

SECTION K, ASSEMBLY OF PROBE

Assembly of Probe

PARTS LIST

Symbol	Description Marking Indicated by Quotation Marks (" ").	Qty.
C-24	Alligator clips, "No. 30"	3
	Capacitor, disc, 12 mmf., 5%, "brn, red, blk, grn"	1
	Coaxial cable, gray, 45-inches long	1
	Coaxial cable connector	1
	Half-shells, blue plastic	2
	Hex nut, #4-40	1
	Lockwasher, split-type #4	1
	Machine screw, 3/4" long, #4-40	1
	Phosphor-bronze wire, 10" length	1
	Resistor, 9-megohms, 1/2-watt, 1%, "9M, 1% 2"	1
R-79	#8 External-tooth lockwasher	1
	Boot, red, for alligator clip	2
	Insulating sleeving, blue	2"
	Insulating sleeving, yellow	2"
	Insulating sleeving, black	4"

Illustrations: Figure 12, Details A, B, C, D, E, F.

Steps 1 through 25. Check (✓) each step as it is completed.

- ( ) Strip 3/4-inch of the outer (gray) insulating jacket or sleeve from one end of the 45-inch coaxial cable. Be careful not to damage or unravel the stranded shielding wires just under the jacket.
- ( ) Remove set-screw on the side of the coaxial cable connector, and slip-out the coil spring. Note that one-half of the spring has a different diameter than the other half.
- ( ) Insert stripped-end of cable into large-diameter end of spring; push and twist through to limit—point where end of gray sleeving butts against shoulder of small-diameter section. See Figure 12, Detail "A"
- ( ) Unwind the shielding wires; bunch them together in a single strand; and fold back over the coil spring. Tie the ends down with several wraps of string, working the bunched wires flat against the coil spring.
- ( ) Solder the bunched wires to the coil spring. Use as little solder as possible. Make the solder joint as quickly as possible to avoid softening the inner insulation. Allow a few minutes to cool before proceeding further.
- ( ) Remove string wrapping. Cut off any loose ends of shielding wires that extend beyond shoulder of spring—point where diameter changes.
- ( ) Strip the insulation from the center conductor so that only 1/8-inch of insulation extends beyond the spring. Twist and tin the center conductor.
- ( ) Insert the above-prepared end of the cable into the connector, making sure that the center conductor passes through the eyelet as shown in Figure 12, Detail "B". If the spring will not fit back into the connector, remove excess solder with a file or knife. Replace set-screw and tighten.
- ( ) Screw the threaded ferrule back and away from the end of the connector so that the insulating-disc and eyelet become accessible. Cut off the center conductor flush where it protrudes through the connector eyelet, as shown. Solder the center-conductor to the eyelet, using only enough solder to fill the eyelet. Scrape off any rosin left on the eyelet or insulating disc.
- ( ) Strip off 1-inch of the outer (gray) insulation from the other end of the coaxial cable.
- ( ) Refer to Figure 12, Detail "C" and "D". Unwind the outer-shielding wires, and separate into two bunches. Twist each bunch into a single strand of wires—one on each side of the cable. Place the strands of wire alongside of and against the stripped end of the cable. Slip a #8 external-tooth lockwasher over the strands and the end of the cable, and force back to the butt end of the outer insulating sleeve. Thread the strands of wire, in-and-out, around and over the teeth of the lockwasher. Solder the strands to the lockwasher at two places. Allow a few minutes to cool.
- ( ) Strip the inner insulation from the exposed end, so that only 1/4-inch of insulation extends beyond the lockwasher. Cut the inner conductor to an exposed length of 1/4-inch.
- ( ) Clip each lead of resistor R-79 to a length of 1/2-inch.
- ( ) Clip each lead of capacitor C-24 to a length of 1/2-inch.
- ( ) Connect R-79 and C-24 by twisting their leads together, two turns at each end. Maintain about 3/8-inch separation of their bodies. (S)
- ( ) Cut the following lengths of flexible phosphor-bronze wire: 4-inches; 2 1/4-inches; 2-inches. Tin 1/4-inch of all ends.
- ( ) Connect one end of the 2 1/4-inch phosphor-bronze wire to either lead of the R-79/C-24 assembly. (S)
- ( ) Connect one end of the 2-inch phosphor-bronze wire to the opposite end of the R-79/C-24 assembly. (S)
- ( ) Re-tin one end of the 4 1/2-inch phosphor-bronze wire 3/4-inch. Wrap the tinned end around the lockwasher mentioned above (see previous step 11), and solder at two places. Do not overheat. Allow to cool.
- ( ) Connect the center conductor of the coaxial cable to the lead of the R-79/C-24 assembly which has the 2 1/4-inch phosphor-bronze wire attached. (S)
- ( ) Slip a 1 1/4-inch length of blue plastic sleeving over the 2 1/4-inch phosphor-bronze wire; insert the free end of the wire, up to the plastic sleeving, between the rear-prongs of one of the alligator clips. Crimp the prongs down on the wire with pliers, and solder the junction.
- ( ) Repeat the above process, using a 1 1/2-inch length of yellow plastic sleeving over the 2-inch phosphor-bronze wire.
- ( ) Repeat the above process, using a 3-inch length of black plastic sleeving over the 4 1/2-inch phosphor-bronze wire.
- ( ) Insert the finished assembly into the split blue-plastic shell as shown in Figure 12, Detail "E". Press the bodies of R-79 and C-24 down around the center post. Dress the cable and leads in place, and cover with the other half-shell. If all leads are in the grooves provided, finger-pressure could close the shell. Fasten securely with a 3/4-inch long #4-40 screw, #4 split-type lock-washer, and #4-40 hex nut as shown in Detail "F".
- ( ) Slip the red rubber insulators over the alligator clips attached to the blue and yellow leads.

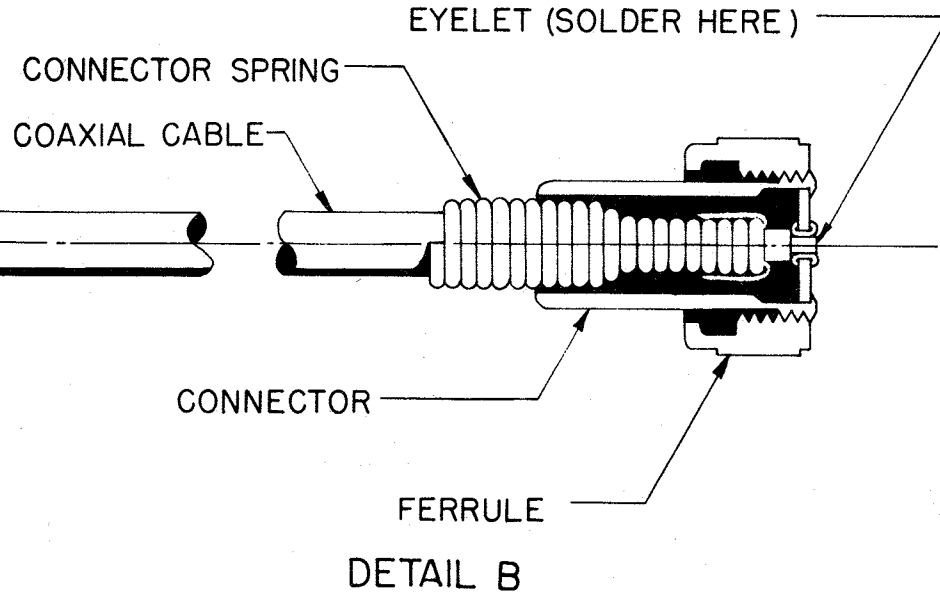
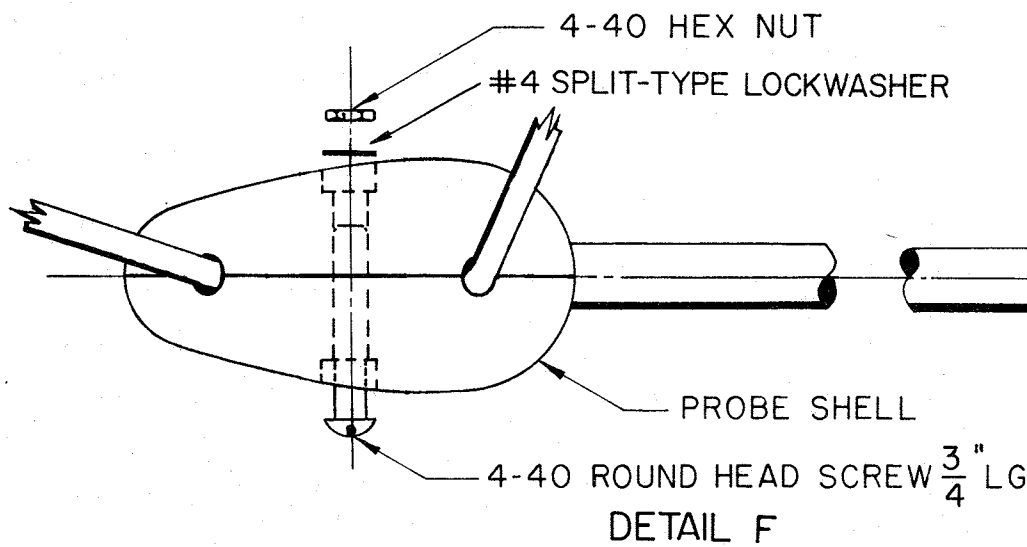
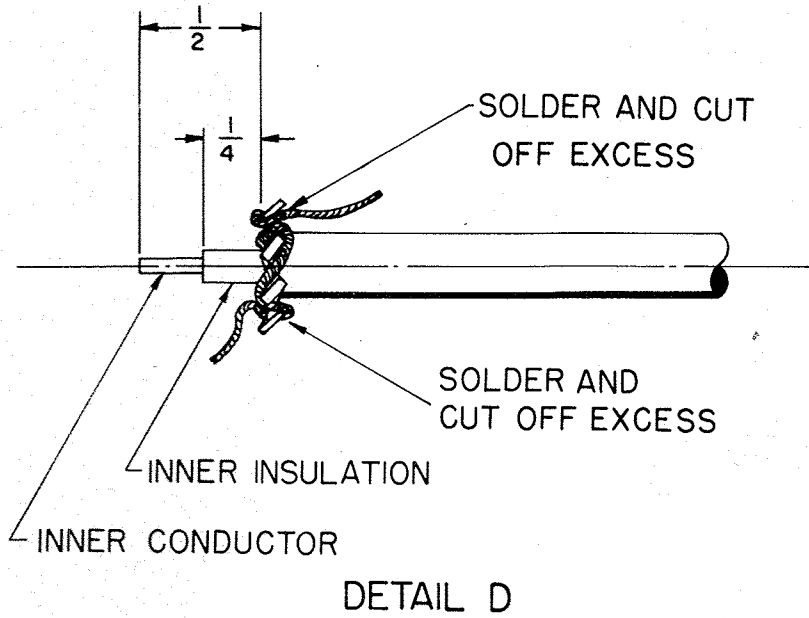
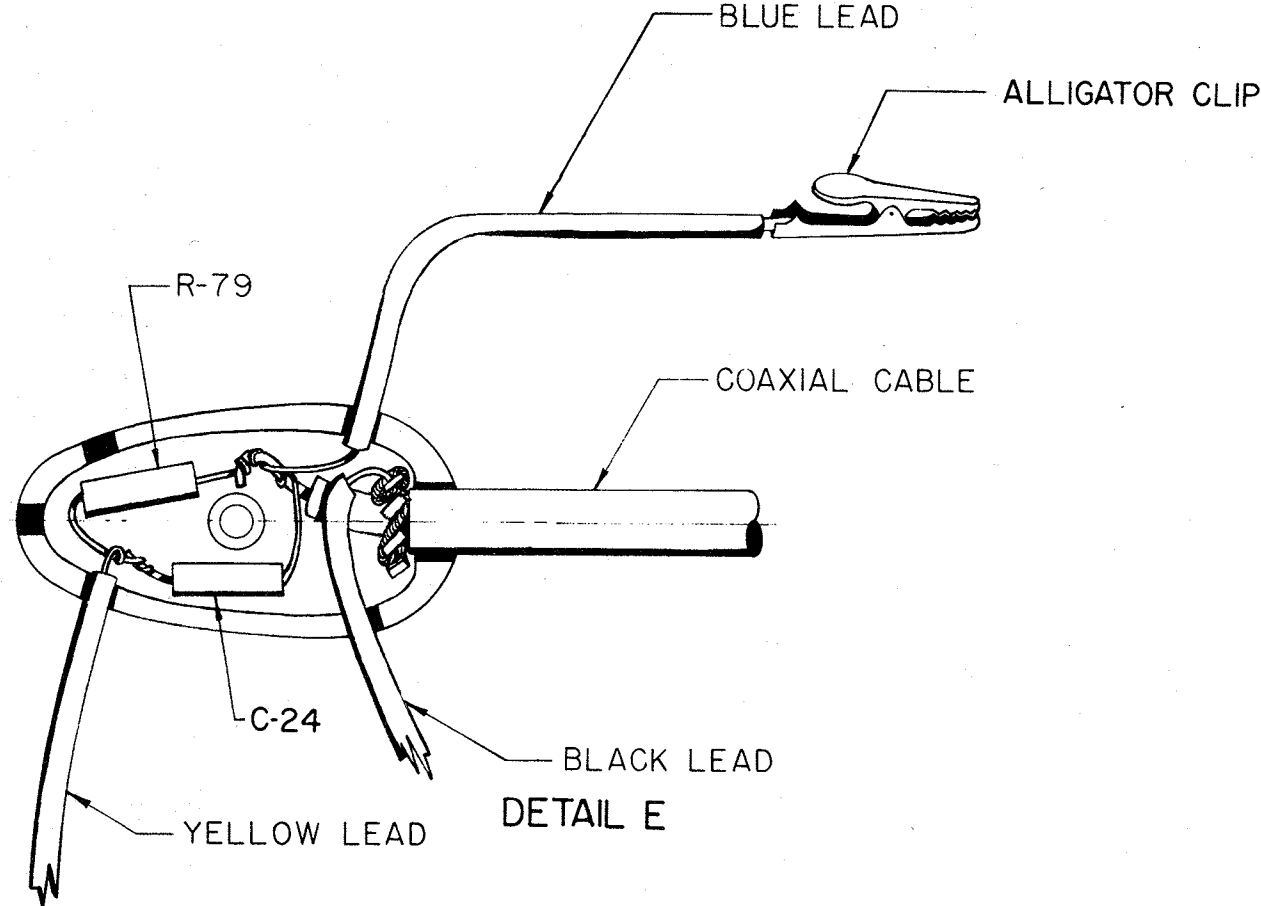
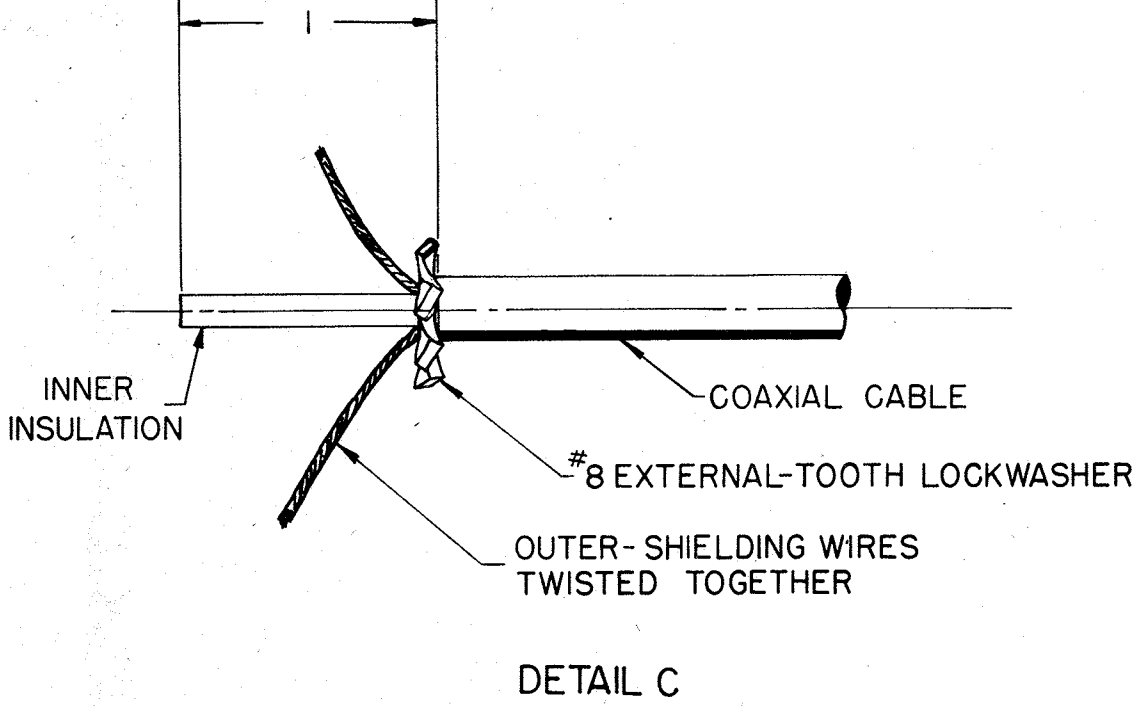
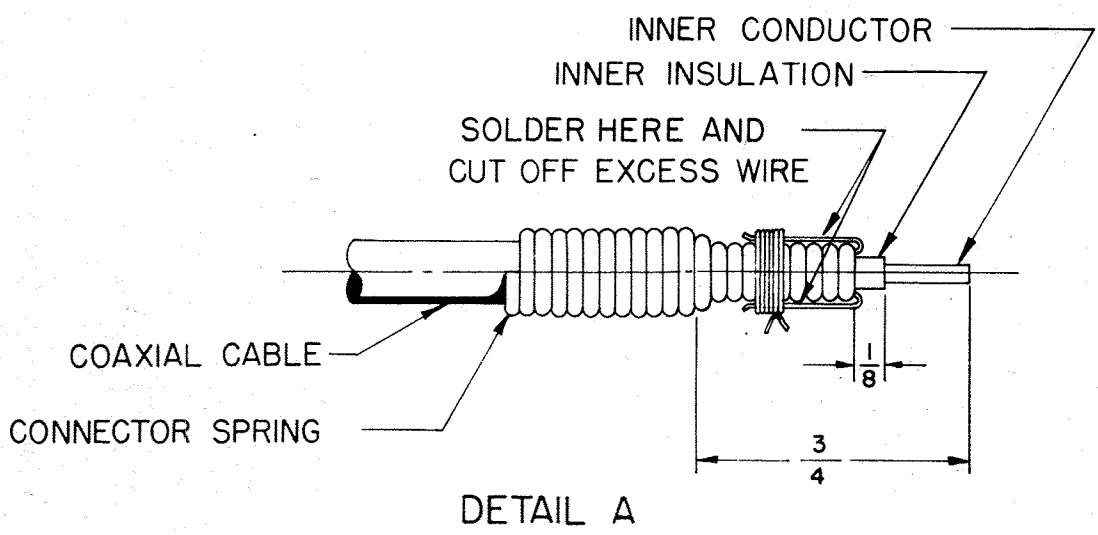
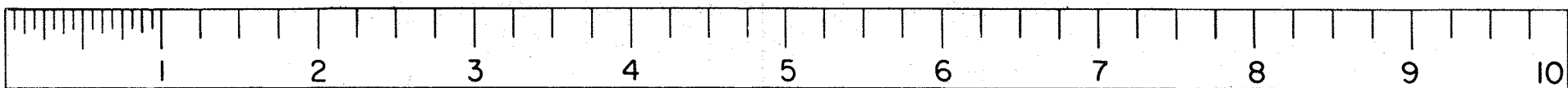


FIGURE 12

WORK AREA



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