

# LEMO® 2B SERIES CONNECTOR SYSTEM

The following procedures are based on Gore's best practices for terminating GORE® Aerospace Ethernet Cables with the LEMO® 2B Series Connector System for both plug (pin) and socket versions. Following these procedures will enable you to maximize the performance of your assembly; however, results may vary depending on the specific application.

## Preparing the Cable and Parts

1. Gather the tools and materials required for assembly and termination (Figures 1 – 6).
2. Be sure to evaluate the tools and procedures in these termination instructions for potential hazards; collect the proper personal protective equipment you will need.
3. 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.
4. Cut a piece of cable to the desired assembly length minus 3.6 cm for the length of the connectors you are terminating:
  - 2.0 cm for the plug connector
  - 1.6 cm for the socket connector
5. Print any labels required by the end-user, and slide the center label onto the cable.
6. To identify the end of the plug connector, place a piece of tape on the end in which the pairs rotate clockwise in order of green → brown → blue → orange (Figure 7).



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

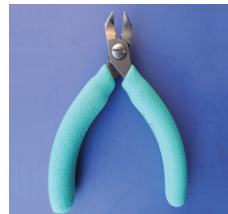


Figure 2: Cutters



Figure 3: Crimpers (DPC.91.701.V)



Figure 4: Male positioner (DCE.91.072.BVC)



Figure 5: Female positioner (DCE.91.072.BVM)



Figure 6: De-insertion tool (DCF-91.070.2LT)

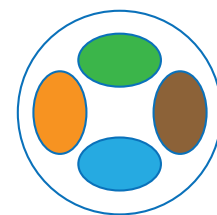


Figure 7: Pairs configuration at plug connector

## GORE® Aerospace Ethernet Cables

### Termination Instructions

## Preparing the Plug Connector

1. With the small end nearest the cable, slide the connector cap onto the cable (Figure 8).



Figure 8: Attaching the connector cap

2. With the smallest end near the cable, slide the collet nut over the cable; then slide the collet over the cable with the teeth facing the collet nut (Figure 9).

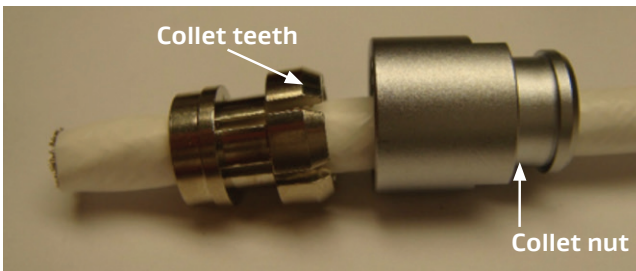


Figure 9: Attaching the collet and collet nut

3. Measure and mark the cable 0.5 inch from its end (Figure 10).



Figure 10: Marking the cable

4. Using a scalpel or scissors, slit the cable's jacket from its edge to the mark (Figure 11).

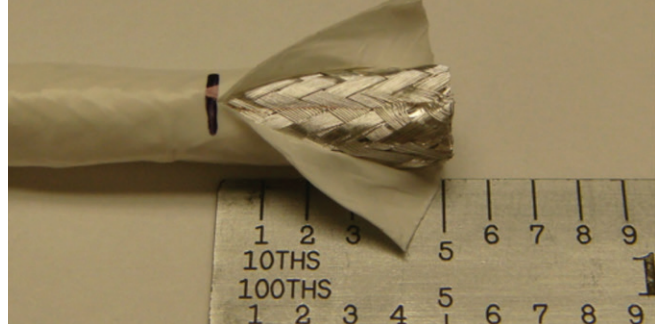


Figure 11: Slitting the cable jacket

5. Using needle-nose pliers, gently pull the outer jacket down the cable until you have exposed approximately 1.5 inches of braid (Figure 12).

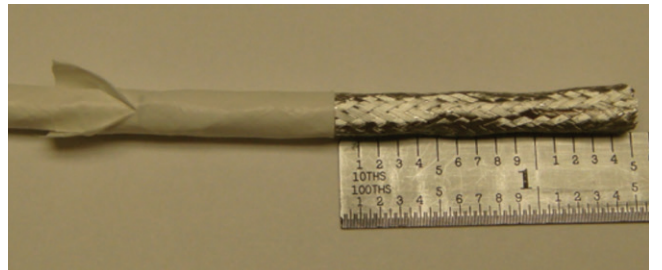


Figure 12: Exposing the braid

6. With your fingers, push the braid back over the cable to expose approximately 1.5 inches of the foil (Figure 13).



Figure 13: Exposing the foil

7. Remove as much white filler as possible.
8. Cut four pieces of polyimide tape that are 0.50-inch long. Wrap a piece of the tape around each pair 0.25 inch from the end of the cable, keeping the foil wrapped as tight as possible (Figure 14).

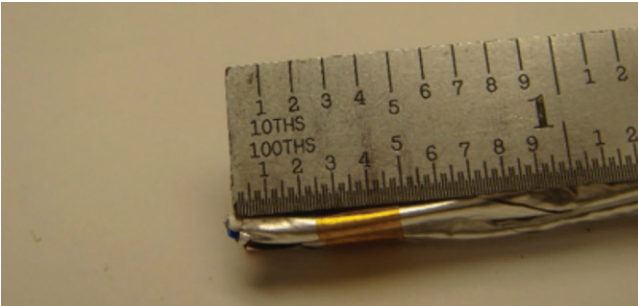


Figure 14: Taping each pair

9. With cutters, cut the foil on each pair where it meets the tape (Figure 15). Tear the foil along the edge.

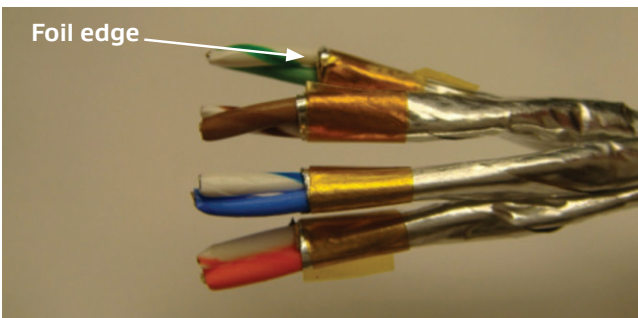


Figure 15: Tearing the foil

10. Measure and mark each conductor 0.15 inch from the end (Figure 16).

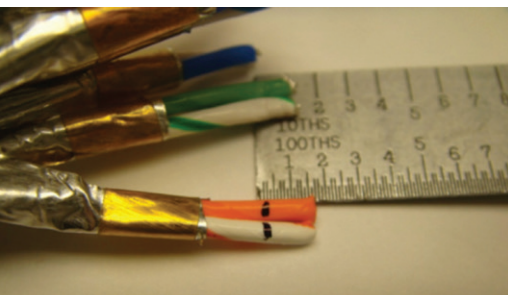


Figure 16: Marking each conductor

11. Install the DCE.91.072.BVC positioner for the pin contact into the DPC.91.701.V hand crimpers, and select setting 5. To prevent stray wire strands during crimping, strip and crimp one primary at a time using contacts from the connector (Figure 17).



Figure 17: Stripping the pairs

12. Insert the contacts into the insulator (Figure 18). The green conductor goes into the position closest to the insulator key as shown in the diagram in Figure 19.

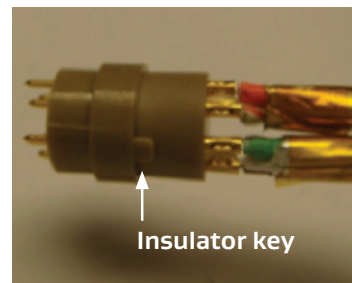


Figure 18: Inserting contacts into insulator

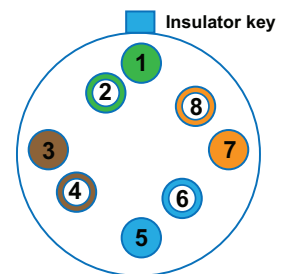


Figure 19: Contact positions inside insulator

## GORE® Aerospace Ethernet Cables

### Termination Instructions

13. Slide the braid back toward the insulator, and trim the braid so that its end is even with or slightly covers the tape on the foil (Figure 20).

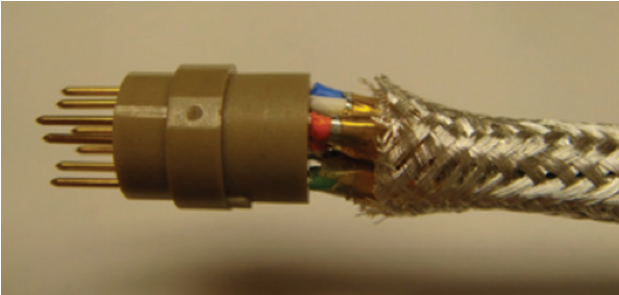


Figure 20: Replacing the braid

14. Using your fingers or needle nose pliers, slide the outer jacket back so that it is 0.8 inch from the end of the insulator, and trim any excess material (Figure 21).



Figure 21: Returning the jacket

15. Align the two parts of the mid-piece, and hold them in place so you can complete the next several steps (Figure 22).

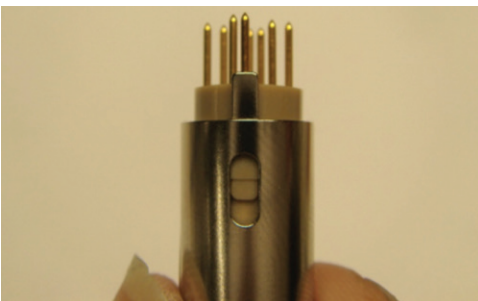


Figure 22: Seating the mid-piece

16. Slide the collet down, and align it with the notch on the mid-piece (Figure 23).



Figure 23: Seating the collet

17. Insert the connector housing on the mid-piece, ensuring that the red dot is aligned with the key on the insulator (Figures 24 and 25).



Figure 24: Installing the connector housing



Figure 25: Insulator key for alignment

## Terminating the Socket Connector

1. With the small end nearest the cable, slide the connector cap onto the cable (Figure 26).



Figure 26: Attaching the connector cap

2. With the smallest end near the cable, slide the collet nut over the cable; then slide the collet over the cable with the teeth facing the collet nut (Figure 27).

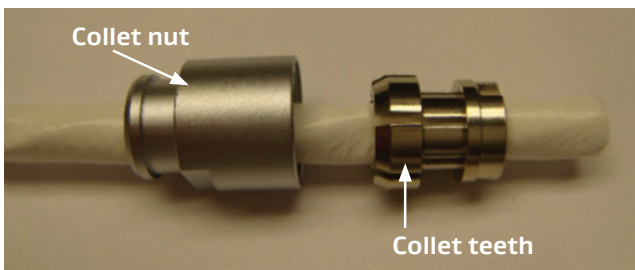


Figure 27: Attaching the collet and collet nut

3. Measure and mark the cable 0.5 inch from its end (Figure 28).



Figure 28: Marking the cable

4. Using a scalpel or scissors, slit the cable's jacket from its edge to the mark (Figure 29).



Figure 29: Slitting the cable jacket

5. Using needle-nose pliers, gently pull the outer jacket down the cable until you have exposed approximately 1.5 inches of braid (Figure 30).

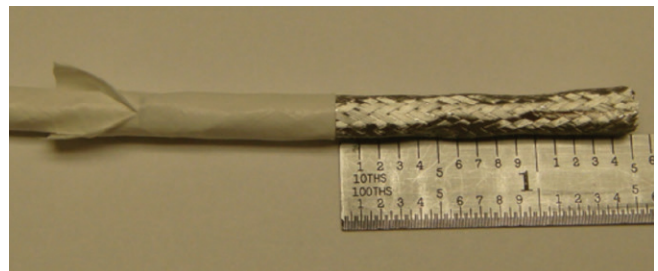


Figure 30: Exposing the braid

6. With your fingers, push the braid back over the cable to expose approximately 1.5 inches of the foil (Figure 31).

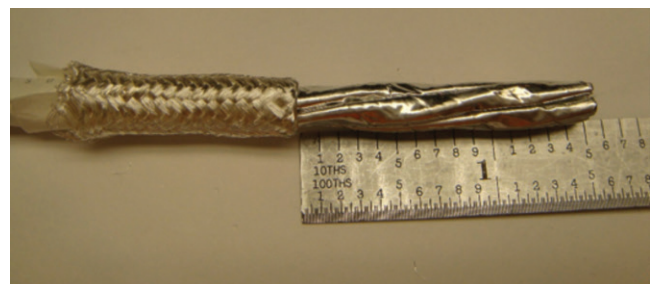


Figure 31: Exposing the foil

## GORE® Aerospace Ethernet Cables

### Termination Instructions

7. Remove as much white filler as possible.
8. Cut four pieces of polyimide tape that are 0.50-inch long. Wrap a piece of the tape around each pair 0.25 inch from the end of the cable, keeping the foil wrapped as tight as possible (Figure 32).

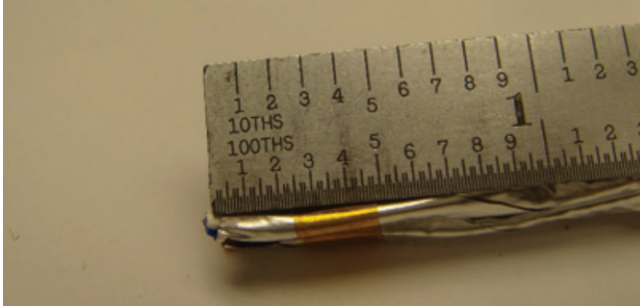


Figure 32: Taping each pair

9. With cutters, cut the foil on each pair where it meets the tape (Figure 33). Tear the foil along the edge.

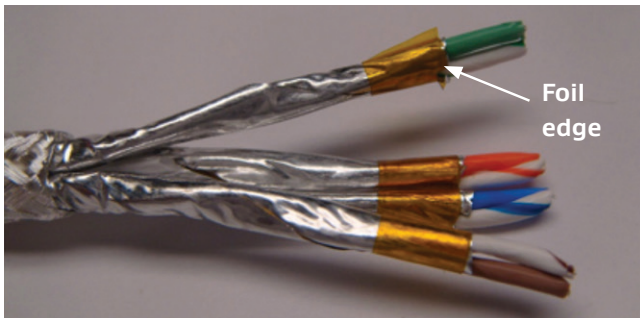


Figure 33: Tearing the foil

10. Measure and mark each conductor 0.15 inch from the end (Figure 34).

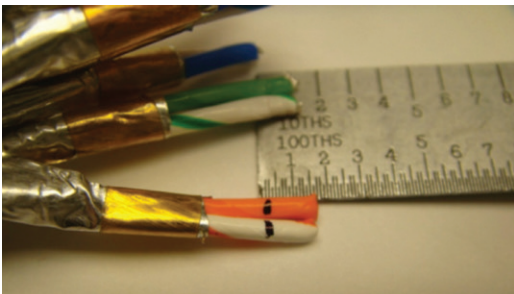


Figure 34: Marking each conductor

11. Install the DCE.91.072.BVM positioner for the pin contact into the DPC.91.701.V hand crimpers, and select setting 5. To prevent stray wire strands during crimping, strip and crimp one primary at a time using contacts from the connector (Figure 35).

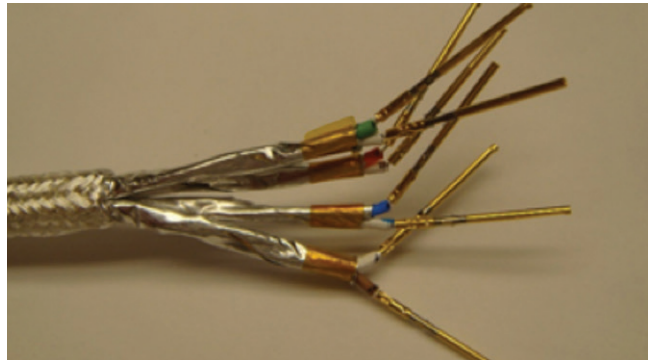


Figure 35: Stripping the pairs

12. Insert the contacts into the insulator (Figure 36). The green conductor goes into the position closest to the insulator key as shown in the diagram in Figure 37.

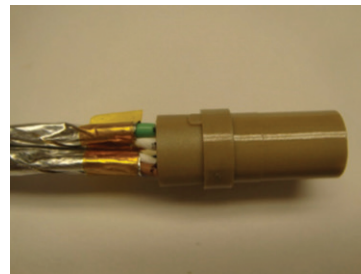


Figure 36: Inserting contacts into insulator

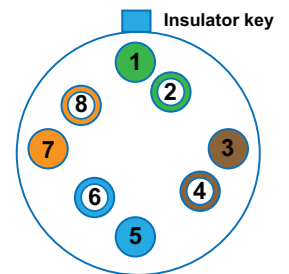


Figure 37: Contact positions inside insulator

13. Slide the braid back toward the insulator, and trim the braid so that its end is even with or slightly covers the tape on the foil (Figure 38).

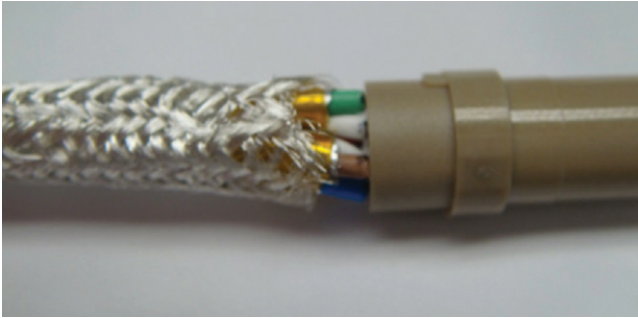


Figure 38: Replacing the braid

14. Using your fingers or needle nose pliers, slide the outer jacket back so that it is 0.8 inch from the end of the insulator, and trim any excess material (Figure 39).

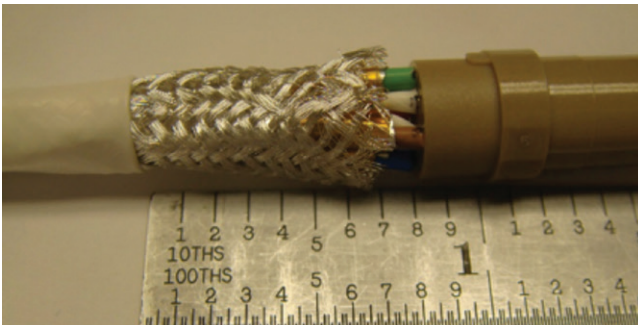


Figure 39: Returning the jacket

15. Align the two parts of the mid-piece, and hold them in place so you can complete the next several steps (Figure 40).



Figure 40: Seating the mid-piece

16. Slide the collet down, and align it with the notch on the mid-piece (Figure 41).

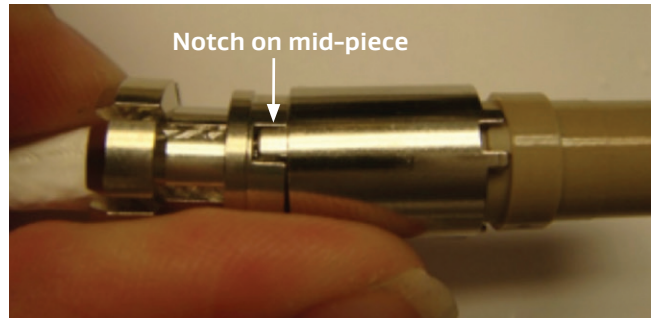


Figure 41: Seating the collet

17. Insert the connector housing on the mid-piece, ensuring that the red dot is aligned with the key on the insulator (Figures 42 and 43).



Figure 42: Installing the connector housing



Figure 43: Insulator key for alignment

## Closing the Connector

1. Perform all in-process testing. At a minimum, verify proper wiring and continuity, and check for shorts. Local authorities and end-users may require additional testing.
2. Verify that the assembly length is accurate.
3. Set a torque meter to 40 inch-pounds, and apply torque to the collet nut.
4. Slide the connector caps down the cable, and snap them onto the collet nuts of both connectors (Figures 44 and 45).
5. Perform all final testing. At a minimum, verify proper wiring and continuity, and check for shorts. Local authorities and end-users may require additional testing.
6. Using a heat-gun, shrink any applicable labels.



Figure 44: Installing the connector cap on plug end



Figure 45: Installing the connector cap on socket end

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