

TELEPHONE SET COMPONENTS
AMPLIFIERS, CORD REELS, HANDSETS, LOUDSPEAKERS, NETWORKS,
RINGERS, AND TRANSMITTERS
IN CUSTOMER-OWNED ENCLOSURES
IDENTIFICATION, INSTALLATION, CONNECTIONS, AND MAINTENANCE

1. GENERAL

1.01 This section describes suitable telephone components that may be used in providing special installations of telephone sets where a customer "built-in" effect is required. The components are adaptable for various mounting arrangements in credenzas, cabinets, desk drawers, desk panels, wall panels, or similar locations. Section 501-420-101 also contains components for this purpose.

1.02 This section is reissued to:

- Add typical connection information on 236A amplifier and 662B transmitter when used with 613B or C key.
- Show latest production models of 2A and 3A cord reels.
- Add information on 2B and 3B cord reels.
- Change references in Fig. 7.

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.



The customer must provide mounting facilities, backboards, panels, and brackets. All cutouts and drilling to accept telephone components must be done by the customer.

1.03 Unless otherwise indicated, the dimensions are approximate measurements. For precise measurements, components should be used for drilling or cutting templates.

2. IDENTIFICATION AND INSTALLATION

(a) **Ordering Guide**

Amplifier, 236A

Cord Reel, 2B

Cord Reel, 3B

Handset, G-Type (*)

Loudspeaker, 760A-(*)

Loudspeaker, 761A

Network, 425C

Network, 425D

Network, 425E

Network, 425F

Network, 4010B

Ringer, C4A

Ringer, M1A

Ringer, P1A

Transmitter, 662B

*Add Color Suffix

(b) **Replaceable Optional Components**

P-11E702 Grommet (for 3-type cord reel)

P-11E703 Nut (for 3-type cord reel)

(c) *Color*

TABLE A
COLOR ORDERING GUIDE

COLOR*		G-TYPE HANDSET†	760A LOUDSPEAKER
Black	-03	•	•
Light Olive Gray	-49		•
Ivory	-50	•	•
Green	-51	•	•
Gray	-52	•	
Red	-53	•	•
Brown	-54	•	•
Yellow	-56	•	•
White	-58	•‡	•
Rose Pink	-59	•	•
Light Beige	-60	•‡	•
Light Gray	-61	•	•
Aqua Blue	-62	•	•
Turquoise	-64	•	•

*Refer to Section 500-120-100 for promoted colors.

†Refer to Section 501-210-100 (handsets).

‡G3K-type is not provided with cord; intended for use with cord reel.

AMPLIFIERS

2.01 The *236A* amplifier (Fig. 1) consists of a printed circuit transistorized unit mounted on a metal base. A terminal strip with eleven screw-type terminals permits interconnections between the amplifier and other components with which it is associated.

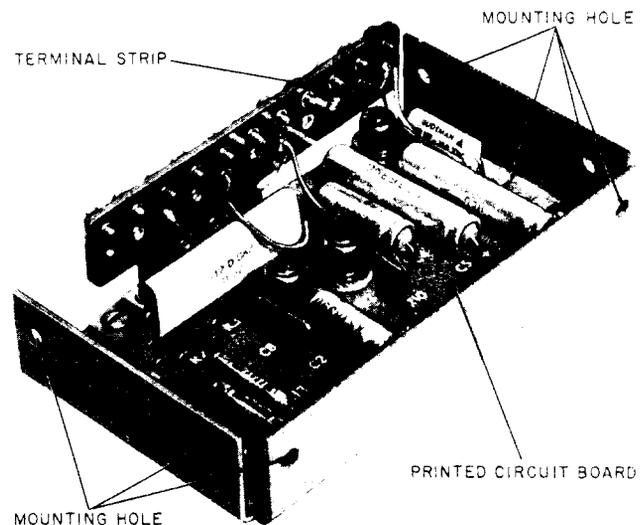


Fig. 1—236A Amplifier

2.02 The *236A* amplifier is 5 inches long, 2-7/8 inches wide, and 1-5/8 inches high; 3/16-inch diameter mounting holes are provided in the ends, side, and bottom of the base to permit mounting the amplifier in any position. Mounting hardware is not furnished.

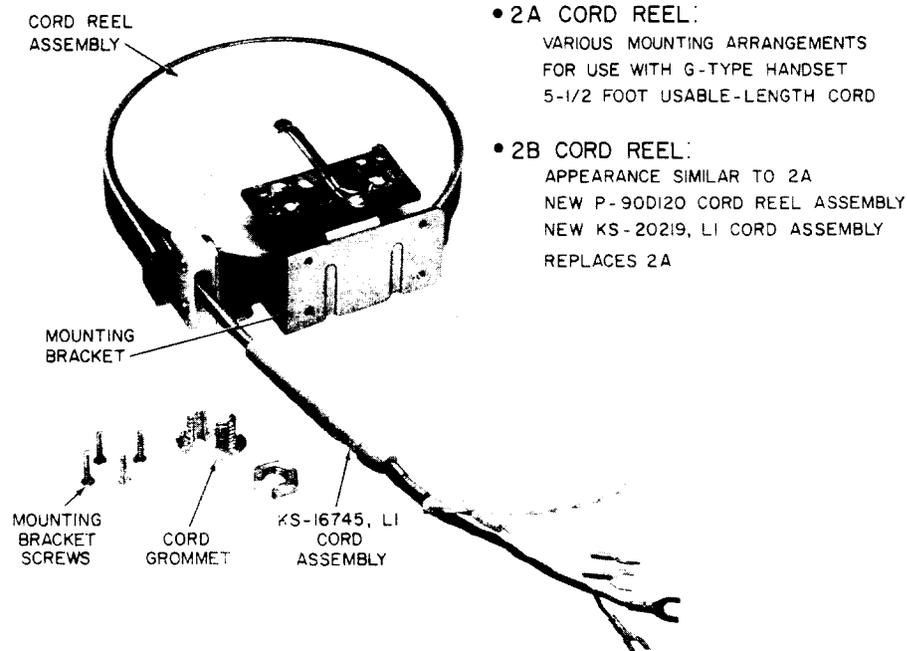
2.03 This amplifier is intended for use with the 662B transmitter (see Fig. 8) and 613B or C key to provide 3A speakerphone capabilities to custom installations. Refer to Section 501-420-101 for information on 613B and C key.

CORD REELS

2.04 The *2A* cord reel (Fig. 2) consists of a reel, terminal board, and cord. The cord reel is 4-5/8 inches long, 4-1/2 inches high, and 1-1/2 inches wide.

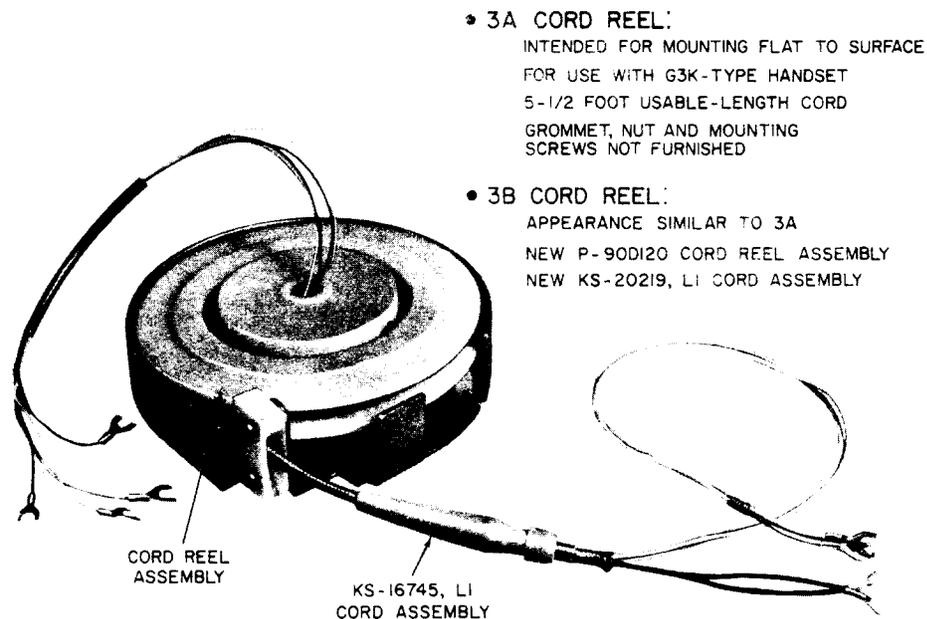
2.05 The KS-16745, List 1 cord has a gray textile cover. A split grommet and split nut are furnished for the cord entrance hole in the customer-owned enclosure. Maximum housing thickness, limited by the thread length of the grommet, is 5/16 inch.

2.06 Eight tapped holes for No. 4-40 screws are provided in the mounting bracket to allow the cord reel to be mounted horizontally or vertically.



- 2A CORD REEL:
VARIOUS MOUNTING ARRANGEMENTS
FOR USE WITH G-TYPE HANDSET
5-1/2 FOOT USABLE-LENGTH CORD
- 2B CORD REEL:
APPEARANCE SIMILAR TO 2A
NEW P-90DI20 CORD REEL ASSEMBLY
NEW KS-20219, LI CORD ASSEMBLY
REPLACES 2A

Fig. 2—2-Type Cord Reel (2A-Shown)



- 3A CORD REEL:
INTENDED FOR MOUNTING FLAT TO SURFACE
FOR USE WITH G3K-TYPE HANDSET
5-1/2 FOOT USABLE-LENGTH CORD
GROMMET, NUT AND MOUNTING
SCREWS NOT FURNISHED
- 3B CORD REEL:
APPEARANCE SIMILAR TO 3A
NEW P-90DI20 CORD REEL ASSEMBLY
NEW KS-20219, LI CORD ASSEMBLY

Fig. 3—3-Type Cord Reel (3A-Shown)

2.07 The 3A cord reel (Fig. 3) consists of a cord reel and cord.

2.08 The 3A cord reel is 4-1/2 inches long, 4-1/2 inches high, and 1-1/4 inches wide. Panel thickness is limited to 5/16 inch when using the grommet.

2.09 This cord reel is intended for flat mounting upon a panel or similar surface. Four holes, tapped for No. 4-40 screws, are provided in the bottom of the mounting bracket for securing the cord reel.

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2.10 Install cord reels by securing to the mounting surface of the customer-owned enclosure and feeding the handset cord through the hole provided in the housing. The split grommet is placed around the cord and pushed through the hole from the front side of the housing panel. The split nut is used to secure the grommet which serves as a stop for the cord.

2.11 To connect the handset to the cord reel:

- (1) Remove both receiver and transmitter units.
- (2) Using a suitable wire, fish the spade-tipped conductors of the cord into the handset shell. The two white leads extend into the receiver cavity.
- (3) Connect the white leads to the screw terminals of the U1 receiver unit and replace receiver and receiver cap.
- (4) Connect the red and black leads to the transmitter cup, position the cup in the housing with the cord retainer over the cord, and replace the transmitter and transmitter cap.

HANDSET

2.12 The *G-type* handset (Fig. 4) is a standard telephone handset consisting of a handle, T1 transmitter unit, U1 receiver unit, and receiver and transmitter caps. Refer to Section 500-120-100 covering telephone apparatus color.

2.13 The G-type handset is recommended for custom installations due to its light weight and availability. The G3K-type is intended for use with 2- and 3-type cord reels which are equipped with four conductor cords. The G3AR is equipped with a 4-conductor retractile cord and is recommended for all other installations. For more information on G-type handsets, refer to Section 501-210-100.

LOUDSPEAKERS

2.14 The **760A** loudspeaker (Fig. 5) is intended for desk or table top mounting and is used with the 3A speakerphone system. It is 5-5/8 inches long, 3-11/16 inches wide, and 3-15/16 inches high. Refer to Sections 512-620-100, 512-620-101, 512-620-200, and 512-620-400 for other information and use of the 760A loudspeaker in the 3-type speakerphone system.

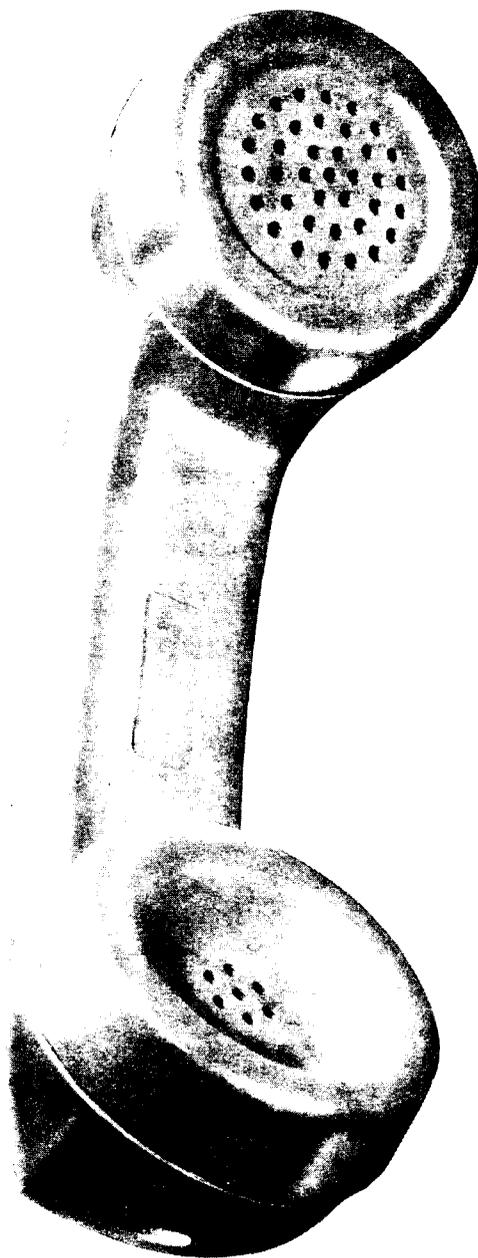


Fig. 4—G-Type Handset

2.15 The **761A** loudspeaker (Fig. 6) is 3-3/32 inches long, 2-1/4 inches wide, and 1-1/16 inches high and is intended for panel mounting similar to 751-type panel telephone sets. It can be used with 3A speakerphone or 1A home interphone systems. Two spade-tipped leads provide connections to the associated circuit components and the housing provides two tapped mounting holes. Mounting screws are furnished.

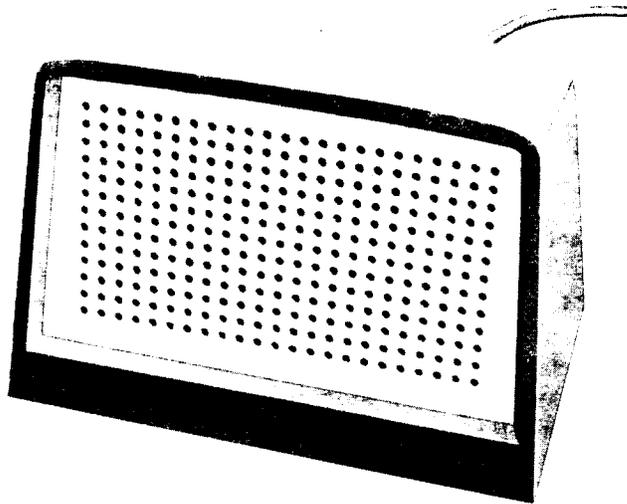


Fig. 5—760A Loudspeaker

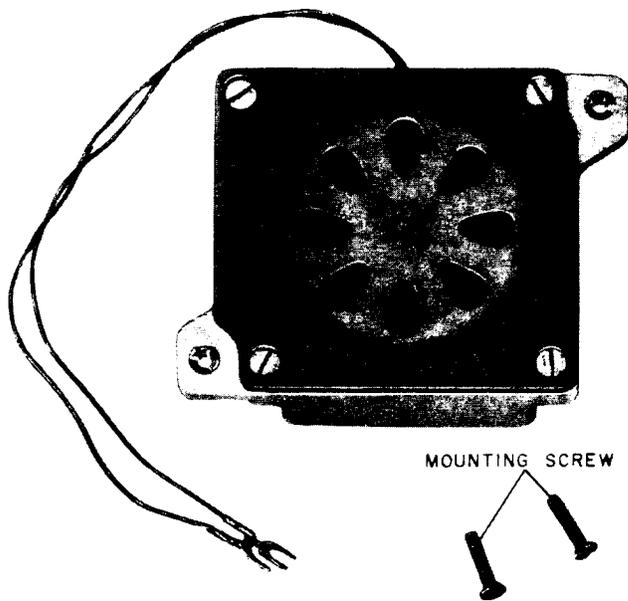


Fig. 6—761A Loudspeaker

2.16 When installing loudspeakers behind panels, a minimum of 40 percent open area must be provided directly in front of the speaker. This can be accomplished by drilling or cutting holes in the panel. Panel thickness should be limited to 1/2-inch maximum.

2.17 Networks which can be used for custom installations are shown in Table B with a

typical telephone set with which they are associated. For description and schematic of the network, refer to the appropriate telephone set connections section.

TABLE B
NETWORKS

NETWORK	TELEPHONE SET
425A (MD)	500A and 501A
425B (MD)	500P and 501P
425C	507A and 509A
425D	636, 638, 639 Types
425E	500R/S, 554A/B, 511F/H
425G	1511F/H
4010B	1558D, 700-Series

RINGERS

2.18 Ringers which can be used for custom installations are shown in Table C with a typical telephone set with which they are used. Since mounting position is critical for some ringers (ie, M1A and P1A) recommended mounting position is included.

TABLE C
RINGERS

RINGER	TELEPHONE SET	MOUNTING	
		HORIZ	VERT
C4A	500-Series	•	•
M1A	700-Series	•	
P1A	TRIMLINE Series	•	•

2.19 Grommet equipped holes are provided as mounting facilities for all ringers. The grommets serve to shock mount and insulate the ringer from other circuit components and should always be used. No mounting hardware is furnished.

2.20 The *PIA* ringer normally is used with a 165B adapter when mounted in a horizontal position and in 165A adapter when mounted in a vertical position. The 165A and 165B adapters are furnished with a plastic resonator as shown in Fig. 7. The resonator serves to increase the volume of the ringer.

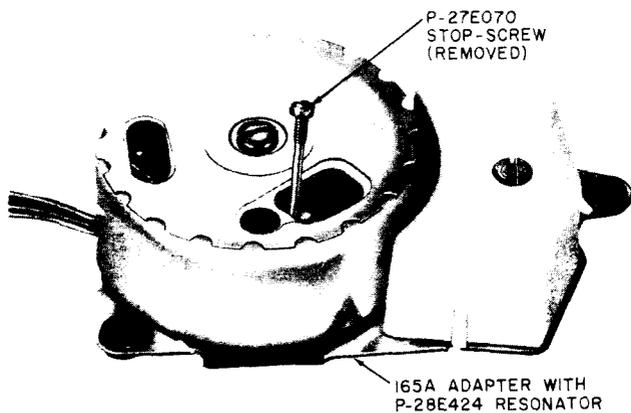


Fig. 7—PIA Ringer With 165A Adapter and Resonator

2.21 Externally mounted ringers may also be used in custom designed installations. Table D shows references for other suitable ringers.

TABLE D

RINGERS AND REFERENCES

RINGER	SECTION
E1-Type	501-251-100
F1A	501-252-100

2.22 When installing ringers in customer-owned enclosures, provisions should be made to assure sufficient volume from the ringer. Holes or slots should be provided near the ringer.

2.23 Install the *PIA* ringer on a vertical surface for optimum ringer operation.

TRANSMITTERS

2.24 Transmitter units enclosed in plastic housings such as 656A, 666-type, 670A, and 671A, which were designed for use as external transmitters, are suitable for custom-built installations. These transmitters are covered in Section 501-230-100.

2.25 The *662B* transmitter (Fig. 8) consists of an ACI transmitter unit, a clamp ring for mounting the transmitter to a panel, and three mounting screws. The transmitter is designed for panel mounting and intended for use with the 3A speakerphone system. Two spade-tipped leads, 18 inches long, provide connections to the associated circuit components.

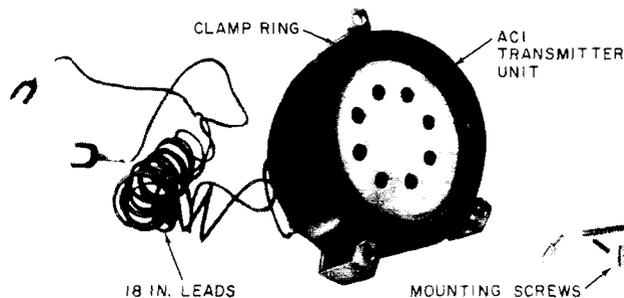


Fig. 8—662B Transmitter

2.26 When installing the 662B transmitter, or other transmitters, behind panels or in fully enclosed housings, a minimum of 40 percent open area must be provided directly in front of the transmitter. This can be provided by drilling or cutting holes in the panel or housing. Panel thickness should be limited to 1/2-inch maximum.

2.27 In installing transmitters and loudspeakers to provide speakerphone capabilities, an acoustical separation of 2 feet (minimum) must be provided. Loudspeaker and transmitter should be oriented away from each other. For more information on speakerphone operation and requirements, refer to Section 512-610-101.

3. CONNECTIONS

3.01 When making connections between components in the customer-owned enclosure, use component leads and M1W cords (6-1/2 inches long) wherever possible. Use D-161488 connectors to connect M1W cords to component leads. Where component lead and M1W cord length is not sufficient, strap wire

may be used. Fig. 9 shows typical speakerphone connections using 662B transmitter, 236A amplifier, and 613B or C key.

4. MAINTENANCE

4.01 Maintenance of custom built telephone sets is limited to apparatus supplied by the telephone company during installation. No maintenance is authorized for the customer-owned enclosure or equipment.

4.02 Refer to sections covering cord reels, loudspeakers, networks, and other circuit components for maintenance of these items.

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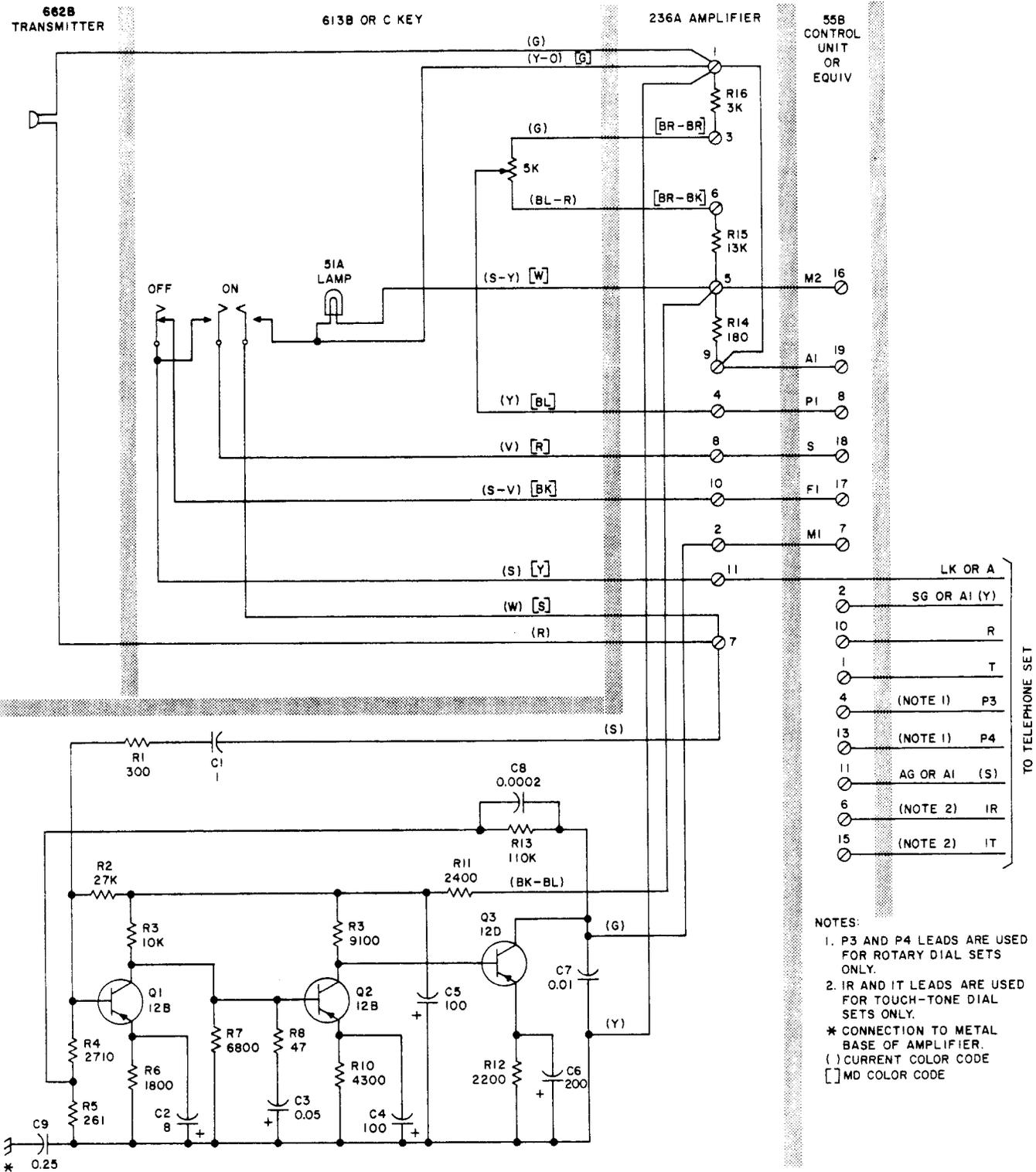


Fig. 9—Typical Speakerphone Connections Using 662B Transmitter, 236A Amplifier and 613B or C Key