

Figure 1

1. INTRODUCTION

This instruction sheet covers the application of Cable Clamp Kits 5745652-[] and 5745653-[]. Documents that pertain to AMPLIMITE HDP-20, HDP-22, and HDE-20 connectors are:

- 408-7514 (HDP-20 Connectors with Crimp Type Contacts)
- 408-9193 (HDP-20 Connectors with Solder Cup Contacts)
- 408-6621 (HDE-20 All Plastic Connectors)
- 408-6645 (HDE-20 Metal Shell Connectors)
- 114-10001 (HDP-22 Connectors)

Read these instructions and any references documents carefully before using any of the cable clamp kits.

NOTE



All dimensions on this document are in metric units [with U.S. customary units in brackets]. Figures and illustrations are for reference only and are not drawn to scale.

Reasons for reissue of this instruction sheet are provided in Section 7, REVISION SUMMARY.

2. DESCRIPTION

The cable clamp kit consists of two die-cast metal halves (cable clamps of differing thicknesses) with mating edges, pan head screws, slide latch screws, and a slide latch. See Figure 1.

The cable clamps are designed to provide shielding and strain relief for braid- and foil-shielded cables.

The cable clamps may be used with cable featuring a split-ring ferrules or crimp ferrules, grommet, or cable without ferrules.

The cable clamps are available in two sizes to accommodate Size 2 and Size 3 AMPLIMITE connectors. Refer to Figure 1 to determine the proper cable size (diameter), connector size for the cable clamp kit, and ferrules for the cable.

3. CABLE CLAMP APPLICATION

NOTE



If the cable is not of sufficient diameter to fit snugly into the cable clamp strain relief, apply heat-shrinkable tubing (before working the braid over the cable jacket) to build up the diameter. The inside diameter of the tubing should be no more than twice the outside diameter of the cable. See Figure 2.

3.1. Braided-Shield Cable (Without Ferrules)

Proceed as follows:

1. Strip the cable jacket from the end of the connector. Refer to Figure 2 for strip length dimension.
2. Push the braided shield away from the conductors to form a bulge at the base of the outer cable jacket. Work the braided shield back over the outer jacket. It may be necessary to unweave the braided shield and place the strands evenly on the outer jacket.

CONNECTOR			CABLE CLAMP KIT	CABLE DIAMETER RANGE (mm [in.]) (OD)†	FERRULES		
SIZE	CONTACT POSITIONS				SPLIT-RING	CRIMP	
	HDP-20	HDP-22				INNER	OUTER
2	15	26	5745652-2●	8.51-9.52 [.335-.375]	745508-6	—	—
			5745652-2●	8.00-9.27 [.315-.365]	—	6-745129-9	4-745130-0
			5745652-2●	4.83-6.10 [.190-.240]	—	7-745129-0	3-745130-8
			5745652-3	6.60-7.62 [.260-.300]	745508-4	—	—
			5745652-4	4.70-5.72 [.185-.225]	745508-3	—	—
			5745652-1	9.91-10.92 [.390-.430]	745508-1	—	—
			5745652-1	9.65-10.92 [.380-.430]	—	7-745129-1	4-745130-1
			5745652-1	7.62-8.89 [.300-.350]	—	7-745129-2	3-745130-9
			5745652-1	5.84-7.11 [.230-.280]	—	7-745129-8	4-745130-5
			5745652-1	4.83-6.10 [.190-.240]	—	7-745129-3	3-745130-8
3	25	44	5745653-1	12.45-13.46 [.490-.530]	745508-9	—	—
			5745653-1	11.94-13.46 [.480-.530]	—	7-745129-4	4-745130-2
			5745653-1	9.65-10.92 [.380-.430]	—	7-745129-5	4-745130-1
			5745653-1‡	6.48-11.94 [.255-.470]	—	—	—
			5745653-2	11.18-12.19 [.440-.480]	745508-8	—	—
			5745653-3	9.91-10.92 [.390-.430]	745508-1	—	—
			5745653-3	9.65-10.92 [.380-.430]	—	7-745129-1	4-745130-1
			5745653-3	7.62-8.89 [.300-.350]	—	7-745129-2	3-745130-9
			5745653-3	5.84-7.11 [.230-.280]	—	7-745129-8	4-745130-5
			5745653-3	4.83-6.10 [.190-.240]	—	7-745129-3	3-745130-8
			5745653-4	7.87-8.89 [.310-.350]	745508-5	—	—
			5745653-5	6.10-7.11 [.240-.280]	745508-4	—	—

† Maximum cable diameter assumes a minimum insulation thickness of 1.52 mm [.060 in.].

● When used with Grommet Kit 747746-1 instead of ferrules, cable diameter range is 4.70-8.13 mm [.185-.320 in.].

‡ Use with Grommet Kit 747973-1.

Figure 2

3. Apply tape or heat-shrinkable tubing (without sealant) to secure loose strand ends to the cable until the clamps are installed. The braid should be exposed by 14.27 mm [.562 in.] between the tubing (or tape) and conductors. See Figure 2.

4. Terminate the conductors with contacts and insert the contacts into the rear of the connector or terminate to the connector according to the appropriate document (refer to Section 1).

5. Position the larger half of the cable clamp on the cable and connector. Ensure that the braided shield of cable is in the strain relief grooves of the clamp.

6. Position the other half of the clamp on top of the cable and secure the pan head screws into the corresponding mating holes.

7. Insert the slide latch screws through the slide latch and connector mounting holes, and secure them in the tapped holes of the cable clamp. To allow for proper slide latch operation, tighten the screws to a torque between 0.17 and 0.23 Nm [1.5 and 2.0 in-lb].

NOTE



The braided shield may remain secured with tape or trimmed directly behind the clamp with a sharp shield-trimming tool. If heat-shrinkable tubing was used to secure the braid, DO NOT trim the tubing.

CABLE JACKET STRIP LENGTH				
CONNECTOR CONTACT POSITION		FERRULE TYPE	STRIP LENGTH RANGE (mm [in.])■	MASS TERMINATION HAND TOOLING IDENTIFICATION▲
HDP-20	HDP-22			
15	—	None	53.3-63-5 [2.1-2.5]	J
15	—	Split Ring	53.3-63-5 [2.1-2.5]	J
15	—	Crimp	71.1-81.3 [2.8-3.2]	F
25	—	None	66-76.2 [2.6-3.0]	J
25	—	Split Ring	66-76.2 [2.6-3.0]	J
25	—	Crimp	83.8-94 [3.3-3.7]	F
15	26	None	43.2-53.3 [1.7-2.1]	—
15	26	Split Ring	43.2-53.3 [1.7-2.1]	—
15	26	Crimp	61-71.1 [2.4-2.8]	—
25	44	None	58.4-68.6 [2.3-2.7]	—
25	44	Split Ring	58.4-68.6 [2.3-2.7]	—
25	44	Crimp	76.2-86.4 [3.0-3.4]	—

■ The strip length dimension range is designed to accommodate a variety of cable designs. In order to determine the proper strip length, before production runs, consideration must be given to the flexibility and type of wire, bundling of wire due to circuit arrangement, and any other related factors.

▲ Pertains to HDE connectors only.

Figure 3

3.2. Foil-Shield Cable (Without Ferrules)

1. Strip the cable jacket from the end of the conductors and remove the plastic cover. Refer to Figure 3 for strip length dimension.

2. Unwrap the foil shield from the cable and wrap it around the outer jacket. Wrap the drain wire around the foil. Ensure that the conductive side of the foil faces out.

3. Secure the ends of the foil and drain wire with tape or heat-shrinkable tubing until the cable clamps are installed. Leave 14.27 mm [.562 in.] of the foil exposed between the tape or tubing and conductors. See Figure 4.

4. Terminate the conductors with contacts and insert the contacts into the rear of the connector or terminate to the connector according to the appropriate document (refer to Section 1).

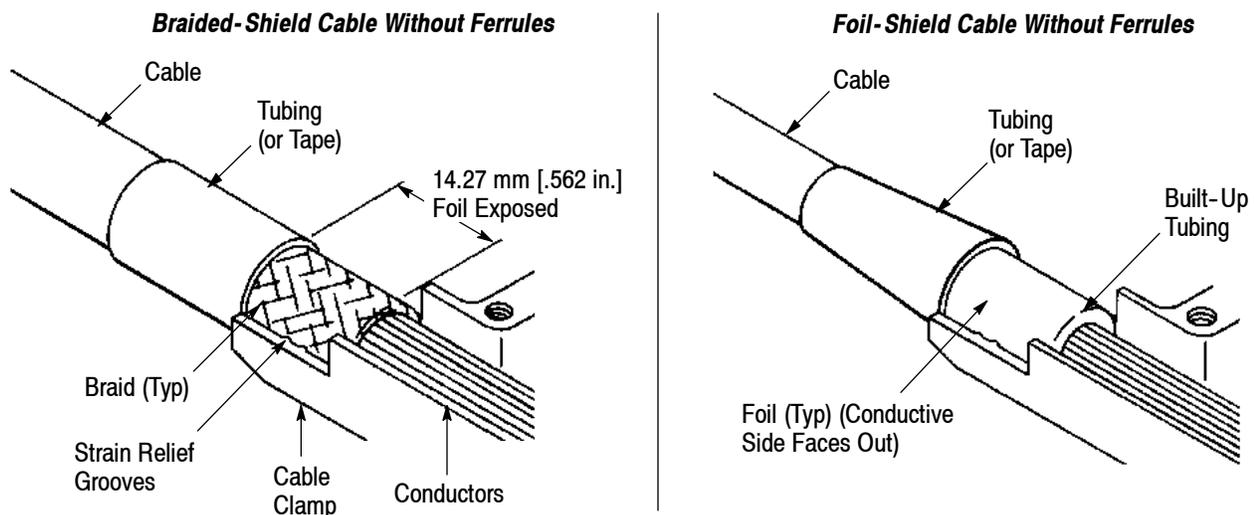


Figure 4

5. Position the larger half of the cable clamp on the cable and conductor. Ensure that the foil shield of the cable and drain wire are in the strain-relief grooves of the clamp.
6. Position the other half of the clamp on top of the cable and secure it with the pan head screws.
7. Insert the slide latch screws through the slide latch and connector mounting holes, and secure them in the tapped holes of the cable clamp. To allow for proper slide latch operation, tighten the screws to a torque between 0.17 and 0.23 Nm [1.5 and 2.0 in-lb].

NOTE

The braided shield may remain secured with tape or trimmed directly behind the clamp with a sharp shield-trimming tool. If heat-shrinkable tubing was used to secure the braid, DO NOT trim the tubing.

4. SPLIT-RING FERRULE APPLICATION

Proceed as follows:

1. Slide the ferrules over the cable.
2. Strip the cable jacket from the end of the conductors and remove the plastic cover and foil. Refer to Figure 3 for strip length dimensions.
3. Fold the braid back over the cable without splitting or splicing the braid. If using the foil cable, fold the drain wire back over the cable.
4. Trim the excess braid or drain wire to approximately 15.24 mm [.600 in.] from the end of the cable.
5. Slide the ferrules under the braid to the end of the cable. If using the drain wire, wrap the drain wire around the ferrules, ensuring that it is NOT located in the slotted opening of the ferrules. See Figure 5.
6. Terminate the conductors with contacts and insert the contacts into the rear of the connector or terminate to the connector according to the appropriate document (refer to Section 1).
7. Position one half of the cable clamp on the cable and connector. Ensure that the flange of the connector is behind the flange gripper of the clamp and that the ferrule is positioned in the strain-relief grooves of the clamp. See Figure 5.
8. Position the other half of the cable clamp on top of the cable and secure it with pan head screws.
9. Insert the slide latch screws through the slide latch and connector mounting holes, and secure them in the tapped holes of the cable clamp.

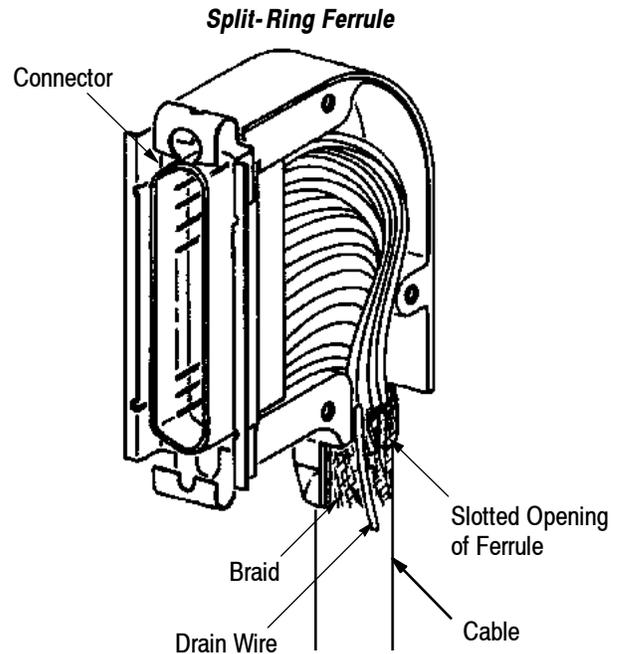


Figure 5

To allow for proper slide latch operation, tighten the screws to a torque between 0.17 and 0.23 Nm [1.5 and 2.0 in-lb].

5. CRIMP FERRULE APPLICATION

Proceed as follows:

1. Slide the outer ferrule over the cable.
2. Strip the cable jacket from the end of the conductors. Take care not to cut the braid. Refer to Figure 3 for strip length dimension.
3. Cut the braid approximately 12.7 mm [.50 in.] from the end of the cable jacket. See Figure 6.
4. Flare the braid out and slide the inner ferrule under the braid. DO NOT unweave the braid. Ensure that the inner ferrule butts against the cable jacket.

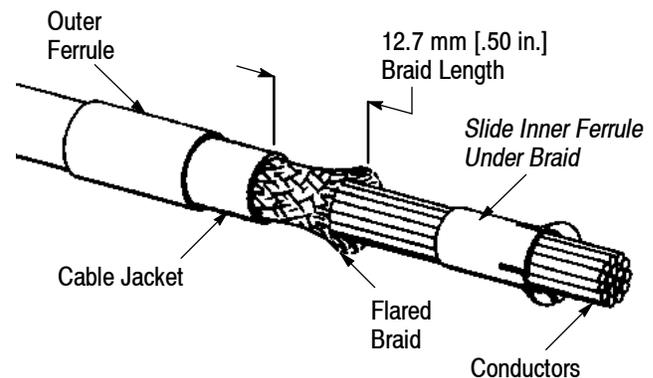


Figure 6

5. Slide the outer ferrule over the inner ferrule.
6. Place the cable assembly into Hand Crimping Tool 543344-1. Refer to instruction sheet 408-9315 for specific crimping instruction.
7. Crimp the ferrules and remove them from the crimping tool. Trim the excess braid from between the two ferrules.
8. Terminate the conductors with the contacts and insert the contacts into the rear of the connector or terminate to the connector according to the appropriate document (refer to Section 1).
9. Position one half of the cable clamp on the cable and connector. Ensure that the flange of the connector is behind the flange edge of the clamp and that the inner ferrule is positioned between the two strain-relief bars of the clamp. See Figure 7.
10. Position the other half of the clamp on top of the cable and secure it with pan head screws.
11. Insert the slide latch screws through the slide latch and connector mounting holes, and secure them in the tapped holes of the cable clamp. To allow for proper slide latch operation, tighten the screws to a torque between 0.17 and 0.23 Nm [1.5 and 2.0 in-lb].

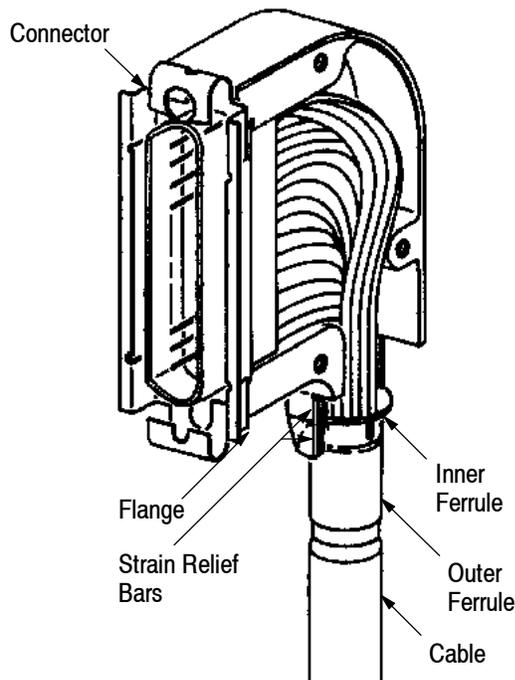


Figure 7

6. GROMMET ASSEMBLY (Refer to Figure 8)

Refer to the notes in Figure 2 to select the proper cable clamp kit with grommets for the cable being used, and proceed as follows:

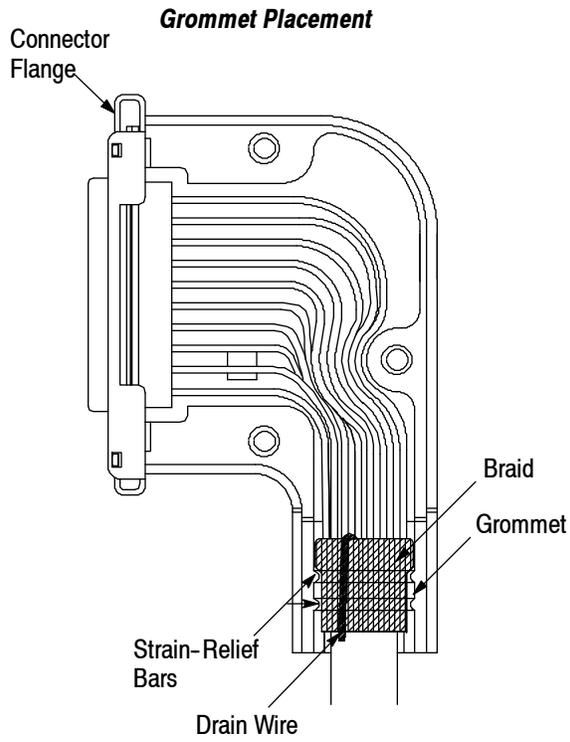
1. Cut the cable to the desired length. Slide the appropriate size grommet onto the cable with the large outside diameter toward the cable end being terminated.
2. Strip the cable jacket from the end of the conductors. Take care not to cut any foil, braid, or drain wire if present. Refer to Figure 3 for the cable jacket strip length for HDP-20 and HDP-22 connectors.
3. **If the cable has neither braid nor foil**, slide the grommet to the end of the cable jacket, and proceed Step 4.

If cable has only foil around the conductors, cut the foil to end of the jacket and remove. If the drain wire is present, trim to a length of approximately 15.24 mm [.600 in.] from the end of the jacket. Slide the grommet to the end of the cable jacket, bend any drain wire back over top of the grommet, and proceed to Step 4.

If cable has only braid, trim the braid to approximately 15.24 mm [.600 in.] from the end of the cable jacket. Slide the grommet to the end of the cable jacket and fold the braid as evenly as possible around the grommet. It may be easier to fold the braid back over the jacket end first, then slide the grommet under it. Proceed to Step 4.

If cable has both foil and braid, trim the foil, braid, and any drain wire to approximately 15.24 mm [.600 in.] from the end of the cable jacket. Slide the grommet to the end of the cable jacket and fold the braid as evenly as possible around the grommet. It may be easier to fold the braid back over the jacket end first, then slide the grommet under it. Cut the foil to end of the jacket and remove. Fold the drain wire, if present, over the braid, and proceed to Step 4.

4. Terminate the conductors with the contacts and insert the contacts into the rear of the connector or terminate the connector according to the appropriate document (refer to Section 1).
5. Position one half of the cable clamp on the cable and connector. Ensure that the large outside diameter of the grommet is seated against the connector side of the inner strain relief bar of the cable clamp.
6. In a similar manner, position the other half of the cable clamp and secure with attaching hardware.



7. REVISION SUMMARY

Revisions to this instruction sheet include:

- Added part numbers to title of instruction sheet
- Replaced reference to instruction sheet in Step 6 of Section 5

Figure 8