

SECTION I
General Description

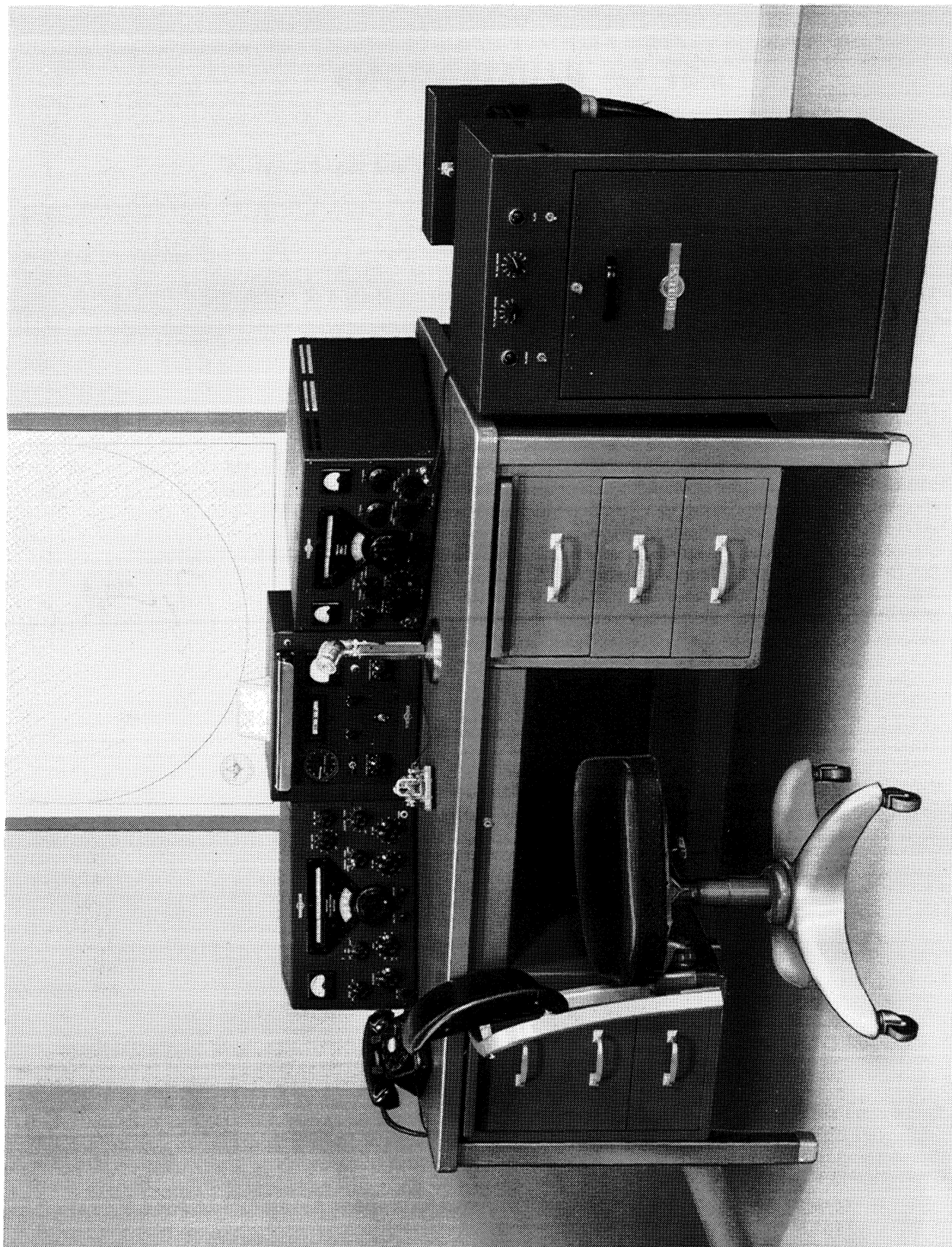


Figure 1-1. SC-101 Station Control Installed with KWS-1 Transmitter and 75A-4 Receiver

C183-13-P

SECTION I GENERAL DESCRIPTION

1.1 GENERAL.

The Collins SC-101 Station Control is a multipurpose accessory designed for use with the Collins KWS-1 Transmitter and Collins 75A-4 Receiver. The three equipments, together with antenna installations, comprise a complete amateur station system installation.

The SC-101 Station Control performs the following functions:

- a. Selection of any one of three transmission lines to antennas on any three of the five high-frequency amateur bands (80-40-20-15-10). The equipment can be modified to select up to six transmission lines to six separate antennas.
- b. Selection of either one of two separate rotary beam antenna tower installations. This selection is made simultaneously with the transmission line selection. Normally, one tower installation is selected with the 20-meter antenna selection and the other with both the 15- and 10-meter antenna selection. The arrangement can be modified as required.
- c. Indication of the forward and reflected power on the transmission line in use. These values are used in determining swr and transmitter power output.
- d. Automatic transmit-receive switching.

In addition to performing the above functions, the SC-101 Station Control provides the following auxiliary conveniences:

Voice-operated phone patch
Station clock
Station light
Speaker for the 75A-4 Receiver

1.2 MAJOR UNITS.

The SC-101 Station Control consists of the following major units:

312A-2 Control/Speaker unit
68Y-1 Antenna Selector
534A-1 Cable Harness and Wiring Duct

The 312A-2 Control/Speaker unit is housed in a modified version of the 75A-4 speaker cabinet. The components are mounted in the unused space surrounding the speaker. All control knobs and indicators are on the front of the cabinet. The front panel is hinged at the base and may be opened for access to the components inside. Cabinet dimensions are: 15 in. wide,

11-1/8 in. high, and 9-1/8 in. deep. The unit normally is placed on the operating desk between the KWS-1 Transmitter and 75A-4 Receiver.

The 68Y-1 Antenna Selector unit is housed in a hinged-front steel box designed for wall mounting. Box dimensions are: 12 in. wide, 12 in. high, and 5-5/8 in. deep. At least 12 in. clearance must be left in front of the box to provide room for opening the front of the box. The major components in the box are mounted on the front cover.

The 534A-1 Cable Harness and Wiring Duct is used to interconnect the 312A-2, 68Y-1, 75A-4, KWS-1, KWS-1 Power Supply, and various external system components. The wiring duct normally is mounted along the rear edge of the operating desk, and the wiring harness subcables are brought out through cable connectors and holes in the duct. Leads to the KWS-1 Power Supply, the 68Y-1 and other external locations are fed through plastic-covered flexible steel conduits (not supplied). The wiring duct dimensions are 53 in. long, 4 in. high, and 3 in. deep.

Figure 1-1 shows a typical station installation of the SC-101, KWS-1, and 75A-4.

1.3 SYSTEM COMPONENTS.

In addition to the three major units, the SC-101 includes the following component parts of a complete system installation:

- a. One synchro transmitter for use with a rotary beam antenna installation.
- b. All necessary coaxial connectors.
- c. Conduit connectors for terminating the various conduits used in the system.

1.4 SYSTEM APPLICATION.

The SC-101 Station Control forms the link between the KWS-1, 75A-4, existing antennas, towers, and other station facilities to make up a complete custom-type system installation. Each antenna used in the system must be fed with a 52-ohm coaxial transmission line, terminated in a type N connector, and must match the KWS-1 Transmitter with swr less than 2.5:1 on all operating frequencies. The rotator/synchro circuitry, as supplied, is designed to handle one stacked 10-over-15 tower installation and/or one 20-meter tower installation. The circuit can be modified if desired.

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1.5 DESCRIPTION OF UNITS.

1.5.1 312A-2 CONTROL/SPEAKER UNIT (figure 1-2).

The 312A-2 Control/Speaker unit contains the following items:

- a. A ten-inch speaker for the 75A-4 Receiver.
- b. An antenna selector switch with positions for each of the five high-frequency amateur bands and one spare position. This switch actuates the antenna selector relays and connects power and control leads to each of two rotary beam antenna installations.
- c. A synchro azimuth indicator coupled to a radio-compass dial. The synchro system operates on 110 v a-c.
- d. A clockwise/off/counterclockwise switch that controls the direction of the rotator(s) and applies power to the rotator and synchro circuits.
- e. A voice-operated phone-patch subassembly, with OFF-ON and VOX BAL controls.
- f. An indicating meter and selector switch for the Collins 302C-2 Directional **Wattmeter**.

g. A power supply that provides d-c voltage for operation of the antenna selector relays.

- h. A station clock.
- i. A station light.
- j. A power switch and pilot light.
- k. Two line fuses.

External connections to all of the above items are made through a terminal board mounted on the rear of the cabinet. The telephone line to the phone patch is connected directly to a terminal board mounted on the phone-patch subassembly.

1.5.2 68Y-1 ANTENNA SELECTOR UNIT (figure 1-3).

The 68Y-1 Antenna Selector unit, as supplied, contains the following items:

- a. Two 52-ohm coaxial relays that work in conjunction with the antenna selector switch in the 312A-2 to select any one of three different antenna transmission lines.
- b. Three type N female coaxial connectors grouped as a patch panel for termination of the transmission lines.



Figure 1-2. 312A-2 Control/Speaker Unit

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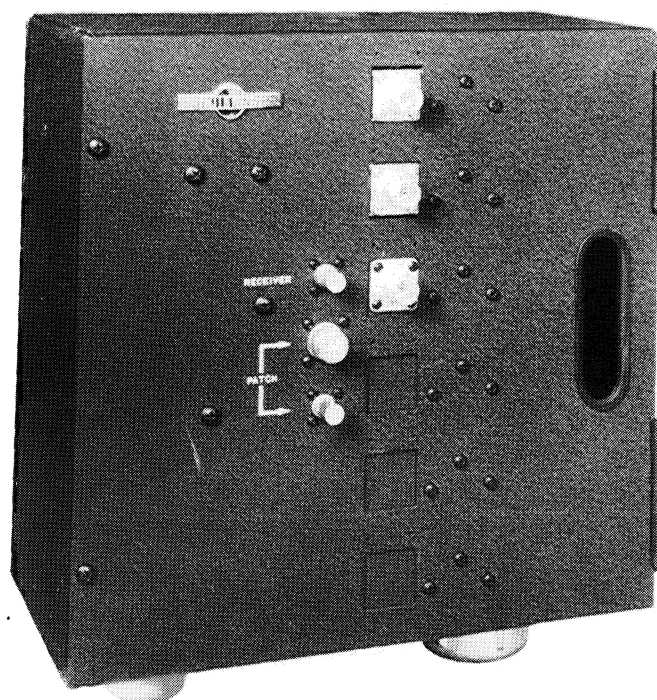


Figure 1-3. 68Y-1 Antenna Selector Unit

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c. A transmit-receive relay interconnected with the KWS-1 and 75A-4 Antenna and operate/standby circuits.

d. The 302C-2 coupler unit used with the indicating meter for measuring transmission line forward and reflected power. The readings are converted to swr by reference to a graph.

e. An auxiliary patch panel with an RCVR type BNC coaxial connector, and a type N coaxial connector connected to a type BNC coaxial connector to permit use of a second receiver with any unused antenna. This patch panel is also mounted on the front of the unit.

Transmission lines from the various antennas are brought into the box through one and one-half inch conduit at the bottom, and then brought out through a hole in the front for connection to the patch panels. All other external leads are part of the 534A-1 Cable Harness and enter the box through a second one-inch conduit in the bottom. Wiring harness connections to

the relays are made directly to the soldering lugs on the relay assemblies. Leads from the 302C-2 indicating meter and switch in the 312A-2 are connected to solder lugs on the coupler unit.

1.5.3 534A-1 CABLE HARNESS AND WIRING DUCT (figure 1-4).

The 534A-1 Cable Harness and Wiring Duct consists of the following items:

a. A wiring duct with removable back cover. The duct has cable connectors and grommeted access holes at various locations. These locations correspond to the positions of the various units and cables in a normal installation. Across the top of the duct are six 115 v a-c utility outlets.

b. A cabled wiring harness and RG-58/U coaxial cable installed within the duct. Subcables branch off the wiring harness and out of the duct to various terminations.

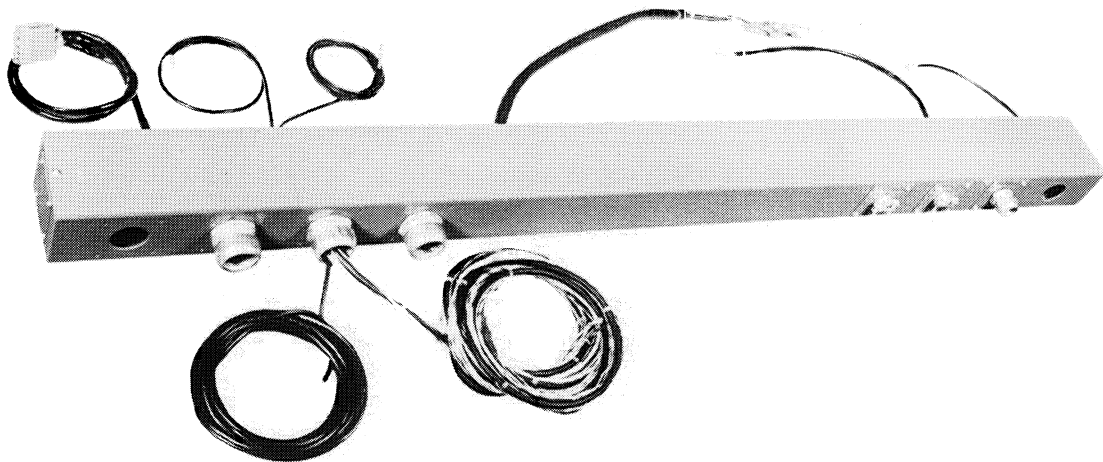


Figure 1-4. 534A-1 Cable Harness and Wiring Duct

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1.6 302C-2 DIRECTIONAL WATTMETER SPECIFICATIONS.

The 302C-2 Directional Wattmeter has the following specifications:

Maximum power handling capability*	2000 watts forward power
Power loss through coupler	Less than 0.1%, or 1 watt with 1000 watts r-f output
Swr introduced by coupler	Less than 1.05:1
Frequency range	2 to 30 mc
Impedance	52 ohm unbalanced
Wattmeter scales	100 watts forward
	1000 watts forward
	100 watts reflected
	1000 watts reflected

*The amount of actual transmitter output power that can be handled safely by the wattmeter depends on the swr on the line.

1.7 ITEMS REQUIRED BUT NOT SUPPLIED.

1.7.1 GENERAL.

The SC-101 Station Control is designed to interconnect existing antennas, rotary beam antenna tower installations, the telephone line, and a primary power source with the KWS-1 Transmitter and 75A-4 Receiver. It is assumed that the station is equipped with the major items associated with these equipments, i.e., tower(s), rotator(s), fuse or breaker box, etc. The SC-101 rotator switching circuitry is best used with relay control of the rotators. A typical circuit is given as part of the installation procedure, section II. The synchro transmitter used on the tower(s) must be the type proper for mating with the synchro azimuth indicator installed in the 312A-2. One synchro transmitter is supplied with the equipment. If two towers are used, a second synchro transmitter must be obtained; it can be ordered from Collins Radio Company, part number CPN 230 0142 00. The synchro transmitters have a 0.125 in. OD shaft for coupling to the antenna drive pole(s).

Other additional items are required in every installation but are not supplied, because the specifications (length of conduits, cables, etc.) vary with individual requirements. These items are listed in paragraph 1.7.2. If more than three antennas are used, additional parts are required in the 68Y-1 Antenna Selector unit. These parts are listed in paragraph 1.7.3.

1.7.2 ADDITIONAL ITEMS REQUIRED, GENERAL.

Table 1-1 below lists the additional parts required in every installation. These items can be obtained from

local suppliers or from Collins Radio Company by part number, as listed.

TABLE 1-1. ITEMS REQUIRED BUT NOT SUPPLIED, GENERAL

ITEM	DESCRIPTION	COLLINS PART NUMBER	USE, NOTES
LIQUID-TITE MACHINE TOOL CONDUIT AND FITTINGS (All fittings for normal installation supplied. Fittings listed for reference only, as when additional extra fittings are required.)	Conduit, 1 in. OD, 4 ft maximum length	018 0068 00	Contains leads from KWS-1 Power Supply to 534A-1 Wiring Duct
	1 in. ID conduit fittings	019 0284 00	Terminates 1 in. OD conduit
	Conduit, 1/2 in. OD, length as required	018 0067 00	Contains primary power leads from distribution box to 534A-1 Wiring Duct
	1/2 in. ID conduit fittings	019 1283 00	Terminates 1/2 in. OD conduit
	Conduit, 1 in. OD, 10 ft maximum length	018 0068 00	Contains leads from 68Y-1 Antenna Selector unit to 534A-1 Wiring Duct
	Conduit, 1-1/2 in. OD, length as required	018 0069 00	Contains RG-8/U transmission lines to 68Y-1 Antenna Selector unit
	1-1/2 in. ID conduit fittings	019 0285 00	Terminates 1-1/2 in. OD conduit
	Conduit, 1 in. OD, length as required	018 0068 00	Contains rotator/synchro cable(s)
TRANSMISSION LINES	RG-8/U coaxial cables, length as required		Connect antennas to 68Y-1 Antenna Selector unit patch-panel jacks
	RG-8/U coaxial cable, 17 ft max length		Connects KWS-1 r-f output to 68Y-1 Antenna Selector unit
PRIMARY POWER LEADS	2 or 3-wire, no. 12 copper, length as required		Primary power leads from distribution box to KWS-1 Power Supply
	2-wire, no. 12 or no. 14 copper, length as required		Primary power leads from distribution box to utility outlet string on 534A-1 Wiring Duct
ROTATOR/ SYNCHRO POWER/ CONTROL CABLE(S)	8-wire (min) cable(s), 6-no. 16 copper, 2- no. 10 copper, one cable for each rotary beam antenna tower, length as required		Power/control cables to tower components. Specifications adequate for cable lengths up to 100 feet. With longer runs, increase wire sizes
PHONE-PATCH LINE	2-wire no. 22, length as required		Telephone connection line from telephone terminal box or block to phone-patch terminal board

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1.7.3 ADDITIONAL ITEMS REQUIRED WHEN MORE
THAN THREE ANTENNAS ARE USED.

Table 1-2 lists the additional items required in the
68Y-1 Antenna Selector unit when more than three

antennas (or transmission lines) are used. Refer to
section VIII for installation instructions.

TABLE 1-2. ADDITIONAL ITEMS REQUIRED WHEN MORE THAN THREE ANTENNAS ARE USED

ITEM	COLLINS PART NUMBER	USE, NOTES
ANTENNA SELECTOR RELAY(S)	410 0136 00	One required for each additional antenna. Symbols: K904, K905, K906.
COAXIAL JUMPER(S)	542 0985 003	One required with each additional relay. Symbols: E903, E904, E905.
TYPE N MALE CONNECTOR(S)	357 9040 00	One required for each additional trans- mission line. Symbols: P908, P909, P910. (Spares supplied may be used.)

SECTION II INSTALLATION

2.1 GENERAL.

2.1.1 UNPACKING.

The SC-101 Station Control units are packed in one wooden case and two cardboard cases. The wooden case contains the 534A-1 Cable Harness and Wiring Duct. The larger cardboard case contains the 68Y-1 Antenna Selector unit and the various accessory cables and components. The smaller cardboard case contains the 312A-2 Control/Speaker unit. Remove the nails from the wooden case carefully to avoid damaging the unit inside. Remove the other units and accessories carefully, and check the items contained in each case against the packing list. If damage to the units is evident, retain the packing cases and material, and notify the transportation company immediately.

Make a thorough visual inspection of the outside and inside of each unit. Do not make adjustments or connections at this time, but look for broken connections, damaged parts, or any other evidence of shipping damage. Reference to figures in section VII will be helpful while making this visual check. If the units appear to be in satisfactory condition, proceed with the installation.

2.1.2 LAYOUT.

Layout of the units in a given station is subject to the option of the operator. The following points must be considered in planning the layout to facilitate cable installation:

- a. The KWS-1 Power Supply must be no more than three feet from one of the rear top corners of the operating desk.
- b. The 68Y-1 Antenna Selector unit must be no more than eight feet from one of the rear top corners of the operating desk.
- c. The operating desk should be at least 53 in. long to accommodate the wiring channel.
- d. A second receiver may be positioned on the operating table in place of the KWS-1 Exciter/Power Amplifier which in turn is placed on top of the KWS-1 Power Supply. In all arrangements, the 312A-2 must be placed between the KWS-1 Exciter/Power Amplifier and the main 75A-4 Receiver.
- e. Either a right-hand layout or a left-hand layout may be used. In the right-hand layout, the KWS-1 is to the right of the operator and the 75A-4 is to his left. In the left-hand layout, the reverse is true, and

the position of the 68Y-1 Antenna Selector unit is similarly interchanged. The 534A-1 Cable Harness is shipped installed in the duct for a right-hand layout. The entrance and exit holes in the top of the duct are symmetrically placed. If a left-hand layout is planned, simply reverse the harness in the duct, bringing out all leads in corresponding positions at the opposite end of the duct. Installation drawings show a typical right-hand layout. Cabling positions, etc., are opposite to those used in left-hand installations, but wire coding and other details apply in both cases.

2.2 INSTALLATION AND WIRING.

2.2.1 GENERAL.

The installation and wiring of much of the equipment and circuitry associated with the SC-101 units will vary with the requirements of the individual station. The drawings and text indicate the options necessary to adapt the equipment to most circumstances. Details may vary in a particular installation from those shown, but the general method should be followed as closely as possible to assure neat and accurate results.

2.2.2 INSTALLATION AND WIRING PROCEDURE, GENERAL.

Figures 2-1, 2-2, 2-3, and 2-4 show the major installation and wiring details. The following steps outline a systematic approach to installation and wiring:

- a. Fasten the 68Y-1 Antenna Selector box to the wall. Mounting holes for the box are on the back, visible by opening the cover. Fasten the 534A-1 Wiring Duct to the back of the operating desk. Mounting holes for the duct are on the back edge, visible by removing the cover plate from the duct. Remove the plate by sliding the cover up until free of the bottom duct lip.
- b. Set the remaining units in position (the KWS-1, 75A-4, and 312A-2) on and around the operating table (figure 2-1). Install band-indicator plates in the 68Y-1 front cover (figure 2-3).
- c. Secure the conduits to the bottom edge of the wiring duct in the proper positions using the conduit connectors provided.
- d. Remove leads to the KWS-1 Power Supply as noted. Thread the various cables through the conduits. A fish-wire taped to the composite cables will help pull them through (figure 2-1).
- e. Install the external end of each conduit in a conduit connector at the desired location. The connector

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on the KWS-1 Power Supply is left free until the back is put on the cabinet, as noted (figure 2-1).

f. Cut all unterminated leads to length, leaving appropriate slack where noted. Install type N and type BNC connectors on the transmission lines. Refer to figures 2-5 and 2-6 for connector installation. Refer to figures 2-3 and 2-4 for lead dress in the 68Y-1 Antenna Selector unit.

g. Connect all wires to their proper terminals, as shown on figure 2-2.

h. Connect the components on the tower(s) to the rotator/synchro cable(s). Figure 2-7 shows a typical schematic with connections to the 312A-2 unit in various applications.

This completes the general installation.

2.2.3 INSTALLATION AND WIRING PROCEDURE, FOUR, FIVE, OR SIX ANTENNA SYSTEMS.

If a four, five, or six antenna system is used, refer to section VIII for instructions.

2.2.4 312A-2 MODIFICATION.

If existing tower components or the rotary beam antenna distribution is different from those shown, the rotator/synchro switching circuit in the 312A-2 may have to be modified to suit these special circumstances. Figure 2-8 is a simplified schematic of this circuitry. For example, if one tower was used for a 10-meter antenna, and the other for a 15- and 20-meter antenna, the circuitry would be modified as follows:

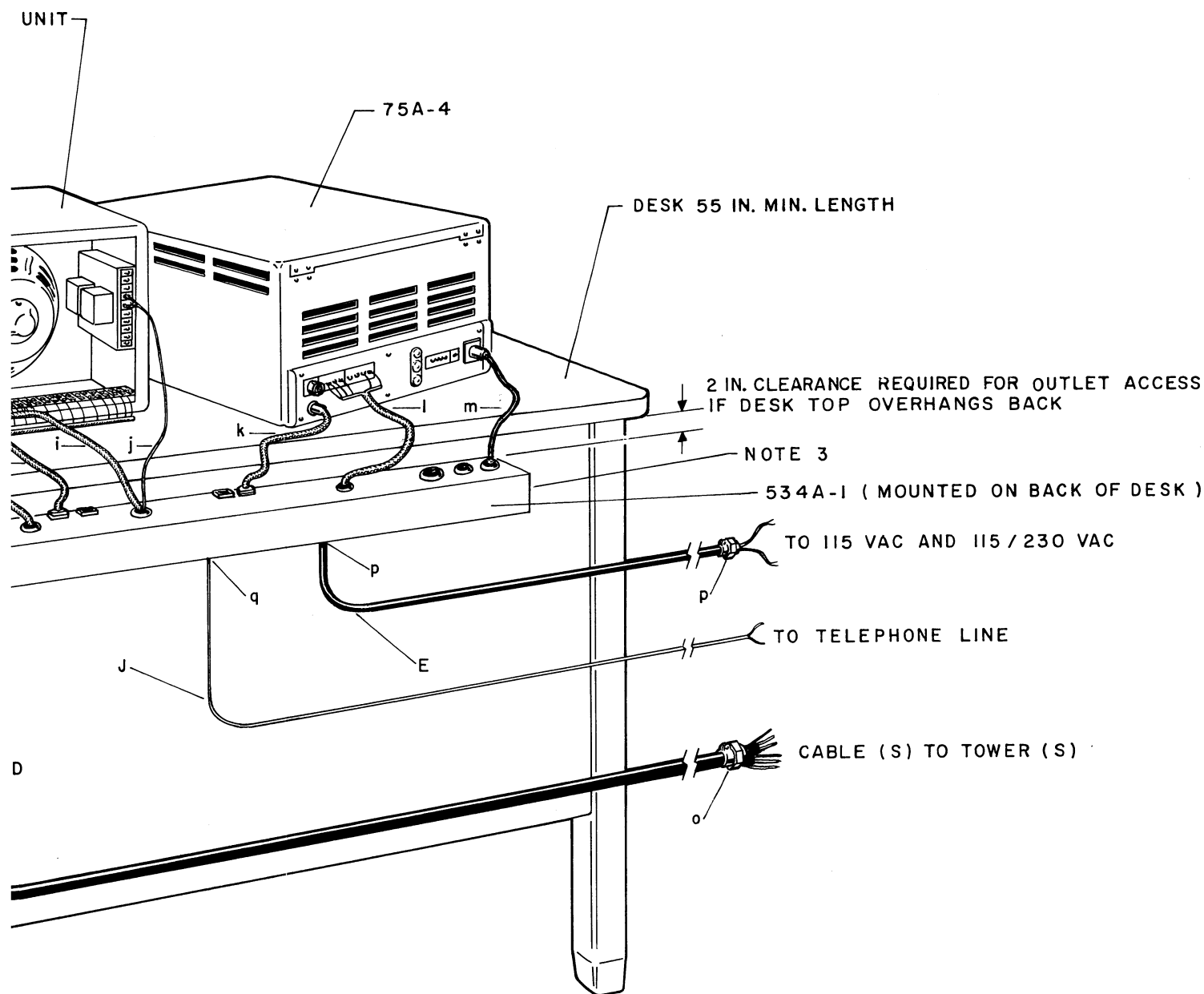
a. On S801 sections A, B, C, and D, remove the jumper between the 10- and 15-meter contacts.

b. Connect a jumper between the 15- and 20-meter contacts on these switch sections.

Modify the circuitry as required.

2.2.5 75A-4 MODIFICATION.

If the 75A-4 Receiver to be used has a serial number below 2382, replace C102 (0.1 uf) with a 1-uf, 200-volt tubular capacitor. Capacitor C102 is located next to the chassis in the position indicated in figure 5-3 in the 75A-4 instruction book. The 1-uf capacitor assures proper operation of the phone patch.



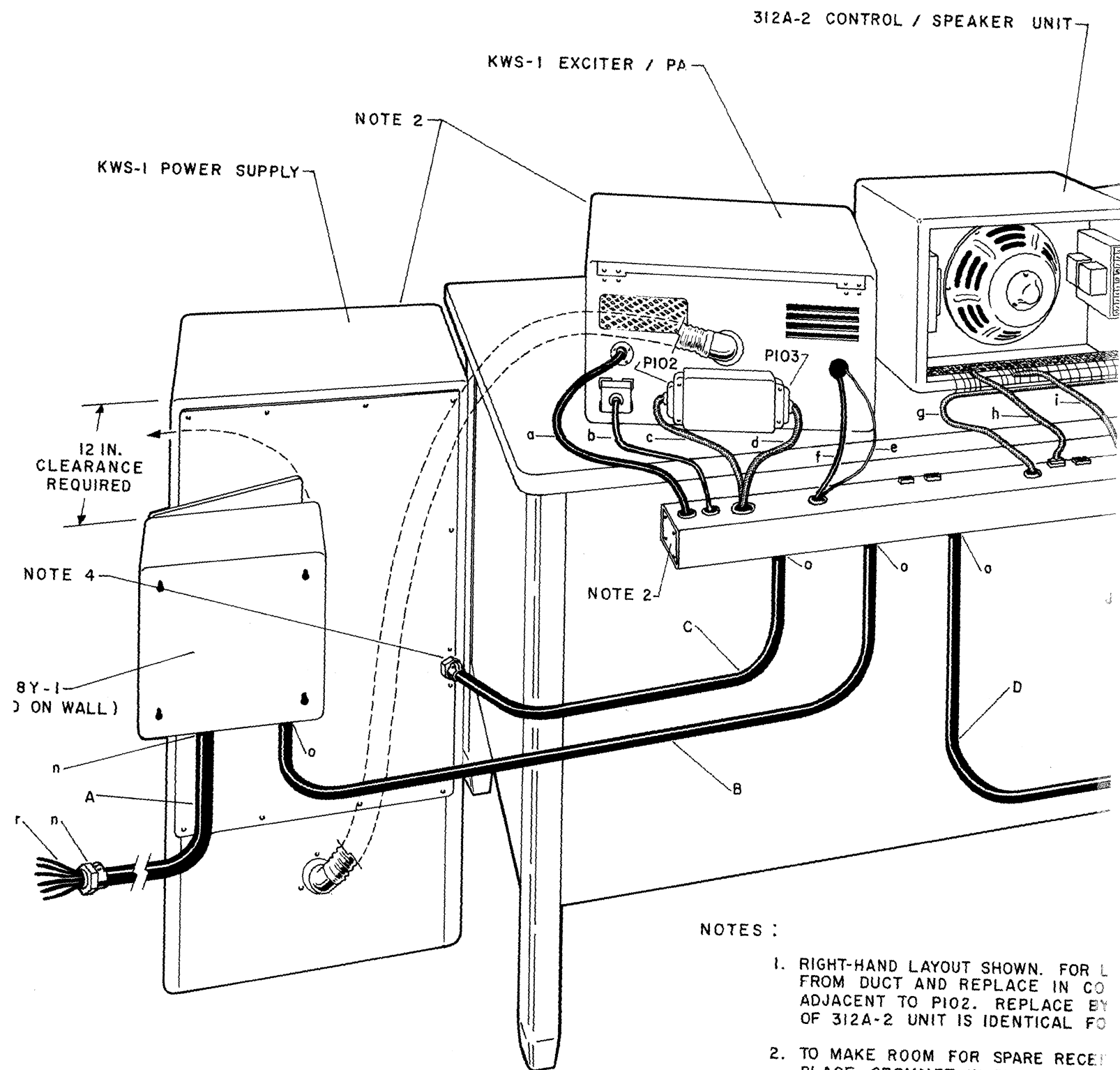
DOWN. FOR LEFT-HAND LAYOUT, LATERALLY REVERSE POSITIONS OF ALL UNITS AND CONDUITS. REMOVE ALL CABLES AND CONDUITS IN CORRESPONDING REVERSED POSITIONS. TO REMOVE MAIN WIRING HARNESS, FEED OUT THROUGH HOLE ADJACENT TO PI02. REPLACE BY FEEDING THROUGH CORRESPONDING HOLE (THIRD FROM END) IN LEFT-HAND END OF DUCT. POSITION IDENTICAL FOR EITHER LAYOUT.

TO PREPARE RECEIVER, PLACE KWS-1 EXCITER / PA ON TOP OF POWER SUPPLY. REMOVE PLATE FROM END OF DUCT AND END-HOLE. REMOVE MAIN WIRING HARNESS BY PULLING OUT LEADS THROUGH DUCT HOLE ADJACENT TO PI02. FEED DUCT THROUGH END-HOLE. PASS ALL LEADS TO KWS-1 EXCITER / PA (SYMBOLS a THROUGH f) THROUGH END-HOLE. REPLACE HARNESS LEADS IN FORMER POSITIONS.

NOTES: JTS, NOTE 2 REFERS TO LEFT-HAND END OF DUCT.

UNIT IS POSITIONED IN SLOT WHEN POWER SUPPLY BACK COVER IS REPLACED.

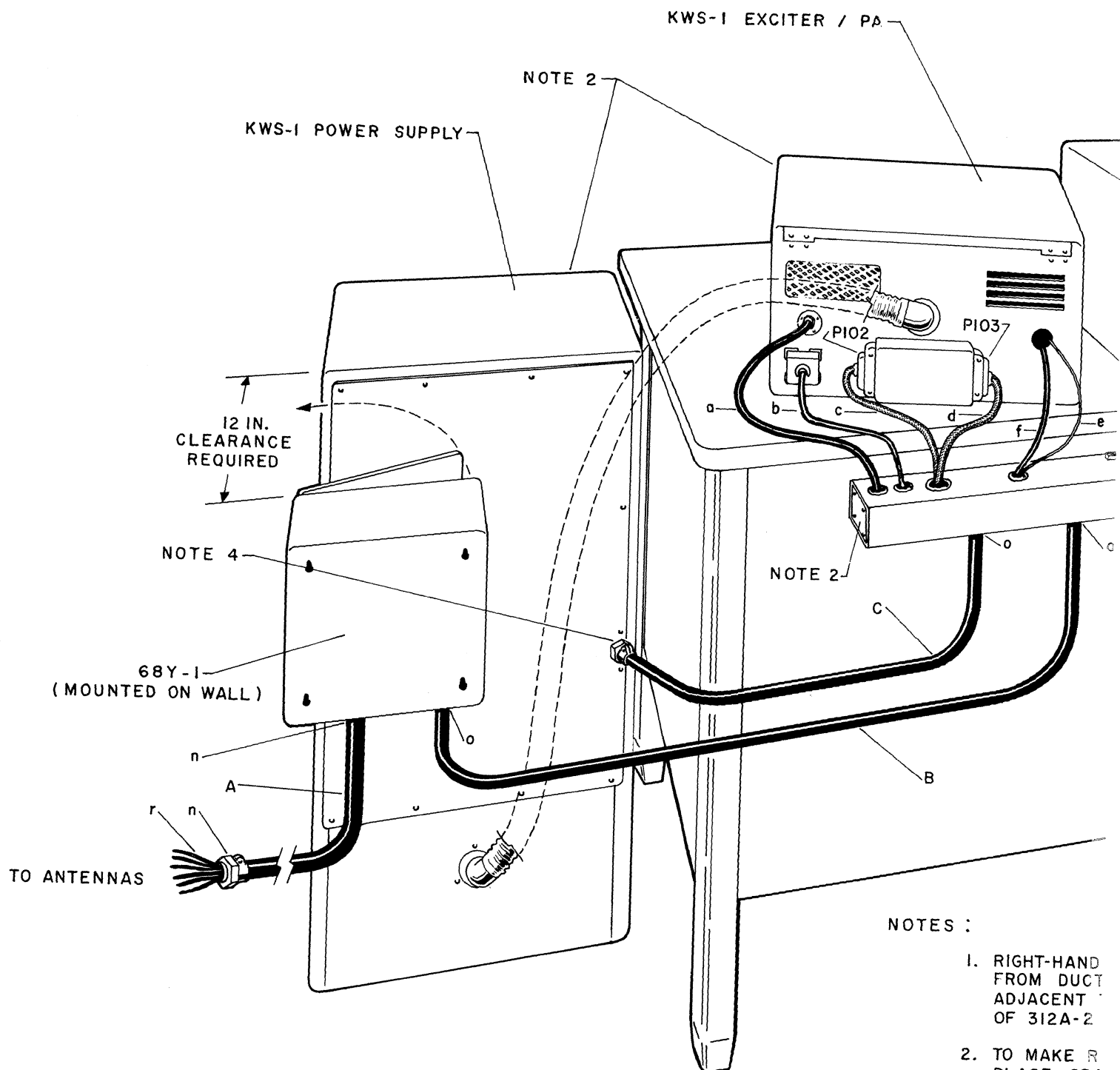
Figure 2-1. SC-101 Station Control, Installation Diagram



NOTES :

1. RIGHT-HAND LAYOUT SHOWN. FOR L FROM DUCT AND REPLACE IN CO ADJACENT TO PI02. REPLACE BY OF 312A-2 UNIT IS IDENTICAL FO
2. TO MAKE ROOM FOR SPARE RECE PLACE GROMMET IN END-HOLE. F HARNESS BACK INTO DUCT THRO REPLACE OTHER WIRING HARNESS
3. FOR LEFT-HAND LAYOUTS, NOTE
4. CONDUIT CONNECTOR POSITIONED

312A-2 CONTROL



NOTES :

1. RIGHT-HAND FROM DUCT ADJACENT OF 312A-2
2. TO MAKE R PLACE GRO HARNESS E REPLACE O
3. FOR LEFT-
4. CONDUIT CO

LEGEND

DESCRIPTION

KWS-1 r-f output, RG-8/U, to 68Y-1 via conduit B

KWS-1 +2000 volt lead, RG-58/U, to KWS-1 P.S. via conduit C

Main wiring harness connections to P-102 on KWS-1 Exciter/PA

Main KWS-1 interunit cable, from P-103 on exciter/PA to P.S. via conduit C

Phone-patch input cable to exciter/PA from main wiring harness (P-703 to J-104)

Calibrate lead, RG-58/U, from KWS-1 calibrate connector to 75A-4 antenna lead, connected to coaxial "tee" in duct.

Main wiring harness leads to TB801 on 312A-2 unit

312A-2 primary power cord and plug to utility outlet

Rotation/synchro power/control cable(s) to tower(s) via conduit D

2-wire telephone line from phone-patch chassis terminal board in 312A-2 to telephone terminal box

75A-4 primary power cord and plug to utility outlet

Main wiring harness leads to 75A-4 terminal boards

75A-4 antenna lead, RG-58/U, from 68Y-1 unit via conduit B

1 in. ID conduit connectors

1/2 in. ID conduit connections

Cable connector mounted on adapter plate over conduit entrance hole

1-1/2 in. ID conduit connectors

Antenna transmission lines, RG-8/U, from 68Y-1 patch panel to antennas, via conduit A

1-1/2 in. OD liquid-tite conduit containing transmission lines

1 in. OD liquid-tite conduit containing leads from duct to 68Y-1 unit

1 in. OD liquid-tite conduit containing leads from duct to KWS-1 P.S.

1 in. OD liquid-tite conduit containing multiwire cable(s) to tower(s)

1/2 in. OD liquid-tite conduit containing primary power leads

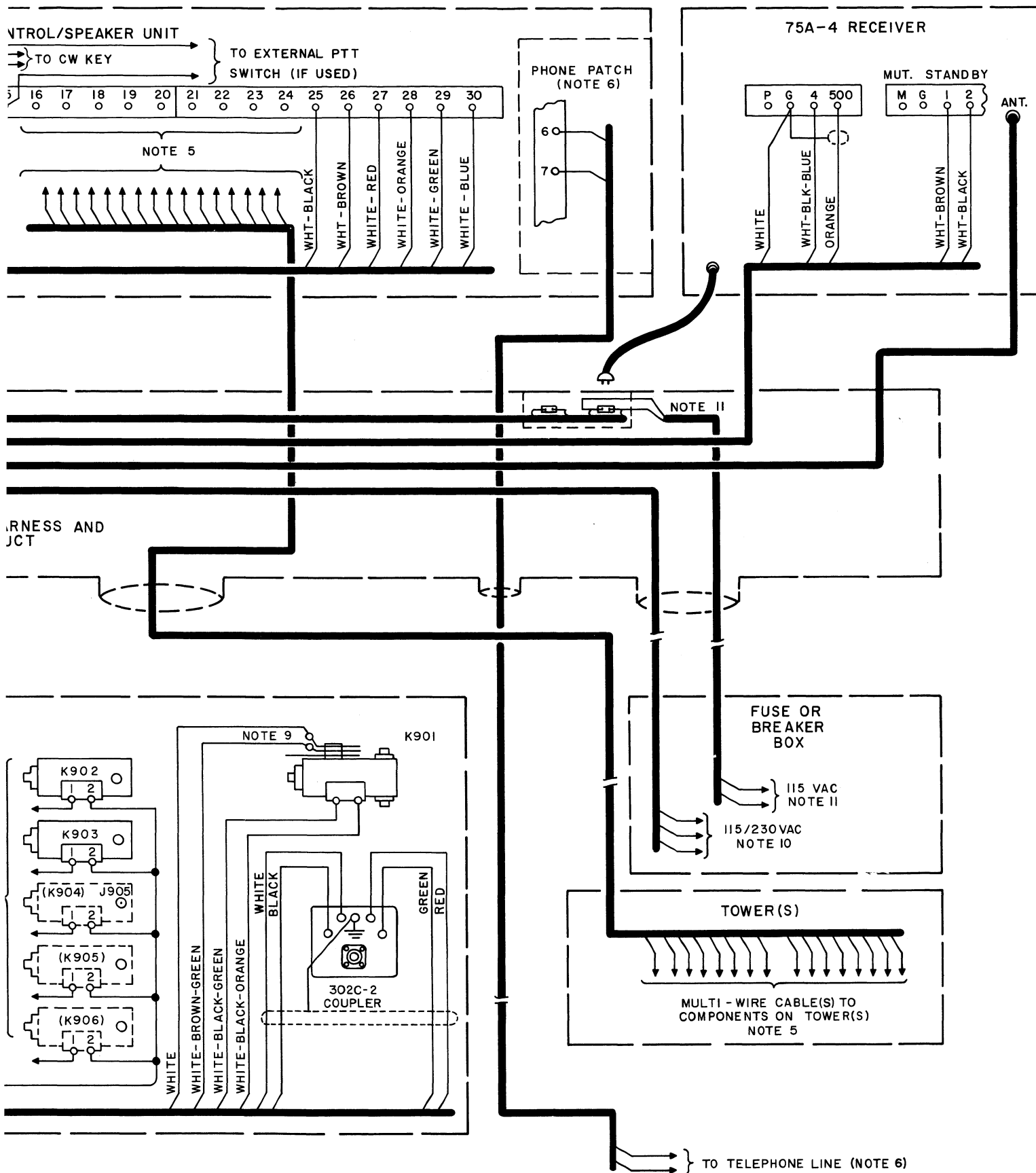
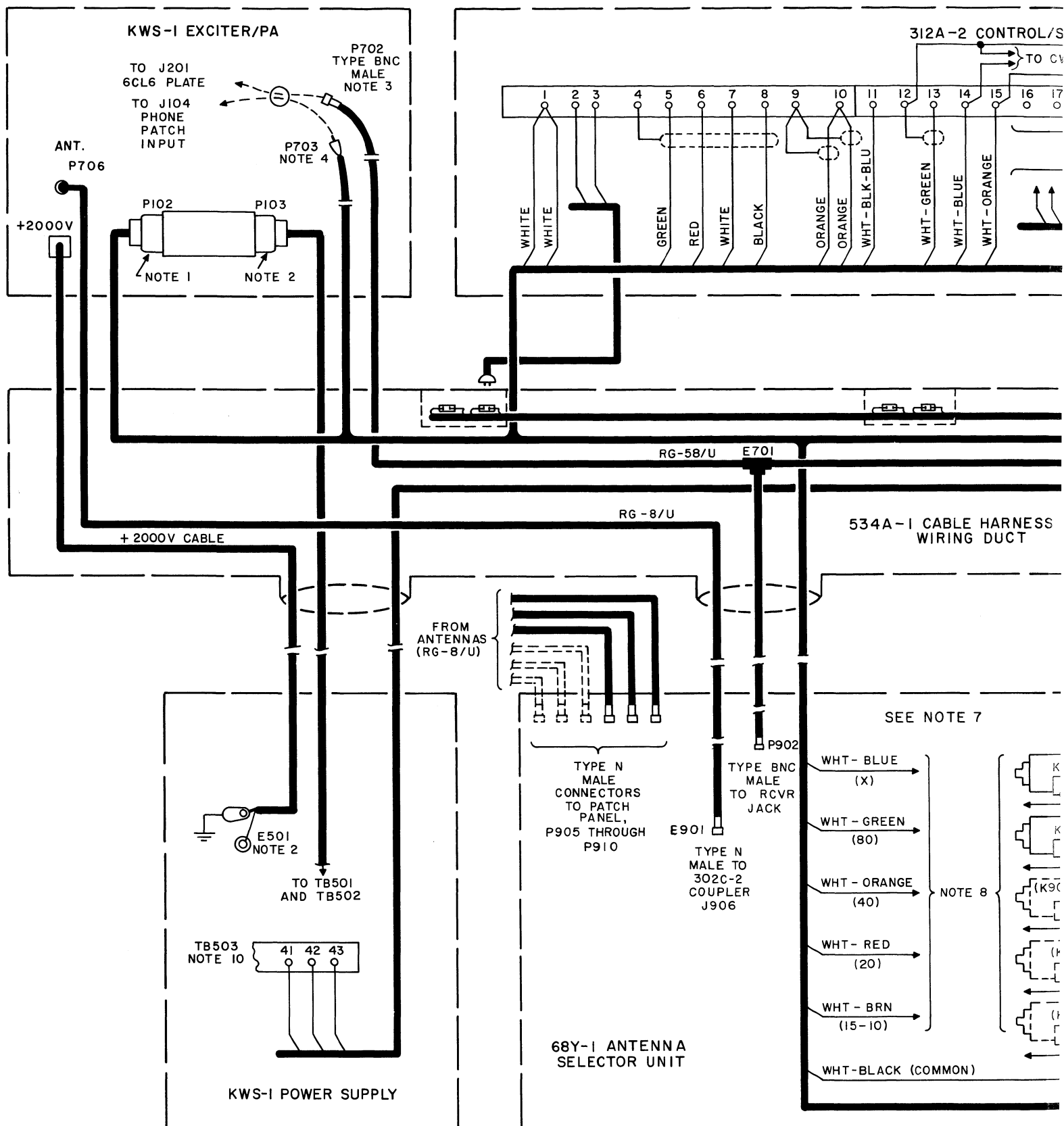


Figure 2-2. SC-101 Station Control, Wiring Diagram

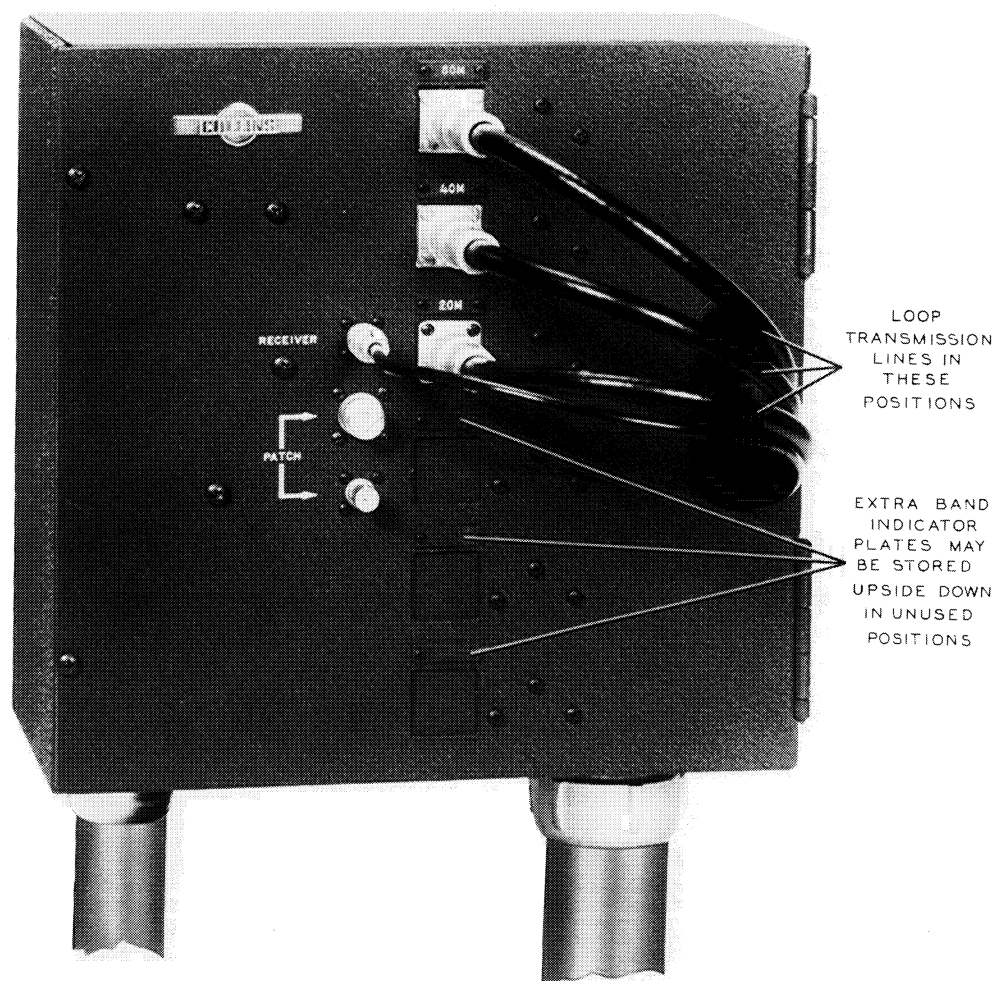


NOTES

1. P102 preconnected to wiring harness. Remove P102 supplied with KWS-1 and substitute P102 from wiring harness in its place.
2. P103 and +2000-volt cable supplied with KWS-1. To install in conduit, tag and remove all leads to TB501, TB502, and E501. Pull cables through duct and conduit, and reconnect. Check connections by reference to KWS-1 instruction book to avoid errors.
3. Connect to J201 as explained in KWS-1 instruction book.
4. Connect to J104 PHONE-PATCH input jack.
5. Rotator/synchro cable connections to terminals 16-24 vary with type of tower circuitry used. Refer to figure 2-7 for various options.
6. Connect 2 wires from telephone line to terminals 6 and 7 on phone-patch terminal board. Telephone line terminals are usually labeled L1-L2 (red-green wires) on telephone connection block.
7. Cut all wires and cables entering 68Y-1 unit to length, dressing leads as shown on figure 2-4. Install type N and type BNC connectors on coaxial leads as shown on figures 2-5 and 2-6. RG-8/U transmission lines and RG-58/U line (to 75A-4 Receiver) passed through slot in front cover and looped to patch panels (see figure 2-3).
8. Number of wires used and connections to K902 through K906 vary with the number and bands of the antennas used. For three antenna systems, refer to table 2-1 below. For four, five, and six antenna systems, refer to section VIII. Connections to relays are made by soldering leads directly to relay terminals.
9. Connect leads to normally open contacts on external terminals.
10. Number of wires used and connections to TB503 and primary fuse and breaker box vary with type of primary power (115 v a-c or 115/230 v a-c) used. Refer to figure 7-3, KWS-1 instruction book, for options. Three-wire 115/230 v a-c connections shown.
11. Connect 115 v a-c utility cable to either end of utility outlet string, as convenient. Outlet string prewired. Remove shield for access to terminals. Far end of cable connected across any 115 v a-c terminals in primary fuse or breaker box.

TABLE 2-1. CONNECTIONS TO K902 AND K903 WITH THREE-ANTENNA SYSTEMS

ANTENNAS USED*	ON K902, CONNECT TERMINAL TO:	ON K903, CONNECT TERMINAL TO:	K902 INDICATOR PLATE:	K903 INDICATOR PLATE:	J905 INDICATOR PLATE:
80-40-20	WH-GRN	WH-OR	80M	40M	20M
80-40-15	WH-GRN	WH-OR	80M	40M	15M
80-40-10	WH-GRN	WH-OR	80M	40M	10M
80-20-15	WH-GRN	WH-RED	80M	20M	15M
80-20-10	WH-GRN	WH-RED	80M	20M	10M
80-15-10	WH-GRN	WH-BRN	80M	15M	10M
40-20-15	WH-OR	WH-RED	40M	20M	15M
40-20-10	WH-OR	WH-RED	40M	20M	10M
40-15-10	WH-OR	WH-BRN	40M	15M	10M
20-15-10	WH-RED	WH-BRN	20M	15M	10M
*If extra antenna is used on any band, connect WHT-BLU lead in place of eliminated lead. Mount X indicator plate in place of eliminated plate.					



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Figure 2-3. 68Y-1 Antenna Selector Unit, Front Cover Closed, Showing Method of Connecting Transmission Lines to Patch Panel

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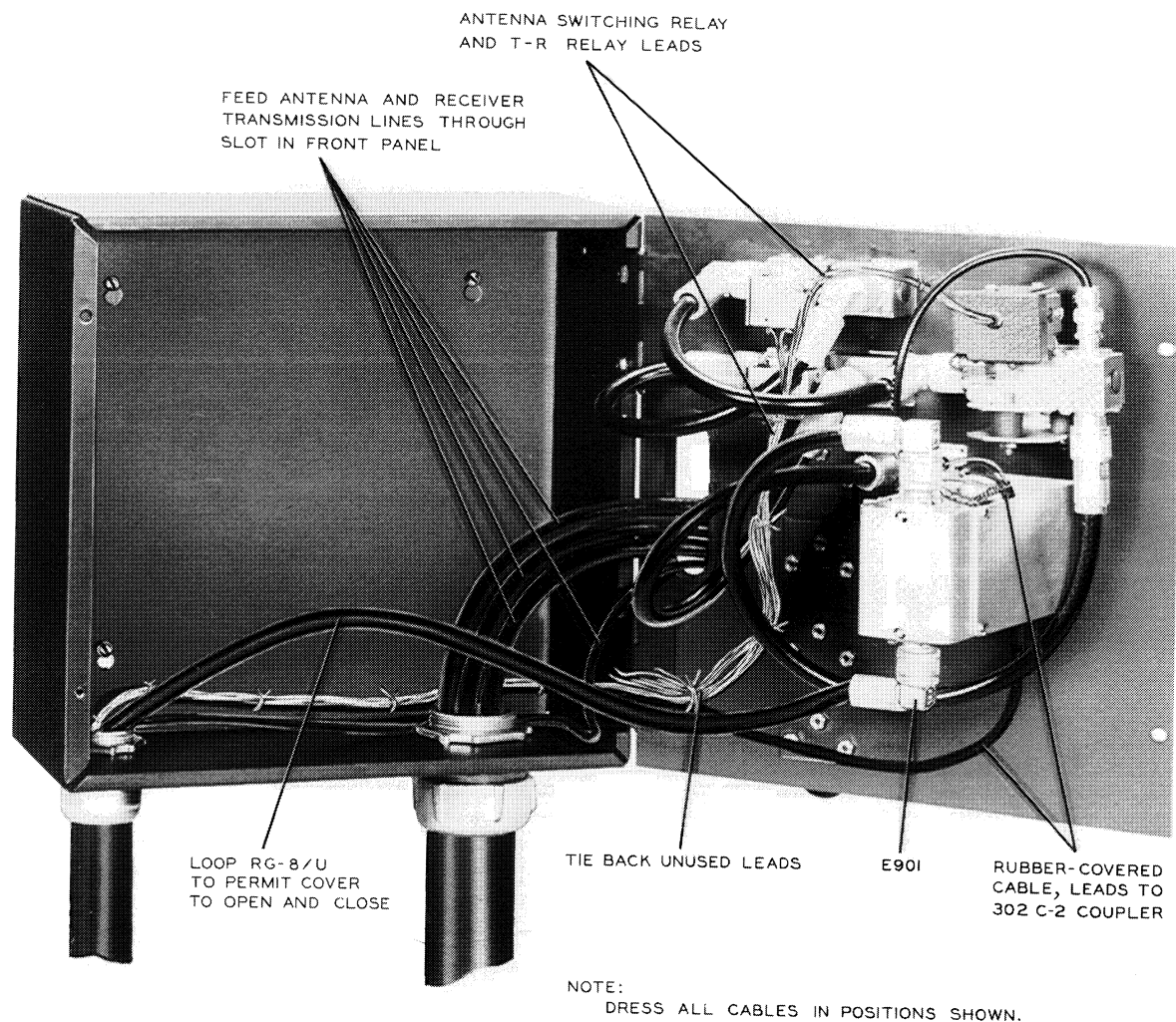
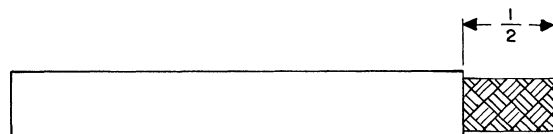


Figure 2-4. 68Y-1 Antenna Selector Unit, Front Cover Open, Showing Method of Dressing Cables and Transmission Lines Inside Unit

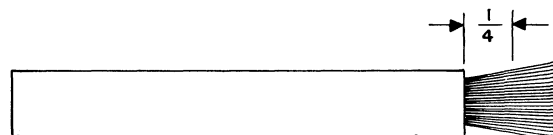
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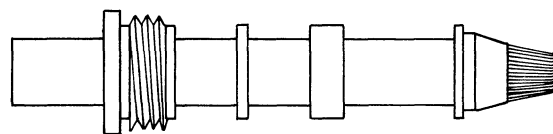
CUT END OF CABLE EVEN.



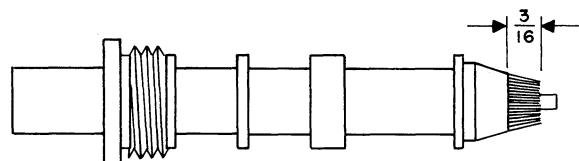
REMOVE VINYL JACKET $\frac{1}{2}$ INCH —
DON'T NICK BRAID.



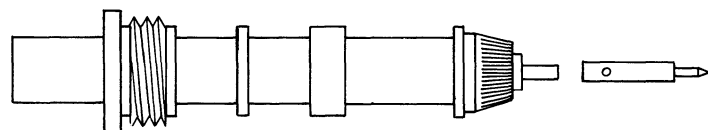
COMB OUT COPPER BRAID AS SHOWN.
BARE $\frac{1}{4}$ INCH OF CENTER CONDUCTOR —
DON'T NICK CONDUCTOR.



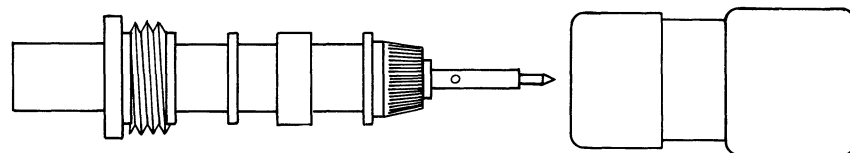
TAPER BRAID AS SHOWN. SLIDE NUT,
WASHER AND GASKET ON VINYL JACKET.
SLIDE CLAMP ON BRAID.



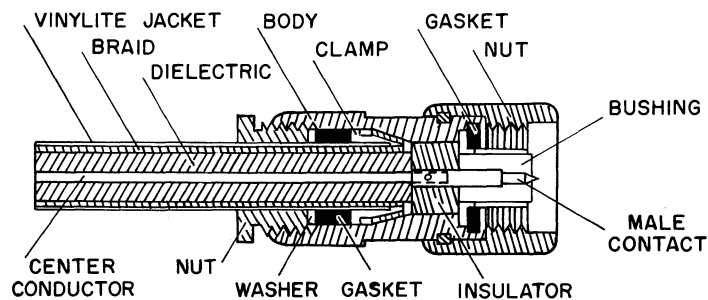
WITH CLAMP IN PLACE, TRIM BRAID
AS SHOWN.



FOLD COPPER BRAID BACK ON CLAMP.
TIN CENTER CONDUCTOR,
USING MINIMUM AMOUNT OF
HEAT.



HOLDING CONTACT WITH PLIERS,
SOFT SOLDER CONTACT TO
CENTER CONDUCTOR. IT IS
IMPERATIVE THAT BACK END
OF CONTACT BE FLUSH WITH
POLYETHYLENE DIELECTRIC.
DO NOT USE EXCESS SOLDER.
WIPE CLEAN — SEE THAT END OF
CABLE INSULATOR IS CLEAN
AND FREE OF SOLDER, ROSIN
AND FOREIGN MATERIAL.



SLIDE BODY INTO PLACE CAREFULLY SO
THAT CENTER CONDUCTOR ENTERS HOLE
IN INSULATOR. FACE OF CABLE DIELECTRIC
MUST FIT FLUSH AGAINST INSULATOR.
PROPERLY TIGHTEN BODY AND NUT
WITH WRENCHES.

Figure 2-5. Installation of Type N Male Connector on RG-8/U Transmission Line

SECTION II

Installation

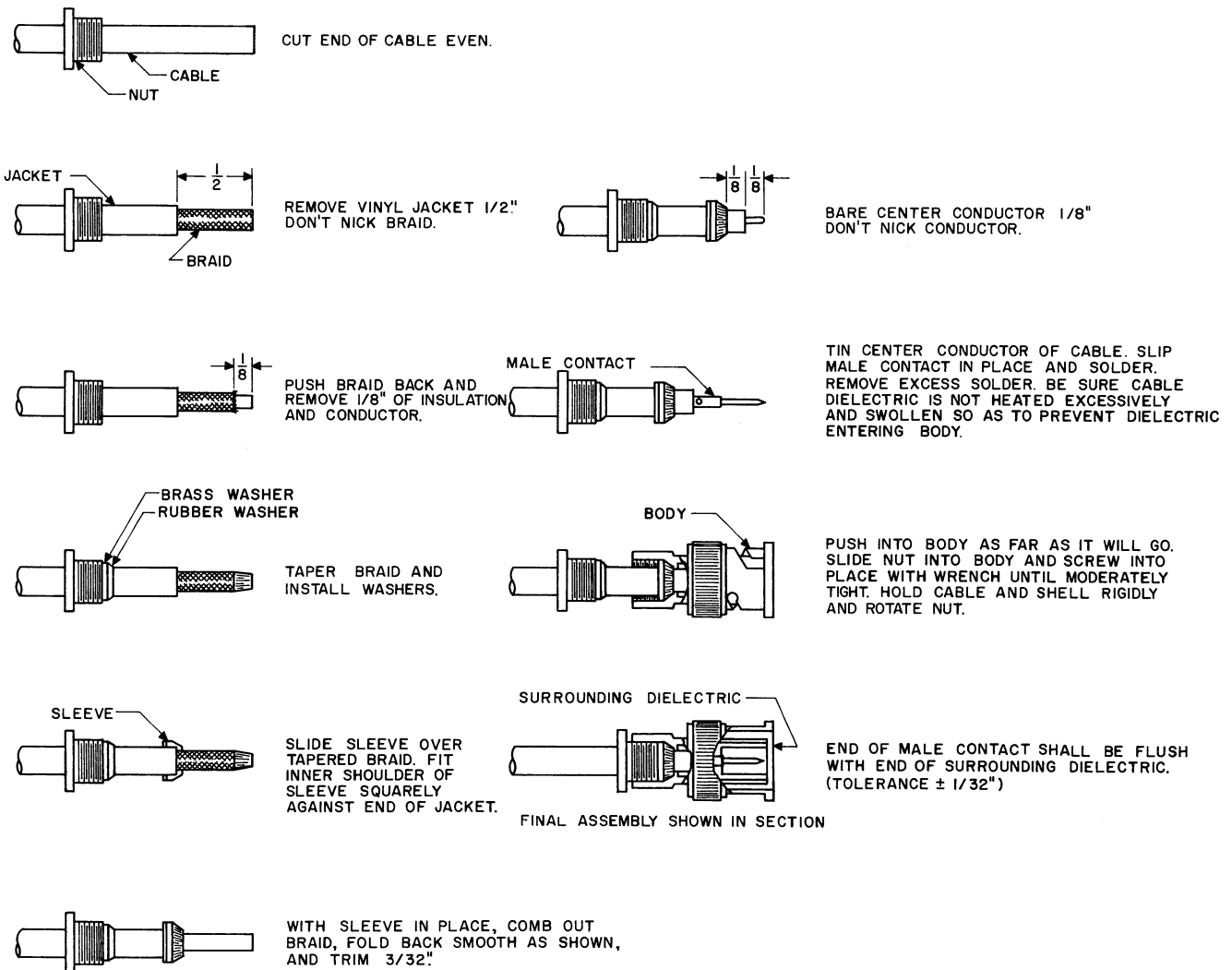
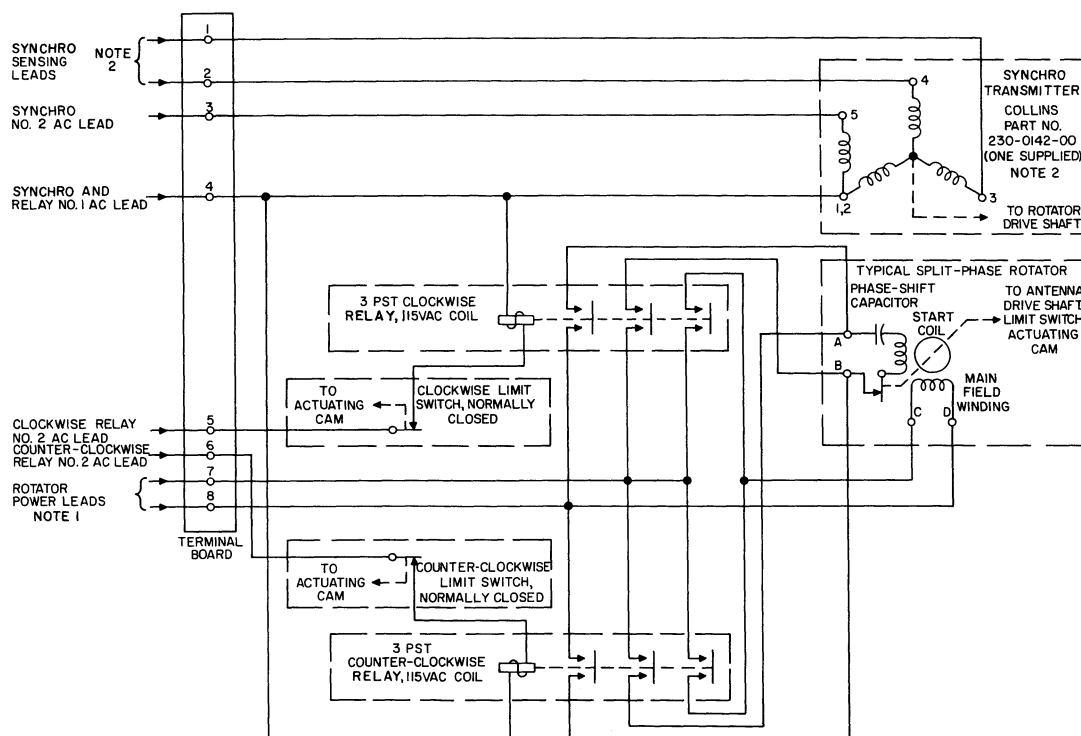


Figure 2-6. Installation of Type BNC Male Connector on RG-58/U Transmission Line

C64-01-3



CONNECTIONS TO 312A-2 TERMINAL BOARD, TERMINALS 16-24									
TYPE OF INSTALLATION		SYNCHRO SENSING LEADS NOTE 2		SYNCHRO NO. 2 AC LEAD	SYNCHRO AND RELAY NO. 1 AC LEAD	CLOCKWISE RELAY NO. 2 AC LEAD	COUNTER- CLOCKWISE RELAY NO. 2 AC LEAD	ROTATOR POWER LEADS NOTE 1	
		1	2	3	4	5	6	7	8
	10 AND/OR 15 METER ROTARY BEAM ANTENNA(S)	17	16	21	18	20	19	18	21
	20 METER ROTARY BEAM ANTENNA	23	24	21	22	20	19	22	21
	10-15-20 STACKED ANTENNAS	17,23	16,24	21	18,22	20	19	18,22	21
	10 AND 20 OR 15 AND 20 METER STACKED ANTENNAS	17,23	16,24	21	18,22	20	19	18,22	21

NOTES:

1. ROTATOR POWER MAY BE SUPPLIED FROM A SOURCE OTHER THAN 312A-2 IF POWER IS AVAILABLE AT OR NEAR THE TOWER LOCATION. THIS SOURCE SHOULD HAVE PROPER FUSE OR CIRCUIT BREAKER PROTECTION FOR TYPE OF ROTATOR USED.
2. IF SYNCHRO TRANSMITTER IS MOUNTED IN AN INVERTED POSITION (SHAFT DOWN) WHEN DIRECT COUPLED, OR IS GEAR-COUPLED TO ANTENNA DRIVE SHAFT, SENSING LEADS (TERMINALS 3 AND 4) SHOULD BE REVERSED AT THE TOWER, OR ON THE 312A-2 TERMINAL BOARD (TERMINALS 16-17 OR 23-24).

Figure 2-7. SC-101 Station Control, Typical Rotary Beam Antenna Tower Components, Schematic Diagram

SECTION II
Installation

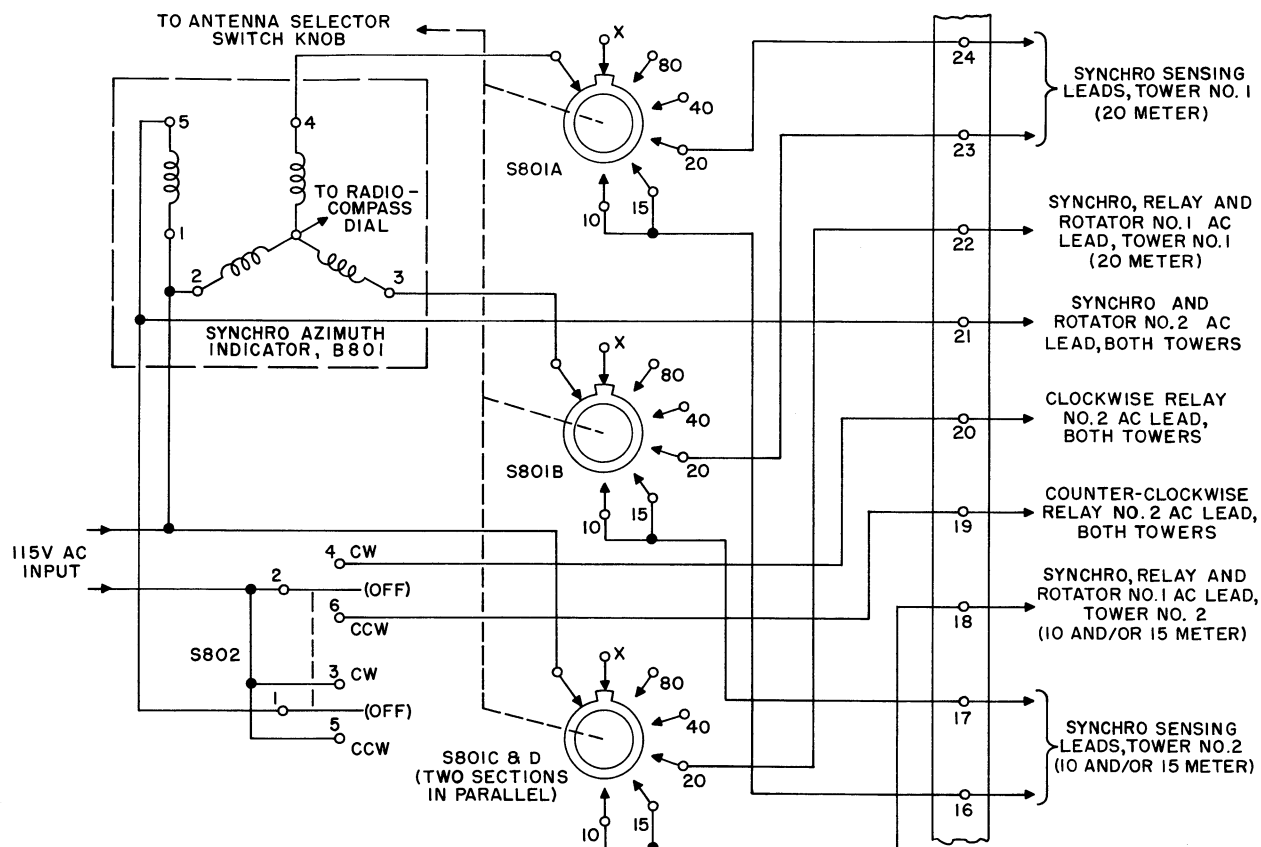


Figure 2-8. 312A-2 Control/Speaker Unit, Rotator/Synchro Circuits, Simplified Schematic Diagram

C183-11-3

