

4A COMMUNICATION SYSTEM

(COM KEY* 416)

1. GENERAL

- 1.01 This document supplements Section 518-450-105, Issue 1.
- 1.02 This supplement is issued to provide identification, installation, connection, and testing information for the following:
- . 24A apparatus unit (power failure ringer adjunct).
 - . 25A apparatus unit (supplementary alerting device interface)
 - . 26A apparatus unit (preset multiple voice signaling)
 - . 109A loudspeaker set (wall speakers)

NOTE: Information on the 27A apparatus unit (customer-owned and maintained) was not available at the time of printing. Identification, installation, connection, and testing information will be packed with the units. Issue 2 of this BSP will include information on all vertical services.

2. IDENTIFICATION

24A APPARATUS UNIT

- 2.01 The 24A apparatus unit (Figures 1 and 2) is a power failure ringer adjunct for the COM KEY 416 system. One apparatus unit is required for each primary set. Each unit monitors the power supply of the primary set. In the event of a power failure, ringing is provided by two C4A ringers that are connected across the respective telephone lines.

25A APPARATUS UNIT

- 2.02 This unit (Figures 3, 4, and 5) is a supplementary alerting device interface adjunct. It provides circuitry to accept an input from one designated direct station selection (DSS) button and/or any combination of four common audible leads to provide an output capable of driving a dc relay for ringing bells, horns, etc.

26A APPARATUS UNIT

- 2.03 This unit (Figures 6, 7, and 8) provides preset multiple voice signaling which permits the customer to activate any combination of direct station select (DSS) addresses by depressing one designated DSS button. This feature is used for group signaling, emergency, etc.

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109A LOUDSPEAKER SET

2.04 The loudspeaker set (Figures 9, 10, and 11) includes speaker, amplifier, and two volume controls in a wood housing designed for wall mounting. They are intended for typical indoor business offices and not outside or high noise level environments. Customer-accessible individual volume controls are provided for background music level (right control) and page level (left control).

ORDERING GUIDE

- 2.05 . 24A apparatus unit
- . 25A apparatus unit
- . 26A apparatus unit
- . Set, loudspeaker, 109A
- . Block, connecting, 91A (if required)
- . Coupler, voice 33A (if required)

3. INSTALLATION

PLANNING

- 3.01 The apparatus units are to be mounted at a location where convenient access to the cabling system is provided.
- 3.02 The following precautions are to be considered as to location of installation:
- (a) The 24A apparatus unit is to be located near any telephone set where this feature is required.

R This apparatus unit must be mounted on a vertical surface
E so that the mercury relay (Figure 2) on the printed wiring
A board is in a vertical position as indicated on the relay
D can.
 - (b) The 26A apparatus unit is to be installed in indoor location (above 32°F).
 - (c) The 109A loudspeaker is designed for indoor locations (above 32°F). Speakers reach a depth of 30 feet. If a room is over 30 feet wide, facing speakers should be used.

NOTE: Care shall be taken in location of speaker(s) to avoid feedback when paging from nearby stations. Spacing of up to 30 feet may be required between the speaker(s) and station sets.

24A APPARATUS UNIT

3.03 Install the 24A apparatus unit as follows:

- (1) Remove the cover and mount the base pan assembly (Figure 2) on the desired vertical location (use appropriate fastener per BSP 080-720-105).
- (2) Remove the cable clamp or clamps (Figure 2).
- (3) Insert system cable or cables (Figure 2).
- (4) Replace the cable clamp or clamps using the tapped hole in the base pan or standoff to hold the cable securely.
- (5) For connections, see paragraph 4.01.
- (6) Replace the housing.

3.04 Test as follows:

- (1) Unplug the ac line cord of the primary set serving CO/PBX lines 1 and 2. From any set, dial CO/PBX line 1. The power failure ringers shall ring. Repeat for CO/PBX line 2.
- (2) Hang up the calling set.
- (3) Plug the ac line cord back into the ac receptacle.
- (4) From any set dial CO/PBX line 1, then line 2, the power failure ringers shall not ring.
- (5) If a second 24A apparatus unit is connected, use the same procedure on CO/PBX lines 3 and 4.

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Be certain the ac line cord of each primary set is securely plugged back into its receptacle after completing these tests.

25A APPARATUS UNIT

3.05 Install the 25A apparatus unit as follows:

- (1) Remove the cover and mount the base pan assembly (Figures 4 and 5) at the desired location (use appropriate fastener per BSP 080-720-105).
- (2) Mount the KS-16626 L12 relay set per BSP 463-120-100 or the KS-16301 L17 relay per BSP 463-110-100.
- (3) For connections, see paragraph 4.02.
- (4) Insert system cable or cables (Figure 4).
- (5) Position inserts (Figure 4) inside cover to hold cables securely when cover is replaced.
- (6) Replace cover.

3.06 Test as follows:

- (1) If the auxiliary signal is coded to respond to a DSS code, depress that DSS button at any station to operate the auxiliary signal. The signal will continue to operate as long as the button is depressed.

NOTE: The handset need not be removed nor does an intercom button have to be depressed.

- (2) If the auxiliary signal is coded to respond to common audible signal(s), call each of these lines from a station. The auxiliary signal shall follow the normal CO/PBX ringing pattern.

26A APPARATUS UNIT

3.07 Install the 26A apparatus unit as follows:

- (1) Remove the cover and mount the base (Figures 7 and 8) assembly on the desired location (use appropriate fastener per BSP 080-720-105).
- (2) For connections, see paragraph 4.03.
- (3) Insert system cable (Figure 7).
- (4) Position inserts (Figure 7) inside cover to hold cables securely in place when cover is replaced.
- (5) Replace the cover.

3.08 Test as follows:

- (1) At an idle telephone set, adjust the volume control to maximum and set the DSS selector switch to DSS code 1.

NOTE: The SPKR button must be in the released (up) position.

- (2) Select and depress an idle intercom (IC) line button. Depress and hold the DSS button corresponding to the input code of the 26A apparatus unit and speak into the handset. Speech shall be heard from the loudspeaker in the station set if the 26A apparatus unit is coded to access the zone coded in step (1).
- (3) Repeat steps (1) and (2), moving the DSS selector switch through the remaining DSS zones.

109 LOUDSPEAKER SET

3.09 Install the 109A loudspeaker as follows:

- (1) Mount the wall bracket assembly (Figure 10) on the desired location. This assembly is mounted directly to a flat surface or a device box. Use appropriate fasteners per BSP 080-720-105.

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D For each loudspeaker installed, the total number of telephone sets per system (as covered in BSP 518-450-105, paragraph 3.02) must be reduced by a like number.

- (2) If music is provided, install the 33A voice coupler per BSP 418-450-105, paragraph 3.13.

NOTE: Only one 33A voice coupler is required in the system to provide music to all 109A loudspeakers and to the primary set(s) for music-on-hold.

- (3) For connections see paragraphs 4.04 and 4.05.
- (4) Connect plug A of loudspeaker into jack A of wall bracket assembly and plug B into jack B, ivory to ivory and gray to gray, respectively (Figure 11).
- (5) Slip the speaker baffle mounting bracket over the mounting clips on the wall bracket assembly and pull the speaker down until it is firmly held (Figure 11).

- 3.10 If background music is provided adjust the volume control of the 33A voice coupler to mid-range. Then, adjust the right-hand volume control(s) on the loudspeaker(s) to the desired music level (Figure 9). The volume control of the 33A voice coupler may be readjusted if necessary to raise or lower the overall music level.

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If music-on-hold was previously furnished, do not adjust the level from the customer provided music source.

- 3.11 Test the loudspeaker as follows:

- (1) At any telephone set, depress an idle IC button and the DSS button that corresponds to the 109A loudspeaker set (if background music is provided it will be muted). Speak into the transmitter and adjust the volume control to the level desired by the customer (Figure 9).

4. CONNECTIONS

24A APPARATUS UNIT

- 4.01 The 24A is factory-wired (Figure 12) to provide power failure ringer service for CO/PBX lines 1 and 2. To connect the unit to lines 3 and 4, see Table A.

25A APPARATUS UNIT

- 4.02 Connect the 25A apparatus unit (Figure 13) as follows:

- (1) Connect the auxiliary signal and power supply to KS-16626, L12 relay set and/or KS-16301, L17 relay set per BSP 463-120-100 or BSP 463-110-100, respectively.

- (2) If the auxiliary signal is to respond to any one DSS code, move the spade-tip lead associated with that code from terminals DSS 1-10 to terminal IN (Figure 5).
- (3) If the auxiliary signal is to respond to any combination of common audible signals (CA 1 through 4), move the spade-tipped lead associated with that line and/or lines to the A through D terminals, respectively.

NOTE: The 25A apparatus unit may be coded to respond to both DSS codes and common audible signals.

4.03 Determine which DSS code that will be used to access the input for multiple signaling and which DSS codes are to be called simultaneously (Figure 14) and connect as follows:

- (1) Remove the lead corresponding to the input code from the numbered terminal (Figures 8 and 14) where it is stored; insert the lead in the IN terminal (Figures 8 and 14).
- (2) Remove the leads corresponding to the output codes and insert each lead in a separate terminal lettered A through J. (Figures 8 and 14).

NOTE: Selection of lettered terminals A-J are on a random basis, using only 1 DSS code per terminal. If possible do not use adjacent terminals; this will prevent the possibility of shorted terminals.

109A LOUDSPEAKER SET

4.04 Connect +V, COM, and DSS to jack A (ivory) of the wall bracket assembly (Figure 11) per Table B.

4.05 If music is provided, connect terminals 5 and 6 of the 33A voice coupler to terminals R and G of jack B (gray) of the wall bracket assembly (Figure 11) using inside wire.

TABLE A
24A APPARATUS UNIT
(CONNECTIONS FOR CO/PBX LINES 3 AND 4 ONLY)

REMOVE LEAD FROM*		CONNECT LEAD TO#	
LEAD COLOR	PRINTED WIRING BOARD TERMINAL	LEAD COLOR	PRINTED WIRING BOARD TERMINAL
BL-W	5*	O-R	5
W-BL	4*	R-O	4
BK-S	6*	Y-G	6
W-BR	9*	R-S	9
BR-W	7*	S-R	7

* INSULATE AND STORE AFTER REMOVAL.

LEADS ARE INSULATED AND STORED.

TABLE B
109A LOUDSPEAKER SET

CONNECTIONS TO JACK A (IVORY)

FUNCTION OF LEAD IN COM KEY 416 CABLE	CONNECT (NOTE 1)		
	FROM	TO	
	JACK A (IVORY)	91A CONN. BLOCK (SEE NOTE 2 AND 4)	STD CUTDOWN ON 66-TYPE CONN. BLOCK (OPTIONAL)
+V	R	45	Y-S
COM	B	20	S-Y
DSS (SEE NOTE 3)	G	D1	BR-BK
		D2	BK-BR
		D3	O-Y
		D4	Y-O
		D5	BR-Y
		D6	Y-BR
		D7	BL-V
		D8	V-BL
		D9	O-V
		D10	V-O

NOTE 1 USE INSIDE WIRE TO MAKE CONNECTIONS.

NOTE 2 SHORT THE FOUR PHYSICALLY ADJACENT TERMINALS 20, M, R1, AND R2 AND SHORT THE FOUR PHYSICALLY ADJACENT TERMINALS T2, T1, M, AND 45.

NOTE 3 CONNECTION IS MADE TO ONE OF THE DSS ZONES D1 - D10 AS APPROPRIATE.

NOTE 4 IF CONNECTIONS ARE MADE TO THE 91A CONN. BLOCK SERVING EITHER PRIMARY SET; THE SHORTS OF NOTE 2 ARE NOT REQUIRED.

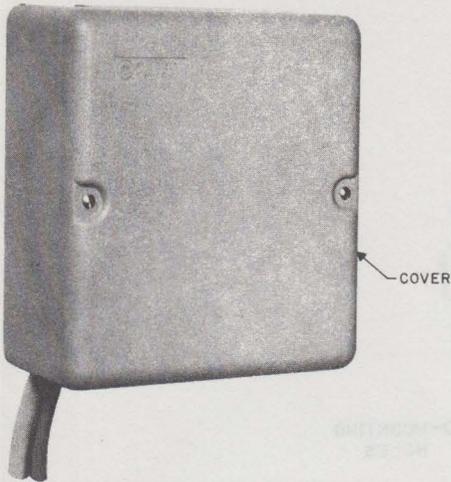


FIGURE 1. 24 A APPARATUS UNIT

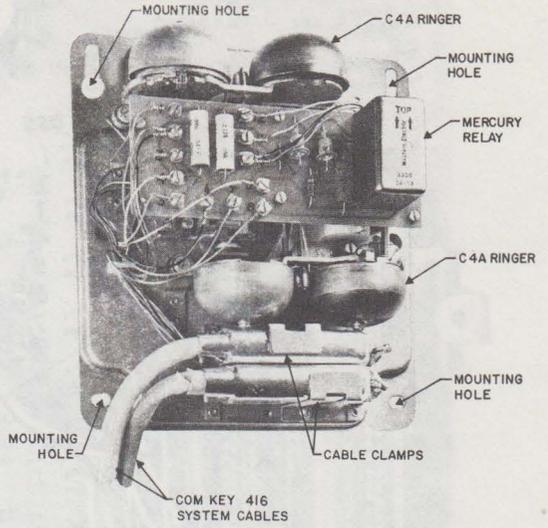


FIGURE 2. 24 A APPARATUS UNIT

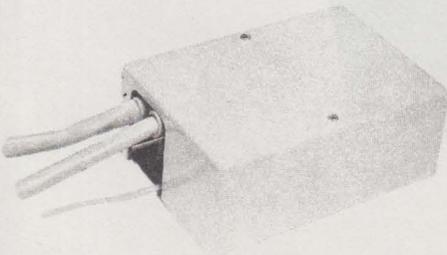


FIGURE 3. 25 A APPARATUS UNIT

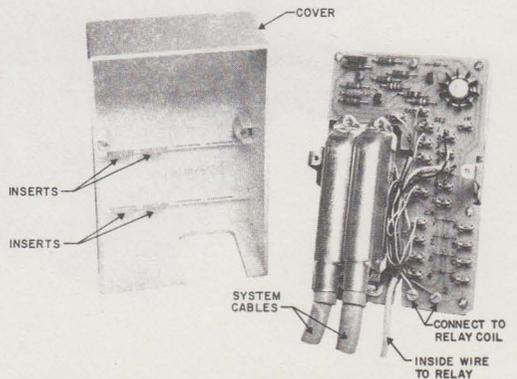


FIGURE 4. 25 A APPARATUS UNIT

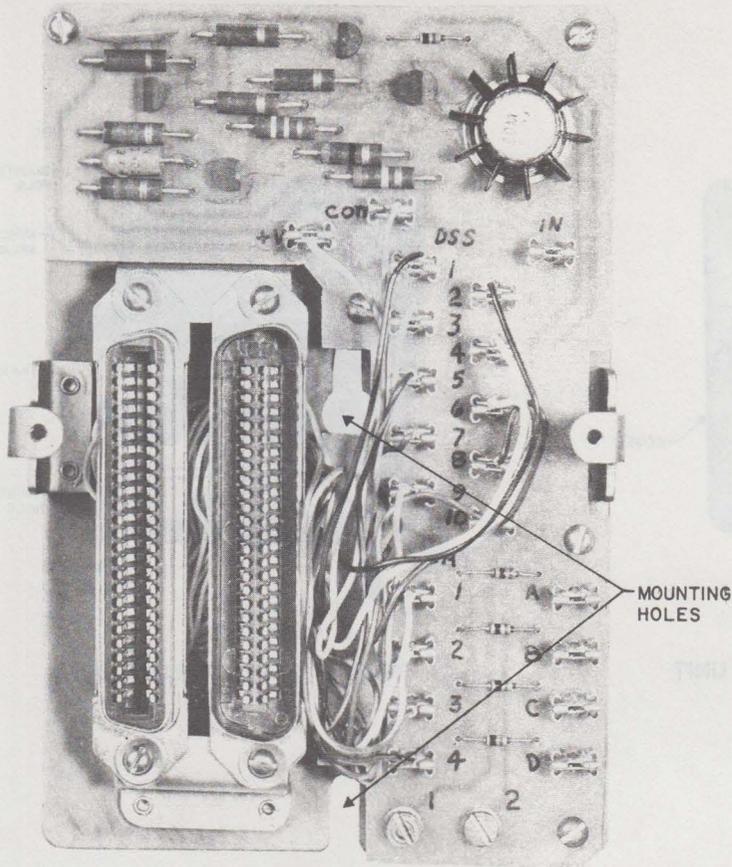


FIGURE 5. 25 A BASE PAN ASSEMBLY

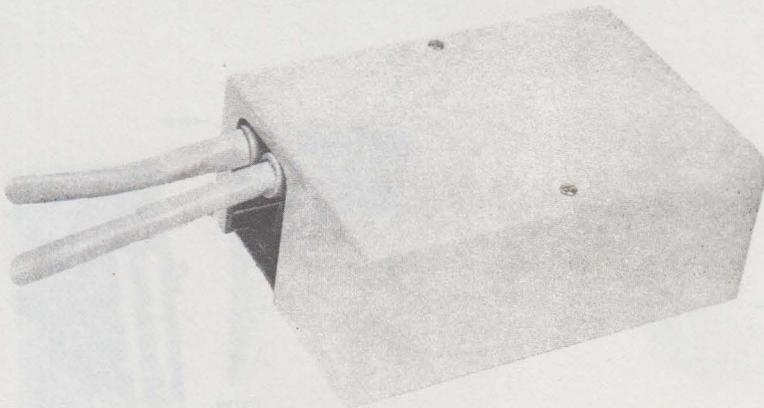


FIGURE 6. 26 A APPARATUS UNIT

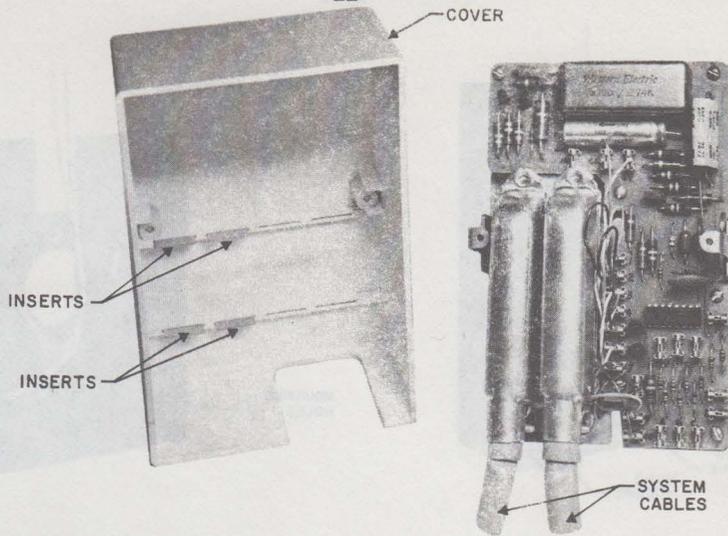


FIGURE 7. 26 A APPARATUS UNIT

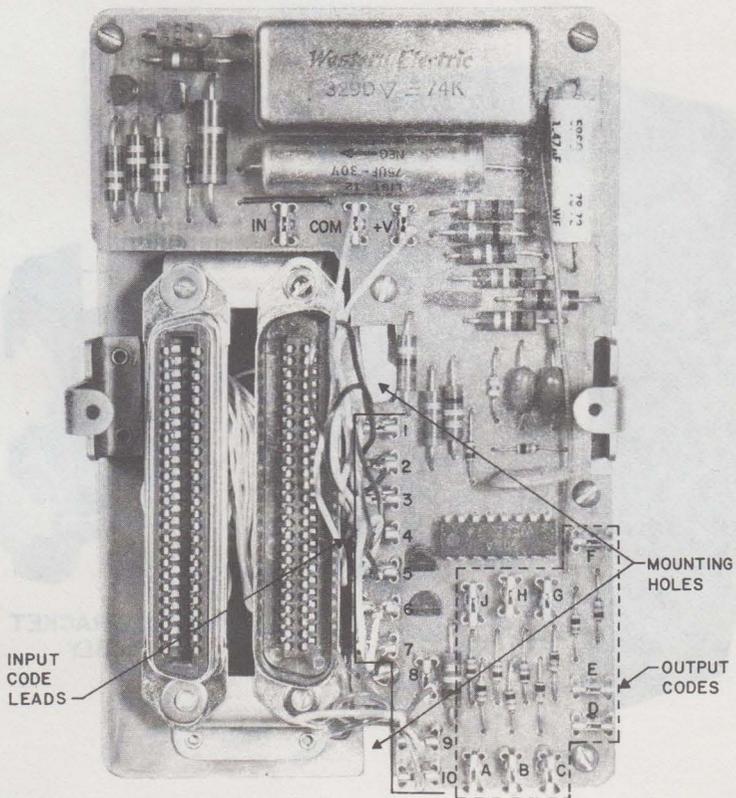


FIGURE 8. 26 A APPARATUS UNIT BASE

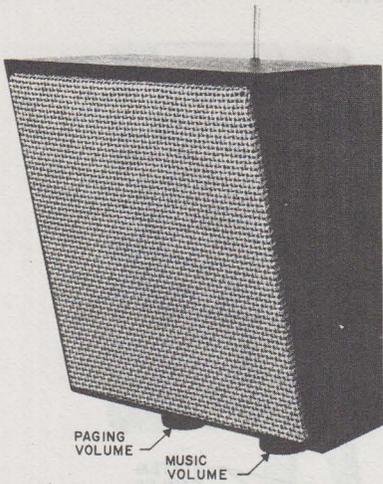


FIGURE 9. 109 A LOUDSPEAKER SET

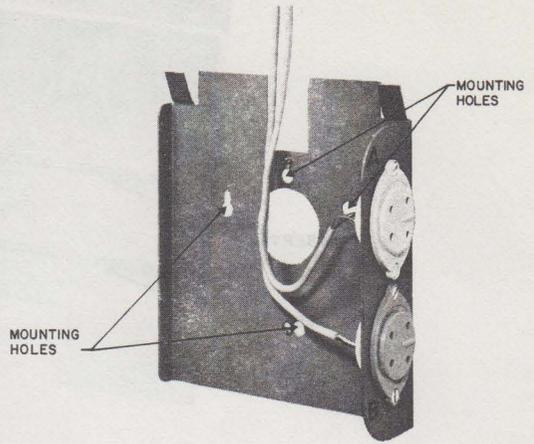


FIGURE 10. WALL BRACKET ASSEMBLY

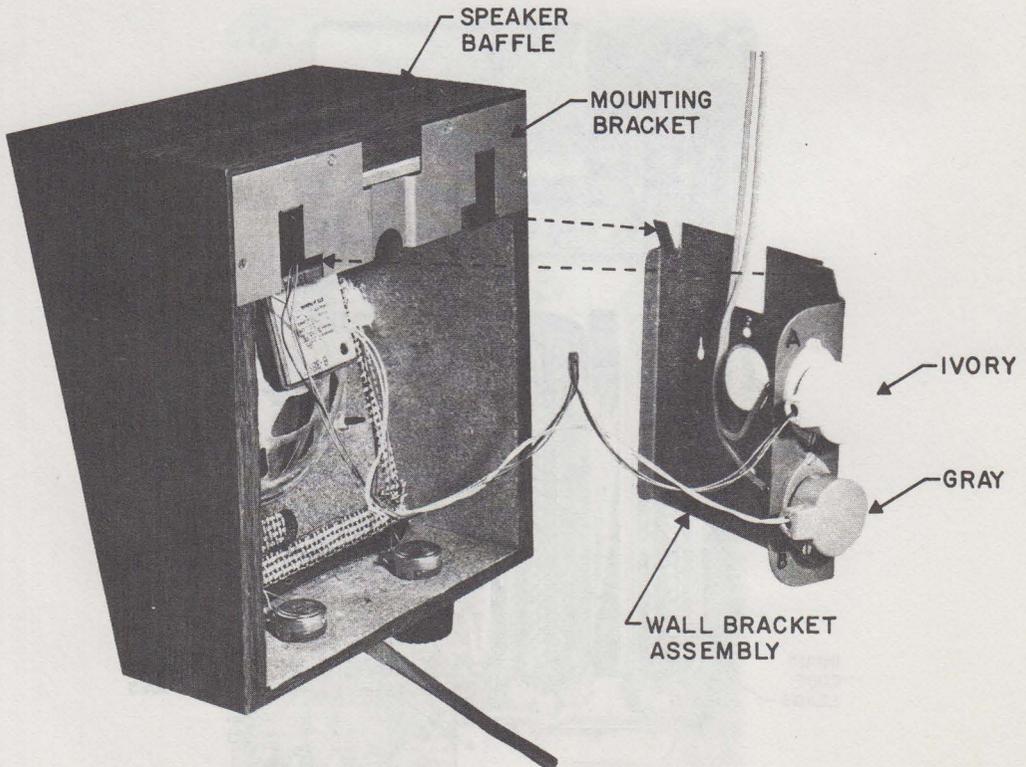


FIGURE 11. 109 A LOUDSPEAKER SET

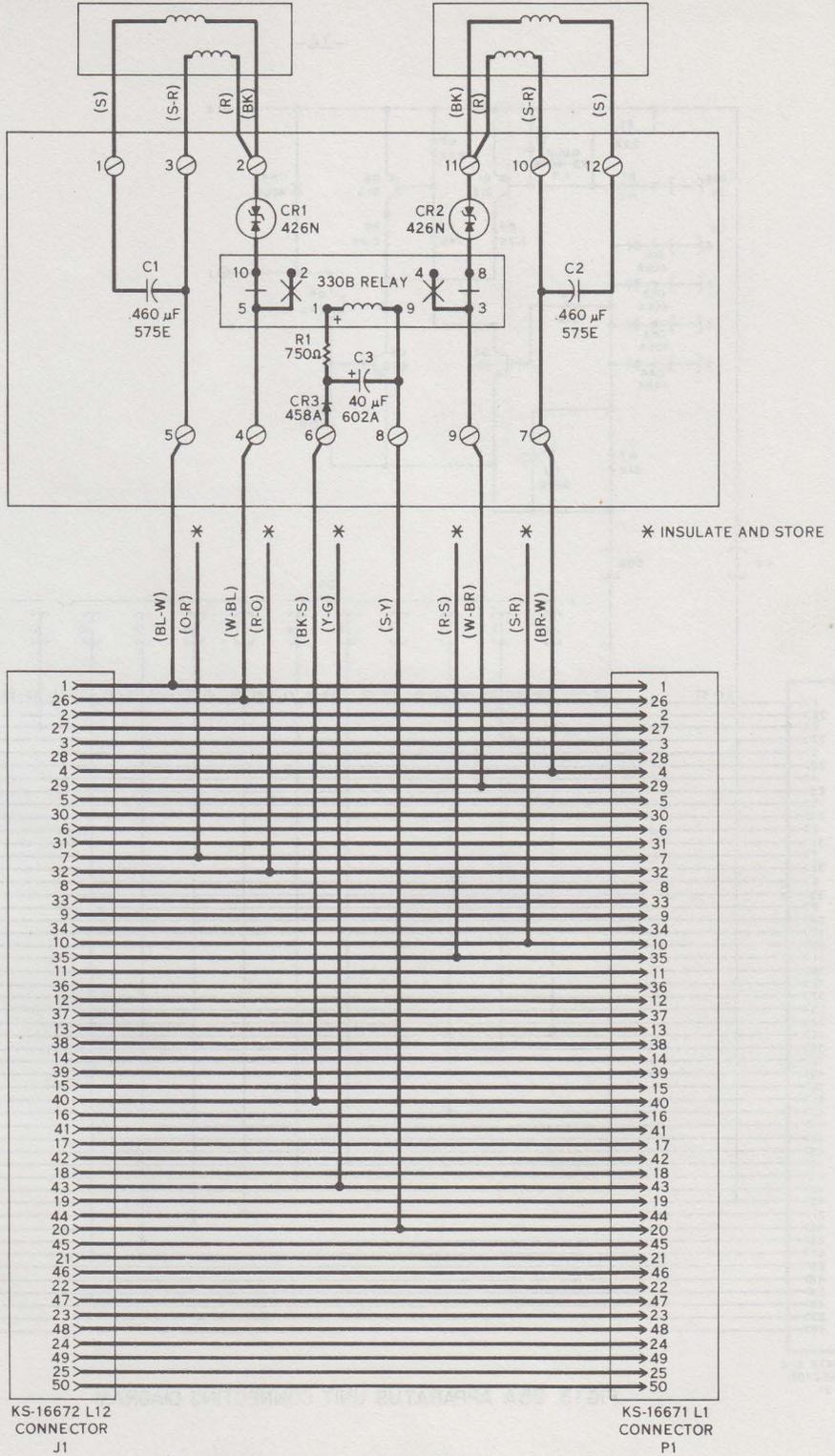


FIG. 12. 24A APPARATUS CONNECTING DIAGRAM

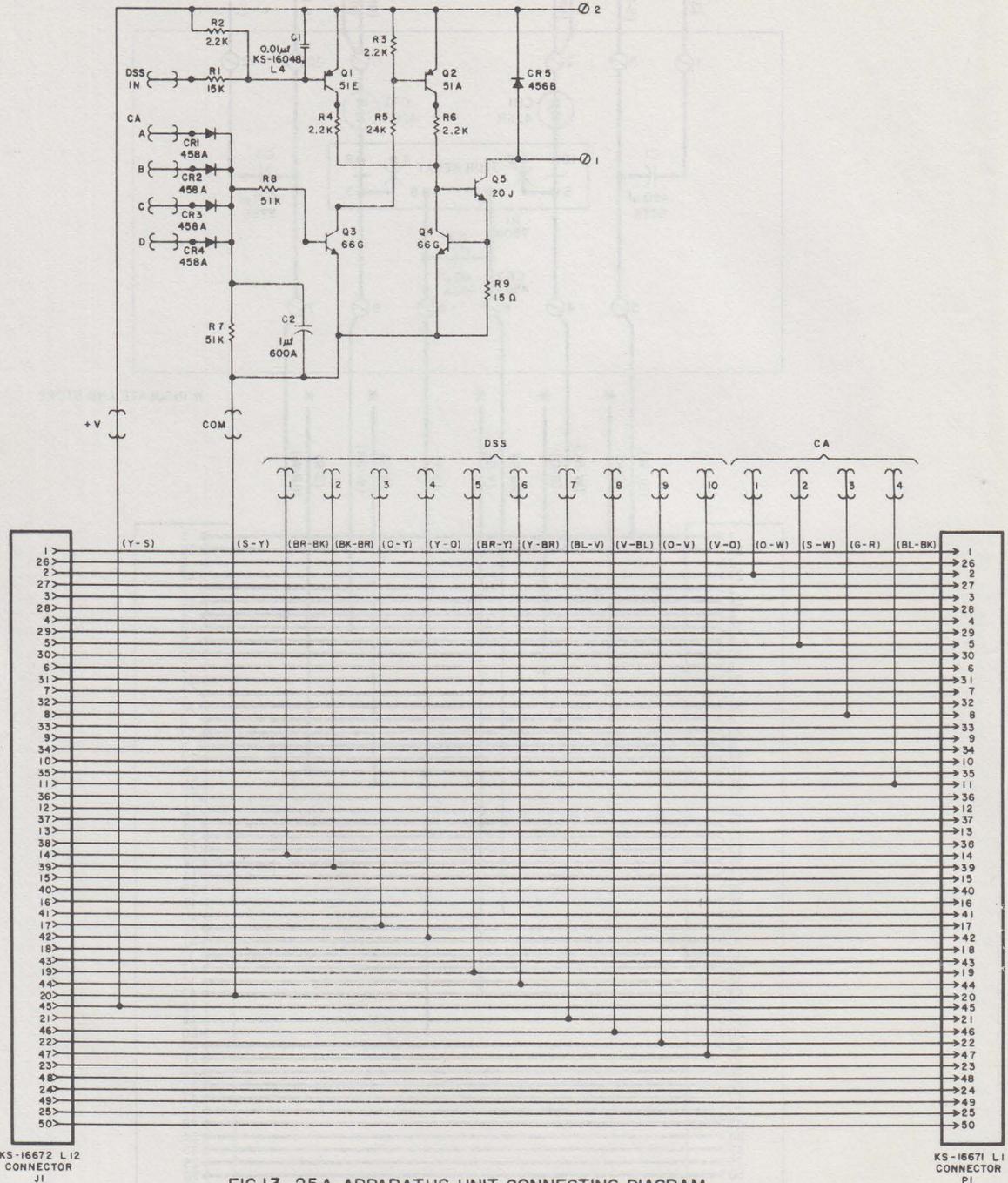


FIG.13. 25A APPARATUS UNIT CONNECTING DIAGRAM

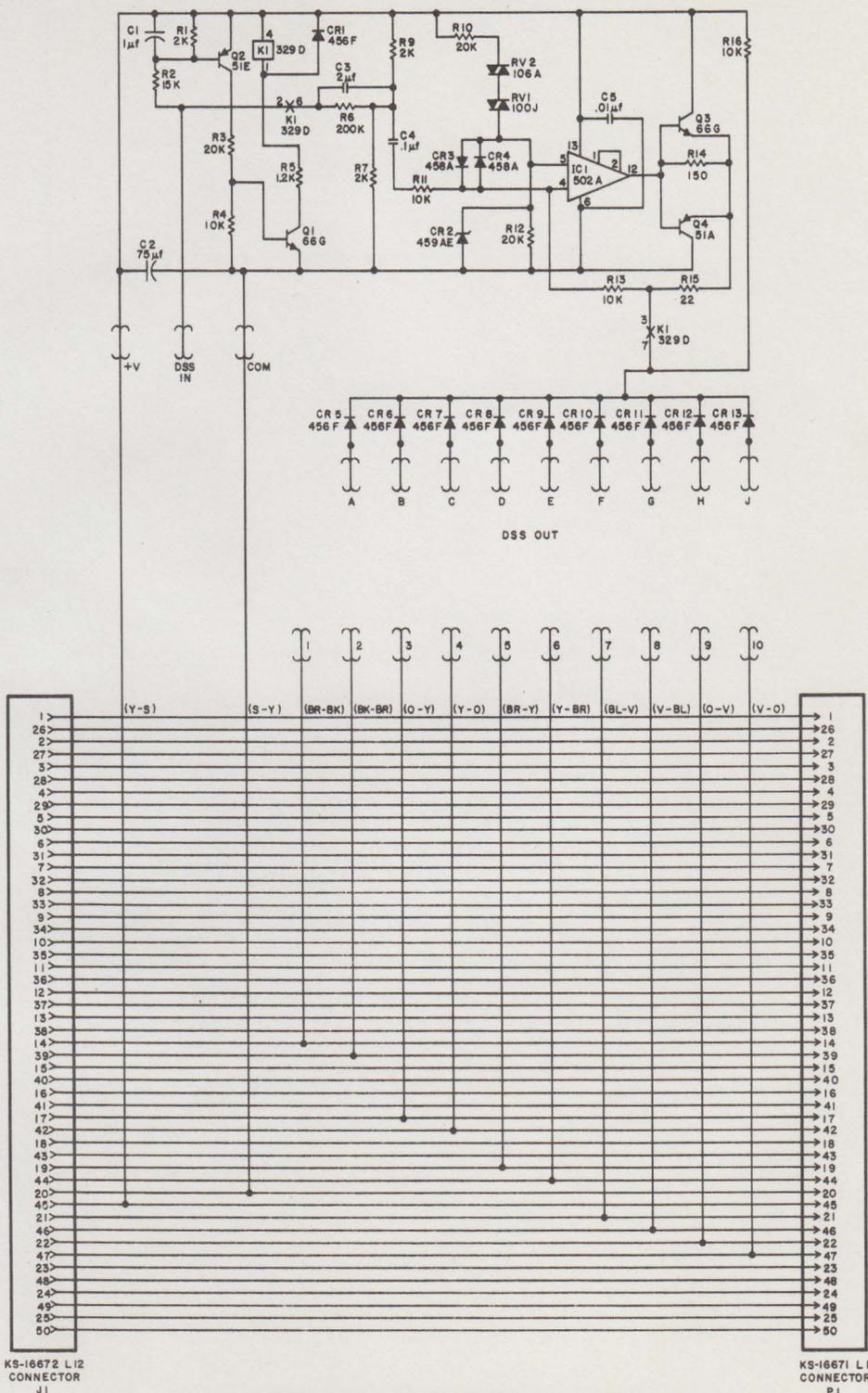


FIG.14. 26 A APPARATUS CONNECTING DIAGRAM