

CARLISLE OCTAX® CONNECTOR SYSTEM

The following procedures are based on Gore's best practices for terminating GORE® Aerospace Ethernet Cables with the Carlisle Octax® Connector System for both socket and plug 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 1–6).
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. Cut the cable to the desired assembly length minus 2.3 centimeters (cm) to allow for length of the connectors (i.e., 1.3 cm for the socket connector and 1.0 cm for the plug connector).
4. Print any labels required by the end-user, and slide the center label onto the cable.
5. To identify the end for the receptacle connector, place a piece of tape on the end in which the pairs rotate clockwise in order of green → orange → blue → brown (Figure 10).



Figure 7: Pairs configuration at socket end



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

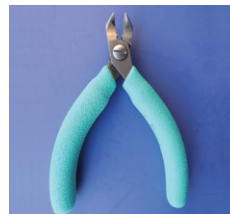


Figure 2: Cutters



Figure 3: Crimpers (M22520/2-01)



Figure 4: Socket positioner (K41)



Figure 5: Pin positioner (K-42)

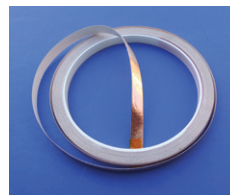


Figure 6: Copper foil tape¹ (3M-3313)

¹ Gore recommends using copper foil tape instead of polyimide tape during termination procedures because copper tape is easier to use and improves signal integrity.

Terminating the Plug Connector (Termination A)

1. With the blue rubber end closest to the cable, slide the backshell onto the socket end of the cable. Then, with the teeth closest to the cable, slide the inner ring onto the socket end of the cable (Figure 8). Push both components up the cable, and tape them out of the way.

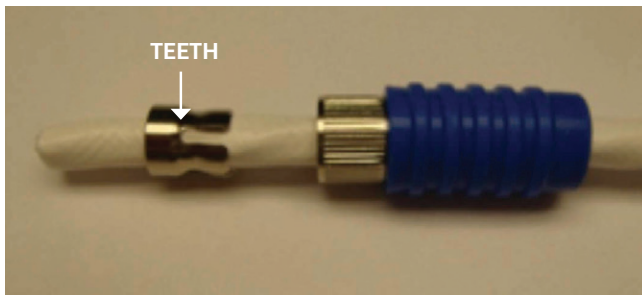


Figure 8: Sliding components onto the cable

2. Measure and mark the cable 0.5 inch from the socket end of the cable (Figure 9).



Figure 9: Marking the cable

3. Using a scalpel or scissors, slit the cable's jacket from the edge to the mark (Figure 10).

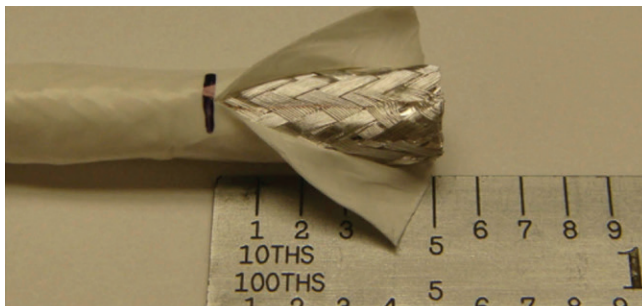


Figure 10: Slitting the cable jacket

4. Using needle-nose pliers, gently pull the outer jacket down the cable until you have exposed approximately 1.5 inches of braid (Figure 11).



Figure 11: Exposing the braid

5. With your fingers, push the braid back over the cable to expose approximately 1.5 inches of the foil (Figure 12).

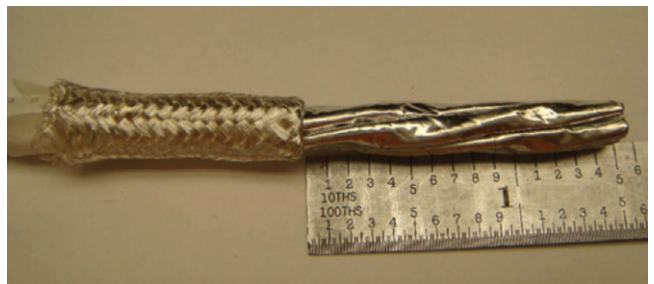


Figure 12: Exposing the foil

6. Cut a 0.5-inch piece of copper or polyimide tape for each pair of the cable. Wrap a piece around each pair 0.25 inch from the end of the cable (Figure 13).

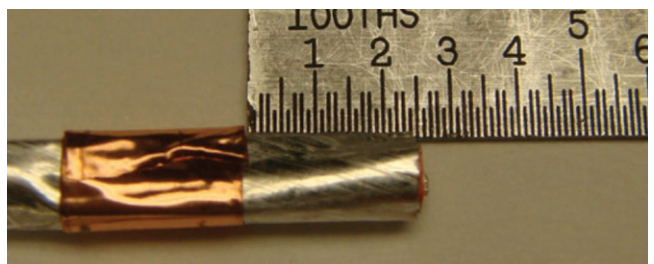


Figure 13: Wrapping the pair

7. With cutters, cut the foil edge where it meets the tape. Then, tear the foil along the tape edge (Figure 14).

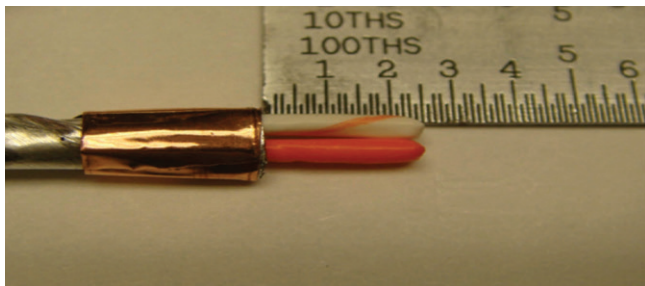


Figure 14: Removing the foil edge

8. Remove the white filler as far down as possible.
9. Mark each pair 0.15 inch from the end of the cable (Figure 15).

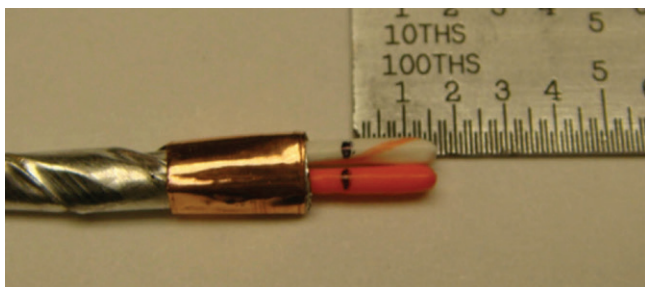


Figure 15: Marking each pair

10. Install the K42 positioner for the pin contact 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 16).



Figure 16: Stripping the contacts

11. Using a blue insulator from the connector kit, insert the contact into an insulator with the solid colored wire in the hole on the left (Figure 17). Be sure to maintain a twist in each pair while inserting it into the insulator.

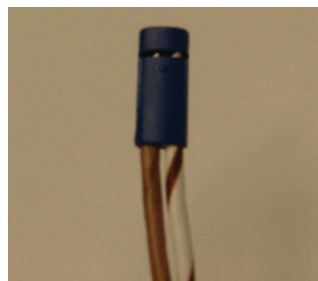


Figure 17: Inserting contacts into insulators

12. Using the pin numbers engraved on the connector piece as a guide (Figure 18), insert each contact into the housing position listed in the following table; twist the contact as needed to align the insulator (Figure 19).

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

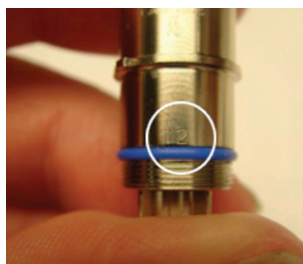


Figure 18: Engraved pin number

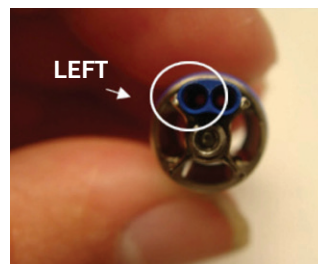


Figure 19: Inserting contacts into housing

13. Gently slide the braid back toward the connector, and trim any excess where the braid meets the metal spacers in the connector (Figure 20).

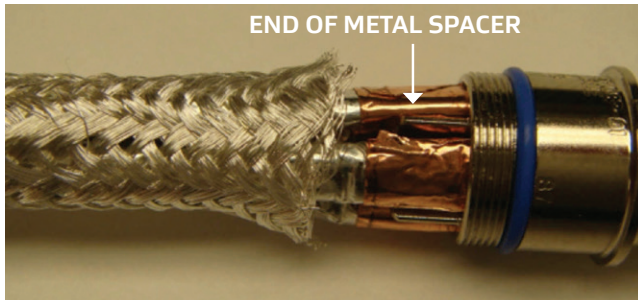


Figure 20: Trimming the braid

14. Remove the tape holding the backshell and inner ring. Slide the inner ring over the braid and wires until it seats over the metal spacers (Figure 21).

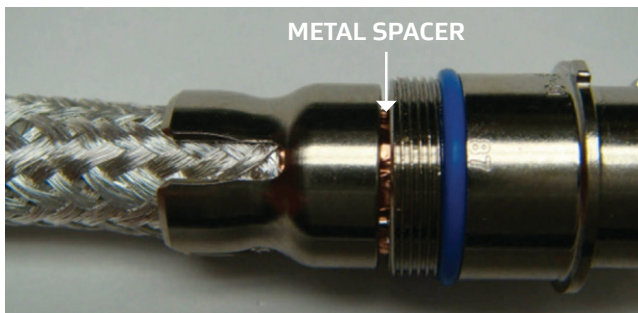


Figure 21: Seating the inner ring

15. With your fingers or needle-nose pliers, push the outer jacket as close as possible to the connector (Figure 22).



Figure 22: Returning the outer jacket

16. Carefully trim any excess jacket material (Figure 23).



Figure 23: Trimming the outer jacket

17. Slide the backshell onto the connector, and manually tighten it until it is secure (Figure 24).



Figure 24: Seating the backshell

Terminating the Plug Connector (Termination B)

1. With the blue rubber end closest to the cable, slide the backshell onto the plug end of the cable. Then, with the teeth closest to the cable, slide the inner ring onto the plug end of the cable (Figure 25). Push both components up the cable, and tape them out of the way.

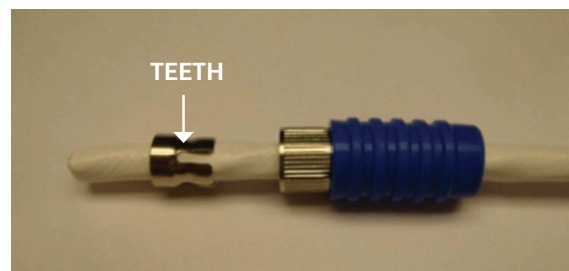


Figure 25: Sliding components onto the cable

2. Measure and mark the cable 0.5 inch from the socket end of the cable (Figure 26).

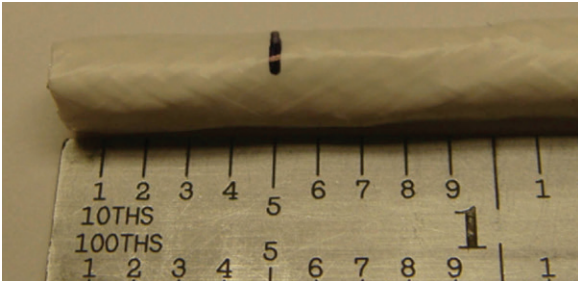


Figure 26: Marking the cable

3. Using a scalpel or scissors, slit the cable's jacket from the edge to the mark (Figure 27).

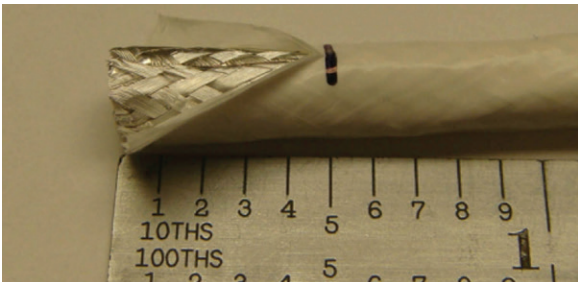


Figure 27: Slitting the cable jacket

4. Using needle-nose pliers, gently pull the outer jacket down the cable until you have exposed approximately 1.5 inches of braid (Figure 28).

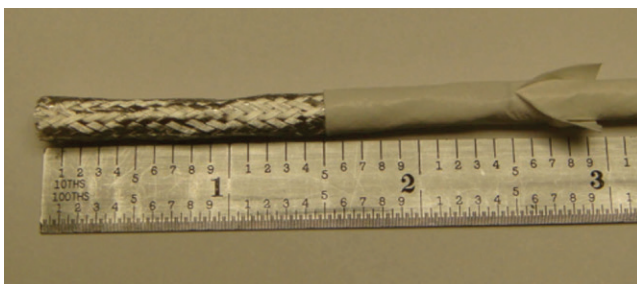


Figure 28: Exposing the braid

5. With your fingers, push the braid back over the cable to expose approximately 1.5 inches of the foil (Figure 29).



Figure 29: Exposing the foil

6. Cut a 0.5-inch piece of copper or polyimide tape for each pair of the cable. Wrap a piece around each pair 0.25 inch from the end of the cable (Figure 30).

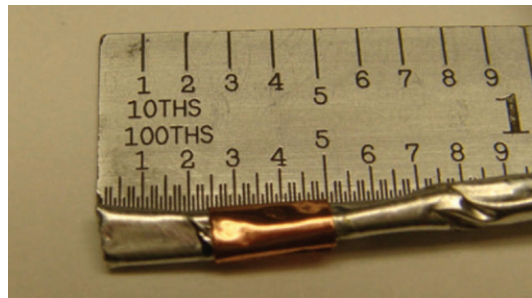


Figure 30: Wrapping the pair

7. With cutters, cut the foil edge where it meets the tape. Then tear the foil along the tape edge (Figure 31).

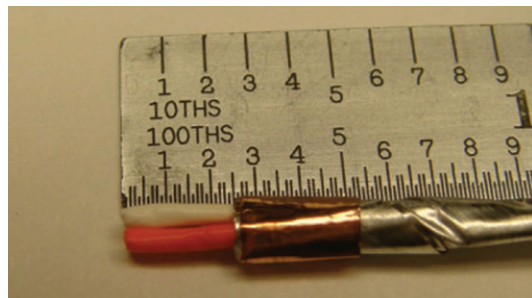


Figure 31: Removing the foil edge

- 8. Remove the white filler as far down as possible.
- 9. Mark each pair 0.15 inch from the end of the cable (Figure 32).

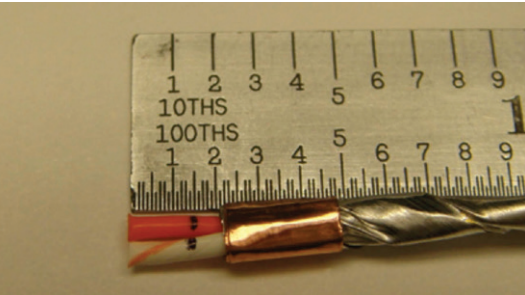


Figure 32: Marking each pair

- 10. Install the K42 positioner for the pin contact 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 33).



Figure 33: Stripping the contacts

- 11. Using a blue insulator from the connector kit, insert the contact into an insulator with the solid colored wire in the hole on the right (Figure 34). Be sure to maintain a twist in each pair while inserting it into the insulator.

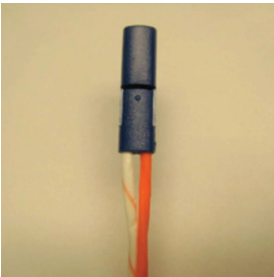


Figure 34: Inserting contacts into insulators

- 12. Using the pin numbers engraved on the connector piece as a guide (Figure 35), insert each contact into the housing position listed in the following table; twist the contact as needed to align the insulator (Figure 36).

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



Figure 35: Engraved pin number

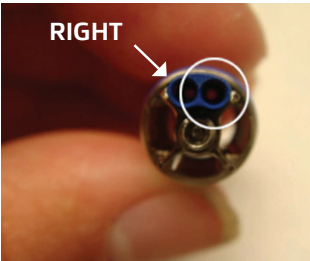


Figure 36: Inserting contacts into housing

- 13. Gently slide the braid back toward the connector, and trim any excess where the braid meets the metal spacers in the connector (Figure 37).

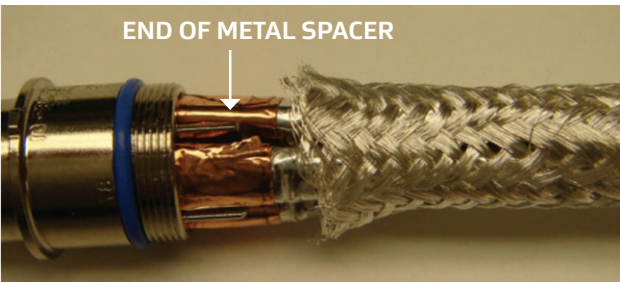


Figure 37: Trimming the braid

14. Remove the tape holding the backshell and inner ring. Slide the inner ring over the braid and wires until it seats over the metal spacers (Figure 38).

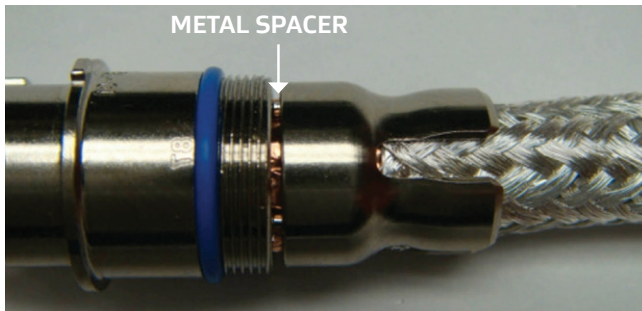


Figure 38: Seating the inner ring

15. With your fingers or needle-nose pliers, push the outer jacket as close as possible to the connector (Figure 39).



Figure 39: Returning the outer jacket

16. Carefully trim any excess jacket material (Figure 40).



Figure 40: Trimming the outer jacket

17. Slide the backshell onto the connector, and manually tighten it until it is secure (Figure 41).



Figure 41: Seating the backshell

Final Testing

After both connectors have been terminated, Gore recommends that the assembly should at least be verified for proper wiring and continuity, and it should be checked for shorts. Local authorities and end-users may require additional testing.

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