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| 1. Connector  | 6. 15 Plybraid   |
| 2. Ground lead  | 7. 10 Plyseal  |
| 3. Cable insulation shield,<br>semi-conducting layer        | 8. W963 High Voltage Tape or<br>3 Bi-Seal High Voltage Tape              |
| 4. 17 Plyshield   | 9. Premium 85 CW or Bi-Cast<br>Jacketing and Splice<br>Encapsulation Kit |
| 5. W963 High Voltage Tape or<br>3 Bi-Seal High Voltage Tape |  |

## Typical High Voltage Shielded Cable Taped Splice

1. Move cable ends into position splice will occupy. Mark cables at centerline of splice and cut off squarely any excess cable.
2. From the end of each of the cables, measure the required distance and mark the cable at this point.
3. Remove cable jacket and insulation shield.
  - a. **For wire shielded cables.** Remove the cable jacket to the point established in step 2. Round off the edge of the jacket with a file or abrasive cloth. Clean cable jacket for a distance of 3 inches from the edge of the jacket. Unwind the shield wires and bend at jacket edge. Then, twist the wires to form

a ground lead and fold flat against the cable jacket.

Remove the semi-conducting layer underlying the shield wires to the point where 1 ¼ inches protrudes uniformly from the edge of the cable jacket.

**b. For tape shielded cables.** Remove the cable jacket to the point established in Step 2. Round off the edge of the jacket with a file or abrasive cloth. Clean cable jacket for a distance of 3 inches from the edge of the jacket.

Unwind and remove the metal shield tape to the point where ¾ inch protrudes uniformly from the edge of the cable jacket.

Remove the semi-conducting layer underlying the metal shield tape to the point where 1 ¼ inches protrudes uniformly from the edge of the cable jacket.

4. From the end of each of the cables, measure a distance equal to ½ the length of the connector plus ½ inch. Remove cable insulation and strand shielding to this point.
5. Pencil the cable insulation of each cable end.
6. Install connector per manufacturer's instruction. Smooth all edges and rough areas with a file or abrasive cloth.
7. Polish cable insulation with abrasive cloth. Clean cable insulation and connector with solvent saturated cleaning cloth.
8. Fill indents in connector with pieces of Plymouth Tape 17 Plyshield EPR Shielding Tape.
9. Apply one half-lapped layer of Plymouth Tape 17 Plyshield EPR Shielding Tape. Start over exposed cable conductor at the base of the insulation pencil and wrap over the connector onto the exposed cable conductor of the other cable to the base of the insulation pencil.
10. Apply half-lapped layers of Plymouth Tape W963 PLYSAFE EPR High Voltage Tape or 3 Bi-Seal High Voltage Tape. Start at the base of the insulation pencil and wrap level across the connector over to the base of the insulation pencil of the other cable. Then, reverse wrapping direction and wrap back to the starting point. Again, reverse wrapping direction and repeat, while maintaining a level wrap and gradually working up the slope of the insulation pencil and onto the cable insulation until the required wall thickness is developed. The ends of the applied high voltage insulation should be tapered for the distance specified and should end ¼ inch from the edge of the semi-conducting layer established in Step 3.
11. Apply one half-lapped layer of Plymouth Tape 17 Plyshield EPR Shielding Tape.
  - a. For wire shielded cables.** Start over the exposed semi-conducting layer at the edge of the cable jacket and wrap over the high voltage tape onto the exposed semi-conducting layer of the other cable, finished at the edge of the cable jacket.
  - b. For tape shielded cables.** Start over the exposed semi-conducting layer at the edge of the metal shield tape and wrap over the high voltage tape onto the exposed semi-conducting layer of the other cable, finishing at the edge of the metal shield tape.
12. Apply Plymouth Tape 15 Plybraid Shielding Braid.
  - a. For wire shielded cables.** Move the twisted ground leads of each cable established in step 3 toward the center of the splice. Cut off any excess and join the

ground leads with a suitable connector.

Start over the ground lead at the edge of the cable jacket and wrap 1½ turns of 15 Plybraid Shielding Braid at the jacket edge to bind the shield wires. Spot solder the 15 Plybraid to itself and to the ground lead formed from the shield wires.

Then open spiral wrap the 15 Plybraid over the connected ground leads and 17 Plyshield EPR Shielding Tape onto the shield wires of the other cable, ending with 1 ½ turns of 15 Plybraid at the edge of the cable jacket. Spot solder the 15 Plybraid to itself and to the ground lead formed from the shield wires.

Spot solder the 15 Plybraid to the connected ground leads at each point the 15 Plybraid crosses them.

**b. For tape shielded cable.** Start over the 17 Plyshield EPR Shielding Tape at the centerline of the splice and apply one half-lapped layer of 15 Plybraid Shielding Braid over the 17 Plyshield and onto the exposed metal shield tape. Spot solder the 15 Plybraid to the metal shield tape.

Starting 2 inches beyond the centerline of the splice and over the previously applied 15 Plybraid, apply one half-lapped layer of 15 Plybraid over the 17 Plyshield and onto the exposed metal shield tape of the other cable. Spot solder the 15 Plybraid to the metal shield tape. Spot solder the 2 layers of 15 Plybraid in the overlapped area.

13. Ground lead. Apply Plymouth Tape Ground Lead over the 15 Plybraid Shielding Braid adjacent to the edge of the cable jacket of one of the cables, following instructions contained with ground lead. Or, as an alternate, spot solder a length of solid ground wire to the 15 Plybraid adjacent to the edge of the cable jacket of one of the cables.

Then, fold the ground lead flat against the cable jacket.

14. Apply a 1-inch wide strip of Plymouth Tape 10 Plyseal over the cable jacket of each cable, positioning the strip of ¼ inch beyond the edge of the jacket.
15. Apply outer jacketing

**a. For plastic jacketing cables.** Apply 2 half-lapped layers of Plymouth Tape W963 PLYSAFE EPR High Voltage Tape. Start over the cable jacket, 2 inches from the edge of the jacket, and wrap over the 10 Plyseal strip, over the 15 Plybraid and onto the jacket of the other cable to the point 2 inches beyond the edge of the jacket.

**b. For Neoprene jacketed cables.** Apply 2 half-lapped layers of Plymouth Tape 44 Neoprene Electrical Tape. Follow the procedure stated in Step 15 a.

**c. Recommended option.**

- i. Apply 2 half-lapped layers of Plymouth Tape Premium 85 CW Electrical Plastic Tape over the outer jacketing applied in step 15 a or 15 b. The Premium 85 CW should extend 1 inch onto the cable jackets beyond the ends of the applied outer jacketing.
- ii. Apply Plymouth Tape TD Bi-Cast Jacketing & Splice Encapsulating Kit to provide additional physical protection.