

“TOUCH-TONE®” CALLING EQUIPMENT
IDENTIFICATION, INSTALLATION, AND CONNECTIONS
801A PBX

	PAGE		PAGE
1. GENERAL	2	J58849DG-1, Lists 1 and 3 Ringing and Tone Supply and Power Patch Panel	5
“TOUCH-TONE” CALLING RECEIVER UNITS	2		
C-Type J58844B (SD-67027-01)	2		
A-Type J99289B (SD-98148-01)	2	Figures	
G1-Type J59204CA (SD-1C586-01)	2	1. C-Type TOUCH-TONE Calling Receiver Unit (J58844B)	7
RINGING AND TONE SUPPLY/S	2	2. A3-Type TOUCH-TONE Calling Receiver Unit (J99289A)	8
2. IDENTIFICATION	3	3. G1-Type TOUCH-TONE Calling Receiver Unit (J59204CA)	8
3. INSTALLATION	3	4. J58844B TOUCH-TONE Calling Receiver—Connections	9
A. Uncrating Equipment	3	5. J99289B TOUCH-TONE Calling Receiver—Connections	10
B. Installing TOUCH-TONE Calling Receiver Units	3	6. J59204CA TOUCH-TONE Calling Receiver—Connections	11
J58844B TOUCH-TONE Calling Receiver Unit (C Type)	3	7. Connector Stamping	11
J99289B TOUCH-TONE Calling Receiver Unit (A Type)	4	8. J58849DG-1, Lists 1, 2, and 4 Ringing and Tone Supply and Power Patch Panel	12
J59204CA TOUCH-TONE Calling Receiver Unit (G1 Type)	4		
C. Installing Precise Dial Tone in the Ringing and Tone Supply	5		

NOTICE

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CONTENTS	PAGE
Tables	
A. Equipment Summary	13
B. G1-Type TOUCH-TONE Calling Receiver Unit—Circuit Pack Locations	14
C. Register Locations	14

1. GENERAL

1.01 This section provides information on identification, installation, and connections of TOUCH-TONE calling receiver units when mounted in the 801A private branch exchange (PBX). Procedures for converting from rotary dial to TOUCH-TONE operation are also described. This conversion consists of ensuring precise dial tone from the tone supply and adding circuit packs in register circuits. This system must be equipped with optional J58872BK carrier unit to provide TOUCH-TONE capability on registers 0 and 1. In cases where the 801A PBX communicates with distant PBX, not equipped with TOUCH-TONE capabilities, a TOUCH-TONE to rotary dial external conversion must be made. For information on furnishing this conversion, refer to Section 534-366-210.

1.02 This section is reissued to:

- Add information on the J59204CA TOUCH-TONE calling receiver unit, G-1 type
- Add descriptive information on the three TOUCH-TONE calling receiver units
- Add testing information on receiver units and ringing and tone supply units.

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

"TOUCH-TONE" CALLING RECEIVER UNITS

1.03 There are three types of TOUCH-TONE calling receiver units as shown in Fig. 1, 2, and 3. These units are briefly described below.

C-Type J58844B (SD-67027-01)

The C-type receiver, sometimes referred to as a junior receiver, is a low-cost receiver designed primarily for use at PBXs where the cable loops between the station set and the PBX equipment are provided on a 2-wire nonrepeated basis (for example, on-premises extension). The C-type receiver recognizes multifrequency tones generated by the TOUCH-TONE dial and converts these tones to dc signals on a 1-out-of-10 basis in the case of a C1 type or 1-out-of-12 basis in the case of a C2 type.

A-Type J99289B (SD-98148-01)

The A-type receiver, sometimes referred to as a senior receiver, is more sensitive and accurate than the C-type (junior) and was originally designed for use at central offices (COs) equipped for TOUCH-TONE calling. It can detect lower level tones than the C-type receiver and is presently being used at PBXs where longer cable loops are necessary (for example, off-premises extension). The A-type receiver recognizes multifrequency tones generated by the TOUCH-TONE dial and converts these tones to dc signals on a 2-out-of-7 basis.

G1-Type J59204CA (SD-1C586-01)

The G1-type receiver can be used instead of the A- or C-type receiver. The signaling performance of the G1-type receiver is superior to either the A- or C-type receiver. The G1-type receiver, when used in the 801A PBX, recognizes multifrequency tones generated by the TOUCH-TONE dial and converts these tones to dc signals on a 2-out-of-7 basis.

RINGING AND TONE SUPPLY/S

1.04 The J58849DG-1 (SD-1E198-01) unit (Fig. 8) is used in cabinet A for module A in a single or two cabinet system, and an additional unit is mounted in cabinet C for module B in a three or four cabinet system. The ringing and tone supply in both cabinets (A and C) must be equipped with a 404A tone generator to furnish precise dial tone.

1.05 This issue of the section is based on the following drawings:

- ED-1E330-01 Issue 8

- SD-67027-01 Issue 8
- SD-98148-01 Issue 17
- SD-1C586-01 Issue 1
- SD-1E198-01 Issue 8
- SD-1E305-01 Issue 14
- SD-1E330-01 Issue 24.

If this section is to be used with equipment or apparatus reflecting later issue(s) of the drawing(s), reference should be made to the schematic drawings (SDs) and circuit descriptions (CDs) to determine the extent of the changes and the manner in which the section may be affected.

2. IDENTIFICATION

2.01 Table A provides an equipment summary to assist in the identification of the equipment units.

3. INSTALLATION

A. Uncrating Equipment

3.01 Uncrate the equipment units at the installation site.

3.02 Check that:

- (a) All units are provided as ordered.
- (b) All units are free from damage or unsightly scratches.
- (c) The correct number of circuit cards required is installed in the receiver when the J99289B TOUCH-TONE calling receiver is provided. The J99289B unit is stamped from left to right on the top as follows: B1, BEF*, B2, B3, B4, B5, B6** or B7**, B8† or B19†, B9‡ or B26‡. Each location should be equipped with the designated circuit pack.
- (d) The correct number and type circuit packs are furnished when the J59204CA TOUCH-TONE calling receiver is provided (Table B).

* BEF is equipped with 632A filter.

** B6 is Z option when receiver is equipped with eight channels. B7 is Y option when receiver is equipped with seven channels.

† B19 replaced B8 of earlier models.

‡ B26 replaced B9 of earlier models.

B. Installing TOUCH-TONE Calling Receiver Units

J58844B TOUCH-TONE Calling Receiver Unit (C Type)

3.03 To install the J58844B receiver unit, proceed as follows.

- (1) Plug the KS-14672, List 2 connector(s) (ED-1E073-10, Group 2 connector cable, part of J58860R) into the KS-14671, List 1 connector(s) on the receiver unit(s) (Fig. 4).
- (2) Mount the J58844B receiver unit(s) on the 23-inch relay rack at the back of the cabinet in the space designated in ED-1E330-01 as reserved for TOUCH-TONE calling receiver units. Use the four screws (P-353446 or 803534462) supplied with the unit leaving the screws slightly loose.

Danger: Care should be taken when installing the receiver unit below the ringing and tone supply to avoid contact with the EJ1 and EJ2 fuse holders as 110 volts are present.
- (3) Route the ED-1E073-10, Group 2 connector cable behind the upright of the 23-inch relay rack.
- (4) Tighten the four screws (P-353446 or 803534462).
- (5) Stamp the KS-16689, List 3 plug on the ED-1E073-10, Group 2 connector cable as shown in Fig. 7 using transfer stenciling kit type B.
- (6) Stamp associated equipment designation (REG0, etc) below the KS-14672 connector.
- (7) Repeat Steps (1) through (6) to install receiver units in each system cabinet in which dial pulse registers are provided.

SECTION 553-201-201

- (8) Insert, as required, circuit pack AC 75 into its respective register location as shown in Table C.
- (9) Plug connector cable into proper register circuit as stamped per Step (5).
- (10) Verify that the 801A PBX is equipped for precise dial tone. (See Subpart C.)
- (11) Test calling receiver unit as outlined in Section 553-201-200. In Part 3 see CIRCUIT TESTS, Subpart D—Registers. A TOUCH-TONE telephone set should be used in place of the 1013A handset.

J99289B TOUCH-TONE Calling Receiver Unit (A Type)

3.04 To install the J99289B receiver unit, proceed as follows.

- (1) Using a KS-16363, List 1 tool (hand-operated wire-wrap tool) or equivalent, connect the unfinished end of J99289B, List 2 connector cable(s) (ED-1E073-10, Group 5) to terminal strip TS(G) on the J99289A, List 1 mounting shelf as shown in Fig. 5. Two vertical rows of terminals, designated A and B, are provided on the terminal strip; row A corresponds to the left receiver unit and row B to the right receiver unit when receiver units are installed in the mounting shelf. If two receiver units are to be installed, connect cables to rows A and B of terminal strip. If one receiver unit is to be installed, connect cable to row A or B only.
- (2) Stamp the associated equipment designation (REG0, etc) below the KS-14672 connectors on the mounting shelf. If stenciling kit is used, locate stencil as near connector as possible.
- (3) Stamp cable identification (A-BKTT, etc) on the KS-16689, List 3 plug of the connector cable(s) as shown in Fig. 7 using transfer stenciling kit type B.
- (4) If J99289A, List D cover is provided, install cover on rear of mounting shelf and secure with four 8-18 by 3/8 PHST screws (P-422946) and four No. 8 washers (P-284148) furnished with the cover.
- (5) Install the J99289A mounting shelf on the 23-inch relay rack at the back of the cabinet

in the space designated in ED-1E330-01 as reserved for TOUCH-TONE calling receivers. Use the four 12-24 by 1/2 PHST screws (P-174397) furnished with the mounting shelf. Leave screws slightly loose.

Danger: Care should be taken when installing the receiver unit below the ringing and tone supply to avoid contact with the FJ1 and FJ2 fuse holders as 110 volts are present.

- (6) Route the connector cables behind the right upright of the 23-inch relay rack.
- (7) Tighten the four P-174397 screws.
- (8) Install J99289B, List 1 receiver unit(s) in the mounting shelf making certain that connector on rear of unit is fully seated with mating plug on the mounting shelf.
- (9) Install the P-47F773 covers on the TOUCH-TONE calling receiver units, and tighten the covers to the mounting shelf.
- (10) Repeat Steps (1) through (9) to install mounting shelves and receiver units in each system cabinet in which dial pulse registers are provided.
- (11) Insert, as required, circuit pack AC 74 into its respective register location as shown in Table C.
- (12) Verify that the 801A PBX is equipped for precise dial tone (See Subpart C.)
- (13) Test receiver unit as outlined in Section 553-201-200. In Part 3 see CIRCUIT TESTS, Subpart D—Registers. A TOUCH-TONE telephone set should be used in place of the 1013A handset.

J59204CA TOUCH-TONE Calling Receiver Unit (G1 Type)

3.05 To install the J59204CA receiver unit, proceed as follows.

- (1) Mount the J59204CA receiver unit(s) on the 23-inch relay rack at the back of the cabinet in the space designated in ED-1E330-01 as reserved for TOUCH-TONE calling receiver units.

Use the four screws (P-353446 or 803534462) supplied with the unit leaving the screws slightly loose.

Danger: Care should be taken when installing the receiver unit below the ringing and tone supply to avoid contact with the FJ1 and FJ2 fuse holders as 110 volts are present.

(2) Stamp KS-16689, List 3 plug A or B of the equipment unit as shown in Fig. 7 using transfer stenciling kit type B. Stamp associated equipment designation (REG0, etc) on receiver unit.

(3) Route the B25A extension cable (Fig. 6) from the J59204CA receiver unit to the register for each receiver.

Note: Do not use patch cable per J59204CA, List 2 (CAD 2 of SD-1C 586-01). This patch cable is provided for use when circuit pack AE 44 is used in positions 5 and 6 of G1 receiver unit. (Used with 770A, 805A, or 812A PBXs.)

(4) Connect the J59204CA receiver unit to register circuit using the B25A extension cable of Step (3). (Connect cable at both ends.)

(5) Repeat Steps (1) through (4) to install receiver units in each system cabinet in which dial pulse registers are provided.

(6) Insert circuit packs HJ 16, HJ 17, and AE 46 into the proper circuit pack connectors as shown in Table B.

(7) Insert, as required, circuit pack AC 74 into its respective register location as shown in Table C.

(8) Verify that the 801A PBX is equipped for precise dial tone. (See Subpart C.)

(9) Test receiver unit as outlined in Section 553-201-200. In Part 3 see CIRCUIT TESTS, Subpart D—Registers. A TOUCH-TONE telephone set should be used in place of the 1013A handset.

C. Installing Precise Dial Tone in the Ringing and Tone Supply

J58849DG-1, Lists 1 and 3 or Lists 1, 2, and 3 Ringing and Tone Supply and Power Patch Panel

3.06 Check cabinets A and C ringing and tone supply list numbers. The J58849DG-1, Lists 1 and 4 or Lists 1, 2, and 4 ringing and tone supply (Fig. 8) is equipped with precise dial tone for TOUCH-TONE application. When J58849DG-1, Lists 1 and 3 or Lists 1, 2, and 3 are provided, the J58849DG-1, List 4 equipment is required in place of the J58849DG-1, List 3 and can be ordered as follows:

Method A (Replacing Apparatus)

One 404A tone generator

One 840222905 bracket

Four 840058598 PHM screws.

Method B (Replacing Complete Unit)

One J58849DG-1, Lists 1 and 4 or Lists 1, 2, and 4 ringing and tone supply.

3.07 Two methods of providing the precision dial tone generator required for TOUCH-TONE operation are described as follows:

Method A—Replacing the 101B frequency generator in an existing ringing and tone supply with a 404A tone generator

Method B—Replacing the entire ringing and tone supply (with 101B frequency generator) with a factory-assembled ringing and tone supply (with 404A tone generator).

Note: The following procedures for removal, modification, and installation of the ringing and tone supply are keyed to the above methods as applicable.

Caution: Removing the ringing and tone supply from an operating PBX will place the system temporarily out of service. Therefore, the following procedures should be performed during periods of light traffic. In respect to system downtime, Method A requires

SECTION 553-201-201

a longer out-of-service interval than Method B. As a safety precaution, it is recommended that the PBX ac power cord be disconnected from the wall outlet.

Removal of Ringing and Tone Supply for Modification or Replacement (Methods A and B)

3.08 Remove the J58849DG, Lists 1 and 3 or Lists 1, 2, and 3 ringing and tone supply from the PBX cabinet as follows.

- (1) Disconnect power plug P2 (from J56635A power supply) from receptacle marked DC SUP.
- (2) Disconnect all connector cables connected to the power patch panel.
- (3) Loosen two screws (P-181255 or 801812555) securing power patch panel to ringing and tone supply chassis. Slip patch panel down on the screws to expose four screws securing chassis to cabinet, and retighten the two loosened screws to prevent patch panel from slipping upward when chassis is removed.
- (4) Remove and retain four screws securing ringing and tone supply to cabinet, and move unit to a suitable work area.

Modification of Ringing and Tone Supply Containing 101B Frequency Generator (Method A)

3.09 Replace 101B frequency generator with a locally ordered J58849DG, List 4 apparatus including a 404A tone generator as follows.

Warning: *Exercise care when removing and replacing frequency generator to avoid damage to any other components and wiring.*

- (1) Unsolder and disconnect (or clip at terminals) four leads to the 101B frequency generator. Insulate the four leads, and tie back to the wiring harness.
- (2) Remove and discard four screws, four flatwashers, four lockwashers, and four hex

nuts securing frequency generator to its mounting bracket. Remove the frequency generator.

(3) Remove and discard the screws from the underside of the chassis which secures the frequency generator mounting bracket to the chassis. Pivot the bracket, as necessary, and remove the mounting bracket.

(4) Locate the KS-14528, List 2 connector (J3) tied to the chassis at the rear of the frequency generator location. Cut cable ties, as necessary, to free connector and cable back to the first cable clamp near the interrupter.

(5) Position 840222905 bracket on the chassis, aligning the threaded holes over the chassis holes from which the original bracket was removed. From the underside of the chassis, insert two 6-32 by 1/4-inch screws (P-181249 or 801812498) into the threaded holes of the bracket and tighten screws.

(6) Position 404A tone generator on the mounting bracket with the 7-pin connector oriented to the right rear of the chassis. Secure generator to bracket using four 6-32 by 3/8-inch screws (P-181251 or 801812513) on the left of the generator and one 6-32 by 1/4-inch screw (P-181249 or 801812498) on the right.

(7) Plug connector J3 into the 7-pin connector on the right rear of the frequency generator.

(8) On front lip of power patch panel, remove numeral 3 from the apparatus list identification (L1-3 or L1-2-3) and, using the stenciling kit, stamp 4 in the same location (L1-4 or L1-2-4).

Installing New or Modified Ringing and Tone Supply (Methods A and B)

3.10 Install J58849DG, Lists 1 and 4 or Lists 1, 2, and 4 ringing and tone supply as follows.

- (1) Assure that the power patch panel is slipped down enough to allow access to the four mounting holes in the front panel of the ringing and the tone supply.
- (2) Mount ringing and tone supply in appropriate position in basic cabinet, and secure to 23-inch relay rack mounting using four 12-24 by 5/16-inch

screws (P-353501 or 803535014) retained in 3.08(4).

(3) Loosen two retaining screws, slide power patch panel up to its installed position, and retighten the two retaining screws.

(4) Reconnect connector cables removed in 3.08 and power cable (PL) from power supply to receptacle marked DC SUP [removed in 3.08(1)].

Refer to ED-1E330-01, as required, to verify cable connections.

(5) Test ringing and tones supplied by the J58849DG-1 unit as prescribed in Section 553-201-200. In Part 3 see CIRCUIT TESTS, Subpart A—Line Circuits (for testing dial tone and ringing supply), Subpart C—Busy Tone, and Subpart R—Reorder Tone. A TOUCH-TONE telephone set should be used in place of the 1013A handset.

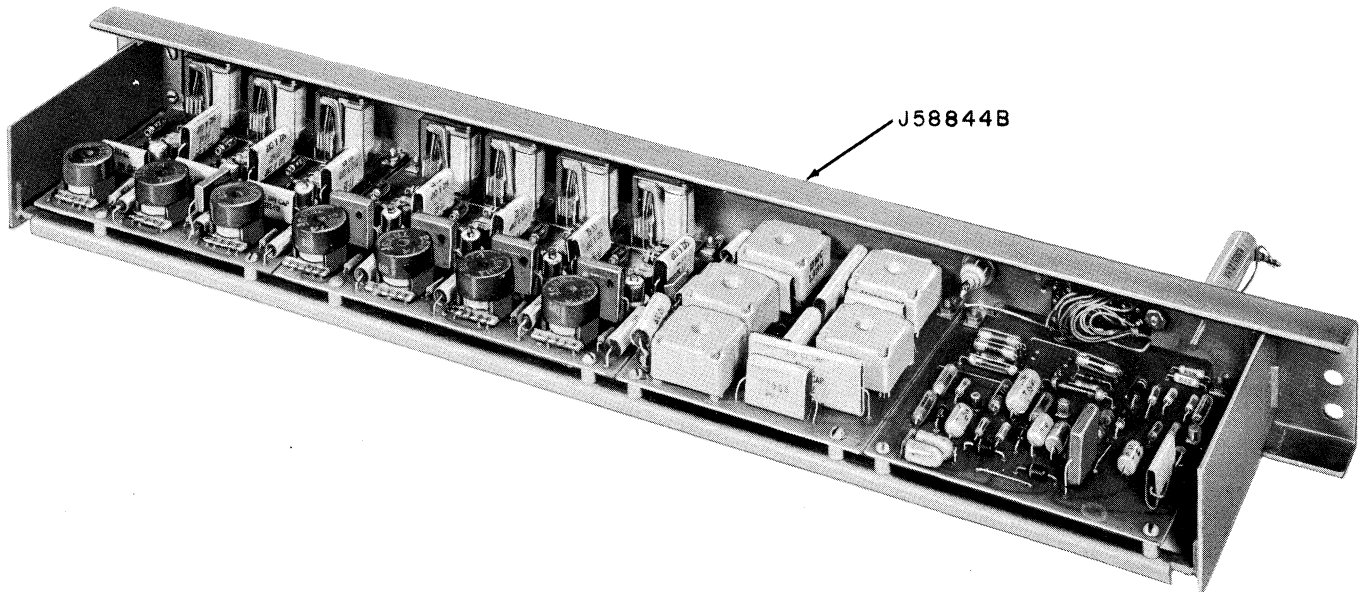


Fig. 1—C-Type TOUCH-TONE Calling Receiver Unit (J58844B)

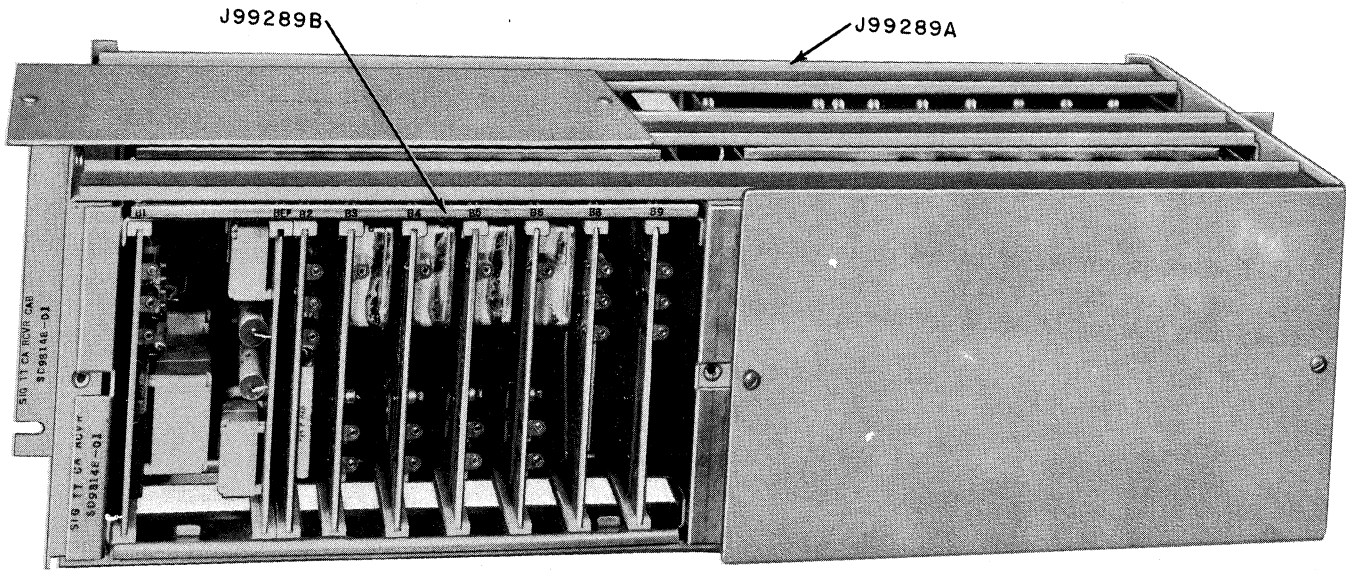


Fig. 2—A3-Type TOUCH-TONE Calling Receiver Unit (J99289A)

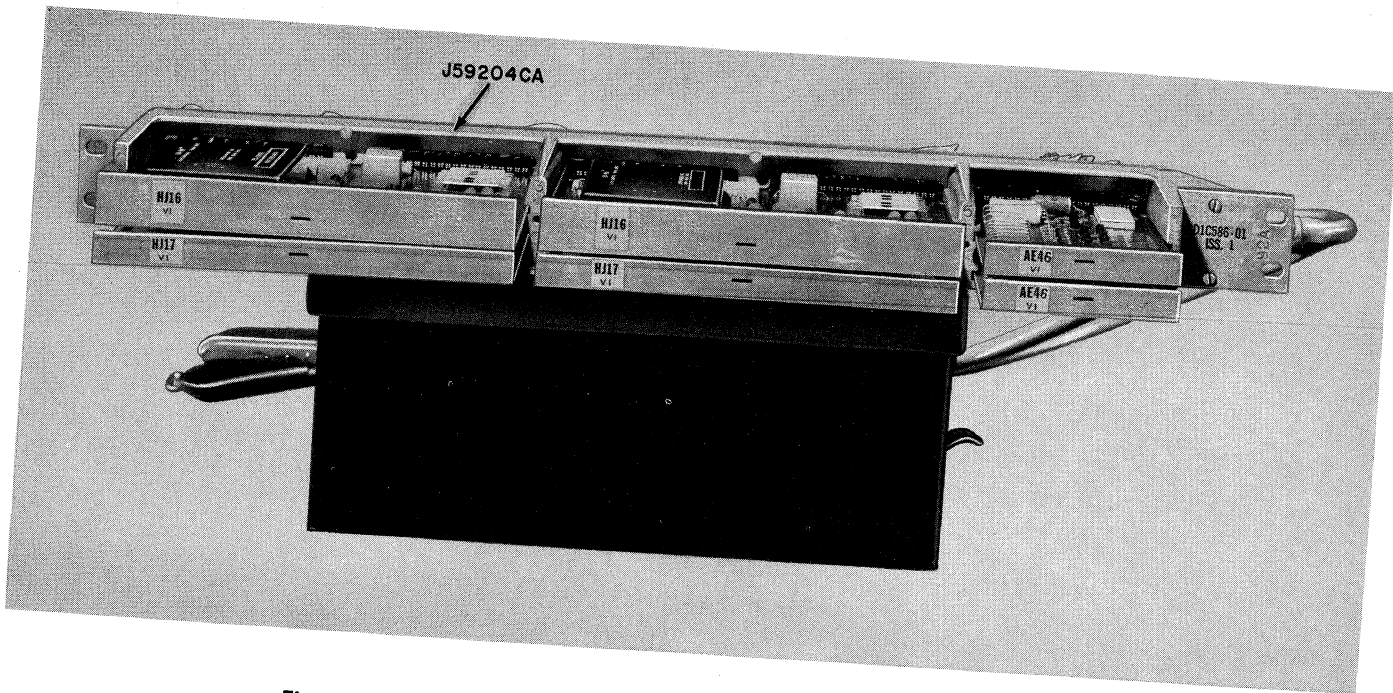
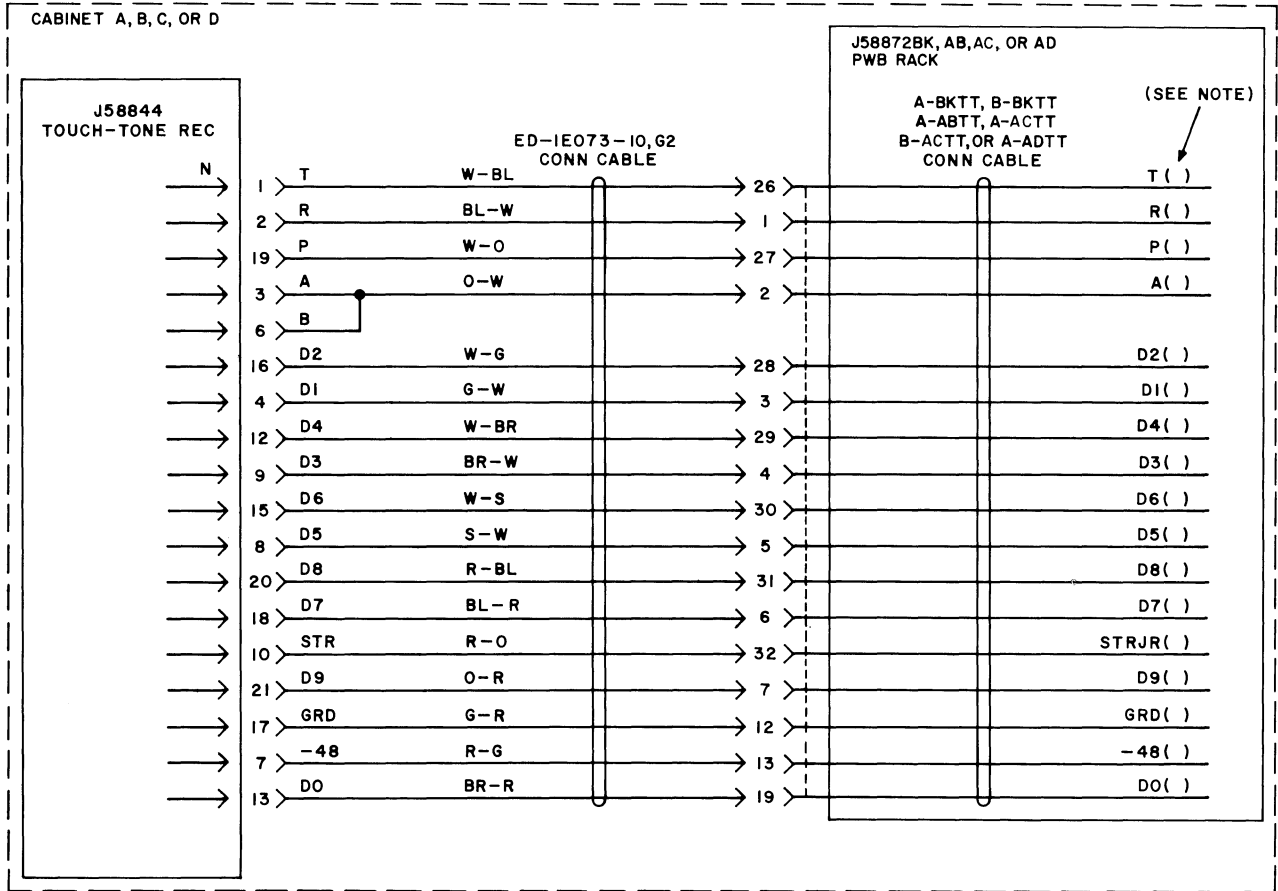
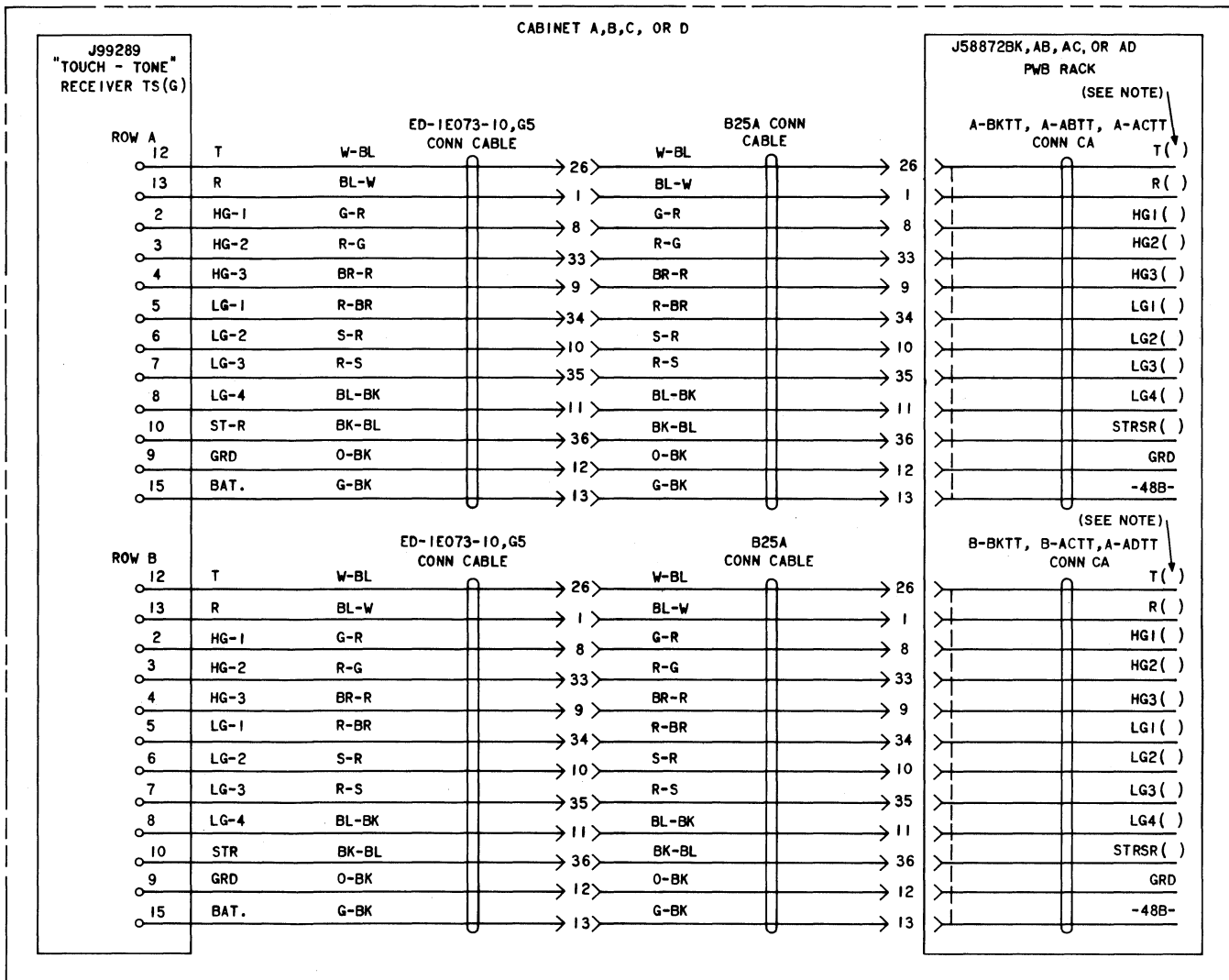


Fig. 3—G1-Type TOUCH-TONE Calling Receiver Unit (J59204CA)



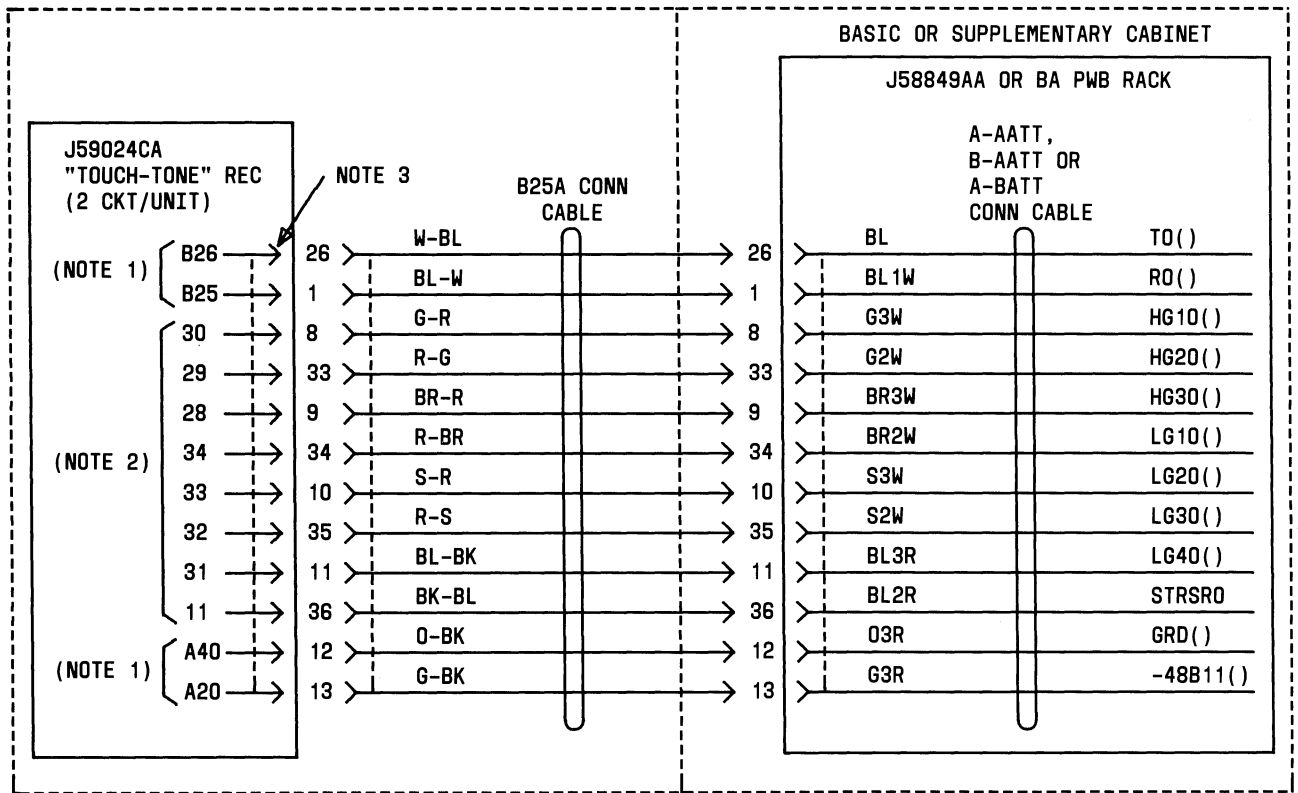
NOTE:
PARENTHESES FOLLOWING LEAD DESIGNATION
INDICATES REGISTER NUMBER.

Fig. 4—J58844B TOUCH-TONE Calling Receiver—Connections



NOTE:
PARENTHESIS FOLLOWING LEAD DESIGNATION
INDICATES REGISTER NUMBER.

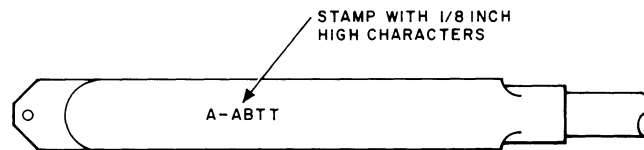
Fig. 5—J99289B TOUCH-TONE Calling Receiver—Connections



NOTES:

1. CP CONNECTOR 1 FOR 1ST CKT ON UNIT
CP CONNECTOR 3 FOR 2ND CKT ON UNIT
2. CP CONNECTOR 5 FOR 1ST CKT ON UNIT
CP CONNECTOR 6 FOR 2ND CKT ON UNIT
3. PLUG A FOR 1ST CKT ON UNIT
PLUG B FOR 2ND CKT ON UNIT
4. () FOLLOWING LEAD DESIGNATION
INDICATES REGISTER NUMBER

Fig. 6—J59204CA TOUCH-TONE Calling Receiver—Connections



STAMP	ASSOCIATED CIRCUIT
A-BKTT	REGISTER 0
B-BKTT	REGISTER 1
A-ABTT	REGISTER 2
A-ACTT	REGISTER 3
B-ACTT	REGISTER 4
A-ADTT	REGISTER 5

Fig. 7—Connector Stamping

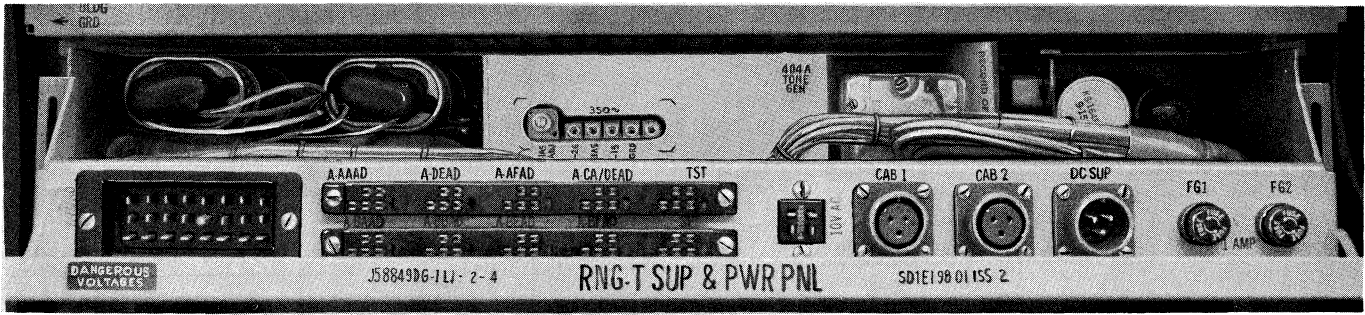


Fig. 8—J58849DG-1, Lists 1, 2, and 4 Ringing and Tone Supply and Power Patch Panel

TABLE A
EQUIPMENT SUMMARY

EQUIPMENT CODE	DESCRIPTION AND FUNCTION
J58844A, List 1 (MD) or J58844B, List 1	A C-type TOUCH-TONE calling receiver unit. Requires 2 inches of a 23-inch relay rack mounting space.
J99289A, List 1	A TOUCH-TONE calling receiver mounting shelf arranged to mount two TOUCH-TONE calling receiver units (J99289B). Requires 6 inches of a 23-inch relay rack mounting space.
J99289A, List 2	A connector cable (ED-1E073-10, Group 5) required in addition to List 1 to connect the TOUCH-TONE calling receiver unit to the 801A PBX. When two TOUCH-TONE calling receiver units are to be installed, two List 2 connector cables are required.
J99289B, List 1	A cabinet assembly, band elimination filter, and circuit packs for 7-channel operation of one TOUCH-TONE calling receiver unit. This unit mounts in the J99289A, List 1 mounting shelf and does not require additional mounting space.
J58849DG, List 1	Ringing and tone supply and power patch panel equipped to provide 20 Hz ringing power. Does not include frequency generator for dial and busy tones.
J58849DG, List 2	A second ringing generator assembly required in addition to List 1 when more than three ringdown tie trunks are desired.
J58849DG, List 4	Wiring and equipment required in addition to List 1 to provide a tone generator (404A) for use with TOUCH-TONE calling.
ED-1E073-10, Group 2	A connector cable required to connect to the J58844B TOUCH-TONE calling receiver and the 801A PBX printed wiring board carrier connector cable. One end of the cable is equipped with a KS-16689, List 3 plug, and the other end is equipped with a KS-14672, List 2 connector.
Circuit Pack AC 75	Required when the J58844B TOUCH-TONE calling receiver is provided. One AC 75 circuit pack is required for each dial pulse register provided in the 801A PBX.
Circuit Pack AC 74	Required when the J99289B TOUCH-TONE calling receiver is provided. One AC 74 circuit pack is required for each dial pulse register provided in the 801A PBX.
J59204CA, List 1	A TOUCH-TONE calling receiver unit assembled and wired for two TOUCH-TONE calling receiver circuits. Unit must be equipped with circuit packs HJ 16, HJ 17, and AE 46 for each circuit. Requires 2 inches of a 23-inch relay rack mounting space.

TABLE B

G1-TYPE "TOUCH-TONE" CALLING RECEIVER
UNIT – CIRCUIT PACK LOCATIONS

CIRCUIT PACK CODE	CIRCUIT PACK POSITION NUMBER	
	CIRCUIT NUMBER 1	CIRCUIT NUMBER 2
HJ 16	1	3
HJ 17	2	4
AE 46	5	6

TABLE C

REGISTER LOCATIONS

REGISTER	J58872 EQUIPMENT UNIT	CABINET	ROW	LOCATION
0	BK	A	AA00*	00
1	BK	A	AA00*	02
2	AB	B	AB02	18
3	AC	C	AC03	40
4	AC	C	AC03	42
5	AD	D	AD03	41

*Located in optional J58872BK unit.