

# Amphenol Instructions for Kevlar Lanyard Field Rework

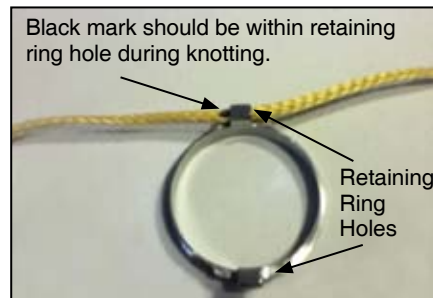
## Purpose

1. Instructions for proper rework of lanyards on Amphenol Connector part number 10-640101-103 MIL-DTL-38999 Lanyard Release Plug.
2. Steel lanyards on these connectors need to be replaced with the Kevlar lanyards within this kit. This instruction sheet illustrates the proper replacement procedure.

## Steps for replacing steel lanyards with Kevlar lanyards.

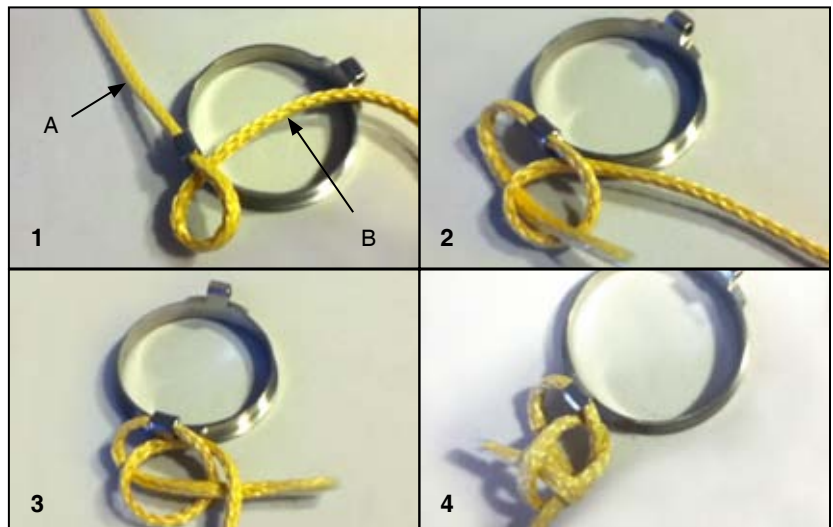
1. Remove steel lanyard from connector.
2. Un-package Kevlar braid and heat sleeves.
3. Thread Kevlar braid through first retaining ring hole. The black mark on the Kevlar should be within the retaining ring hole. See **Figure 1** for illustration.

Note: Parts shown in graphics may not be exact parts in kit.



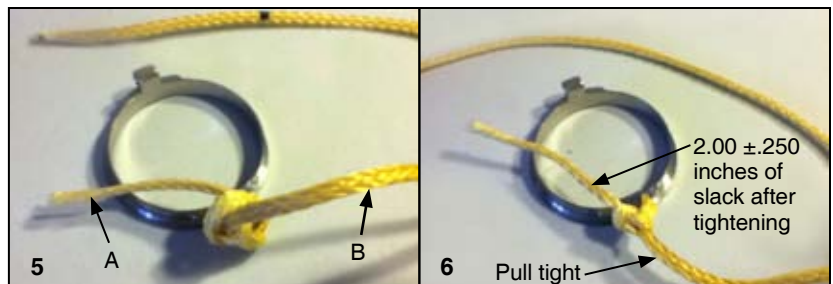
**Figure 1: Locating Knot**

4. Tie a bowline knot as shown in the four steps of **Figure 2**. During and after tying, the black mark needs to remain inside or within .100 inches of retaining ring hole as shown in **Figure 1**. Take care to keep knot as close to retaining ring hole as possible (don't have a large loop). To do this, loosely get the knot completed as in image 4 of **Figure 2**, then proceed with step 5.



**Figure 2: Bowline Knot Illustration**

5. Without undoing knot, work the loose knot up towards the retaining ring as shown in **Figure 3**. Pull so side A is approximately 1.50 inches, continue to push the knot further towards retaining ring and pull side B, then pull tight sides A and B. If there is not 2.00 +/- .250 inches of slack, or the knot is not within .100 inches from retaining ring, carefully loosen knot and try to fix, or untie and begin step 4.



**Figure 3: Tightening Knot**

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## Steps for replacing steel lanyards with Kevlar lanyards, cont.

6. Slide both heat shrink sleeves onto the longer portion of the lanyard as shown in **Figure 4**.
7. Thread braid through second retaining hole. The sleeves should be in the pull area of the lanyard. The second mark on the Kevlar braid should also be in a location no more than .100 inches from its respective retaining ring hole.
- Note: The marks on the braid must remain within .100 from their respective retaining ring holes throughout the remaining steps to ensure proper lanyard length.



Figure 4: Heat Shrink Sleeves

8. Tie a Bowline knot as shown in **Figure 5** at second retaining ring hole, following the same steps 4 and 5. Ensure knot is tightly secured and done properly, and that the marks on the braid are within .100 inches of retaining ring hole or not visible before proceeding with step 9. The slack lanyard should be approximately 2.00 inches long +/- .250, and the knot should be within .100 inches of the top of the retaining ring hole.

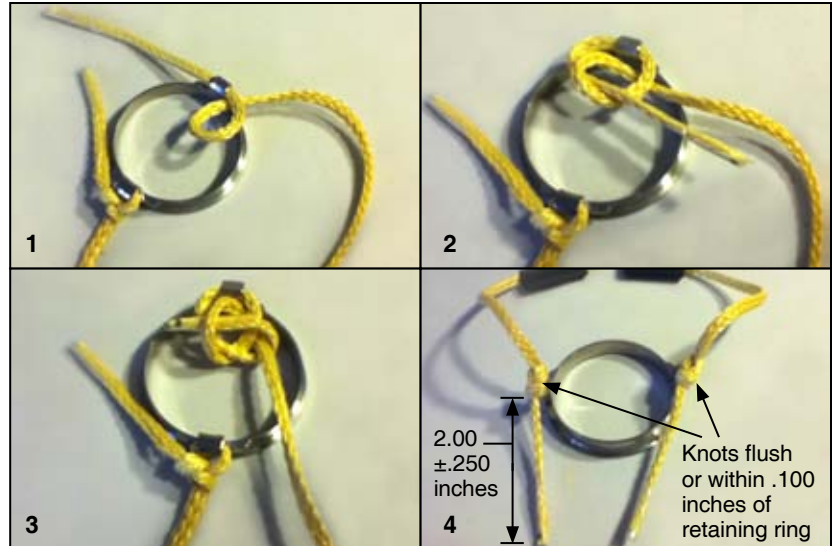


Figure 5: Second Bowline Knot

9. Hold the connector with one hand and pull tight on the Kevlar lanyard to tighten the knots.
10. Before proceeding, confirm that the length of the end of the Kevlar braid to end of the plug shell is 7.00 inches +/- .236". This measurement is while the lanyard is pulled taut over a .500" mandrel, or anything with a .500 inch diameter. The length can also be checked using a jig designed for this purpose.

11. Confirm the knots are tight. Slide heat shrink sleeves over the two sets of Bowline knots and remaining Kevlar braid and then fold the remainder back into the sleeve, as shown in **Figure 6**.
12. Ensuring the Heat shrink sleeves remain in place, apply heat with a heat gun to heat shrink sleeves until sleeves secure both knots. Do not overheat the sleeve, heat enough so that the sleeve is secure as shown in **Figure 6**.



Figure 6: Heat Shrink Sleeves over Knots

13. Examine assembly for damage.
14. If there is any damage or problems during any of the above steps, or at any time the assembly does not look like Figures 1-6, begin current step again, ensuring assembly conforms to all previous steps. If when beginning current step there is any damage discard Kevlar lanyard and use new part.
15. Permanently mark the operating sleeve of the connector with the letters "MOD".
16. Confirm the following:
- Heat shrink sleeve covers knots.
  - The end of the Kevlar braid protruding from heat sleeve is acceptable up to .500 inch maximum.
  - No damage or significant fraying of Kevlar braid.
  - The length from the end of the lanyard to the end of the plug shell when lanyard is pulled taut (not overly tight to the point of stretching) over a .500 inch diameter mandrel is between 6.764 inches and 7.236. This can be done using any .500 inch diameter object, pulling the connector taut, and measuring. The end of the plug shell is the furthest point on the connector from the lanyard in case drawing is not available.