

TECHNICAL MANUAL
FOR
SWITCH BOX SA-734/SG
AND INDICATOR UNIT ID-866/SG

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DEPARTMENT OF THE NAVY
BUREAU OF SHIPS
Washington 25, D. C.

From: Chief, Bureau of Ships
To: All Activities concerned with the Installation, Operation and
Maintenance of the Subject Equipment
Subj: Technical Manual for Switch Box SA-734/SG and Indicator
Unit ID-866/SG.

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Chief of Bureau

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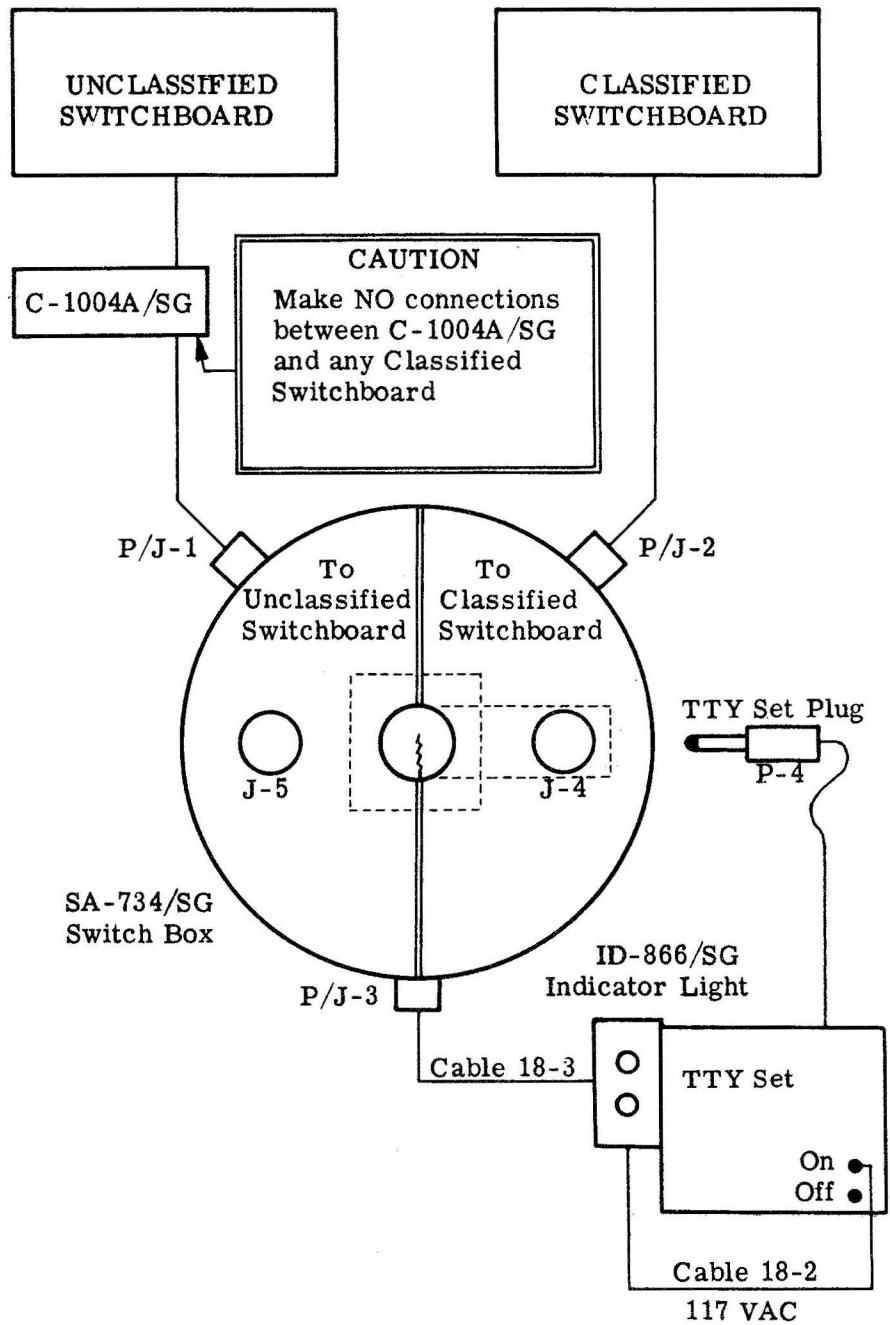
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SA-734/SG AND ID-866/SG
BLOCK DIAGRAM
TYPICAL INSTALLATION

FIGURE 1-1

SECTION 1

GENERAL INFORMATION

1-1. EQUIPMENT ILLUSTRATION.

Figure 1-1, Switch Box SA-734/SG and Indicator Unit ID-866/SG.

1-2. FUNCTIONAL DESCRIPTION.

Switch Box SA-734/SG is designed for use with ON-LINE Security Communications Equipment Systems to provide teletypewriter flexibility where space conditions preclude the installation of additional teletypewriter equipments. The Switch Box contains two shielded jacks: one designated as CLASSIFIED and wired to the classified switchboard; the other designated UNCLASSIFIED and wired to the unclassified switchboard via the C-1004A/SG. (Refer to figure 1-1.) When patched to the classified jack, the teletypewriter receives or transmits classified traffic from/to the classified switchboard. When patched to the unclassified jack, unclassified traffic can be transmitted or received to/from the unclassified switchboard (via the C-1004A/SG Transmitter Control Switch).

Shielding is provided on all essential components. Hence, cross modulation between the classified and unclassified signal lines is reduced to an acceptable level. In addition, a locking arrangement in the box precludes patching to the locked out switchboard.

The Indicator Unit ID-866/SG mounts on the associated teletypewriter and indicates which jack of the SA-734/SG is exposed for patching. The lights are controlled by a microswitch actuated by the lock in the SA-734/SG.

1-3. EQUIPMENT LISTS.

a. Equipment Supplied.

Switch Box SA-734/SG, 5 1/2 inch dia. x 3 3/4 inch
Light Indicator ID-866/SG, 6 inches H x 2 inches W x 5 1/2 inches D
Plug, Shielded, (Tip, Ring, Sleeve).

b. Material Required but NOT Supplied.

Cable, Shielded	DSS-2, Stock No. G6145-260-8791 (Recommended) or TTRSA-2, Stock No. GX6145-184-1369 (only one of the two pair in cable is used)
Cable, 18-3	THFA, Stock No. GX6145-190-7489 (or Equivalent)
Cable, 18-2	DHFA, Stock No. GX6145-186-1497 (or Equivalent)

SECTION 2

INSTALLATION

2-1. EQUIPMENT LOCATION.

The Switch Box SA-734/SG is to be located conveniently near the associated teletypewriter equipment. Mount the Switch Box on the bulkhead at a height convenient for performing the patching and locking functions. The Indicator Light assembly mounts on the teletypewriter equipment table (or support) in clear view of the operator.

2-2. POWER REQUIREMENT.

The Indicator Lights require 115 VAC for operation. This is supplied from the associated teletypewriter.

2-3. INSTALLATION.

a. INSTALLATION OF SHIELDED CABLE AND SET PLUG (P-4) FOR TELETYPEWRITER OUTPUT/INPUT.

(1) Remove existing signal cable for teletypewriter equipment.

(2) Cut required length of shield cable (DSS-2 or TTRSA-2). Install shielded plug on one end as follows: (Refer to figure 2-1 and figure 2-2.)

(a) If TTRSA-2 cable is used, cut back one of the two pairs flush at both ends of the cable to preclude connection to any other circuits.

(b) Connect WHITE lead to tip.

(c) Connect BLACK lead to ring.

(d) Connect shield of cable to sleeve.

(3) Connect the other end of shielded cable to teletypewriter equipment in place of cable removed. Ground shield to teletypewriter frame.

b. INSTALLATION OF INDICATOR UNIT.

(1) Mount Indicator Light assembly on teletypewriter table or support in clear view of the operator.

NOTE

The Light Indicator Unit ID-866/SG is furnished for mounting on the right side of the teletypewriter equipment. If it is necessary to mount the unit on the left side of the teletypewriter, reverse the cover plate and the mounting plate (with associated backing strips) before proceeding.

Perform the following connections: (Refer to figure 2-3.)

(a) Procure length of THFA cable (cable 18-3) to reach from Indicator Light to planned location of Switch Box. Connect female Amphenol (P-3) on one end as follows:

1. One lead to terminal A.
2. One lead to terminal B.
3. One lead to terminal C.

(b) Feed other end of cable through Box Connector (H-1) and connect to TB-1 in Indicator Light unit as follows:

1. Lead from P-3(A) to terminal 5.
2. Lead from P-3(B) to terminal 4.
3. Lead from P-3(C) to terminal 2.

(2) Procure DHFA cable (cable 18-2) of required length. Feed one end through the same Box Connector (H-1) and connect to TB-1 as follows:

- (a) One lead to terminal 1.
- (b) One lead to terminal 3.

(3) Run other end of cable to teletypewriter equipment and connect to (output) side of power-on switch.

c. **PREPARATION OF REQUIRED SHIELDED CABLE FOR UNCLASSIFIED TRAFFIC.**
(Refer to figure 2-4.)

(1) This cable runs from the unclassified connector (J-1) on the Switch Box SA-734/SG to the Transmitter Control Switch C-1004A/SG.

(a) Cut a length of DSS-2 or TTRSA-2 cable long enough to reach between Transmitter Control Switch C-1004A/SG and Switch Box SA-734/SG. (If TTRSA-2 cable is used, cut back one pair flush at both ends. Refer to figure 2-5.) Install female connector (P-1) on one end as follows:

1. BLACK lead to pin B.
2. WHITE lead to pin A.
3. Ground shield to connector.

(b) Connect free end to Transmitter Control Switch C-1004A/SG as follows:

1. BLACK lead to B- terminal of TB-101.

2. WHITE lead to A+ terminal of TB-101.
3. Ground shield.

d. PREPARATION OF REQUIRED SHIELDED CABLE FOR CLASSIFIED TRAFFIC.
(Refer to figure 2-4.)

(1) This cable runs from the classified connector (J-2) on the SA-734/SG to the classified switch board.

(2) Cut length of DSS-2 or TTRSA-2 cable sufficient to reach from classified switch board to Switch Box SA-734/SG. (If TTRSA-2 cable is used, cut back one pair flush at both ends. Refer to figure 2-5.) Connect one end to classified switch board. Ground shield. Install female Amphenol connector (P-2) on other end as follows:

- (a) BLACK lead to pin B.
- (b) WHITE lead to pin A.
- (c) Ground shield to connector.
- (d) Make NO connection to pin C.

e. MOUNTING OF SWITCH BOX SA-734/SG.

- (1) Bolt Switch Box to bulkhead at suitable height.

NOTE

DO NOT weld Switch Box to bulkhead. This may damage internal insulation. Studs may be welded to bulkhead and Switch Box affixed to these.

f. INTERCONNECTIONS. (Refer to figure 2-6.)

(1) Connect Indicator Light unit cable (as prepared in paragraph 2-3b) to bottom Amphenol connector (J-3) on SA-734/SG.

(2) Connect unclassified cable (as prepared in paragraph 2-3c) to left hand (unclassified) connector (J-1) on SA-734/SG.

(3) Connect classified cable (as prepared in paragraph 2-3d) to right hand (classified) connector (J-2) on SA-734/SG.

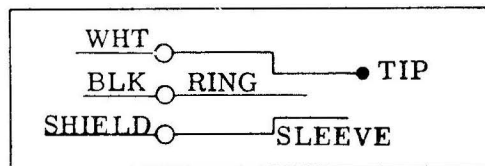
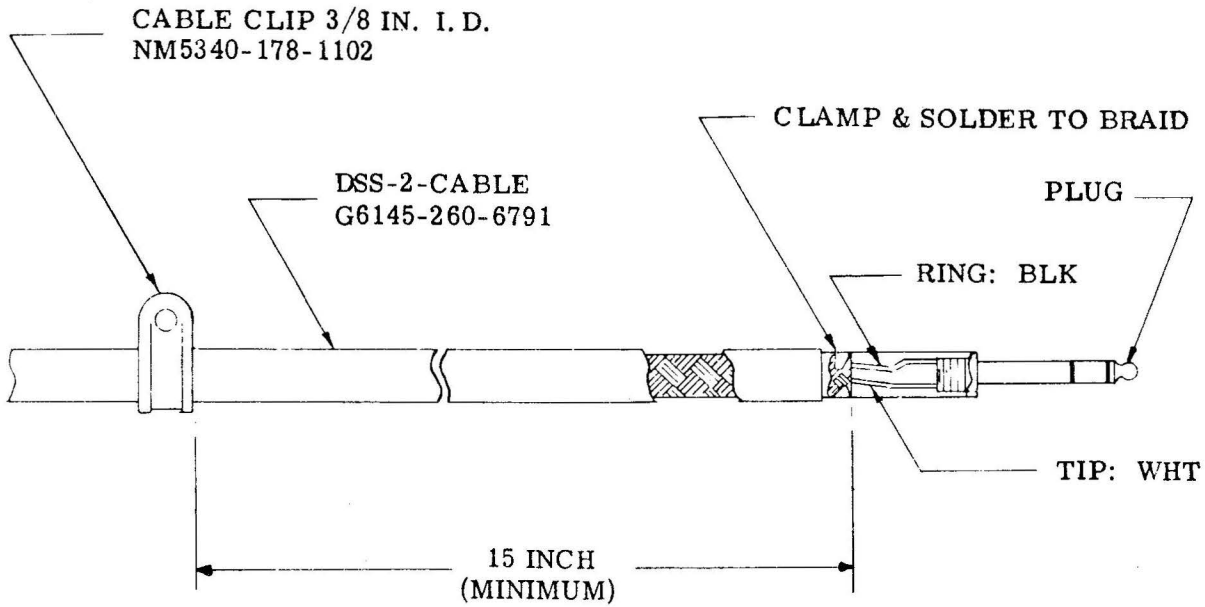
g. CHECKS AND INSPECTIONS.

(1) Measure resistance between all shielding and ground. Resistances should be zero or negligible.

(2) Check for grounded jacks or plugs.

(3) Check operation of lock and indicator light. With the classified jack exposed, the **GREEN** lamp should light. With the unclassified jack exposed the **RED** lamp should light. If the **GREEN** lights with unclassified and the **RED** lights with classified, check wiring from J-3, P-3 to ID-866/SG.

NOTE: EXACT ADHERENCE TO WIRING
INSTRUCTIONS IS IMPORTANT

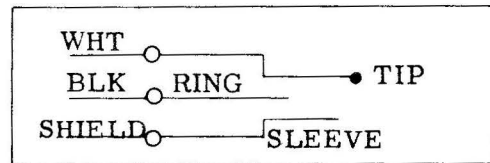
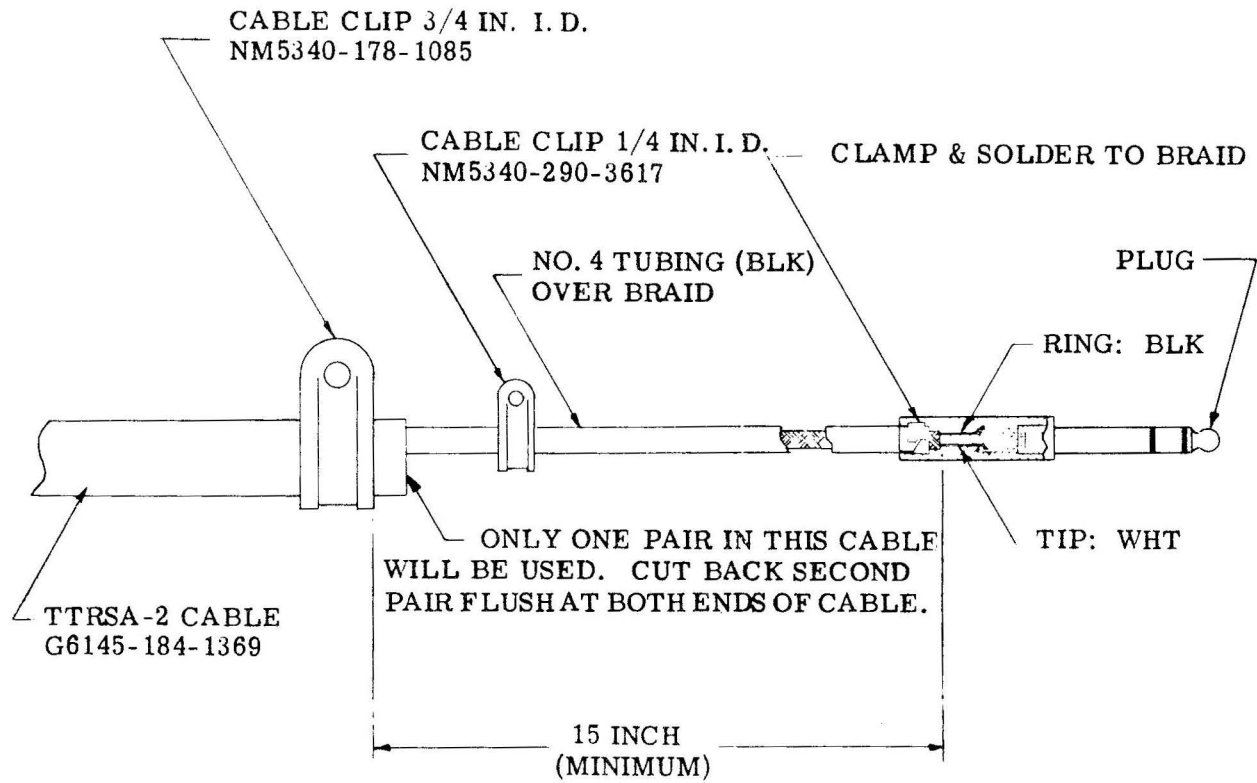


WIRING DETAIL

TELETYPEWRITER SET PLUG (P-4)
CONNECTIONS USING DSS-2 CABLE
(RECOMMENDED)
WIRING DETAIL

FIGURE 2-1

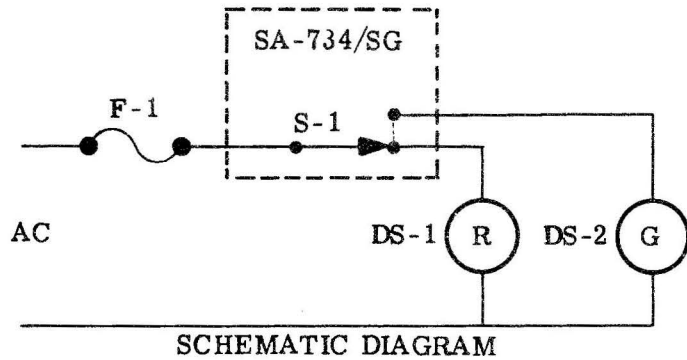
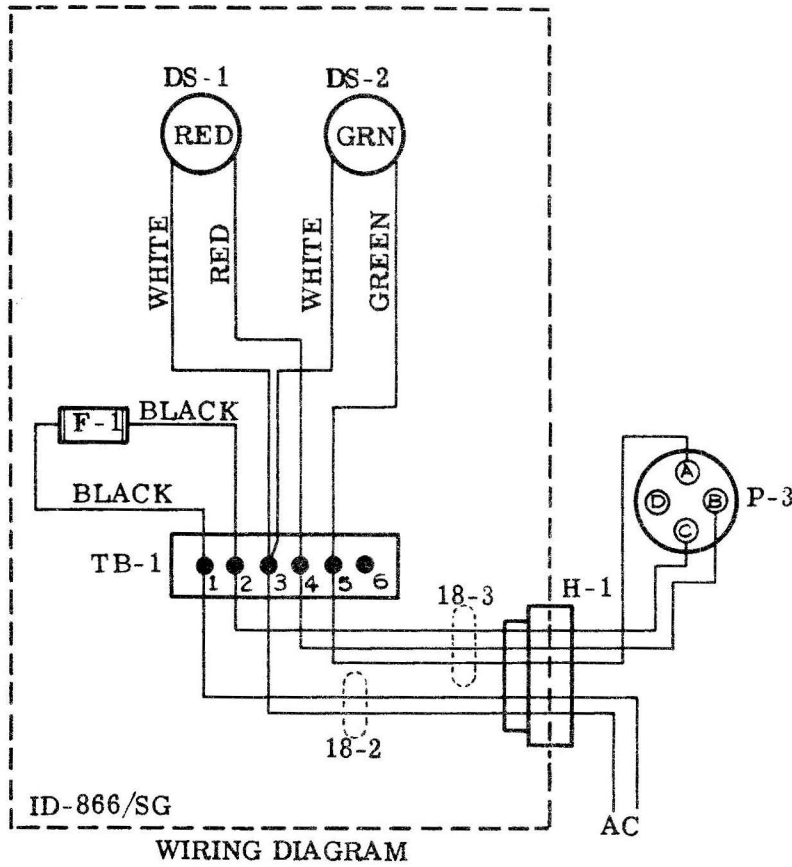
NOTE: EXACT ADHERENCE TO WIRING
INSTRUCTIONS IS IMPORTANT



WIRING DETAIL

TELETYPEWRITER SET PLUG (P-4)
CONNECTIONS USING TTRSA-2 CABLE
WIRING DETAIL

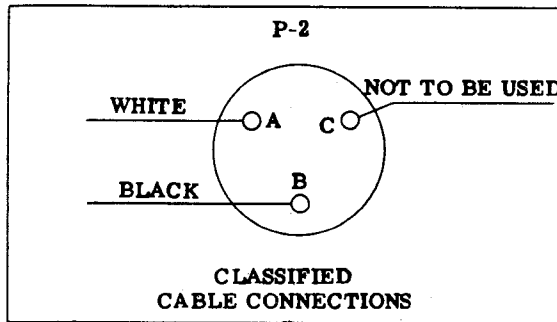
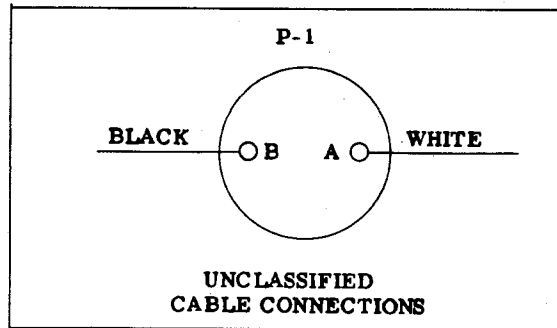
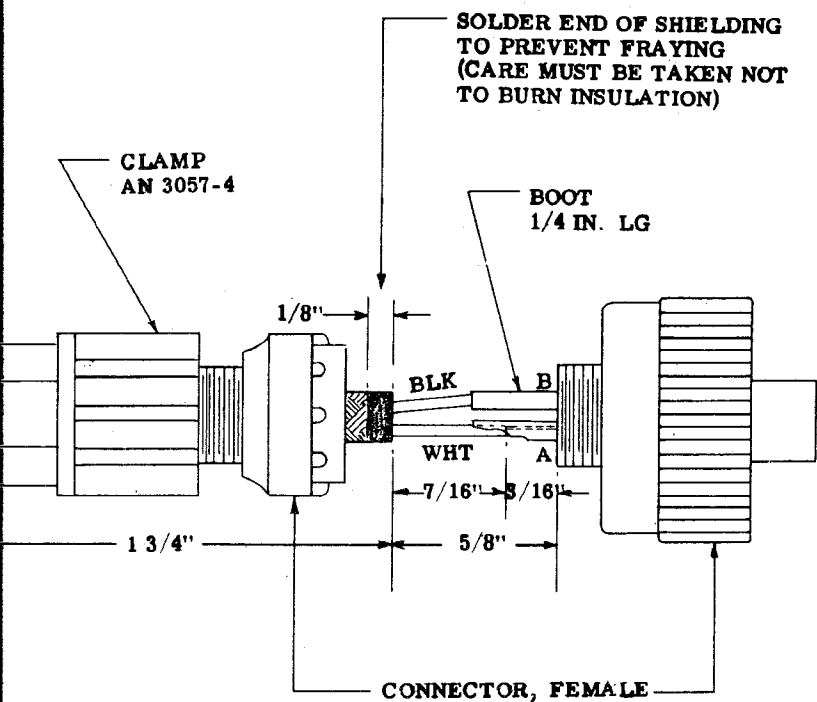
FIGURE 2-2



INDICATOR UNIT ID-866/SG

FIGURE 2-3

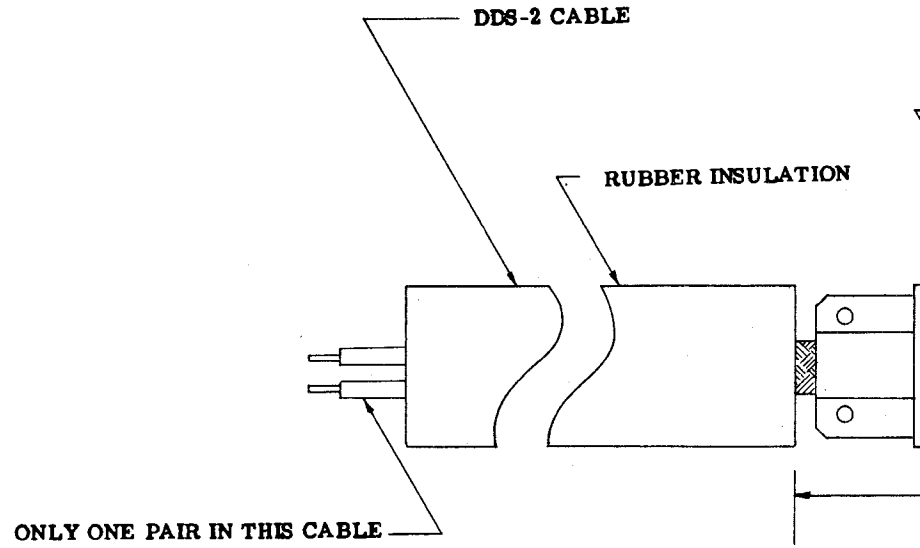
Figure
2-4



NOTE: EXACT ADHERENCE TO WIRING
INSTRUCTION IS IMPORTANT.

DSS-2 CABLE (RECOMMENDED)
WIRING DETAIL
CLASSIFIED AND UNCLASSIFIED CABLES
FIGURE 2-4

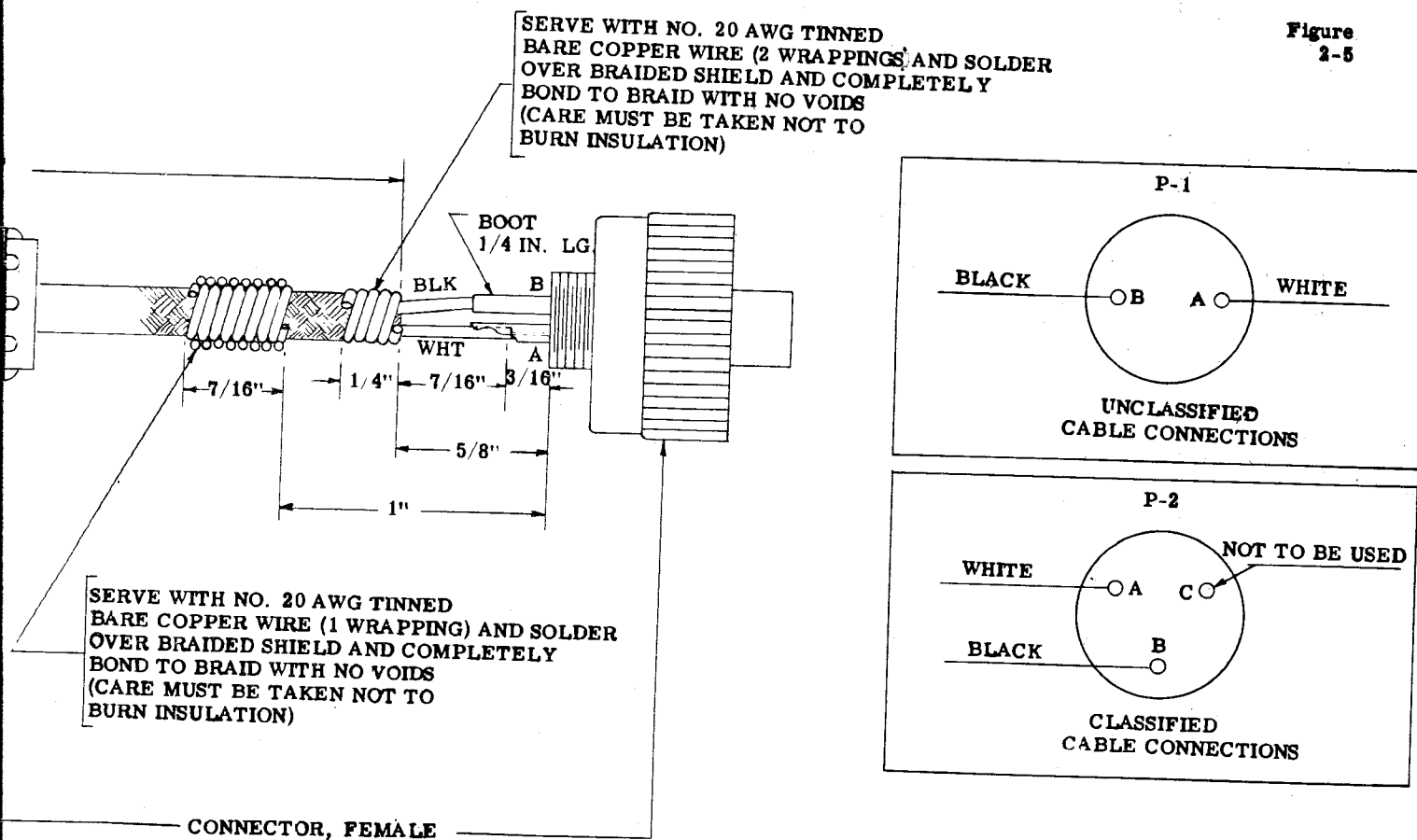
NAVSHIPS 93757
SA-734/SG
Installation



NOTE:
AFTER ASSEMBLY OF PLUG & CLAMP, TAPE FROM
1/4 IN. BEYOND RUBBER INSULATION TO REAR OF
CLAMP.

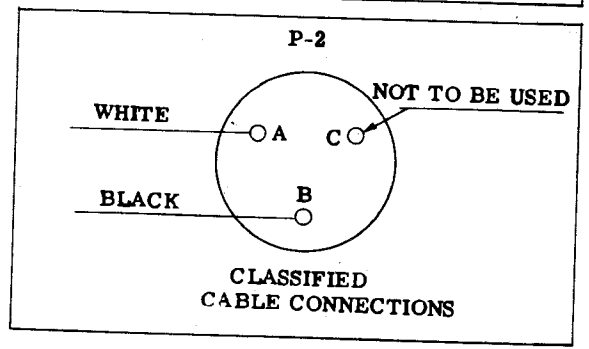
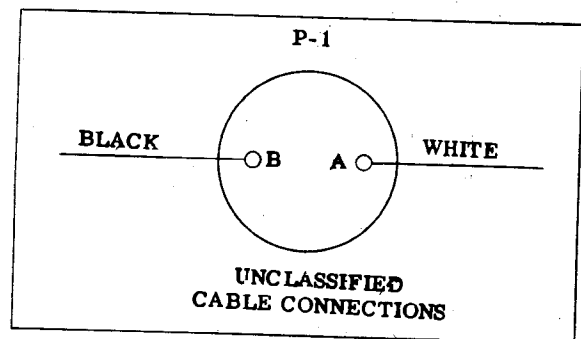
ORIGINAL

Figure
2-5

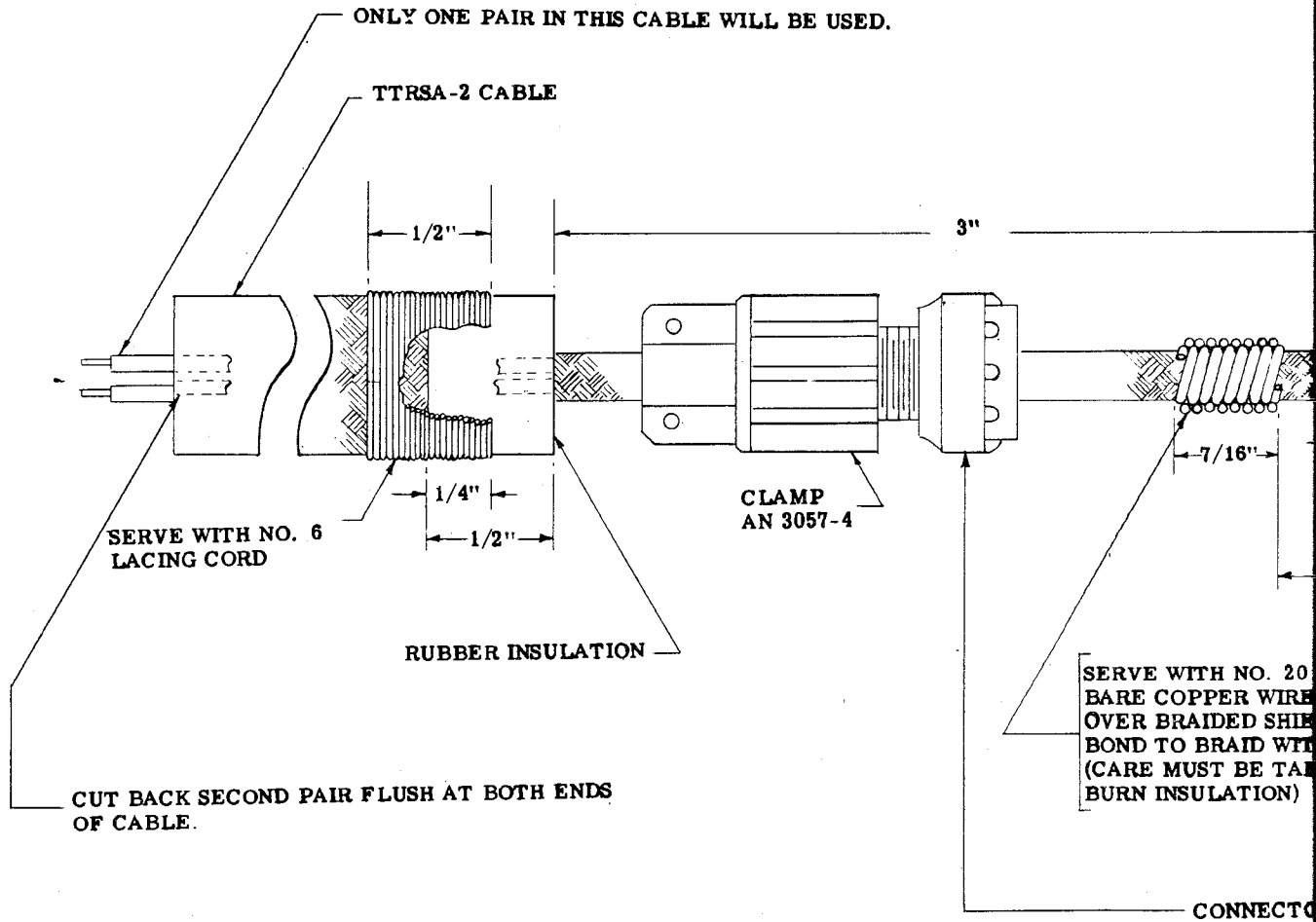


SERVE WITH NO. 20 AWG TINNED BARE COPPER WIRE (2 WRAPPINGS) AND SOLDER OVER BRAIDED SHIELD AND COMPLETELY BOND TO BRAID WITH NO VOIDS (CARE MUST BE TAKEN NOT TO BURN INSULATION)

SERVE WITH NO. 20 AWG TINNED BARE COPPER WIRE (1 WRAPPING) AND SOLDER OVER BRAIDED SHIELD AND COMPLETELY BOND TO BRAID WITH NO VOIDS (CARE MUST BE TAKEN NOT TO BURN INSULATION)



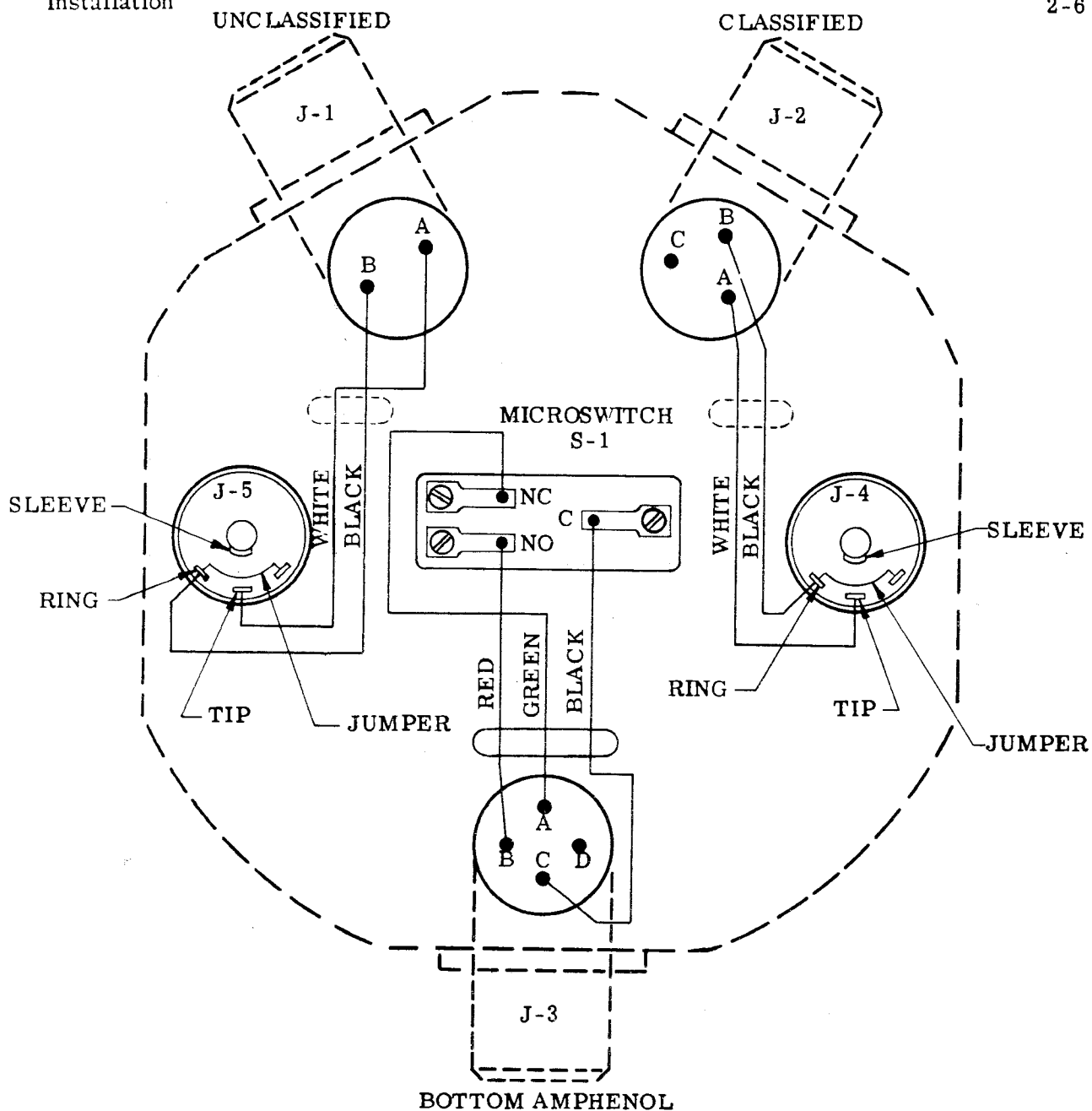
NAVSHIPS 93757
SA-734/SG
Installation



NOTE: EXACT ADHESIVE INSTRUCTIONS

NOTE: AFTER ASSEMBLY OF PLUG & CLAMP, TAPE FROM 1/4 IN. BEYOND NO. 6 LACING CORD TO REAR OF CLAMP.

ORIGINAL



WIRING DIAGRAM
SWITCH BOX SA-734/SG

FIGURE 2-6

SECTION 3

OPERATION

3-1. FUNCTIONAL OPERATION.

To receive or transmit classified traffic, patch the teletypewriter to the classified jack of the SA-734/SG. To receive or transmit unclassified traffic, patch the teletypewriter to the unclassified jack.

The lock tongue, by exposing only one of the jacks, prevents inadvertent patching by the operator.

3-2. OPERATING PROCEDURES.

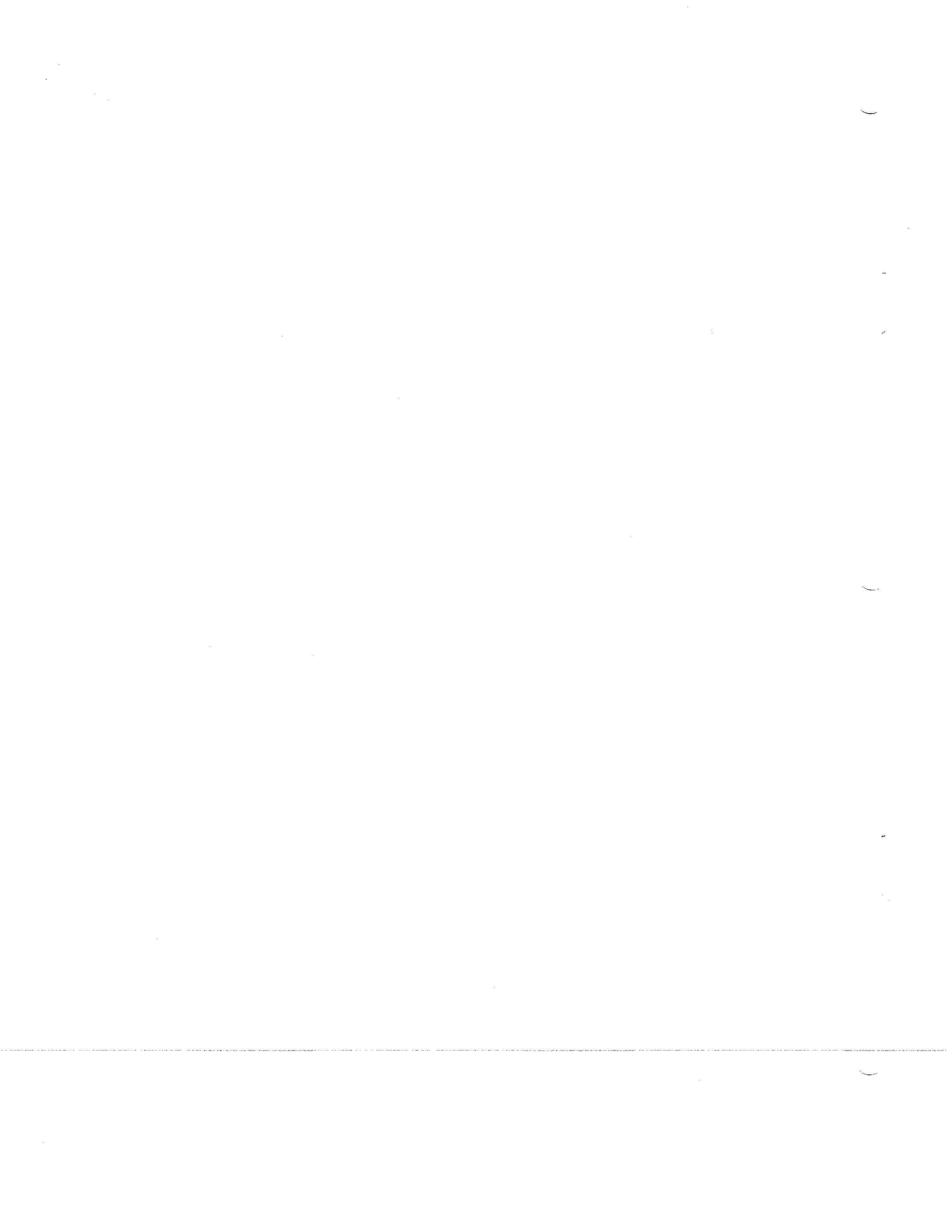
Obtain key and with it position lock tongue so as to expose only the desired jack. Plug the teletypewriter set line plug into the exposed jack.

3-3. OPERATOR'S MAINTENANCE.

Make weekly resistance measurement between all shielding and ground. Should the resistance be greater than zero, inspect all shielding for breaks and/or loose connections and remedy as necessary. The resistance between shielding and ground must be zero to maintain minimum cross-modulation.

IMPORTANT

If the SA-734/SG seal is broken, the SA-734/SG MUST BE CAREFULLY RETESTED to insure adequate RF signal attenuation between the circuits. Refer to Section 4, Test Procedure, for this procedure.



SECTION 4
TEST PROCEDURE

4-1. INTRODUCTION.

Upon assembly, each SA-734/SG Switch Box is tested for adequate RF signal attenuation between circuits, and then sealed. Should this seal be broken, IT IS ESSENTIAL THAT THE SA-734/SG BE RETESTED.

4-2. TEST EQUIPMENT AND ACCESSORIES REQUIRED.

a. One Signal Generator, SA-85/URM-25D. Accessories included with the equipment and used in this test include:

- (1) Fixed attenuator, 10:1, CN-224/URM-25D.
- (2) Coaxial cable, BNC 4 feet, CG-409/U.
- (3) BNC to type N coaxial adapter, UG-201A/U.
- (4) Coaxial termination, 50 ohms, MX-1487/URM-25D.
- (5) Cable assembly, 5 inches, CG-409/U.

b. One Radio Interference Field Intensity Meter, AN/PRM-1A(A or B). The following accessory is included and used in this test:

- (1) Matching Impedance, CU-195/PRM-1.

c. One Cable Assembly to be fabricated includes the following:

- (1) Coaxial cable, 2 feet, RG-58/U.
- (2) BNC male connector, UG-88C/U.
- (3) Telephone plug; tip, ring and sleeve type, Switchcraft #297.

d. One Cable Assembly to be fabricated includes the following:

- (1) Coaxial cable, 15 inches, RG-58/U.
- (2) BNC male connector, UG-88C/U.
- (3) Connector, 3 pin female, AN type, MS3106E-10SL-3S(C).
- (4) Cable Clamp for AN connector, AN3057-4A.

e. One Cable Assembly to be fabricated includes the following:

- (1) Coaxial cable, 15 inches, RG-58/U.
- (2) BNC male connector, UG-88C/U.
- (3) Connector, 2 pin female, AN type, MS3106E-10SL-4S(C).
- (4) Cable clamp for AN connector, AN3057-4A.

f. One Cable Assembly to be fabricated includes the following:

- (1) Coaxial cable, 15 inches, RG-58/U.
- (2) BNC male connector, UG-88C/U.

- (3) Connector, 4 pin female, AN type, MS3106E-12SL-844S(C).
- (4) Cable Clamp for AN connector, AN3057-6.

4-3. TEST PROCEDURE:

a. GENERAL.

(1) All interconnecting cables fabricated for this project should have the best RF connection that is practically possible between the cable shield and the shell of the connector. Otherwise, crosstalk between the interconnecting cables may become such a problem that reliable testing of the switch box may not be possible.

(2) Carefully observe all ground connections as indicated, and make them with the shortest piece of wire possible.

(3) If there is any doubt as to the accuracy of any measurement, check the signal level input before proceeding any further. Any attenuation measurement less than 80db or greater than 115db - taken at 20 megacycles - should be suspected as inaccurate and repeated with every precaution before being recorded as the final result.

(4) A typical data sheet is shown on page 4-6. It is suggested that the test data be tabulated in a similar manner on the same type data sheet. In any event, it is important to include all the information contained on this sheet, regardless of how it is presented.

b. PRELIMINARY.

(1) Assemble all the items listed in the **TEST EQUIPMENT AND ACCESSORIES** Section. Connect the signal generator and the field intensity meter to the AC line, turn on the equipment and allow it to warm up for approximately 20 minutes before recording any measurements.

(2) Secure a heavy copper braid or copper sheet to a good ground. This braid or sheet will serve as a ground plane for the test area.

(3) Connect short ground leads (AWG #18 or braid) from:

(a) Signal generator to the ground plane.

(b) Power supply of the PRM-1 to ground.

(c) Switch Box to ground. This connection should be made by placing the ground wire under one of the screw heads.

These three ground wires should be as short as possible, and in any event, should not exceed eight (8) inches in length.

c. MEASUREMENT OF TEST SIGNAL.

(1) Connect the test equipment and Switch Box as follows: (Refer to figure 4-1.)

(a) Connect the 200K open circuit jack (J101) of the signal generator to the unclassified phone jack of the Switch Box (J5) with the cable assembly (Item 3) fabricated specifically for this purpose.

(b) Connect the three cable assemblies (Items 5, 4 and 6) to the compatible AN connectors on the Switch Box, J1, J2 and J3.

(c) Connect the 10:1 attenuator, CN-224/URM-25D (Item 1-A) to the cable assembly (Item 5) affixed to the unclassified AN connector (J1). This terminates the output of the signal generator in 50 ohms.

(d) Connect cable assembly (Item 1-E) to the attenuator; the termination adaptor (Item 1-D) to Item 1-E; the 4 foot coaxial cable (Item 1-B) to the termination adaptor; the BNC-to-N-Adapter (Item 1-C) to the cable; the matching impedance, CU-195/PRM-1 (Item 2-A) to Item 1-C; and the antenna input of the Radio Interference Field Intensity Meter (Item 2) to the matching impedance.

(2) The signal generator is now connected directly to the field intensity meter through a 10:1 attenuator. Set the output of the signal generator to 1.0 volt at 20 megacycles (when adjusted for a meter reading of 10, the output of this jack (J101) is approximately 1.0 volt across a 50 ohm load.)

(3) Adjust the radio interference field intensity meter to read approximately 20 megacycles and tune for maximum meter deflection.

(4) Calibrate the RI-FI meter and verify the 1.0 volt output of the signal generator. (The field intensity meter will only record 0.1 volt or 100db due to the 10:1 attenuator in series with the meter. Therefore, add 20db to the meter indication or multiply the indicated voltage by a factor of 10 to determine the signal level output of the signal generator.)

d. MEASUREMENT OF R. F. ATTENUATION BETWEEN CLASSIFIED CIRCUIT AND UNCLASSIFIED CIRCUIT - INPUT TO UNCLASSIFIED PHONE JACK. (Refer to figure 4-2.)

(1) Disconnect the end of the coaxial termination (Item 1-D) from the cable assembly. Reconnect the coaxial termination (Item 1-D) to the cable assembly that is attached to the classified circuit (J2).

(2) Record the field intensity meter's indication in this circuit. (Note that there is no attenuator external to the field intensity meter to consider in this measurement; therefore, the field intensity meter will indicate directly the total value of the signal.)

(3) The difference in amplitude between the input signal (10×10^5 microvolts or 120db) and the detected signal of preceding paragraph is recorded as the effective attenuation between these two circuits. The value of attenuation should exceed 80db at 20 megacycles. If the figure is less than 80db, check your connections and repeat all procedures from 4-3b.

e. MEASUREMENT OF R. F. ATTENUATION BETWEEN THE UNCLASSIFIED CIRCUIT AND THE INDICATOR CIRCUIT.

(1) Disconnect the coaxial termination (Item 1-D) from the cable assembly (Item 4) of the classified circuit (J2) and reconnect it to the cable assembly (Item 6) of the Indicator circuit (J3).

(2) Record the RI-FI meter indication and compute the difference between the input signal level and the measured signal level for the attenuation between these two circuits.

f. MEASUREMENT OF R. F. ATTENUATION BETWEEN THE CLASSIFIED CIRCUIT AND THE INDICATOR CIRCUIT.

(1) Remove the input signal from J5 of the switch box and reinsert in J4 of the classified circuit (it will be necessary to turn the key to have access to the connector).

(2) Disconnect the attenuator (Item 1-A) from the cable assembly (Item 5) of the unclassified circuit (J1), and reconnect it to the cable assembly (Item 4) affixed to the classified circuit (J2). This connection terminates the signal generator with a matched load which is absolutely essential for any reliable results.

NOTE

The signal level input of this circuit should be identical to the signal input of the unclassified circuit if the dials of the test equipment have not been disturbed.

(3) The RI-FI meter is connected to J3 via the cable assembly (Item 6); record the meter indication and compute the difference between the input signal level and the measured signal level for the attenuation between these two circuits.

NOTE

The recordings taken across the Indicator circuit (J3) will vary 10-15db from those readings taken between the unclassified and classified circuits due to different circuit configurations. In any event, THE ATTENUATION MEASURED BETWEEN ANY TWO CIRCUITS AT 20 M. C. SHOULD BE 80 D. B. OR GREATER.

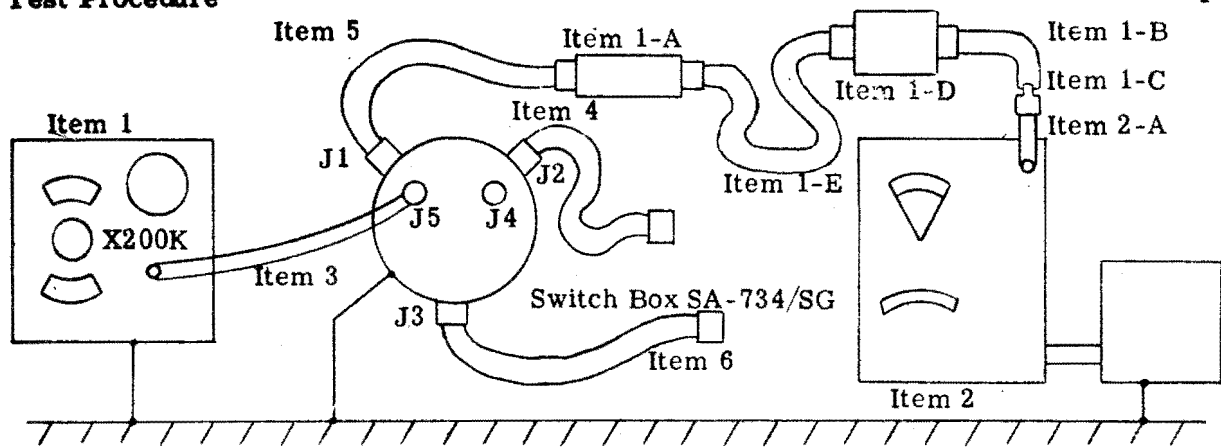
g. MEASUREMENT OF R. F. ATTENUATION BETWEEN CLASSIFIED CIRCUIT AND UNCLASSIFIED CIRCUIT -- INPUT TO CLASSIFIED PHONE JACK.

(1) Disconnect the coaxial termination and cable assembly (Items 1-D and 1-B) from the cable assembly (Item 6) of the Indicator circuit (J3) and reconnect to the cable assembly (Item 5) of the unclassified circuit (J1).

(2) Record the RI-FI meter indication; compute and record the attenuation as in paragraph 4-3d(2) and (3).

NOTE

The attenuation observed in this measurement should be approximately the same as that observed in paragraph 4-3d.



- | | | | |
|----------|------------------------|----------|--------------------|
| Item 1 | Sig. Gen. URM-25D | Item 2 | RI-FI Meter, PRM-1 |
| Item 1-A | Fixed Attenuator, 1-:1 | Item 2-A | Matching Impedance |
| Item 1-B | Cable Assembly | Item 3 | Cable Assembly |
| Item 1-C | BNC to N-Adapter | Item 4 | Cable Assembly |
| Item 1-D | Termination, 50 Ohms | Item 5 | Cable Assembly |
| Item 1-E | Cable Assembly | Item 6 | Cable Assembly |

SCHEMATIC

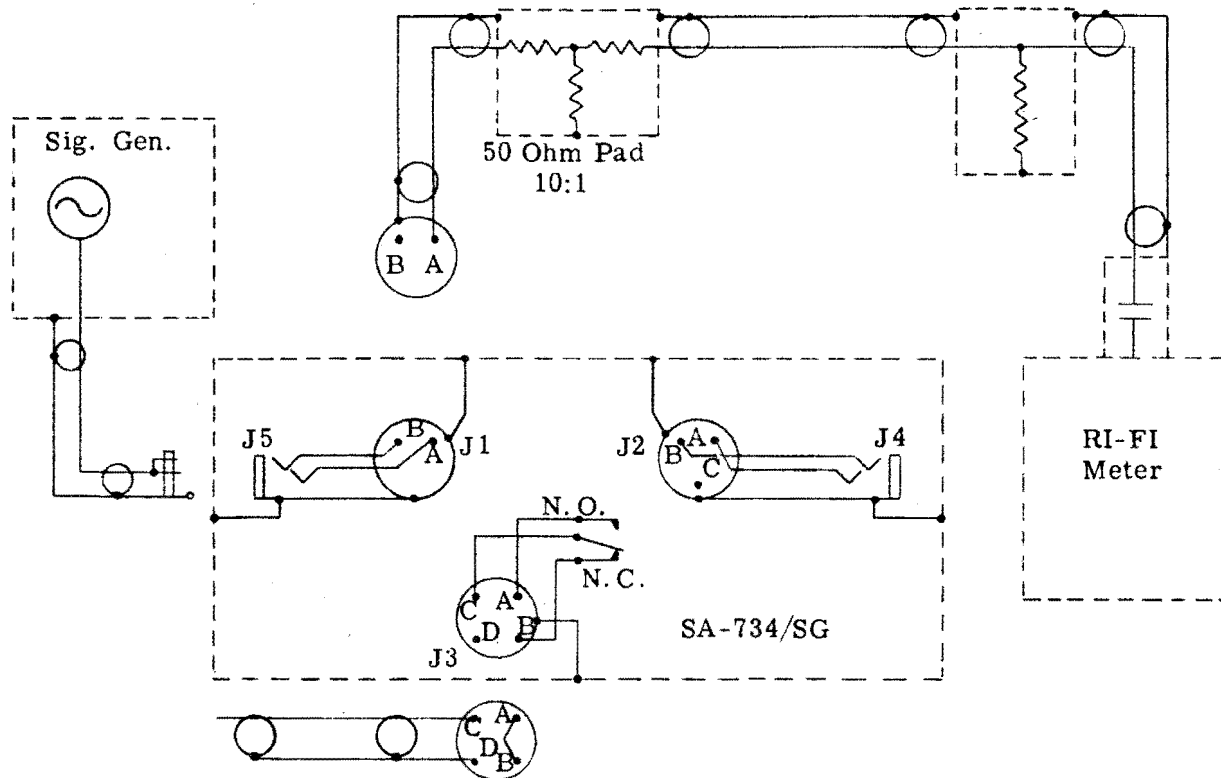
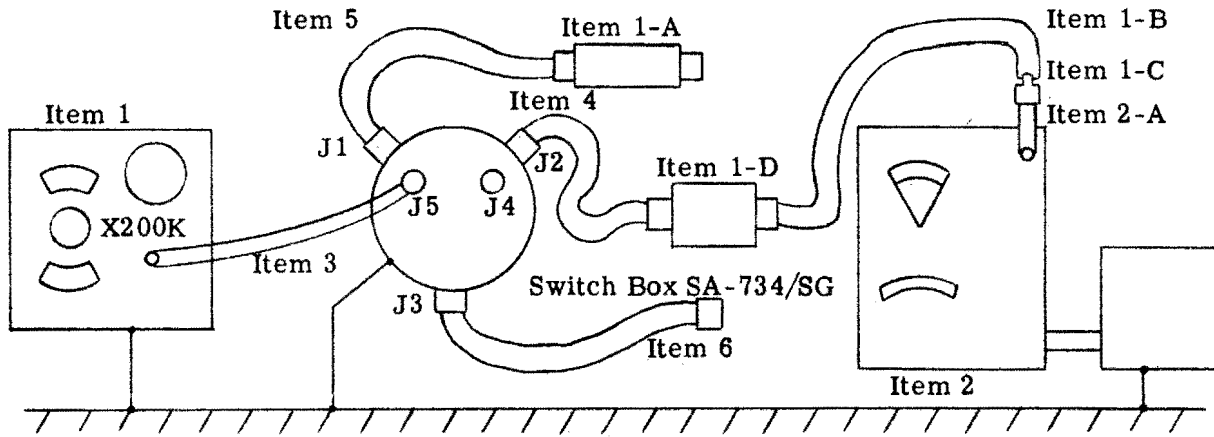


Figure 4-1 Equipment Configuration for Measurement of Test Signal from the URM-25D through the Switch Box SA-734/SG



- | | | | |
|----------|------------------------|----------|--------------------|
| Item 1 | Sig. Gen. URM-25D | Item 2 | RI-FI Meter, PRM-1 |
| Item 1-A | Fixed Attenuator, 1-:1 | Item 2-A | Matching Impedance |
| Item 1-B | Cable Assembly | Item 3 | Cable Assembly |
| Item 1-C | BNC to N-Adapter | Item 4 | Cable Assembly |
| Item 1-D | Termination, 50 Ohms | Item 5 | Cable Assembly |
| Item 1-E | Cable Assembly | Item 6 | Cable Assembly |

SCHMATIC

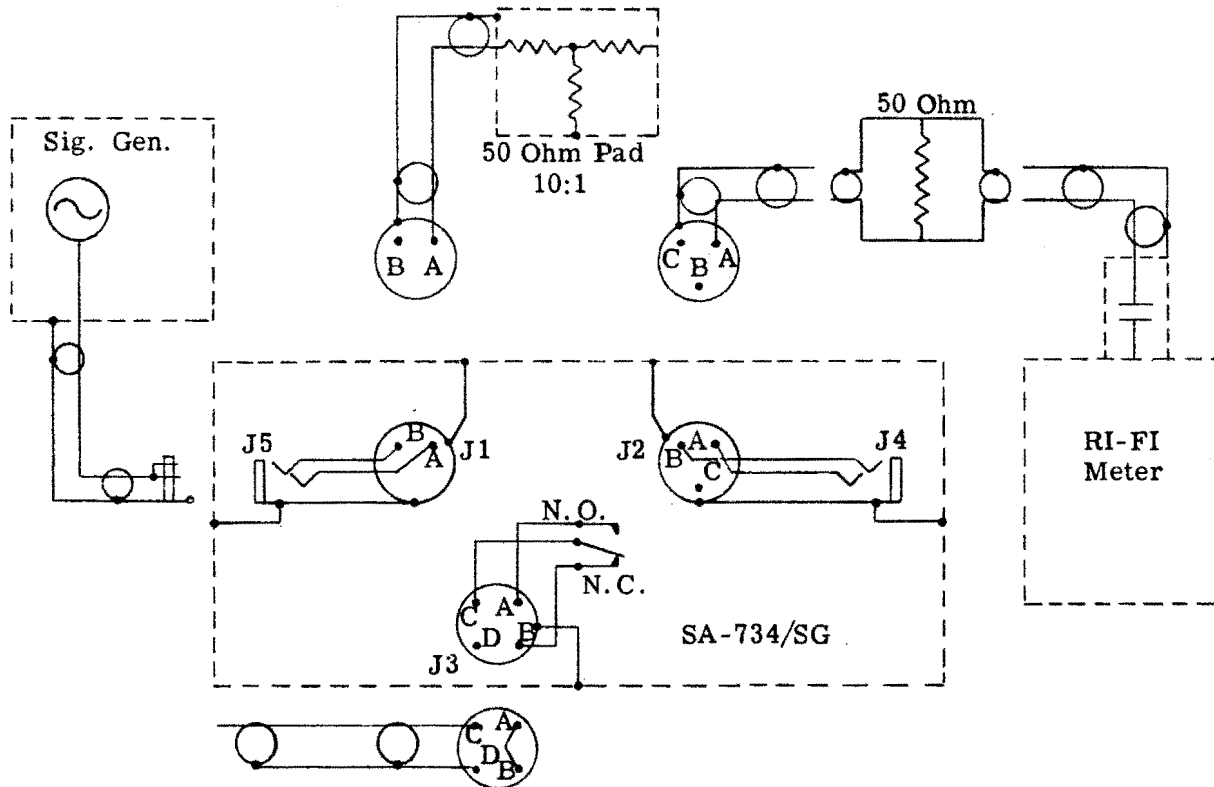


Figure 4-2 Equipment Configuration for Measurement of Attenuation from the Unclassified Circuit to the Classified Circuit

SECTION 5

PARTS LIST

5-1. PARTS LIST.

List of materials for standard size (5 1/2 inch diameter) Switch Box.

SA-734/SG SWITCH BOX

DESIG	DESCRIPTION	NAVY STOCK NO.	OTHER STOCK NO.	QTY
	Terminal Box (Modified)	HF5940-351-2223		1
	Jack Mounting Plate, Sheet Steel	Refer to NSEF Drwg. #FSC02227- 10B440		1
J4, J5	Jack, Shielded, 3 Contacts		Switchcraft No. CN-13B	2
J1	Connector, Male (Ch. Mt.) 2 Contact	NS5935-636-8290		1
J2	Connector, Male (Ch. Mt.) 3 Contact	NS5935-201-2723		1
J3	Connector, Male (Ch. Mt.) 4 Contact		AN3102A- 12SL-844P	1
P4	Plug, Shielded, 3 Contact		Switchcraft No. 297	1
P1	Connector, Female, 2 Contact	NS5935-553-3093	MS3106E- 10SL-4SC	1
P2	Connector, Female, 3 Contact	NS5935-553-3092		1
P3	Connector, Female, 4 Contact		97-3106A- 12SL-844SC	1
	Clamp, Cable	NS5935-280-2200	AN3057-4	2
	Clamp, Cable		AN3057-6	1
S1	Switch, SPDT		Microswitch No. BZ-3RS	1
	Wire (BLACK) MIL-W-16878/B, Type B Nylon Jacketed, No. 20		Alpha No. 1866-2	20"
	Wire (WHITE) MIL-W-16878/B, Type B Nylon Jacketed, No. 20		Alpha No. 1866-1	10"
	Wire (RED) MIL-W-16878/B, Type B Nylon Jacketed, No. 20		Alpha No. 1866-3	10"
	Wire (GREEN) MIL-W-16878/B, Type B Nylon Jacketed, No. 20		Alpha No. 1866-4	10"

SA-734/SG SWITCH BOX

DESIG	DESCRIPTION	NAVY STOCK NO	OTHER STOCK NO	QTY
	Tubing, Black Biraco No. 6		Birnbach Cat. No. 3268	12"
	Tubing, Black Biraco No. 8		Birnbach Cat. No. 3268	12"
	Front Panel Bearing (1/4 in. shaft) 9/16 in. Lg.		Birnbach No. 550	2
	Clamp, Hose 3/8 I.D.	G4730-289-1686		2
	Braided, Tinned, Copper		Belden No. 8669-1/2 I.D.	10"
	Hood, UG 106/U	NM5935-259-3045		2
	Washer, Lock 3/8 I.D. Internal Tooth	G5310-013-8542		2
	Screw, Brass, No. 6-32 Flat Hd., 1 in. Lg.	G5305-010-1015		6
	Washer, Lock No. 6 External Tooth	G5310-514-6738		10
	Nut, No. 6-32 Hex	G5310-265-9631		14
	Screw, No. 4-40 Pan Hd. 3/8 Lg.	G5305-043-6640		12
	Nut, No. 4-40 Hex Self Locking Cad Plated	G5310-197-2298		12
	Washer, Lock No. 10 Internal Tooth	GA5310-274-8686		4
	Seal, Lead 2 Hole Locking Slot, 1/2 in. OD 3/16 Thk, 2 Ply Wire	GA5340-292-0887		2
	Lock, Modified (Refer to Drawing No. FSC02227-10B459)		Corbin Lock No. 0738	1
	Insulation Sheet Electrical. 005 Thk. x 11/16 in. wide x 6 1/4 in. Lg. MIL-I-695A, Type F, Form R			2
	Spring, Shim Stock Steel .005 Thk. x 7/16 in. wide	Refer to NSEF Drwg. #FSC02227- 10B475		1
	Screw Modified	Refer to NSEF Drwg. FSC02227- 10A477		2

ID-866/SG LIGHT INDICATOR

DESIG	DESCRIPTION	NAVY STOCK NO.	OTHER STOCK NO.	QTY
	Light, Indicator, Housing		Budd Co. No. CU883	1
DS-1	Lens, RED	HF6210-295-2840		1
DS-2	Lens, GREEN	HF6210-295-2841		1
	Lamp Holder Assy.	HF6210-152-2808		2
	Bulb	GF6240-270-4697	Westinghouse No. 1769	4
TB-1	Terminal Strip	NS5940-355-4674	Kulka No.8TB6M	1
	Fuse Holder	NS5920-280-4167		1
F-1	Fuse 1/10 Amp. -250V	NF5920-131-9896		1
H-1	Connector, Box	GF5975-152-1145		1
***	Reversible Mounting Plate, Aluminum Sheet QQ-A-327 Temp-T6	Refer to NSEF Drwg # FSC02227- 10B453		1
***	Backing Strip, Steel QQ-S-636 Hot Rolled	Refer to NSEF Drwg. #FSC02227- 10A454		2
	Screw, Pan Head No. 6-32 x 1/2 Lg.	G5305-043-6665		2
	Nut, No. 6-32 Hex	G5310-274-7760		2
	Washer, Lock No. 6 External Tooth	G5310-514-6738		2
	Screw Drive, No. 2 Button Hd. 3/16 Lg.	G5305-253-5611		4
	Screw, No. 8-32 Flat Hd. 3/8 Lg.	G5305-290-2064		4
	Tubing, Black, Biraco No. 6		Birnbach Cat. No. 326	2"
	Lugs, Crimp Bandolugs		Burndy Corp. No. S-3E18-G-43	10

ID-866/SG LIGHT INDICATOR

DESIG	DESCRIPTION	NAVY STOCK NO.	OTHER STOCK NO.	QTY
	Wire (RED) MIL-W-16878/B, Type B Nylon Jacketed No. 20		Alpha No. 1866-3	8"
	Wire (GREEN) MIL-W-16878/B, Type B Nylon Jacketed No. 20		Alpha No. 1866-4	8"
	Wire (WHITE) MIL-W-16878/B, Type B Nylon Jacketed No. 20		Alpha No. 1866-1	8"
	Wire (BLACK) MIL-W-16878/B, Type B Nylon Jacketed No. 20		Alpha No. 1866-2	8"

*** Applied to early production models only: Add to late production models the following:

Page 5-2 -- Tubing, Black BIRACO No. 12, Birnbach Cat, No. 327BC, 6 inches

Page 5-3 -- Cover Plate, Refer to NSEF Drawing FSC02227-10B-512, 1

Reversible Mounting Plate, Refer to NSEF Drawing FSC-2227-10B-513, 1

No. 8-32 Flat Head Screw 2 1/4 inch Steel Cad Plated, 3

No. 8-32 Acorn Nuts, Steel Cad Plated, 3

No. 8 Washer Lock, External Tooth Steel Cad Plated, 3