

TM 11-2731

WAR DEPARTMENT TECHNICAL MANUAL

T7-536

INSTALLATION OF RADIO AND
INTERPHONE EQUIPMENT IN
CARRIAGE, MOTOR,
90-MM GUN, M36,
M36B1, or M36B2

RESTRICTED. DISSEMINATION OF RESTRICTED MATTER.
No person is entitled solely by virtue of his grade or position
to knowledge or possession of classified matter. Such matter
is entrusted only to those individuals whose official duties
require such knowledge or possession. (See also paragraph
23b, AR 380-5, 15 March 1944.)

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MAY 1945

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Washington 25, D. C., 14 May 1945

TM 11-2731, Installation of Radio and Interphone Equipment in Carriage, Motor, 90-MM Gun, M36, M36B1, or M36B2, is published for the information and guidance of all concerned.

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Refer to FM 21-6 for explanation of distribution formula.

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DESTRUCTION NOTICE

WHY — To prevent the enemy from using or salvaging this equipment for his benefit.

WHEN— When ordered by your commander.

- HOW** —
1. Smash—Use sledges, axes, handaxes, pickaxes, hammers, crowbars, heavy tools.
 2. Cut—Use axes, handaxes, machetes.
 3. Burn—Use gasoline, kerosene, oil, flame throwers, incendiary grenades.
 4. Explosives—Use firearms, grenades, TNT.
 5. Disposal—Bury in slit trenches, fox holes, other holes. Throw in streams. Scatter.

USE ANYTHING IMMEDIATELY AVAILABLE FOR DESTRUCTION OF THIS EQUIPMENT

- WHAT**—
1. Smash—All vacuum tubes, crystals, control dials, coupling coils, transformers, speakers in receivers, external loudspeakers, microphones, headsets, dynamotors, and cable connectors.
 2. Cut—All connecting wires, cording, and cabling.
 3. Burn—All equipment and all associated training, technical, and installation manuals.
 4. Bury or scatter—All remains, after destroying their usefulness.

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DESTROY EVERYTHING
SAFETY NOTICE

This equipment uses high voltages which are dangerous to life. Observe all safety precautions.

1. Make no adjustment with the power switch on.
2. Do not operate the equipment with the shields removed.
3. Do not connect power to any unit of the radio set until operating instructions have been read completely.

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SECTION I

GUIDE TO USE OF THIS MANUAL

1. Purpose

This manual provides methods and procedure, based upon actual field experience, for installation of radio and interphone equipment in Carriage, Motor, 90-MM Gun, M36, M36B1, or M36B2. All references in this manual to installation of equipment in Carriage, Motor, 90-MM Gun, M36 are also applicable to installations in Carriage, Motor, 90-MM Gun, M36B2. Official nomenclature followed by empty parentheses, such as Headset HS-30-(), is used to indicate any model of equipment regardless of its procurement.

2. Equipment

Installations covered include the following equipments:

- Radio Set SCR-610-()
- Interphone Equipment RC-99-()

3. Holes and Brackets

Brackets required for installation of the radio set are normally drilled and installed prior to

delivery of Carriage, Motor, 90-MM Gun, M36, M36B1, or M36B2. Drilling instructions are given in this manual for any other necessary holes and brackets. Do not relocate any holes or brackets unless absolutely necessary.

4. Preliminary Check

Study the illustrations, the installation methods outlined, and any subsequent changes to this manual before proceeding with installation of equipment.

Caution: Carriage, Motor, 90-MM Gun, M36, M36B1, or M36B2 has a 24-volt electrical system. Before installing the radio equipments, be sure they are designed for 24-volt operation, or tubes may burn out or dynamotors may be damaged.

5. Operating Check

Carefully study the Technical Manual covering the radio equipment before trying to operate it; then, make a thorough operating check to determine whether the equipment has been properly installed and is in working order.

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SECTION II

IGNITION NOISE SUPPRESSION IN CARRIAGE, MOTOR, 90-MM GUN, M36, M36B1, OR M36B2

6. General

Excessive ignition or other electrical noises may interfere with the operation of radio equipment in Carriage, Motor, 90-MM Gun, M36, M36B1, or M36B2. The Technical Manual issued with the vehicle will be helpful in locating the source of the noise, since it describes the suppression system used. Instructions for operating radio equipment used in the vehicle also should be studied. See TM 11-483 for further information on suppression of radio noises.

7. Procedure

Locate and suppress ignition noises as follows:

a. Start the motor of the vehicle and turn on the radio set. Put the receiver sensitivity control at *maximum*; then, listening to the receiver output with a headset, slowly tune the receiver over the entire range of frequencies to be used for communication.

b. When the frequency (or frequencies) with greatest noise level is found, turn off the vehicle engine. If this noise continues, the source is outside the ignition system. If noise stops, the trouble is in the ignition system.

c. Start the engine again. Adjust the receiver sensitivity control until engine noises can be distinguished easily from static, etc. Interference may then be identified as follows:

<i>Interference</i>	<i>Usual source</i>
Popping sound: corresponds to ignition firing; stops when engine is turned off, accelerates when engine is raced.	Ignition system.
Intermittent, clicking sound: lingers for several seconds when ignition is turned off.	Generator regulator.

<i>Interference</i>	<i>Usual source</i>
Whining sound: varies with speed of engine; ceases only when generator stops rotating.	Generator.
Sparking, or continuous crackling noise.	Brushes and commutator of generator.

d. Interference from other electrical parts and circuits of the vehicle, such as panel gauges and heater fans, can usually be identified by turning off the gauges, fans, or other suspected mechanisms individually.

e. If the source of interference still cannot be found by any of the preceding methods, connect a probe antenna (fig. 8) to the antenna terminal of the radio set. Slowly move the loop of the probe antenna over the various parts of the electrical system of the vehicle. Keep the loop close to, but not in contact with, the part being examined. Noise from interference-producing parts should be heard in the receiver.

f. Usually interference can be eliminated by cleaning, tightening, or replacing noise-producing parts. Examine and tighten all suppressor and shielding components, and all connections and grounding bonds. Clean the surface under them. This will assure good electrical contact between wires and terminals, and between metal casings and the frame of the vehicle. (Insulated but ungrounded metal parts absorb and reradiate electrical noises.)

g. If interference persists, suppressor components should be checked by substituting new ones. If a replacement is not available, disconnect the suspected component, and test capacitors, resistors, and chokes within it. Replace any that are defective.

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SECTION III

RADIO SET SCR-610-()

8. Required Parts

Items necessary for installation of Radio Set SCR-610-() in Carriage, Motor, 90-MM Gun, M36, M36B1, or M36B2 are listed below:

Basic unit Stock No. 2S610/24		
Quantity	Stock No.	Item
a1	6Q349	Alignment Tool TL-207.
a1	2A229C	Antenna AN-29-C.
a1	3B879	Case CS-79.
a1	2Z1890-137	Case CS-137.
1	6Z3147	Connector No. 61007 and Bondnut BL-50.
a2	2A2352/1	Fitting, includes spare.
a1	2B613	Handset TS-13.
a2	3G1250-64.15	Insulator, includes spare.
a2	3G586	Insulator IN-86.
d1	2A2081-15	Mast Base AB-15/GR
1	2Z6721-250	Mounting FT-250-().
d2	2A2416	Mast Section MS-116, includes spare.
d2	2A2417	Mast Section MS-117, includes spare.
d2	2A2418	Mast Section MS-118, includes spare.
1	2C5379	Radio Receiver and Transmitter BC-659-().
1	3H4496-120	Power Supply Unit PE-120-().
a1	2Z8056	Roll BG-56.
a15 ft	6Z7926	Rope RP-5.
a2	2Z9019	Strap ST-19.
a2	6D13037	TM 11-615.
1	3H6711	Vibrator VB-11.
a27 ft	1B29	Wire W-29.
6 ft	1B128	Wire W-128.

Part and location

Mounting FT-250-() on floor of right sponson (item 3, figs. 1 and 3).

Power Supply Unit PE-20-(), with Vibrator VB-11 (item 2, figs. 1 and 3), on Mounting FT-250-().

Method and materials

Secure Mounting FT-250-() to bracket furnished in vehicle, located on floor of right sponson as shown in figures 1 and 3, with 1/4-20x3/4-inch screws and 1/4-inch lockwashers.

Open case of Power Supply Unit PE-120-() and remove chassis cover. Place Vibrator VB-11 in its socket. Make certain that connector link is in BC-659 position, and that change-over plug is set for 24 volts (arrow pointing to 24), and that tubes are pressed down firmly

Installation unit Stock No. 2S610-V90/50		
Quantity	Stock No.	Item
a1	3A39	Battery BA-39.
a1	3A40	Battery BA-40.
1	3A41	Battery BA-41.
c1	4B417-4	Chest Set TD-4.
1	2Z3400-153	Cover BG-153.
b1	2B800-16	Headset H-16/U.
1	6L50-610V90	Hardware bag.
3	3G621	Insulator IN-121, includes spare.
a1	2B1645	Microphone T-45.

a. These items are not installed but are to be stowed in vehicle at discretion of using organization.

b. If Headset H-16/U is not available, one Headset HS-30-() (Stock No. 2B830) and one Cord CD-604 (Stock No. 3E1604) shall be used.

c. If Chest Set TD-4 is not available, one Cord CD-307-A (Stock No. 3E1307-5.5) and one Cord CD-318-B (Stock No. 3E1318) shall be used.

d. Mast Base MP-48 or MP-48-A, with Cover BG-108 and 2 each Mast Sections MS-51, MS-52, and MS-53, Clamps MC-423 and MC-424 may be substituted for Mast Base AB-15/GR, Mast Sections MS-116, MS-117, and MS-118 when used for M36, but must not be used for M36B1.

9. Assembly and Installation

Components of Radio Set SCR-610-() should be installed as shown in figures 1 and 3 and as directed below:

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Part and location

Method and materials

Radio Receiver and Transmitter BC-659-() and Battery BA-41 (item 1, figs. 1 and 3).

Mast Base AB-15/GR (item 4, fig. 3) and Mast Base MP-48-A (item 4, fig. 1).

in their sockets. Replace cover on chassis and close lid of power supply unit. Place Power Supply Unit PE-120-() on Mounting FT-250-() in position as shown in figures 1 and 3, and secure with provided hook fasteners. Route power cord, furnished with Power Supply Unit PE-120-(), to vehicle terminal box (item 36, fig. 1; item 44, fig. 3) located on sponson floor at rear of Mounting FT-250-(). Install connector (item 11, figs. 1 and 3) and bondnut (item 12, figs. 1 and 3) in terminal box knock-out hole to secure power cord.

If Battery BA-41 is not already installed in Receiver and Transmitter BC-659-(), install as follows: Remove receiver and transmitter chassis from case. Remove cover of battery compartment located on chassis near front panel. Place Battery BA-41 into battery compartment, being careful to engage plug into socket of battery. Replace cover. Before replacing chassis in its case make sure that all tubes are pressed down firmly in their proper sockets, that crystals for desired operating frequencies are in their proper sockets with retaining clip in position, and that the two toggle switches near left side of chassis are in ON position. Place Radio Receiver and Transmitter BC-659-() in position on Power Supply Unit PE-120-() as shown in figures 1 and 3. Secure with snap slide fasteners provided.

It is desirable that Mast Base AB-15/GR be used in Carriage, Motor, 90-MM Gun, M36 or M36B1; however, Mast Base MP-48-A or MP-48 may be used in M36 but may not be used in M36B1. Locate Mast Base AB-15/GR on antenna bracket (item 29, fig. 3) on right side of sponson, as shown in figure 1 for M36, or on antenna bracket on front of right sponson as shown in figure 3 for M36B1. Disassemble Mast Base AB-15/GR (fig. 6) by holding lower insulator, item 7, and turning body of mast base, item 2, counterclockwise. Place upper insulator, item 5, over hole in antenna bracket. Note that a neoprene washer, item 6, is cemented to each insulator, items 5 and 7. Place small neoprene washer, item 4, over item 5, and place plain washer, item 3, over item 4. Insert body of mast base, item 2, through hole in items 3, 4, 5, 6, and antenna bracket hole. Insert bolt, item 8, with insulator item 7 attached, into item 2 from underneath. Turn item 2 clockwise until mast base is tightened securely. See figure 5 for installation of Mast Base MP-48 or MP-48-A when used with Carriage, Motor, 90-MM

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Part and location

Method and materials

Wire W-128 and Insulator IN-121 (items 25 and 18, fig. 3; item 21, fig. 1).

Gun, M36. Remove internal lead-in assembly from mast base and use external lead-in.
Cut a 37-inch length of Wire W-128. Strip insulation from $\frac{1}{2}$ inch at each end, and solder-tin tips of wire. *CAUTION: Wire W-128 must be exactly 36 inches long between binding post on mast base and antenna terminal on radio set.* Solder a terminal (fig. 9) to one end of wire. Connect terminal to antenna terminal post on rear of Radio Receiver and Transmitter BC-659-(). Connect other end of wire to binding post (item 11, fig. 6) on Mast Base AB-15/GR. When installation is made in the M36B1, refer to detail A in figure 3. Place Insulator IN-121, with rubber washers (item 26, fig. 3), in hole through front hull plate. Pass Wire W-128 through Insulator IN-121, and tape Wire W-128 so that insulators are securely held in place. Use waterproof cement if available. When a single insulator of sufficient length can be obtained, it can be substituted for the two Insulators IN-121.

Mast Sections MS-116, MS-117, and MS-118 (items 5, 6, and 7, fig. 3).

Screw mast sections together and screw assembled sections into Mast Base AB-15/GR. When mast sections are removed, stow in Roll BG-56. If it is necessary to use Mast Sections MS-51, MS-52, and MS-53 with Clamps MC-423 and MC-424 on Mast Base MP-48 or MP-48-A in installation on M36, place clamps over joints of assembled mast sections to prevent loss of sections. Use Cover BG-108 over Mast Base MP-48 or MP-48-A when mast sections are not in place. Mast Base MP-48 or MP-48-A must not be used on M36B1.

Case CS-137.

Place 118 crystal units, supplied with Radio Receiver and Transmitter BC-659-(), in Case CS-137. Place Case CS-137 in Power Unit PE-120-().

Case CS-79.

Install Batteries BA-39 and BA-40 in Case CS-79. Stow Case CS-79 in convenient place in vehicle, as recommended by using organization.

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SECTION IV

INTERPHONE EQUIPMENT RC-99

10. Required Parts

Items necessary for installation of Interphone Equipment RC-99 in Carriage, Motor, 90-MM Gun, M36, M36B1, or M36B2 are listed below:

Basic unit Stock No. 2S99/24		
Quantity	Stock No.	Item
4	6Z3147	Connector No. 61007 and Bondnut BL-50.
d2	2C675-739A	Control Box BC-739-A.
d1	2C1738H	Interphone Control Box BC-606-H.
1	2C1637	Interphone Amplifier BC-667.
a2	6D13033	TM 11-702.

Installation unit Stock No. 2S99-V90/50		
Quantity	Stock No.	Item
ab4	4B417-4	Chest Set TD-4.
35 ft	3E2213	Cordage CO-213.
1	6L50-99V90	Hardware bag.
ac4	2B800-16	Headset H-16/U.
a4	2B1645	Microphone T-45.

Part and location

Cordage CO-213 (items 16, 17, 18, 19, 20, fig. 1; items 19, 20, 21, 22, 23, and 24, fig. 3).

Method and materials

Figure 1 lists approximate lengths of cordage required for installation of interphone system in Carriage, Motor, 90-MM Gun, M36, and figure 3 lists approximate lengths of cordage required for installation of interphone system in Carriage, Motor, 90-MM Gun, M36B1. *Wire as much of the equipment as possible before installing in vehicle.* Cut Cordage CO-213 (items 16, 18, 19, and 20, fig. 1; items 19, 22, 23, and 24, fig. 3) to proper lengths. Strip back 3½ inches of outer rubber cover and 2½ inches of the inner and outer shields. Using a pointed instrument, separate weave of shielding of the exposed 1-inch ends. Strip ½ inch of insulation from black lead at point exposed by separation of shields. Twist separated wires of both shield braids around exposed portion of black lead and solder together using minimum of solder. Black lead is used for ground as shown in figure 2. Cut Cordage CO-213 (item 17, fig. 1; items 20 and 21, fig. 3) to required lengths. Strip back 8½ inches of outer rubber covering and 7½ inches of outer shield-

Quantity	Stock No.	Item
d2	2C1738H	Interphone Control Box BC-606-H.
1	6H6306	Reel Assembly RL-106/VI.
2	6H6308	TM 11-2254.

a. These items are not installed but are to be stowed in vehicle at discretion of using organization.

b. If Chest Set TD-4 is not available, 4 Cord CD-307-A (Stock No. 3E1307-5.5) and 4 Cord CD-318-A (Stock No. 3E1318-A) shall be used.

c. If Headset H-16/U is not available, 4 Headset HS-30-() (Stock No. 2B830) and 4 Cord CD-604 (Stock No. 3E1604) shall be used.

d. If basic unit contains Control Box BC-739 and Interphone Control Box BC-606-A, -B, -C, -D, -E, -F, or -G; and Control Box BC-739-A and Interphone Control Box BC-606-H cannot be obtained, suitable waterproofing must be applied to the control boxes issued.

11. Assembly and Installation

Components of Interphone Equipment RC-99 shall be installed as shown in figures 1, 2, 3, and 4, and as directed below:

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Part and location

Control Box BC-739-A with Mounting FT-507 (item 10, fig. 1; item 10, fig. 3).

Interphone Control Box BC-606-H with Mounting FT-507 (item 9, figs. 1 and 3).

Method and materials

ing, and tape the shielded pair of red and green wires as shown in figure 2. Parallel white and yellow leads, and black and brown leads, and solder proper lugs (obtained from terminal box) to wires as shown in figure 2.

Secure Mounting FT-507, supplied with Control Box BC-739-A, to interphone bracket furnished in hull of vehicle. Locate interphone bracket as shown in figure 1 for Carriage, Motor, 90-MM Gun, M36, and figure 3, for Carriage, Motor, 90-MM Gun, M36B1. Place Control Box BC-739-A on Mounting FT-507 and secure with studs and hex. nuts furnished with control box. Remove disk sweated over hole in control box, and install two connectors and bondnuts as follows: Place rubber washer (furnished with control box) over threaded stem of connector No. 61007; insert stem through hole in control box and feed Cordage CO-213 (item 16, fig. 1 or item 19, fig. 3) through connector into control box and secure connector with Bondnut BL-50. Solder ends of wires to numbered terminals on terminal strip inside control box, as shown in figure 2.

Secure Mounting FT-507, supplied with Interphone Control Box BC-606-H, to interphone brackets furnished in hull and turret of vehicle. Locate loader's Interphone Control Box BC-606-H on left side of turret as shown in figure 1 or figure 3. Secure interphone control box with studs and hex. nuts furnished. Locate commander's Interphone Control Box BC-606-H on right side of turret as shown in figures 1 and 3. Secure interphone control box with studs and hex. nuts furnished. Locate gunner's Interphone Control Box BC-606-H on right side of turret, forward of commander's interphone control box, as shown in figures 1 and 3. Secure interphone control box with studs and hex. nuts furnished. Remove disk sweated over hole in each interphone control box and install connectors, bondnuts, and cordage as follows: Place rubber washers (furnished with interphone control boxes) over threaded stem of connector No. 61007, insert stem through hole in interphone control box and feed Cordage CO-213 (items 18, 19, and 20, fig. 1; items 22, 23, and 24, fig. 3) through connectors into proper interphone control box and secure connectors with Bondnut BL-50. Solder ends of wires to numbered terminals on terminal strip inside control box as shown in figure 2, detail A. Jumpers connected between terminals 1 and 8, and between terminals 5 and 6 are required for wiring of commander's box only.

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Part and location

Method and materials

Control Box BC-739 and Interphone
Control Box BC-606-A, -B, -C, -D,
-E, -F, and -G.

When Control Box BC-739 is substituted for Control Box BC-739-A, Mounting FT-507 is not supplied. Control box is secured directly to interphone bracket in hull of vehicle. When Interphone Control Box BC-606-A, -B, -C, -D, -E, -F, or -G is substituted for Interphone Control Box BC-606-H, Mounting FT-507 is not supplied. Apply suitable waterproofing to substitute interphone control boxes and secure directly to interphone brackets in turret and hull of vehicle. Cordage CO-213 is secured by means of a clamp on interphone control box and wiring is performed as shown in figure 2. Patch cords from Control Box BC-739 or BC-739-A terminate with Plugs PL-55 and PL-68 which are to be inserted into headset and microphone jacks on front panel of Radio Receiver and Transmitter BC-659-(). Route and secure patch cords as shown in figures 1 and 3.

Interphone Amplifier BC-667 (item
8, figs. 1 and 3).

Remove screws around edge of panel of Interphone Amplifier BC-667. Remove amplifier chassis from case. Remove necessary knockouts from case, and install connectors No. 61007 and Bondnuts BL-50 in holes. Lead prepared tips of Cordage CO-213 (items 17 and 16, fig. 1; items 20, 21, and 19, fig. 3) through connectors and bondnuts and connect to terminal strip inside amplifier as shown in figure 2. Secure case of Interphone Amplifier BC-667 on bracket, installed by manufacturer, in bulkhead in right sponson as shown in figures 1 and 3, using hardware supplied. Route Cordage CO-213 as shown in figures 1 and 3, and secure with cordage clamps. Place Tubes VT-107, supplied with interphone amplifier, in tube sockets on chassis and place one Tube VT-107 in spare socket in cabinet Interphone Amplifier BC-667. Replace chassis of amplifier into case and secure by replacing original screws in panel of chassis.

Hooks (item 15, fig. 1; item 16, fig.
3) and clips (item 17, fig. 3).

Install with hardware provided as shown in figures 1 and 3.

Reel Assembly RL-106/VI (fig. 4).

See TM 11-2254 before beginning this installation. Disassemble Reel Assembly RL-106/VI as follows: Place brake lever on Reel RL-108/VI in drag position. Place a wrench on square shoulder of spindle; holding the mounting block on other side of reel, unscrew spindle from mounting block. This removes entire reel, except brake disk, from mounting block. Remove brake disk from mounting block by removing four No. 8 machine screws holding brake disk to mounting block. Location of mounting block is shown in figure 4. Weld mounting block securely to right side wall of turret as shown

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RESTRICTED*Part and location**Method and materials*

in fig. 4. Weld Guide Ring MX-171/VI securely to right side wall of turret at an angle from mounting block, as shown in figure 4. Assemble Reel Assembly RL-106/VI as follows: Replace brake disk on mounting block. Secure brake disk to mounting block by means of four No. 8 machine screws previously removed. Replace reel unit on mounting block. Place brake lever in drag position, place a wrench on square shoulder of spindle and screw spindle into mounting block. Insert plugs on Cords CD-264 and CD-265 (furnished with reel assembly) into jacks on jack box on Reel RL-108/VI and into commander's Interphone Control Box BC-606-H, located on right side wall of turret. Thread Cordage CO-146 through Guide Ring MX-171/VI, and place Junction Box J-65/VI onto bracket on guide ring as shown in figure 4.

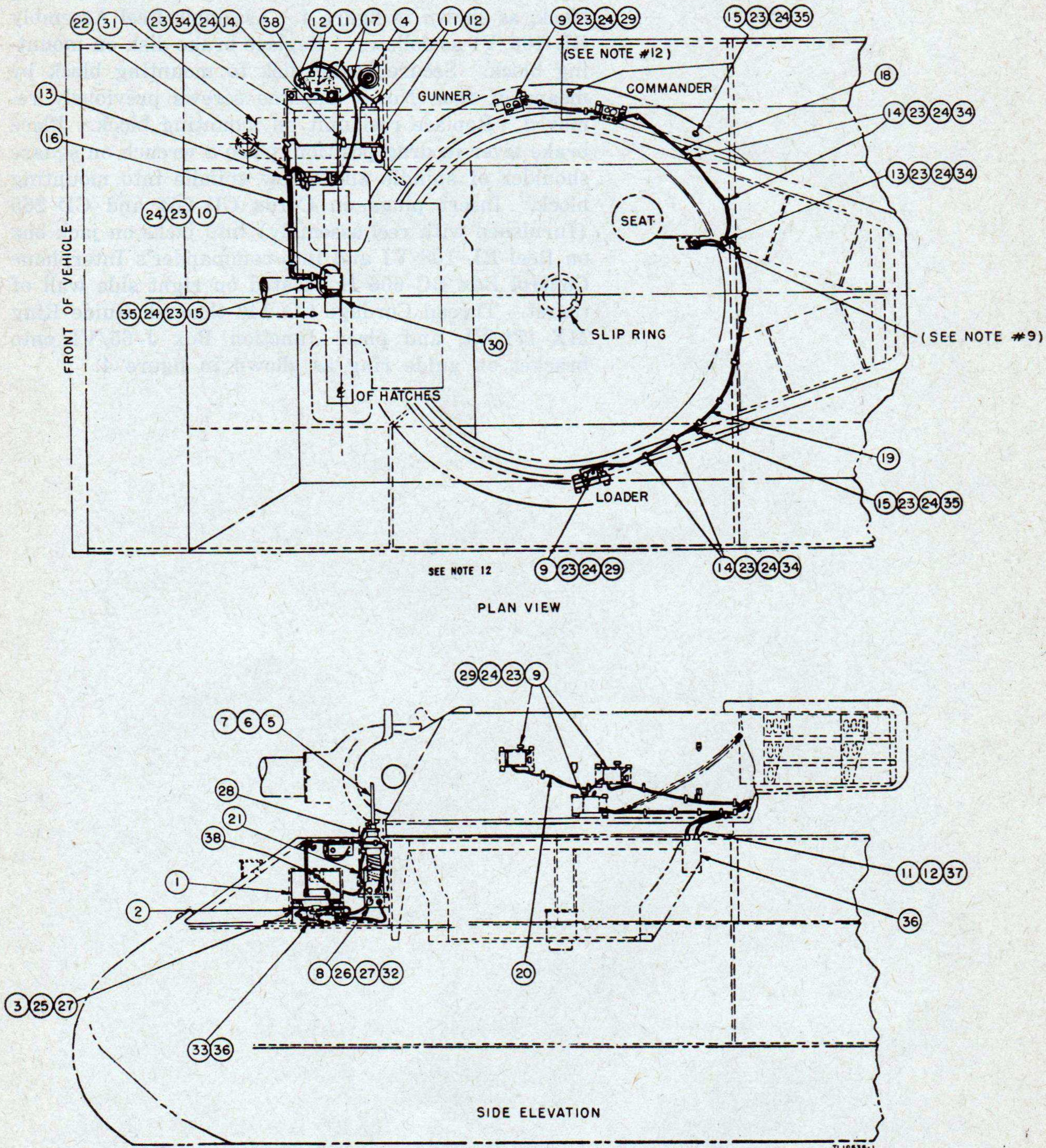
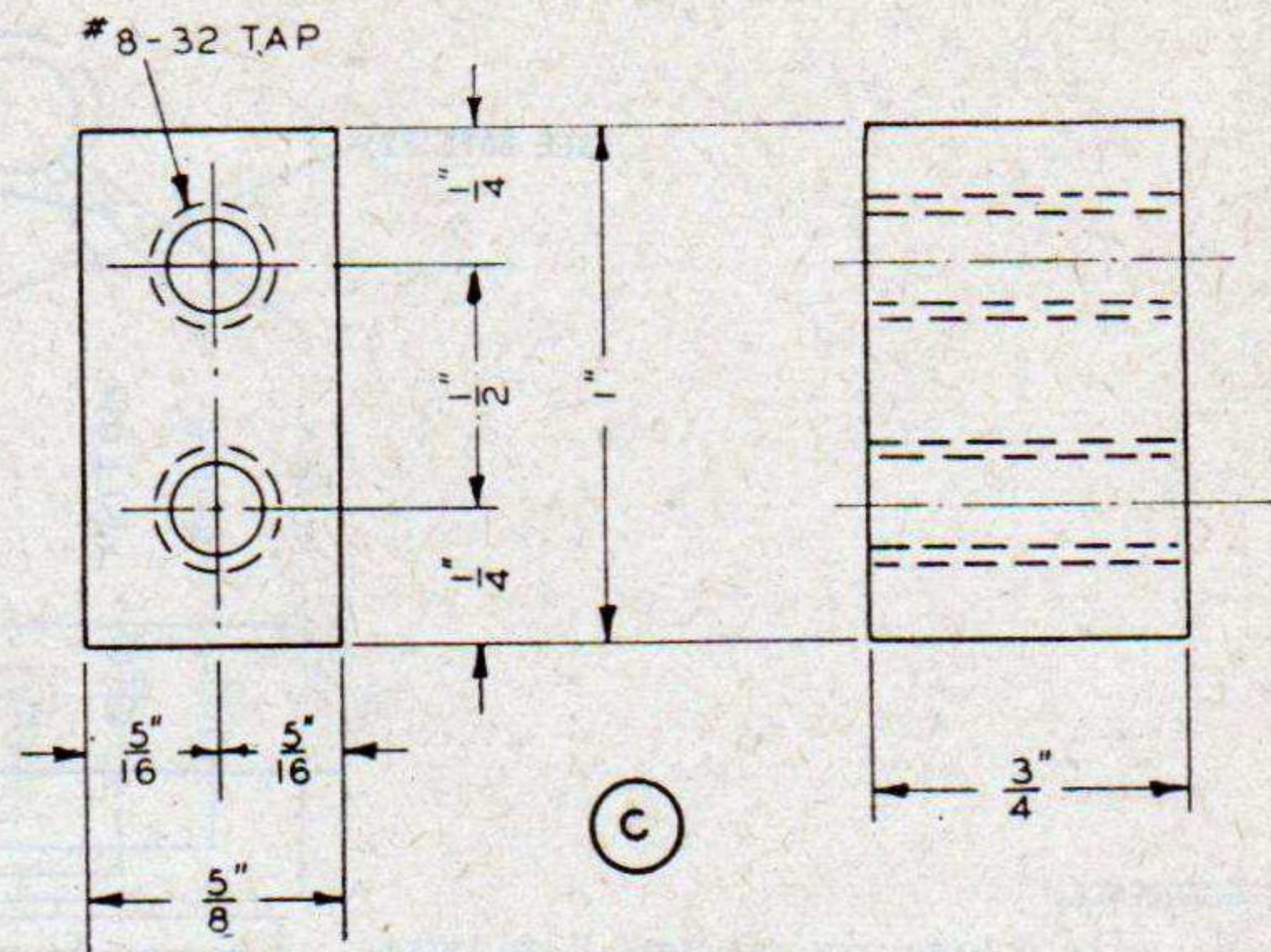
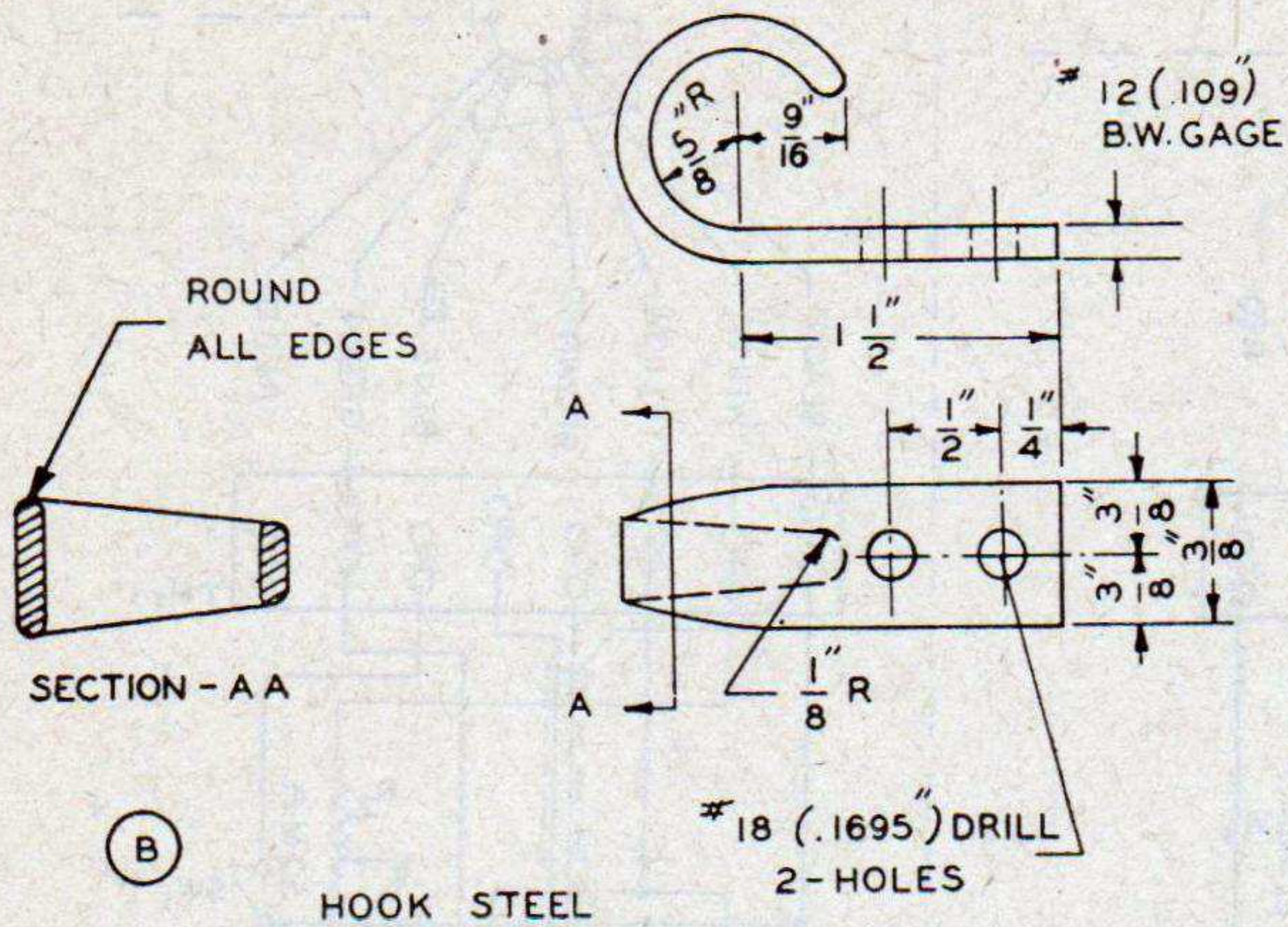
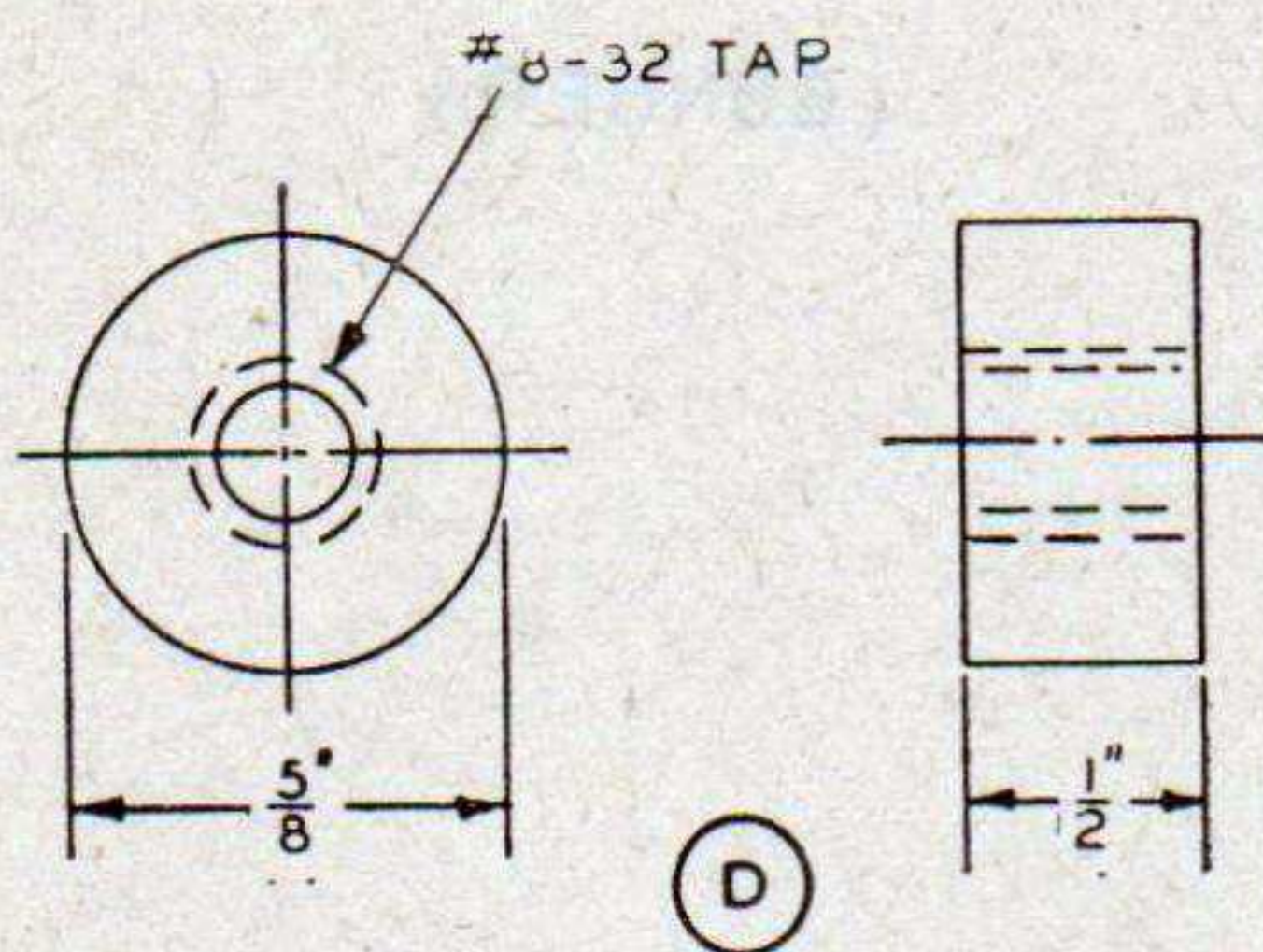


Figure 1. Installation of Radio Set SCR-610-() and Interphone

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STEEL SPACER FOR MOUNTING INTERPHONE HOOKS AND CLIPS



STEEL SPACER FOR MOUNTING INTERPHONE CONDUIT CLAMPS

NOTE:

1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS SEE REQUIRED PART LIST.
2. ITEMS (29) TO (36) INCLUSIVE ARE FURNISHED WITH THE VEHICLE BY MANUFACTURER.
3. (21) CUT TO PROPER LENGTH. TIN ENDS FOR ANTENNA CONNECTIONS.
4. USE (28) WHEN MAST SECTIONS MS-51, MS-52 AND MS-53 ARE NOT IN USE.
5. (14) (15) (23) AND (24) ARE FURNISHED WITH (9) AND (10)
6. (37) IS REDUCING WASHER NO. 3703 AS MADE BY THOMAS AND BETTS OR EQUAL.
7. USE POWER UNIT PE-117 CONNECTED TO 12 VOLT TERMINAL IN (36) IF (2) IS NOT AVAILABLE.
8. SEE FIGURE 2 FOR WIRING DIAGRAM OF RC-99.
9. CORDAGE SHALL BE WELL TAPED AT TURRET RING TO PROVIDE ADDITIONAL PROTECTION.
10. DIMENSIONS UNLESS OTHERWISE SHOWN ARE IN INCHES.
11. USE MAST BASE AB-15/GR WITH MAST SECTIONS MS-116, MS-117 AND MS-118 IF AVAILABLE.
12. LATE PRODUCTION VEHICLES ARE PROVIDED WITH A DUAL MOUNTING BRACKET NO. A-349547, ON RIGHT WALL OF TURRET, INSTEAD OF TWO SINGLE BRACKETS.

ITEM NO.	NAME OF ITEM	QUANTITY REQUIRED
1	RADIO RECEIVER AND TRANSMITTER BC-659-()	1
2	POWER SUPPLY UNIT PE-120-() WITH VIBRATOR VB-11	1
3	MOUNTING FT-250-()	1
4	MAST BASE MP-48-A	1
5	MAST SECTION MS-51	1
6	MAST SECTION MS-52	1
7	MAST SECTION MS-53	1
8	INTERPHONE AMPLIFIER BC-667	1
9	INTERPHONE CONTROL BOX BC-606-()	3
10	CONTROL BOX BC-739-()	1
11	CONNECTOR NO. 61007	8
12	BONDNUT BL-50	8
13	CLAMP NO. 7 SEE FIGURE 7	5
14	CLAMP NO. 4 SEE FIGURE 7	17
15	HOOK SEE DETAIL "B"	5
16	CORDAGE CO-213 7 FT. 6 IN. LONG	1
17	CORDAGE CO-213 46 IN. LONG	2
18	CORDAGE CO-213 5 FT. 5 IN. LONG	1
19	CORDAGE CO-213 8 FT. LONG	1
20	CORDAGE CO-213 37 IN. LONG	1
21	WIRE W-128 37 IN. LONG SEE NOTE 3	1
22	COVER BG-153 SEE NOTE 11	1
23	RD.HD.MACH.SCREW NO. 8-32 X 3/8 IN. LONG	44
24	LOCKWASHER STD. FOR NO. 8 SCREW	44
25	HEX.HD.CAP. SCREW 1/4-20 X 3/4 LONG	4
26	RD.HD. MACH.SCREW 1/4-20 X 1 1/4 LONG	4
27	LOCKWASHER STD. FOR 1/4 IN. SCREW	8
28	COVER BG-108 SEE NOTE 4	1
29	BRACKET NO. A-349613 SEE NOTE 12	3
30	BRACKET NO. B-260137	1
31	BRACKET NO. B-260027	1
32	BRACKET NO. B-229674	1
33	BRACKET NO. B-200363	1
34	SPACER NO. A-191935 SEE DETAIL "D"	21
35	SPACER NO. A-191964 SEE DETAIL "C"	5
36	TERMINAL BOX	2
37	REDUCING WASHER SEE NOTE 6	2
38	TERMINAL SEE FIGURE 9	1

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- NOTE:
- FIGURE REFERENCE:
FOR INSTALLATION OF RADIO SET SCR-610-() AND INTERPHONE EQUIPMENT RC-99 IN CARRIAGE, MOTOR, 90 MM GUN, M36.....FIG 1.
FOR INSTALLATION OF RADIO SET SCR-610-() AND INTERPHONE EQUIPMENT RC-99 IN CARRIAGE, MOTOR, 90 MM GUN, M36B1.....FIG 3.
 - END OF ALL UNUSED CABLE WIRES SHALL BE TAPED.
 - DOTTED CIRCLE AROUND CABLE INDICATES SHIELD.
 - PARALLEL WHITE AND YELLOW LEADS, BROWN AND BLACK LEADS OF CORDAGE CO-213 FOR POSITIVE AND NEGATIVE POWER CONNECTIONS, RESPECTIVELY.
 - M = 1000 Ω

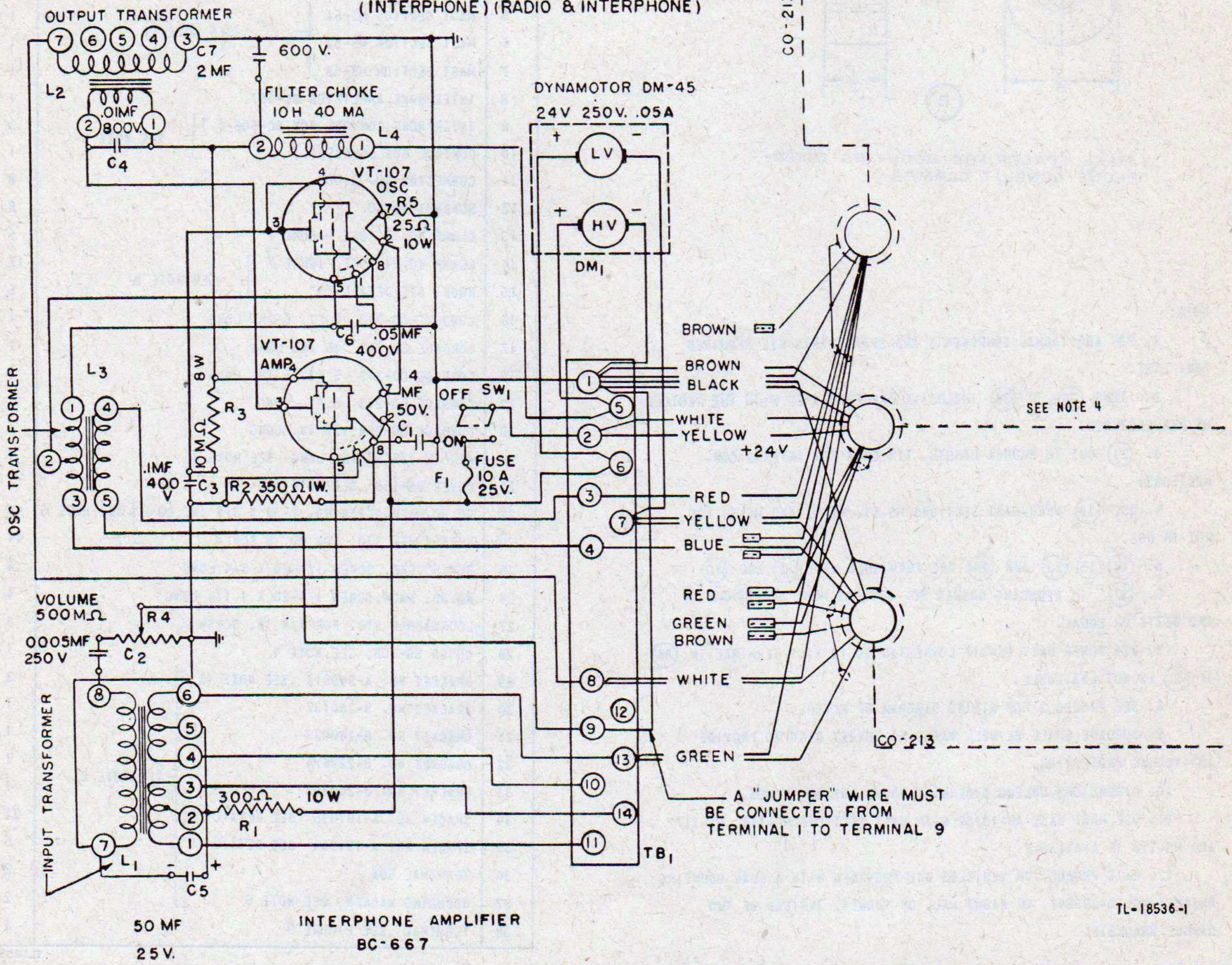
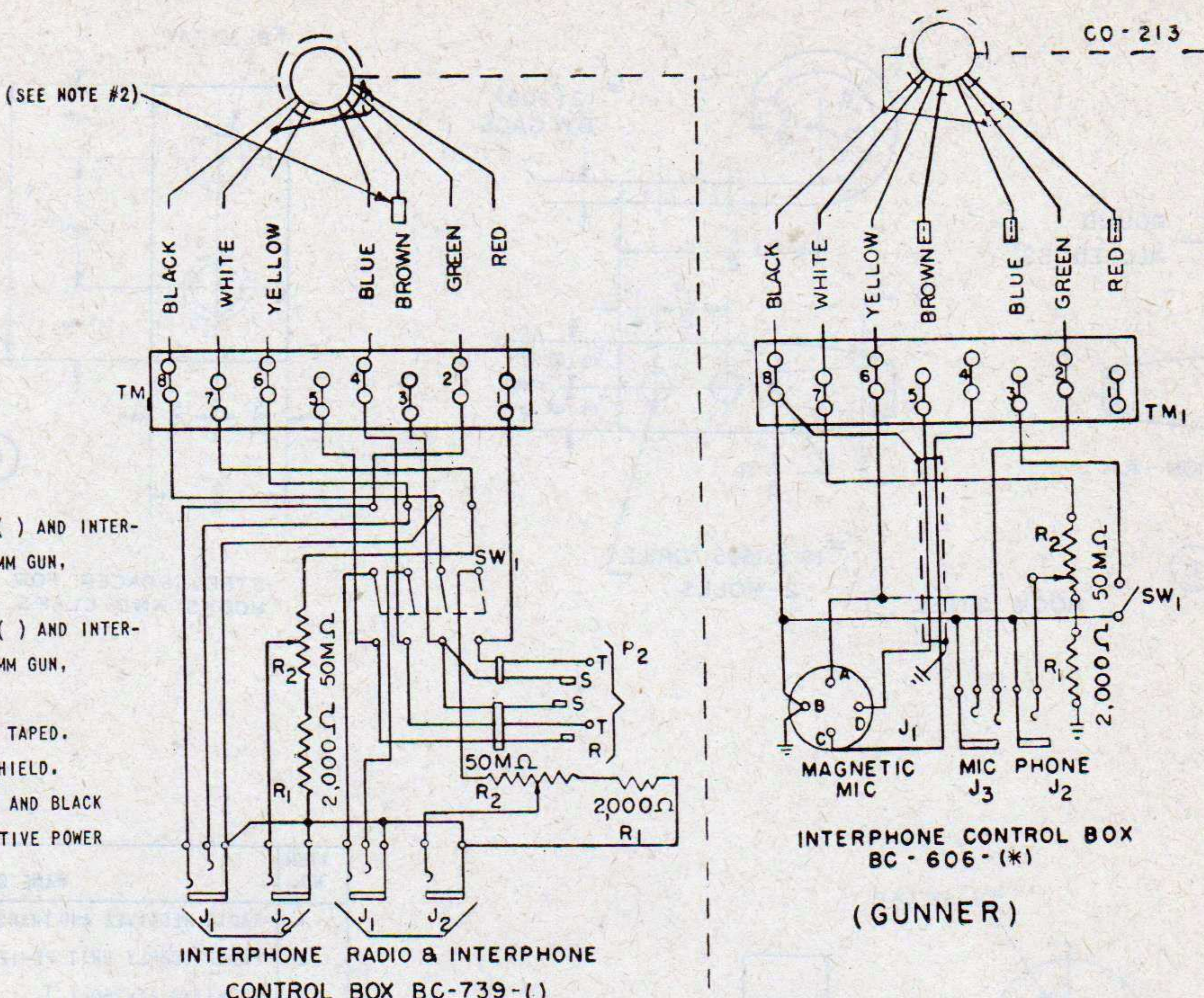
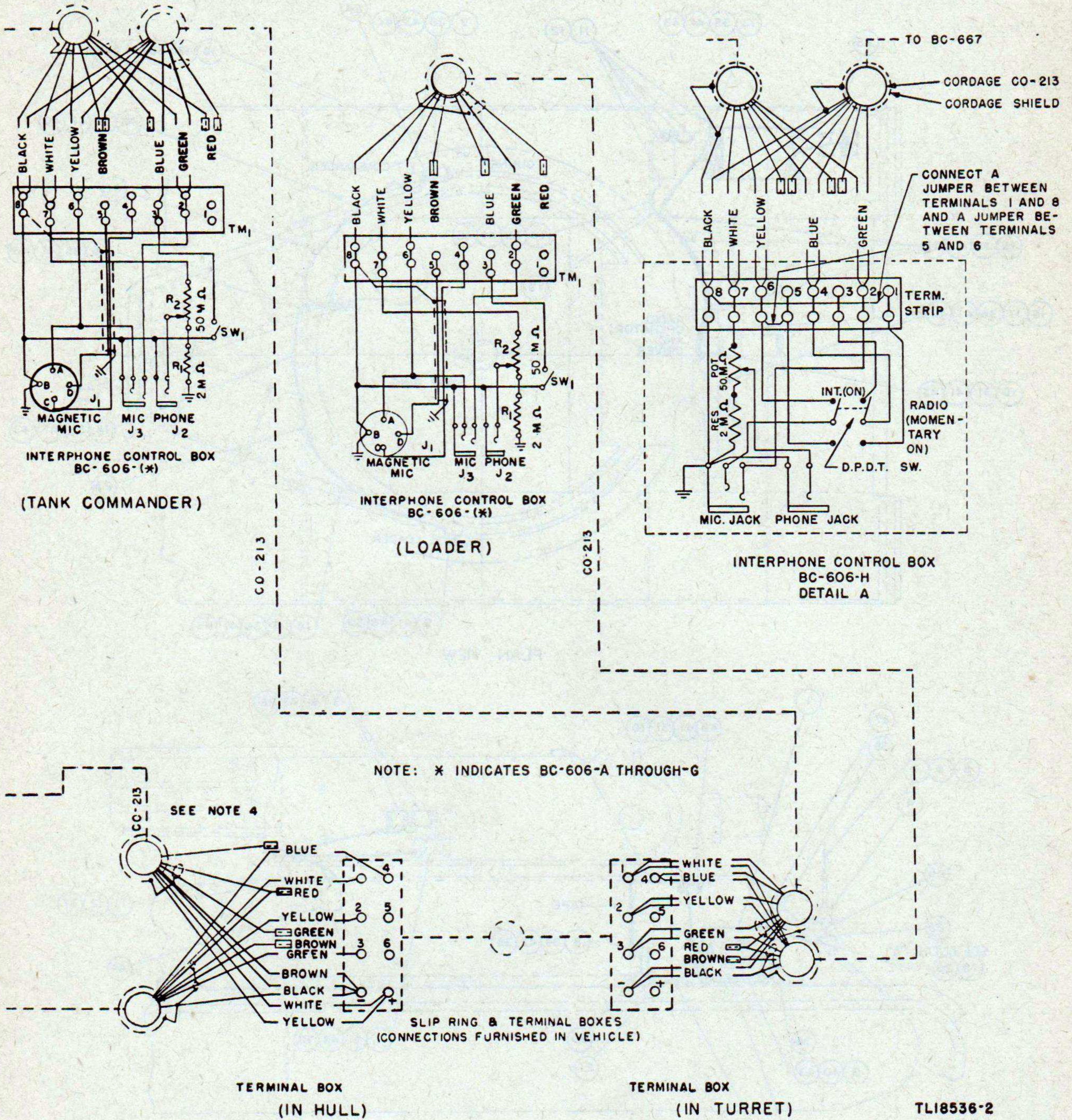
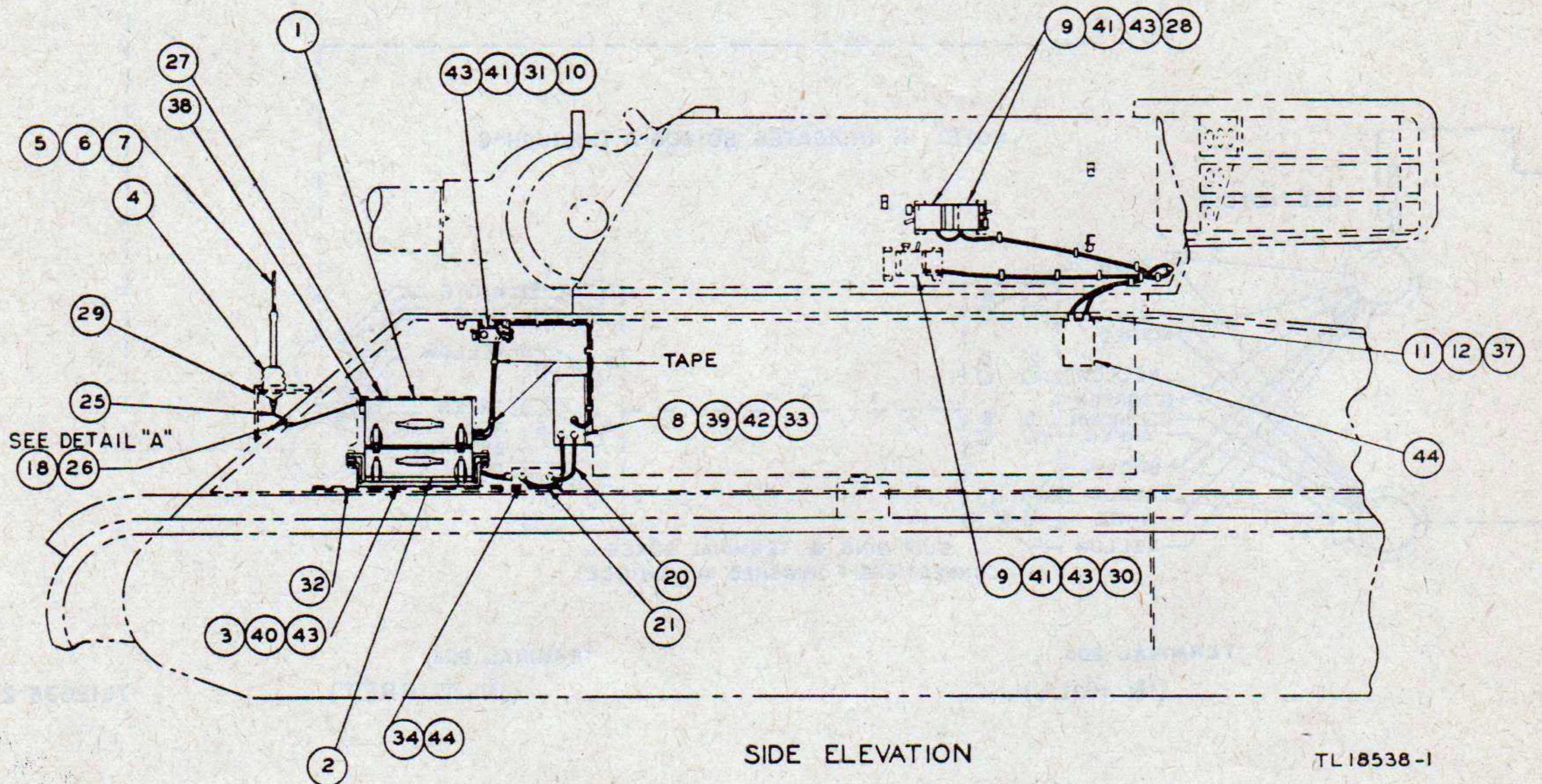
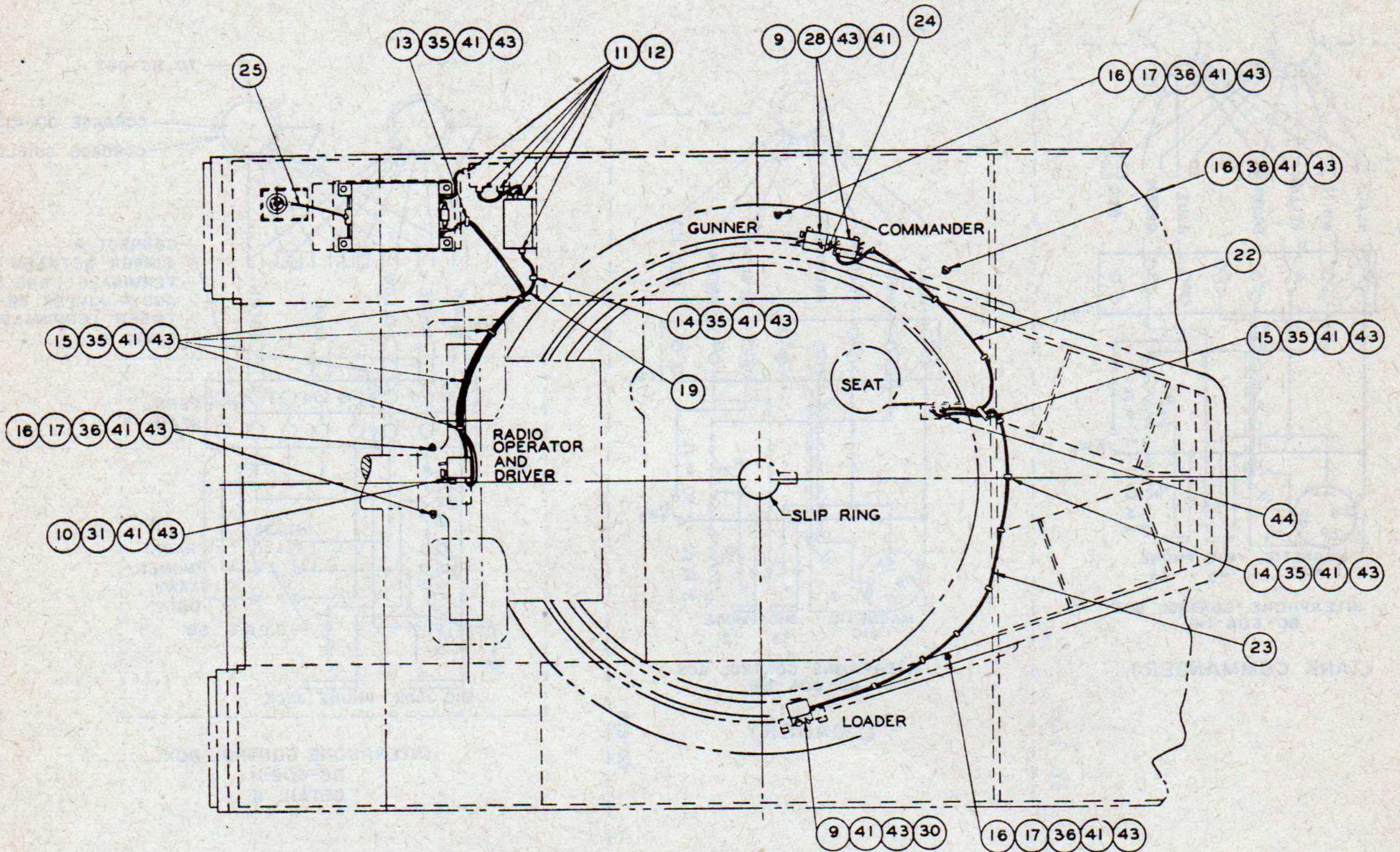


Figure 2. Wiring diagram of Interphone Equipment RC-99



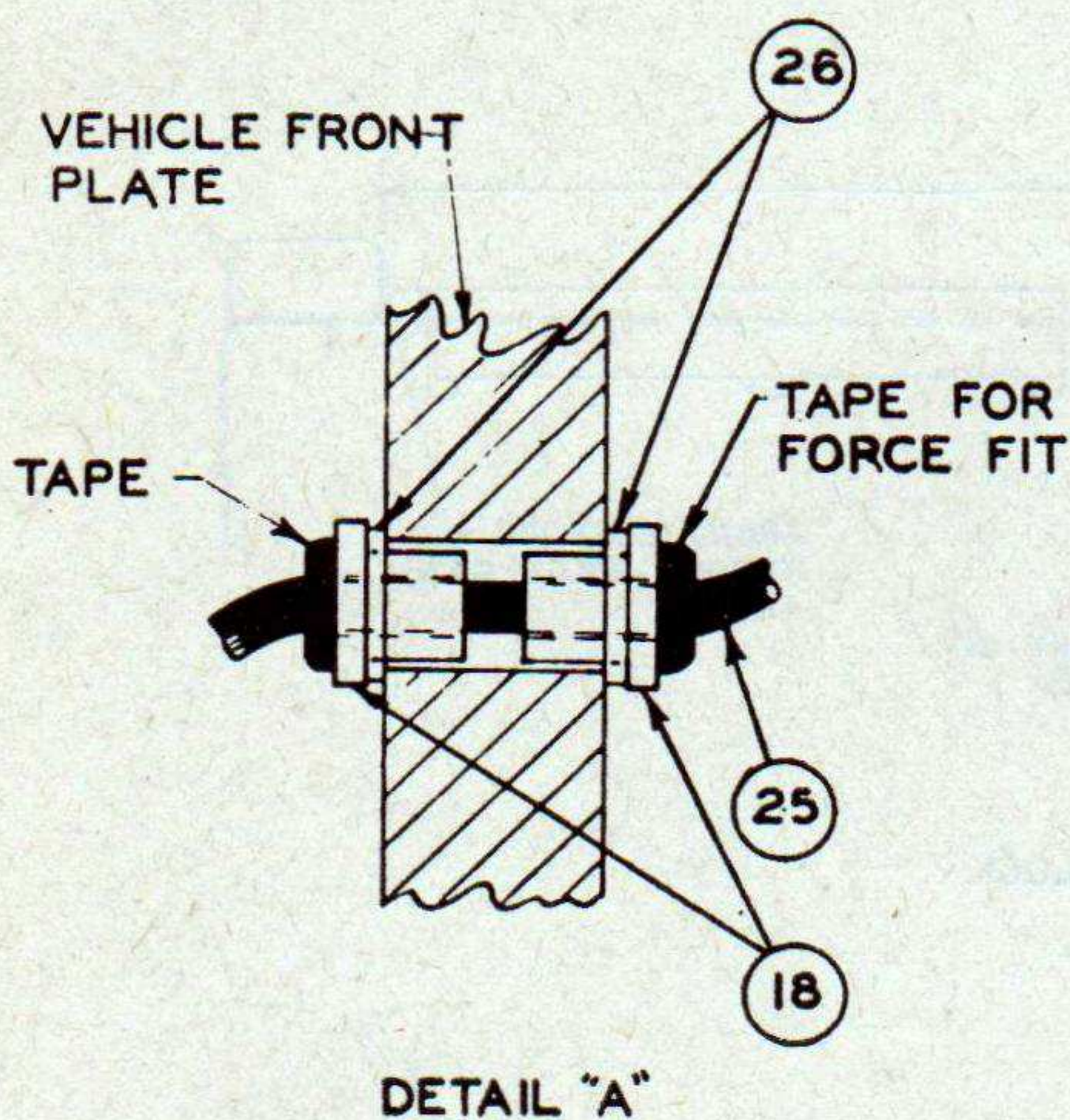


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Figure 3. Installation of Radio Set SCR-610-() and Inter

NOTES:

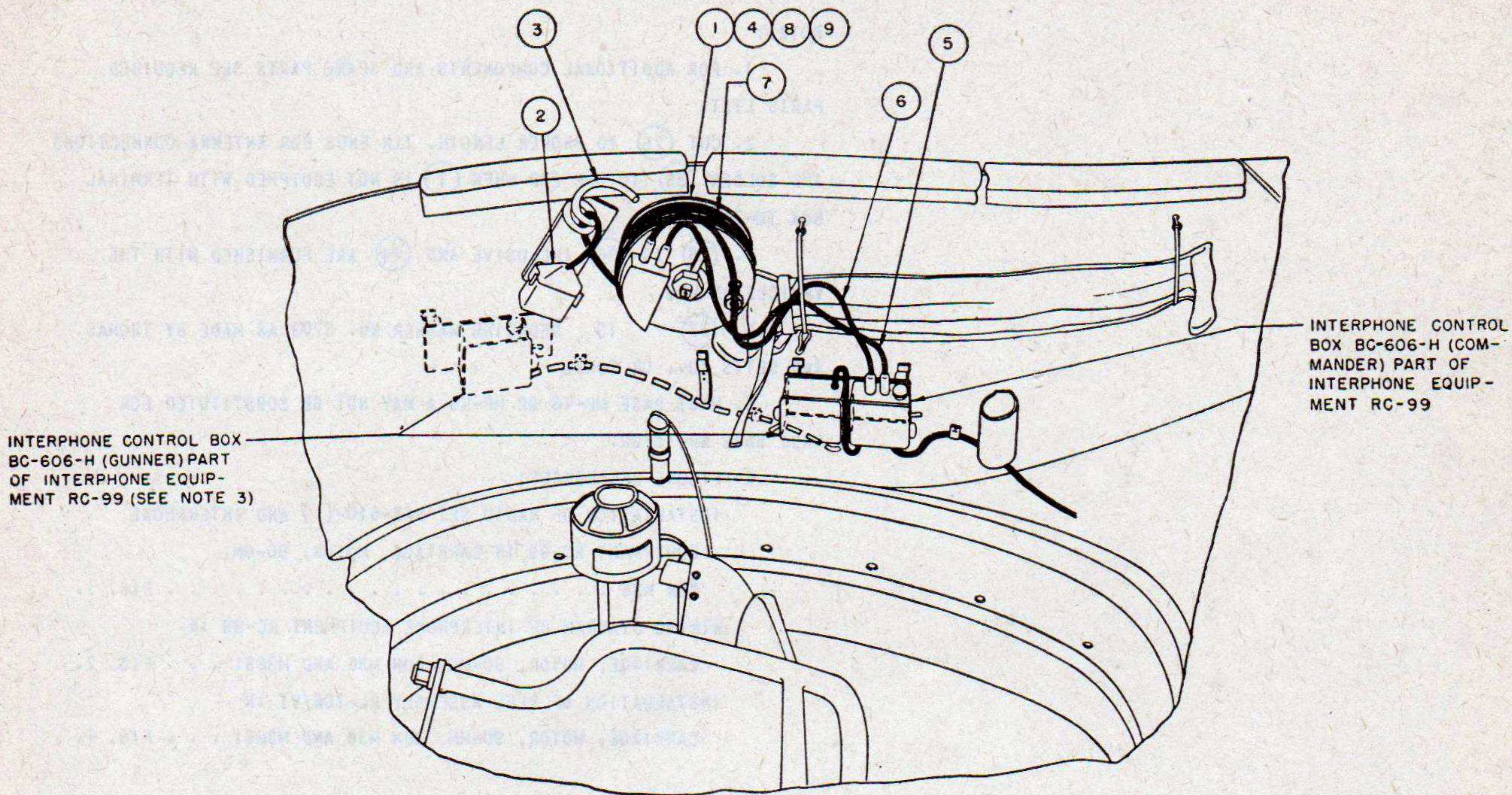
1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS SEE REQUIRED PARTS LIST.
2. CUT (25) TO PROPER LENGTH. TIN ENDS FOR ANTENNA CONNECTIONS AND SOLDER (38) TO ONE END WHEN (1) IS NOT EQUIPPED WITH TERMINAL BOX TM-218.
3. (28) TO (36) INCLUSIVE AND (44) ARE FURNISHED WITH THE VEHICLE BY MFG.
4. (37) IS REDUCING WASHER NO. 3703 AS MADE BY THOMAS AND BETTS CO., OR EQUAL.
5. MAST BASE MP-48 OR MP-48-A MAY NOT BE SUBSTITUTED FOR MAST BASE AB-15/GR.
6. FIGURE REFERENCES:
 INSTALLATION OF RADIO SET SCR-610-() AND INTERPHONE EQUIPMENT RC-99 IN CARRIAGE, MOTOR, 90-MM, GUN M36 FIG. 1.
 WIRING DIAGRAM OF INTERPHONE EQUIPMENT RC-99 IN CARRIAGE, MOTOR, 90-MM, GUN M36 AND M36B1 . . . FIG. 2.
 INSTALLATION OF REEL ASSEMBLY RL-106/VI IN CARRIAGE, MOTOR, 90-MM, GUN M36 AND M36B1 . . . FIG. 4.



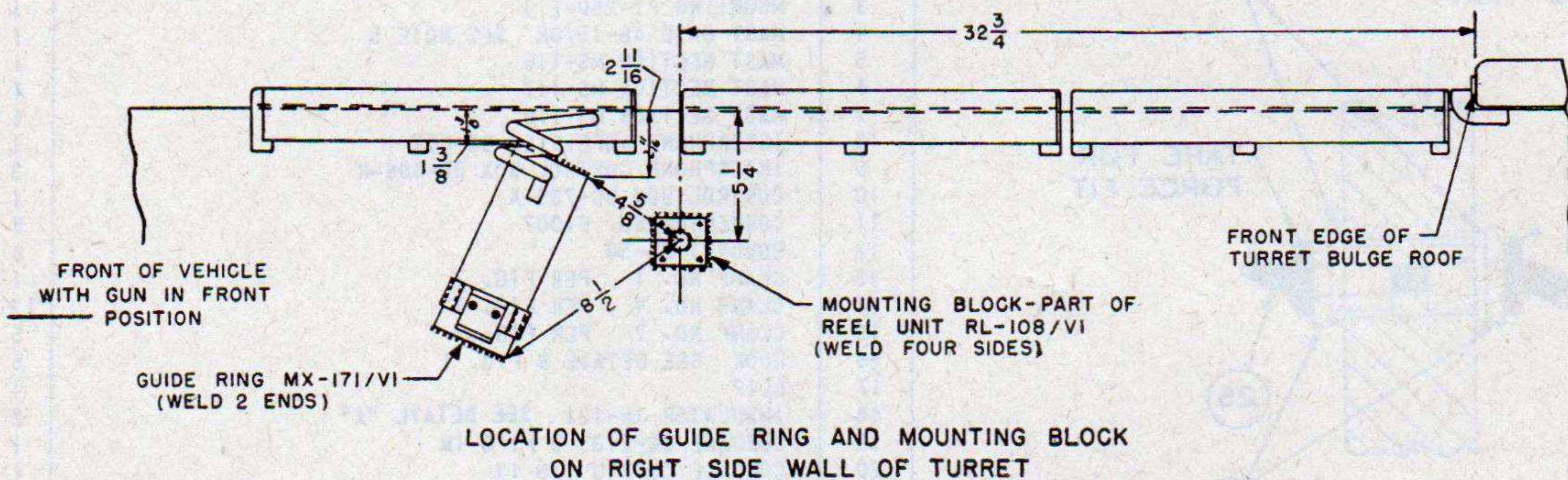
ITEM NO.	NAME OF ITEM	QUANTITY REQUIRED
1	RADIO RECEIVER AND TRANSMITTER BC-659-()	1
2	POWER SUPPLY UNIT PE-120-() WITH VIBRATOR VB-11	1
3	MOUNTING FT-250-()	1
4	MAST BASE AB-15/GR SEE NOTE 5	1
5	MAST SECTION MS-116	1
6	MAST SECTION MS-117	1
7	MAST SECTION MS-118	1
8	INTERPHONE AMPLIFIER BC-667	1
9	INTERPHONE CONTROL BOX BC-606-H	3
10	CONTROL BOX BC-739-A	1
11	CONNECTOR NO. 61007	8
12	BONDNUT BL-50	8
13	CLAMP NO. 1 PER FIG. 7	1
14	CLAMP NO. 4 PER FIG. 7	12
15	CLAMP NO. 7 PER FIG. 7	5
16	HOOK SEE DETAIL B FIG. 1	5
17	CLIP	4
18	INSULATOR IN-121 SEE DETAIL "A"	2
19	CORDAGE CO-213 5 FT 8 IN	1
20	CORDAGE CO-213 39 IN	1
21	CORDAGE CO-213 46 IN	1
22	CORDAGE CO-213 5 FT	1
23	CORDAGE CO-213 9 FT 1 IN	1
24	CORDAGE CO-213 17 IN	1
25	WIRE W-128 36 IN LONG SEE NOTE 2	1
26	WASHER, RUBBER SEE DETAIL "A"	2
27	COVER BG-153	1
28	BRACKET A-349547	1
29	ANTENNA BRACKET B-7058564	1
30	BRACKET A-349613	1
31	BRACKET B-298176	1
32	BRACKET B-260027	1
33	BRACKET B-229674	1
34	BRACKET B-200363	1
35	SPACER A-191935 SEE DETAIL D FIG. 1	18
36	SPACER A-191964 SEE DETAIL C FIG. 1	5
37	REDUCING WASHER SEE NOTE 4	2
38	TERMINAL SEE FIG. 9	1
39	RD.HD.MACH. SCREW 1/4 - 20 X 1-1/4	4
40	HEX.HD.CAP SCREW 1/4 - 20 X 3/4	4
41	RD.HD.MACH. SCREW 8 - 32 X 3/8	40
42	LOCKWASHER SAE ST'D FOR 1/4 SCREW	8
43	LOCKWASHER SAE ST'D FOR NO. 8 SCREW	40
44	TERMINAL BOX SEE NOTE 3	2

SEE NOTE 3

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RIGHT SIDE WALL OF TURRET



LOCATION OF GUIDE RING AND MOUNTING BLOCK ON RIGHT SIDE WALL OF TURRET

ITEM NO.	NAME OF ITEM	QUANTITY REQUIRED
1	REEL RL-108/VI	1
2	JUNCTION BOX J-65/VI	1
3	GUIDE RING MX-171/VI	1
4	MOUNTING BLOCK A-7058541 SEE NOTE 2	1
5	CORD CD-264	1
6	CORD CD-265	1
7	CORDAGE CO-146 75 FT LONG	1
8	RD. HD. MACH. SCREW 8-32 X 1/2 LONG	4
9	LOCKWASHER SAE ST'D FOR NO. 8 SCREW	4

NOTE:

1. DIMENSIONS WHERE NOT SHOWN OTHERWISE ARE IN INCHES.
2. (4) (8) AND (9) ARE PART OF REEL UNIT RL-108/VI.
3. INTERPHONE CONTROL BOX BC-606-H LOCATED AS SHOWN IN DOTTED LINES IN EARLY VEHICLES, AND IN SOLID LINES IN LATER VEHICLES.
4. FIGURE REFERENCES:
 INSTALLATION OF SCR-610-() AND INTERPHONE EQUIPMENT RC-99 FIG. 1 OR 3
 WIRING DIAGRAM OF RC-99 FIG. 2

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Figure 4. Installation of Reel Assembly RL-106/VI in Carriage, Motor, 90-MM Gun, M36, M36B1, or M36B2.

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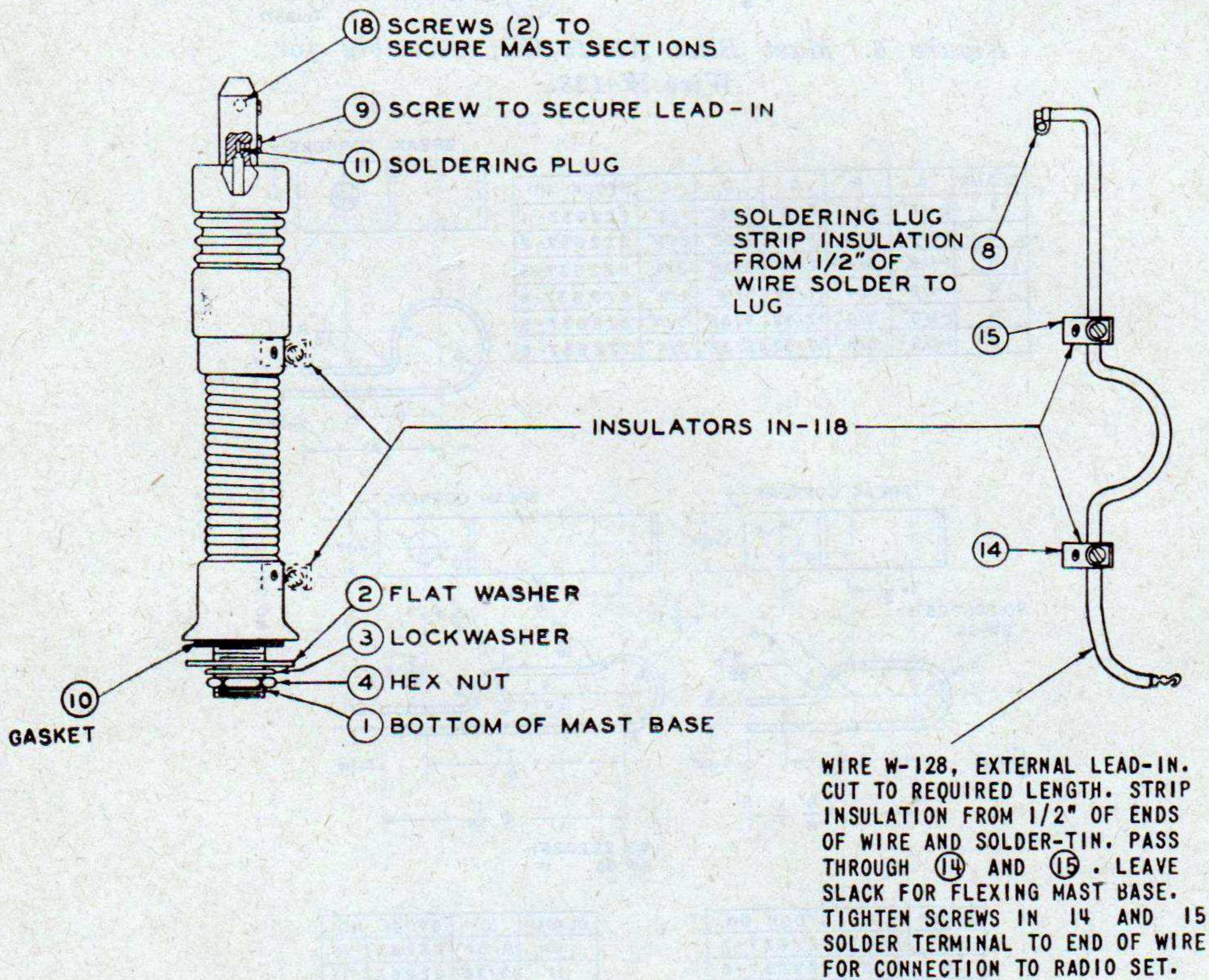
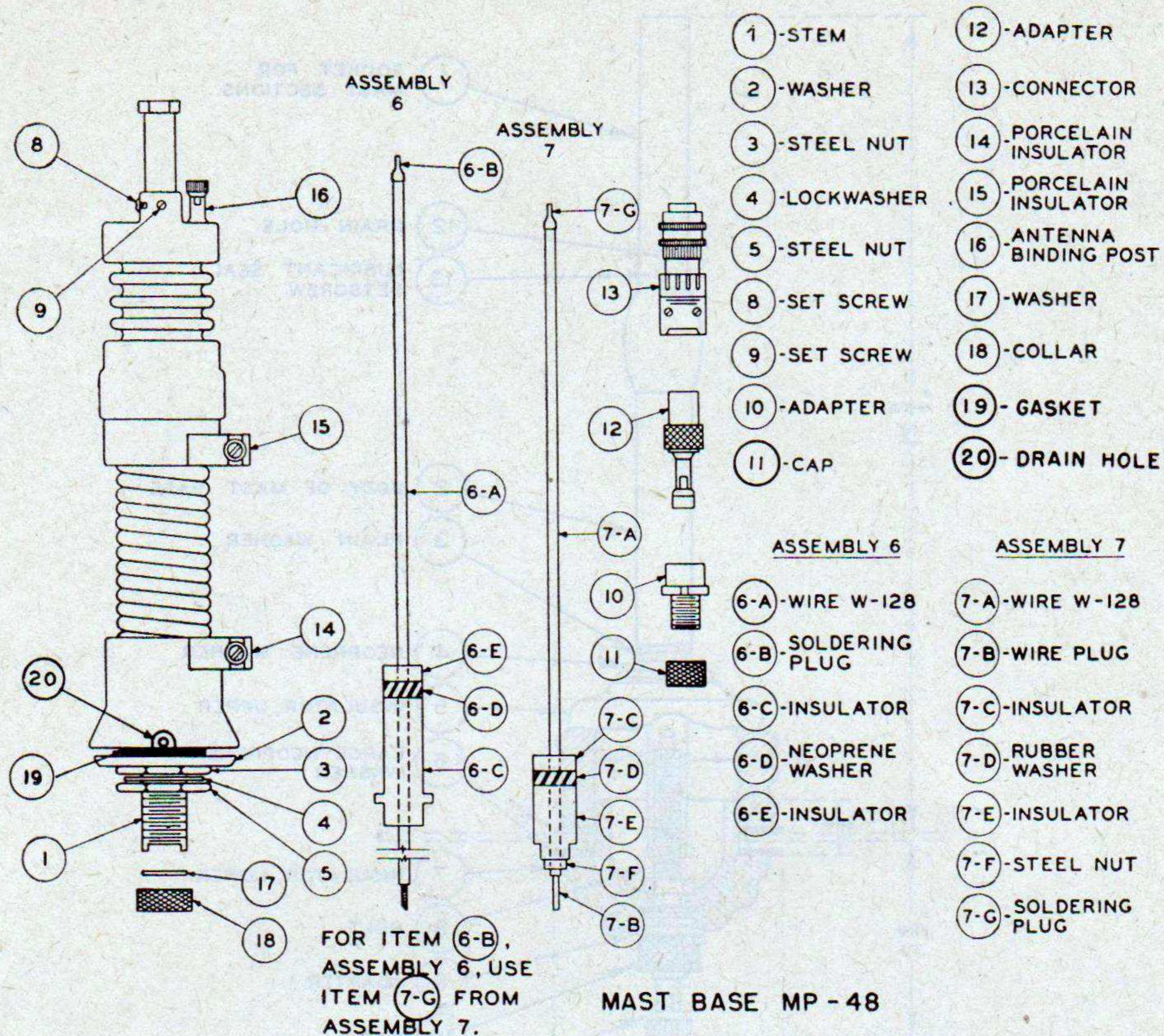


Figure 5. Mast Base MP-48 and MP-48-A, installation.

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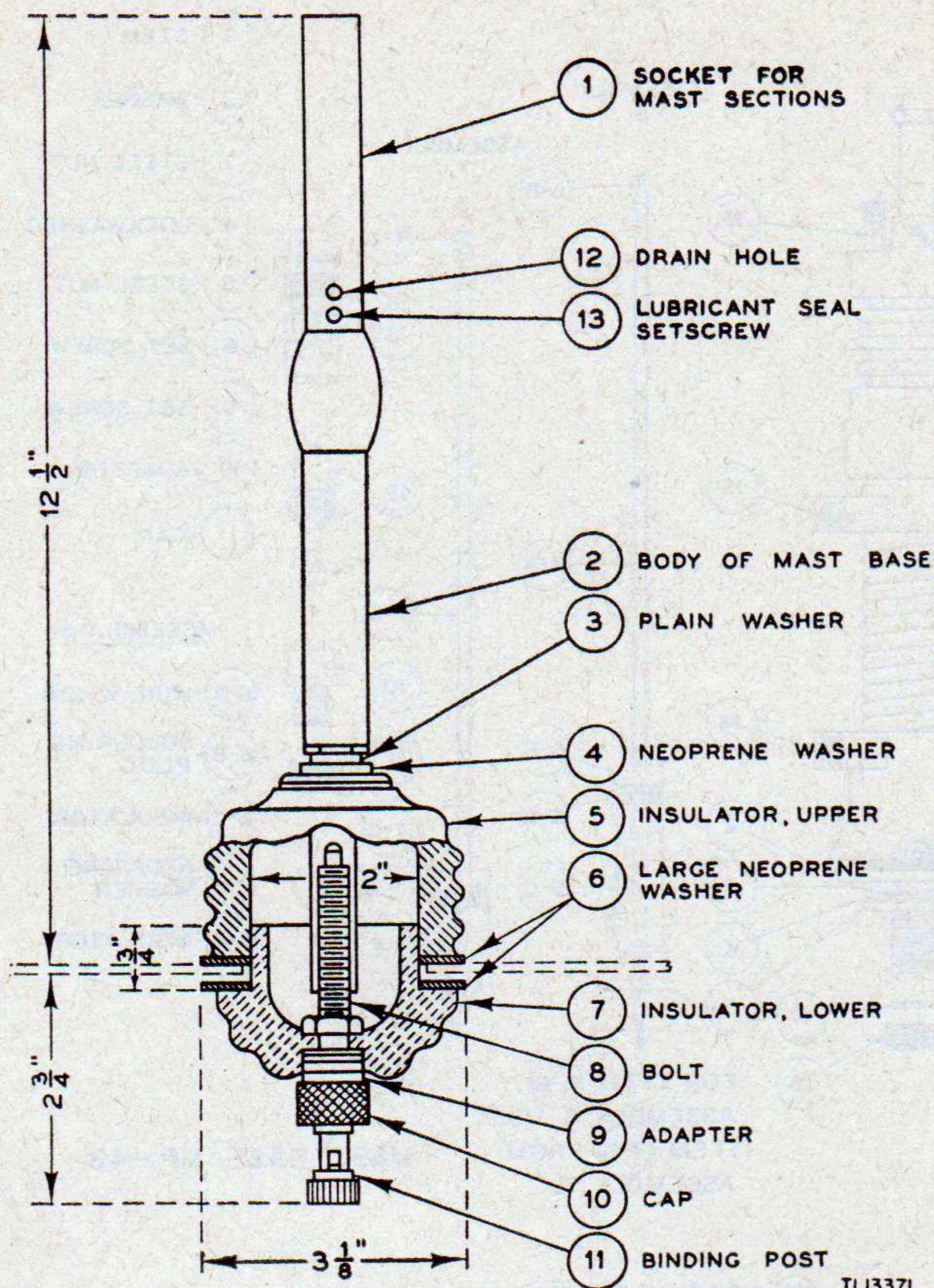
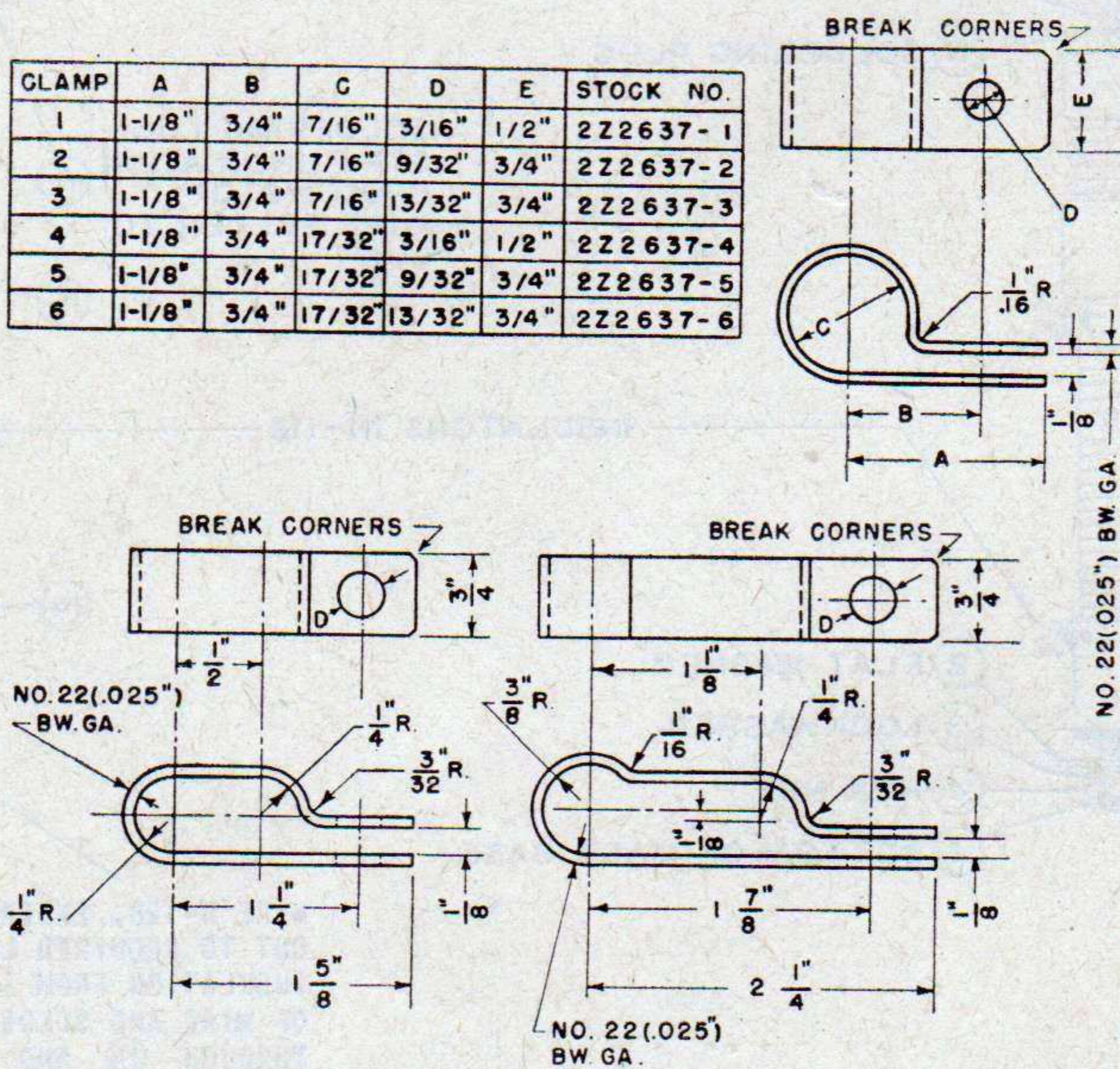


Figure 6. Mast Base AB-15/GR, assembly for Wire W-128.

CLAMP	A	B	C	D	E	STOCK NO.
1	1-1/8"	3/4"	7/16"	3/16"	1/2"	222637-1
2	1-1/8"	3/4"	7/16"	9/32"	3/4"	222637-2
3	1-1/8"	3/4"	7/16"	13/32"	3/4"	222637-3
4	1-1/8"	3/4"	17/32"	3/16"	1/2"	222637-4
5	1-1/8"	3/4"	17/32"	9/32"	3/4"	222637-5
6	1-1/8"	3/4"	17/32"	13/32"	3/4"	222637-6



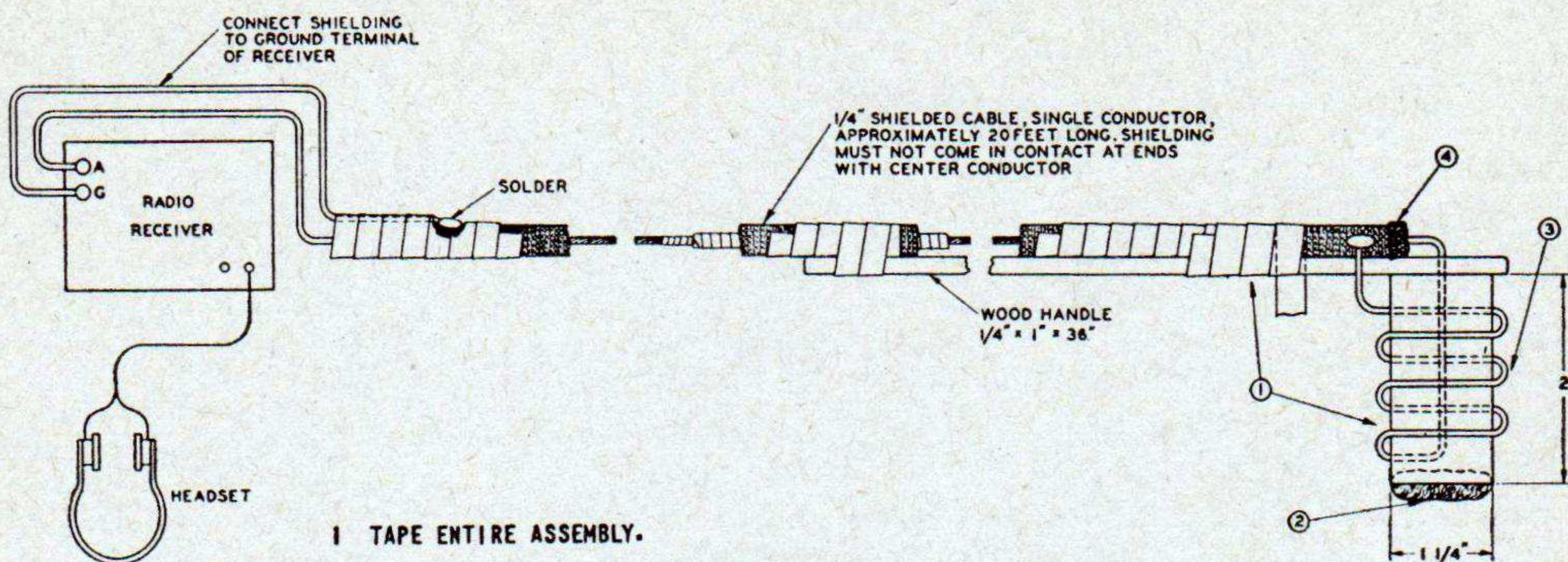
CLAMP	D	STOCK NO.
7	3/16"	222637-7
8	9/32"	222637-8
9	13/32"	222637-9

CLAMP	D	STOCK NO.
10	9/32"	222637-10
11	13/32"	222637-11

NOTE:
TOLERANCES $\pm 1/32$ "

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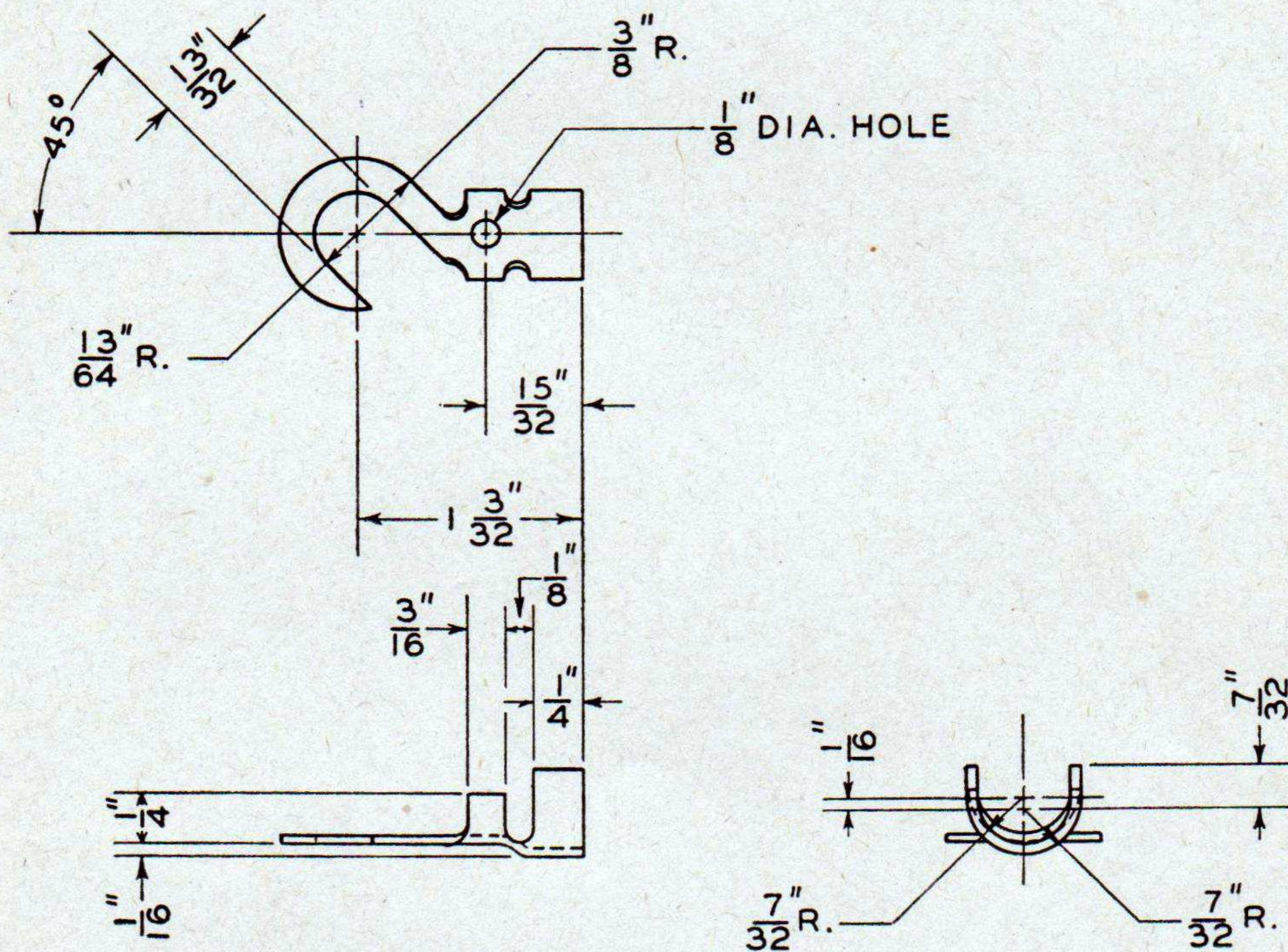
Figure 7. Clamps for cordages.



- 1 TAPE ENTIRE ASSEMBLY.
- 2 STUFF END OF INSULATED TUBING WITH FELT AND TAPE OVER ENTIRE ASSEMBLY
- 3 WIND 3 TURNS NO. 16 OR NO. 18 WIRE ON TUBE OF INSULATING MATERIAL. SOLDER ONE END TO SHIELD ON CABLE, THE OTHER END ON INSULATED WIRE INSIDE CABLE.
- 4 ROLL BACK END OF SHIELDING, AND SECURE WITH SOLDER.

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Figure 8. Probe antenna.

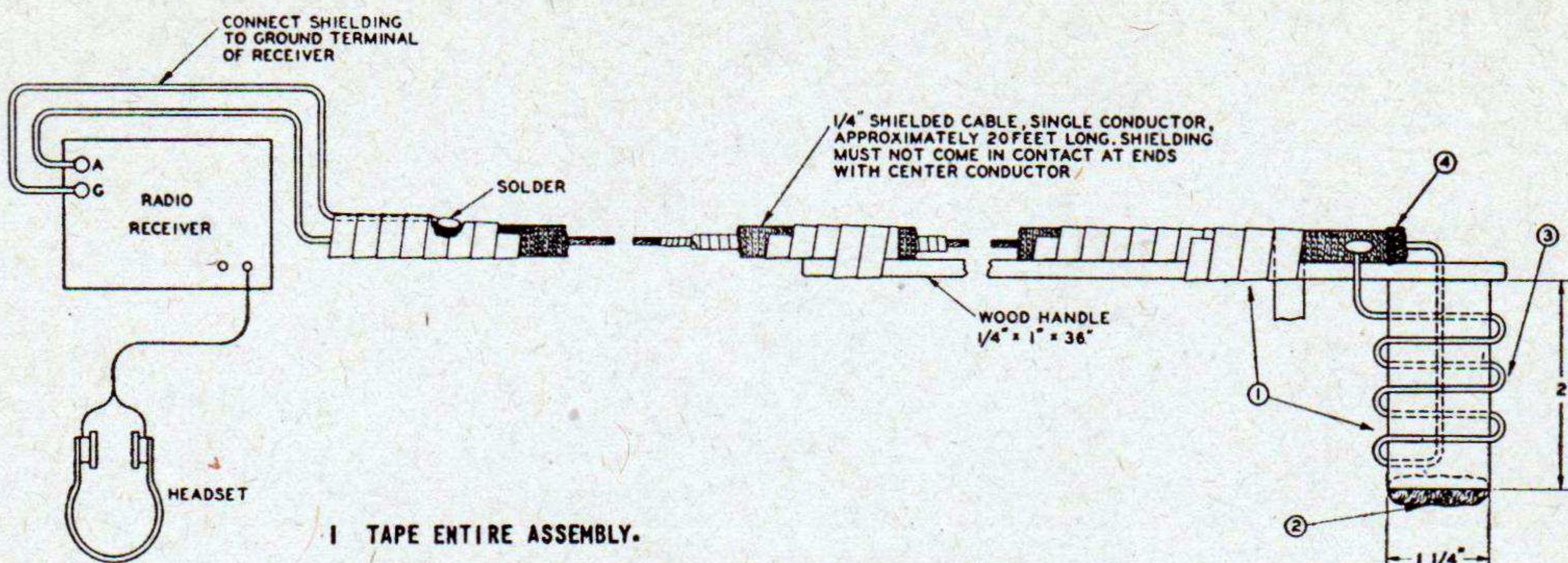


TERMINAL
COPPER-TINNED #18 (.040) B & S GA. AS REQ.

NOTE:
TOLERANCES WHERE NOT SHOWN OTHERWISE SHALL BE HELD TO $\pm \frac{1}{64}$

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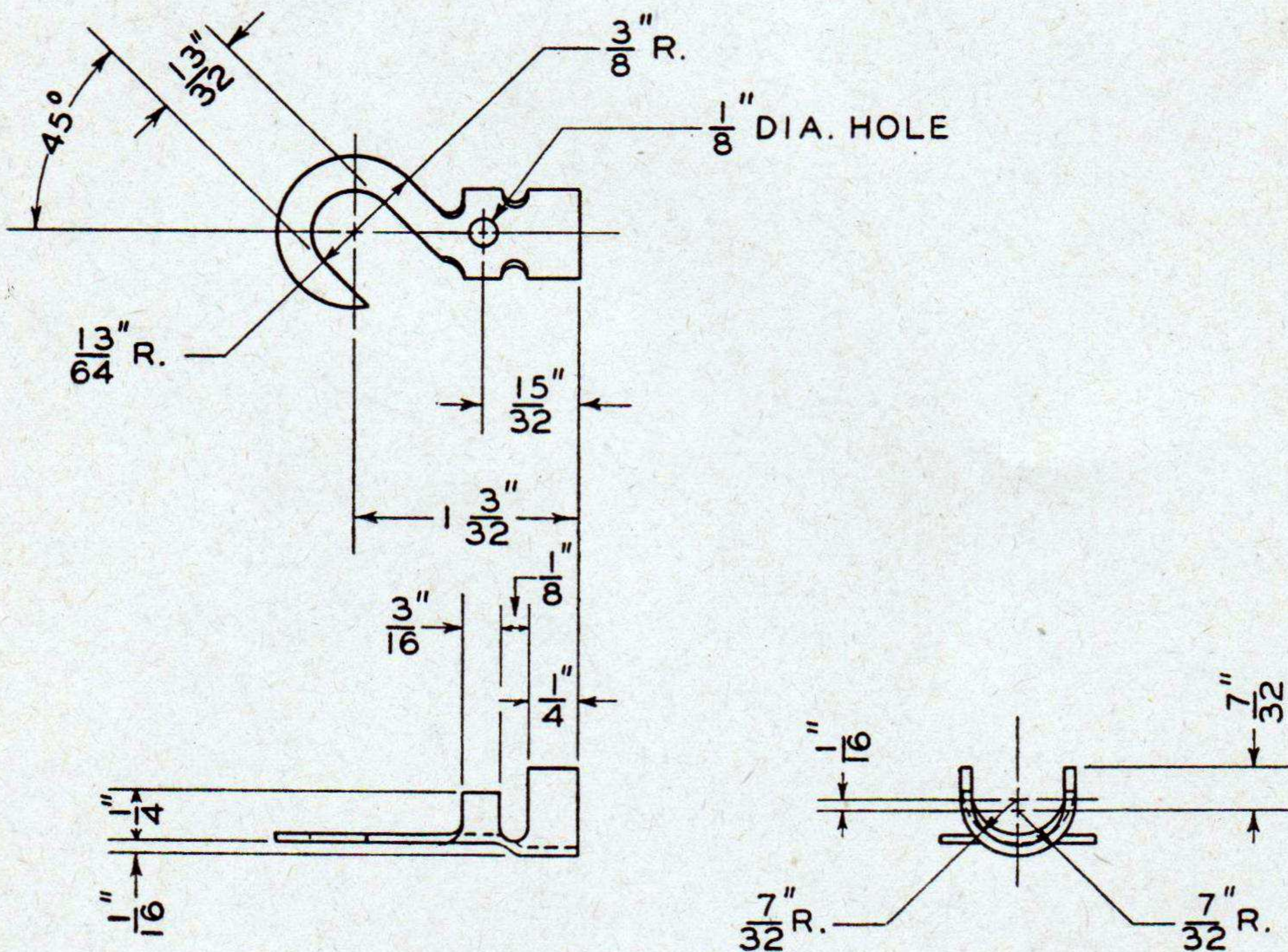
Figure 9. Terminals.



- 1 TAPE ENTIRE ASSEMBLY.
- 2 STUFF END OF INSULATED TUBING WITH FELT AND TAPE OVER ENTIRE ASSEMBLY
- 3 WIND 3 TURNS NO. 16 OR NO. 18 WIRE ON TUBE OF INSULATING MATERIAL. SOLDER ONE END TO SHIELD ON CABLE, THE OTHER END ON INSULATED WIRE INSIDE CABLE.
- 4 ROLL BACK END OF SHIELDING, AND SECURE WITH SOLDER.

TL7547-A

Figure 8. Probe antenna.



TERMINAL
COPPER-TINNED #18 (.040) B & S GA. AS REQ.

NOTE:
TOLERANCES WHERE NOT SHOWN OTHERWISE SHALL BE HELD TO $\pm \frac{1}{64}$

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Figure 9. Terminals.

