

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 [$\pm .005$] 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 the application of AMPLIMITE HDP-20 and Economy Crimp Snap Subminiature D Commercial Connectors with all-plastic contact retention. These commercial connectors are available with or without shielding or shielding enclosure kits. Contacts are available in three snap-in types: crimp, posted, and solder cup. The crimp snap-in contacts are available with or without an insulation support barrel for strain relief. Refer to Application Specification 114-10000 for information on these HD-20 Precision Formed Contacts. Various accessories are compatible with the connectors and kits. Assembled connectors are designed to meet the requirements of Military Specification MIL-C-24308.

AMPLIMITE HDP-20 Connectors come in a variety of sizes for your production needs and are adaptable to a variety of mounting and hardware requirements. Using a keystone mating face configuration, these connectors incorporate multiple polarization and mating alignment features, allowing flexibility in system design. The plug connector has an integral hood which protects the inserted pin contacts. The cavity rows are number-coded for your convenience. These connectors accept a contact with a wire size range of 28-18 AWG.

When corresponding with TE Connectivity Personnel, use the terminology provided on this specification to help facilitate your inquiry for information. Basic terms and features of components are provided in Figure 1.

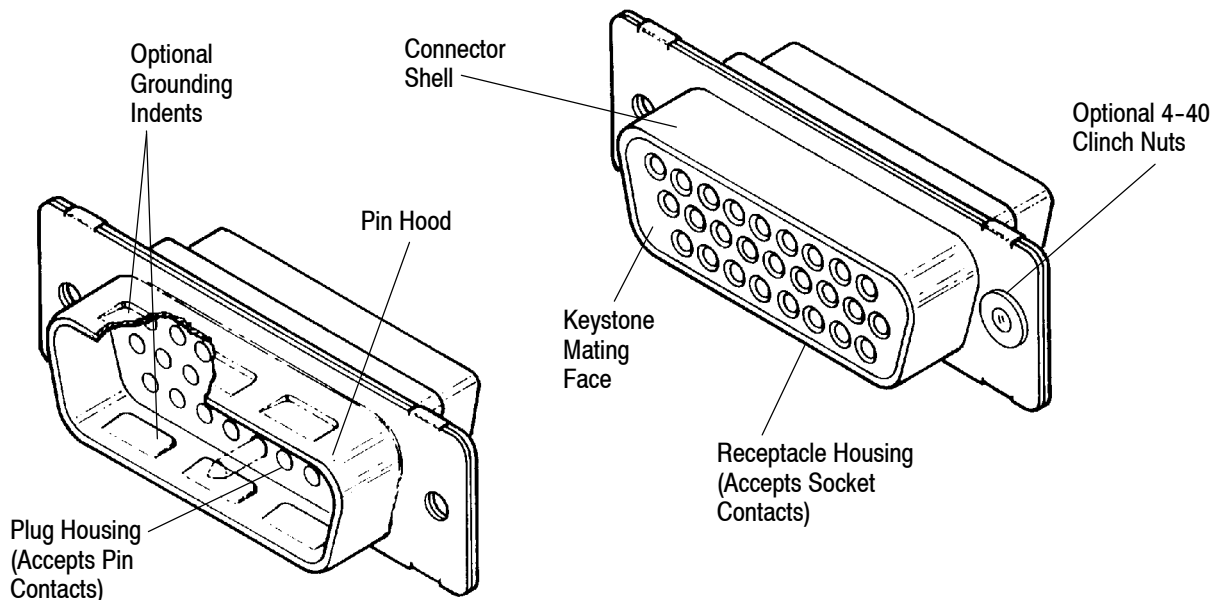


Figure 1

2. Reference Material

2.1. Revision Summary

This paragraph is reserved for a revision summary covering the most recent additions and changes made to this specification which include the following:

- Removed old logos from artwork.
- Updated document to corporate requirements.

2.2. Customer Assistance

Reference Part Number 205206 and Product Code 5091 are representative numbers of AMPLIMITE HDP-20 Subminiature D Commercial Connectors. 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 TE Representative or, after purchase, by calling the Tooling Assistance Center or the Product Information number at the bottom of page 1.

2.3. Drawings

Customer Drawings for each product part number are available from the 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.

2.4. Manuals

Manual 402-40 is available from the service network. This manual provides information on various flux types and characteristics along with the commercial designation and flux removal procedures. A checklist is included in the manual as required for information on soldering problems.

2.5. Specifications

A. Product Specifications

Product Specifications 108-40005, 108-40030, 108-40032 provide product performance requirements and test information.

B. Application Specifications

Application Specifications 114-10000, 114-25034, 114-40002, 114-40003, 114-40008, 114-40010, 114-40013, 114-40015, 114-40017, 114-40023, 114-40026, 114-40027, and 114-40028 contain design, inspection, and assembly procedures for AMPLIMITE HDP-20 Connectors.

2.6. 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> |
|------------------------|---|
| 408-4245 | Seating Fixture Assembly 543615-1 for AMPLIMITE HDP Series One-Piece Shield |
| 408-6551 | Slide Latch Kits and Locking Post Kits |
| 408-6609 | AMPLIMITE HD-20 Shielded Cable Clamp Kits |
| 408-6769 | AMPLIMITE HDP-20, HDP-22, and HDE-20 Right-Angle Metal Shielded Cable Clamp Kits |
| 408-6906 | Release Tool Kit 91266-2 for AMPLIMITE Connector Cable Clamps |
| 408-7514 | AMPLIMITE High Density (HDP-20) Connectors with Crimp-Type Contacts |
| 408-7555 | Cable Clamp Assemblies for AMPLIMITE HD-20 and HD-22 Connectors |
| 408-7799 | AMPLIMITE Solder Pot contacts (66569-3 and 66570-3) |
| 408-7837 | Female Screwlock Kits and Male Screw Retainer Kits |
| 408-8083 | Ferrule Applicator Assembly No. 812407-1 |
| 408-9010 | Shielding Hardware Kits for AMPLIMITE HDP-20 and HDE-20 Connectors |
| 408-9128 | AMPLIMITE Latching Blocks |
| 408-9130 | AMPLIMITE Two-Piece Spring Latches for Straight Exit RFI/EMI Cable Clamps, Straight/90 Degree Exit Two-Piece Cable Clamps, and Universal Cable Clamps |
| 408-9131 | Two-Piece Spring Latches for AMPLIMITE Connectors Used with Post Molded Strain Relief |
| 408-9172 | Shielding Hardware Enclosure Kits for AMPLIMITE Connectors |
| 408-9199 | Shielding Enclosure Expansion Tool Kits 58241-1, -2, and -4 |
| 408-9238 | Universal Cable Clamp Kits for AMPLIMITE Connectors |
| 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 |
| 408-9318 | Crimping Die Assemblies 543013-[] |
| 408-9404 | Insertion/Extraction Tool 91285-1 and Replacement Tip Kits 543382 |

| Document Number | Document Title |
|-----------------|--|
| 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 |
| 409-5842 | AMP-O-LECTRIC* Model "G" Terminating Machine 354500-[] |
| 409-5843 | 2700-Lb. Pneumatic Power Unit 312522-[] |

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

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

B. Shelf Life

The connectors should remain in the shipping containers until ready for use to prevent damage to the housings. The products 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 housings near any chemicals listed below, as they may cause stress corrosion cracking in the components.

| | | | | |
|----------|------------|------------------|----------|-----------|
| Alkalies | Carbonates | Phosphates | Citrates | Tartrates |
| Amines | Citrates | Sulfides | Nitrites | |
| Ammonia | Nitrites | Sulfur Compounds | | |

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



3.2. Mounting Panel Cutout

AMPLIMITE HDP-20 Connectors are adaptable to rack-and-panel applications. We recommend mounting the plug to the panel and the receptacle to the rack. Figure 2 provides panel cutout, mating, and mounting clearance dimensions.

NOTE Dimensions H and J apply when using cable clamps or latching blocks. Connectors with floating bushings are for use in drawer applications, or other difficult alignment situations.

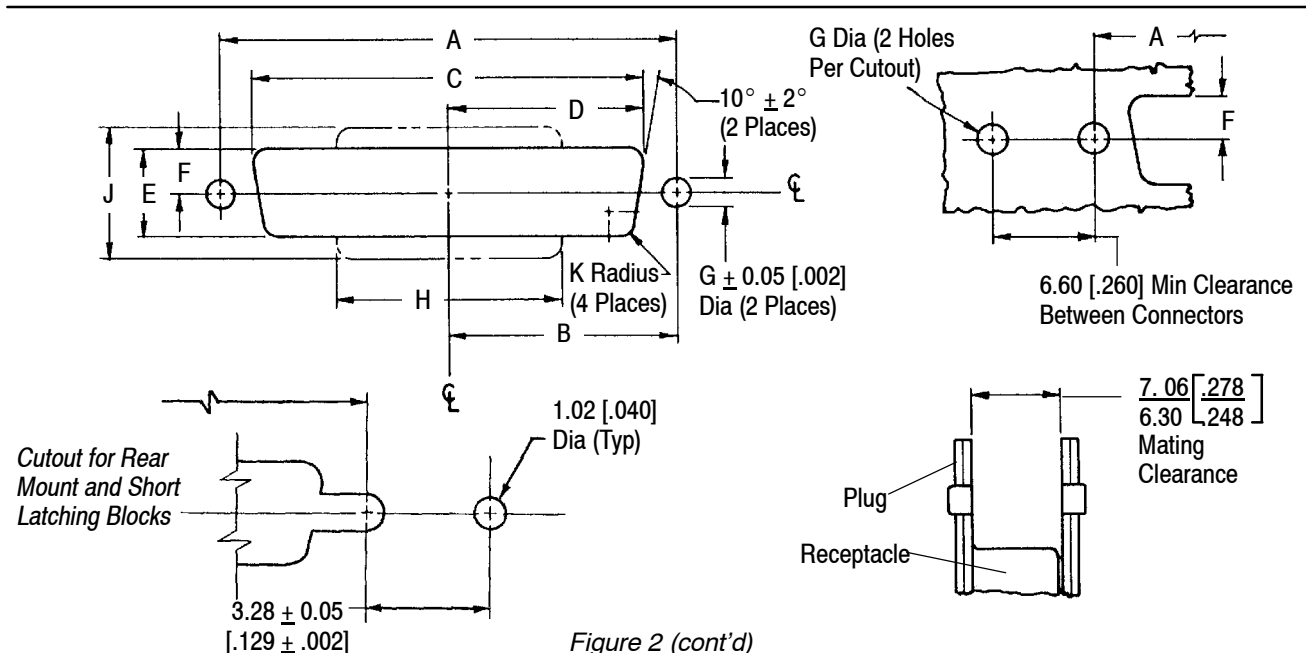


Figure 2 (cont'd)

| CONNECTOR POSITIONS AND SHELL SIZE | PANEL MTG POSN | FLOATING BUSHING | DIMENSIONS ± 0.05 [.002] | | | | | | | | | |
|------------------------------------|----------------|------------------|------------------------------|------------------|------------------|------------------|-----------------|----------------|----------------|------------------|-----------------|----------------|
| | | | A | B | C | D | E | F | G | H● | J● | K |
| 9 Position Size 1 | Front | Yes | 24.99 [.984] | 12.50 [.492] | 23.01 [.906] | 11.51 [.453] | 13.84 [.545] | 6.93 [.273] | 2.24 [.088] | --- | --- | 2.11 [.083] |
| | | No | | | 22.20 [.874] | 11.10 [.437] | 13.03 [.513] | 6.53 [.257] | 3.05 [.120] | --- | --- | |
| | Rear | Yes | | | 21.29 [.838] | 10.64 [.419] | 12.22 [.481] | 6.12 [.241] | 2.24 [.088] | --- | --- | 3.35 [.132] |
| | | No | | | 20.47 [.806] | 10.24 [.403] | 11.40 [.449] | 5.72 [.225] | 3.05 [.120] | 13.97 [.550] | 19.05 [.750] | |
| 15 Position Size 2 | Front | Yes | 33.32 [1.312] | 16.66 [.656] | 31.34 [1.234] | 15.67 [.617] | 13.84 [.545] | 6.93 [.273] | 2.24 [.088] | --- | --- | 2.11 [.083] |
| | | No | | | 30.53 [1.202] | 15.27 [.601] | 13.03 [.513] | 6.53 [.257] | 3.05 [.120] | --- | --- | |
| | Rear | Yes | | | 29.62 [1.166] | 14.81 [.583] | 12.22 [.481] | 6.12 [.241] | 2.24 [.088] | --- | --- | 3.35 [.132] |
| | | No | | | 28.80 [1.134] | 14.40 [.567] | 11.40 [.449] | 5.72 [.225] | 3.05 [.120] | 18.54 [.730] | 19.05 [.750] | |
| 25 Position Size 3 | Front | Yes | 47.04 [1.852] | 23.52 [.926] | 45.08 [1.775] | 22.56 [.888] | 13.84 [.545] | 6.93 [.273] | 2.24 [.088] | --- | --- | 2.11 [.083] |
| | | No | | | 44.27 [1.743] | 22.15 [.872] | 13.03 [.513] | 6.53 [.257] | 3.05 [.120] | --- | --- | |
| | Rear | Yes | | | 43.33 [1.706] | 21.67 [.853] | 12.22 [.481] | 6.12 [.241] | 2.24 [.088] | --- | --- | 3.35 [.132] |
| | | No | | | 42.52 [1.674] | 21.26 [.837] | 11.40 [.449] | 5.72 [.225] | 3.05 [.120] | 32.38 [1.275] | 19.05 [.750] | |
| 37 Position Size 4 | Front | Yes | 63.50 [2.500] | 31.75 [1.250] | 61.54 [2.423] | 30.78 [1.212] | 13.84 [.545] | 6.93 [.273] | 2.24 [.088] | --- | --- | 2.11 [.083] |
| | | No | | | 60.73 [2.391] | 30.38 [1.196] | 13.03 [.513] | 6.53 [.257] | 3.05 [.120] | --- | --- | |
| | Rear | Yes | | | 59.79 [2.354] | 29.90 [1.177] | 12.22 [.481] | 6.12 [.241] | 2.24 [.088] | --- | --- | 3.35 [.132] |
| | | No | | | 59.08 [2.326] | 29.54 [1.163] | 11.40 [.449] | 5.72 [.225] | 3.05 [.120] | 48.77 [1.920] | 19.05 [.750] | |
| 50 Position Size 5 | Front | Yes | 61.11 [2.406] | 30.56 [1.203] | 59.16 [2.329] | 29.59 [1.165] | 16.64 [.655] | 8.33 [.328] | 2.24 [.088] | --- | --- | 2.11 [.083] |
| | | No | | | 58.34 [2.297] | 29.18 [1.149] | 15.82 [.623] | 7.92 [.312] | 3.05 [.120] | --- | --- | |
| | Rear | Yes | | | 57.15 [2.250] | 28.58 [1.125] | 14.91 [.587] | 7.47 [.587] | 2.24 [.088] | --- | --- | 3.35 [.132] |
| | | No | | | 56.34 [2.218] | 28.17 [1.109] | 14.10 [.555] | 7.06 [.278] | 3.05 [.120] | 43.64 [1.718] | 19.05 [.750] | |

- Dimensions H and J apply when using cable clamps or latching blocks. Connectors with floating bushings are for use in drawer applications, or other difficult alignment situations.

Figure 2 (end)

3.3. Contact Insertion

Terminated contacts are inserted into the back of the connector housing, and snap in place. The cavity rows are numbered for your convenience. If your design does not require the use of all cavities, the contacts should be distributed evenly throughout the connector.

NOTE

After inserting a contact into the housing, pull back lightly on the wire to make sure the contact is fully seated.



3.4. Terminated Strip Length

Terminated strip length shall be as indicated in Figure 3.

| TERMINATED STRIP LENGTH | |
|-------------------------|---------------|
| CONTACT POSN | "B" LENGTH |
| 9 | |
| 15 | 33.02 [1.300] |
| 25 | |
| 37 | 39.12 [1.540] |
| 50 | 38.1 [1.500] |

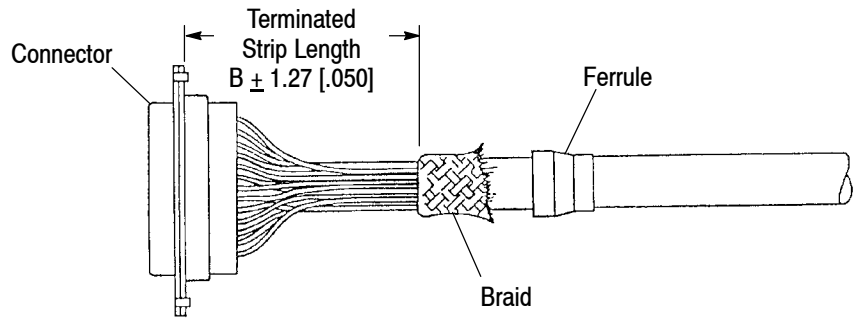


Figure 3

3.5. Ferrule Crimp Requirements

Slide the ferrule onto the cable prior to stripping the cable. Keep the larger diameter end of the ferrule toward the end to be terminated. If the ferrule has only one diameter, no orientation is required. After the wires and contacts have been terminated slide the ferrule until it is over the braid. Crimp the braid according to the instructions packaged with the appropriate tooling. See Figure 4 for ferrule crimp requirements.

NOTE

Trim excess braid flush with front of ferrule with a knife.



| TERMINATED ASSY LENGTH | |
|------------------------|---------------|
| CONTACT POSN | "F" LENGTH |
| 9 | |
| 15 | 38.99 [1.535] |
| 25 | |
| 37 | 48.06 [1.892] |
| 50 | 47.65 [1.876] |

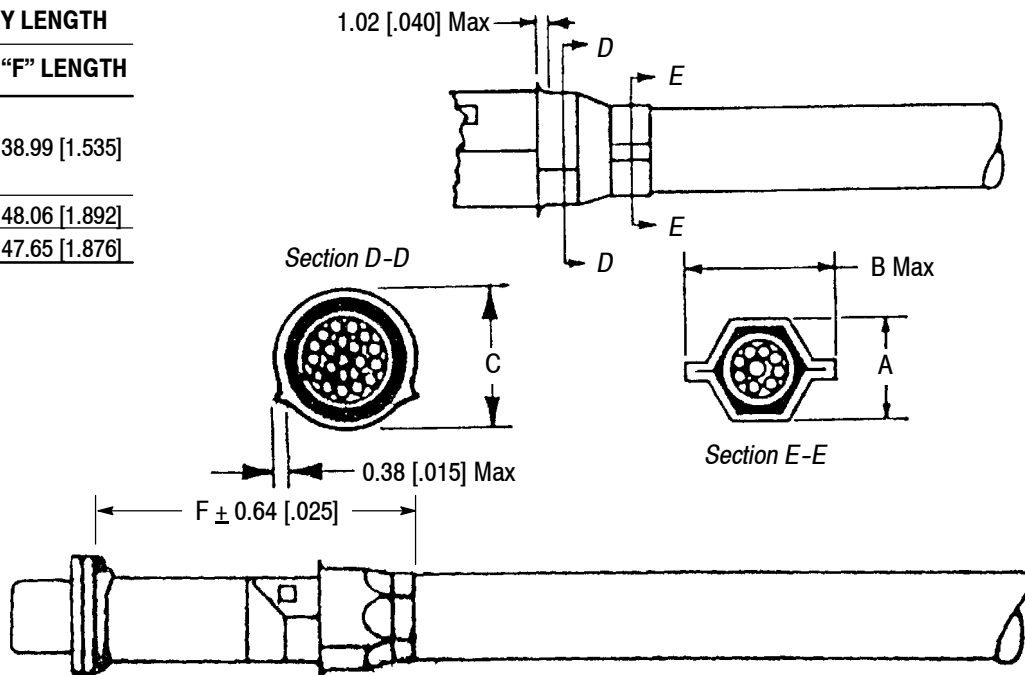


Figure 4 (cont'd)

| CABLE DIAMETER ACCEPTED | CABLE CRIMP "A" | CABLE CRIMP "B" | SHIELD CRIMP "C" |
|-------------------------|------------------------------------|-----------------|-----------------------------------|
| 4.19-4.83 [.165-.190] | 4.5 ± 0.13 [.177 \pm .005] | 10.21 [.402] | 10.9 ± 0.13 [.429 \pm .005] |
| 4.83-5.51 [.190-.217] | 5.41 ± 0.13 [.213 \pm .005] | 9.58 [.377] | |
| 5.51-6.25 [.217-.246] | 6.07 ± 0.13 [.239 \pm .005] | --- | |
| 6.25-7.21 [.246-.284] | 6.68 ± 0.13 [.263 \pm .005] | 10.85 [.427] | |
| 7.21-8.23 [.284-.324] | 7.65 ± 0.13 [.301 \pm .005] | --- | |
| 8.23-9.52 [.324-.375] | 8.66 ± 0.13 [.341 \pm .005] | --- | |
| 9.52-11.10 [.375-.437] | 9.98 ± 0.13 [.393 \pm .005] | --- | |
| 10.16-11.56 [.400-.455] | 10.49 ± 0.13 [.413 \pm .005] | --- | 13.72 ± 0.2 [.540 \pm .008] |
| 5.84-6.73 [.230-.265] | 6.43 ± 0.2 [.253 \pm .008] | --- | |
| 8.58-9.78 [.338-.385] | 9.14 ± 0.2 [.360 \pm .008] | 11.84 [.466] | |
| 9.52-10.97 [.375-.432] | 10.16 ± 0.2 [.400 \pm .008] | 12.95 [.510] | |
| 10.72-12.45 [.422-.490] | 10.72 ± 0.2 [.422 \pm .008] | 16.00 [.630] | |
| 12.19-14.27 [.480-.562] | 12.19 ± 0.2 [.480 \pm .008] | 16.00 [.630] | |

Figure 4 (end)

3.6. Hardware and Accessories

The AMPLIMITE HDP-20 Connectors are compatible with the mounting hardware and accessories as shown in Figure 5. The instructional material listed (in parentheses) with each accessory provides details for product selection and assembly procedures.

A. Shielding Hardware Kits

Shielding Hardware Kits (Instruction Sheet 408-9010) and Shielding Hardware Enclosure Kits (Instruction Sheet 408-9172) are available for AMPLIMITE connectors. Hardware kits include a connector and inner and outer shield halves. Enclosure kits also include a protective flexible thermoplastic enclosure and two male jackscrews. The thermoplastic enclosure is assembled to the kit using Shielding Enclosure Expansion Tools with base PN 58241 (Instruction Sheet 408-9199). Cable ferrules must be purchased separately.

B. Cable Clamp Assembly Kits

Cable clamp assembly kits are available in straight/45° and straight/90° versions (Instruction Sheet 408-7555). The clamp assemblies can be mated using spring latches (Instruction Sheets 408-9130, 408-9131) and latching blocks (Instruction Sheet 408-9128), or using screwlocks and retainers (Instruction Sheet 408-7837).

C. Shielded Cable Clamp Assembly Kits

Metal RFI/EMI Shielded Cable Clamp Assemblies come in two-piece kits, and are available in both straight-exit (Instruction Sheet 408-6609) and 90°-exit (Instruction Sheet 408-6769) versions. Unlike the hardware kits, these cable clamp kits allow the cable to be fully prepared and terminated to the connector before shield installation. The straight-exit shield is attached to the connector using saddle washers and screws. The 90°-exit shield is attached using slide latches and screws.

D. Jacketed Shielded Cable

For applications using jacketed shielded cable with AMPLIMITE shields (see subparagraph C), two ferrule options are available. A split-ring ferrule is used with a foil or braided shield and is not crimped. An inner and an outer crimped ferrule are used with applications using braid-shielded cable only.

E. Slide Latch Assemblies and Clips

One-Piece Slide Latch or Two-Piece Slide Latch Clips (Instruction Sheet 408-6551) attach to the connector mating face. The mating connector uses Locking Post Assemblies which latch into the slide latch assembly.

F. Universal Cable Clamp Kits

Universal Cable Clamp Kits (Instruction Sheet 408-9238) are available for connectors with a number 3 shell size (25 position) only. Each kit consists of two cable clamp halves, a two-piece braid termination clamp set (shielded versions only), a cable clamp wedge set, and mounting screws. Release Tool Kit 91266-2 (Instruction Sheet 408-6906) is used to release assembled universal cable clamp halves.

G. One Piece Economy Shielding Hardware

AMPLIMITE One-Piece Economy Shielding Hardware is available for AMPLIMITE Size 1, 2, and 3 connectors. These press-on hardware shields must be seated with Seating Fixture 543615-1 (Instruction Sheet 408-4245). The shielding hardware is copper with tin overplating and is available in straight 90° exit versions only.

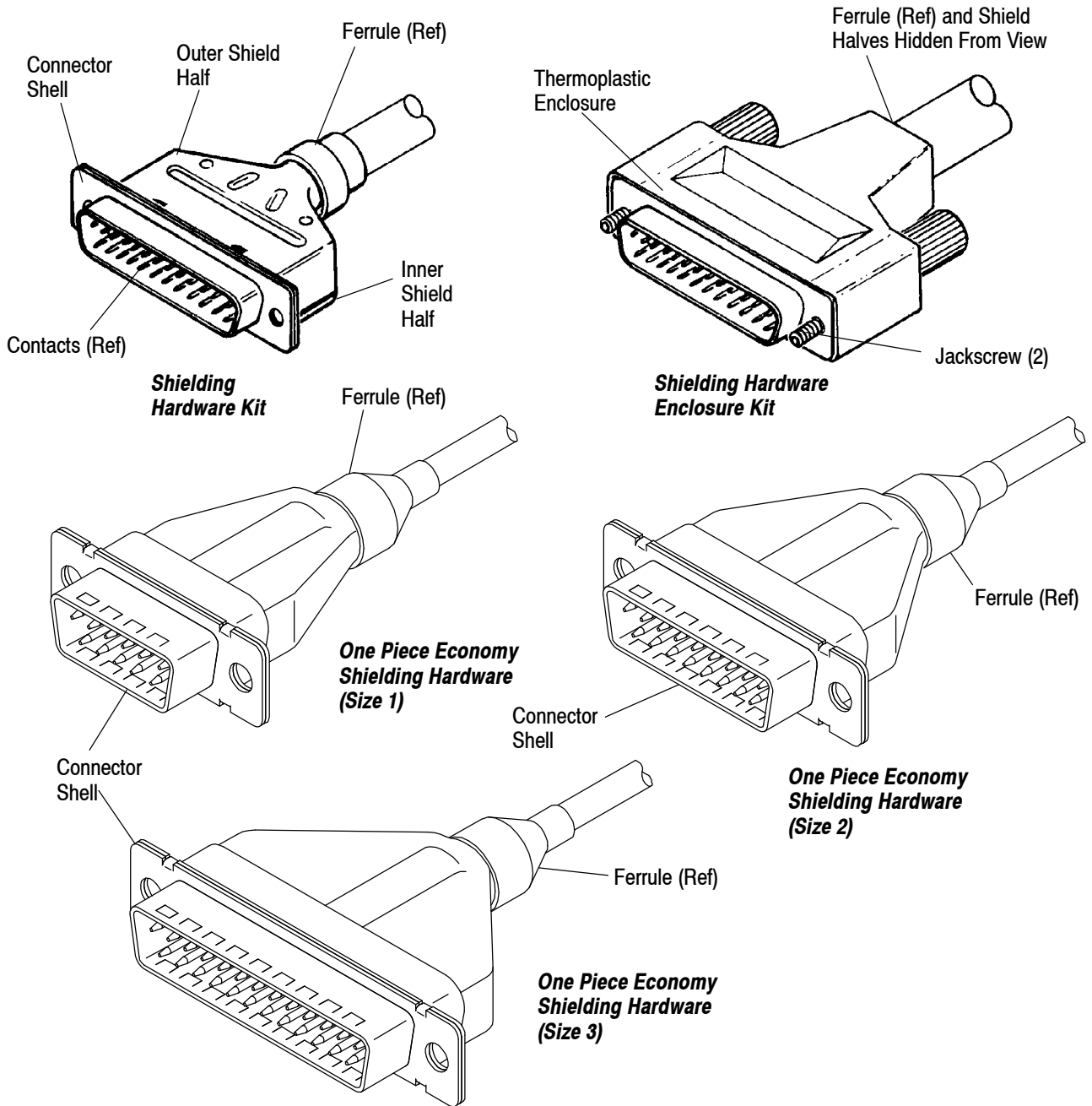
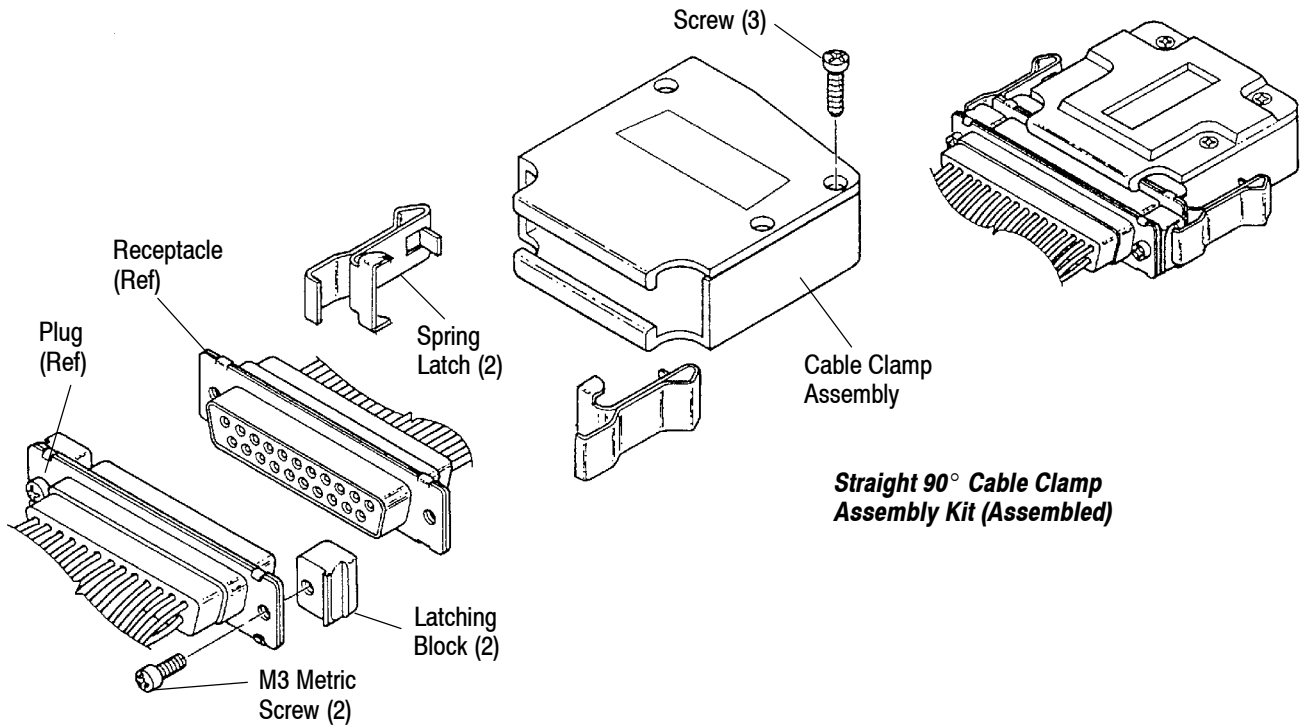
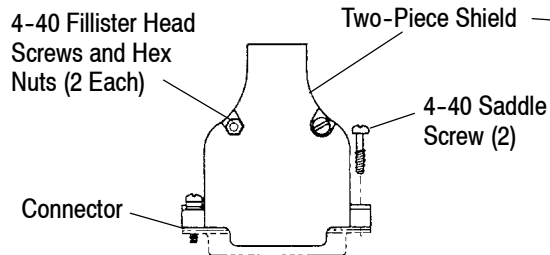
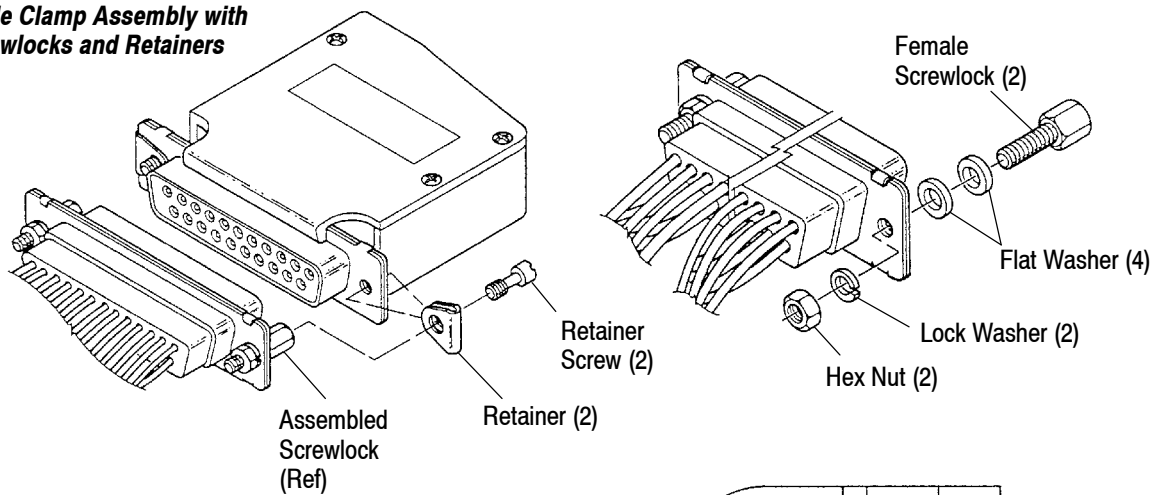


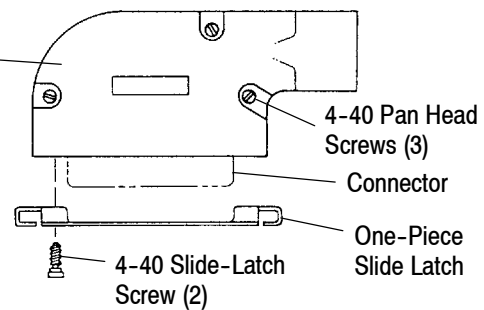
Figure 5 (cont'd)



Cable Clamp Assembly with Screwlocks and Retainers



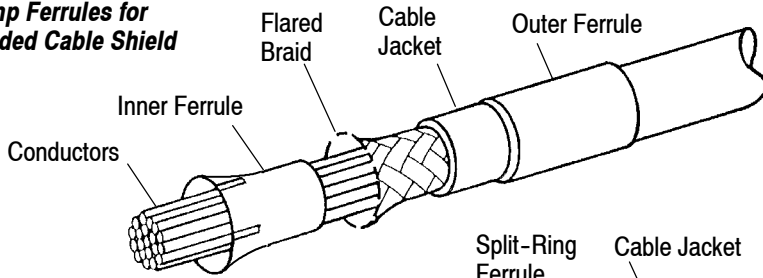
Straight Exit RFI/EMI Shielded Cable Clamp Assembly Kit



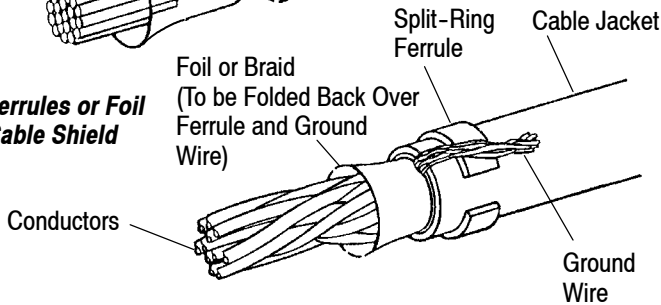
90° Exit RFI/EMI Shielded Cable Clamp Assembly Kit

Figure 5 (cont'd)

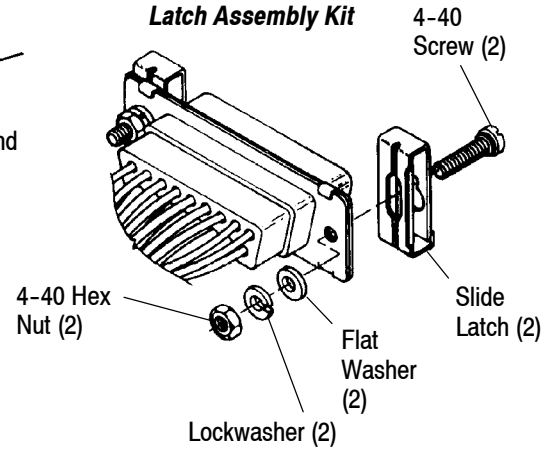
Crimp Ferrules for Braided Cable Shield



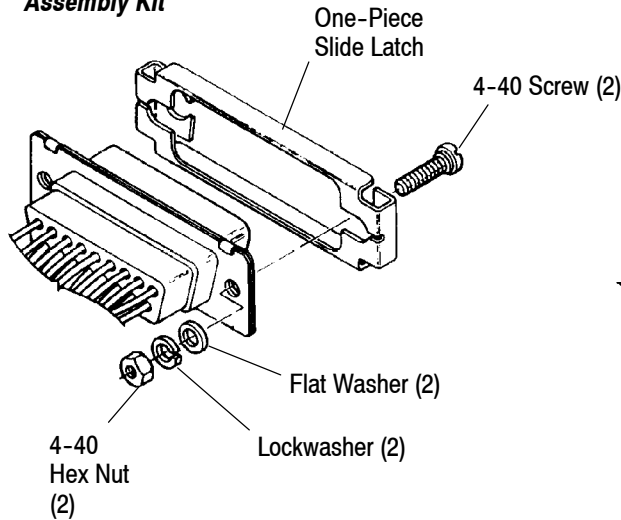
Split-Ring Ferrules or Foil or Braided Cable Shield



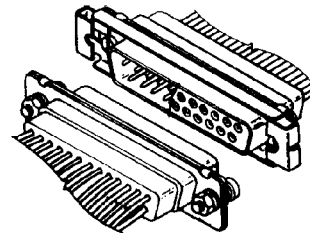
Two-Piece Slide Latch Assembly Kit



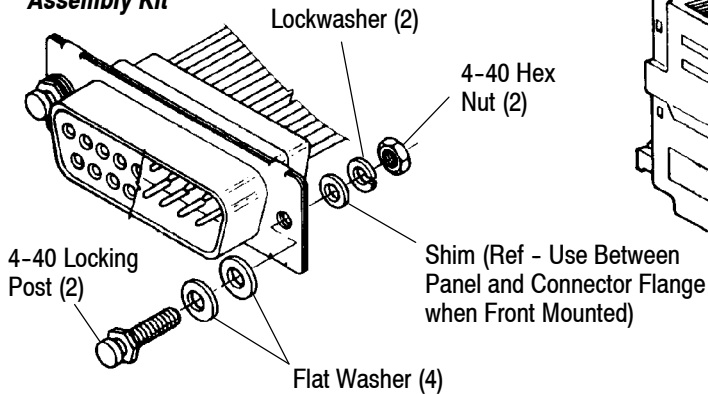
One-Piece Slide Latch Assembly Kit



Typical Slide Latch Application



Locking Post Assembly Kit

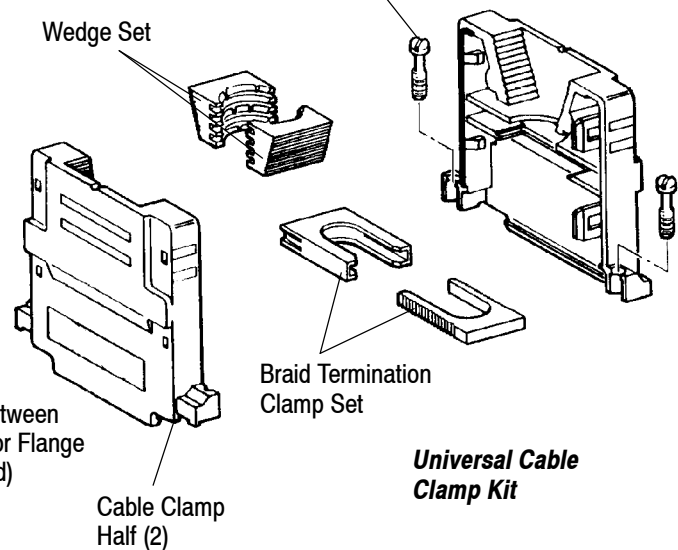


Mounting Screw (2)

Wedge Set

Braid Termination Clamp Set

Universal Cable Clamp Kit



■ One-piece slide latches for shell sizes 1, 4, and 5 cannot be used with cable clamps that extend beyond the front of the connector flange.

Figure 5 (end)

3.7. Repair

Use Insertion/Extraction Tool 91285-1 (Instruction Sheet 408-9404) to remove individual contacts from housings for replacement or for relocation to another housing cavity. Damaged or worn contacts may be replaced provided there is sufficient slack, after restripping the wire, to insert the new contact.

CAUTION *DO NOT re-use damaged or worn contacts. Instead, replace them with new contacts and discard the old ones.*



4. QUALIFICATION

AMPLIMITE HDP-20 Subminiature D Commercial Connectors are Listed by Underwriters Laboratories Inc. (UL) in File Number E-28476 and Certified by CSA International in File Number LR-16455. These connector assemblies will also mate with any size 20 Subminiature D complying with the dimensions in Military Standard MIL-C-24308.

5. TOOLING

AMPLIMITE HDP-20 Connector ferrules can be terminated to wire using hand, semi-automatic, or automatic crimping tools. Recommended tooling, and instructional material, is provided in Figures 6 and 7.

AMPLIMITE HDP Series One-Piece Shield can be applied by using Seating Fixture 543615-1. The seating fixture assembly is designed to fully seat a one-piece shield for an RFI/EMI shielded AMPLIMITE HDP Connector Assembly for customer-applied overmolding. Refer to Instruction Sheet 408-4245 for specific instructions on this application.

5.1. Braid Shielded Cable

Inner and outer crimp ferrules, used with braid-shielded cable only, are crimped with the tooling listed in the table in Figure 6. These arrangements are able to stand alone, or may be used with a variety of shielded and unshielded cable clamps.

The dies listed in this table must be inserted into corresponding tooling. Hand tool dies 543013-[] (Instruction Sheet 408-9318) fit Hand Crimping Tool 543344-1 (Instruction Sheet 408-9315), while applicator dies (no publication) fit Ferrule Applicator Assembly 812407-1 (Instruction Sheet 408-8083). The applicator is powered by the AMP-O-LECTRIC Model "G" Terminating Machine 354500-[] (Customer Manual 409-5842).

The exact cable clamp used determines inner ferrule size and shape. The inner ferrule, in turn, determines the dies. Some ferrules are stepped, and some straight; some stepped ferrules have a large flared end, some a smaller flare. These differences are noted in the table.

| CONNECTOR OR CABLE CLAMP SHELL SIZE | CABLE DIAMETER ACCEPTED | INNER FERRULE TYPE (SIZE) | HAND TOOL DIE SET | HAND TOOL DIE SET MARKING | APPLICATOR DIE SET |
|-------------------------------------|-------------------------|---------------------------|-------------------|---------------------------|--------------------|
| 9 Position Size 1 | 4.83-6.10 [.190-.240] | Stepped | 543013-2 | B-1 | 813809-1 |
| | | Straight | 543013-1 | A-1 | |
| | 5.84-7.11 [.230-.280] | Stepped | 1-543013-7 | B-8 | 813809-7 |
| | | Straight | 543013-6 | B-3 | 813809-5 |
| 15 Position Size 2 | 4.83-6.10 [.190-.240] | Stepped (Large) | 543013-3 | C-1 | 813809-1 |
| | | Stepped (Small) | 543013-2 | B-1 | |
| | 5.84-7.11 [.230-.280] | Stepped | 1-543013-6 | C-8 | 813809-7 |
| | 7.62-8.89 [.300-.350] | Stepped | 543013-4 | C-2 | 813809-2 |
| | 8.00-9.27 [.315-.365] | Straight | 543013-6 | B-3 | 813809-5 |
| | 9.65-10.92 [.380-.430] | Straight | 543013-7 | C-4 | 813809-3 |

Figure 6 (cont'd)

| CONNECTOR OR CABLE CLAMP SHELL SIZE | CABLE DIAMETER ACCEPTED | INNER FERRULE TYPE (SIZE) | HAND TOOL DIE SET | HAND TOOL DIE SET MARKING | APPLICATOR DIE SET |
|-------------------------------------|-------------------------|---------------------------|-------------------|---------------------------|--------------------|
| 25 Position Size 3 | 4.83-6.10 [.190-.240] | Stepped | 543013-3 | C-1 | 813809-1 |
| | 5.84-7.11 [.230-.280] | Stepped | 1-543013-6 | C-8 | 813809-7 |
| | 7.62-8.89 [.300-.350] | Stepped (Small) | 543013-4 | C-2 | 813809-2 |
| | | Stepped (Large) | 543013-5 | D-2 | |
| | 9.65-10.92 [.380-.430] | Straight | 543013-7 | C-4 | 813809-3 |
| | | Stepped | 543013-8 | D-4 | |
| 11.94-13.46 [.470-.530] | Straight | 1-543013-0 | D-5 | 813809-4 | |
| 37 Position Size 4 | 4.83-6.10 [.190-.240] | Stepped | 543013-3 | C-1 | 813809-1 |
| | 5.84-7.11 [.230-.280] | Stepped | 1-543013-6 | C-8 | 813809-7 |
| | 7.62-8.89 [.300-.350] | Stepped | 543013-4 | C-2 | 813809-2 |
| | 9.65-10.92 [.380-.430] | Straight | 543013-7 | C-4 | 813809-3 |
| | | Stepped | 543013-9 | E-4 | |
| | 12.06-13.34 [.475-.525] | Stepped | 1-543013-1 | E-5 | 813809-4 |
| | 14.99-16.51 [.590-.650] | Straight | 1-543013-3 | E-6 | — |
| 50 Position Size 5 | 4.83-6.10 [.190-.240] | Stepped | 543013-2 | B-1 | 813809-1 |
| | 7.62-8.89 [.300-.350] | Stepped | 543013-5 | D-2 | 813809-2 |
| | 8.00-9.27 [.315-.365] | Straight | 543013-6 | B-3 | 813809-5 |
| | 9.65-10.92 [.380-.430] | Stepped | 543013-8 | D-4 | 813809-3 |
| | 11.94-13.46 [.470-.530] | Straight | 1-543013-0 | D-5 | 813809-4 |
| | | Stepped | 1-543013-2 | F-5 | |
| | 15.24-16.51 [.600-.650] | Stepped | 1-543013-4 | F-6 | — |
| 17.78-19.05 [.700-.750] | Straight | 1-543013-5 | F-7 | 813809-8 | |

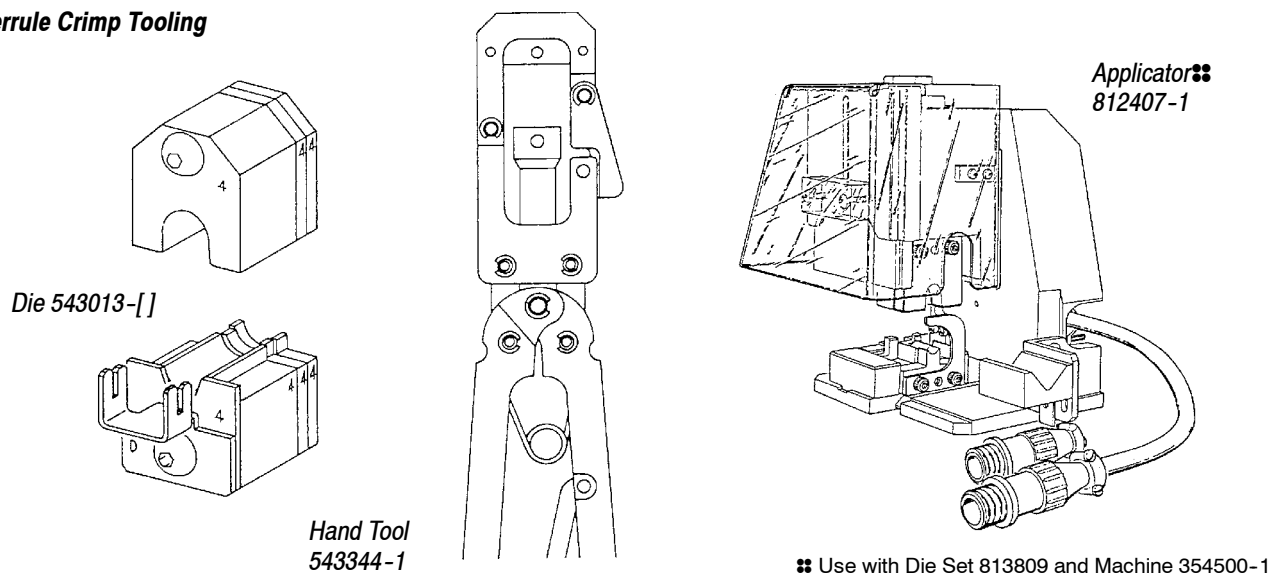
Ferrule Crimp Tooling


Figure 6 (cont'd)

Miscellaneous Tooling

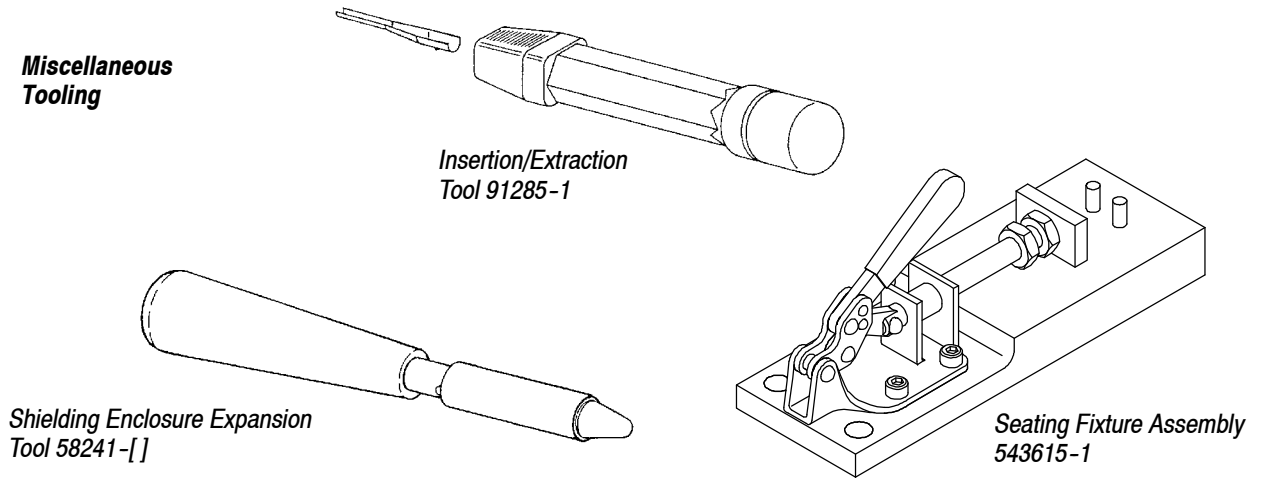


Figure 6 (end)

5.2. Single Cable-to-Shield Ferrules

The dies listed in the table in Figure 7 must be inserted into the hand tools and automatic machine die holder that uses them. Die sets with base PN 58237 (Instruction Sheet 408-9242) and 58238 (Instruction Sheet 408-9243) are used in Hand Crimping Tool 543344-1 (Instruction Sheet 408-9315), or in Die Holder 58449-1 (Instruction Sheet 408-9721) powered by Pneumatic Power Unit 312522-3 (Customer Manual 409-5843). Die sets with base PN 543424 (Instruction Sheet 408-9507) and 543425 (Instruction Sheet 408-9508) are used in Hand Crimping Tool 543344-1 (Instruction Sheet 408-9315) only.

NOTE *Crimp dimensions for ferrules will fall within proper guidelines when dies are seated in the appropriate tooling and properly gaged. Gaging information is contained in instruction sheets corresponding to the dies. All braided cable shielding should be folded forward and distributed evenly before sliding and crimping the ferrule into place.*

| HARDWARE SHELL SIZE | CABLE DIAMETER ACCEPTED | DIE SET |
|---------------------|-------------------------|----------|
| 1, 2, 3 | 4.19-4.83 [.165-.190] | 543424-3 |
| | 4.83-5.51 [.190-.217] | 543424-2 |
| | 5.51-6.25 [.217-.246] | 543424-8 |
| | 6.25-7.21 [.246-.284] | 543424-1 |
| | 7.21-8.23 [.284-.324] | 543424-7 |
| | 8.23-9.52 [.324-.375] | 543424-6 |
| | 9.52-11.10 [.375-.437] | 543424-5 |
| | 10.16-11.56 [.400-.455] | 543424-4 |
| 4, 5 | 5.84-6.73 [.230-.265] | 543425-2 |
| | 8.58-9.78 [.338-.385] | 543425-1 |
| | 9.52-10.97 [.375-.432] | 58238-1 |
| | 10.72-12.45 [.422-.490] | 58237-2 |
| | 12.19-14.27 [.480-.562] | 58237-1 |

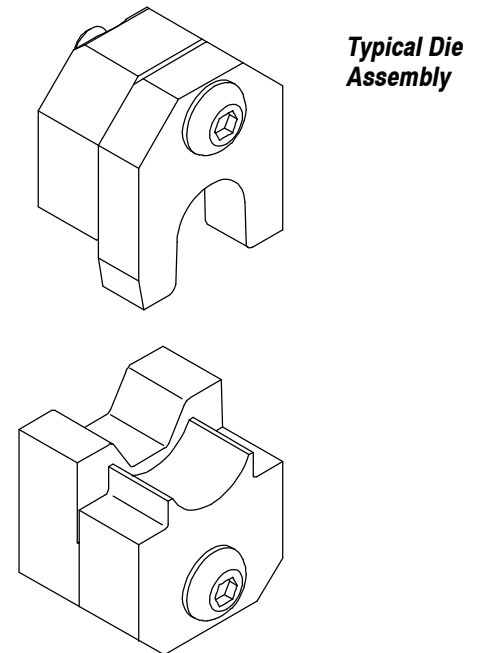


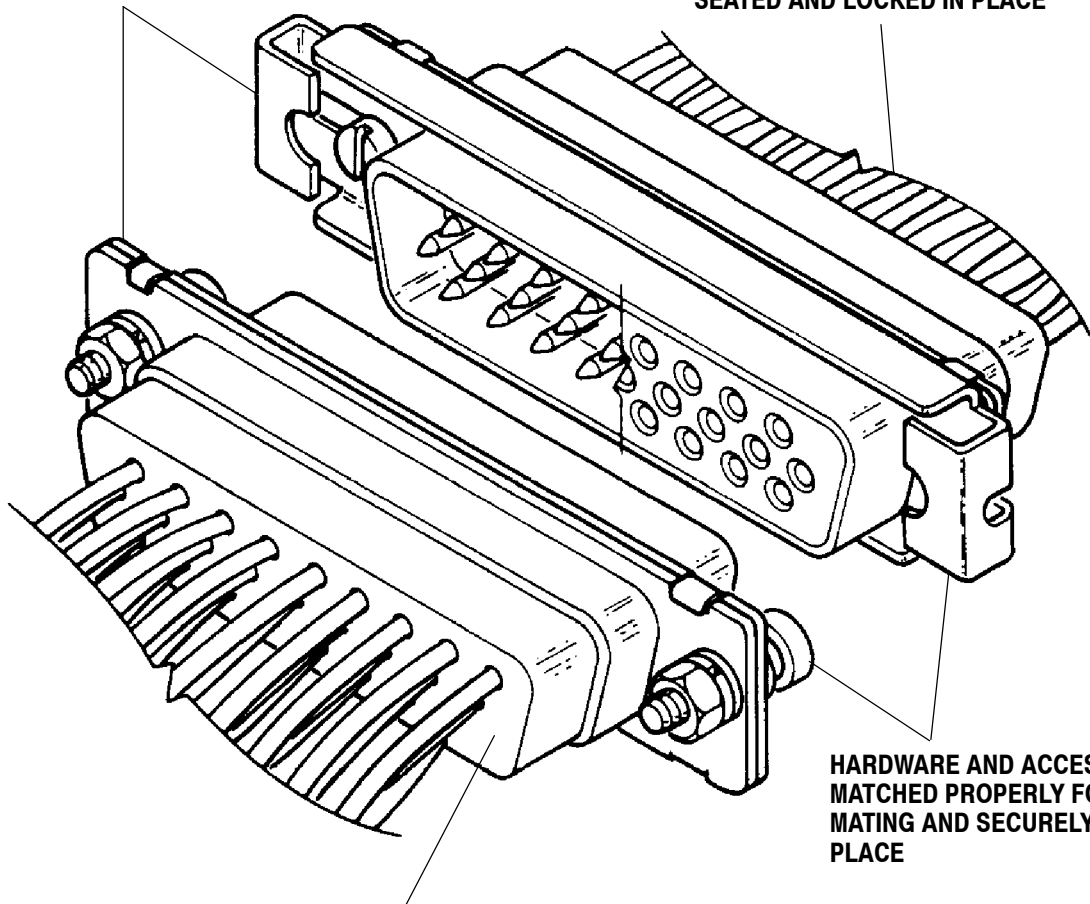
Figure 7

6. VISUAL AID

Figure 8 shows a typical application of an AMPLIMITE HDP-20 Subminiature D Commercial Connector with Snap-In Contacts. 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.

**MATING CONNECTOR ASSEMBLIES
MUST MATCH IN BOTH SHELL SIZE
AND NUMBER OF POSITIONS**

**PULL LIGHTLY ON EACH INDIVIDUAL WIRE
TO BE SURE THAT CONTACTS ARE FULLY
SEATED AND LOCKED IN PLACE**



**HARDWARE AND ACCESSORIES
MATCHED PROPERLY FOR
MATING AND SECURELY IN
PLACE**

**CONNECTOR MUST BE UNDAMAGED
BY ASSEMBLY AND TIGHTENING OF
HARDWARE KIT OR ACCESSORIES**

**TYPICAL APPLICATION (SHOWS
FREE-HANGING CONNECTORS
WITH LOCKING POSTS AND
SLIDE LATCHES)**

FIGURE 8. VISUAL AID