GORE® Aerospace Ethernet Cables

Termination Instructions

HARTING RJ Industrial® 10G RJ45 Connector System

The following procedures are based on Gore's best practices for terminating GORE® Aerospace Ethernet Cables with the Harting RJ45 Connector System. Following these procedures will enable you to maximize the performance of your assembly, particularly for Cat6a protocol. These procedures should be used as a guide in conjunction with current connector manufacturing instructions.

Figure 1: Needle nose pliers and scalpel

Figure 2: Soft jaw pliers

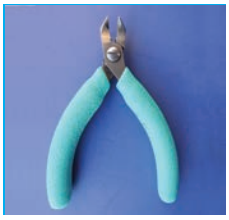

Figure 3: Cutters

Figure 4: Heat gun

Preparing the Cable and Parts

1. Gather the tools and materials required for assembly and termination (Figures 1–4).
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 your drawing.
3. Cut two 1.5-inch pieces of 0.5-inch yellow RNF-100 heat-shrink sleeving for environmental protection.
4. Cut the cable to the desired assembly length minus 1.4 inches to allow for the length of the connectors that you are terminating (i.e., 0.7 inches for each connector).
5. Print any labels required by the end-user.

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Terminating the Connector (both ends)

1. Loosen the retaining nut on the black housing and slide the round end onto the cable. Then, slide the labels, yellow heat-shrink sleeving, and black housing from the connector kit onto the cable (Figure 5). There may be other items to slide onto the connector as well; therefore, be sure to slide all items that cannot be slipped over the connector once the plugs are installed.

Figure 5: Attaching the labels, sleeving and black housing

2. Measure and mark the jacket 1.1 inches from the working end of cable.
3. Using a scalpel or work knife, remove the outer jacket at the mark.
4. Wrap the tape around the cable so that there is 0.70 inches of braid showing (Figure 6).

Figure 6: Wrapping the tape

5. Remove the braid so that it is flush with the tape (Figure 7).

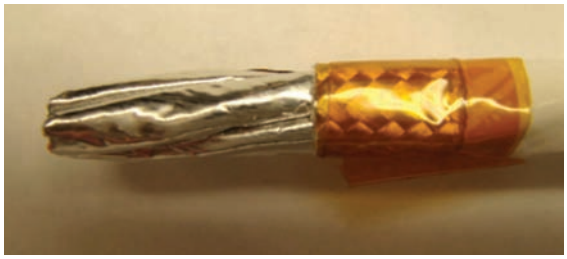

Figure 7: Removing the braid

6. Using cutters, cut the foil edge where it meets the tape (Figure 8). Tear the foil along the tape edge.

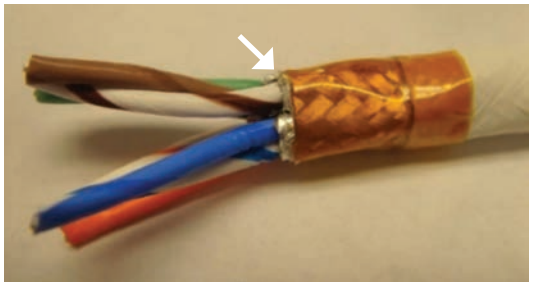

Figure 8: Tearing the foil

7. Trim the white filler between the exposed pairs as much as possible.
8. Starting with the bottom row, insert the wires into the connector according to the following diagram (Figures 9 — 10).

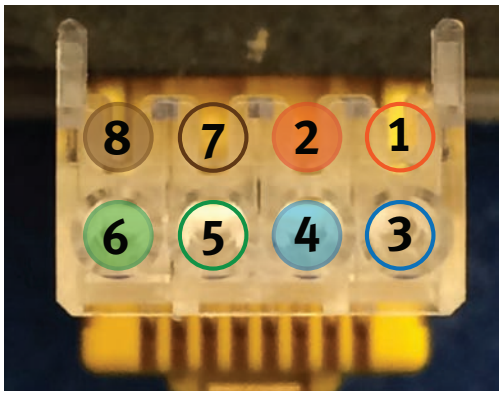

Figure 9: Wire positions inside connector

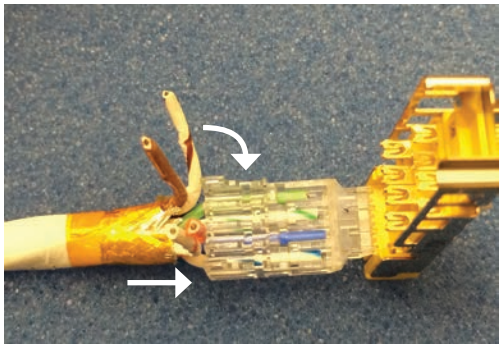

Figure 10: Inserting wires in bottom row

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9. Ensure the bottom row of wires are inserted well past the opening for the contacts (Figure 11).

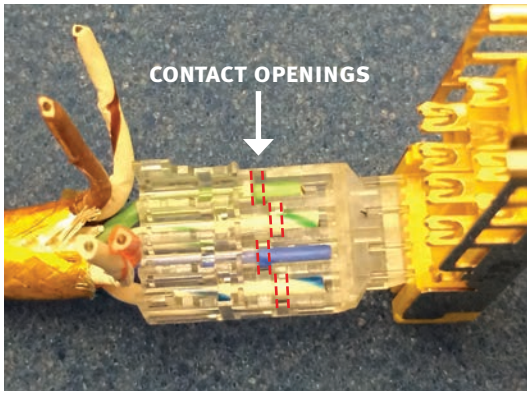

Figure 11: Wires inserted in position in bottom row

10. Insert the top row of wires into the connector according to the diagram (Figure 12).

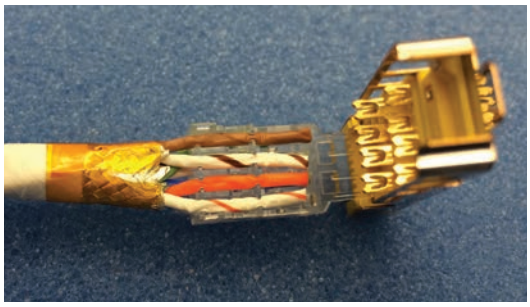

Figure 12: Wires inserted in position in top row

11. Using cutters, cut the top row of wires flush with the edge of the top row on the connector (Figure 13). This will prevent the top wires from shorting to the bottom wires.

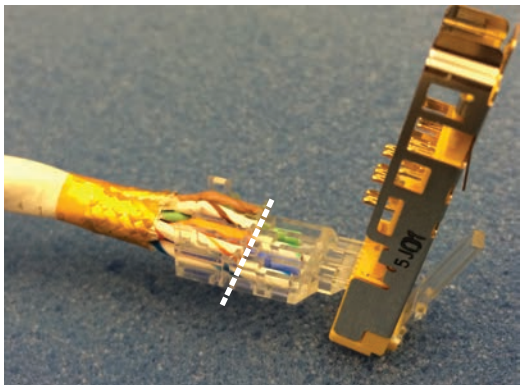

Figure 13: Cutting the top row of wires

12. Using soft jaw pliers, gently push down the top part of the connector and snap into place (Figures 14 — 15).

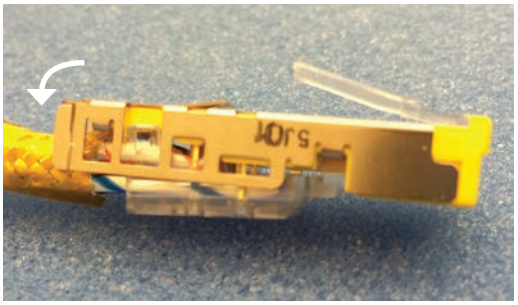

Figure 14: Pushing the top part of connector

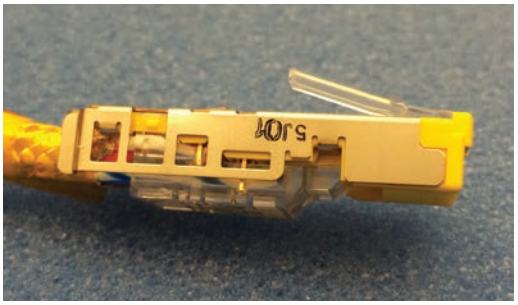

Figure 15: Snapping the top part of connector

13. With fingers, gently remove the tape from the braid.

14. Insert the metal EMI shell onto the bottom of the connector and click into place (Figure 16).

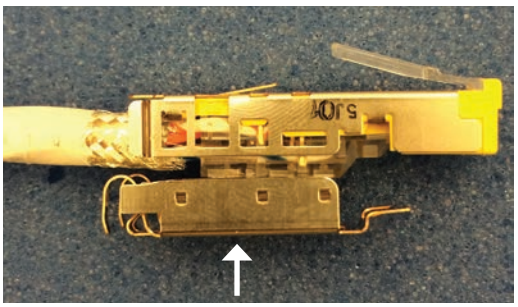

Figure 16: Inserting the metal EMI shell

15. Pull up the black housing over the connector and click into place. Then, tighten the retaining nut as far as it will go (Figure 17).

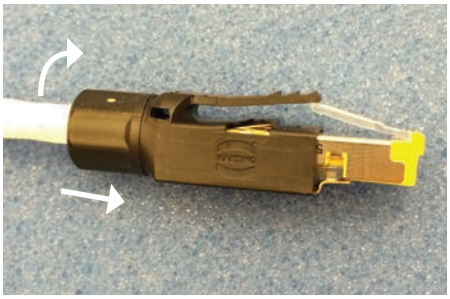

Figure 17: Tightening the retaining nuts

16. Slide the yellow RNF-100 heat-shrink sleeving up and over the back of the retaining nut. Then, using a heat gun, shrink the sleeving into place (Figure 18).

Figure 18: Shrinking sleeving on retaining nut

17. 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. Gore recommends testing the final assembly using an advanced signal Integrity tester such as the Fluke Networks® DSX-5000 or equivalent.