Tunable Connectors

for HELIAX® HJ7-50A and HJ7P-50A Cables

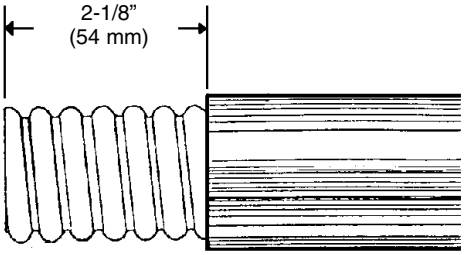
Tools and Materials Required for Assembly

Scale	Metal snips
Knife	Wrenches: two 2-1/4 and one 7/16”
Flat file	Hacksaw, fine-toothed
Miter box	Nylon rod
Screwdriver	Plastic mallet

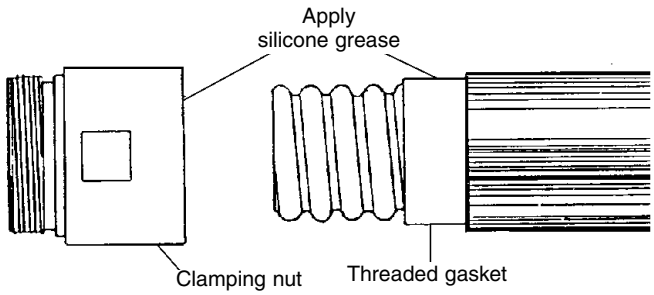
Notice

The installation, maintenance, or removal of antenna systems requires qualified, experienced personnel. Andrew installation instructions have been written for such personnel. Antenna systems should be inspected once a year by qualified personnel to verify proper installation, maintenance, and condition of equipment.

Andrew disclaims any liability or responsibility for the results of improper or unsafe installation practices.

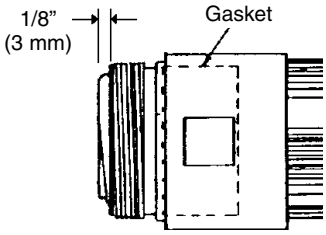


1 Hold the cable downward and cut the cable end square. File the cut edges of the conductors to remove rough spots and deburr the inner conductor. Remove all copper particles from the cable interior. Use a straight-edged piece of paper to guide the jacketing cut and remove the indicated amount of jacket.

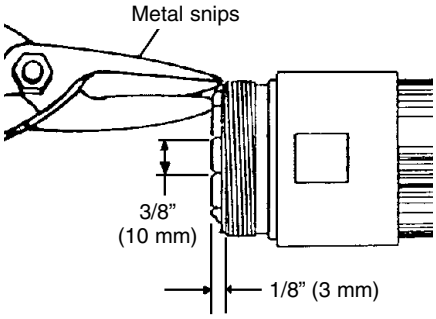


2 Turn the threaded gasket inside out and slide it onto the cable. Then, flip it back so that the gasket threads engage the conductor threads and position it against the jacket. Apply a thin coat of silicone grease to the outer surface of the gasket and the inner surface of the clamping nut.

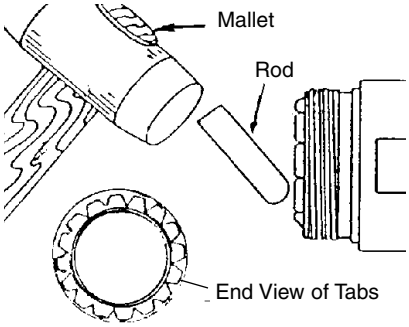
3 Push the clamping nut onto the cable and screw it into place so that 1/8” (3 mm) of outer conductor is exposed.



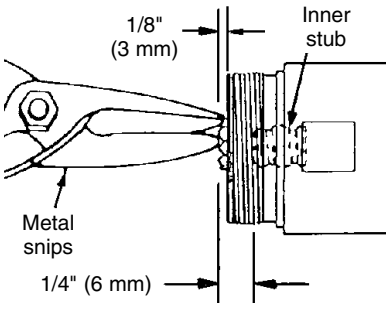
4 Wipe off any silicone grease from the outer surface of the outer conductor. Then, cut tabs in the outer conductor as shown.



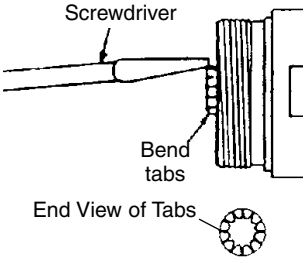
5 Bend the outer conductor tabs outward and flatten them against the clamping nut with the mallet and rod. Do not use excessive force that will thin the material. Trim any tabs that extend beyond the outer edge of the clamping nut.



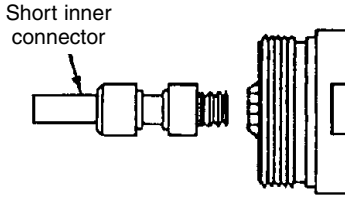
6 Install inner stub with screwdriver slots facing out. Screw the stub into the inner conductor so that it is recessed about 1/4" (6 mm). Cut approximately 12 45° V-notches 1/8" (3 mm) deep in the inner conductor.



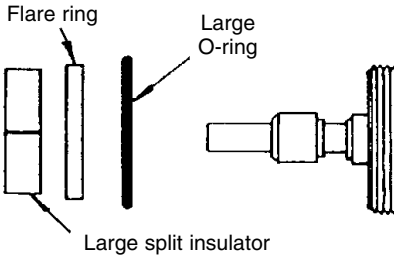
7 Unscrew the inner stub so that its tapered edge is even with the depth of the inner conductor notches. Bend the tabs against the tapered surface of the stub with the screwdriver and tap them with the mallet.

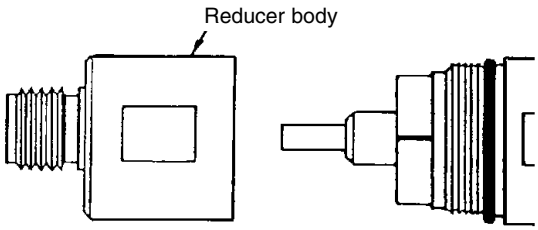


8 Firmly screw the short inner connector counterclockwise into the inner stub with a 7/16" wrench.

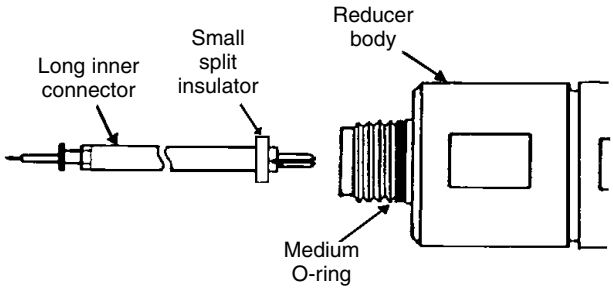


9 Slide the large O-ring into the groove of the clamping nut. Apply a thin coat of silicone grease to the O-ring. Remove any grease from clamping nut threads with solvent. Position the flare ring against the clamping nut and snap the large split insulator into the recess of the inner connector.

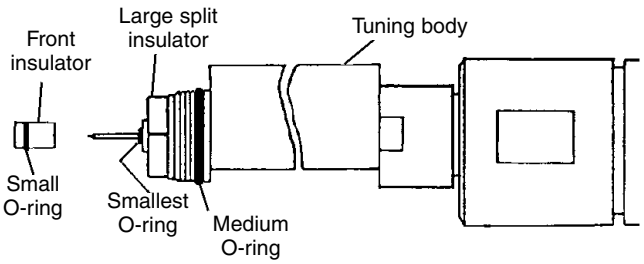




10 Screw the reducer body onto the clamping nut and tighten the connection with wrenches. Turn only the reducer body; do not turn the clamping nut.

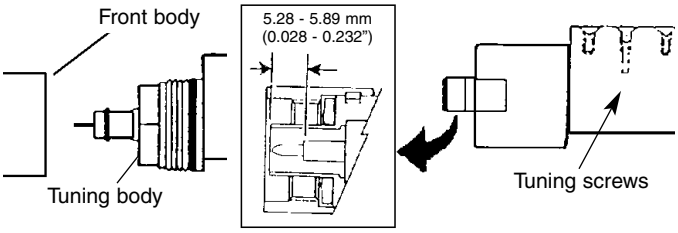


11 Slide one of the medium O-rings into the groove of the reducer body. Apply a thin coat of silicone grease to the O-ring. Remove any grease from reducer body threads with solvent. Snap one of the small split insulators into the groove nearest the spring fingers of the long inner connector. Fully insert the spring fingers into the short inner connector.

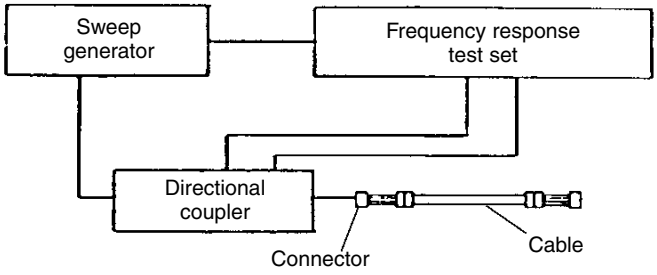


12 Screw the tuning body onto the reducer body and tighten the connection with wrenches. Turn only the tuning body; do not turn the reducer body. Slide the other medium O-ring into tuning body groove. Apply a thin coating of grease to the O-ring. Remove any grease from the tuning body threads with solvent. Snap the other split insulator into the groove of the long inner connector.

Apply a thin coat of silicone grease to the small and smallest O-rings. Slide the smallest O-ring onto the long inner connector. Remove any grease from the inner connector with solvent. Slide the small O-ring into the front insulator groove and slide the insulator onto the inner connector.



13 Screw the front body onto the tuning body and tighten the connection with wrenches. Turn only the front body; do not turn the tuning body.



14 Tune the connector to minimize VSWR using the setup shown. Adjust the tuning screws for either (1) minimum VSWR at the operating frequency, or (2) best frequency characteristics across the desired frequency band. Apply paint or non-hardening sealant to the screws to indicate that tuning is complete.

Note: Tuning the attached connector before installing the cable is acceptable, since uncoiling and installing has a negligible effect on VSWR. This tuning will improve VSWR, but cannot be used to correct other system problems. Fine tuning of the connector may be done after installation.

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Printed in U.S.A. 7/01