Coaxial Contacts

Installation Instructions

21- Series for Heavy Duty Cylindricals

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Bendix Electrical Components Division
Sidney, N.Y. 13838

INTRODUCTION

This manual contains directions for assembly of 21- Series coaxial contacts used in Bendix AN, QWL and QWLD Series connectors.

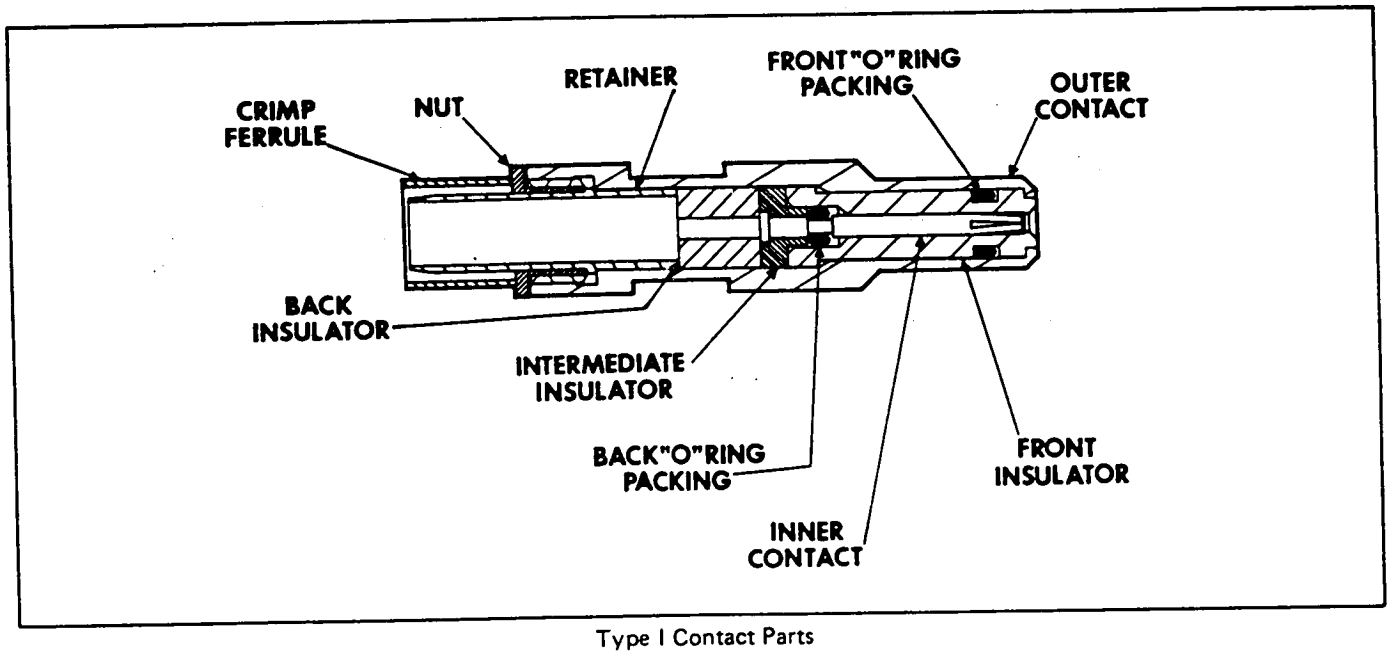
There are two types of coaxial contacts. Type I have "O" ring packings around the inner contact and around the front insulator. Type II contacts do not have these packings. Directions for assembling each type of contact are given separately.

Cable stripping lengths and crimping tool data can be

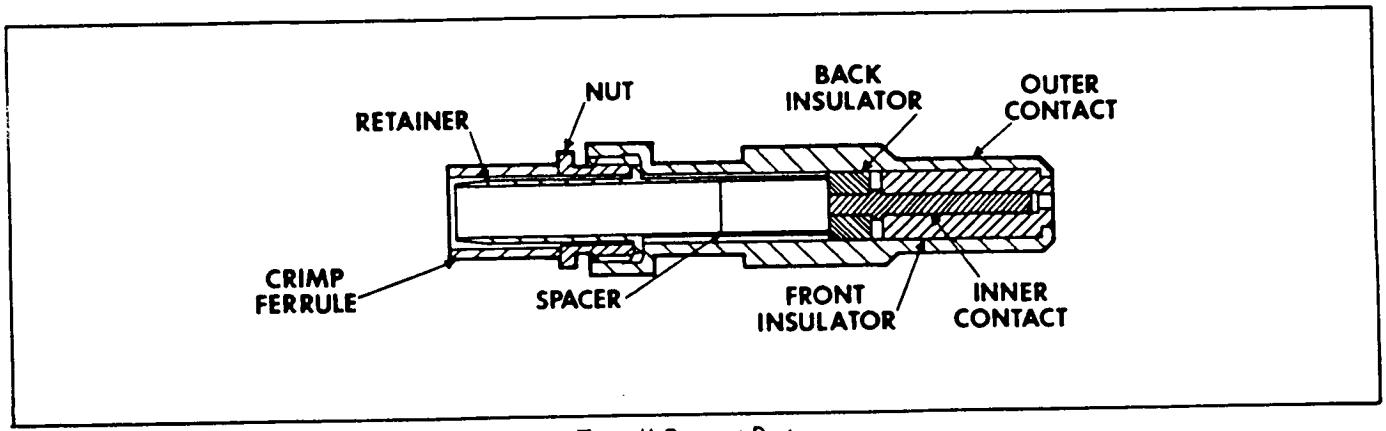
Contacts are supplied in various finishes, as shown in table 1.

Finish	Description
1	.00020 Minimum Silver over Copper flash.
2	.00005 Minimum Gold (Knoop Hardness 130 – 200) over Silver.
3	.00010 Minimum Gold (Knoop Hardness 130 – 200) over Silver.
4	.00010 Minimum Gold (Knoop Hardness 130 – 200) over Copper.
5	.00005 Minimum Gold (Knoop Hardness 130 – 200) over Nickel.
E	.00005 Minimum Gold (Knoop Hardness 90 Max.) over Copper.
F	.00005 Minimum Gold (Knoop Hardness 130 – 200) over Copper.
H	.00010 Minimum Gold (Knoop Hardness 130 – 200) over Copper.

Table 1. Contact Finish Suffix



Type I Contact Parts



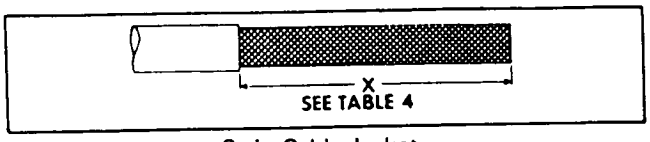
Type II Contact Parts

ASSEMBLY

TYPE I CONTACTS

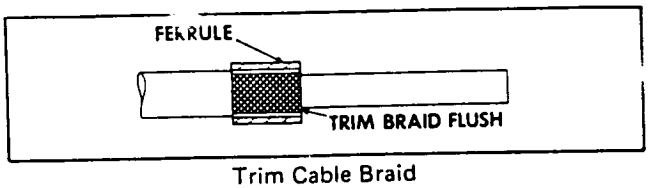
1. Cut end of cable cleanly and straight across end. Do not crush cable when cutting.

2. Strip cable jacket to "X" dimension given in table 4 for the contact part number being installed. Do not cut or nick cable braid.



Strip Cable Jacket

3. Slide ferrule over braid to edge of jacket. Trim braid even with other edge of ferrule. Use small diagonal cutters or scissors for trimming braid. When done, slide ferrule back over cable jacket.

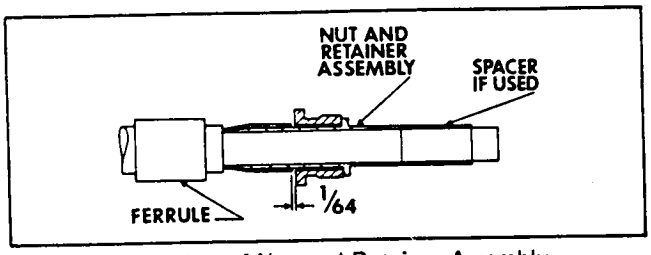


Trim Cable Braid

Note

If ferrule will not fit over cable jacket, slide nut and retainer assembly under cable braid as described in paragraph 4 while holding ferrule in position over braid.

4. Place nut over retainer. Expand cable braid. Slide nut and retainer assembly under braid. Leave 1/64 inch clearance between edge of braid and nut.

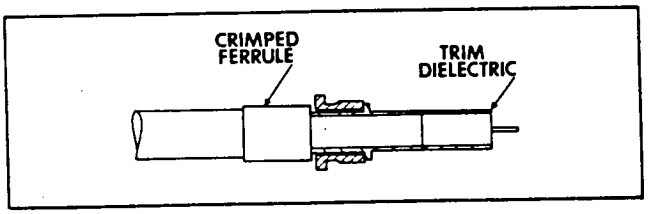


Position of Nut and Retainer Assembly

CAUTION

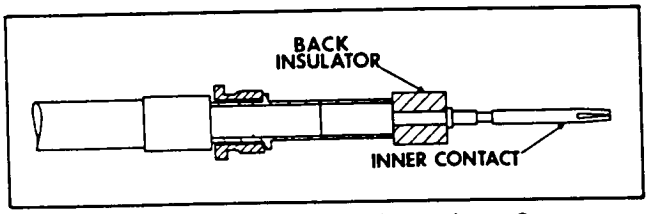
Do not comb out cable braid. Crimp may not hold cable if braid is straightened.

5. Place ferrule over braid, flush with braid edge. Using crimping tool listed in table 4, crimp braid between ferrule and retainer. Nut must turn freely on retainer after crimping. If spacer is used, slide it over cable dielectric until it butts against retainer. Trim cable dielectric flush with end of retainer (or spacer if used.) Do not cut or nick cable center conductor.



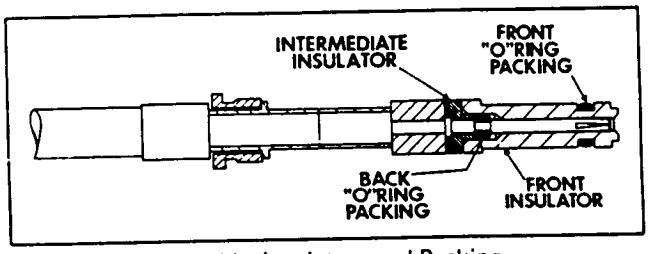
Crimp Ferrule and Trim Dielectric

6. Slide back insulator over cable center conductor until it butts against retainer (or spacer, if used). Pretin cable center conductor and inner contact. Use a good grade of rosin-alcohol flux and 60/40 tin-lead solder at a temperature of 500 to 550°F. Be sure all strands of center conductor are formed tightly together before tinning. Solder inner contact to cable center conductor.



Assemble Back Insulator and Solder Inner Contact

7. Slide intermediate insulator over inner contact until it butts aginst back insulator. Put rear "O" ring packing in contact undercut ahead of intermediate insulator. Slide front insulator over inner contact, large diameter of insulator first. Put front "O" ring packing in undercut on front insulator.



Assemble Insulators and Packing

8. Push inner contact and cable assembly in outer contact. Thread nut into rear of outer contact. Using 11-8676 Wrench listed in table 4, tighten nut with amount of torque listed in table 2.

Contact Size	Torque
4	40 – 44 inch-ounces
8	30 – 36 inch-ounces
12	16 – 20 inch-ounces

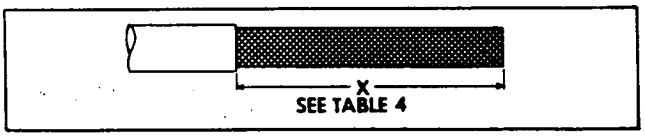
Table 2. Torque Values

ASSEMBLY

TYPE II CONTACTS

1 Cut end of cable cleanly and straight across end. Do [illegible]tting.

2. Strip cable jacket to "X" dimension given in table 4 for the contact part number being installed. Do not cut or nick cable braid.

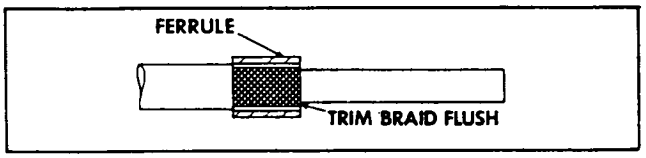


Strip Cable Jacket

Note

When terminating RG-140/U cables, a heat shrinkable sleeving can be placed over cable jacket prior to stripping operation No. 2. Max. allowable dia. over sleeving is .280 inch.

3. Slide ferrule over braid to edge of jacket. Trim braid even with other edge of ferrule Use small diagonal cutters or scissors for trimming braid. When done, slide ferrule back over cable jacket.

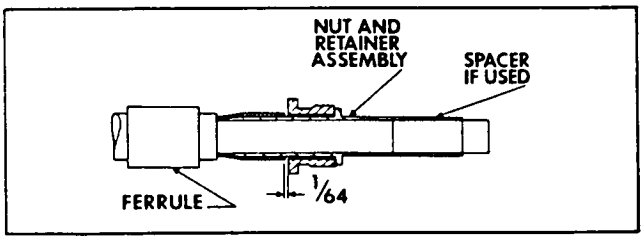


Trim Cable Braid

Note

If ferrule will not fit over cable jacket, slide nut and retainer assembly under cable braid as described in paragraph 4 while holding ferrule in position over braid.

4. Place nut over retainer. Expand cable braid. Slide nut and retainer assembly under braid. Leave 1/64 inch clearance between edge of braid and nut.

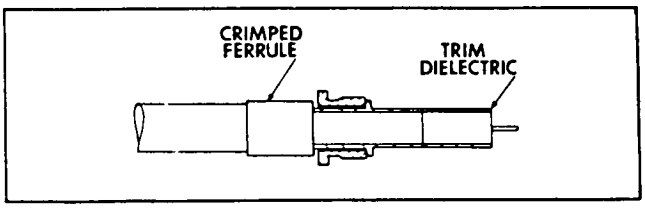


Position of Nut and Retainer Assembly

CAUTION

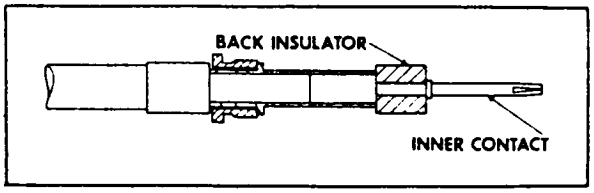
Do not comb out cable braid. Crimp may not hold cable if braid is straightened.

5. Place ferrule over braid, flush with braid edge. Using crimping tool listed in table 4, crimp braid between ferrule and retainer. Nut must turn freely on retainer after crimping. If spacer is used, slide it over cable dielectric until it butts against retainer. Trim cable dielectric flush with end of retainer (or spacer if used). Do not cut or nick cable center conductor.



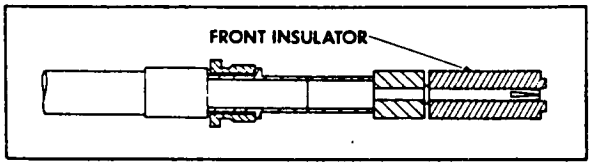
Crimp Ferrule and Trim Dielectric

6. Slide back insulator over cable center conductor until it butts against retainer (or spacer, if used). Pretin cable center conductor and inner contact. Use a good grade of rosin-alcohol flux and 60/40 tin-lead solder at a temperature of 500 to 550°F. Be sure all strands of center conductor are formed tightly together before tinning. Solder inner contact to cable center conductor.



Assemble Back Insulator and Solder Inner Contact

7. Slide front insulator over inner contact, large end first.



Assemble Front Insulator

8 Push inner contact and cable assembly in outer contact. Thread nut into rear of outer contact. Using 11-8676 Wrench listed in table 4, tighten nut with amount of torque listed in table 3.

Contact Size	Torque
4	40 – 44 inch-ounces
8	30 – 36 inch-ounces
12	16 – 20 inch-ounces

Table 3. Torque Values

Table 4. Coaxial Contacts Covered by This Manual.

Coaxial Contact Part No.		Size	Type	Finish	Series	"X" Stripping Dimension Inches	Use With Cable Type	Ferrule Crimping Tools – Any Listed May Be Used				
Pin	Socket							Thomas and Betts*	MIL-T-22910/7-1 Tool, Use With Die P/N	MIL-C-22520/5-01 Tool, Use With Die P/N	MIL-C-22520/10-01 Tool, Use With Die P/N	Retainer Nut Wrench***
21-33014-1	21-33013-1	8	II	5	AN	1 1/8	RG-58C/U RG-141A/U RG-303/U	WT203 WT232 WT239 WT403	M22910/7-15B	M22520/5-05B M22520/5-09A M22520/5-41B	M22520/10-07B	11-8676-2
21-33034-2	21-33033-2	8	II	1	QWL	1 1/8						
21-33048-2	21-33047-2	8	II	***	QWLD	1 1/8						
21 33048-3	21-33047-3	8	II	***	QWLD	1 3/16	RG-180B/U RG-195A/U					
21-33040-1	21-33039-1	8	II	1	QWLD	1 1/8	Special 75 OHM					
21-33016-5	21-33015-5	8	II	3	QWL	1 1/4	RG-58C/U RG-141A/U			M22520/5-05B		11-8676-2
21 33130-2( )	21-33129-2( )	8	II	2, 4, E, F, H	QWL	1 1/8						
21-33034-6	2 -33033-6	8	II	1	QWL	1 1/8	RG-180B/U RG-195A/U			M22520/5-05B		11-8676-2
21 33130-6( )	21 33129-6( )	8	II	2, 4, E, F, H	QWL	1 1/8						
21 33014-21	21-33013-21	12	II	5	AN	1 1/8	RG-161/U RG-174A/U RG-179B/U RG-187A/U RG-188A/U RG-316/U	WT200 WT230 WT238 WT400 WT430	M22910/7-12B	M22520/5-06A M22520/5-08A M22520/5-03A M22520/5-35B	M22520/10-05A	11-8676-1
21 33034-1	21-33033-1	12	II	1	QWL	1 1/8						11-8676-2
21-33048-1	21 33047-1	12	II	***	QWLD	1 3/16						
21 33016-1	21-33015-1	8	II	3	QWL	1 1/4						
21 33034-3	21-33033-3	8	II	1	QWL	1 1/4						
21 33064 20( )	21-33063-20( )	8	II	ALL	QWL	1						11-8676-1
21 33130-1( )	21-33129-1( )	12	II	2, 4, E, F, H	QWL	1 1/8	RG-174A/U RG-188A/U			M22520/5-08A		11-8676-2
21 33130-3( )	21 33129-3( )	8	II	2, 4, E, F, H	QWL	1 1/8						
21 33034-5	21-33033-5	8	II	1	QWL	1 1/8	RG-59B/U RG-62A/U			M22520/5-45B		11-8676-3
21 33130-5( )	21-33129-5( )	8	II	2, 4, E, F, H	QWL	1 1/8						
21 33016-2	21 33015-2	8	II	3	QWL	1 1/4	RG-59B/U RG-62A/U RG-62B/U RG-210/U	WT209 WT230 WT409 WT430	M22910/7-18B	M22520/5-45B		11-8676-3
21 33064 21( )	21-33063-21( )	8	I	ALL	QWL	1						11-8676-4
21 33060-10( )	21-33059-10( )	4	II	ALL	AN	7/8						
21-33014-22	21-33013-22	12	II	5	AN	1 7/8	RG 178B/U RG-196A/U	WT219 WT231 WT238 WT419 WT431	M22910/7-11B	M22520/5-03B M22520/5-33B	M22520/10-05B	11-8676-1
21-33034-4	21-33033-4	8	II	1	QWL	1 1/8	RG-55B/U RG-142A/U RG-142B/U RG-223/U	WT208 WT233 WT239 WT408	M22910/7 17B	M22520/5-05A M22520/5-11A M22520/5-19B M22520/5-57A	M22520/10-07A	11-8676-3
21-33130-4( )	21-33129-4( )	8	II	2, 4, E, F, H	QWL	1 1/8						
21 33060-12( )	21-33059-12( )	4	II	ALL	AN	7/8	RG-142A/U RG-142B/U			M22520/5-05A		11-8676-4
21-33034-7	21 33033-7	8	II	1	QWL	1 1/8	IS75MU-8†	WT209 WT230 WT409 WT430	M22910/7-18B	M22520/5-45B		11-8676-3
21 33130-7( )	21-33129-7( )	8	II	2, 4, E, F, H	QWL	1 1/8						
21 33034 8	21-33033-8	8	II	1	QWL	1 1/4	RG 140/U RG-302/U	WT208	M22910/7-17B	M22520/5-05A M22520/5-19B	M22520/10-07A	11-8676-3
21-33130 8( )	21-33129-8( )	8	II	2, 4, E, F, H	QWL	1 1/4						
21-33060-11( )	21-33059-11( )	4	II	ALL	AN	7/8	RG-212/U	WT215 WT235 WT415	M22910/7-14A	M22520/5-39A		11-8676-4
21 33016-9	21 33015-9	8	II	3	QWL	1 1/4	TIMES TRF 58 BOSTON TV-43			M22520/5-45B		11-8676-3
21-33034-9	21-33033-9	8	II	1	QWL	1 1/8						
21 33130-9( )	21-33129-9( )	8	II	2, 4, E, F, H	QWL	1 1/8						

*Thomas and Betts Models WT203, WT232, WT239 and WT403 with die closure 0.178±.003 only are approved. Later production of these tools have a 0.184±.003 die closure and must not be used.

( ) see finish code page 1.

Thomas and Betts Crimping Tools are available from The Thomas and Betts Company, 36 Butler St., Elizabeth, New Jersey 07207.

**Available from The Bendix Corporation, Electrical Components Division, Sidney, N.Y. 13838.

***Socket contact part numbers 21-33047-X are supplied with E (soft gold) finish. Pin contact part numbers 21-33048-X are supplied with F (hard gold) finish.

†When cable core dia. in individual shielded cable is .163 inch max. dia.