONTACT POSITION	CABLE (O.D.) OUTSIDE DIAMETER	TOOLING (DOCUMENT)				
		DIE SET	EXPANSION TOOL	HAND TOOL	PNEUMATIC TOOL	PNEUMATIC TOOL DIE SET HOLDER
9 15 25	4.19-4.83 [.165-.190]	543424-3 (408-9507)	58241-1 (408-9199)	543344-1 (408-9315)	312522-2 (409-5843)	58449-1 (408-9721)
	4.83-5.51 [.190-.217]	543424-2 (408-9507)				
	5.51-6.25 [.217-.246]	543424-8 (408-9507)				
	6.25-7.21 [.246-.284]	543424-1 (408-9507)				
	7.21-8.23 [.284-.324]	543424-7 (408-9507)				
	8.23-9.52 [.324-.375]	543424-6 (408-9507)				
	9.52-11.05 [.375-.435]	543424-5 (408-9507)				
37	8.59-9.78 [.338-.385]	543425-1 (408-9508)	58241-2 (408-9199)			
	9.52-10.97 [.375-.432]	58238-1 (408-9243)				
	10.72-12.45 [.422-.490]	58237-2 (408-9242)				
	12.19-14.27 [.480-.562]	58237-1 (408-9242)				

Figure 15 (cont'd)

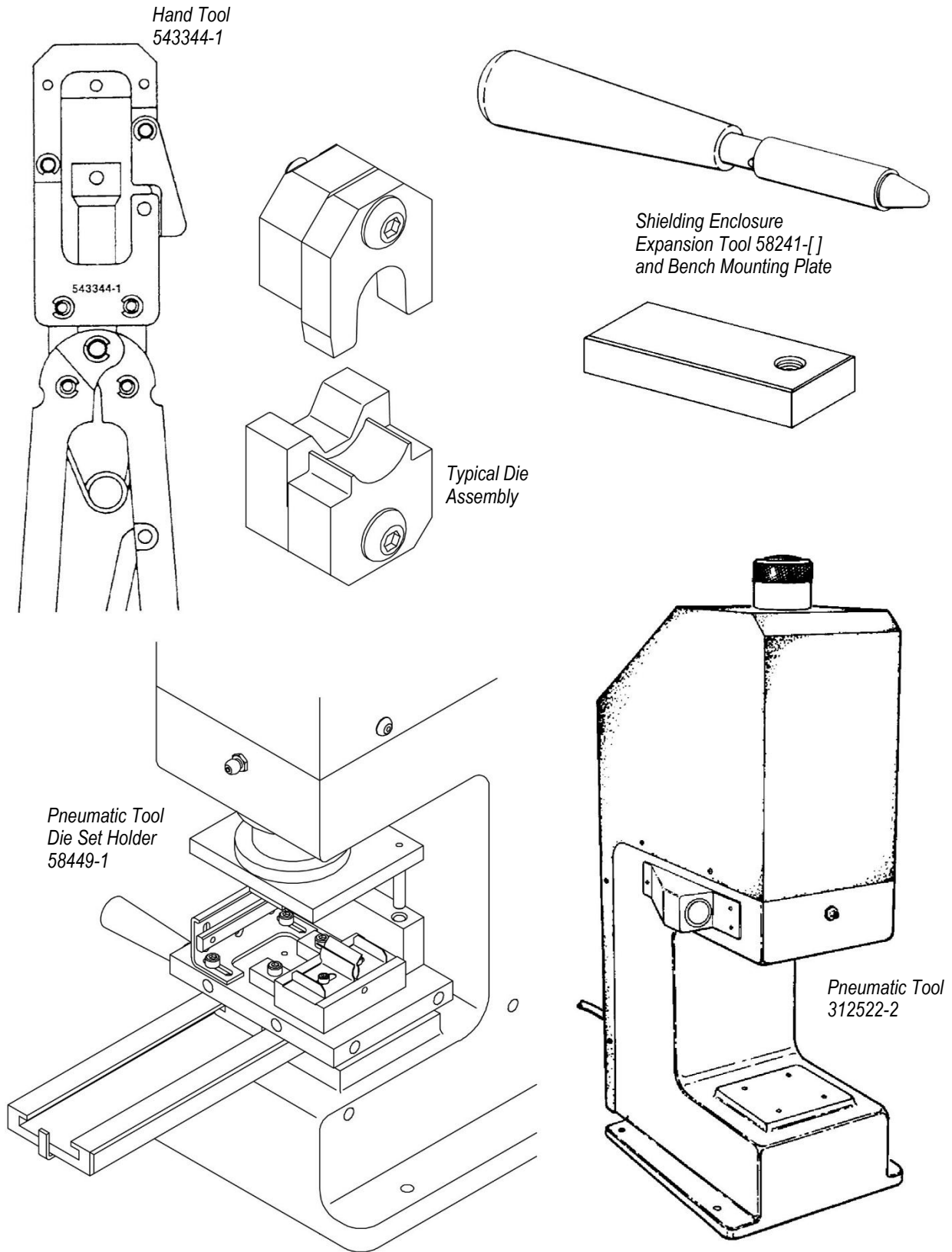


Figure 15 (end)

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.

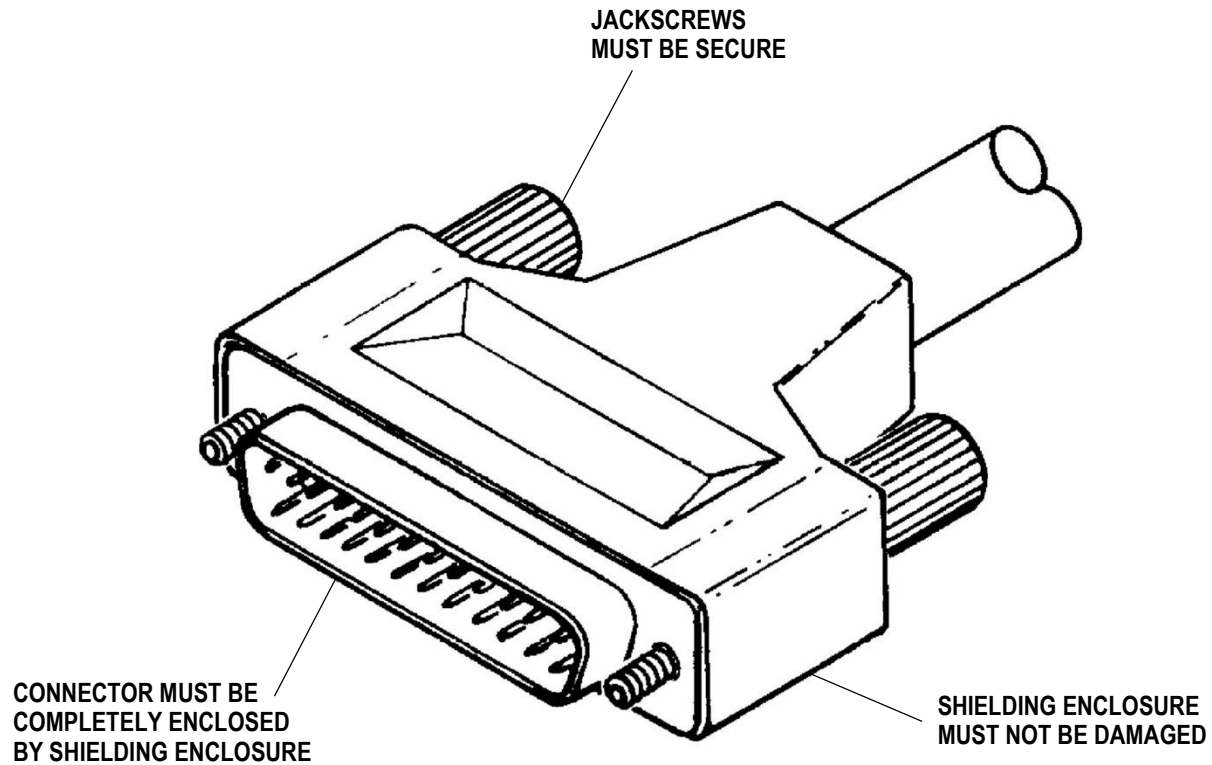


FIGURE 16. VISUAL AID