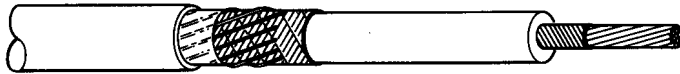


# Quick Splice

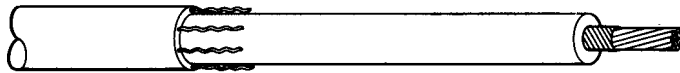
## Inline Splicing Kits for ribbon or wire shielded and Unishield Cables



**Ribbon Shield**

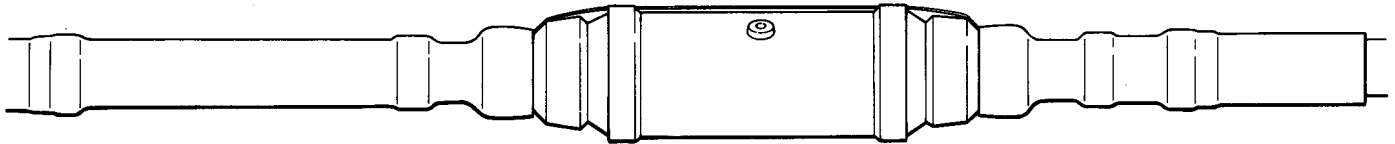


**Wire Shield**



**Unishield®**

Unishield is a registered trademark of Anaconda Wire and Cable Company



Kit No.	Conductor * Size (kcmil)	Cable Primary Insulation O.D. Range
5503	250-350	1.06-1.21 in. 26,9-30,7 mm
5504	500	1.12-1.32 in. 28,4-33,5 mm
5505	750	1.32-1.52 in. 33,5-38,6 mm

\* NOTE: Final determining factor is primary insulation O.D.

<p><b>Technical Information:</b> for use on Ribbon or Wire Shielded and Unishield® Cables</p> <p>Copper or Aluminum Conductors Cable Size Range: 250-750 kcmil</p> <p>15kV rated: 150 kV BIL</p>	Issue 1	Date Oct. 1, 1982	Rev.	Ch.	<p><b>3M Quick Splice Inline Splicing Kits for Shielded Cables</b></p> <p><b>5503 5504 5505</b></p>
	Not to scale		Ch. <i>2AS 9/24/82</i>		
	Dr. J.F.KRENIK		App. <i>Conf 9/24/82</i>		
	<b>2047 T47</b>				
	<p>Electro-Products Division/3M St. Paul, MN 55144    Made in U.S.A.</p>				

# Instructions for Ribbon Shielding

**NOTE:** Check to be sure cable insulation fits within the kit O.D. range as shown in table on page one.

## A. Prepare Cables According to Standard Procedures

1. Clean cable jackets by wiping with a dry cloth for approximately two feet from each end.
2. Remove jacket to distance B and C for cables "X" and "Y" respectively (Figure 1, Table A).

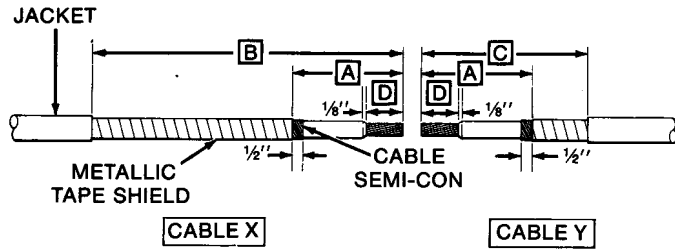


Figure 1

Kit No.	Conductor Size (kcmil)	Dimensions			
		A	B	C	D
5503	350	6 in. 152,4 mm	17 in. 431,8 mm	9 in. 228,6 mm	2 in. 50,8 mm
5504	500	6¾ in. 171,5 mm	17 in. 431,8 mm	10 in. 254 mm	2¾ in. 60,3 mm
5505	750	6¾ in. 171,5 mm	17 in. 431,8 mm	10 in. 254 mm	2½ in. 63,5 mm

Table A

3. Remove metallic shielding to distance A.
4. Remove cable semi-con, allowing it to extend ½" beyond metallic shielding (dimension A).
5. Remove insulation to dimension D and taper edges for ⅛" at approximately 45°.
6. Clean exposed insulation using enclosed cleaning pads. Do not use solvent or abrasive on cable semi-con layer. If abrasive **must be** used on insulation, do not reduce diameter below that specified for minimum splice application.
7. Tightly half-lap Scotch Brand 13 Semi-Conductive Tape beginning 1" on cable cu. tape shield extending ½" onto cable insulation. Leave a smooth leading edge and tape back to original shield position.
8. Apply one half-lapped layer (adhesive side out) orange vinyl tape (supplied in kit) over metallic shield beginning approximately ¼" on previously applied #13 Tape and ending over cable jacket.

## B. Installation

1. Slide longer PST Cold Shrink insulator onto cable "X" jacket and the shorter PST onto cable "Y" jacket directing pull tabs away from cable ends as shown in Figure 2.

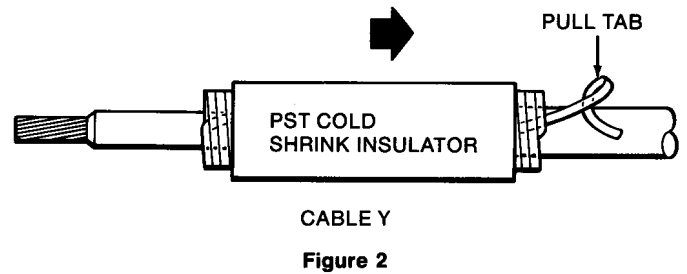


Figure 2

2. Apply a few wraps of vinyl tape over cable "X" conductor end to protect splice bore while installing.
3. Lubricate exposed insulation, #13 Tape and orange vinyl tape with silicone grease provided.
4. Install end caps on cables "X" and "Y". Final position should be adjacent to cable jacket cut on each side.

**NOTE:** Do not reuse grease accumulated during end cap installation.

Clean, if necessary, and generously relubricate insulation of cable "X".

5. Lubricate bore of splice with silicone grease and install onto cable "X" leaving conductor exposed for connector (Figure 3).

**HINT:** Rotation of splice body while pulling will ease installation.

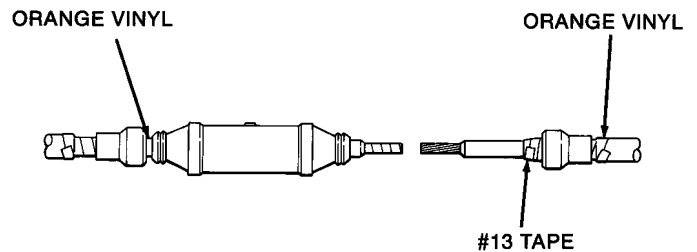


Figure 3

**NOTE:** Make certain all splicing components (PST's, Splice End Caps, and Splice Body) are located properly on their respective cable end before installing connector.

6. Remove vinyl tape from cable "X" conductor.
7. Install CI connector crimped per instructions in table on back page (page 8).
8. Wipe excess contact aid from conductor and connector area. REMOVE ANY SHARP EDGES THAT MAY EXIST.
9. Carefully inspect and, if necessary, reclean the cable insulation on the exposed end (cable "Y"). Apply a thin layer of silicone grease over the insulation.

10. Center splice body over connector as shown in Figure 4.
11. Inspect the splice to ensure that the #13 Tape does not extend inside the splice body. SEE FIGURE 4 FOR TOLERANCE.

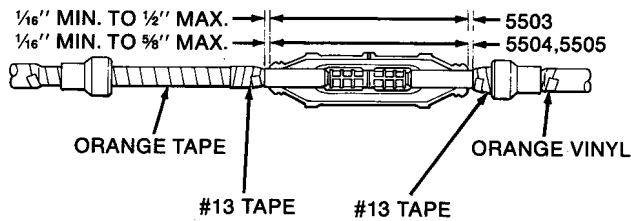


Figure 4

12. Apply silicone grease over exposed insulation in gap between splice body and #13 Tape.
13. Slide end caps into position and twist onto splice body. Two locking grooves exist on each end. THE INSTALLER SHOULD FEEL TWO SNAPS.
14. Remove previously applied orange vinyl tape covering cable shield areas and wipe off any remaining silicone grease.

### C. Install Shield Continuity Assembly

1. Position shield continuity assembly strap over splice body and hold it in place with a wrap or two of vinyl tape at ends of splice body (Figure 5).

*NOTE: Coils of assembly must be facing cable and positioned so they will cover metallic shielding only when applied.*

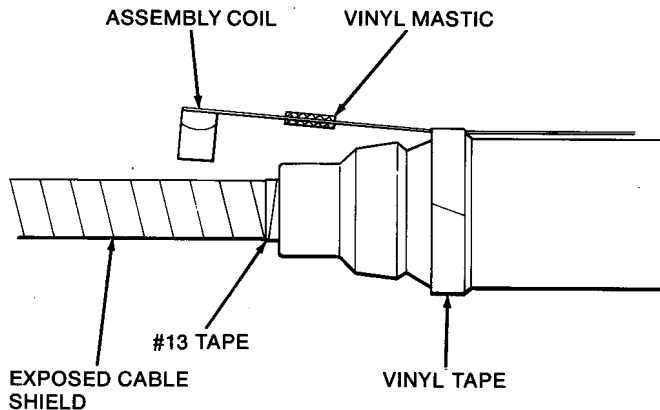


Figure 5

2. Coil Application:
  - a. Unwrap coil and straighten for one to two inches.
  - b. Hold the coil and shield strap in place with thumb (Figure 6). Pull (to unwrap) the coil around the cable and rewrap around cable metallic shield and itself.

*NOTE: Cinch (tighten) the applied coil after final wrap.*

  - c. Repeat "a" and "b" for other end of splice.

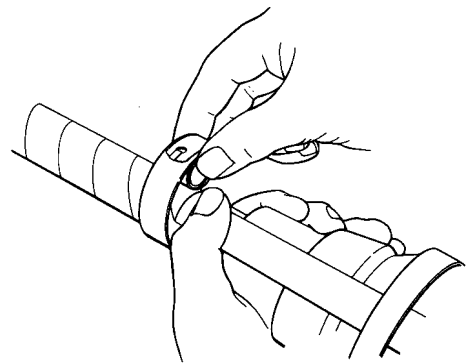


Figure 6

### 3. Sealing Shield Strap:

- a. Cut the supplied strip of vinyl mastic into four equal length pads.
- b. After removing liner, place one pad under strap, mastic side toward strap and centered over splice body end cap (Figure 5). Place a second pad over the strap and the first pad and press together, mastic to mastic, forming a sandwich. (This will be overwrapped with #13 Tape.)
- c. Repeat step "b" for other end of splice body.
- d. Apply two half-lapped layers of #13 Tape over the vinyl mastic and the remaining smaller diameter portion of the end cap as shown (Figure 7).

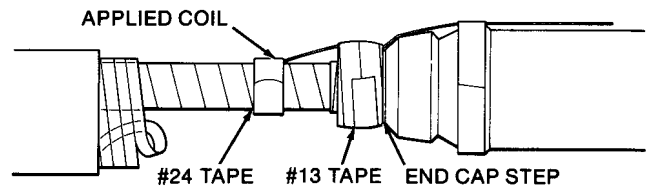


Figure 7

### D. Install PST Cold Shrink Insulators

1. Position each PST so its leading edge will butt against end cap step (Figure 8). Remove core by unwinding counterclockwise and tugging occasionally.

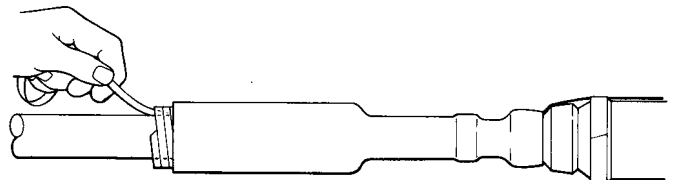


Figure 8

### E. Grounding Splice

*NOTE: Discard black plastic shoe packaged with ground clamp.*

1. If the practice calls for grounding the splice, fasten the alligator ground clamp (provided) to the exposed shield continuity strap approximately at the center of the splice. A ground strap conductor can then be fastened to the clamp.

# Instructions for Wire Shield

**NOTE:** Check to be sure cable insulation fits within the kit O.D. range as shown in table on page one.

## A. Prepare Cables According to Standard Procedures

1. Clean cable jackets by wiping with a dry cloth for approximately two feet from each end.
2. Remove jacket to distance B and C, for cables "X" and "Y" respectively (Figure 1, Table A).

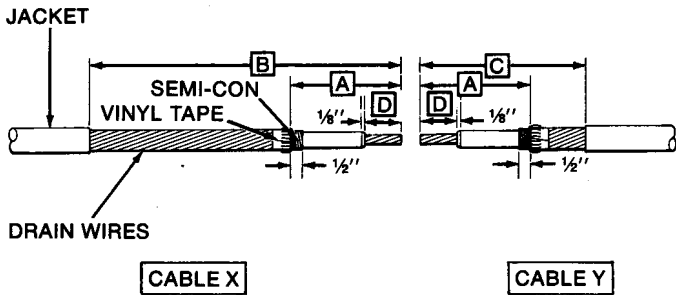


Figure 1

Kit No.	Conductor Size (kcmil)	Dimensions			
		A	B	C	D
5503	350	6 in. 152,4 mm	17 in. 431,8 mm	9 in. 228,6 mm	2 in. 50,8 mm
5504	500	6 3/4 in. 171,5 mm	17 in. 431,8 mm	10 in. 254 mm	2 1/2 in. 60,3 mm
5505	750	6 3/4 in. 171,5 mm	17 in. 431,8 mm	10 in. 254 mm	2 1/2 in. 63,5 mm

Table A

3. Apply two wrap of vinyl tape at dimension A on both cables (Figure 1). Wires must remain uniformly spaced around cable between jacket and vinyl tape. Do not allow wire overlaps.
4. Fold loose shield wires back and cut off at center of vinyl tape (Figure 2).

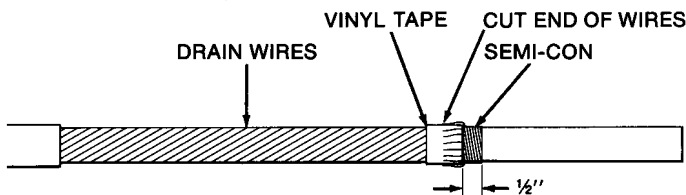


Figure 2

5. Remove cable semi-con, leaving 1/2" exposed beyond folded back wires. (Figure 2)
6. Remove insulation to dimension D (Figure 1) and taper edges 1/8" at approximately 45°.
7. Clean exposed insulation using enclosed cleaning pads. Do not use solvent or abrasive on cable semi-con layer. If abrasive must be used on insulation, do not reduce diameter below that specified for minimum splice application.

8. Apply two highly elongated half-lapped layers, of Scotch Brand 13 Semi-Conducting Tape over vinyl tape, folded back wire ends, cable semi-con and 1/2" onto cable insulation. Leave a smooth leading edge. Begin and end taping approximately 1/4" on shield wires beyond the vinyl tape (Figure 3).

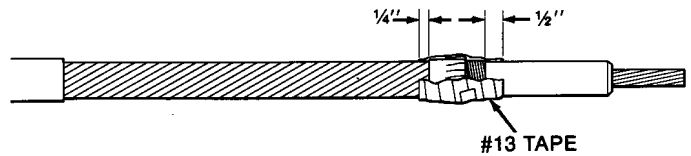


Figure 3

9. Apply one half-lapped layer (adhesive side out) orange vinyl tape (supplied with kit) over shield wires beginning approximately 1/4" onto #13 Tape and ending over cable jacket.

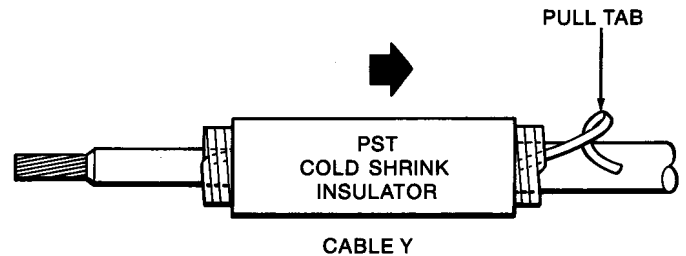


Figure 4

## B. Splice Installation

1. Slide longer PST Cold Shrink insulator onto cable "X" jacket and the shorter PST onto cable "Y" jacket directing pull tabs away from cable ends as shown in figure 4.
2. Apply a few wraps of vinyl tape over cable "X" conductor end to protect splice bore while installing.
3. Lubricate exposed insulation, #13 Tape and orange vinyl tape with silicone grease provided.
4. Install end caps on cables "X" and "Y". Final position SHOULD be adjacent to cable jacket cut on each side. **NOTE:** Do not reuse grease accumulated during end cap installation. Clean, if necessary, and generously relubricate insulation of cable "X".
5. Lubricate bore of splice with silicone grease and install onto cable "X" leaving conductor exposed for connector (Figure 5). **HINT:** Rotation of splice body while pulling will ease installation.

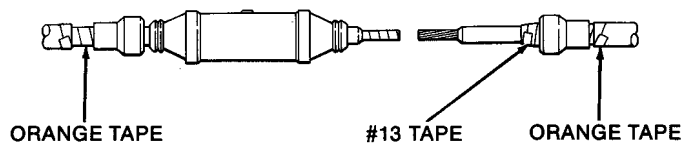


Figure 5

**NOTE:** Make certain all splicing components (PST's, Splice End Caps, and Splice Body) are located properly on their respective cable end before installing connector.

6. Remove vinyl tape from cable "X" conductor.
7. Install CI connector crimped per instructions in table on back page (page 8).
8. Wipe excess contact aid from conductor and connector area. REMOVE ANY SHARP EDGES THAT MAY EXIST.
9. Carefully inspect, and if necessary, reclean the cable insulation on the exposed end (cable "Y"). Apply a thin layer of silicone grease over the insulation.
10. Center splice body over connector as shown in Figure 6.
11. Inspect splice body to insure that #13 Semi-Conductive Tape does not extend into the splice body. See Figure 6 for tolerance.
12. Apply silicone grease over exposed insulation in gap between splice body and #13 Tape.
13. Slide end caps into position and twist onto splice body. Two locking grooves exist on each end. The installer should feel two snaps.
14. Remove previously applied orange vinyl tape covering cable shield areas and wipe off any remaining silicone grease.

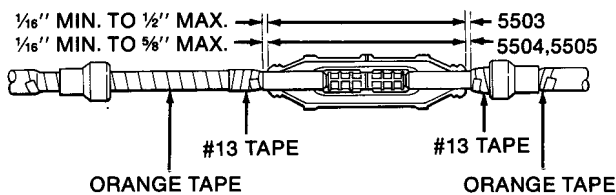


Figure 6

### C. Install Shield Continuity Assembly

1. Position shield continuity assembly over splice and hold it in place with a wrap or two of vinyl tape at ends of splice body (Figure 7).  
**NOTE:** Coils of assembly must be facing cable and positioned so they will cover **shielding wires only** when applied.

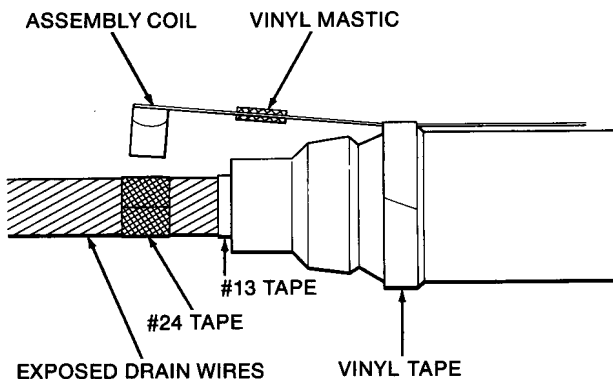


Figure 7

2. Note position of coil at cable and wrap #24 Metallic Shielding Tape (one complete length as supplied) around shield wires at this point (Figure 7). Install assembly coil over the #24 Tape (see "Coil Application" procedure). Do this for both ends.

**NOTE:** In the following step, be certain #24 Tape and shield strap coil are wrapped in the same direction and that the coil is centered within the edges of the #24 Tape.

### 3. Coil Application Procedure:

- a. Unwrap coil for one to two inches.
- b. Hold the coil and shield strap in place with thumb (Figure 8). Pull (to unwrap) the coil around the cable and rewrap around #24 Tape and itself.  
**NOTE:** Cinch (tighten) the applied coil after final wrap.

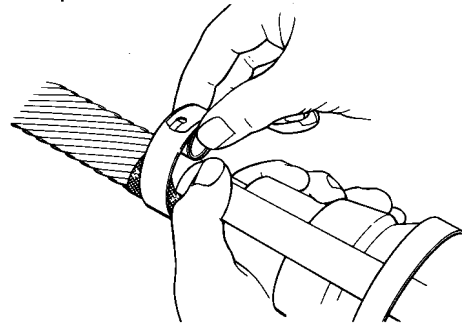


Figure 8

### 4. Seal Shield Strap:

- a. Cut the supplied strip of vinyl mastic into four equal length pads.
- b. After removing liner, place one vinyl mastic pad **under** strap, mastic side toward strap, and centered over splice body end cap (Figure 7). Place a second pad over the strap and the first pad and press together, mastic to mastic forming a sandwich. (This will be overwrapped with #13 Tape.)
- c. Repeat step "b" for other end of splice.
- d. Apply two half-lapped layers of #13 Tape over the mastic pad and the smaller diameter portion of the end cap as shown (Figure 9).

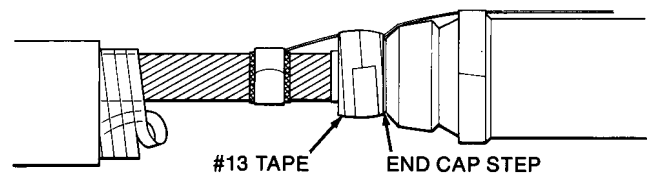


Figure 9

### D. Install PST Cold Shrink Insulators

1. Position each PST, so its leading edge will butt against step on end cap (Figure 9). Remove core by unwinding counterclockwise and tugging occasionally.

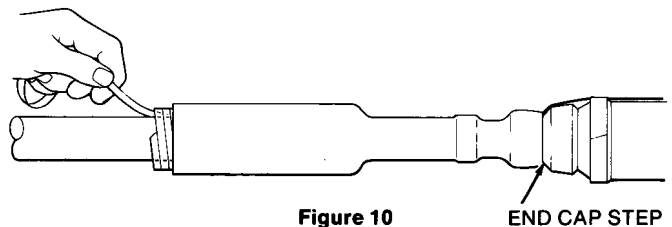


Figure 10

### E. Grounding Splice

**NOTE:** Discard black plastic shoe packed with ground clamp.

1. If the practice calls for grounding the splice, fasten the alligator ground clamp (provided) to the shield continuity strap, approximately at the center of the splice body. A ground conductor can then be fastened to the clamp.

# Instructions for Unishield Cable

**NOTE:** Check to be sure cable insulation fits within the kit O.D. range as shown in table on page one.

## A. Prepare Cables According to Standard Procedures

1. Clean cable jackets by wiping with a dry cloth for approximately two feet from each end.
2. Place vinyl tape marker at dimension **B** plus 3/4" for cable "X" and **C** plus 3/4" for cable "Y" (Figure 1, Table A). Pull shield wires back to this marker. **DO NOT CUT WIRES OFF.**
3. Ring cut approximately 75% through semi-con jacket at dimension **B** and **C**. Caution: Do not cut all the way through. Remove jacket to these ring cuts. **HINT: The use of a hose clamp will prevent semi-con jacket end lifting during removal.**
4. Remove insulation to dimension **D** (Figure 1). Taper end of insulation for 1/8" at approximately 45°.
5. Clean exposed insulation using enclosed cleaning pads. Do not use solvent or abrasive on cable semi-con jacket. If abrasive must be used on insulation do not reduce diameter below that specified for minimum splice application.
6. Starting approximately 1/2" on semi-con jacket, apply one highly elongated half-lapped layer of #13 Semi-Conductive Tape along insulation to dimension A for cable "X" and "Y" (Figure 1). Leave a smooth even leading edge and continue taping back to semi-con jacket cut-off point.

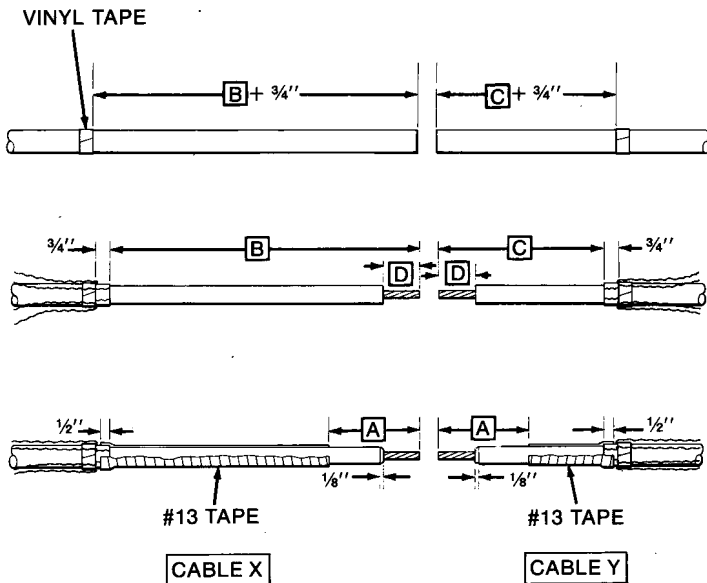


Figure 1

Kit No.	Conductor Size (kcmil)	Dimensions			
		A	B	C	D
5503	350	5 in. 127,0 mm	17 in. 431,8 mm	9 in. 228,5 mm	2 in. 50,8 mm
5504	500	5 3/4 in. 146,0 mm	17 in. 431,8 mm	10 in. 254,0 mm	2 3/8 in. 60,3 mm
5505	750	5 3/4 in. 146,0 mm	17 in. 431,8 mm	10 in. 254,0 mm	2 1/2 in. 63,5 mm

Table A

## B. Splice Installation

1. Slide longer PST Cold Shrink insulator onto cable "X" jacket and the shorter PST onto cable "Y" jacket directing pull tabs away from cable ends as shown in figure 2.

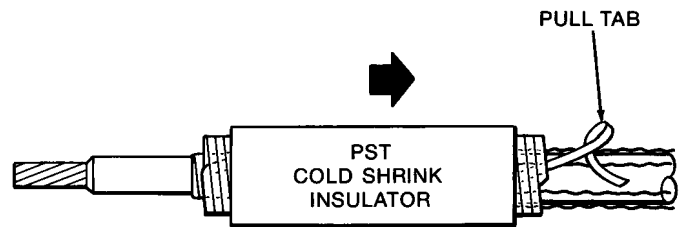


Figure 2

2. Apply a few wraps of vinyl tape over cable "X" conductor end to protect splice bore while installing.
3. Lubricate exposed insulation and #13 Tape of cables "X" and "Y" with silicone grease furnished.
4. Install end caps to cables "X" and "Y". Final position should be adjacent to cable jacket cut on each side.

**NOTE:** Do not reuse grease accumulated during end cap installation.

Clean, if necessary, and generously relubricate insulation of cable "X".

5. Lubricate bore of splice with silicone grease and install onto cable "X" leaving conductor exposed for connector (Figure 3).

**HINT:** Rotation of splice body while pulling will ease installation.

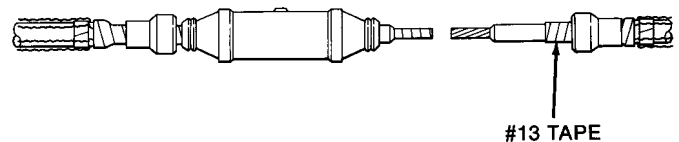


Figure 3

**NOTE:** Make sure all splicing components (PST's, Splice End Caps and Splice Body) are located properly on their respective cable end before installing connector.

6. Remove vinyl tape from end of cable "X" conductor.
7. Install CI connector crimped per instructions in table on back page (page 8).
8. Wipe excess contact aid from conductor and connector area. **REMOVE ANY SHARP EDGES THAT MAY EXIST.**
9. Carefully inspect, and if necessary, reclean the cable insulation on the exposed cable end (cable "Y"). Apply a thin layer of silicone grease over the insulation.
10. Center splice body over connector as shown in Figure 4.
11. Inspect to insure that #13 Semi-Conductive Tape does not extend inside the splice body. See Figure 4. for tolerance.

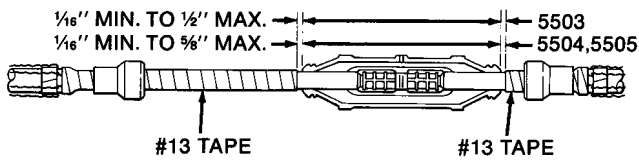


Figure 4

12. Apply silicone grease over exposed insulation in gap between splice body and #13 Tape.
13. Slide end caps in position and twist onto splice body. Two locking grooves exist on each end. The installer should feel two snaps.

**C. Install Shield Continuity Assembly**

1. Apply a two layer band of vinyl tape over #13 tape wrappings adjacent to each splice end cap. (Vinyl tape should butt against splice end). Figure 5.

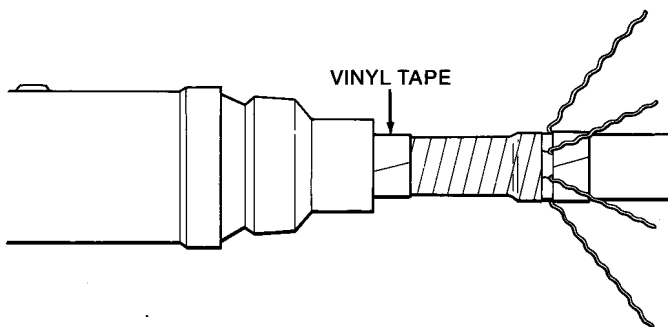


Figure 5

2. Lay ground wires down over #13 Tape and trim lengths approximately 1/8 inch short of splice. Figure 6. Secure wire ends in place over vinyl tape with an additional two layer tape band. Figure 7. Repeat for both ends.

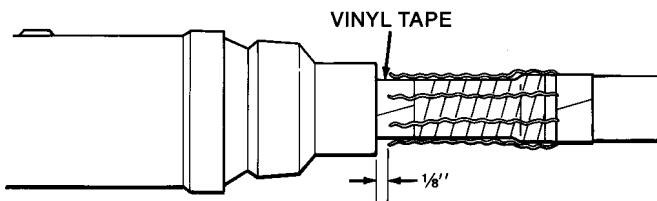


Figure 6

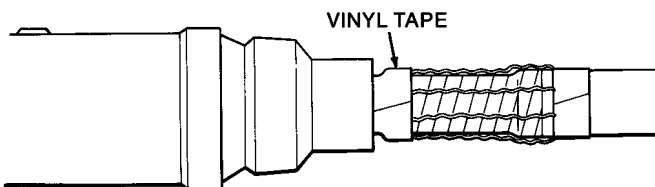


Figure 7

**3. Coil Application**

- a. Hold the flat strap of the shield continuity assembly against the mold body with a wrap or two of vinyl tape at end of mold body. Make certain coils are positioned over ground wires only before securing strap to splice body. Figure 8.

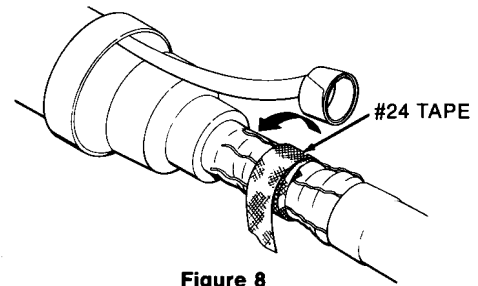


Figure 8

- b. Unwrap coil for one to two inches.
- c. Apply one complete length of #24 Metallic Shielding Tape (supplied) over ground wires directly beneath coil position (Figure 9).

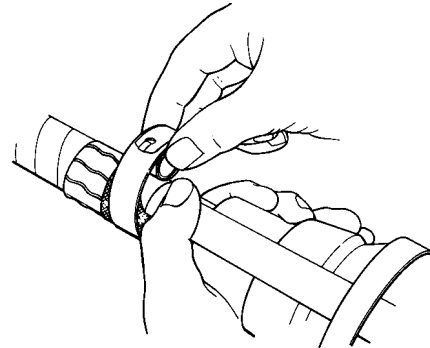


Figure 9

- d. Hold the coil and shield strap in place with thumb (Figure 9).

*NOTE: Be certain #24 Tape and shield strap coil are wrapped in the same direction and that the coil is centered within the edges of the #24 Tape. Pull (to unwrap) the coil around the cable and rewrap around #24 Tape and itself. Figure 10.*

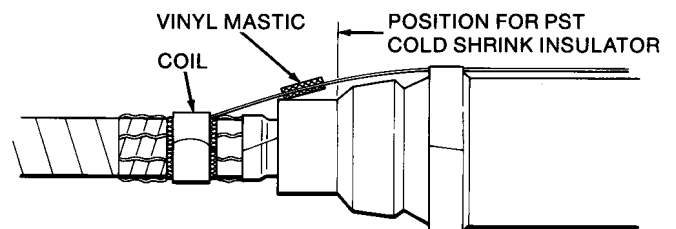


Figure 10

*NOTE: Cinch (tighten) the applied coil after final wrap. Repeat for both ends.*

**8. Sealing Shield Strap:**

- a. Cut the supplied strip of "vinyl mastic" into four equal length pads.
- b. After removing liner, place one vinyl mastic pad under strap, mastic side toward strap and centered over the splice body end cap. Place a second pad over the strap and first pad. Press together, mastic to mastic, forming a sandwich. Figure 10. (This will be overwrapped with #13 Tape.)

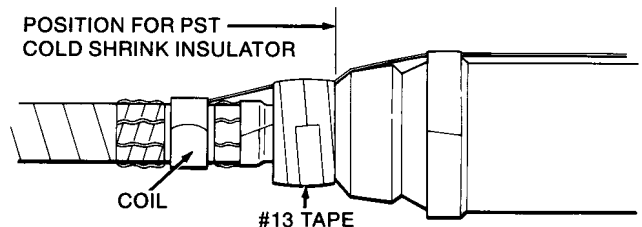


Figure 11

# Instructions for Unshield Cable (cont.)

- c. Repeat step "b" for other end of splice.
- d. Apply two half-lapped layers of #13 Tape over the mastic pad and the smaller diameter portion of the end cap (Figure 11).

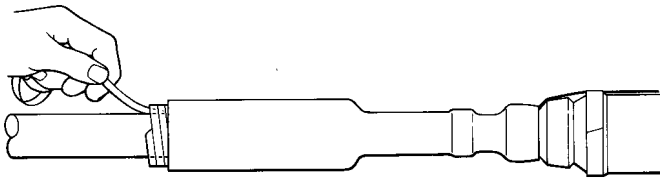


Figure 12

## D. Install PST Cold Shrink Insulators

1. Remove marker tape over semi-conductive jacket.
2. Position each PST so its leading edge will butt against the step in the end cap (Figure 12). Remove core by unwinding counterclockwise and tugging occasionally.

## E. Grounding Splice

*NOTE: Discard black plastic shoe packaged with ground clamp.*

1. If the practice calls for grounding the splice, fasten the alligator ground clamp (provided) to the shield continuity strap, approximately at the center of the splice body. A ground conductor can then be fastened to the clamp.

# Connector and Crimping Information

*Note: A special 3M Connector CI series is necessary for these kits.*

Kit No.	Conductor Size		3M Connector No.
	Stranded or Compressed (kcmil)	Compact (kcmi)	
5503	250	—	CI-250
	300	—	CI-300
	350	—	CI-350
5504	500	—	CI-500
	—	500	CI-450
5505	750	—	CI-750
	—	750	CI-650

Crimping Tool Table		
Mfg	Hydraulic Tool	Die (Crimps per end)
<b>Burndy</b>	Y-35, Y-39, Y-45*	U31 ART (2)
<b>Kearney</b>	WH-1, WH-2	1-1/8-1 (2)
<b>T &amp; B</b>	TBM-14	87H (2)**
<b>Burndy</b>	Y-39, Y-45*	U34 ART (3)
<b>Kearney</b>	WH-2	1-5/16 (3)
<b>T &amp; B</b>	TBM-15	106 (3)**
<b>Burndy</b>	Y-39 Y-45	U39 ART-2 (3) S39 ART (3)
<b>Kearney</b>	WH-2	1-1/2 (3)
<b>T &amp; B</b>	TBM-15	125H (3)

\* Usable with U-Die Adapter PT651

\*\* Excess flash must be filed off to round out connector.

**Important Notice:** All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied: Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

Litho in U.S.A. with 3M Offset Plates, Film and Chemicals.

**Electro-Products Division/3M**  
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