Coaxial contacts for twisted pair shielded cable and dual braid coaxial cables

1 Scope

This document indicates how to terminate miniature coaxial contacts to shielded twisted pairs and double braided high immunity coaxial cables. These contacts are designed to be used in ARINC 404 connectors. They have been designed for the cables specified in the following section. Usage of other cables should be used with technical guidance from Tyco Electronics Corporation.

2 Reference documents

2.1 Drawings:

Product drawings:		Tooling drawings:	
133952	133962	69710	Crimping hand-tool
133954	134392	91074	Contact extraction tool
133957	133959	483883	Crimping die
		483884	Crimping die

2.2 Other documents:

Instruction sheet
411-15916 Instruction sheet (French language)

3 Applicable cables

3.1 FILECA[1] cables

Refer to section 4 for the initial preparation steps of the crimping procedure.

- Cable FILECA F2709/9 (ref 133952-1 & -2/133953-1 & -2
- Cable FILECA F2709/9 (ref 133952-1 & -2/133953-1 & -2 F2709/3 & 2709/13-CA (P/N 133952-3 & -4/133953-3 & -4)

[1] FILECA is a trademark of Draka holding N.V.

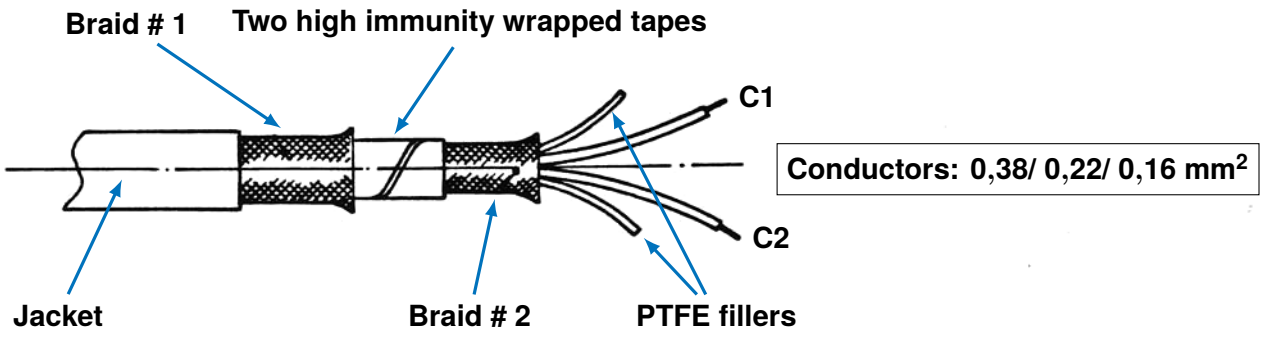


Figure 0: Cables Fileca F2709/3 & 2709/13-CA

3.2 Cable FILOTEX[2] study 46123 (P/N 133952-3 & -4/133953-3 4)

Refer to section 5 of this document for the initial steps of the crimping procedure.

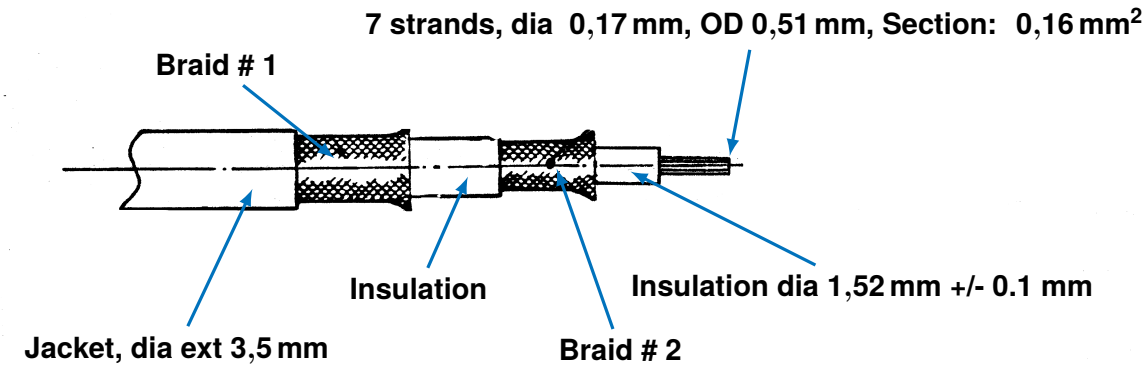


Figure 1: Cable Filotex, study 46123

[2]Filotex is a trademark of Nexans

4 Preparation of cables F 2709/9, F 2709/3, F 2709/13-CA

4.1 Slide the ferrule item 1 on the cable.

4.2 Strip over a length of 15 mm.

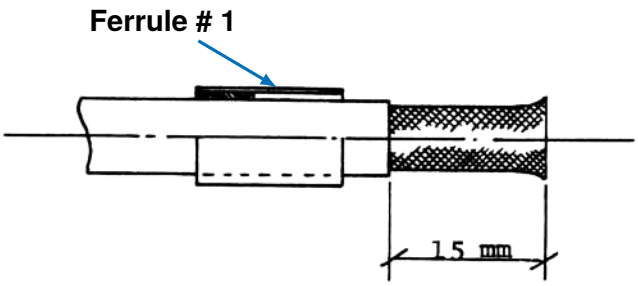
4.3 Fold the braid # 1.

4.4 Remove the high immunity films.

4.5 Fold the braid # 2.

4.6 Cut and remove the fillers. (figure 3)

4.7 Strip the conductor # 1 over 4.5 mm (figure 4).



For contacts male or female T5 or T9

Figure 2: Cable preparation (step1)

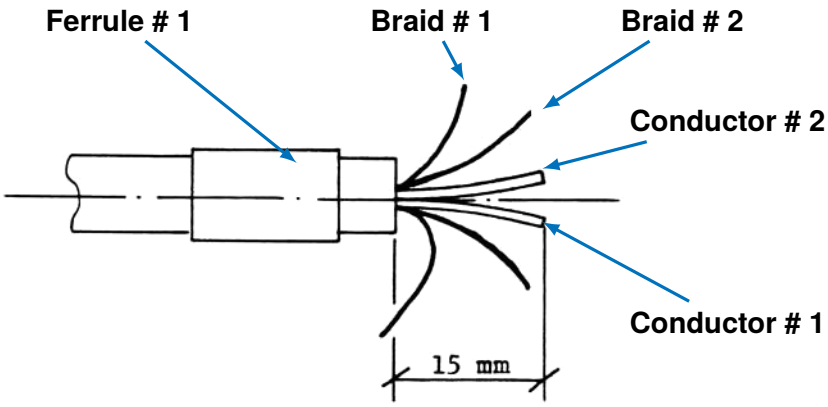


Figure 3: Cable preparation (step 2) Fillers removed

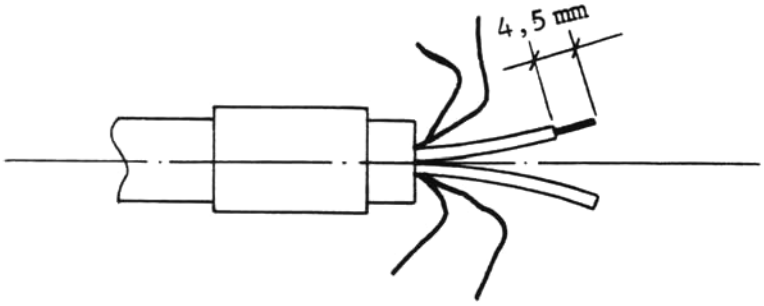


Figure 4: Cable preparation (step 3) Conductor stripped

4.8 Crimp the central contact on the conductor #1

4.8.1 Male center contact:

Insert the conductor in the contact barrel. (figure 5). Crimp with hand-tool M22520/2-01, positioner M22520/2-06, position # 4 for the wires section 0,38 mm^2 & 0,22 mm^2 and position # 3 for the wires section 0,16 mm^2.

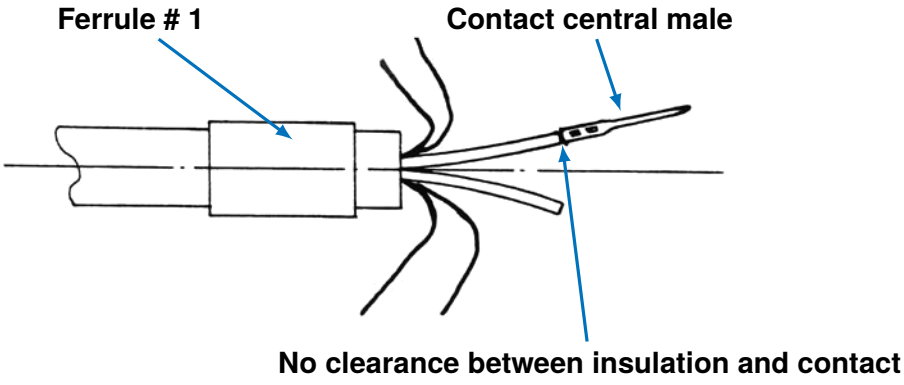


Figure 5: Male contact ready to be crimped

4.8.2 Female center contact:

The procedure is the same. (Figure 6). Crimp with hand-tool M22520/2-01, positioner K491, M22520/2-06, position # 4 for the wires section 0,38 mm^2 & 0,22 mm^2 and position # 3 for the wires section 0,16 mm^2.

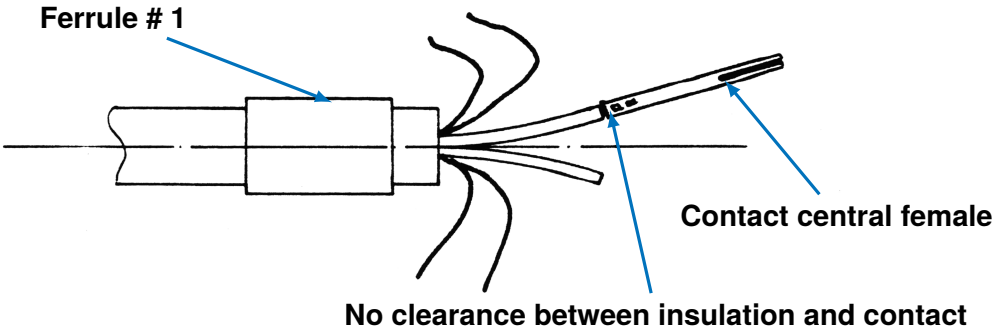


Figure 6: Female contact ready to be crimped

4.9 Crimp of the miniature coaxial contact.

4.9.1 Female coaxial contact

- Insert the male central contact in the body of the female coaxial contact.
- Cut the the conductor # 2 at the level of the shoulder of the female coaxial contact. (Figure 7) Slide the male central contact in the body of the female coaxial contact.
- Strip the conductor # 2 over a length of 5 mm (figure 8)
- Remove the female coaxial contact, slide the ferrule # 2 on the two conductors, insert again the male contact in the body of the female coaxial contact. Translate the central contact to the point where it stops against the dielectric of the miniature female coaxial contact, and maintain it carefully in position.(Figure 9)
- Perform the hexagonal crimp with hand-tool 69710-1 with crimping dies P/N 483883-1 (see position of contact in the hand-tool figure 11, page 7).
- Slide the ferrule # 2 on the barrel of the female coaxial contact. The conductor # 2 shall be in the usual position of a braid.
- Crimp with hand-tool P/N 69710-1 and crimping dies P/N 483883-1. (See correct position of contact in the crimping dies, figure 11, page 7).

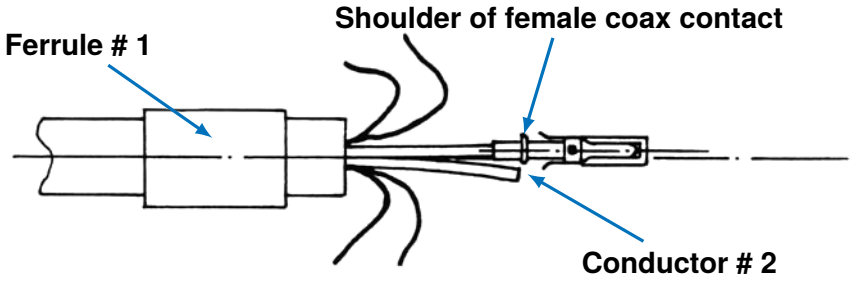


Figure 7: Conductor # 2 cut to length (flush with contact shoulder)

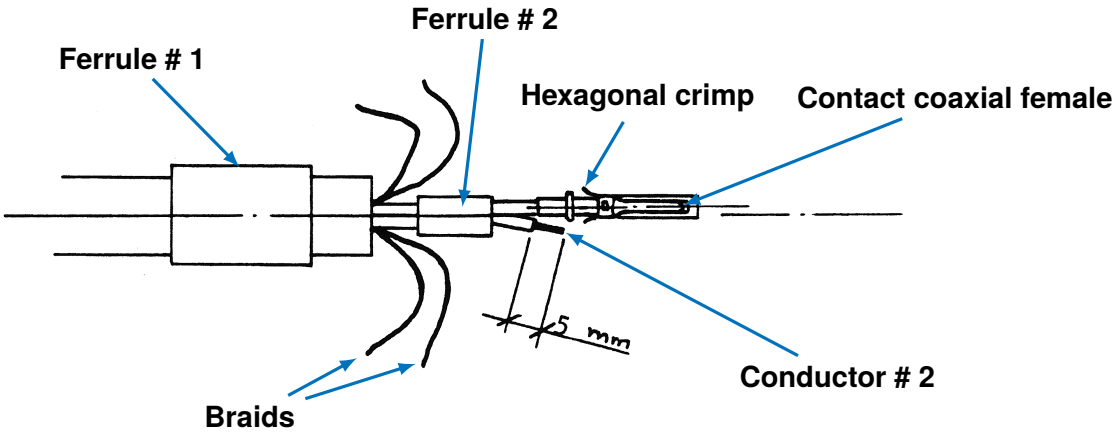


Figure 8: Conductor # 2 stripped

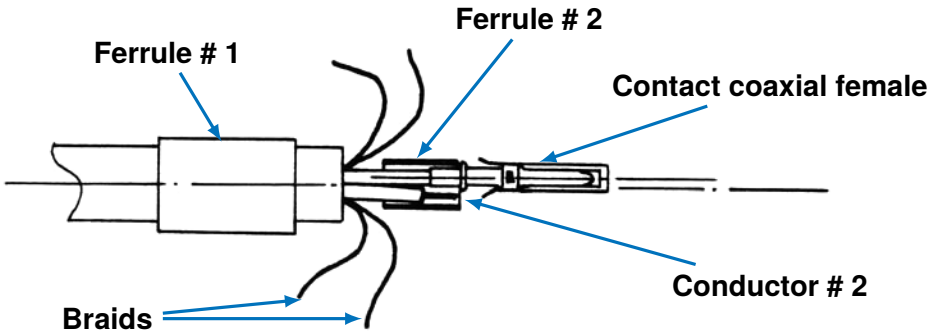


Figure 9: Ferrule # 2 translated into final position

4.9.2 Male miniature coaxial contact

- Operate in the same way as for the female contact
- Crimp with hand-tool P/N 69710-1 & dies 483883-1. (See correct position of contact in the crimping dies, figure 11, page 7).

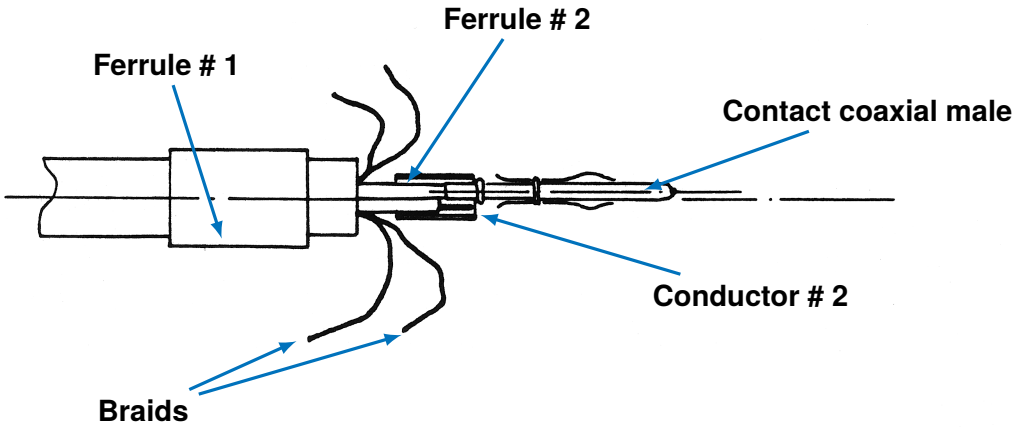


Figure 10: Assembly in position for crimping

4.9.3 Crimp of the braid on the outer body of the coaxial contact male, size 9 or size 5.

- Insert the female coaxial contact (crimped as indicated in section 4.9.1, page 5) into the body of the male coaxial contact size 9 (or size 5).
- Fold the two braids over the knurled section. Strip the braids flush with the contact shoulder.
- Slide the ferrule # 1 and crimp with hand-tool P/N 69710-1 and crimping dies 483884-1.

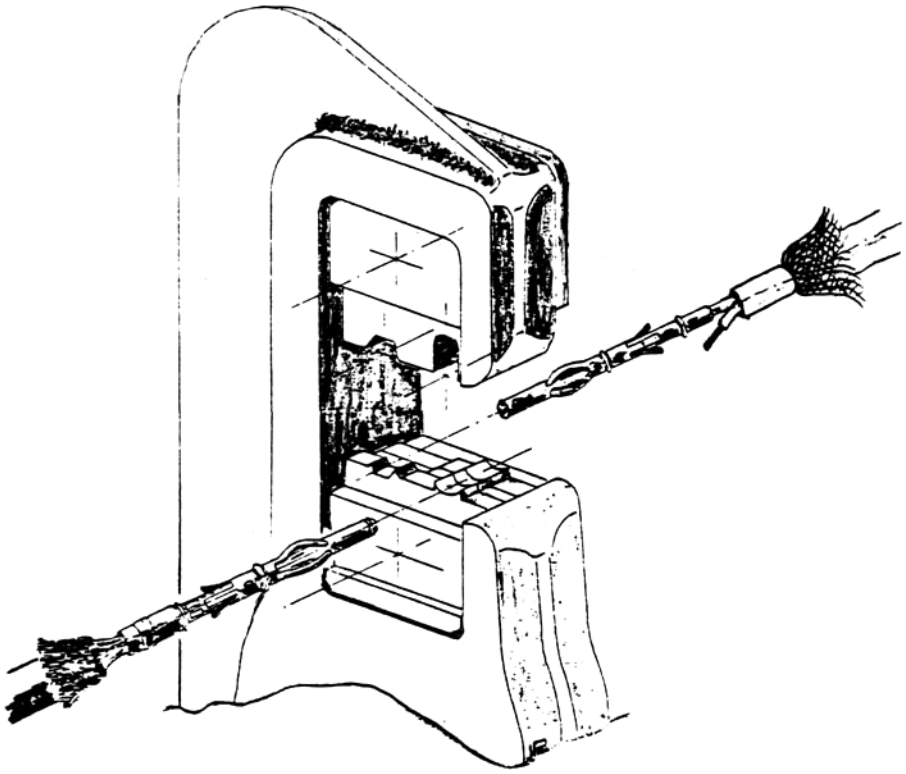


Figure 11

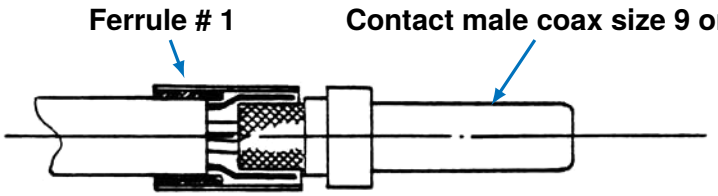


Figure 12

4.9.4 Crimp of the braids on the outer body of the female contact size 9 or 5.

- Operate as previously, inserting the male coaxial contact (crimped as indicated in section 4.9.2) in the outer body of the female contact size 9 or 5.
- Crimp with hand-tool P/N 69710-1 & dies P/N 483884-1

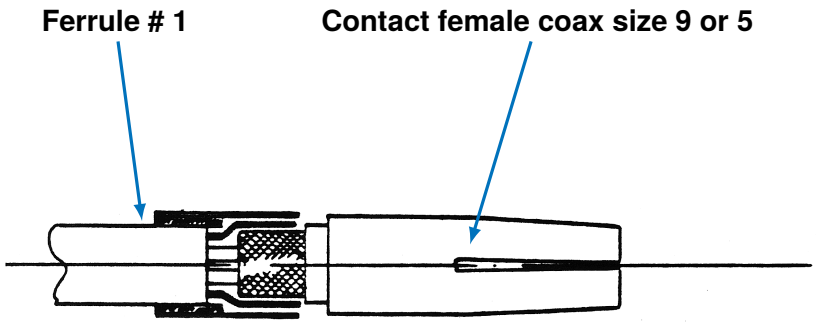


Figure 13

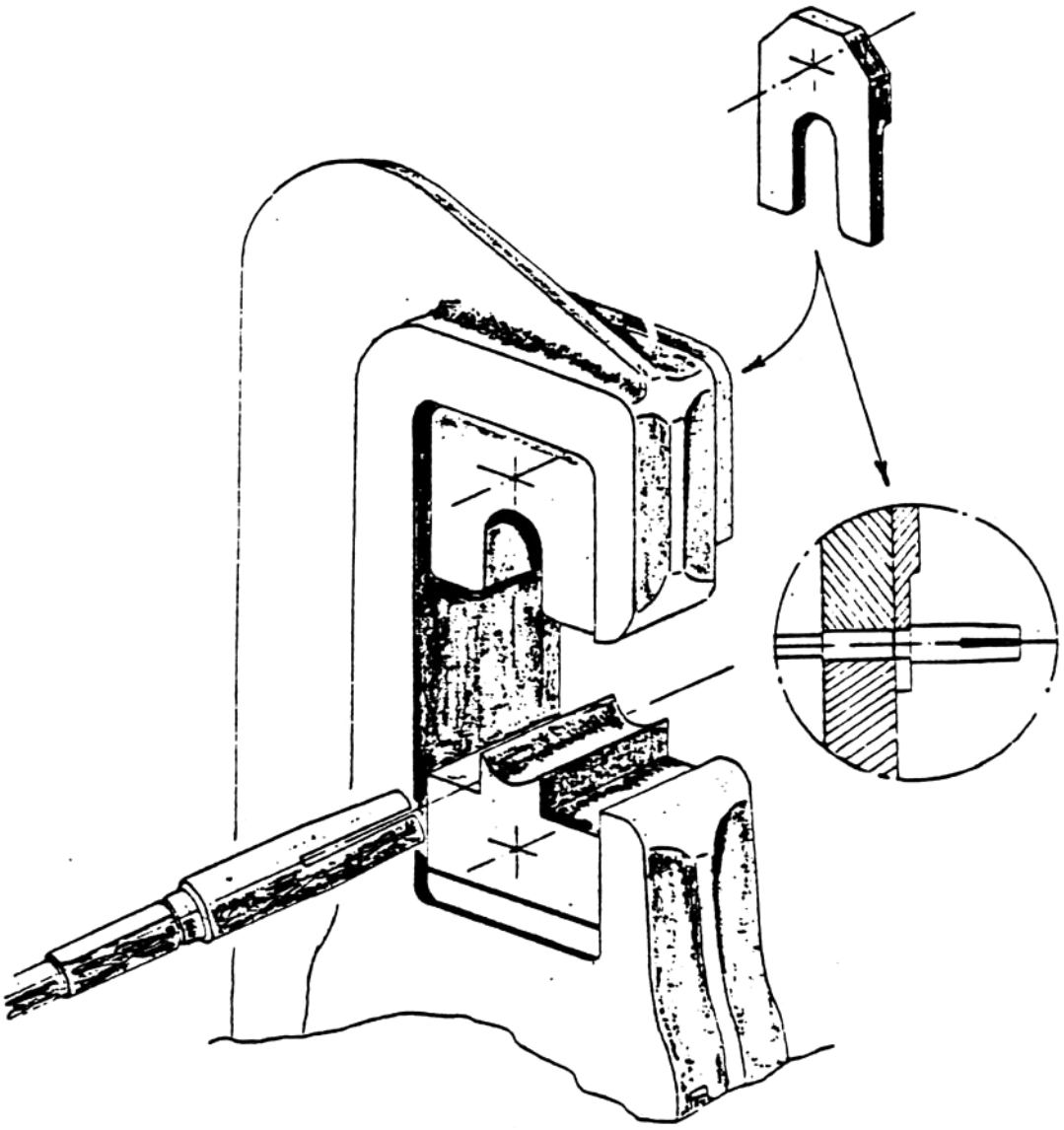


Figure 14

5 Preparation of cable FILOTEX (Study 46123)

5.1 Slide the ferrule # 1 over the cable.

5.2 Cut the jacket over a length of 15 mm

5.3 Cut the braid # 1 at 10,5 mm, and fold it over.

5.4 Cut the insulation between the braids over 10,5 mm.

5.5 Insert the cable into the ferrule.

5.6 Slide the ferrule # 2 over the cable.

5.7 Cut the braid # 2 over a length of 5,5 mm

5.8 Strip the conductor over over a length of 5 mm

5.9 Crimp of the central contact on the conductor

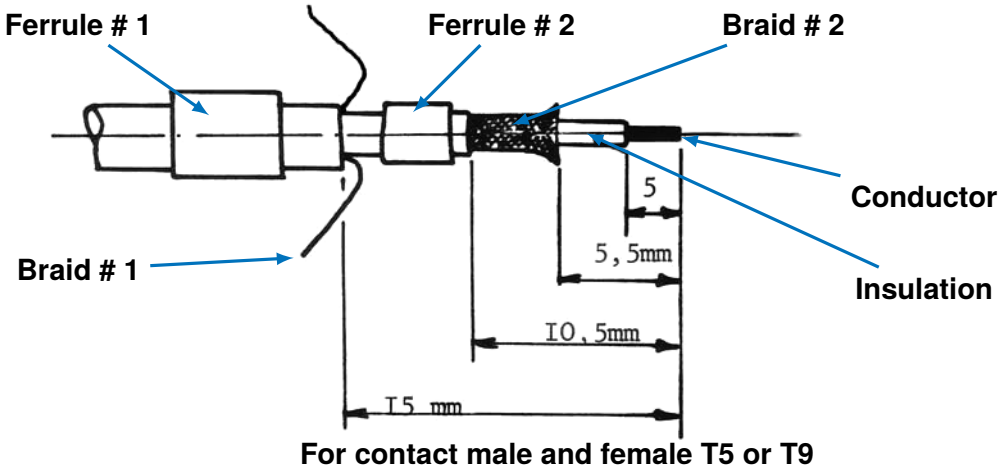


Figure 15

5.9.1 Male center contact. Insert the conductor in the contact barrel.

Crimp with hand-tool M22520/2-01, positioner M22520/2-06, position # 4 for the wires section 0,38 mm^2 & 0,22 mm^2 and position # 3 for the wires section 0,16 mm^2.

5.9.2 Female center contact.

The procedure is the same. Crimp with hand-tool M22520/2-01, positioner K491, M22520/2-06, position # 4 for the wires section 0,38 mm^2 & 0,22 mm^2 and position # 3 for the wires section 0,16 mm^2.

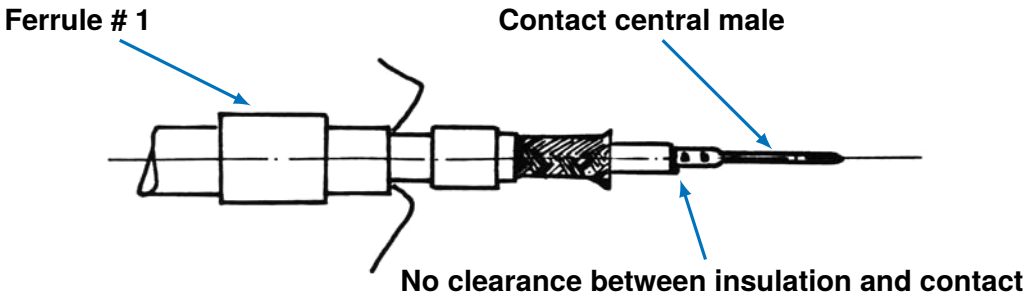


Figure 16

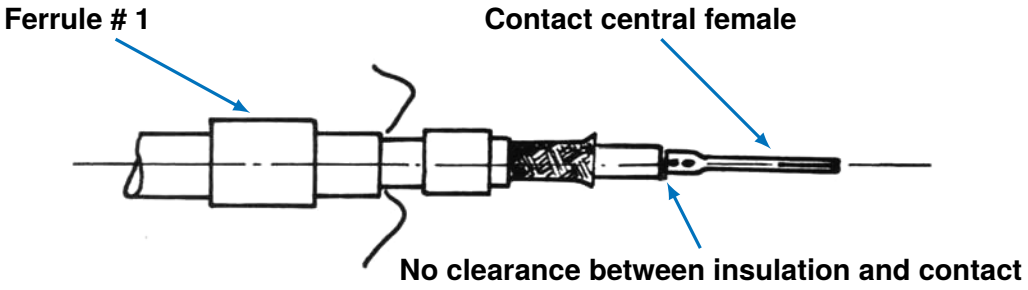


Figure 17

5.10 Crimp of the miniature coaxial contact.

5.10.1 Female coaxial contact.

- Insert the male central contact in the body of the female coaxial contact. Translate the central contact to the point where it stops against the dielectric of the miniature female coaxial contact, and maintain it in position.
- Make the hexagonal crimp with hand-tool 69710-1 with crimping dies P/N 483883-1 (see position of contact in the hand-tool figure 20, page 11). Slide the braid # 2 on the crimp area of the coaxial female contact. Slide the ferrule # 2. Crimp with hand-tool P/N 69710-1 & crimping dies 483883-1. (see position of contact in the hand-tool figure 20, page 11)

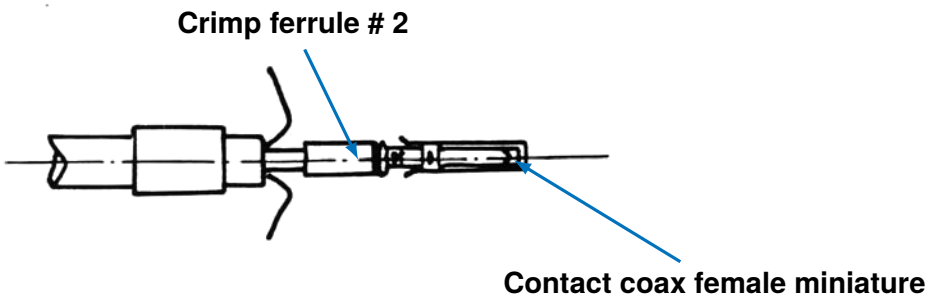


Figure 18

5.10.2 Male coaxial contact.

- Proceed as indicated previously for the female contact. Use hand-tool P/N 69710-1 and crimping dies 483883-1.

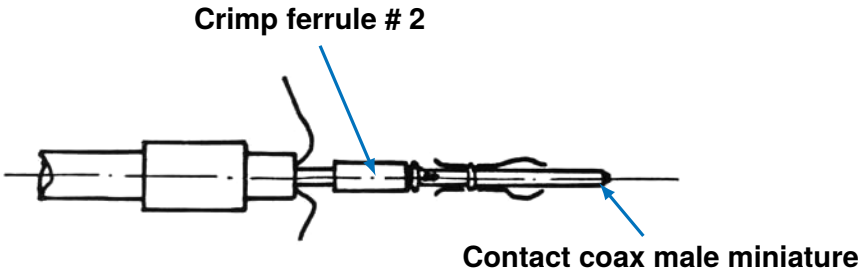


Figure 19

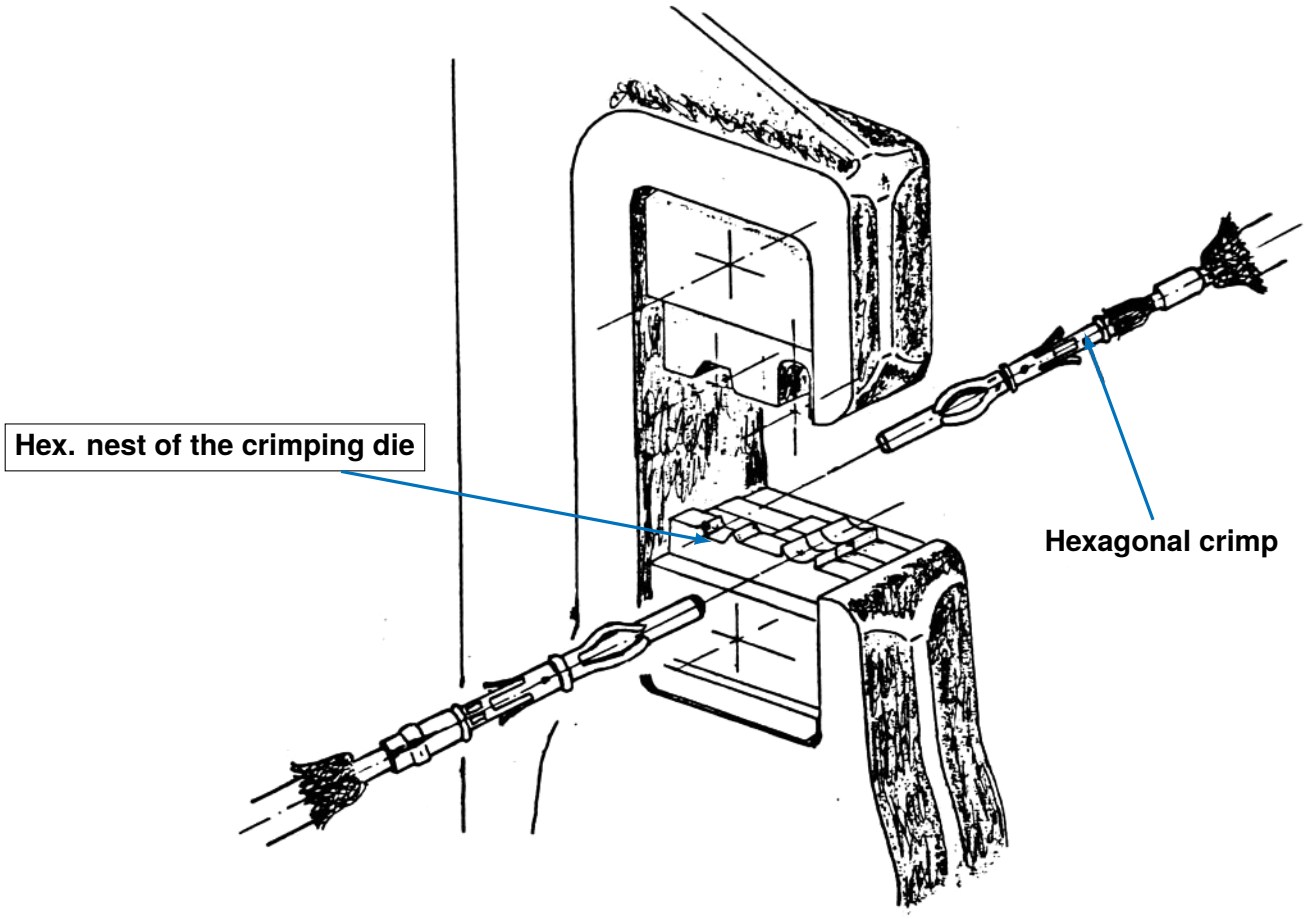


Figure 20

5.11 Crimp the braid # 1 on the outer body of coaxial male contact size 9 or size 5:

- Insert the female coaxial miniature contact (crimped as indicated in section 5.10.1) into the body of the male coaxial contact size 9 (or size 5).

- Check the proper locking by applying a slight traction towards the rear side. Fold the braid over the knurled section.
- Cut the braid flush with the contact shoulder.
- Slide the ferrule # 1 and crimp with hand-tool P/N 69710-1 & crimping dies 483884-1. (see position of of contact in the hand-tool figure 23, page 13)

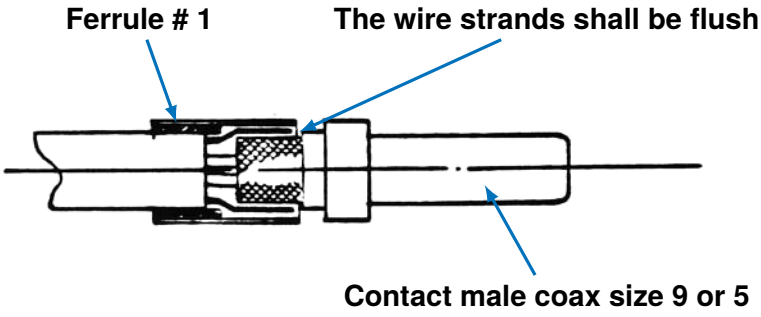


Figure 21

5.12 Crimp the braid # 1 on the outer body of coaxial female contact size 9 or size 5:

- Proceed as indicated previously, inserting the male coaxial contact (crimped as indicated in section 5.10.2) in the body of the female coaxial contact size 9 or size 5.
- Crimp with hand-tool P/N 69710-1 & crimping dies 483884-1. (see position of of contact in the hand-tool figure 23, page 13)

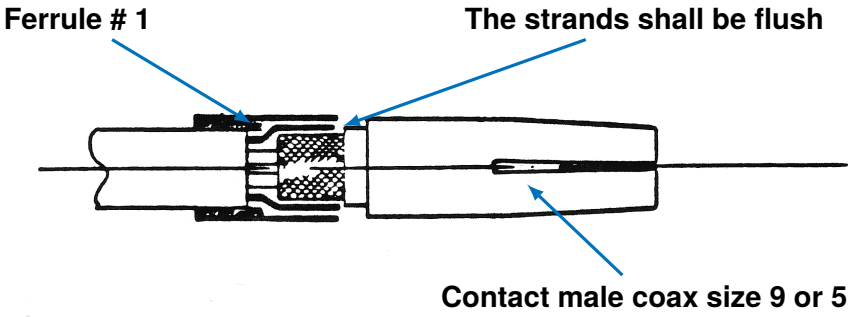


Figure 22

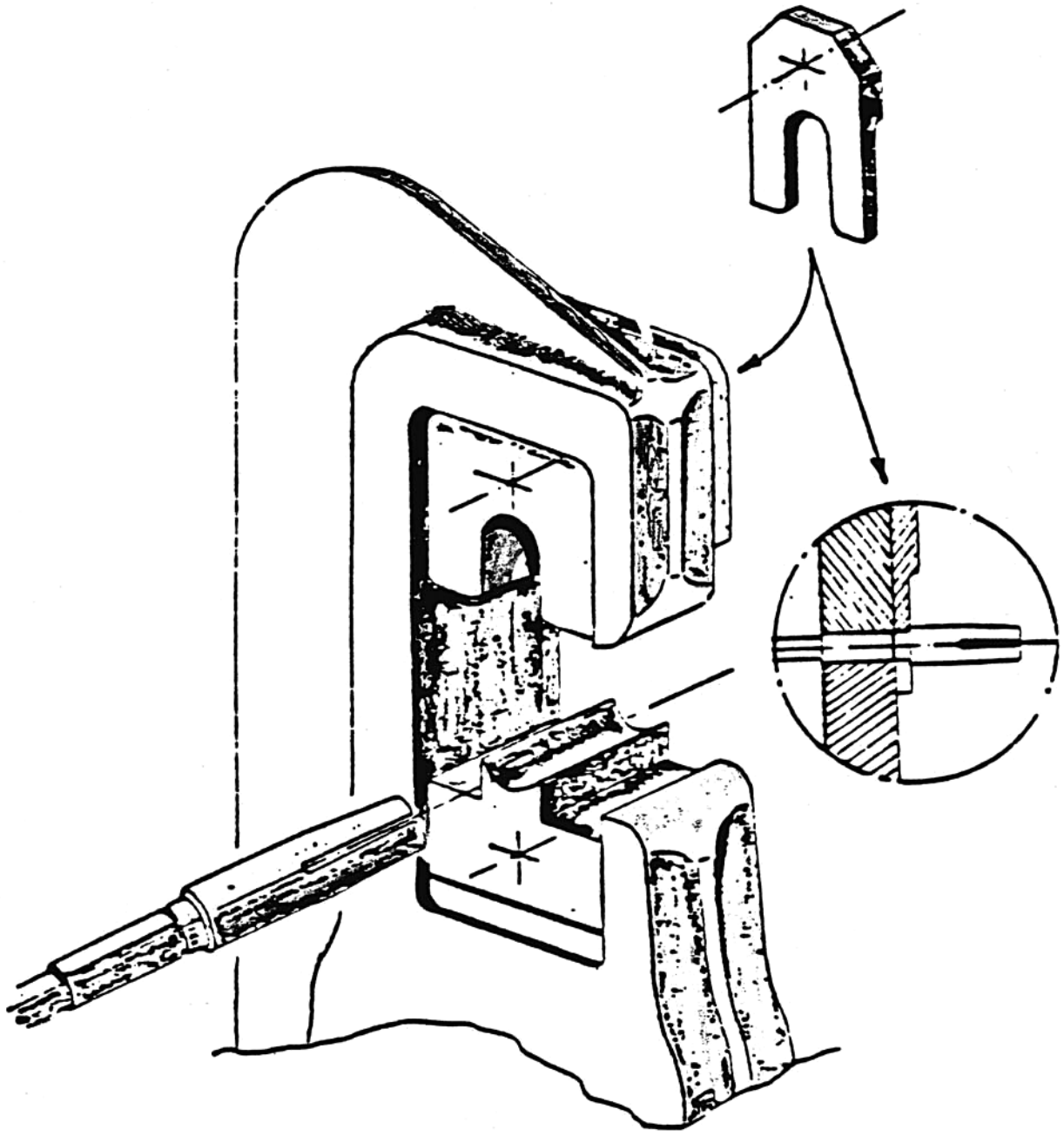


Figure 23: Position of contact in tool (P/N 69710-1 & crimping dies P/N 483884-1)