CHAPTER 7

YARD AND TENDER INFORMATION

7-1. INSTALLATION.

a. UNPACKING AND HANDLING. — Carefully unpack Antenna Coupler CU-714/SRA-22 and Coupler Control C-2698/SRA-22, and inspect for evidence of shipping damage. If damage is evident, notify the transportation agency immediately. Packing material must be retained to substantiate claims.

b. INSTALLATION REQUIREMENTS.

(1) INSTALLATION POINTERS.— Coupler Control C-2698/SRA-22 is designed for rack mounting. When using the coupler control with Radio Set AN/XXX, remove the blank panel, which is below interconnection box J-1007/U, and mount the coupler control in this space. Antenna Coupler CU-714/SRA-22 is sealed and uses waterproof connectors. The antenna coupler shall be mounted adjacent to the base of the antenna. A distance of 19 inches minimum should be left for removing the antenna coupler from its case. It is important to have a good ground to the ship or the ship grounding system.

(2) OUTLINE DRAWING. — Figure 7-1 shows outline and mounting installation dimensions for the antenna coupler, and figure 7-2 shows outline and installation dimensions for the coupler control .

(3) INTERCONNECTING DIAGRAMS. — Figure 7-3 is an interconnecting diagram of Antenna Coupler Group AN/SRA-22 for use with Radio Set AN/XXX. Figure 7-4 shows an interconnecting diagram of the antenna coupler group for use as a separate unit with other transmitters. Cable requirements are given in table 7-1.

(4) CABLE ASSEMBLY. — Install type-N connectors on the RG-213/U and/or RG-215/U type cables. Install 16-pin plug 2P6 on one end of No. 22 AWG multiconductor interconnection cable when Antenna Coupler Group AN/SRA-22 is used with equipment other than Radio Set AN/XXX. Cut cable to the required length for specific installation. Install 24-pin plug 2P5 on one end of cable, and terminate the other end of the cable to terminal board TB-5. Install a 24-pin round plug 1P7 on another 22-AWG multiconductor interconnection cable, and terminate the other end of this cable to terminal board TB-5. For instructions on installing the connectors and plugs to the cables, refer to Electronics Installation and Maintenance Book, NAVSHIPS 0967-000-0113.

(5) WEATHERPROOFING. — The 24-pin round plug 1P7 and the type-N connector that terminate at the antenna coupler must be weatherproofed. Figure 7-5 weatherproof procedures. Cut the armor back 4 inches from back of plug 1P7. Wrap completely with two layers of plastic tape with 50-percent overlay between turns from armor to wires connected to the plug. Hand-tighten the connector to the antenna coupler. Wrap completely with several layers of plastic tape with 50-percent overlay between turns. Extend plastic tape 5 inches beyond end of the connector. Seal the taped connector with one coat of electrical insulating compound. Extend 1 inch beyond the plastic tape impregnating the armor.

The type-N connector is weatherproofed in the same manner as the plug 1P7, except that armor is not cut back.

c. INSPECTION AND ADJUSTMENTS.

Note

To operate controls of Coupler Control C-2698/SRA-22, it is necessary to hold the TUNE-OPERATE switch in the TUNE position.

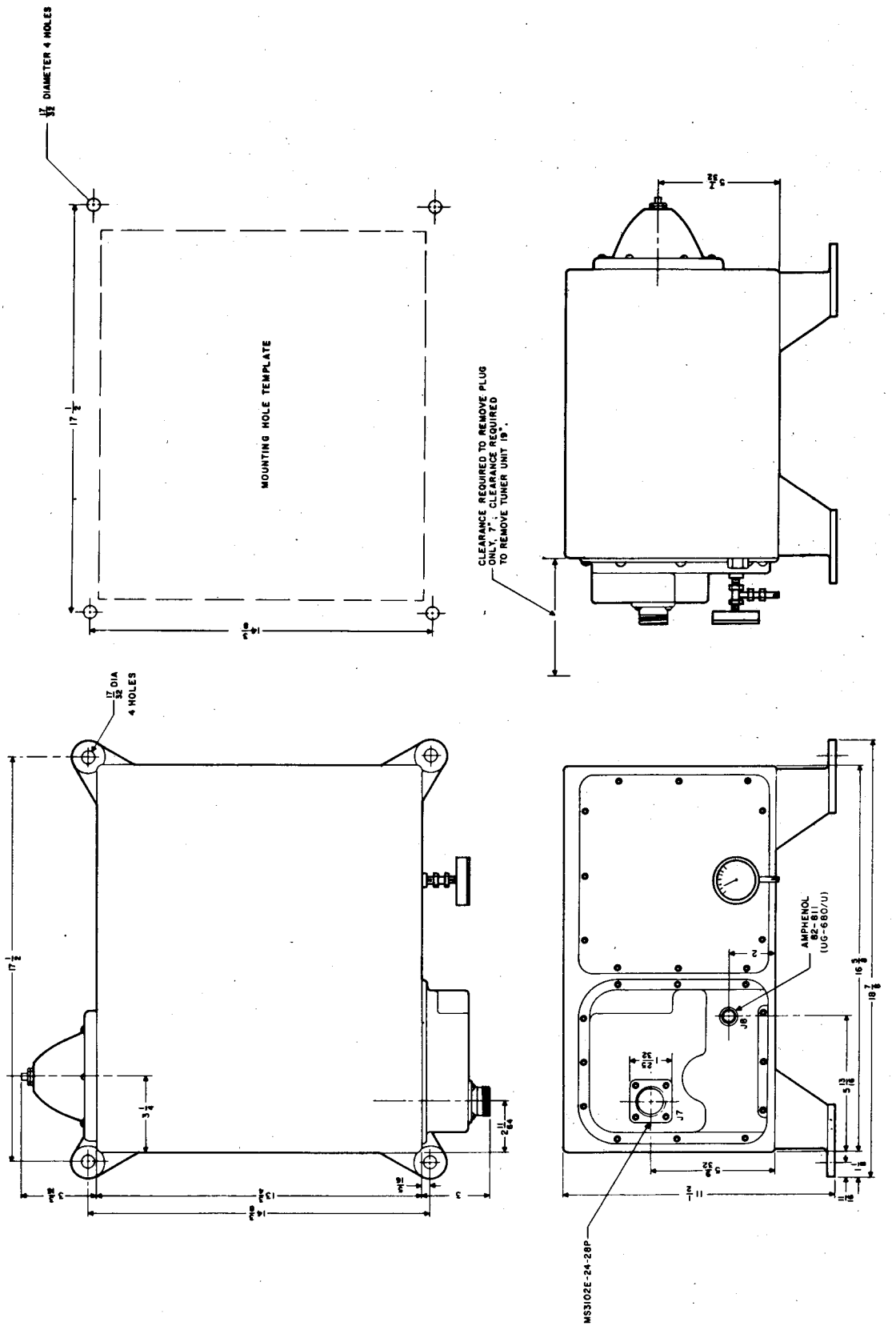
(1) Check grounding of the antenna coupler case to the ship or ship grounding system. It is most important to have a good ground for the antenna coupler. A solid copper strap, illustrated in figure 7-5, not less than 3/4-inch wide and secured with 1/4-20 (or larger) bolts, should be installed for bonding the case to the ship hull. See Shipboard Interference Reduction, NAVSHIPS 900,171, for grounding specifications.

(2) Set TAP COARSE TUNE-FINE TUNE switch on coupler control to COARSE TUNE and note if TAP indicator meter changes reading.

(3) Set COIL COARSE TUNE-FINE TUNE switch on coupler control to COARSE TUNE and note if COIL indicator meter changes reading.

(4) Set LOAD-ANT switch on coupler control to LOAD position. (Make sure that a dummy load is connected to the coupler control.) Refer to paragraph 2-3b(1) and perform the procedures as outlined.

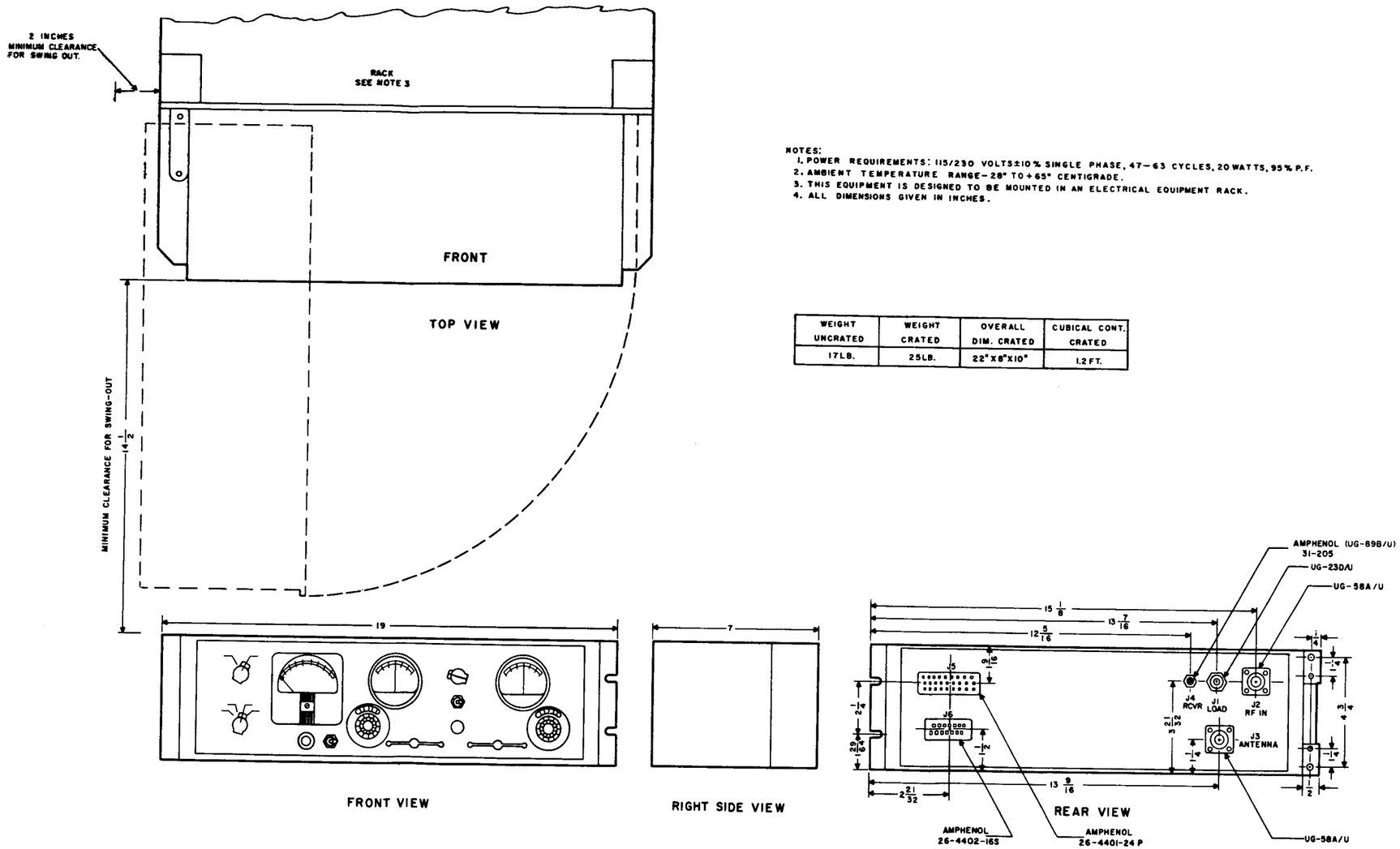
d. PREPARATION FOR RESHIPMENT. — No disassembly of Antenna Coupler Group AN/SRA-22 is necessary for reshipment. Coupler Control C-2698/SRA-22 should be wrapped in neutral paper and put into a carton padded with corrugated padding, along with five 1-pound bags (16-unit bag) of desiccant. The carton should be wrapped with vapor-proof barrier and put into a final carton that measures 22 by 8 by 10 inches.



WEIGHT UNCRATED	WEIGHT CRATED	OVERALL DIMENSIONS CRATED	CUBICAL CONTENTS CRATED
42 LB	53 LB	20"X 14 $\frac{17}{32}$"X 20"	3.4 CU. FT.

Figure 7-1. Antenna Coupler CU-714/SRA-22, Outline and Mounting Dimensions

NOTES
1. ALL DIMENSIONS ARE GIVEN IN INCHES.
2. POWER REQUIREMENTS: 115/230 ±10% SINGLE PHASE, 47-63 CPS, 130 WATTS, 95% P.F.
3. AMBIENT TEMPERATURE RANGE -28° TO +65° CENTIGRADE.
4. HEAT DISSIPATION: 270 WATTS MAXIMUM (CONTINUOUS OPERATION)



NOTES:
1. POWER REQUIREMENTS: 115/230 VOLTS±10% SINGLE PHASE, 47–63 CYCLES, 20 WATTS, 95% P.F.
2. AMBIENT TEMPERATURE RANGE –28° TO +65° CENTIGRADE.
3. THIS EQUIPMENT IS DESIGNED TO BE MOUNTED IN AN ELECTRICAL EQUIPMENT RACK.
4. ALL DIMENSIONS GIVEN IN INCHES.

WEIGHT UNCRATED	WEIGHT CRATED	OVERALL DIM. CRATED	CUBICAL CONT. CRATED
17LB.	25LB.	22"X8"X10"	1.2 FT.

Figure 7-2. Coupler Control C-2698/SRA-22, Outline and Mounting Dimensions

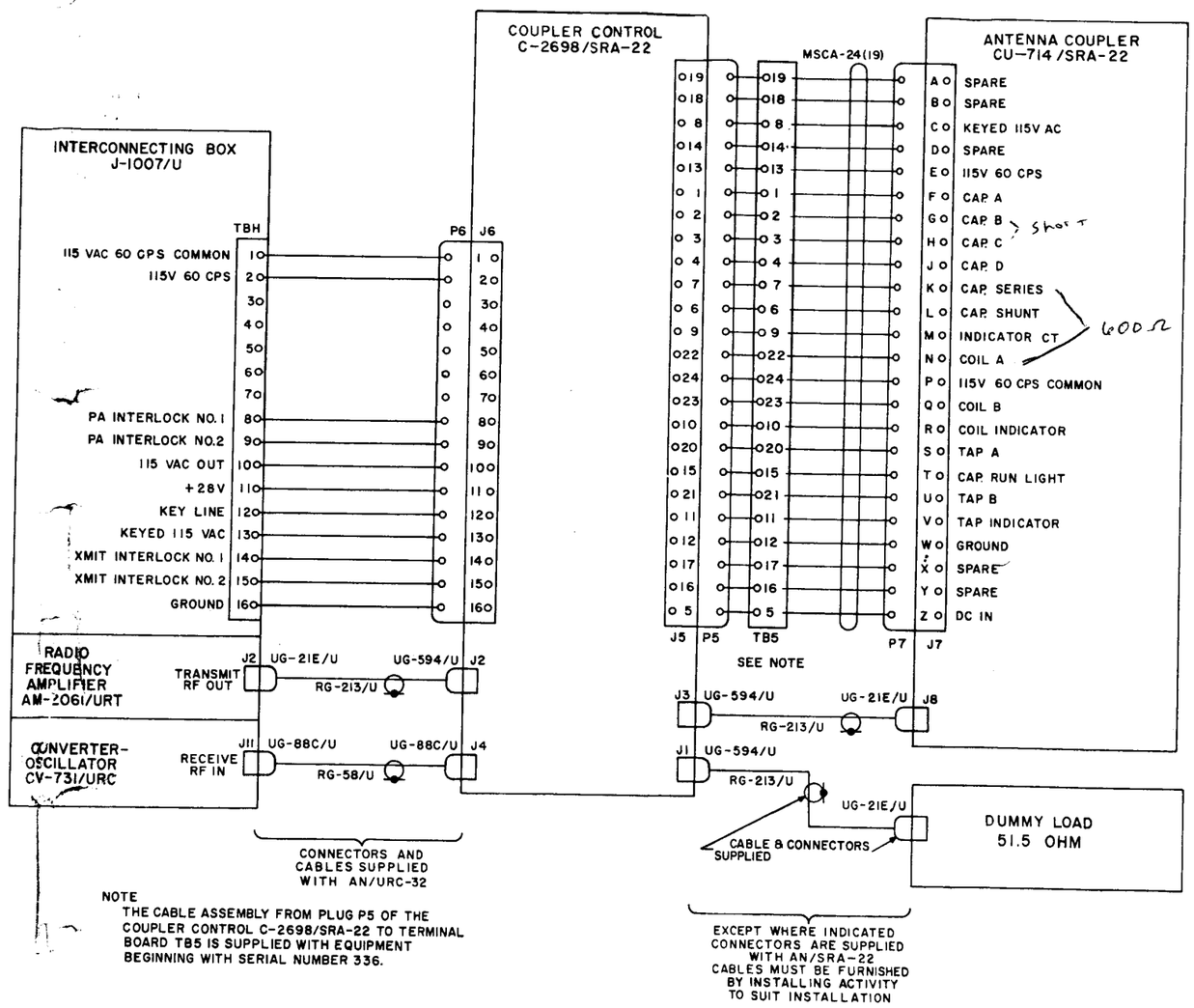


Figure 7-3. Interconnecting Diagram of Antenna Coupler Group AN/SRA-22 with Radio Set AN/URC-32

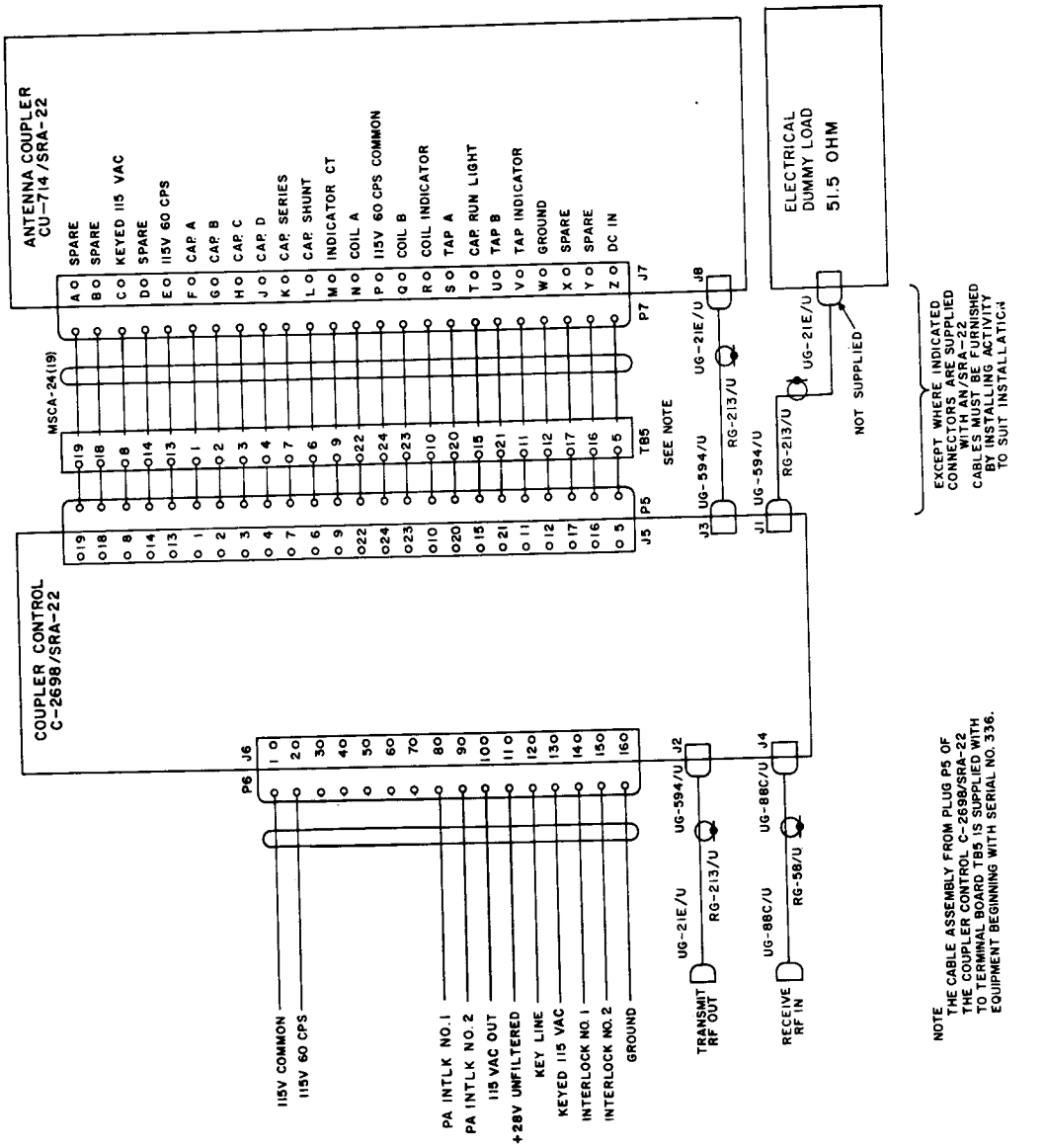


Figure 7-4. Interconnecting Diagram of Antenna Coupler Group AN/SRA-22 for Use as Separate Unit

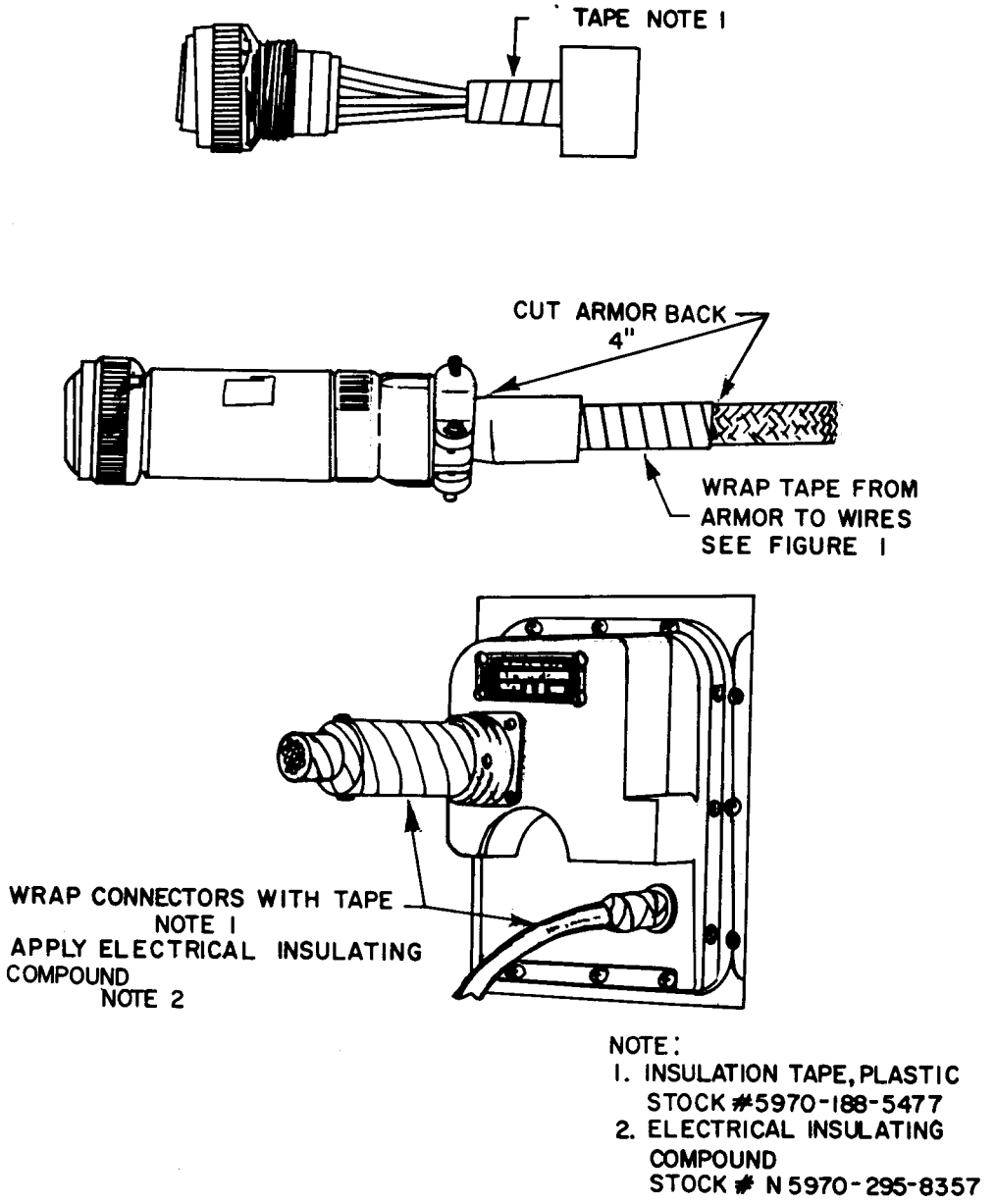


Figure 7-5. Antenna Coupler CU-714/SRA-22 Weatherproofing Procedures

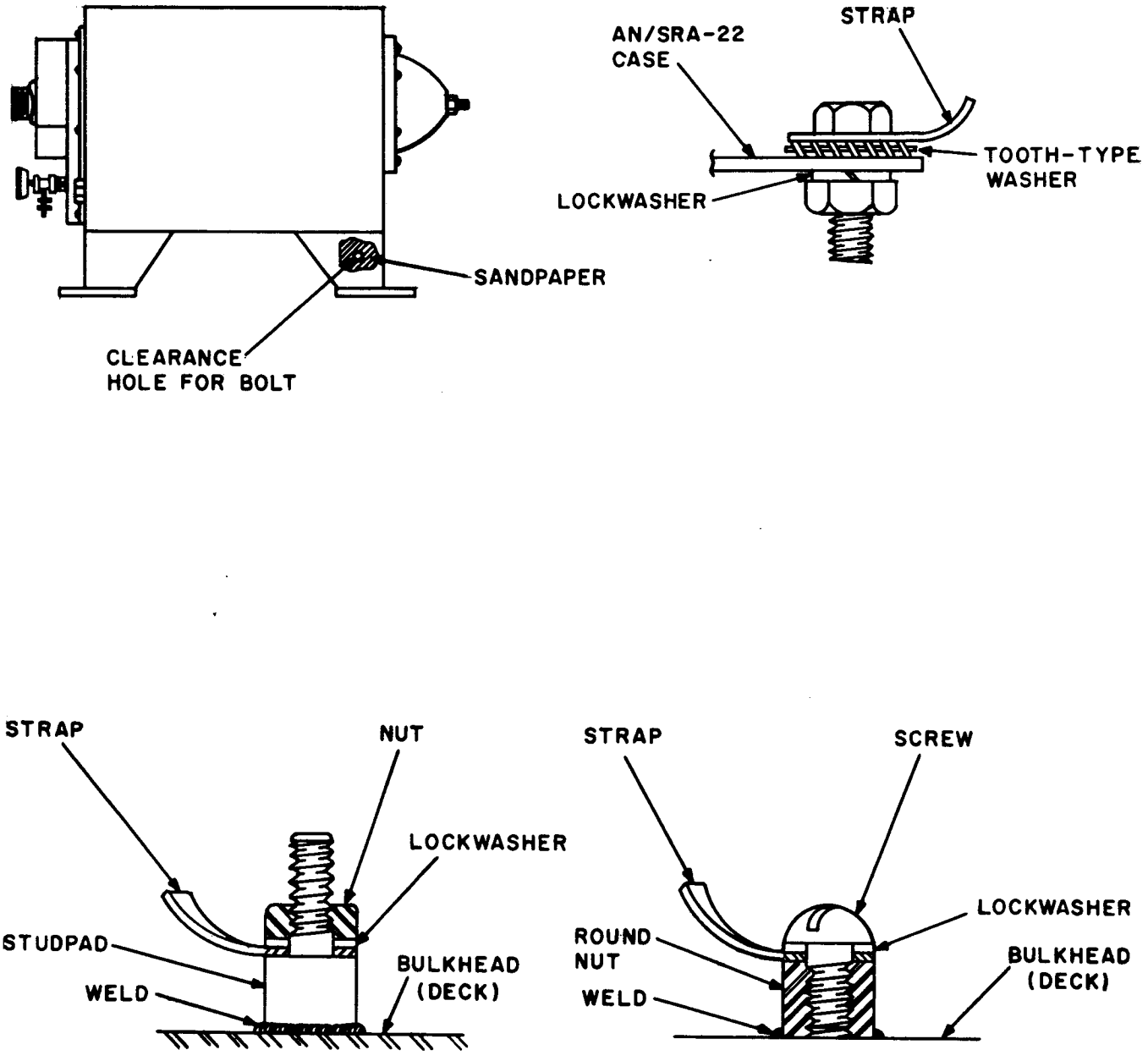


Figure 7-6. Antenna Coupler CU-714/SRA-22 Ground Recommendations

TABLE 7-1. CABLE REQUIREMENTS

NO. OF CABLES	TYPE OF CABLE	TERMINATION AT ANTENNA COUPLER	TERMINATION AT COUPLER CONTROL	TERMINATION AT DUMMY LOAD
1	MSCA-24	24-contact round male MS3106E24-28S(c)	To terminal strip TB-5	
1	RG-213/U or RG-215/U	Series N plug, straight UG-21E/U	Series N plug, right angle UG-594/U	
1	RG-213/U or RG-215/U		Series N plug, right angle UG-594/U	Series N plug, straight UG-21E/U
1	RG-213/U or RG-215/U		Series N plug, right angle (from transmitter) UG-594/U	
1	RG-58/U		Series BNC plug (from receiver) UG-88C/U	
1	No. 22 AWG multiconnection cable (from AN/URC-32)		16-contact male plug (from AN/URC-32) Amphenol 26-4502-16F	
1	No. 22 AWG multiconnection cable (from TB-5)		24-contact female plug (from TB-5) Amphenol 26-4501-24S (cable assembly, incl. plug 2P5 CPN 547-1289-00)	

Antenna Coupler CU-714/SRA-22 should be wrapped in neutral paper and put into a carton padded with corrugated padding, along with three 1-pound bags (16-unit bag) of desiccant. This carton should be wrapped with a vapor-proof barrier and put into a final carton that measures 20 by 14-1/2 by 20 inches.

7-2. MAJOR OVERHAUL.

This section contains the major overhaul procedures for Antenna Coupler Group AN/SRA-22. These procedures are usually employed by overhaul activities when repairs are necessary beyond the capabilities of the ship force.

a. REMOVAL AND DISASSEMBLY OF COUPLER CONTROL C-2698/SRA-22. — Same as paragraph 5-6a (1 through 11).

b. REMOVAL AND DISASSEMBLY OF ANTENNA COUPLER CU-714/SRA-22. — Refer to figure 6-1 and proceed as follows.

Note

If components such as switches, plugs, jacks, and terminal posts are to be removed, unsolder leads and tag them for aid in reassembly. Where it is not necessary to replace the component, do not remove the leads unless necessary to complete the disassembly.

(1) Remove plug 1P7 and coaxial plug 1P8 from connectors 1J7 and 1J8 (41 and 45) on antenna coupler unit.

(2) Disengage the 12 captive screws (1) holding antenna coupler in its case.

(3) Pull unit slowly out of case and disconnect jack 1J9 (460) from plug 1P9 (269). Remove gasket (2) and 28 screws (3, 6, 8, 11, and 14) holding shrouds (5, 10, 13, and 15) over coil drum assembly. Washers (7) and nuts (9 and 12) will also be removed by this procedure.

(4) Unsolder bus wire on connector 1J8 (45).

(5) Remove screws (19) (1 panhead and 5 flathead) from front plate. Pull front casting (49) straight forward until coil slug (28) clears ceramic drum, then allow front casting (49) to swing down. Care should be taken not to damage ceramic drum coil form or wires.

(6) Remove nylon bolt (25) and slug (28).

(7) Remove standoffs (29 and 31), lockwashers (32), and solder lug (40) from studs (30 and 33).

(8) Remove two screws (34), two lockwashers (35), and ground contact (36) from front casting (49).

(9) Remove four screws (37) and gasket washers (37A) holding connector 1J7 (41) and gasket (42) to front casting (49). Also remove nuts (38) and lockwashers (39). Connector 1J7 (41) can now be replaced if necessary. Clearly mark all wires removed to ensure correct reassembly.

(10) Remove hex nut (43), lockwasher (44), and connector 1J8 (45) if replacement is necessary.

(11) Manually run coil and tap to maximum (all of the coil ribbon wound on ceramic drum and tap assembly run toward capacitor end of drum). Secure ribbon to ceramic drum with tape. Holding drums securely, disengage ribbon from metallic drum by removing screw (105) and release tension carefully. Tape free end of ribbon to ceramic drum to prevent ribbon damage.

(12) Remove five screws (70) and three screws (70A) holding front plate (71). Swing front plate (71) to one side.

(13) Remove six screws (16) holding cover (17 and 18) to front plate (71).

(14) Remove two screws (54) and nuts (55) and unsolder capacitor leads if capacitor 1C5 (56) is to be replaced.

(15) Unsolder leads from terminals (51 and 53) and remove three screws (57) to free switch 1S8 (58) from front plate (71).

(16) Remove terminals (51 and 53) by removing screws (50 and 52).

(17) Remove two screws (59), screw (60), lockwasher (61), solder lug (62), and variable tap mount (63).

Note

Be careful not to lose the round nut in shaft 1MP-51 (82).

(18) Slide ball bearing (64) off pinion (81) shaft.

(19) Remove ball bearing (65) from around button contact (108).

(20) Remove six screws (66) and six retaining rings (69). Remove six rollers (68) from six roller arms (67).

(21) Loosen three setscrews (73) on collar (74). Remove ceramic coil assembly.

(22) Remove two screws (76), switch 1S10 (78), and spacers (79) from primary gear plate (419). Swing switch 1S10 away from gear (102).

(23) Remove roll pin (80) (pin closest to primary gear plate (419) from tap drive pinion (81), and remove tap drive pinion from primary gear plate (419).

(24) Remove shaft (82).

(25) Remove two screws (91), two lockwashers (92), and contacts (93).

(26) Remove retaining ring (94) and spacers (95 and 96). Be extremely careful not to lose four springs (97) which also may be removed at this time.

(27) Remove spacer (98) and tap hub (99).

(28) Remove roll pin (100) from stop assembly (103) and slide 1-v drum assembly off shaft (382)

(29) Remove two screws (101), 1-v drum driven gear (102), roll pin (75), four screws (105), and stop assembly (103).

(30) Remove button contact (108), four screws (105), and 1-v drum end assembly (109).

(31) Remove four screws (104) and drum end assembly (120) from drum (107).

(32) Remove screw (110), washer (111), and nut (112) holding spring (115) to 1-v drum end assembly.

(33) Remove screw (113) and washer (114) from flange coupler (117).

(34) Remove spring (115).

(35) Loosen setscrew (116) and slide flange coupler (117) off 1-v drum shaft (118).

(36) Remove Oilite bearing (119) from 1-v drum end assembly (120).

(37) Remove tap ring assembly from coil form.

(38) Remove three screws (121), three lockwashers (122), and three washers (123).

(39) Remove screw (124), lockwasher (125), screw (126), lockwasher (127), and two strip contacts (128 and 129).

(40) Remove slip ring (130).

(41) Remove four spacers (131, 132, 133, 134) and four rollers (135).

(42) Remove two screws (136) and two stop screws (137) from roller shafts (138, 139, 140, and 141) and plastic spur gear (142).

(43) Unsolder ribbon from bus wire connection (143) and remove silver coil ribbon (144), being careful not to kink or damage ribbon.

(44) Remove screw (145) and lockwasher (146) that secure lead (147).

(45) Remove roll pin (150) and slide out ceramic drum (160).

(46) Remove six screws (157), washers (155 and 156), nuts (154), and end assembly (159).

(47) Remove four screws (148) and flange coupler (149).

(48) Separate plastic spur gear (158), h-v drum stop assembly (159 and 159A), and h-v drum (160).

(49) Loosen setscrews (73) on coupler (74) and slide out h-v output shaft (151).

Note

Be careful not to lose h-v contact (153) and coupler (74).

(50) Remove screw (160), lockwasher (162), and solder lug (163) from variable capacitor (171).

(51) Remove three screws (164), three lockwashers (165), h-v spark gap contact (166), and solder lug (167).

(52) Remove screw (168), washer (169), and teflon spur gear (170).

(53) Remove four screws (172) from capacitor plate (176).

(54) Remove variable capacitor (171) from capacitor plate (176) by backing out leadscrew (180).

(55) Remove small nut (173), lockwasher (173A), h-v contact (174), and screw (175) from capacitor plate (176).

(56) Remove four screws (177) holding h-v collar (178) and gear (179) to capacitor lead screw (180). Separate these parts.

(57) Remove three screws (182) holding h-v output plate (187).

(58) Remove retaining ring (183) and spacers (184, 185).

(59) Separate 1P10 (186) and h-v output plate (187)

(60) Remove three screws (188) and three h-v posts (189).

(61) Remove two nuts (190) and spacers (191) from switch 1S11.

(62) Remove switch 1S11 (192) and two spacers (193).

(63) Remove two studs (195).

(64) Remove three nuts (196), three lockwashers (197), three washers (198), three washers (199), and spacers (199A).

(65) Remove screw (200), lockwasher (201), solder lug (202), washer (203), washer (204), and spacer (205).

(66) Remove retaining ring (206) and washers (207, 208, 209) from h-v rotor shaft (304).

(67) Remove two nuts (210), lockwashers (211), solder lug (215), and four washers (212, 213).

(68) Remove two studs (214), and separate h-v contact (216) and two spacers (217).

(69) Remove two screws (218), two lockwashers (219), two solder lugs (220), four washers (221, 222), and two contact buttons (223).

(70) Remove two screws (224), two lockwashers (225), solder lug (228), two washers (226), and two washers (227).

(71) Separate strip contact (229), two spacers (230), and h-v plate (231).

(72) Remove four standoffs (232, 233) and six studs (234, 235, 236).

(73) Loosen setscrew (237) and remove roll pin (238) from h-v rotor collar (240).

(74) Remove three screws (239) that secure h-v rotor collar (240) to h-v rotor plate (245).

(75) Carefully remove two nylon screws (244) and h-v rotor strip (242). Replace contacts (241 and 243) if necessary.

(76) Loosen four setscrews (246) from coupler (254).

(77) Remove three screws (247, 248) and two lockwashers (249).

(78) Remove four nuts (250), four lockwashers (251), four screws (252), and two potentiometer clamps (253).

(79) Slip coupler (254) off shaft of potentiometer 1R6 (255). Also remove mounting bracket (256).

(80) Remove screws (499), spacers (500), washers (501), and nuts (502). This frees switch 1S12 (506).

(81) Loosen two setscrews (505) and remove coil stop cam (258).
(82) Loosen two setscrews (505) and remove coupler (504).
(83) Loosen two setscrews (505) and remove shaft extender (503).
(84) Remove spring (259).
(85) Loosen two setscrews (260) from coil stop (261).
(86) Remove screw (262), lockwasher (263), washer (264), and h-v spark gap contact (265) from secondary gear plate (346).
(87) Remove two nuts (266), two lockwashers (267), two screws (268), and two clamps (269A) that secure plug 1P9 (269) to bracket (274).
(88) Remove two screws (271) that secure bracket (274) to secondary gear plate (346). Also remove screw (270) and spacer (296).
(89) Remove screw (275), washer (276), and teflon spur gear (277) from primary gear plate (419).
(90) Remove screw (278), washer (279, teflon spur gear (280), and retainer ring (281) from primary gear plate (419).
(91) Remove coil stop assembly (282).
(92) Remove two screws (285) and center tap block (286).
(93) Remove screw (287) and spacer bar (288).
(94) Remove screw (289) and spacer bar (290).
(95) Remove spacer bar (292).
(96) Remove screw (305A), spacer (306A), and spacer bar (293).
(97) Remove screw (294) and spacer bar (295).
(98) Loosen four setscrews (84) in coupler (85).
(99) Remove four screws (88), nuts (86), and potentiometer clamps (89).
(100) Slide potentiometer 1R7 (90) out of coupler (85).
(101) Remove three screws (83) and potentiometer bracket (498).
(102) Remove screw (492) and switch plate (490).
(103) Remove screws (491), spacers (493), washers (494), and nuts (497). Remove switch 1S13 wafer (495).
(104) Remove screws (297).
(105) Remove screw (298) and spacer (299).
(106) Remove two screws (300).
(107) Remove screw (301).
(108) Remove screw (302) and spacer (307).
(109) Remove spring (303) connected to h-v rotor shaft (304).
(110) Remove screw (305) and spacer (306).
(111) Remove two screws (308) and guide pin block (309).
(112) Remove two screws (310) and guide pin block (311).
(113) Remove h-v rotor shaft (304).
(114) Remove secondary gear plate (346).
(115) Remove four screws (312) and coil motor (313).
(116) Remove four screws (314) and tap motor (315).
(117) Remove four screws (316) and capacitor motor (317).
(118) Remove four screws (318) and four h-v posts (319).
(119) Remove two capacitor drive pin stops (320).
(120) Remove two stop pin screws (321).
(121) Remove Oilite bearings (322, 323, 324, 325, 326, 327).
(122) Remove ball bearings (328, 329, 330) from gear shafts (382, 383, and 376), respectively.
(123) Remove Oilite bearing (331) from gear shaft (368).
(124) Remove ball bearings (332 and 333) from gear shafts (366 and 367), respectively.
(125) Remove Oilite bearing (334) from gear shaft (363).
(126) Remove ball bearings (335, 336, and 337) from gear shafts (362, 361, and 367), respectively.
(127) Remove Oilite bearings (338, 339, 340, and 341) from gear shafts (356, 354, 353, and 352), respectively.
(128) Remove spacer (342).
(129) Remove Oilite bearings (343, 344, and 345) from gear shafts (349, 375, and 386), respectively.
(130) Remove three screws (347) that secure gear (348) to gear (349).
(131) Remove two screws (350) that secure gear (351) to hub (352).
(132) Remove gear assemblies (353, 354).
(133) Loosen two setscrews (355) and remove shaft (356) from gear (359).
(134) Remove two screws (357) and stop block (358) from gear (359).
(135) Remove gear assemblies (360, 361, and 362).

(136) Remove spur gear shaft (363).
(137) Remove screw (364) and stop block (365) from gear (366).
(138) Remove gear (366).
(139) Remove gear assemblies (367 and 368).
(140) Remove gear-shaft assembly (369).
(141) Remove gear assemblies (370, 371, and 372).
(142) Remove roll pin (373) and separate gear-shaft assembly (374) and spur gear (375).
(143) Remove gear assembly (376).
(144) Remove retainer ring (377) and three washers (378, 379, and 380).
(145) Remove sector gear assembly (381).
(146) Remove spur gear shaft (382).
(147) Remove gear-shaft assembly (383).
(148) Remove roll pin (384), shaft (385), and gear-shaft assembly (386).
(149) Remove spring (387), retainer ring (388), and stop arm (389).
(150) Remove four screws (390) that secure pin stop (391) to primary gear plate.
(151) Remove ball bearing (392) and Oilite bearing (393) from primary gear plate.
(152) Remove bearing (394).
(153) Remove Oilite bearing (395) and ball bearing (396) from parimary gear plate.
(154) Remove Oilite bearing (397).
(155) Remove Oilite bearing (398).
(156) Remove three Oilite bearings (399, 400, and 401).
(157) Remove ball bearing (402) and Oilite bearing (403).
(158) Remove four ball bearings (404, 405, 406, and 407).
(159) Remove six Oilite bearings (408, 409, 410, 411, 412, 413).
(160) Remove two screws (414), two Oilite bearings (415, 416), and hub support (417).
(161) Remove ball bearing (418) from primary gear plate (419).
(162) Disengage 12 captive screws (420) and remove blower front cover (427) from right-hand side of the antenna coupler case.
(163) Remove pressure gauge (422), filler valve (481), T-fitting (480), nipple (479), connector (422), and 0-ring (423).
(164) Remove rubber gasket (424).
(165) Remove six screws (428) and six lockwashers (429).
(166) Remove blower assembly from antenna coupler case (477).
(167) Remove capacitors 1C8 (483) and 1C9 (484) by removing four screws (487) and lock-washers (488).
(168) Remove screws (486) and capacitor mounting plate (485).
(169) Remove three screws (433), lockwashers (434), spacers (435), and blower (436).
(170) Remove nuts and capacitor mounting brackets (437, 439), lockwashers (438), and capacitor 1C6 (440).
(171) Remove terminal (443) and solder lug (489) by removing screw (441) and lockwasher (442).
(172) Remove cradle (446) by removing 11 screws (445).
(173) Remove five screws (447) and remove plenum (448) and blower gasket (449).
(174) Remove nut (450) and guide pin (451).
(175) Remove nut (452) and guide pin (453).
(176) Remove two screws (461, 462) and connector 1J10 (463).
(177) Remove 6 screws (466) and 18 washers (466A, 467, 468).
(178) Remove h-v output insulator (469) and gasket (470).
(179) Remove two nuts (471, 472), two washers (473, 474), gasket (475), and h-v output shaft (476).
(180) Remove screw (464) and h-v post (465).
(181) Remove two screws (456), lockwashers (455), and nuts (454) holding jack 1J9 (460) in cover (458).

c. CLEANING. — This section contains instructions and procedures for cleaning the dismantled and disassembled components of Antenna Coupler Group AN/SRA-22. All parts requiring particular methods of cleaning are considered separately, and parts which are of such similar nature as to permit identical cleaning procedures are grouped. Instructions are given for cleaning finished surfaces to permit immediate repairs to minor finish damage by brush touch-up after the surface has been cleaned. Reference to the word "solvent" shall be understood as indicating a mixture comprising methylene chloride, 25 percent; perchloro-ethylene, 5 percent; and dry-cleaning solvent, 70 percent, by volume. All referenced cleaning materials and protective agents are listed and identified in table 7-2.

TABLE 7-2. CLEANING MATERIALS AND PROTECTIVE AGENTS

MATERIAL	SPECIFICATION	ASO STOCK NO.
Solvent; a mixture by volume of: Methylene chloride, 25 percent Perchloroethylene, 5 percent Dry-cleaning solvent, 70 percent	ANA Spec AN-M-37 Fed. Spec O-T-236 Fed. Spec P-S-661a	R51-M-950-20 R51-T-4459-200 R51-C-1326-75
Chamois skin		
Cloth, cotton; lintless		
Detergent, powder		
Oil, lubricating	MIL-L-7870	R14-0-2405-20
Oil, lubricating; refrigerating machine	Fed. Spec VV-0-581	
Paper, lens tissue		
Paper, tissue; fine grade		
Solvent, dry-cleaning	Fed. Spec P-S-661a	R51-C-1326-75
Tool, burnishing		R41-T-3080
Trichloroethylene	AN-O-T-631	R51-T-5780

WARNING

Perform operations involving cleaning solvent under a ventilated hood. Avoid breathing solvent vapor; wear a suitable mask when necessary. Avoid continuous contact with a solvent. Use goggles, gloves, and apron to prevent irritiation caused by prolonged contact. Change clothing that has become saturated with solvents.

References to air jet signify a hand-operated air nozzle supplied with clean, dry, compressed air at a pressure of 25 to 28 psi maximum.

(1) CLEANING NONSEALED BALL BEARINGS. — Nonsealed ball bearings can be cleaned in a bearing cleaning machine, such as ASO Stock No. V40C969, using the cleaning agents and procedures recommended by its manufacturer. Otherwise, clean these bearings according to the following hand-washing procedures.

(a) Perform cleaning work in an air-conditioned or air-filtered area. All tools, equipment, fixtures, and the area in general must be maintained at a very high level of cleanliness. For air jets used in the area, compressed air from a source outside the area should be again filtered and dehydrated, even though the source has those facilities. All cloth used in these procedures must be lint free and clean. Dry-cleaning solvent Federal Spec P-S-661a must be filtered through clean chamois skin or filter paper before use, and periodically thereafter.

(b) Insert a bearing holder into bore securely, and immerse bearing in cleaning solvent Federal Spec P-S-661a. Move bearing up and down several times to circulate dry-cleaning solvent.

(c) Remove bearing from bath, and direct air jet at side of bearing opposite from holder until dry; take care not to allow flow from air jet to spin the bearing.

(d) Again wash and dry bearing as directed in steps (b) and (c).

(e) Repeat wash as directed under step (b) and, while so doing, gently rotate outer race with gloved finger to dislodge any foreign particles from balls, retainer, and races; then dry as directed in step (c).

(f) Demagnetize bearing by passing it through throat of a suitable demagnetizer, once in a forward direction, then in reverse direction; while so doing, slightly rotate bearing in order that balls within it will be rotated one or two revolutions.

(g) Using a second bath of freshly filtered dry-cleaning solvent, repeat washing and drying operations of step (e). Repeat this operation until bearing is completely free of all foreign matter as ascertained by step (h).

(h) Gently rotate outer race with gloved finger, and observe whether action is smooth all the way around without resistance or grinding. Smooth action of a dry bearing is accepted as an indication that is is clean.

(j) Bake bearing for approximately one-half hour in suitable electric or infrared ventilated oven at approximately 43° C (110° F) until all remaining dry-cleaning solvent is evaporated.

(k) Remove from oven and place in clean, dry, suitable container for protection from dust, moisture, and handling while in transit to inspector. Attach a slip to container identifying contents.

(2) CLEANING COVERED CABLE.

(a) Clean outer surface of flexible vinylite conduit by wiping dirt from surfaces with solvent-moistened, lintless cloth.

(b) Wipe dry using dry, clean, lintless cloth.

(c) Treat any connector terminations as directed in paragraphs 7-2c(5); wipe clean any lug terminations with solvent-moistened, lintless cloth; and dry them with dry, clean, lintless cloth.

(3) CLEANING CASTINGS. — Unfinished, finished, or partly finished castings are cleaned as follows.

(a) Remove bulk of any surface grease with rags.

(b) Blow dust from surfaces, holes, and recesses with air jet.

(c) Immerse casting in washing bath of solvent and scrub until clean, working over all surfaces and into all holes and recesses with suitable nonmetallic brushes. Flat, woodbacked brushes with soft fiber bristles are recommended for surfaces; round brushes, similar to those used for washing bottles and test tubes, are recommended for holes and recesses.

(d) Raise from bath and permit solvent to drain into bath.

(e) Immerse in rinsing bath of clean solvent, rinse, and raise from bath. Position to drain dry, so that solvent is not trapped in holes or recesses. Where practical positioning will not permit complete drainage, use air jet to remove any trapped solvent.

(f) When thoroughly dry, touch up minor damage to finish. Extensive damage to finish may require complete refinishing.

(g) Protect from dust and moisture pending inspection.

(4) CLEANING WIRED CHASSIS. — The following cleaning procedure is used for chassis containing terminal boards, resistors, capacitors, switches, inductors, transformers, or other wired parts.

(a) Remove dust and dirt from all surfaces, including parts and wiring, using soft-bristled brushes in conjunction with an air jet.

Note

When necessary to disturb the dress of wiring and cables, dressing should be noted, and upon completion of cleaning operations, wiring and cables should be restored to their proper positions or dress.

(b) Clean jacks as instructed in paragraph 7-2c(11).

(c) With minimum possible disturbance of wiring, clean connectors as prescribed in paragraph 7-2c(5).

(d) Clean switches as directed in paragraph 7-2c(18).

(e) Complete chassis cleaning by wiping down all finished surfaces with solvent-moistened, lintless cloth.

(f) Dry and polish finished surfaces using dry, clean, lintless cloth.

(g) Make touch-up repairs to minor damage to finish.

(h) Protect from dust, moisture, and physical damage pending inspection.

(5) CLEANING CONNECTORS.

(a) Wipe dust and dirt from bodies, shells, and cable clamps using solvent-moistened, lintless cloth. Wipe dry with clean, dry, lintless cloth.

(b) Remove dust from inserts using small soft-bristled brush in conjunction with air jet.

(c) Wash dirt and any traces of lubricant from insert insulation and contacts with solvent applied sparingly with small camel's-hair brush.

(d) Dry insert with air jet.

(6) CLEANING COVERS AND SHIELDS. — Clean all unfinished, partly finished, and finished sheet-metal covers and shields, such as dust covers, inspection covers, chassis covers, and housings, according to applicable steps of procedure used for cleaning castings. Refer to paragraph 7-2c(3).

(7) CLEANING DIALS AND KNOBS. — Clean all dials and knobs by gently wiping their surfaces with clean, soft, lintless cloth which has been slightly moistened with solvent. When clean, polish with tissue paper.

(8) CLEANING NEOPRENE OR RUBBER GASKETS AND SEALS.

(a) Remove any grease from surfaces with dry, lintless cloth.

(b) Make up a washing bath of 2 ounces of detergent powder per gallong of warm water.

(c) Immerse gaskets and seals in bath and wash clean with lintless cloth.

(d) Rinse well in clean, warm water, dry with air jet, and protect from dust, lubricants, and high temperatures pending inspection.

(9) CLEANING GASKETS AND SHIM WASHERS (PAPER OR FIBER).

(a) Remove any grease from surfaces with dry, lintless cloth.

(b) With clean, lintless cloth moistened with solvent, quickly wipe all surfaces until clean.

(c) Immediately dry all surfaces using clean, dry, lintless cloth.

(d) Protect from dust and lubricants pending inspection.

(10) CLEANING INSULATORS.

(a) Wipe clean with solvent-moistened, clean, lintless cloth.

(b) Dry and polish using dry, clean, lintless cloth.

(11) CLEANING JACKS.

(a) Remove dust from exteriors with camel's-hair brush and air jet.

(b) Blow dust from interior of each female contact with air jet.

(12) CLEANING LAMP HOLDERS.

(a) Clean exteriors with soft-bristled brush and air jet.

(b) Clean interiors of socket types with air jet.

(13) CLEANING LAMPS. — Clean all lamps by wiping with solvent-moistened, lintless cloth; then dry and polish with clean, dry, lintless cloth.

(14) CLEANING LAMP-HOLDER LENS.

(a) Wipe all surfaces clean with solvent-moistened, lintless cloth.

(b) Wipe all surfaces with dry, clean, lintless cloth.

(c) Polish glass lens with clean, fine, tissue paper or lens tissue paper.

(15) CLEANING MACHINED METAL PARTS. — Detached gears, shafts, keys, pins, collars, worms, springs, and similar machined parts should be cleaned in a suitable machine if available; otherwise, proceed as follows.

(a) Clean as directed in steps (a), (c), (d), and (e) of paragraph 7-2c(3) and in steps (b), (c), and (d) of this paragraph.

Note

Split-gear or spring-loaded assemblies require cleaning between twin gears. Accomplish this while washing assemblies by moving gears with fingers.

(b) Dry in dust-free, dry area. The use of radiant heat in a ventilated enclosure is recommended for drying, particularly where humidity is high.

(c) When dry, immediately apply light coat of MIL-L-7870 lubricating oil to any bare steel surfaces.

(d) Protect from dust and moisture pending inspection.

(16) CLEANING MECHANICAL METAL PARTS. — The detached miscellaneous mechanical parts include mounting plates, mounting clamps and brackets, blower fan, nuts, bolts, screws, washers, handles, fasteners, and hardware. These are handled in a suitable cleaning machine, or according to applicable steps of procedure used for castings. Refer to paragraph 7-2c(3).

(17) CLEANING RECEPTACLES. — Clean all receptacles according to applicable steps of procedure used for connectors. Refer to paragraph 7-2c(5).

(18) CLEANING ROTARY SWITCHES. — Clean all special switches with button contacts and switches of the phenolic-wafer type as follows.

(a) Remove all dust with air jet while turning switch rotor back and forth several times.

(b) Wash all contacts and insulation with solvent lightly applied with small camel's-hair brush.

(c) Dry with air jet, then repeat wash using clean solvent. Rotate switch rotor several times during this wash.

(d) Dry gently, but thoroughly, with air jet.

(19) CLEANING FUSE HOLDERS AND FUSES. — Clean fuse holders and fuses according to procedures used for lamps and lamp holders. Refer to paragraph 7-2c(12) and (13).

(20) CLEANING TOGGLE SWITCHES.

(a) Using air jet, blow dust from surfaces and crevices of switch bodies and any attached activating mechanisms.

(b) Wipe all surfaces with solvent-moistened, lintless cloth and dry with air jet.

(21) CLEANING MOTORS AND RELAYS. — All motors and relays are sealed, and only the exterior surfaces can be cleaned. Clean all surfaces according to applicable steps of procedure used for cleaning castings. Refer to paragraph 7-2c(3).

(22) CLEANING CERAMIC DRUM.

(a) Wipe clean with solvent-moistened, clean, lintless cloth.

(b) Dry and polish using dry, clean, lintless cloth.

(23) CLEANING SILVER RIBBON.

(a) Clean silver ribbon with an artgum eraser to remove foreign material.

(b) Wipe lightly with solvent-moistened, lintless cloth to remove any grease or oil.

(c) Use an approved silver polish to remove any tarnish.

(d) Polish with a clean, lintless cloth and use air jet to remove any polish residue or dust.

(24) CLEANING METAL, FIBER, OR FABRIC GEARS. — If gear trains are disassembled for replacement of defective gears, the gears should be cleaned according to the following procedures.

(a) Metal gears should be cleaned according to applicable steps of paragraph 7-2c(15).

(b) Composition or plasticized gears and nylon friction clutches should be cleaned according to procedures given in steps (c) and (d) following.

(c) Remove all surface dust and dirt using soft-bristled brush in conjunction with air jet.

(d) Using a clean, lintless cloth lightly moistened with solvent, clean the composition gears by wiping clean.

(25) CLEANING NONSEALED NEEDLE BEARINGS. — These bearings are cleaned using the same procedures given in paragraph 7-2c(1) for nonsealed ball bearings.

(26) CLEANING BRONZE OILITE BEARINGS. — Bronze Oilite bearings are impregnated with oil by the manufacturer. Normally, cleaning is unnecessary, and service is limited to application of a small amount of MIL-L-7870 oil with a dropper.

(27) CLEANING SEALED OR SHIELDED BEARINGS. — Normally, sealed or shielded bearings require no cleaning or lubrication since they are lubricated and sealed by the manufacturer for lifetime operation. Replace sealed bearing if faulty.

(28) CLEANING CERAMIC COIL FORMS.

(a) Make up a washing bath of two ounces of detergent powder per gallon of water.

(b) Where possible, immerse ceramic coil form in washing bath and work over all surfaces using a suitable nonmetallic brush, preferably with soft fiber bristles. Round brushes, similar to those used for washing bottles and test tubes, are recommended for holes and recesses.

(c) Rinse coil forms in warm-water bath; drain and dry with air jet.

(29) CLEANING MOLDED PLASTIC PARTS. — Plastic parts include insulating members, terminal boards, mounting blocks, and such. These should be cleaned in the following manner.

(a) Using an air jet, blow loose dust and dirt from surfaces, holes, and crevices.

(b) Wipe clean using a detergent and water solution with a lintless cloth.

(c) Dry and polish with a clean, dry, lintless cloth.

d. INSPECTION. — This section presents procedures designed to determine, by inspection, the condition of the disassembled and cleaned components of Antenna Coupler Group AN/SRA-22. Defects resulting from wear, physical damage, deterioration, or other such causes, are discovered by these inspection techniques.

(1) INSPECTING BEARINGS. — The following inspection procedure applies to all ball bearings of the open, sealed, and special types found in this equipment. After the bearing has been cleaned, inspect it to determine whether it is serviceable or is to be rejected because of a defect. Replace the bearing if it is defective. If determined serviceable, clean the bearing again. After final cleaning, lubricate the bearing, if it is to be installed in the equipment, or treat it with a preservative, if it is to be stored. Wrap and package the bearing. Clearly mark the outside of the package with the proper nomenclature of the bearing and its lubrication or preservative material.

CAUTION

All inspection work must be performed under conditions of extreme cleanliness. Operators must wear rubber gloves or fingerstalls to prevent corrosion caused by fingerprint contamination when handling bearings.

Inspect all bearings as outlined below.

(a) Check for blue or purple discoloration of any part of bearing caused by burning.

(b) Check for tarnished external surfaces. This is indicated by a light discoloration of highly finished surfaces.

(c) Check for rust.

(d) With emphasis on bearing balls and races, check for pitted, scarred, scuffed, or galled surfaces.

(e) Check for flat bearing balls, broken ball separators, flaking or spalling of load carrying surfaces. and other abnormal conditions.

In addition to the above inspection, check for undersize OD caused by creepage of outer race in its housing. This applies to all ball bearings whose races do not separate when the bearing is removed from its companion part. Also check for oversize or defective bore caused by the inner race having turned on its shaft and for excessive radial play. Use a suitable radial gauge equipped with a dial indicator calibrated in ten-thousandths of an inch when checking radial play of each bearing. Each bearing must be clean and dry. A noise inspection of this type of bearing can be accomplished by manual or mechanical rotation. If motor driven, the bearing should be lightly lubricated with oil only, such as Feder Spec VV-0-581, and rotated at 500 to 1000 rpm. A dental lathe can be used to drive the inner race while the outer race is held in gloved fingers. A used, but serviceable, bearing will develop a certain amount of noise. A slight uniform noise is to be expected, but loud noise, uniform noises such as clicks or buzzes, and vibration originating in the bearing indicate that it is unfit for service. If manually rotated, the bearing must be clean and dry (unlubricated), and the outer race should be spun with the gloved finger while the bearing is held by a bearing holder inserted in its bore. Hold the bearing in several positions while making the check and listen for any vibration or intermittent resistance.

(2) INSPECTING CASTINGS. — Unfinished, finished, or partly finished castings are inspected as follows. Inspect for cracks or breaks and marred or damaged machined surfaces, holes, counterbores, or threades. Also inspect the casting finish. If it is damaged beyond practical touch-up, repairs, forward the casting to the finishing department.

(3) INSPECTING COVERS AND SHIELDS. — Inspect covers and shields for deformation, punctures, deep dents, and badly worn surfaces. Also check for damaged fastener devices or handles. Examine the fastener devices and handles for corrosion and damage to finish. Forward them to the finishing department if extensively damaged or corroded.

(4) INSPECTING DIALS AND KNOBS. — Inspect all dials and knobs for physical damage and deformation, marred surfaces, and impairment of markings.

(5) INSPECTING GASKETS AND SEALS. — Inspect gaskets and seals for deformation and for damage such as tears, creases, folds or elongations, rough surfaces, and imbedded foreign materials. Check for loss of resiliency of all rubber or neoprene gaskets and seals by stretching or compressing moderately and noting any failure to spring back to shape.

(6) INSPECTING FIBER GASKETS. — Inspect fiber gaskets for deformation and for damage such as tears, rough surfaces, imbedded foreign matter, and other abnormal conditions.

(7) INSPECTING GEARS. — Gears in this equipment are identified in table 7-3. This table lists the basic dimensions of each gear in inches, the number of teeth, the diametral pitch, the type, and the material from which the gear is cut. Gear plating, if any, is also given for quick identification of the gear involved. Inspect these gears as follows.

(a) Inspect all gears for broken, chipped, or badly worn teeth.

(b) Inspect gear bodies for cracks and deformation.

(c) Inspect bore of gear for excessive wear.

(d) Inspect surfaces for corrosion or other abnormal condition.

(8) INSPECTING MACHINED METAL PARTS.

(a) Make over-all check for physical damage to surfaces, corners, and edges.

(b) Inspect closely all machined plane surfaces, holes, bores, counterbores, slots, grooves, shoulders, flanges, keyways, teeth, tapped holes, and all threaded members, both male and female, for physical damage of any sort including roughness of surface, corrosion, or presence of foreign matter.

TABLE 7-3. GEAR DATA

FIG. 6-1 ITEM NO.	TYPE	NO. OF TEETH	LENGTH (inches)	OD (inches)	FACE WIDTH (inches)	MATERIAL
81	Gear-shaft assembly	18	6.438	0.625	5.125	Aluminum gear and shaft
142	Spur gear	136			0.125	Plastic
159	Spur gear	80	0.218	2.562	0.125	Plastic
170	Spur gear	20	0.312	0.687	0.156	Teflon
277	Spur gear	52	0.271	0.169	0.125	Teflon
280	Spur gear	40	0.375	1.312	0.187	Teflon
348 349	Gear assembly	20 70	0.765	1.500	0.188 0.094	Steel plastic
351 352	Gear-shaft assembly	40	0.718	1.312	0.125	Plastic gear Steel shaft
353	Gear assembly	18 60	0.765	0.645	0.156 0.091	Steel
354	Gear assembly	24 30	0.750	0.333	0.141 0.125	Stainless steel
359	Gear-cam assembly	124	0.406	1.312	0.062	Aluminum gear Stainless steel hub
360	Gear assembly	96 18	1.00	1.020	0.091 0.125	Aluminum Steel
361	Gear assembly	84 18				Aluminum Stainless steel
362	Gear assembly	56 18	0.656	0.060	0.090 0.156	Aluminum Steel
363	Spur gear	24	0.750	0.406	0.375	Stainless steel
367	Gear assembly	24 81	0.765	1.282	0.156 0.064	Steel
368	Gear assembly	100 19	0.718	1.062	0.091 0.140	Stainless steel
369	Gear-shaft assembly	48	0.718		0.091	Aluminum
370	Gear assembly	42 20	0.655	0.456	0.091 0.156	Aluminum Steel
371	Gear assembly	20 49	0.655	0.530	0.156 0.091	Steel Aluminum
372	Gear assembly	20 54	0.655	0.583	0.156 0.091	Steel Aluminum

TABLE 7-3. (Continued)

FIG. 6-1 ITEM NO.	TYPE	NO. OF TEETH	LENGTH (inches)	OD (inches)	FACE WIDTH (inches)	MATERIAL
374	Gear-shaft assembly	30	1.265	0.333	0.090	Stainless steel
375	Spur gear	64	0.625	0.787	0.062	Aluminum
376	Gear assembly	68 30	1.250	0.729	0.094 0.141	Steel
381	Gear-shaft assembly	112	1.406	1.781	0.062	Steel gear and shaft
382	Spur gear	30	1.500		0.156	Stainless steel
383	Gear-shaft assembly	99	1.187	1.578	0.093	Steel
386	Gear-shaft assembly	35	0.827	0.578	0.078	Stainless steel gear and shaft

Note

Wear of gear bore and teeth, except in instances where it is sufficiently severe to be apparent on visual inspection, is best determined by gauge measurement. Bore wear can be ascertained by comparing plug-gauged diameter with diameter given for a new gear in table 7-3. Presence of a sharp burr on one side of gear at edges of teeth is an indication of wear of teeth.

(c) Inspect plated or finished areas for damage requiring replating or refinishing beyond touch-up repair.

(9) INSPECTING METAL PARTS. — Inspect the unmachined mechanical metal parts including mounting plates, chassis, mounting clamps and brackets, blower fan, nuts, bolts, screws, washers, handles, fasteners, and hardware for physical damage and deformation. Also check these parts for corrosion and any damage which would require replating or refinishing beyond practical touch-up.

(10) INSPECTING COVERED CABLE. — Inspect flexible vinylite conduit as follows.

(a) Inspect for physical damage throughout entire length of conduit.

(b) Inspect conduit at ends to make certain that it is not pulled loose from connectors.

(c) Inspect cable for other abnormal conditions. Treat any connector terminations as directed under paragraph 7-2d(12).

(11) INSPECTING COILS. — Inspect r-f coils for broken leads, loose, poorly soldered, or broken terminal connections, and loose mountings. Also check for crushed, scratched, cut, bruised, or charred windings; corrosion on windings, leads, terminals, and connections; and physical damage to forms and tuning-slug adjustment screws.

(12) INSPECTING CONNECTORS.

(a) Inspect connector body for broken parts, deformed shell, clamp, and other abnormal conditions, depending upon its type.

(b) Inspect connector for cracked, broken insulation, and for contacts which are broken, deformed, or out of alignment. Check also for corroded or damaged plating on contacts and for loose, poorly soldered, broken, or corroded terminal connections.

(13) INSPECTING CERAMIC DRUM. — Inspect the ceramic drum for cracks, chips, or scratches. Also check for signs of burning and other abnormal conditions.

(14) INSPECTING JACKS. — Inspect all jacks for corrosion, rust, loose or broken parts, cracked insulation, poor contacts, and other abnormal conditions.

(15) INSPECTING LAMPS. — Inspect lamps for loose, cracked, or broken glass envelope. Also check for internal darkening, corrosion of base, and damage to insulation or base.

(16) INSPECTING LAMP HOLDERS. — Inspect the lamp holders for corrosion, weak contacts, damaged insulation, and loose or broken parts. Also check for other conditions which are not normal.

(17) INSPECTING LENSES. — Inspect lenses for cracks, looseness, and deformation.

(18) INSPECTING MOLDED PLASTIC PARTS. — Inspect plastic part such as terminal boards, mounting blocks, and insulating members for signs of corrosion, cracked, broken, or charred insulation, and for loose or missing mounting hardware. Also check these parts for other abnormal indications which might be a source of future breakdown.

(19) INSPECTING RECEPTACLES. — Inspect receptacles for cracked, broken, or charred insulation. Also check for physical damage to all parts, loose or bent contacts, damage to contact plating, corrosion, and other abnormal conditions.

(20) INSPECTING FIXED COMPOSITION RESISTORS. — Inspect fixed composition resistors for cracked, broken, blistered, or charred bodies, and loose, broken, poorly soldered, or corroded terminal connections.

(21) INSPECTING FIXED FILM AND WIRE-WOUND RESISTORS. — Inspect fixed film and wire-wound resistors for signs of heating, cracked, broken, or charred insulation, loose, poorly soldered, broken, or corroded terminal connections, and loose mountings.

(22) INSPECTING VARIABLE RESISTORS. — Inspect variable resistors for corrosion of shafts, cases, and other visible parts, loose mountings, and physical damage. Rotate the shaft to determine whether action is too rough, too loose, or two tight. Precision potentiometers usually have tight tolerances.

(23) INSPECTING TERMINAL CONNECTIONS.

(a) Inspect terminal connectors for cold-soldered or "rosin" joints. These joints present a porous or dull, rough appearance. Check for strength of bond with the point of a tool.

(b) Examine for excess solder, protrusions from the joint, pieces adhering to adjacent insulation, and particles lodged between joints, conductors, or other parts.

(c) Inspect for insufficient solder and unsoldered strands of wire protruding from conductor at joint. Also look for insulation that is stripped back too far from joint, or badly frayed at joint.

(24) INSPECTING ROTARY SWITCHES.

(a) Inspect insulation for cracks or breakage and for charring.

(b) Check movable and stationary contacts for deformation, breakage, and wear, and for burning, pitting, and corrosion.

(c) Inspect terminals for loose, poorly soldered, broken, or corroded connections.

(d) Examine mechanical parts for damage or corrosion and for irregular or rough action.

(e) If applicable, examine switch for proper detent action.

(25) INSPECTING TOGGLE SWITCHES. — Inspect for cracked, broken, or charred body, rough or loose action, loose, poorly soldered, broken, or corroded terminal connections, and loose or missing mounting nuts, bolts, and other parts.

(26) INSPECTING TRANSFORMERS. — Check transformers for signs of excessive heating, physical damage to case, cracked or broken ceramic insulators, and other abnormal conditions. Also check for corroded, poorly soldered, or loose terminals and loose, broken, or missing mounting hardware.

(27) INSPECTING WIRING. — Inspect open and laced wiring of chassis, terminal boards, and parts of equipment by checking insulation for physical damage and charring, and checking wires for breakage and for improper dress in relation to adjacent wiring or chassis.

(28) INSPECTING MOTORS AND RELAYS. — The motors and relays in this equipment are sealed units, and inspection must be limited to the cases. Employ applicable procedures of paragraphs 7-2 (metal parts) and 7-2d(26) (transformers).

(29) INSPECTING INSULATORS. — Inspect all ceramic or Teflon insulators for evidence of damage, such as broken or chipped edges, burned areas, or presence of foreign material.

(30) INSPECTING SILVER COIL RIBBON. — Inspect the silver coil ribbon for kinks, tears, creases, dents, and other evidence of physical damage. Also inspect for any tarnish, corrosion, or foreign matter.

(31) INSPECTING FIXED CAPACITORS. — Inspect fixed capacitors for defects listed in table 7-4.

TABLE 7-4. INSPECTION OF FIXED CAPACITORS

DEFECT	METAL CASE	MOLDED TYPE	CERAMIC TYPE
Oil leakage (at case seams or around terminal insulation).	X		
Cracked, broken, or charred terminal insulation.	X		
Case damage (dents or holes).	X		
Case damage (cracks or breakage).		X	
Body damage (cracks or breakage).			X
Loose, broken, or corroded terminal studs, lugs, or leads.	X	X	X
Loose, broken, or poorly soldered terminal connections.	X	X	X
Loose mountings.	X	X	X

(32) INSPECTING VARIABLE CAPACITORS. — Inspect variable capacitors for corrosion of shafts, cases, and other visible parts, loose mountings, and physical damage. Rotate the shaft to determine whether action is too rough, too loose, or too tight.

(33) INSPECTING THE VARIABLE VACUUM CAPACITOR. — Inspect the variable vacuum capacitor for cracks and other physical damage. Inspect the interior of the glass for whitening, and check the plates of the capacitor for dark spots or other signs of internal arcing.

(34) INSPECTING ALUMINUM DRUM. — Inspect the aluminum shorting drum for defects, using the procedure for machined metal parts given in paragraph 7-2d(8).

7-3. REASSEMBLY AND TESTING.

This section contains instructions for the reassembly of the cleaned and inspected parts into subassemblies and assemblies, and specific tests to be made prior to reassembly into components.

Refer to figure 6-1 for aid in reassembly. The reference figure and index numbers correspond to those used during disassembly.

Note

During reassembly, use Glyptol to secure nuts, screws, and setscrews where no lockwashers are provided.

a. REASSEMBLING THE CASE AND BLOWER ASSEMBLY. - This paragraph covers the reassembly of all parts shown on sheet 2 of figure 6-1.

(1) Secure h-v post (465) to inside of case (477), using screw (464).
(2) Place gasket (475) on threaded end of h-v output shaft (476).
(3) Insert threaded end of h-v output shaft (476) through hole in center of h-v output insulator (469).
(4) Slide washer (474) onto threaded end of h-v output shaft (476).
(5) Slide washer (473) onto threaded end of h-v output shaft (476) and screw on two nuts (471, 472).
(6) Place gasket (470) on case (477) so that holes in each are in line.
(7) Place h-v output insulator (469) on gasket (470) so that holes in each are in line, and secure in place with 6 screws (466) and 18 washers (466A, 467, 468).
(8) Replace connector 1J10 (463) using two screws (461, 462).

(9) Ensure that cover (458) is flush with rear of connector 1J9 (460) and secure, using two screw (456), two lockwashers (455), and two nuts (454).

(10) Replace two guide pins (453, 451) using nuts (450, 452).

(11) Mount plenum (448) to case (477) on left side of dividing partition using five screws (447).

(12) Mount cradle (446) to case (477) using screws (445, 447).

(13) Mount terminal (443) to blower mounting bracket (444) using screw (441), solder lug (489), and lockwasher (442).

(14) Mount capacitor 1C6 (440) to blower mounting bracket (444) using two capacitor mounting brackets (439), two lockwashers (438), and two nuts (437).

(15) Mount blower (436) to blower mounting bracket (444) using three screws (433), three lockwashers (434), and three spacers (435).

(16) Mount capacitor mounting plate (485) onto blower bracket (444) using screws (486).

(17) Mount capacitors 1C8 (483) and 1C9 (484) using screws (487) and lockwashers (488).

(18) Position blower gasket (449) over end of blower opening.

(19) Mount blower mounting bracket to case (477) using six screws (428) and six lockwashers (429).

(20) Replace O-ring (423), connector (422), nipple (479), T-fitting (480), filler valve (481), and pressure gauge (482). Gaskets (423 and 424) must be lubricated with grease MIL-6-16908. All pipe fittings should be treated with a pipe thread compound to ensure air-tight fits.

(21) Carefully position gasket (424) and blower plate (427) and secure to case (477) with 12 screws (420) and lockwashers (421).

b. REASSEMBLING COUPLER CONTROL C-2698/SRA-22.

(1) Ensure that all components that were removed in step (10) of paragraph 5-6a have been replaced correctly. Refer to figures 5-3, 5-4, 5-5, and 5-6 for component location, and to Coupler Control C-2698/SRA-22 schematic diagram, figure 5-7, for wiring information.

(2) Replace front panel and secure to chassis with nine screws.

(3) Replace rear panel and secure to chassis with 14 screws.

(4) Secure type-N r-f connector to 2J1 using a lockwasher and a nut. Tighten nut using a suitable wrench.

(5) Secure coaxial plug 2P5 to directional coupler.

(6) Mount hinge to rack with two screws.

(7) Secure coaxial plugs 2P1, 2P2, 2P3, 2P4, and plugs 2P5 and 2P6 to the connectors on the rear panel.

(8) Swing C-2698/SRA-22 into rack and secure to rack with two screws.

(9) Replace dust cover and secure with thumb fasteners.

c. REASSEMBLING ANTENNA COUPLER CU-714/SRA-22. — During reassembly procedures, it will be necessary to reconnect many interconnecting wires; be certain to follow the identification markings that were made during disassembly of the unit. Refer to figures 6-1 and 5-8 for aid in reassembly. The referenced figure and index numbers correspond to those used during disassembly.

(1) GEAR SUBASSEMBLIES.

(a) Replace two capacitor drive pin stops (320) in a secondary gear plate (346).

(b) Replace two spacers (306 and 306A) using two screws (305 and 305A).

(c) Replace two guide pin blocks (309, 311) using four screws (308, 310).

(d) Secure four h-v posts (319) to secondary gear plate (346) using studs (318).

(e) Mount h-v contacts (174) on capacitor plate (176) using two nuts (173), lockwashers (173A), and screws (175).

(f) Mount capacitor plate (176) on h-v posts (319) using four screws (172).

(g) Secure capacitor 1C7 (171) to capacitor plate (176) using three screws (164) and lockwashers (165). H-v spark gap contact (166) should be secured with lower screw (164). Solder lug (167) should be secured with upper screw (164).

(h) Use four screws (177) to secure gear (179) and h-v collar (178) to capacitor lead screw (180).

(i) Screw capacitor lead screw (180) assembly into capacitor (171) and replace ball bearing (407).

(k) Secure three motors (313, 315, 317) to secondary gear plate (346) using 12 screws (312, 314, 316).

(m) Replace gear (386) on shaft (385) and secure with roll pin (384). Replace bearing (394), bearing (345), and this gear-shaft assembly.

Note

Some bearings must be pressed into gear plates (346, 419). Maintenance personnel may elect to press all bearings into place before attempting to install gears; however, in the assembly discussion, all bearings will be mentioned with gears they support.

(n) Replace two ball bearings (402, 333), and install gear (367) on secondary gear plate (346).
(p) Replace two Oilite bearings (403, 334), and install gear (363) on secondary gear plate (346).
(q) Replace sector gear-shaft assembly (381).
(r) Replace two Oilite bearings (399, 324) and install gear assembly (371) on secondary gear plate (346).
(s) Replace stop pin screw (321).
(t) Replace two bearings (344, 291), slide gear (375) onto long shaft of gear-shaft assembly (374), and slide short shaft of gear-shaft assembly (374) into primary gear plate (419). Replace two bearings (323, 398) and install gear (372) on primary gear plate (419) at same time. Replace roll pin (373) in gear (375), but do not tighten it at this time.
(u) Replace two Oilite bearings (400, 325) and replace gear assembly (370).
(v) Replace two Oilite bearings (326, 401) and install gear-shaft assembly (369).
(w) Replace two ball bearings (328, 392) and install spur gear shaft (382).
(x) Replace two Oilite bearings (331, 397) and replace gear assembly (368).
(y) Replace ball bearing (329), Oilite bearing (393), and gear-shaft assembly (383).
(z) Secure pin stop (391) to primary gear plate (419) with four screws (390). Slide stop arm (389) on pin stop (391), snap on retainer ring (388), and connect spring (387).
(aa) Replace two Oilite bearings (337, 409) and install gear assembly (360).
(ab) Secure stop block (358) to gear (359) using two screws (357). Slide gear (359) on shaft (356). Replace two setscrews (355) but do not tighten them at this time. Replace two Oilite bearings (338, 408) and install gear (359) assembly.
(ac) Replace two ball bearings (335, 405) and install gear assembly (362).
(ad) Replace two ball bearings (336, 406) and install gear assembly (361).
(ae) Secure stop block (365) on gear-shaft assembly (366) with screw (364). Replace two ball bearings (332, 404) and install gear-shaft assembly (366).
(af) Replace two ball bearings (330, 396) and install gear assembly (376).
(ag) Replace two Oilite bearings (339, 411) and install gear assembly (354).
(ah) Replace two Oilite bearings (340, 410) and install gear assembly (353).
(aj) Slide gear (351) on hub (352) shaft and secure with two screws (350). Install two Oilite bearings (341, 412) and install gear-hub assembly.
(ak) Slide gear (348) onto shaft of gear (349); secure the two gears together with three screws (347). Replace two Oilite bearings (343, 413) and install gear assembly.
(am) Replace Oilite bearing (327), h-v rotor shaft (304), and spring (303).
(an) Attach spacer bar (288) to primary gear plate (419) using screw (287).
(ap) Secure secondary gear plate (346), including motors and capacitor, to primary gear plate (419) using screws (420).

Note

To reassemble gear plates, position antenna coupler so that secondary gear plate can be guided straight down on top of primary gear plate. Line up gear plates, placing coil actuator stop (261) in position on stop assembly shaft (282). Using a spring hook, position gear shaft sleeves into their respective holes in gear plates. Make sure that all gears are free, and that each section works freely.

(aq) Connect spring (303).
(ar) Slide spur gear (170) onto capacitor lead screw (180) shaft and secure with screw (168) and washer (169).

(as) Slide spur gear (277) onto shaft (385) and secure with screw (275) and washer (276).

(at) Replace ball bearing (418). Snap retainer ring (281) on shaft (383) and secure with screw (278) and washer (279).

(au) Gear train assembly is complete; setscrews (355) and roll pin (373) will be secured during alignment procedures.

(av) Insert screw (161), lockwasher (162), and solder lug (163) in rear of capacitor (171).

(2) CAPACITOR DRIVE SWITCH 1S10.

(a) Replace two Oilite bearings (415, 416) in hub support (417).

(b) Slide hub support (417) and bearings (415, 416) over gear-shaft assembly (381) and secure in place with two screws (414).

(c) Slide three washers (378, 379, 380) over gear-shaft assembly (381) and snap on retainer ring (377). Assemble spacers (79) and switch (78) on screws (76). Slip switch onto gear-shaft assembly (381) and secure with screws (76). Gear-shaft assembly (381) should be lubricated with silicone compound, Dow Corning DC-4 (SPEC AN-C-128), CPN 005 0201 00, FSN 9-5970-159-1598.

(3) COIL STOP ASSEMBLY.

(a) Replace two Oilite bearings (395, 322) and slide coil stop assembly (282) into primary gear plate (419).

(b) Slide stop (260) onto coil stop assembly (282) and tighten setscrews (260). Connect spring (259).

(4) TAP POTENTIOMETER 1R7.

(a) Secure switch 1S13 wafer (495) to switch plate (490) using screws (491), spacers (493), washers (494), switch S13 wafer (495), and nuts (497).

(b) Attach switch plate (490) to primary gear plate (419) with screw (492).

Note

Be sure to align switch 1S13 wafer (495) so that flat portion of shaft (356) slides into wafer slot.

(c) Position potentiometer bracket (498) on switch plate (490) and secure with screws (83).

(d) Slide coupler (85) over potentiometer shaft (90) and attach potentiometer to bracket (498) with clamps (89), screws (88), and nuts (86). Slide coupler (85) over shaft (360) and tighten setscrews (84) on shaft (360) side only. Setscrews (84) on potentiometer (90) side will be tightened later.

(5) H-V OUTPUT PLATE.

(a) Replace three h-v posts (189) using three screws (188).

(b) Replace h-v output plate (187) and secure with three screws (182).

(c) Replace two spacers (184, 185) on plug 1P10 (186) and snap on retainer ring (183).

(6) COIL POTENTIOMETER 1R6 AND H-V CONTACT (265).

(a) Mount switch wafer 1S12 (506) onto potentiometer bracket (256) with screws (499), spacers (500), washers (501), and nuts (502).

(b) Attach shaft extender (503) to gear-shaft assembly (374) with setscrews (505).

(c) Slip collar (504) over shaft extender (503) onto shaft (373) and tighten setscrews (505).

(d) Place coil stop cam (258) over collar (504) and tighten setscrews (505).

(e) Align switch wafer 1S12 (506) to slide over shaft of coil stop cam (258) and attach potentiometer bracket (256) to secondary gear plate (346) with screws (247), spacer (299), and screws (298).

(f) Place coupler (254) over potentiometer shaft (255) and shaft extender (503). Secure potentiometer (255) to bracket (256) with clamps (253), screws (252), lockwashers (251), and nuts (250).

(g) Tighten setscrews on coupler (254) on shaft extender (503) side only. Other setscrews will be tightened later.

(h) Replace h-v spark gap contact (265) on secondary gear plate (346) using screw (262), lockwasher (263), and washer (264). Adjust h-v spark gap contact (265) for 0.187-inch gap between its mating parts.

(7) CAPACITOR LIMIT SWITCH 1S11, SERIES-SHUNT SWITCH 1S9, AND PLUG 1P9.

(a) Secure h-v rotor collar (240) to h-v rotor plate (245) using three screws (239).

(b) Replace two rotor strips (242) with contacts (243) on h-v rotor plate (245) using four screws (244).

(c) Replace h-v rotor plate (245) on h-v rotor shaft (304), but do not tighten setscrews (237).

(d) Secure two contact buttons (233) on h-v plate (231) using two screws (218); assemble two lockwashers (219), two solder lugs (220), and four washers (222) on screws (218), as illustrated in figure 6-1.

(e) Assemble washer (225), solder lug (228), and two washers (226, 227) on screw (224). Two such assemblies are needed. Secure strip contact (229) and spacers (230) to h-v plate (231) using screws (224). Screw assembly for center of strip contact (229) does not use solder lug (228).

(f) Replace h-v contact (216) on h-v plate (231) using two studs (214) and two spacers (217). Secure studs (214) to h-v contact (216) by placing two washers (212, 213), solder lug (215), lockwasher (211), and nut (210) on lower stud and by placing two washers (212, 213), lockwasher (211), and nut (210) on upper stud.

(g) Assemble lockwasher (201), solder lug (202), washer (203), spacer (204), and washer (205) on screw (200). Secure standoff (233) to h-v plate (231) using screw (200).

(h) Replace studs (234, 235, 236) and three standoffs (232).

(j) Replace h-v plate (231) on studs (236) and secure with three washers (199 and 199A), lockwashers (197), and nuts (196).

(k) Replace washers (207, 208, 209) and retainer ring (206) on h-v rotor shaft (304).

(m) Replace two studs (195), spacers (193), switch 1S11 (192), washers (191), and nuts (190) on h-v plate (231).

(n) Adjust h-v rotor strips (242, 243) so that they are centered on their contacts and have a contact pressure of 50 to 100 grams. The h-v collar may be adjusted to secure this contact pressure. Secure h-v rotor strips (242, 243) in place by tightening setscrew (237) and replacing roll pin (238) in h-v rotor collar (240).

(p) Mount plug 1P9 (269) on bracket (274) using two clamps (269a), two screws (268), two lockwashers (267), and two nuts (266).

(q) Secure bracket (274) to secondary gear plate (346) using screws (270) and screws (271). Replace spacer (342) when replacing screw (270).

(8) CERAMIC DRUM.

(a) Solder one end of silver ribbon (144) to bus wire connection (143) through hole in ceramic drum (160). Being careful not to kink or twist the ribbon, wind ribbon tightly in grooves of ceramic drum. Tape loose end with connector (106) to ceramic drum to prevent unraveling.

(b) Slip flange coupler (149) through h-v drum stop assembly (159). Secure in place using four screws (148).

(c) Secure spur gear (158) to h-v drum stop assembly (159) and h-v drum (160) using six screws (157), washers (155, 156), and nuts (154).

(d) Replace h-v contact (153). Slide h-v output shaft (151) into flange coupler (149) and secure with screw (145), lockwasher (146), and solder lug (147).

(e) Slide h-v output shaft (151) of h-v drum (160) assembly through primary gear plate (419), coupler (74), and secondary gear plate (346). Replace three setscrews (73) and roll pin (150).

(f) Replace four roller shafts (138, 139, 140, 141) on spur gear (142) using two screws (136) and two stop screws (137).

(g) Slide four rollers (135) and four spacers (131, 132, 133, 134) onto roller shafts (138, 139, 140, 141).

CAUTION

Replace rollers, roller shafts, and spacers in their exact original order. Placement of these components is imperative to spiral track they must follow.

(h) Secure slip ring (130) to roller shafts using three screws (121), three lockwashers (122), and three washers (123). Secure two contacts (129, 128) to slip ring (130) and roller shaft (140) using two lockwashers (127, 125) and two screws (126, 124).

(j) Replace gear (142) assembly on h-v drum (160).

CAUTION

When assembling gear (142) assembly on h-v drum (160), avoid wiping the strip contacts (128, 129) on the abrasive surface of the ceramic drum. Also, make certain that strip contact (128) makes good contact with silver ribbon (144).

(k) Replace ball bearing (65) and sliding contact (108) on 1-v drum end assembly (109).
(m) Replace 1-v drum end assembly (109) in 1-v drum (107) and secure with screws (105).
(n) Slide flange coupler (117) on 1-v drum shaft (118). Start, but do not tighten, setscrew (116).
(p) Secure spring (115) to flange coupler (117) using screw (113) and washer (114).
(q) Replace 1-v drum end assembly (120) and Oilite bearing (119) on 1-v drum shaft (118).
(r) Secure spring (115) to 1-v drum end assembly (120) using screws (110), washer (111), and nut (112).
(s) Slide stop assembly (103) onto shaft (118) and secure with roll pin (75).
(t) Compress spring (115) slightly, and tighten setscrew (116) to secure flange coupler (117) to 1-v drum shaft (118).
(u) Engage 1-v drum end assembly (120) with 1-v drum (107), and secure with screws (104).
(v) Secure 1-v driven gear (102) to stop assembly (103) using two screws (101).
(w) Slide 1-v drum (107) assembly onto spur gear shaft (382) and secure with roll pin (100).
(x) Secure solder lug (106) to 1-v drum (107) with one of the 1-v drum end assembly screws (105).

CAUTION

Before attaching silver ribbon to 1-v drum, drum should be rotated 2-1/2 to 3 turns clockwise to obtain spring loading. Tape tension must be 1 to 1.5 pounds force exerted tangentially by 1-v drum after drum has been moved 1/32-inch counterclockwise (ccw) as viewed from gear plate assembly.

(9) FRONT PLATE.
(a) Secure center tap block (286) to primary gear plate (419) using two screws (285).
(b) Slide tap drive pinion (81) over gear assembly (376) shaft and secure with roll pin (80). Replace ball bearing (64).
(c) Replace tube insulator (72).
(d) Secure spacer bars (288, 295) to primary gear plate (419) using screws (294, 287).
(e) Secure switch 1S8 (58) to front plate (71) using three screws (57).
(f) Secure center tap mount (63) to front plate (71) with two screws (59).
(g) Secure two terminals (51, 53) with screws (50, 52).
(h) Replace six rollers (68) on roller arms (67) and secure with retainer rings (69). Secure roller arms (67) to front plate (71) with six screws (66).
(j) Secure capacitor 1C5 (56) to front plate (71) with two screws (54) and nuts (55).
(k) Replace spacers (98) in center tap hub (99).

CAUTION

Spacers (98) are made of silver graphite and are very brittle; handle with extreme care.

(m) Replace springs (97) in center tap hub (99). Assemble two spacers (96, 95) and retainer ring (94) on center tap hub (99).
(n) Secure contacts (93) to center tap hub (99) with two screws (91) and washers (92).
(p) Slide center tap hub (99) assembly onto shaft (82). Fix shaft (82) in place on primary gear plate (419), making certain that one of the spacers (95, 96) is on either side of, and makes contact with, slip ring (130).
(q) Replace covers (17 and 18) on front plate with screws (16).
(r) Replace front plate (71) and secure with screws (70 and 70A). Replace screw (60), lockwasher (61), and solder lug (62).
(10) FRONT CASTING.
(a) Replace nomenclature plate (47) using four screws (46).
(b) Replace connector 1J8 (45) using lockwasher (44) and nut (43).
(c) Replace gasket (42) and connector 1J7 (41) using four screws (37), washers (37A), solder lugs (40), lockwashers (39), and nuts (38).

(d) Replace ground contact (36) using two lockwashers (35) and screws (34).
(e) Replace stud (33), lockwasher (32), and standoff (31).
(f) Replace stud (30), solder lug (40), lockwasher (32), and standoff (29).
(g) Mount slug (28) on front casting (49) using nylon bolt (25).
(h) Secure front casting (49) to front plate (71) with screws (19).
(j) Before replacing shrouds, perform tests outlined under paragraphs 7-3e(1), (2), and (3).

d. ALIGNMENT.

(1) COUPLER CONTROL C-2698/SRA-22. - The only alignments necessary in the coupler control units are the COIL and TAP potentiometers. Run the COIL and TAP potentiometers to their counterclockwise end stop. If the COIL and TAP dials do not read zero, loosen the setscrews on the dials and, being careful not to turn the shaft of the potentiometer, set the dials to zero and tighten the setscrews.

(2) ANTENNA COUPLER CU-714/SRA-22. - To align the antenna coupler unit, perform the alignment procedures outlined in Section 5-5.

e. TESTING.

(1) BACKLASH CHECKS. - The following backlash checks should be performed after reassembly of the antenna coupler unit.

(a) Total backlash of tap assembly gear (142) when tap pinion gear (81) is held stationary must be no more than 0.009 inch.

(b) Total backlash of capacitor gear (361) when capacitor motor (317) shaft is held stationary must be no more than 0.016 inch.

(c) Total backlash of h-v coil gear (158) when coil motor (313) shaft is held stationary must be no more than 0.011 inch.

(d) Total backlash of h-v coil gear (158) when l-v coil gear (102) is held stationary must be no more than 0.010 inch measured tangentially at pitch line of h-v gear (158).

(2) END PLAY AND CLEARANCES. - The following end play and clearance checks should be performed after reassembly of the antenna coupler unit.

(a) Check that end play on pinion gear (376) is between 0.010 to 0.020 inch.
(b) Check that end play of l-v drum (107) is between 0.010 to 0.020 inch.
(c) Check that end play on h-v drum shaft (151) is between 0.001 to 0.003 inch. There must be no appreciable bind when inserting 0.005 shim between h-v drum (160) and its rollers (68).

(3) OPERATING CHECK. - With test cable made up using plugs furnished with Field Change No. 5, connect Coupler CU-714/SRA-22 to Controller C-2698/SRA-22. Energize the equipment and check out all controls, electrical limit stops, and transmitting potentiometers for proper operation.

7-4. FINAL REASSEMBLY AND TEST.

This section contains instructions for final reassembly and testing.

a. FINAL REASSEMBLY.

(1) Install shrouds (5, 10, 13, 15) using screws (3, 6, 8, 11, 14), nuts (9, 12), and lockwashers (7) as illustrated in figure 6-1.

(2) Position gasket seal (2) over front of case (477) so that 12 holes in each are aligned. Gasket (2) must be lubricated with grease MIL-6-16908.

(3) Connect plug 1P9 (460) to jack 1J9 (269) and slide antenna coupler into opening in case (477), being careful that cable attached to plug 1P9 is clear of coupler r-f section.

(4) Secure front casting (49) to case (477) with 12 captive screws (1) and lockwashers (48).

(5) Connect bottle of dry nitrogen to filler valve (481) and pressurize antenna coupler to 10 psig as indicated on pressure gauge (482).

(6) Immerse entire unit in a tank of water and observe any leaks present. If any leaks are present, use correction procedure illustrated in figure 7-7.

b. FINAL TEST

(1) TEST EQUIPMENT AND SPECIAL TOOLS. - There are no special tools required to perform the tests covered in this section. The test equipment required is listed in table 5-2.

(2) TEST SETUP. - Refer to figure 7-8 for block diagram of test setup. Connect Antenna Coupler Group AN/SRA-22 to equipment as shown.

(3) TEST PROCEDURE. - Perform steps (a) through (e) using following frequencies: 2, 4, 8, 16, and 30 megacycles.

(a) Perform tuning procedure outlined in paragraph 2-3b(2) with LOAD-ANT switch in LOAD position.

(b) Increase Radio Set AN/XXX EXCITER GAIN control until a level of 500 watts is reached as indicated by VTVM (160 volts r-f across 51.5 ohms). Observe coupler control r-f power meter indication.

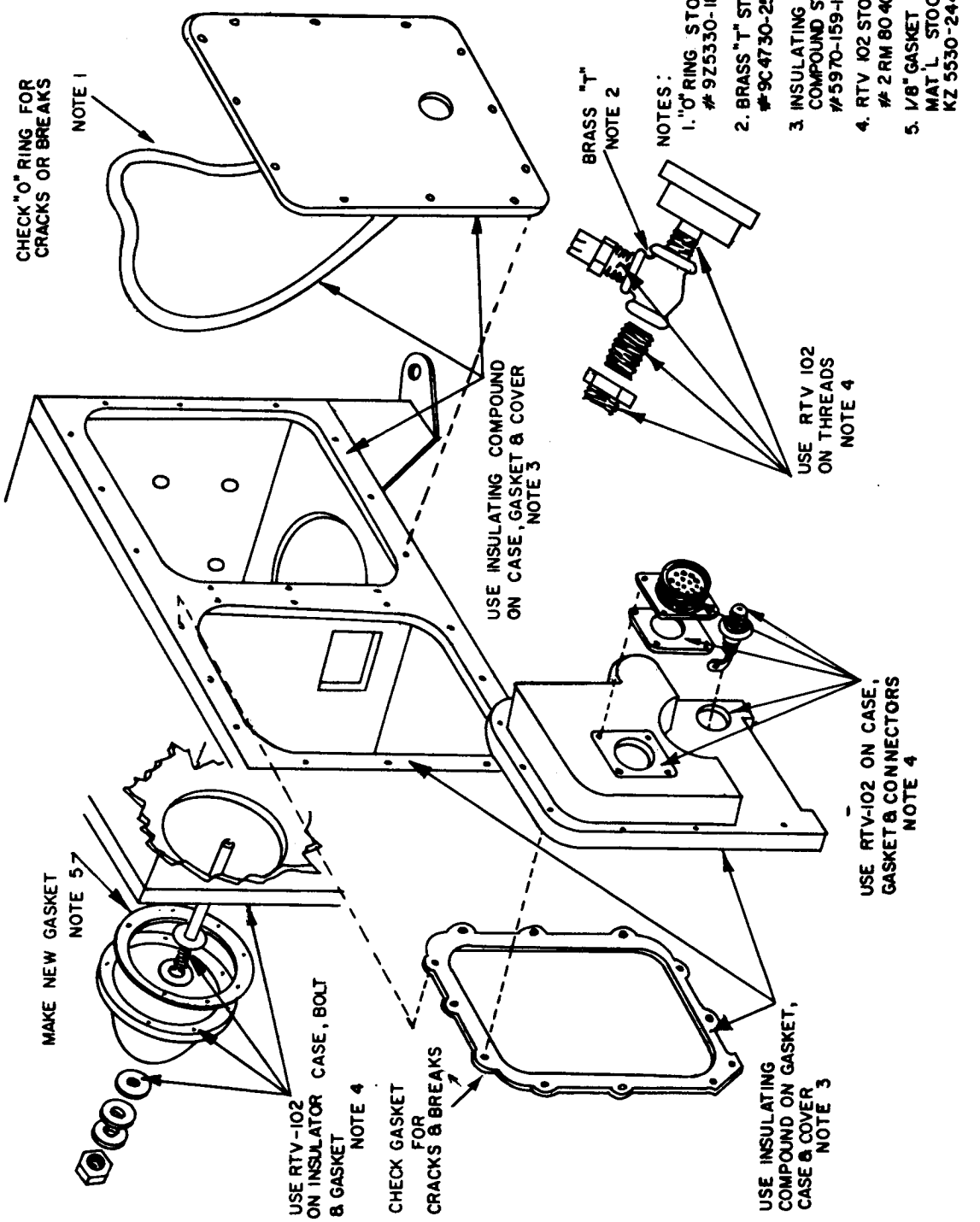


Figure 7-7. Antenna Coupler CU-714/SRA-22, Sealing Procedures

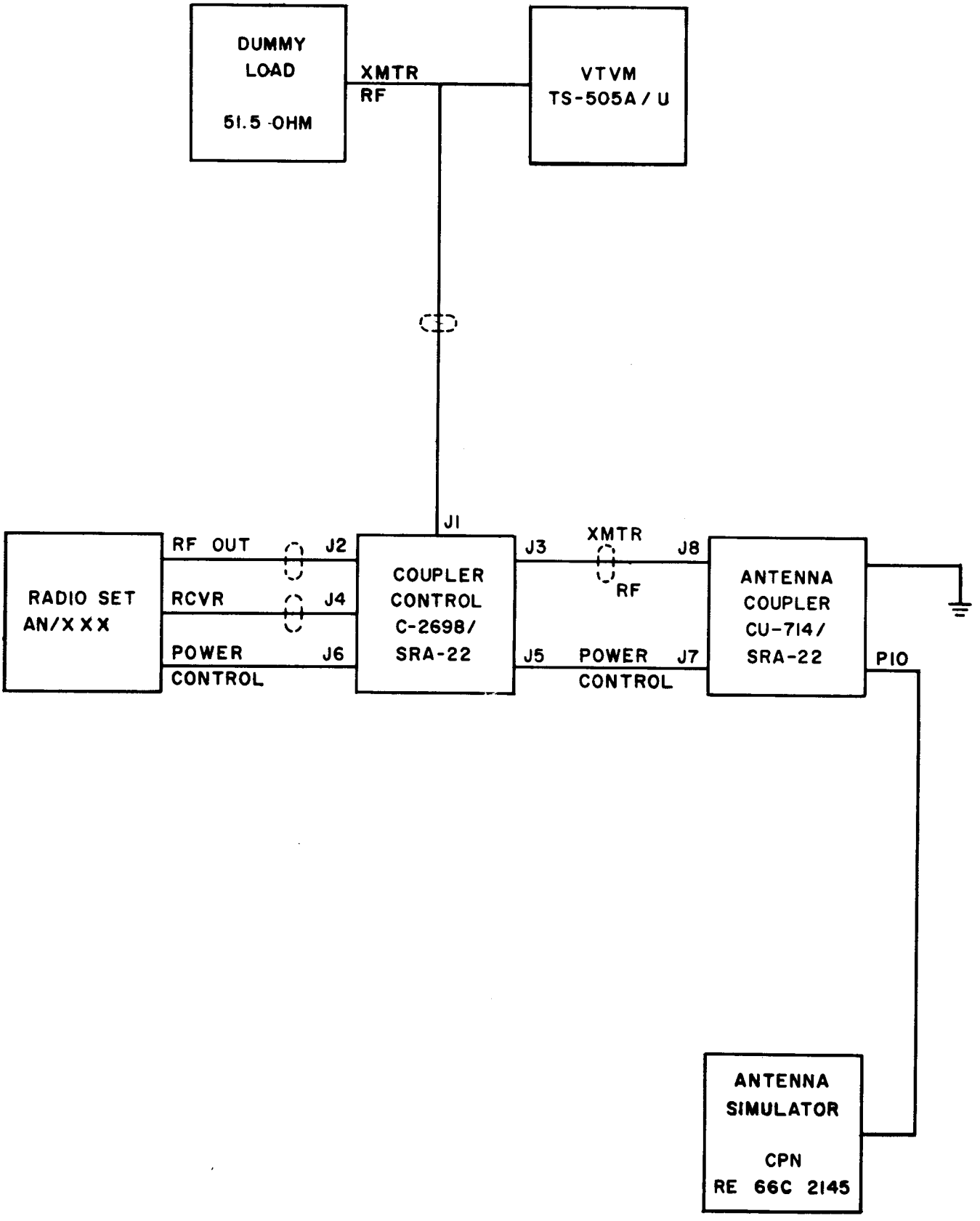


Figure 7-8. AN/SRA-22 Test Setup, Block Diagram

(c) With transmitter unkeyed, reverse cable to 2J1 and 2J2. Key transmitter and observe that coupler control r-f power meter indication is same as that obtained in step (b). This indicates that directional coupler and metering circuits are balanced and functioning properly.

(d) Restore cables reversed in step (c) and operate ANT-LOAD switch to ANT position. Tune antenna as outlined in paragraph 2-3b(2) and record CAPACITOR, COIL, and TAP control settings on a tuning chart illustrated in figure 2-4.

(e) Determine that standing wave ratio is within allowable limits (not more than 1.3:1) by reference to figure 3-1.