

GLENAIR EL OCHITO® CONNECTOR SYSTEM

The following procedures are based on Gore's best practices for terminating GORE® Aerospace Ethernet Cables with the Glenair El Ochito® Connector System for both plug and receptacle versions. These procedures should be used as a guide in conjunction with current connector manufacturing instructions.

Preparing the Cable and Parts

1. Gather the tools and materials required for assembly and termination (Figures 1–9). Note that certain variants of the Glenair El Ochito® contact may require a different crimper for the barrel. For example, use body crimper GS206 for 858-016-01F.
2. Verify that you have the correct parts for your assembly by checking the part numbers for the connectors and the GORE® Aerospace Ethernet Cables listed on drawing DDA0238.
3. If the connector kit does not have a grommet follower, cut two 1.0-inch pieces of 0.25-inch white RNF-150 heat-shrink tubing per assembly.
4. Cut the cable to the desired assembly length minus 3.0 centimeters (cm) to allow for the length of the connectors [i.e., 1.8 cm for the socket connector (pins) and 1.2 cm for the crimp pin connector (sockets)].
5. Print any labels required by the end-user, and slide the center label onto the cable.
6. To identify the end for the crimp socket connector, place a piece of tape on the end in which the pairs rotate clockwise in order of green → orange → blue → brown (Figure 9).



Figure 9: Pairs configuration at plug end

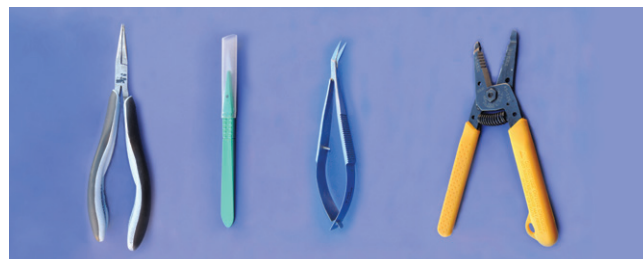


Figure 1: Needle nose pliers, scalpel, tweezer scissors, and hand strippers

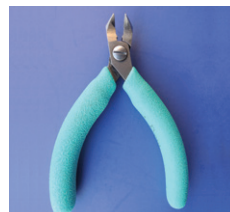


Figure 2: Cutters



Figure 3: Crimpers (M22520/2-01)



Figure 4: Positioner (K1906)



Figure 5: Crimp Die Y143 (M22520/5-45)



Figure 6: Braid brush



Figure 7: Crimper M22520/5-01



Figure 8: Probe/pick

Terminating the Crimp Socket Connector (Termination A)

1. Slide the grommet follower, onto the cable with the blue end facing the cable. If the connector kit did not have the grommet follower slide one piece of the TAT onto the cable (Figure 10).

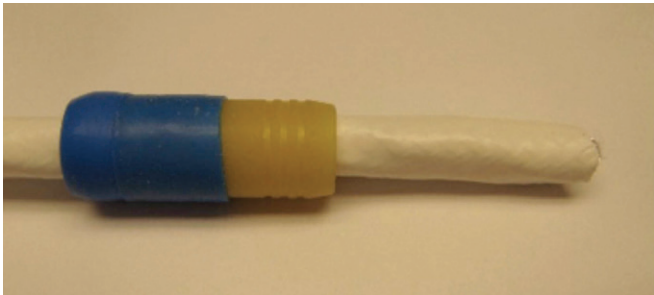


Figure 10: Sliding grommet follower on cable

2. Measure and mark the cable 0.5 inch from the crimp socket end of the cable (Figure 11).



Figure 11: Marking the cable

3. Using a scalpel or scissors, slit the cable's jacket from its edge to the mark (Figure 12).

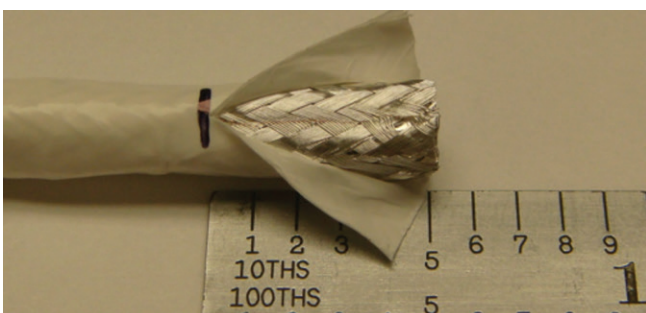


Figure 12: Slitting the cable jacket

4. Using needle-nose pliers, gently pull the outer jacket down the cable until you have exposed approximately 2 inches of braid (Figure 13).



Figure 13: Exposing the braid

5. Wrap the end of the cable's braid with polyimide tape (Figure 14).



Figure 14: Taping the braid end

6. Slide a crimp ferrule onto the cable over the braid until it touches the edge of the outer jacket (Figure 15).



Figure 15: Sliding crimp ferrule on cable

7. With your fingers, push the braid back over the cable to expose the foil until it reaches the ferrule (Figure 16).



Figure 16: Exposing the foil

8. Remove the white filler as far down as possible.
9. Slide plastic bushing onto the cable until it abuts the braid (Figure 17).



Figure 17: Sliding plastic bushing onto cable

10. Mark each twisted pair at 0.25-inch from the end (Figure 18).

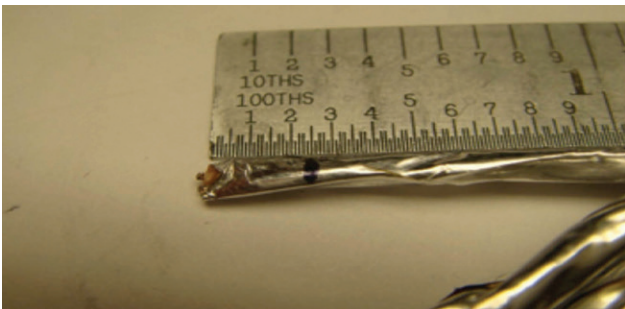


Figure 18: Marking each pair

11. Remove the foil down to the mark on each pair, keeping the foil as tightly wrapped as possible (Figure 19).

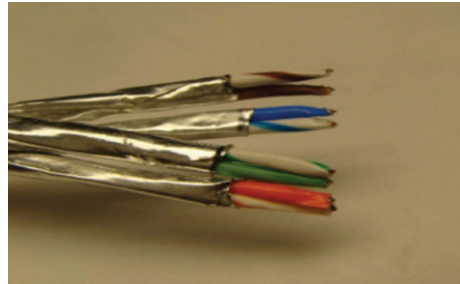


Figure 19: Removing foil from each pair

12. Mark each primary at 0.125 inch from the end (Figure 20).

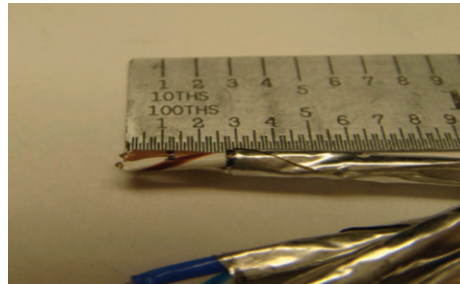


Figure 20: Marking each primary

13. Install the K1906 positioner for the pin contacts into the M22520/2-01, and select setting 3. To prevent stray wire strands during crimping, strip and crimp one primary at a time (Figure 21).

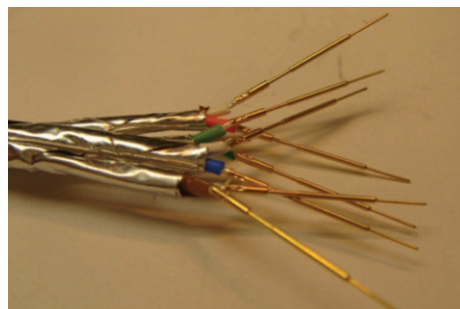


Figure 21: Stripping and crimping primaries

14. Check the metal spacers in the inner insulator. If the spacers have fallen out, slide them back in so that they are positioned as shown in Figure 22.
15. With the crimp end facing you, insert each primary into the inner insulator, which is divided into four quadrants (Figure 23). You can start in any quadrant, but you must insert the first primary into the left side of the quadrant, and continue clockwise (Figure 24). The following table shows the order in which you should insert the primaries:



Figure 22: Inner insulator with metal spacers

Pin	Wire
1	Green
2	Green/White
3	Brown
4	Brown/White
5	Blue
6	Blue/White
7	Orange
8	Orange/White

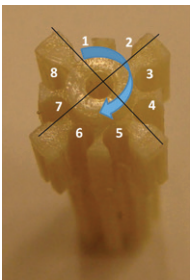


Figure 23: Diagram of pin positions

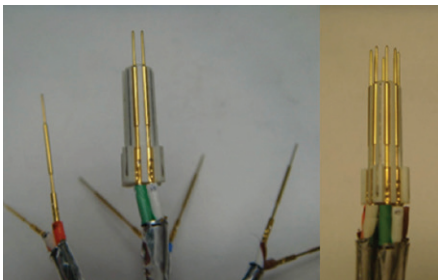


Figure 24: Inserting primaries into the connector

16. With the insulator key between the green and green/white primaries, slide the outer insulator over the contacts and the inner insulator until it is completely seated (Figure 25).

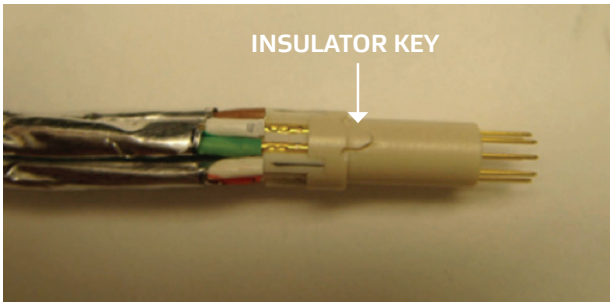


Figure 25: Seating the outer insulator

17. Slide the plastic bushing down the cable until it meets the insulator (Figure 26).



Figure 26: Returning the plastic bushing

18. Slide the braid back toward the inner insulator (Figure 27).



Figure 27: Returning the braid

19. Slide the ferrule toward the plastic bushing (Figure 28).



Figure 28: Returning the ferrule

20. Using a braid brush or pick, brush the remaining braid at the top of the ferrule (Figure 29).



Figure 29: Brushing the braid

21. Align the internal keyway of the body with the insulator key (Figure 30), and install the outer body (Figure 31). If the ferrule does not seat fully, push down on the ferrule from the top with tweezers until it seats (Figure 32).



Figure 30: Aligning the keyway



Figure 31: Installing outer body



Figure 32: Pushing the ferrule

22. Trim excess braid until it does not hang over the ferrule (Figure 33).



Figure 33: Trimming the braid

Terminating the Crimp Pin Connector (Termination B)

1. Slide the grommet follower onto the cable with the blue end facing the cable. If the connector kit did not have the grommet follower, slide one piece of the TAT onto the cable (Figure 34).



Figure 34: Sliding grommet follower on cable

2. Measure and mark the cable 0.5 inch from the crimp pin end of the cable (Figure 35).



Figure 35: Marking the cable

3. Using a scalpel or scissors, slit the cable's jacket from its edge to the mark (Figure 36).

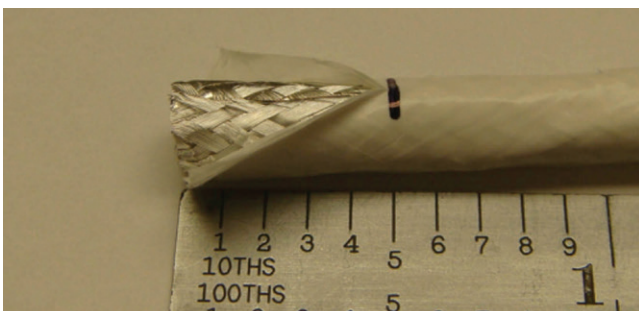


Figure 36: Slitting the cable jacket

4. Using needle-nose pliers, gently pull the outer jacket down the cable until you have exposed approximately 2 inches of braid (Figure 37).



Figure 37: Exposing the braid

5. Wrap the end of the cable's braid with polyimide tape (Figure 38).

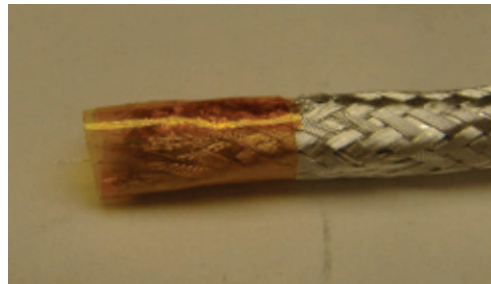


Figure 38: Taping the braid end

6. Slide a crimp ferrule onto the cable over the braid until it touches the edge of the outer jacket (Figure 39).



Figure 39: Sliding crimp ferrule on cable

7. With your fingers, push the braid back over the cable to expose the foil until it reaches the ferrule (Figure 40).



Figure 40: Exposing the foil

8. Remove the white filler as far down as possible.
9. Slide plastic bushing onto the cable until it abuts the braid (Figure 41).



Figure 41: Sliding plastic bushing onto cable

10. Mark each twisted pair at 0.25-inch from the end (Figure 42).

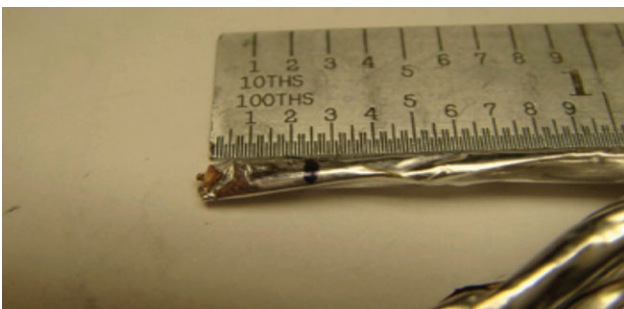


Figure 42: Marking each pair

11. Remove the foil down to the mark on each pair, keeping the foil as tightly wrapped as possible (Figure 43).

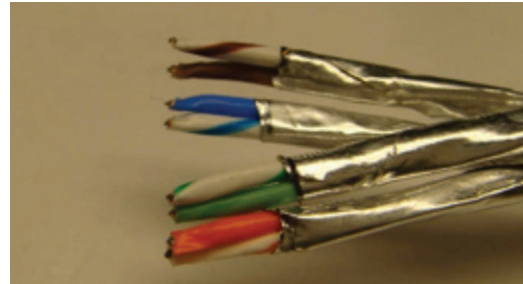


Figure 43: Removing foil from each pair

12. Mark each primary at 0.125 inch from the end (Figure 44).

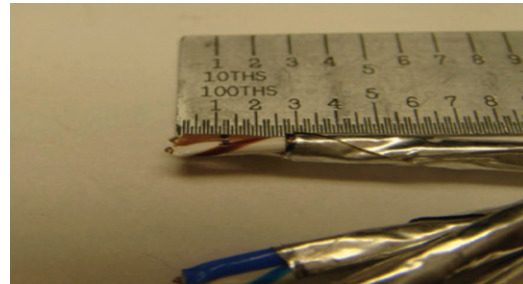


Figure 44: Marking each primary

13. Install the K1906 positioner for the pin contacts into the M22520/2-01, and select setting 3. To prevent stray wire strands during crimping, strip and crimp one primary at a time (Figure 45).

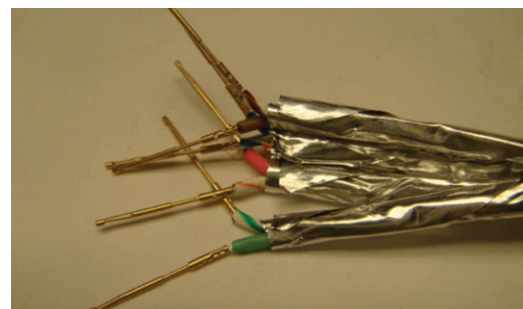


Figure 45: Stripping and crimping primaries

14. Check the metal spacers in the inner insulator. If the spacers have fallen out, slide them back in so that they are positioned as shown in Figure 46.
15. With the crimp end facing you, insert each primary into the inner insulator, which is divided into four quadrants (Figure 47). You can start in any quadrant, but you must insert the first primary into the right side of the quadrant, and continue counter clockwise (Figure 48). The following table shows the order in which you should insert the primaries:

Pin	Wire
1	Green
2	Green/White
3	Brown
4	Brown/White
5	Blue
6	Blue/White
7	Orange
8	Orange/White

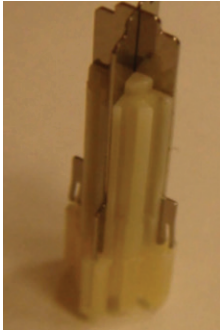


Figure 46: Inner insulator with metal spacers

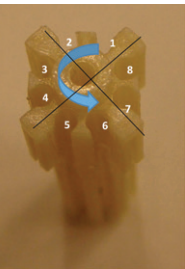


Figure 47: Diagram of pin positions

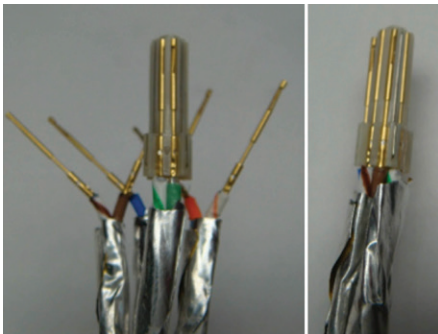


Figure 48: Inserting primaries into the connector

16. With the insulator key between the green and green/white primaries, slide the outer insulator over the contacts and the inner insulator until it is completely seated (Figure 49).
17. Slide the plastic bushing down the cable until it meets the inner insulator (Figure 50).



Figure 49: Seating the outer insulator

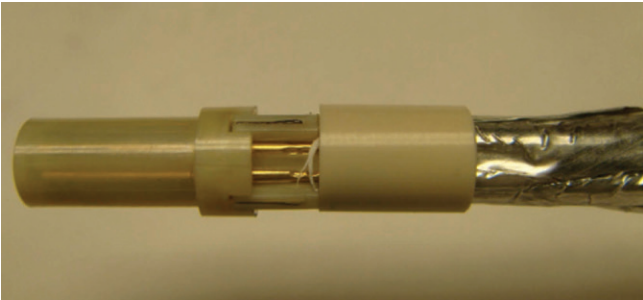


Figure 50: Returning the plastic pushing

18. Slide the braid back toward the inner insulator (Figure 51).



Figure 51: Returning the braid

19. Slide the ferrule toward the plastic bushing (Figure 52).

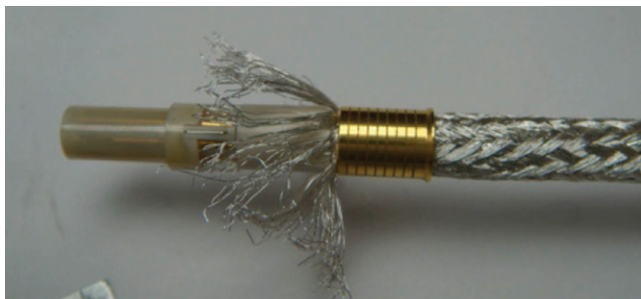


Figure 52: Returning the ferrule

20. Using a braid brush or pick, brush the remaining braid at the top of the ferrule (Figure 53).



Figure 53: Brushing the braid

21. Align the internal keyway of the body with the insulator key (Figure 54), and install the outer body (Figure 55). If the ferrule does not seat fully, push down on the ferrule from the top with tweezers until it seats (Figure 56).



Figure 54: Aligning the keyway



Figure 55: Installing outer body



Figure 56: Ferrule not fully seated

22. Trim excess braid until it does not hang over the ferrule (Figure 57).



Figure 57: Trimming the braid

Closing the Connectors

1. Check the ends for continuity and make sure the wiring is in the proper position.
2. For each connector end, ensure that each body is fully seated on the crimp ferrule and use crimper M22520/5-01 (or GS206 as needed for the specific contact), die set Y143 to crimp each connector (Figures 58–59).
3. Slide the grommet follower down both ends of the cable (Figures 60–61).



Figure 58: Crimp Socket



Figure 59: Crimp Pin



Figure 60: Crimp socket with grommet follower



Figure 61: Crimp pin with grommet follower

4. If grommet followers were not included, position the tubing just above the crimp line. Using a heat-gun, shrink the tubing over each connector (Figure 62–63).



Figure 62: Shrinking tubing on crimp socket



Figure 63: Shrinking tubing on crimp pin

5. Verify that the length of the assembly is accurate.

6. Perform all required testing. At a minimum, verify proper wiring and continuity, and check for shorts. Local authorities and end-users may require additional testing.

NOTICE — USE RESTRICTIONS APPLY. Not for use in food, drug, cosmetic or medical device manufacturing, processing, or packaging operations.

El Ochito is a registered trademark of Glenair, Inc.

GORE, *Together, improving life*, and designs are trademarks of W. L. Gore & Associates. © 2022 W. L. Gore & Associates, Inc.

