Coaxial Contacts

Installation Instructions

21-LJT-RE
Series

February 1978 Printed in U.S.A. L-844-4

Bendix Electrical Components Division

Sidney, N. Y. 13838

SECTION I

GENERAL INSTRUCTIONS

1–1. This publication contains installation procedures for 21-LJT-RE Series Coaxial Contacts. These contacts are covered by four basic contact assembly numbers. The socket contacts are P/N 21-33035 with .000050 inch gold over silver plating, and P/N 21-33101 with .00010 inch gold over silver plating The pin contacts are P/N 21-33036 with .000050 inch gold over silver plating and P/N 21-33102 with .00010 inch gold over silver plating. The contact assembly number is followed by a dash number which specifies the contact configuration for use with certain coaxial cables. For example; 21-33035-21 is a socket contact for RG-195A/U or RG-180B/U coaxial cable. The entire contact part number is stamped on the outside of the contact except for the 21-33101-21 and 21-33102-21 which are identified with BIN Code bands.

1–2. Refer to Sections II and III for installation procedure. Table 1 lists the cable type and tool numbers for each contact configuration.

1–3. If the connector incorporates an individual wire sealing member, this member must be slid onto the cable prior to assembly of the coaxial cable to the coaxial contact. Inspect to insure metal sleeve has been installed inside the sealing member.

1–4. General information concerning installation of coaxial contacts.

a. When cutting cables to proper length, ends must be cut cleanly and at right angles to axial plane of cable. Cable must not be deformed while making cut.

b. Strip cable sheath and dielectric carefully to avoid cutting or nicking braid or conductor stands. Small diagonal cutting pliers, scissors or a fingernail clipper may be used for trimming braid.

c. When terminating the inner contact with solder, pretin 1/2 of bare conductor end before soldering to contact. A good grade of rosin-alcohol flux and a solder bath with 60/40 tin-lead solder at 500° – 550°F is recommended. When working with multi-strand conductors, make certain strands are formed together tightly before dipping in flux and solder. Do not hold conductor in solder bath longer than time necessary to thoroughly tin all strands of wire. Avoid excessive temperatures which will burn, scorch or swell the dielectric.

d. Contact wire wells must be pretinned with a good grade of rosin-alcohol flux and 60/40 tin-lead solder. Support contact vertically in a pin vise. Insert flux or solder into contact wire well and apply heat to outside of contact until flux or solder flows into wire well. Apply flux to wire well before solder.

e. When soldering conductor to contact, dip pretinned conductor end into rosin-alcohol flux and start it into wire well, simultaneously applying heat to outside of well. As the solder liquifies, seat the conductor in the well. Continue heating until solder on conductor and in wire well is completely liquified. Remove heat and maintain alignment of conductor and contact until solder solidifies. Do not move conductor while solder is cooling. Allowing the conductor to move as solder cools through the plastic state will result in crystallization and a weak solder joint. If additional solder is necessary, insert wire solder through hole in side of wire well and apply heat. Wipe solder from outside of wire well before it hardens.

SECTION II

INSTALLATION INSTRUCTIONS
(Solder termination of inner contact)

NOTE

See Section I, paragraph 1–4, for general information concerning cutting, stripping and soldering of cable Refer to Table 1 for cable type and tool numbers for each contact configuration. See Figure 2–1 for contact part identification.

CAUTION

Prior to assembly of contact to cable,the individual wire sealing member (if applicable) must be assembled on cable as in Section I, paragraph 1–3.

TABLE 1
LJT-RE (21-) Crimp Coax Contacts

Contact			Use With RG/U	Outer Ferrule			Inner Contact			Inser-tion	Removal	"X" Dim. (in.) (A, Fig. 2–2)
Part Number	Stamping	Size	Cable No.	Crimp Tool	Die	Die Closure	Crimp Tool	Positioner	Tool Selector Setting	Tool	Tool	
21-33035-21 Socket	21-33035-21	8	180B	M22520/5-01	M22520/5-05	B	M22520/2-01	M22520/2 31	1	*	11-9170	3/4
21-33101-21 Socket	MS27535		195A	M22520/10-01	M22520/10-07	Blue						
21-33035-22 Socket	21-33035-22	8	McDonnell							*	11-9170	3/4
21 33101-22 Socket	21-33101-22		5M1010									
21-33036-21 Pin	21-33036-21	8	180B				M22520/2-01	M22520/2-31	1	*	11-9170	3/4
21-33102-21 Pin	MS27536		195A									
21-33036-22 Pin	21-33036-22	8	McDonnell							*	11-9170	3/4
21-33102-22 Pin	21-33102-22		5M1010									

*Insertion Tool is not required. Insertion is accomplished by hand. Inner contacts are soldered or crimped depending on application.

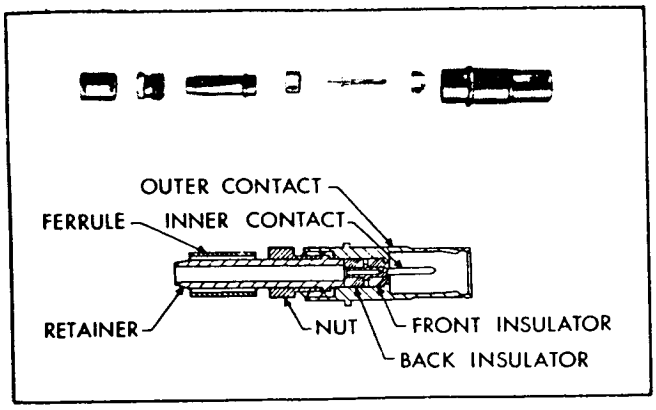

Figure 2–1. Contact Part Identification

2–1. Assemble Contact to Cable as follows:

a. Remove length ("X" dimension) of cable outer sheath from end of cable (A, figure 2–2 and Table 1). Hot wire stripping is recommended to avoid cutting or nicking the braid strands.

b. Slide ferrule over outer conductor (braid) flush with edge of outer sheath (B, Figure 2–2).

c. Trim braid flush with edge of ferrule.

d. Slide ferrule over outer sheath (C, Figure 2–2).

e. Position nut on retainer.Expand outer conductor (braid) and slide retainer under braid. Leave approximately 1/64 inch gap between edge of braid and nut.

f. Slide ferrule over outer conductor (braid) and crimp braid between ferrule and retainer with appropriate crimping tool (D, Figure 2–2, and Table 1). Make certain nut turns freely after crimping.

g. Trim inside insulation (cable core) flush with end of retainer. Do not cut or nick center conductor.

h. Install back insulator over back end of inner contact (E, Figure 2–2).

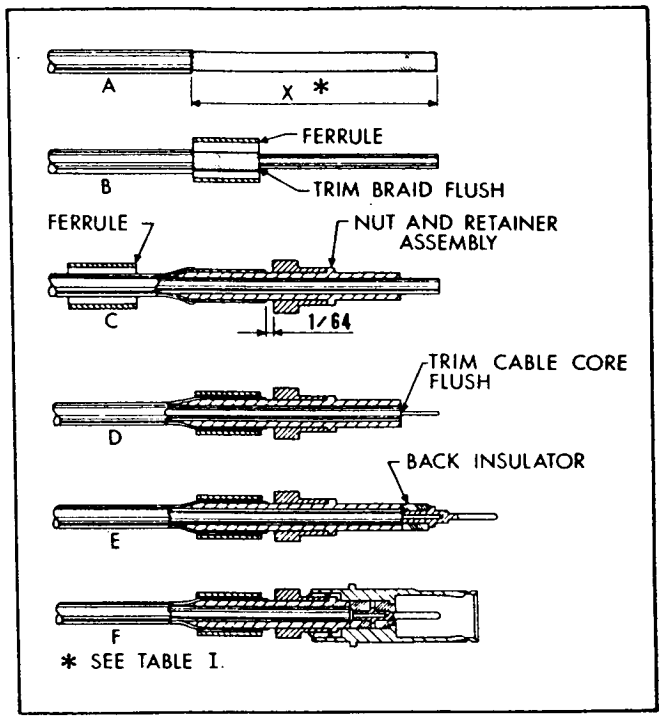

Figure 2–2. Contact Assembly Steps

i. Trim center conductor to allow back insulator to butt against the retainer when inner contact is installed.

j. Tin center conductor and, using a 47.5 watt soldering iron, solder the center conductor into the inner contact wire well. See Section I, paragraph 1–4, for general soldering instructions. A pin vise can be used to hold inner contact.

k. Slide front insulator over inner contact, large diameter first (F, Figure 2–2).

l. Slide outer contact over insulator and thread nut into rear of outer contact. Tighten the nut until metal to metal bottoming is achieved between the nut and outer sleeve. Do Not allow the cable to turn when tightening the nut.

SECTION III

INSTALLATION INSTRUCTIONS
(Crimp termination of inner contact)

3–1. After storing individual wire sealing member on cable (if applicable) proceed with assembly steps 2–1a. through 2–1e.

a. Flare braid and slide nut and retainer assembly under the cable shield until retainer bottoms against braid.

b. Strip cable core (inside insulation) flush with end of retainer, exposing cable center conductor. (A, Figure 3–1.)

c. Remove nut and retainer assembly from cable end.

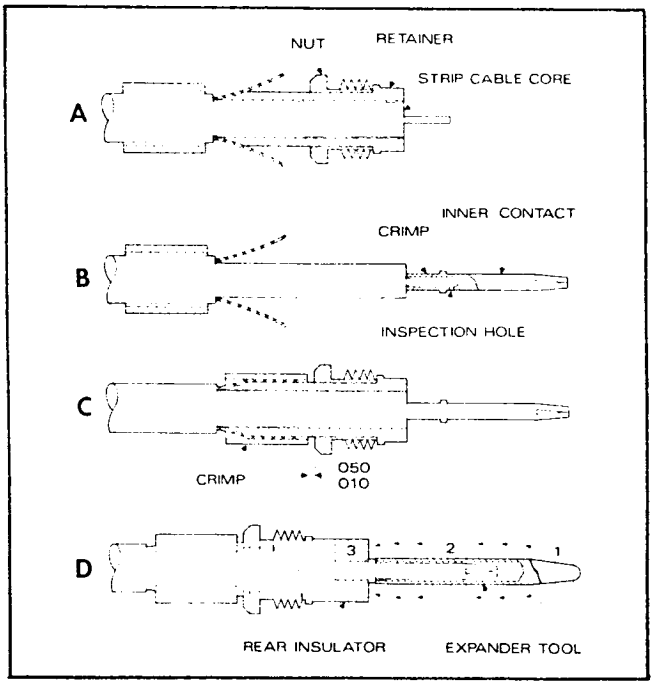

Figure 3–1. Contact Assembly Steps

d. Slide inner contact over cable center conductor. Cable center conductor must be visible through the inspection hole in the inner contact wire well.

e. Crimp inner contact using crimp tool and positioner listed in Table 1 (B, Figure 3–1).

f. Slide nut and retainer assembly over inner pin contact, cable core and under cable shield. Retainer must bottom against braid.

g. Bring ferrule forward over braid and crimp braid between ferrule and retainer using crimp tool and die listed in Table 1. Nut must rotate freely after crimping ferrule. (C, Figure 3–1).

h. Slide rear insulator onto expander, Bendix P/N 11-10136, found in Bendix Coaxial Bushing Installation Kit P/N 11-10134 or locally fabricated equivalent. (See Figure 3–2 for dimensional data.)

i. Slide expander over inner contact. Using a Bendix P/N 11-10135 Push Rod found in Bendix Coaxial Bushing Installation Kit P/N 11-10134, or locally fabricated equivalent (See Figure 3–3 for dimensional data), push the rear insulator into place until it seats between retainer end and inner contact shoulder (D, Figure 3–1).

j. Remove push rod and expander.

k. Proceed with final assembly per steps 2–1 k and l.

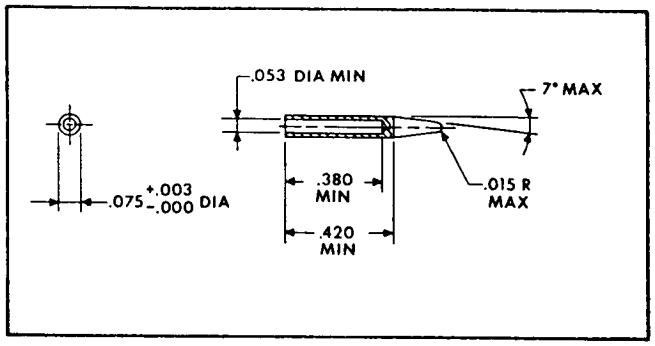

Figure 3–2. Expander Tool Dimensions

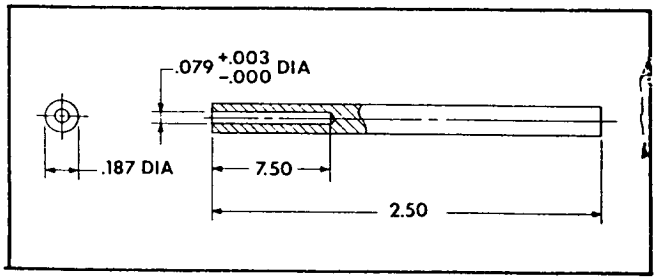

Figure 3–3. Push Rod Dimensions

SECTION IV

CONTACT INSERTION/REMOVAL

4–1. Contact Insertion.

Note

Talc or DC-200* (200,000 centistokes) lubricant may be used as an aid in installing the wire sealing member into the grommet. Lubricant should be applied in a smooth even coat.

*Dow Corning Corp., Midland, Mich. 48640

4–2. Prior to insertion of the contact, slide the wire sealing member, up the wire and over the crimped ferrule area until it stops.

4–3. To insert the contact, grip the contact/cable assembly with the finger and thumb close to the rear of the contact and start the contact into the proper insert hole in the rear (grommet) end of the connector.

The wire sealing member will snap into place in the grommet and is properly seated when the ridge in the grommet snaps into the groove in the insulator assembly. The contact will engage its retention feature in the hard insert at approximately the same time that the sealing member engages the internal grommet ridge. Gently tug on the wire to check for proper contact assembly.

CAUTION

Care must be exercised to prevent the lip of the grommet hole from rolling under and being pulled into the grommet. If this does occur, the lip should be carefully straightened to guarantee a moisture seal.

4–4. Contact Removal.

4–5. Remove the wire sealing member from the grommet by carefully pulling straight back along the cable far enough to allow clearance for the contact removal tool.

4–6. Working from the rear face of the connector (grommet end) open the tips of the 11-9170 removal tool and carefully slip removal tool around the outer sheath of the coaxial cable. Slide the tool down the cable until the tool tip enters the grommet and comes to a positive stop. A slight increase in resistance will be noticed just before the tip bottoms. The design of the tool is such that the above action will spread the internal contact retention member and release its hold on the contact. Holding the tool firmly against the positive stop on the contact, grip the cable and simultaneously remove the tool, contact, and the cable.

CAUTION

Do not tip or rotate the removal tool while it is within the grommet, otherwise damage may result to the tool tips or grommet.