

**630-TYPE KEY SERVICE PANEL AND 113-TYPE CONNECTING UNIT
IDENTIFICATION, INSTALLATION, AND CONNECTIONS
1A2 KEY TELEPHONE SYSTEM**

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NOTICE

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1. GENERAL

1.01 This section provides information on the 630-type key service panel (KSP) and the 113-type connecting unit (CU).

1.02 This section is reissued to:

- (a) Add information on the new 630B KSP and 113B1 CU
- (b) Rate the 630A KSP and 113A1 CU manufacture discontinued (MD)
- (c) Add connection information for the 278A paging adapter
- (d) Add option information for common audible signaling
- (e) Provide information on new KS-22453 power cord tag
- (f) Change information on grounding requirements
- (g) Add information on the 340A adapter
- (h) Correct minor errors
- (i) Change title.

Revision arrows are used to emphasize the more significant changes. The Equipment Test List (ETL) is not affected.

1.03 This section is based on drawing SD-69819-01, Issue 2. If this section is to be used with equip-

ment or apparatus reflecting later issue(s) of the drawing(s), reference should be made to the SDs and CDs to determine the extent of changes and the manner in which the section may be affected.

1.04 Incoming central office (CO) lines are to be installed in compliance with the Federal Communications Commission (FCC) Registration Program and must be routed through a standard network interface. Information on approved interfaces is contained in Sections 463-400-100 through 463-400-150.

1.05 After January 1, 1980, connection of customer-provided equipment (CPE) or telephone company-provided equipment to the 1A2 Key Telephone System (KTS) requires the use of a 33B voice coupler when providing music-on-hold.

2. IDENTIFICATION

PURPOSE

2.01 The 630-type KSP (Fig. 1) provides mounting and power facilities for 400-type line, intercom, and music-on-hold key telephone units (KTUs). It is used in conjunction with the 113-type CU or can be connected directly to a key telephone red distribution field without using the 113-type CU.

2.02 ♦The 630B KSP and the 113B1 CU are identical to the 630A KSP (MD) and 113A1 CU (MD) except that the B units provide additional options for audible signaling and make various leads accessible for the addition of new features.

Note: The 630B KSP and 113B1 CU and the 630A KSP (MD) and 113A1 CU (MD) are interchangeable. However, interchanging these connecting units is not recommended because the associated lead information for the connecting unit would be incorrect.♦

2.03 The 113-type CU (Fig. 2) is a connectorized key telephone distribution field consisting of three 66-type connecting blocks. The 113-type CU plugs directly into the connectors provided on the 630-type KSP.

ORDERING GUIDE

2.04 Order as follows:

- Panel, 630B

- Unit, Connecting, 113B1
- Cover, Decorative, 161A
- Cover, Utility, 163A
- Cover, (End Caps), 153A
- D-180942 Kit of Parts, Hinge Assembly
- Cord, Power (1-1/2 feet)—824013262
- Cord, Power (2 feet)—824013270
- Cord, Power (4 feet)—824013288
- Cord, Power (6 feet)—824013296
- Cord, Power (12 feet)—824010995
- ♦Unit, Power, 287A1
- Interrupter, KS-15900, L1
- Adapter, 340A
- Tag, Cord, Power, KS-22453
- Insulator, Terminal, C Clip.♦

COMMON FEATURES

2.05 The 630-type KSP has the following features:

- Accommodates 400-series KTUs providing services described in Table A.
- Connectorized for quick connection to 113-type CU or distribution field.
- Self-contained power unit with two additional receptacles for powering externally mounted modular panels.
- Built-in fuse block assemblies (Table B) with self-indicating fuses.
- Includes KS-15900, L1 interrupter.
- Can be mounted on a vertical surface. The 630-type KSP can also be attached to a 113-type CU with a hinge arrangement (D-180942 Kit of Parts) (Fig. 3).
- Dimensions: 12-3/4 inches wide, 18-3/8 inches high, and 7-1/2 inches deep. When

mounted on a 113-type CU, the depth of the combined units is 12-3/4 inches deep.

2.06 The 113-type CU has the following features:

- Can be mounted on any vertical surface
- Has provisions for attaching a 630-type KSP with the use of a hinge arrangement (D-180942 Kit of Parts)
- Connectorized cables for quick connection to the 630-type KSP
- Spare 66-type connecting block for terminating additional station cables and miscellaneous circuits
- Dimensions: 12-3/4 inches wide, 18-3/8 inches high, and 3-1/4 inches deep.

COVERS

2.07 The 161A decorative cover (Fig. 4) is designed to cover the 630-type KSP or 113-type CU when mounted side by side or when the 630-type KSP is mounted on the 113-type CU with the D-180942 Kit of Parts.

Note: If this cover is used when the KSP and CU are mounted side by side, a minimum space of 1 inch must be left between them. ♦To facilitate routing of cables between units, cut out appropriate thin wall sections in covers.♦

2.08 The 163A utility cover is designed to cover the 630-type KSP or 113-type CU when mounted side by side. The sides can be covered by attaching end caps (cover, 153A) to the front cover with the clips supplied. Where several panels are mounted next to each other, the front covers form a continuous surface and only two end caps are installed at the extreme ends. The 163A utility cover cannot be used to cover the 630-type KSP when it is mounted on the 113-type CU with the D-190942 Kit of Parts.

HINGE ASSEMBLY (D-180942 KIT OF PARTS)

2.09 The 630-type KSP can be mounted on the 113-type CU with the D-180942 Kit of Parts. The kit of parts consists of a latch, two hinge assemblies, and required screws.

2.10 The latch is pressed into the latch notch on the lower left-hand side of the 630-type KSP

(Fig. 3). Two self-tapping screws attach each hinge on the top and bottom on the right-hand side of the 113-type CU. Two threaded connecting pins attach the 630-type KSP to the hinges on the 113-type CU. The 630-type KSP is designed to swing to the right **only**.

POWER

2.11 The 630-type KSP is equipped with a 287A1 power supply which provides the following voltages:

- Talk Battery 18-27 volt dc 0.6 amperes
- Signal Battery 20-27 volt dc 1.9 amperes
- Lamp Battery 8.75-11 volt ac 4.5 amperes

The 287A1 power supply includes the 117B frequency generator which provides the ringing supply of 110-125 volt alternating current at 30 Hz.

Danger: ♦**Terminals 45F and 46D on connecting block 2 of the 113B1 CU should be insulated with C terminal insulator clips to prevent possible shock.**♦

2.12 The voltages on the 287A1 power supply are wired to fuses on the 630-type KSP. Refer to Table B for fuse assignments. The only fuse provided on the 287A1 power supply is a 2-amp Bussman MDL 2, 110-volt ac input fuse which appears on the front of the unit.

Warning: ♦**The top of the 630-type KSP should be kept clear to provide proper ventilation for the power supply.**♦

2.13 If abnormal commercial ac input voltage is suspected:

- (1) Remove the ac power cord from the ac receptacle.
- (2) Using an ac voltmeter, determine the ac voltage at the commercial ac receptacle.
- (3) Pull out the ac voltage adjustment knob on the front of the power supply and turn the pointer to the voltage stenciled on the power supply that is closest to the commercial alternating current. Push the ac adjustment knob back in.

2.14 The power supply is equipped with a parallel blade ground receptacle. Three conductor

power cords with male and female standard 3-prong plugs are available in the following lengths and should be ordered separately:

- Cord, Power (1-1/2 feet)—824013262
- Cord, Power (2 feet)—824013270
- Cord, Power (4 feet)—824013288
- Cord, Power (6 feet)—824013296
- Cord, Power (12 feet)—824010995.

2.15 ♦A KS-22453 power cord tag should be snapped on the ac power cord at the ac receptacle.♦

2.16 The output cord for the power supply is plugged into the J13 receptacle on the 630-type KSP. The J1 and J2 receptacles are available to power two modular panels (Table A and Fig. 5). To disconnect output power cord, squeeze the tabs on the top and bottom of the power cord connector and pull out. ♦Refer to Fig. 10 for power unit connections to the J1, J2, and J13 power jacks.♦

2.17 The 287A1 power supply can be changed by removing four screws from the front of the unit ♦pulling slack in the power cord,♦ and unplugging the input and output cords.

3. INSTALLATION

3.01 Select a wall location for a key telephone installation in accordance with the following:

- Approval and best interest of customer.
- Accessible with adequate illumination for maintenance.
- Wall offering adequate support and stability.
- As close as practicable to stations being serviced.
- Minimum of 9 inches is required to the right of the 113-type CU for the 630-type KSP to open if mounted on the 113-type CU with the D-180942 Kit of Parts.
- Close to conduit or duct system for cabling purposes.

- Near commercial ac power receptacle.
- Sufficient clearance above floor to avoid damage from water or blows incidental to cleaning.
- Clean, dry, well-ventilated, and free from flammable or corrosive fumes.
- Where the surrounding room temperature normally does not exceed 110°F. Avoid locations near radiators, steam pipes, registers, and other similar heating devices which would subject the equipment to excessive heat.

3.02 Refer to the following sections for additional information required to plan the installation of a KTS:

- Section 518-010-101—Centralized Key Telephone Installations
- Section 518-010-105—KTS, Grounding and Special Protection Requirements
- Section 518-215-100—1A2 KTS, Identification, and Arrangements
- Section 518-215-400—Service, 1A2 KTS, Line Services
- Section 518-215-401—Service, 1A2 KTS, Auxiliary Line Services
- Section 518-215-402—Service, 1A2 KTS, Intercom Services
- Section 518-215-419—Service, 1A2 KTS, 620A, 641A, and 642A Modular Panels.

3.03 ♦Before mounting the 630-type KSP, select the proper length ac power cord and plug it into the power unit through the hole on the rear of the KSP. Route the ac power cord through the power cord retainers on the sides or bottom of the KSP.♦

3.04 Mount the 113-type CU on the wall near commercial 110-volts ac power receptacle. If the 630-type KSP is to be mounted on the 113-type CU, use the D-180942 Kit of Parts. Refer to paragraphs 2.09 and 2.10 for additional information.

Note: The 287A1 power unit is equipped with a parallel blade ground receptacle.

3.05 If the 630-type KSP is to be mounted on the wall, it must be mounted to the left of the 113-type CU. This is to allow the cables on the 113-type CU to reach the connectors on the 630-type KSP. The cables from the 113-type CU are connected to the 630-type KSP connectors as follows:

113-TYPE CU	630-TYPE KSP
FROM	TO
P10	J10
P11	J11
P12	J12

Refer to Table C for 630-type KSP cable connector assignments, Fig. 7 for 113A1 CU connecting block assignments, and Fig. 8 for 113B1 CU connecting block assignments.

3.06 Central office or PBX lines can be connected to the 630-type KSP and 113B1 CU by using one of the following methods:

- (a) Plugging an A25B connector cable into jack 9 on the 630-type KSP and connecting the other end to the network interface via a 66-type connecting block. Refer to Table C, connector 9.
- (b) Connecting jumpers between connecting block 1 of the 113B1 CU and the network interface. Refer to Fig. 8. (This method cannot be used on the 113A1 CU [MD].)
- (c) Plugging a 340A adapter into jack 9 on the 630-type KSP and connecting D4BU cords between the 340A adapter and the network interface. Refer to the following table for jack assignments in the 340A adapter.

340A ADAPTER		
TERMINAL	DESIGNATION	JACK
26 1	T(1) R(1)	A
27 2	T(2) R(2)	
28 3	T(3) R(3)	B
29 4	T(4) R(4)	
30 5	T(5) R(5)	C
31 6	T(6) R(6)	

3.07 To prevent damage to the telephone equipment, it is imperative that the 630-type KSP be properly grounded and protected to limit voltage surges.



The susceptibility of surge damage to semiconductor components used in 400-series KTUs requires the grounding and protection procedures be followed carefully. Properly protected and grounded installations will minimize service failures that can result from surge voltages or differences between dissimilar grounds. Refer to Section 518-010-105 for coverage of KTS grounding and protection requirements.

3.08 It is recommended all incoming CO/PBX lines be connected to protectors. The protector ground terminal will serve as the primary KSP ground point and must be connected to the best acceptable ground source, preferably, the same as the ac power service. In any case, the KSP ground source and the power service ground source should be bonded together.

3.09 Using a No. 12 gauge wire, connect the circuit ground terminal on the 630-type KSP to the single-point ground terminal and the coupled bonding conductor or protector ground. If a 3-wire ac receptacle is not available, use a Hubbell B112433 adapter to convert the 2-prong outlet to a 3-prong

outlet, provided the outlet is grounded. If the outlet is not grounded, a frame ground must be connected to the single-point ground through a No. 12 gauge wire. Normally the green wire in the power supply cord would ground the frame of the power supply. Refer to Section 518-010-105 for coverage of KTS grounding and protection requirements.♦

Note: To remove strain from the ground terminal, run the No. 12 gauge ground wire to the bottom of the 630-type KSP and clamp to the backboard or mounting surface.

3.10 Prior to terminating the telephone set cables, the selected KTUs shall be carefully unpacked, options applied as applicable, and installed in their appropriate connector.

3.11 Install KTUs by inserting the plug end of the printed wiring boards into the 630-type KSP KTU jacks. Secure the KTUs in the jacks with the locking devices provided.



Exercise care when handling and inserting plug-in KTUs to avoid damage to the printed wiring boards and components.

3.12 Refer to Table A for KTU jack locations and the following figure for KTU connections:

Fig. 12 — 400D KTU (MD) Connections (CO/PBX Line) in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 13 — 400G KTU (MD) Connections (CO/PBX Line) in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 14 — 400H KTU Connections (CO/PBX

Line) in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 15 — 498A KTU Connections (Music-on-Hold) in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 16 — 401-Type KTU Connections (Manual Intercom) in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 17 — 407C KTU Connections (Dial Intercom, 10-Code Selector) in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 18 — 424C KTU Connections (Dial Intercom, 19-Code Selector) in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 19 — 494-Type KTU (TOUCH-TONE Service or Rotary and TOUCH-TONE Service, 19-Code Selector) Connections in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 20 — 407- or 424-Type KTU (Rotary Selector) Connections in 630-Type Key Service Panel and 113-Type Connecting Unit Wired to Externally Mounted 440A KTU (MD) (TOUCH-TONE Telephone Adapter)

Fig. 21 — 407- or 424-Type (Rotary Selector) Connections in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 22 — 415-Type KTU Connections (Automatic, DC Signaling, Private Line) in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 23 — ♦425B KTU Connections (Flashing Intercom Lamps) in a 642A Modular Panel Interconnected to a 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 24 — 278A Paging Adapter Connections for Manual Paging Access in 630-Type Key Service Panel and 113-Type Connecting Unit

Fig. 25 — 278A Paging Adapter Connections for Dial Paging Access in 630-Type Key Service Panel and 113-Type Connecting Unit

3.13 The station cables should now be terminated to the 113-type CU 66-type connecting blocks. Refer to Table D for 113-type CU terminal assignments.

Note: Connecting block 3 in the 113-type CU is spare and provided to terminate additional station cables, audible signal configurations, and paging arrangements.

3.14 On all intercom installations for the 630A KSP (MD) and 113A1 CU (MD) provide a 10-volt ac power strap for audible signaling on connecting block 2 of the 113A1 CU (MD) from SS terminal 38A to 10-volt terminal 46F. Common audible signaling for CO lines on the 630A KSP (MD) is limited to the use of ringers (105-volt 30-Hz) and cannot be changed. Refer to Fig. 7 for 113A1 CU (MD) options.

Warning: Because of component limitations, 105-volt ac ringing current cannot be used for signaling with the 494-type KTU.

3.15 Audible signaling for intercom and CO lines on the 630B KSP and 113B1 CU can be either buzzers (10-volt) or ringers (105-volt 30-Hz). For option information, refer to Fig. 9.

3.16 Before applying power, check for misplaced, missing, or defective fuses. Check for loose or broken wiring connections.

3.17 Apply power and test the KTS for correct operation.

4. INSTALLATION OF 630-TYPE KEY SERVICE PANEL WITH LARGER KEY TELEPHONE SYSTEMS

4.01 When a KTS installation exceeds 6 lines or requires additional features, the modular panels described in Section 518-215-419 should be used in addition to the 630-type KSP. These modular panels should be mounted to the right of the 630-type KSP and the 113-type CU (Fig. 11). This will provide for the standard right-hand growth arrangement for KTS installations described in Section 518-010-101.

Note: In large installations equipped with dial intercom, it is recommended the 630-type KSP be used as the first modular panel.

4.02 The J1 and J2 output power jacks on the 630-type KSP are provided to supply power for two modular panels. When more than two modular panels are required, a 79-type power supply should be used.

4.03 The installer shall have the option of terminating the station cables directly on the 113-type CU and modular panel terminals or may use the 113-type CU and modular panel terminals as a KTS equipment (red) field with the station terminal (blue) field mounted below.

5. ADDITIONAL FEATURES

MUSIC-ON-HOLD

5.01 Music-on-hold can be provided by plugging a 498A KTU into jack 6A. Jack 6A is factory-wired to provide music-on-hold for six CO/PBX lines. No further straps are required to provide this service. Refer to Note 1 in Table A for restrictions on music-on-hold for CO lines when the 415 KTU is used.

5.02 The 498A KTU contains four circuits and must be expanded to six circuits with the addition of a 116A1 circuit module to the 498A KTU when more than four CO/PBX lines are to be equipped with music-on-hold.

5.03 The seventh circuit from the 498A KTU, when it is equipped with a 116A1 circuit module, appears as T7, R7, A7, and L7 on connecting block 2 in the 113-type CU and can be used to provide music-on-hold on a CO/PBX line in an associated modular panel.

5.04 A 33B voice coupler must be connected between the customer music source and the 630-type KSP music input leads for music-on-hold (Fig. 15).

VOICE PAGING

5.05 The 278A paging adapter should be used as an access interface circuit for voice paging. Refer to Fig. 24 for manual paging access connections and Fig. 25 for dial paging access connections.

Note: Because of circuit limitations, 105-volt ac ringing current cannot be used to access the 278A paging adapter.

TABLE A
630-TYPE KEY SERVICE PANEL JACK ASSIGNMENTS

JACK	ASSIGNMENT	
J1	Power Source for One Additional Modular Panel	
J2	Power Source for One Additional Modular Panel	
J3A		Line 1
J3B		Line 2
J4A		Line 3
J4B		Line 4
J5A		Line 5
J5B		Line 6
J6A	498A KTU (Music-On-Hold)†	
J6B	Vacant	
J7A J7B	401-Type (Manual Intercom)‡ or 407-Type KTU (Dial Intercom, Rotary Selector, 10 Codes) or 424-Type KTU (Dial Intercom, Rotary Selector, 19 Codes) or 404-Type KTU (Dial Intercom, TOUCH-TONE Service or TOUCH-TONE Service/Rotary Selector, 19 Codes)	
J8	Receptacle for KS-15900, L1 Interrupter	
J9	Input Connector for CO/PBX Feeder Lines	
J10	Output Connectors for 113-Type Connecting Unit or Distribution Field	
J11		
J12		
J13	Power Input From 287A1 Power Supply	

* If a 415-type KTU (automatic, DC signaling, private line) is used and MOH is required, the following conditions must be met:

Music-on-hold can be provided on the first four lines only and the 400-type KTUs associated with MOH can be plugged into connectors J3A, J3B, J4A, and J4B only. The 498A KTU (MOH) must not be equipped with the 116A1 circuit module.

The automatic, DC signaling, private line (415-type KTU) can be provided on lines 5 and 6 only and the 415-type KTUs associated with the private lines can be plugged into connectors J5A and J5B only.

† The 498A KTU contains four circuits and must be expanded to six circuits with the addition of a 116A1 circuit module to the 498A KTU when more than four CO/PBX lines are to be equipped with MOH.

‡ The 401-type KTU (manual intercom) plugs into J7B only.

TABLE B
630-TYPE KEY SERVICE PANEL FUSE ASSIGNMENTS

FUSE	TYPE	AMPERAGE	ASSIGNMENT
F1	70C	3A	10-volt ac feeder fuse for F8, F9, F10, and F11 distribution fuses
F2	70C	3A	10-volt ac feeder fuse for F4, F5, F6, F7, F14, and F15 distribution fuses
F3	70G	5A	10-volt ac for interrupter
F4	70B	2A	10-volt ac for lamp wink on lines 1, 3, and 5
F5	70B	2A	10-volt ac for lamp wink on lines 2, 4, and 6
F6	70B	2A	10-volt ac for lamp wink on jack 1 for additional modular panel
F7	70B	2A	10-volt ac for lamp wink on jack 2 for additional modular panel
F8	70B	2A	10-volt ac for lamp flash, lines 1, 3, and 5
F9	70B	2A	10-volt ac for lamp flash, lines 2, 4, 6, and intercom
F10	70B	2A	10-volt ac for lamp flash on jack 1 for additional modular panel
F11	70B	2A	10-volt ac for lamp flash on jack 2 for additional modular panel
F12	70B	2A	10-volt ac for steady lamp, lines 1, 3, and 5
F13	70B	2A	10-volt ac for steady lamp, lines 2, 4, 6, and intercom
F14	70B	2A	10-volt ac to jack 1 for additional modular panel
F15	70B	2A	10-volt ac to jack 2 for additional modular panel
F16	70B	2A	-24 volt dc-B for additional modular panels, all lines, intercom, and auxiliary services
F17	70B	2A	-24 volt dc-A for additional modular panels, all lines, intercom, and auxiliary services

TABLE C

630-TYPE KEY SERVICE PANEL CABLE CONNECTOR TERMINAL ASSIGNMENTS

CONNECTOR J9		
LEAD DESIG	TERMINAL	COLOR
T(1)	26	W-BL
R(1)	1	BL-W
T(2)	27	W-O
R(2)	2	O-W
T(3)	28	W-G
R(3)	3	G-W
T(4)	29	W-BR
R(4)	4	BR-W
T(5)	30	W-S
R(5)	5	S-W
T(6)	31	R-BL
R(6)	6	BL-R
Spare	32	R-O
	7	O-R
	33	R-G
	8	G-R
	34	R-BR
	9	BR-R
	35	R-S
	10	S-R
	36	BK-BL
	11	BL-BK
	37	BK-O
	12	O-BK
	38	BK-G
	13	G-BK
	39	BK-BR
	14	BR-BK
	40	BK-S
	15	S-BK
	41	Y-BL
	16	BL-Y
	42	Y-O
	17	O-Y
	43	Y-G
	18	G-Y
44	Y-BR	
19	BR-Y	
45	Y-S	
20	S-Y	
46	V-BL	
21	BL-V	
47	V-O	
22	O-V	
48	V-G	
23	G-V	
49	V-BR	
24	BR-V	
50	V-S	
25	S-V	

CONNECTOR J10		
LEAD DESIG	TERMINAL	COLOR
IT	26	W-BL
IR	1	BL-W
D1,A	27	W-O
AI	2	O-W
LG	28	W-G
L,LA	3	G-W
R0	29	W-BR
RG	4	BR-W
R1	30	W-S
RG	5	S-W
R2	31	R-BL
RG	6	BL-R
R3	32	R-O
RG	7	O-R
R4	33	R-G
RG	8	G-R
R5	34	R-BR
RG	9	BR-R
R6	35	R-S
RG	10	S-R
R7	36	BK-BL
RG	11	BL-BK
R8	37	BK-O
RG	12	O-BK
R9	38	BK-G
RG	13	G-BK
RX0	39	BK-BR
RG	14	BR-BK
RX1	40	BK-S
RG	15	S-BK
RX2	41	Y-BL
RG	16	BL-Y
RX3	42	Y-O
RG	17	O-Y
RX4	43	Y-G
RG	18	G-Y
RX5	44	Y-BR
RG	19	BR-Y
RX6	45	Y-S
RG	20	S-Y
RX7	46	V-BL
RG	21	BL-V
RX8	47	V-O
RG	22	O-V
SS	48	V-G
10V-RN	23	G-V
SP	49	V-BR
TDX	24	BR-V
Spare	50	V-S
Spare	25	S-V

TABLE C (Contd)
630-TYPE KEY SERVICE PANEL CABLE CONNECTOR TERMINAL ASSIGNMENTS

CONNECTOR J11		
LEAD DESIG	TERMINAL	COLOR
T(1)	26	W-BL
R(1)	1	BL-W
A(1)	27	W-O
A1(1)	2	O-W
LG(1)	28	W-G
L(1)	3	G-W
T(2)	29	W-BR
R(2)	4	BR-W
A(2)	30	W-S
A1(2)	5	S-W
LG(2)	31	R-BL
L(2)	6	BL-R
T(3)	32	R-O
R(3)	7	O-R
A(3)	33	R-G
A1(3)	8	G-R
LG(3)	34	R-BR
L(3)	9	BR-R
T(4)	35	R-S
R(4)	10	S-R
A(4)	36	BK-BL
A1(4)	11	BL-BK
LG(4)	37	BK-O
L(4)	12	O-BK
T(5)	38	BK-G
R(5)	13	G-BK
A(5)	39	BK-BR
A1(5)	14	BR-BK
LG(5)	40	BK-S
L(5)	15	S-BK
T(6)	41	Y-BL
R(6)	16	BL-Y
A(6)	42	Y-O
A1(6)	17	O-Y
LG(6)	43	Y-G
L(6)	18	G-Y
RC(1)	44	Y-BR
RG	19	BR-Y
RC(2)	45	Y-S
RG	20	S-Y
RC(3)	46	V-BL
RG	21	BL-V
RC(4)	47	V-O
RG	22	O-V
RC(5)	48	V-G
RG	23	G-V
RC(6)	49	V-BR
RG	24	BR-V
10V	50	V-S
ACG	25	S-V

CONNECTOR J12		
LEAD DESIG	TERMINAL	COLOR
FC1	26	W-BL
FC2	1	BL-W
FC3	27	W-O
Y1	2	O-W
Y2	28	W-G
Y3	3	G-W
Y4	29	W-BR
Y5	4	BR-W
RS1	30	W-S
CG	5	S-W
RH	31	R-BL
24 VDC*	6	BL-R
BR	32	R-O
TC	7	O-R
LT1	33	R-G
LT2	8	G-R
BY1	34	R-BR
J	9	BR-R
LK	35	R-S
TTG	10	S-R
AL1	36	BK-BL
AL2	11	BL-BK
T(7)	37	BK-O
R(7)	12	O-BK
A(7)	38	BK-G
L(7)	13	G-BK
M2	39	BK-BR
M1	14	BR-BK
Spare	40	BK-S
	15	S-BK
	41	Y-BL
	16	BL-Y
RX9 R6* T6* R5* T5* R4* T4* R3* T3* R2* T2* R1* T1* 105V-RN* MS* RN* 105V*	42	Y-O
	17	O-Y
	43	Y-G
	18	G-Y
	44	Y-BR
	19	BR-Y
	45	Y-S
	20	S-Y
	46	V-BL
	21	BL-V
	47	V-O
	22	O-V
	48	V-G
	23	G-V
49	V-BR	
24	BR-V	
50	V-S	
25	S-V	

* Appears in 630B KSP and 113B1 CU only.

TABLE D

113-TYPE CONNECTING UNIT TERMINAL ASSIGNMENTS

CONNECTING BLOCK 2					
LEAD DESIG	TERMINAL	LEAD DESIG	TERMINAL	LEAD DESIG	TERMINAL
IT	1A-F	IT	19A	BY1	46A
IR	2A-F	IR	20A	105V*	46D
L	3A-F	L	21A	SS*	46E
LG	4A-F	LG	22A	PR†	48A-B
RG	5A-F	RG	23A	—	49A-B
R0	6A	RX8	24A	RS1	38B
R1	6B	RX6*	24E	CG	39B
R2	6C	A	25A-F	D1	40B
R3	6D	A1	26A-F	L,LA	41B
R4	6E	LG	27A-F	BR	42B
R5	6F	L	28A-F	TTG	43B
IT	7A-F	A	29A-F	LK	44B
IR	8A-F	A1	30A-F	J	45B
L	9A-F	LG	31A-F	TC	46B
LG	10A-F	L	32A-F	TDX	38C
RG	11A-F	A	33A-F	LT1	39C
R6	12A	A1	34A-F	LT2	40C
R7	12B	LG	35A-F	AL1	41C
R8	12C	L	36A-F	AL2	42C
R9	12D	SS†	38A	FC1	43C
RX0	13E	RX6†	38E	FC2	44C
RX1	12F	RN†	39A	FC3	45C
IT	13A-F	MS*	39A	SP	46C
IR	14A-F	—24VDC*	39F	M1	48C-D
L	15A-F	Y1	40A	M2	49C-D
LG	16A-F	Y2	41A	T(7)	40E
RG	17A-F	Y3	42A	R(7)	41E
RX2	18A	Y4	43A	A(7)	42E
RX3	18B	Y5	44A	L(7)	43E
RX4	18C	RH	45A	FO†	49E
RX5	18D	10V-RN*	45D	±10V	46F
RX6	18E	RN*	45E	ACG	47F
RX7	18F	105-RN*	45F	PI†	49F

* 113B1 connecting unit only.

† 113A1 connecting unit only.

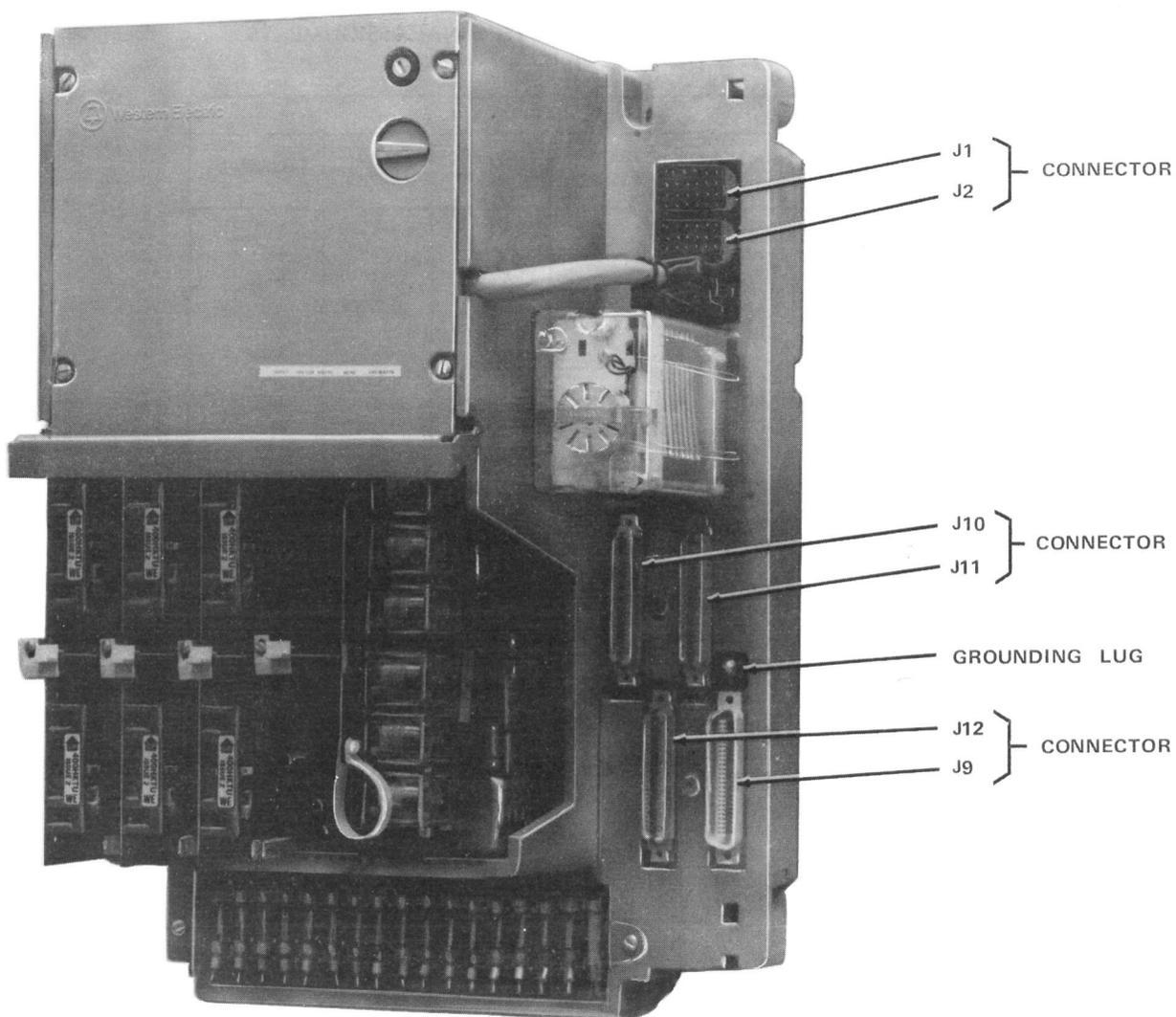


Fig. 1—630-Type Key Service Panel

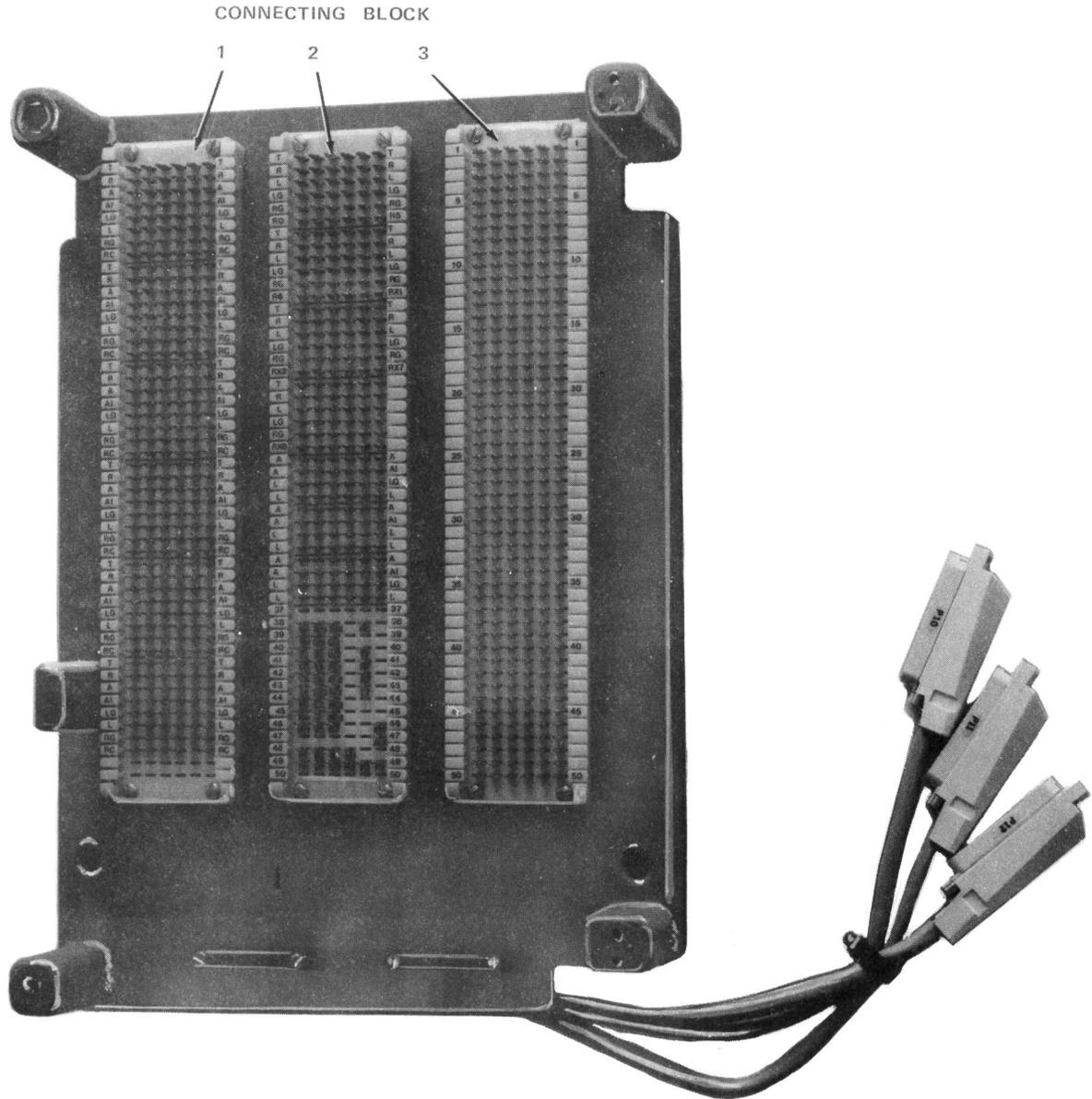


Fig. 2—113-Type Connecting Unit

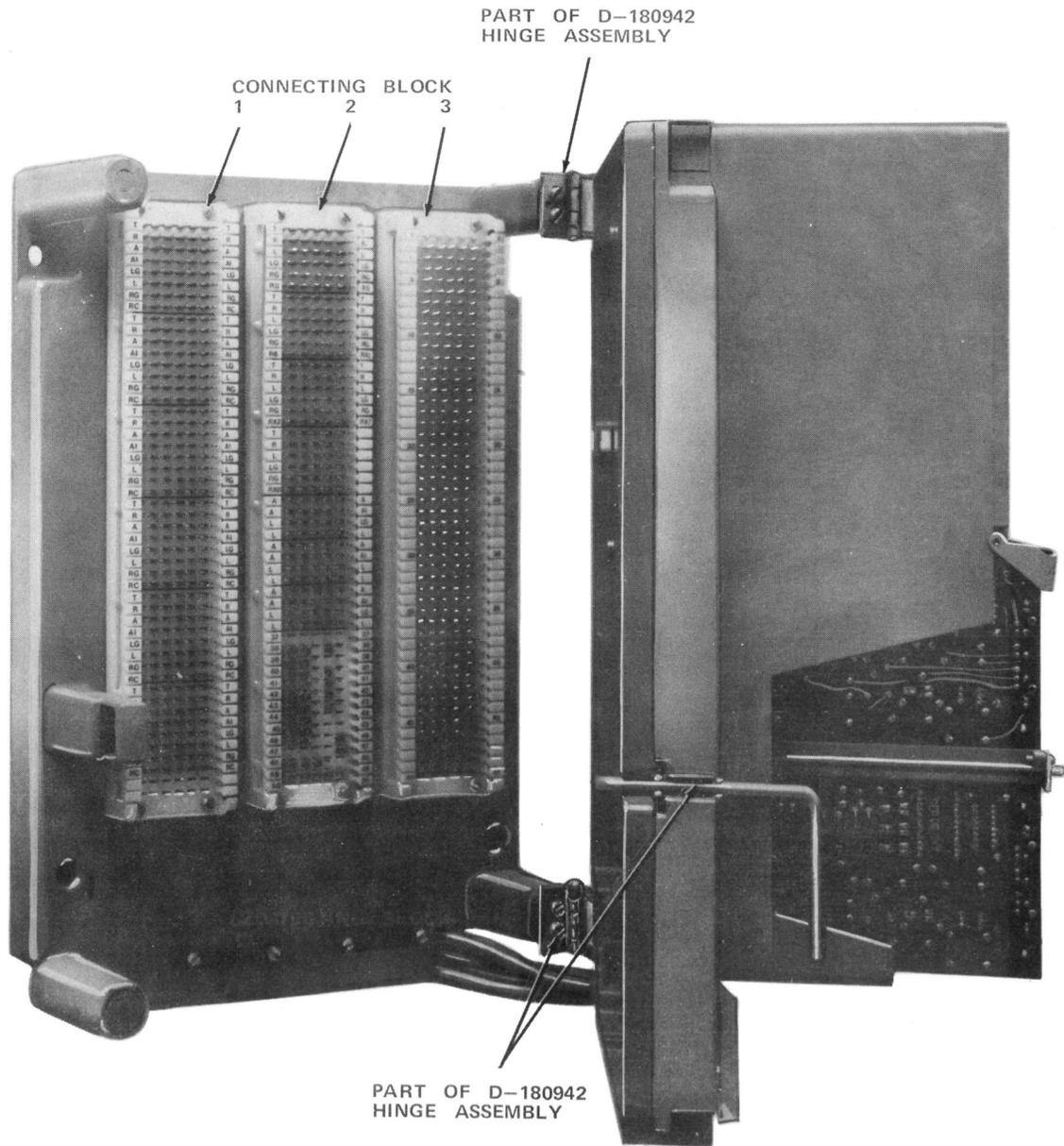


Fig. 3—630-Type Key Service Panel Mounted on 113-Type Connecting Unit

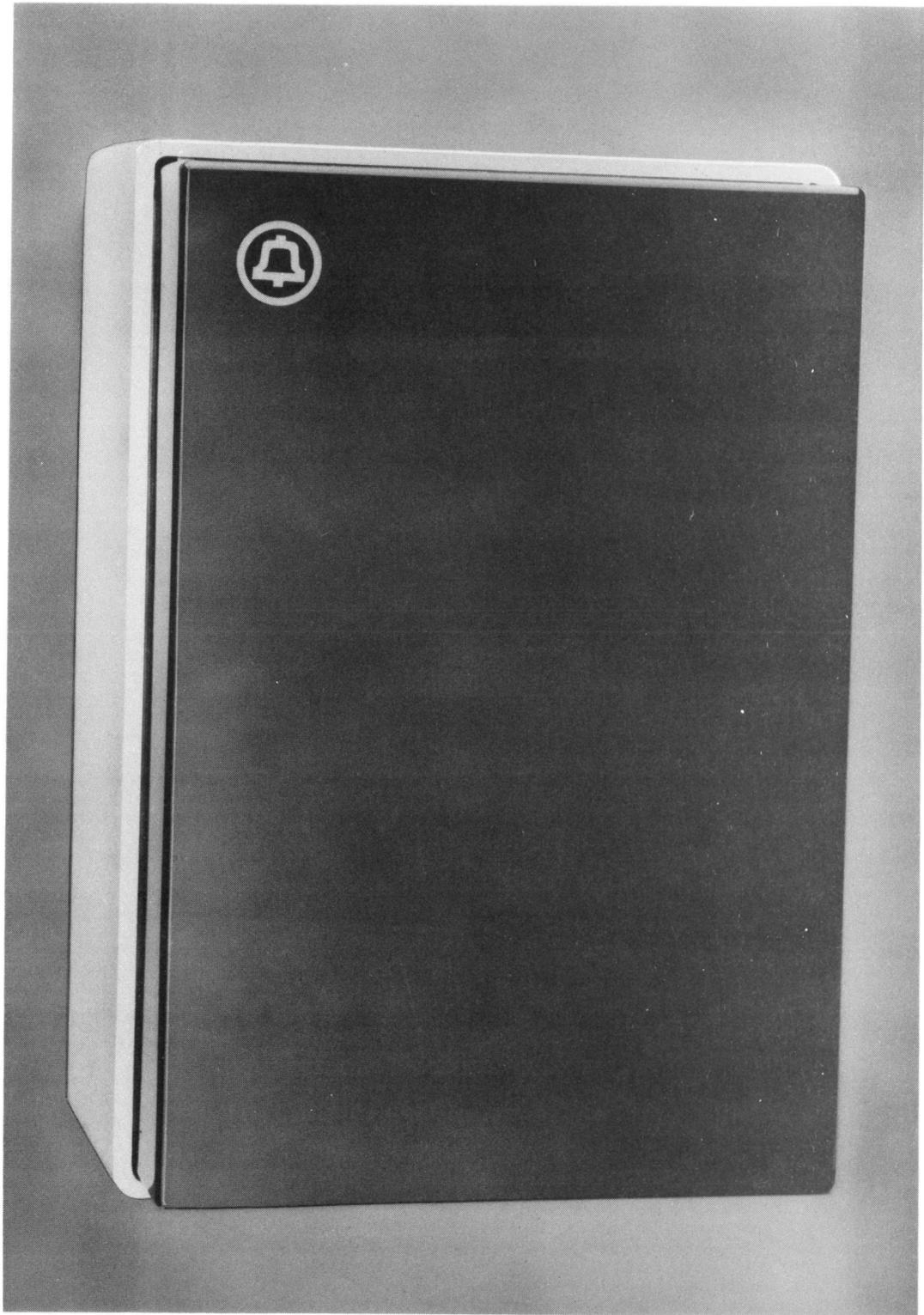


Fig. 4—161A Decorative Cover

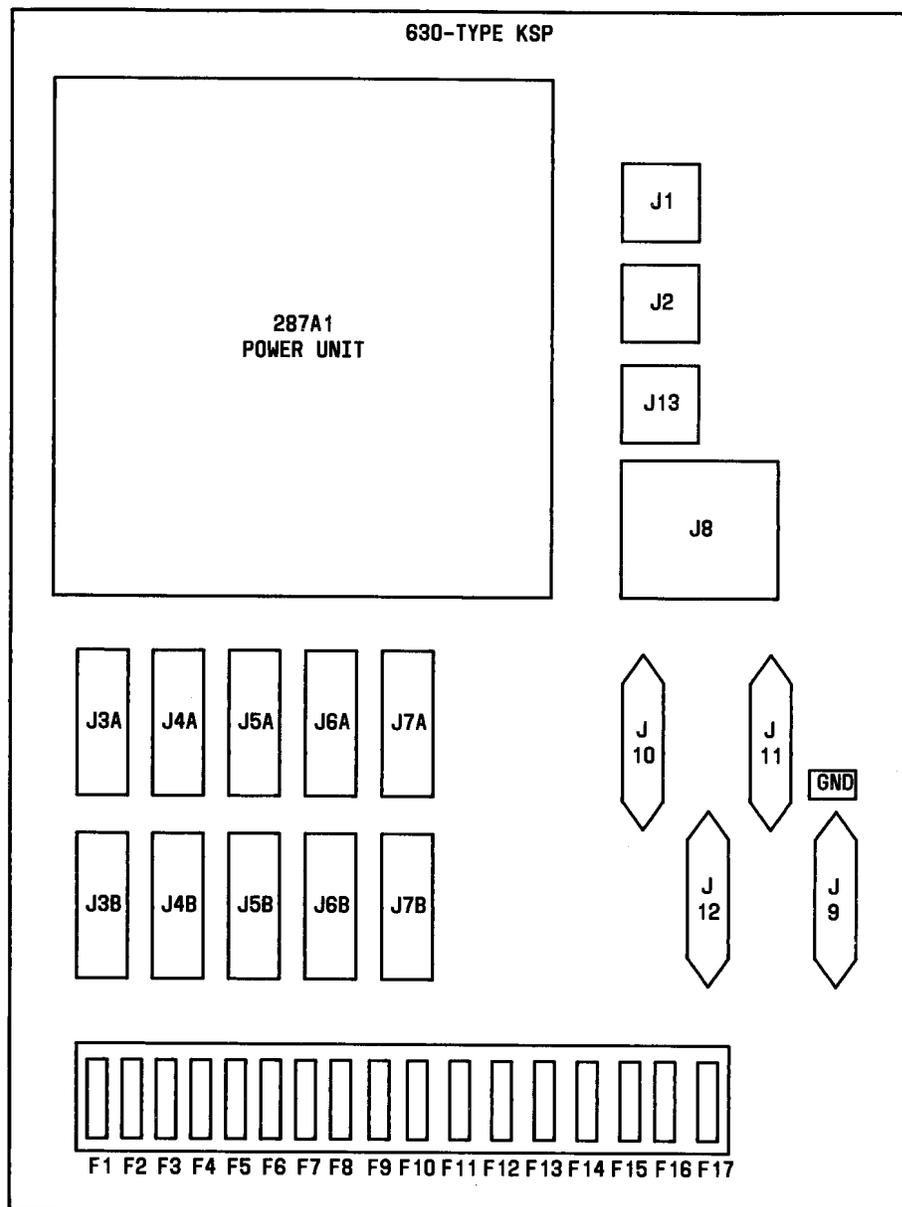


Fig. 5—630-Type Key Service Panel Mounted on 113-Type Connecting Unit

630-TYPE PANEL
CONNECTOR J9

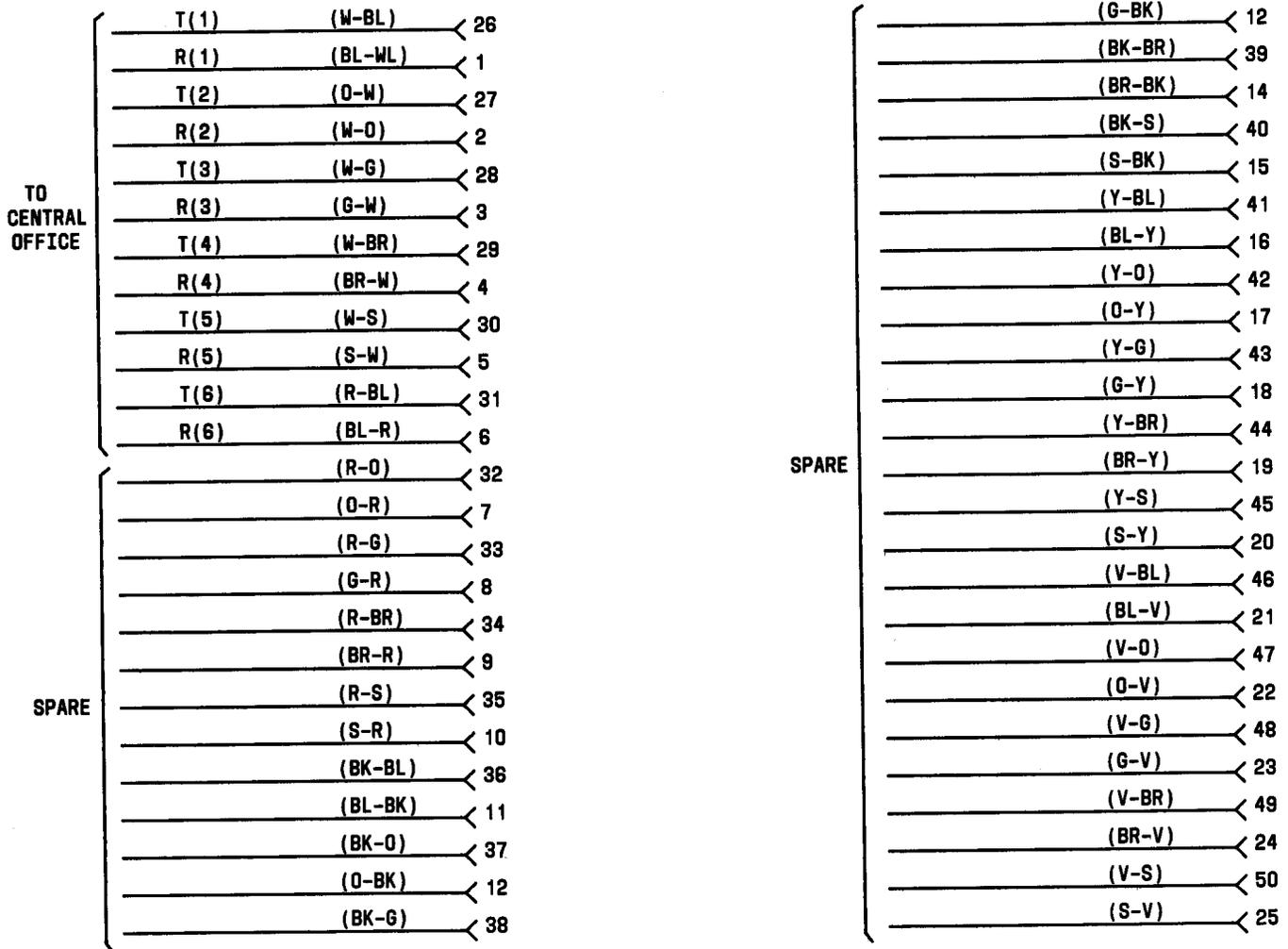


Fig. 6—630-Type Key Service Panel, Cable Connector Terminal Assignments
(Sheet 1 of 4)

630-TYPE PANEL
CONNECTOR J10

TO KEY TELEPHONE
SET, "TOUCH-TONE"
TELEPHONE ADAPTER
KTU, OR DELUXE
INTERCOM KTUs
VIA CONNECTING
BLOCK 2 OF
113-TYPE
CONNECTING UNIT
OR DISTRIBUTION
FIELD

IT	(W-BL)	26
IR	(BL-WL)	1
D1,A	(W-O)	27
A1	(O-W)	2
LG	(W-G)	28
L,LA	(G-W)	3
RO	(W-BR)	29
RG	(BR-W)	4
R1	(W-S)	30
RG	(S-W)	5
R2	(R-BL)	31
RG	(BL-R)	6
R3	(R-O)	32
RG	(O-R)	7
R4	(R-G)	33
RG	(G-R)	8
R5	(R-BR)	34
RG	(BR-R)	9
R6	(R-S)	35
RG	(S-R)	10
R7	(BK-BL)	36
RG	(BL-BK)	11
R8	(BK-O)	37
RG	(O-BK)	12
R9	(BK-G)	38

TO INTERCOM
AUDIBLE SIGNAL
VIA CONNECTING
BLOCK 2 OF
113-TYPE
CONNECTING UNIT
OR DISTRIBUTION
FIELD

TO INTERCOM
AUDIBLE SIGNAL VIA
CONNECTING BLOCK 2
OF 113-TYPE
CONNECTING UNIT
OR DISTRIBUTION
FIELD

TO "TOUCH-TONE"
TELEPHONE ADAPTER
KTU OR DELUXE
INTERCOM KTUs
VIA CONNECTING
BLOCK 2 OF
113-TYPE
CONNECTING UNIT
OR DISTRIBUTION
FIELD

RG	(G-BK)	12
RX0	(BK-BR)	39
RG	(BR-BK)	14
RX1	(BK-S)	40
RG	(S-BK)	15
RX2	(Y-BL)	41
RG	(BL-Y)	16
RX3	(Y-O)	42
RG	(O-Y)	17
RX4	(Y-G)	43
RG	(G-Y)	18
RX5	(Y-BR)	44
RG	(BR-Y)	19
RX6	(Y-S)	45
RG	(S-Y)	20
RX7	(V-BL)	46
RG	(BL-V)	21
RX8	(V-O)	47
RG	(O-V)	22
SS	(V-G)	48
10V-RN*	(G-V)	23
SP	(V-BR)	49
TDX	(BR-V)	24
SPARE	(V-S)	50
SPARE	(S-V)	25

* THIS LEAD IS THE RN LEAD IN THE 630A KSP
AND THE 10V-RN LEAD IN THE 630B KSP

Fig. 6—630-Type Key Service Panel, Cable Connector Terminal Assignments
(Sheet 2 of 4)

630-TYPE PANEL
CONNECTOR J11

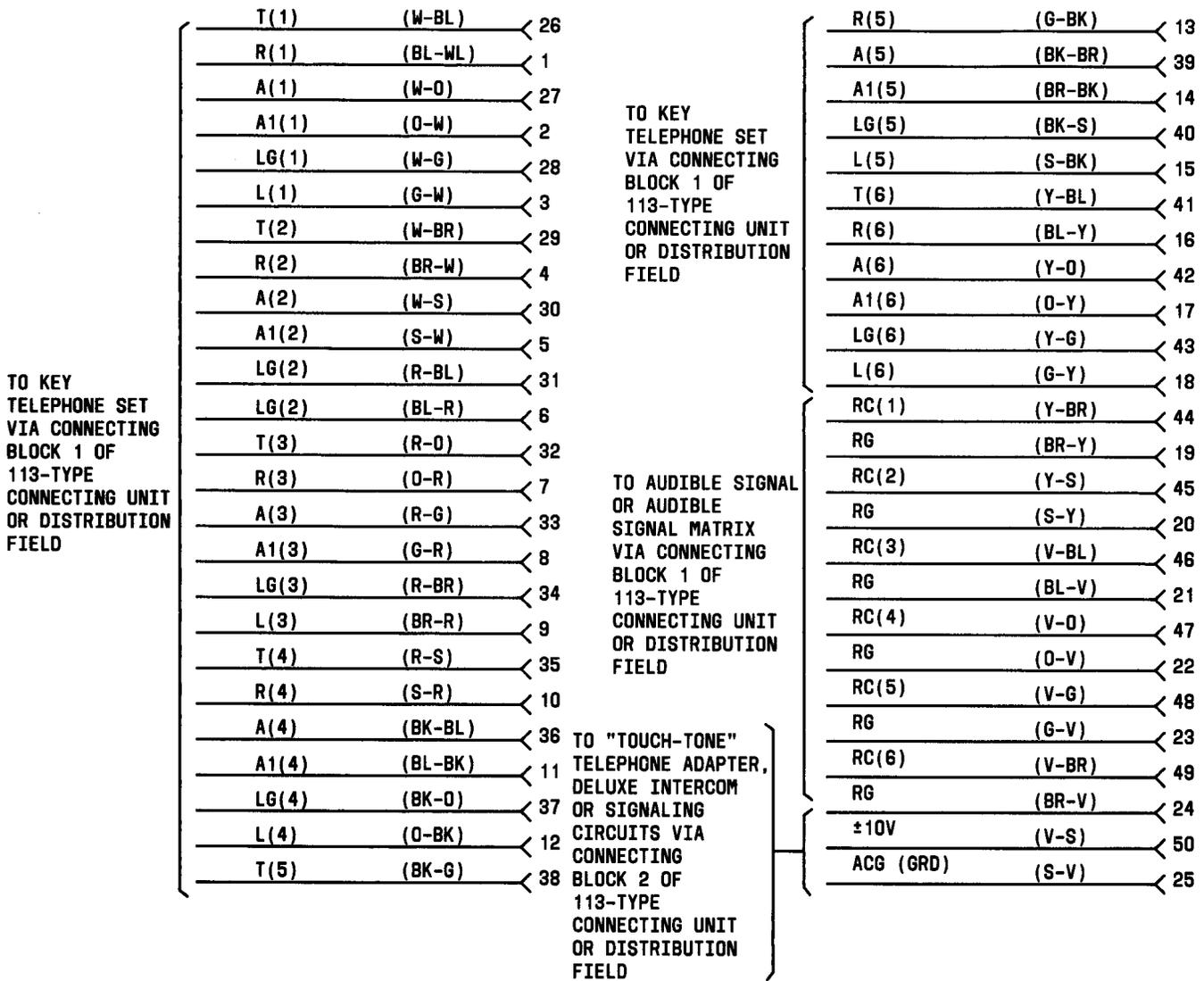


Fig. 6—630-Type Key Service Panel, Cable Connector Terminal Assignments
(Sheet 3 of 4)

630-TYPE PANEL
CONNECTOR J12

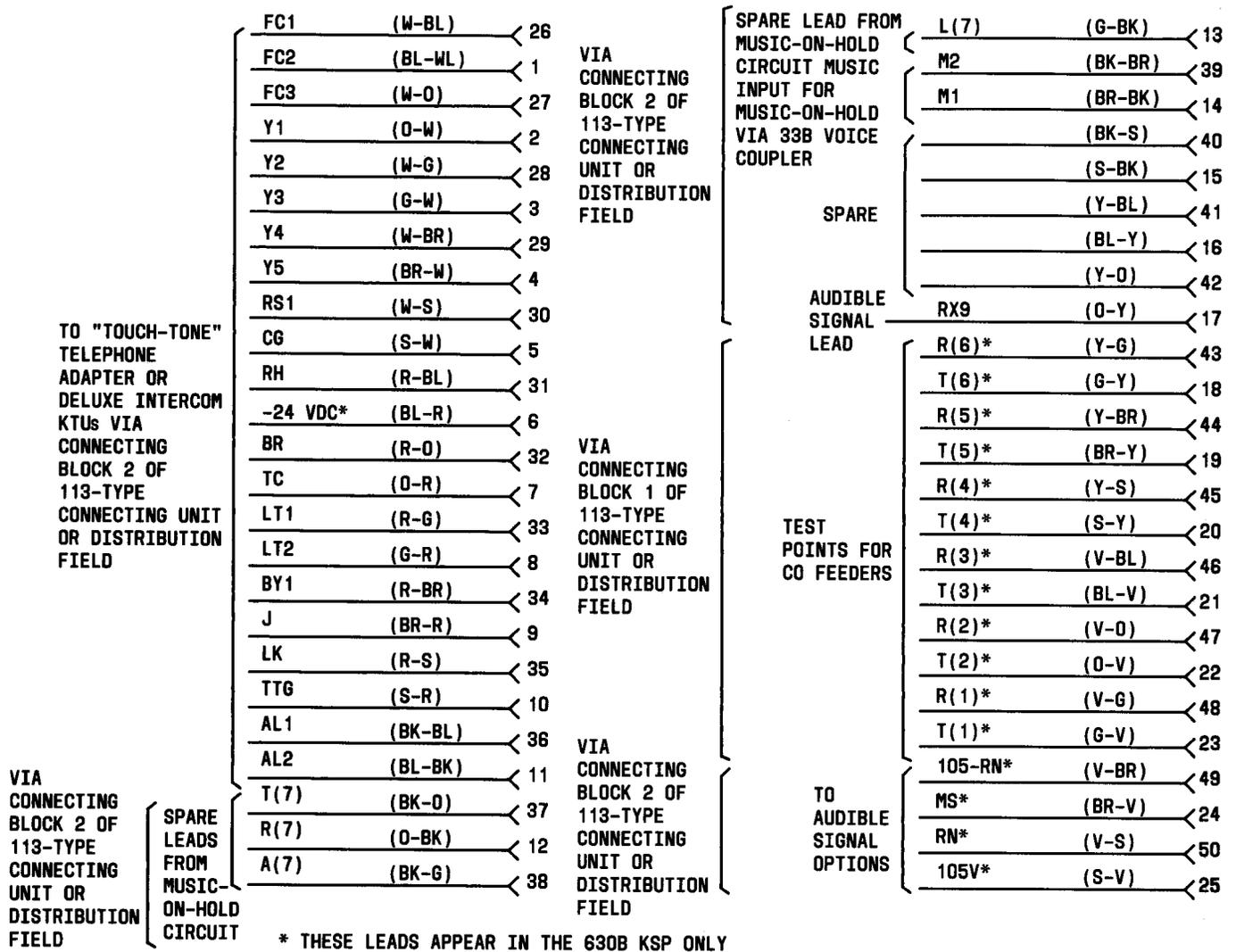


Fig. 6—630-Type Key Service Panel, Cable Connector Terminal Assignments
(Sheet 4 of 4)

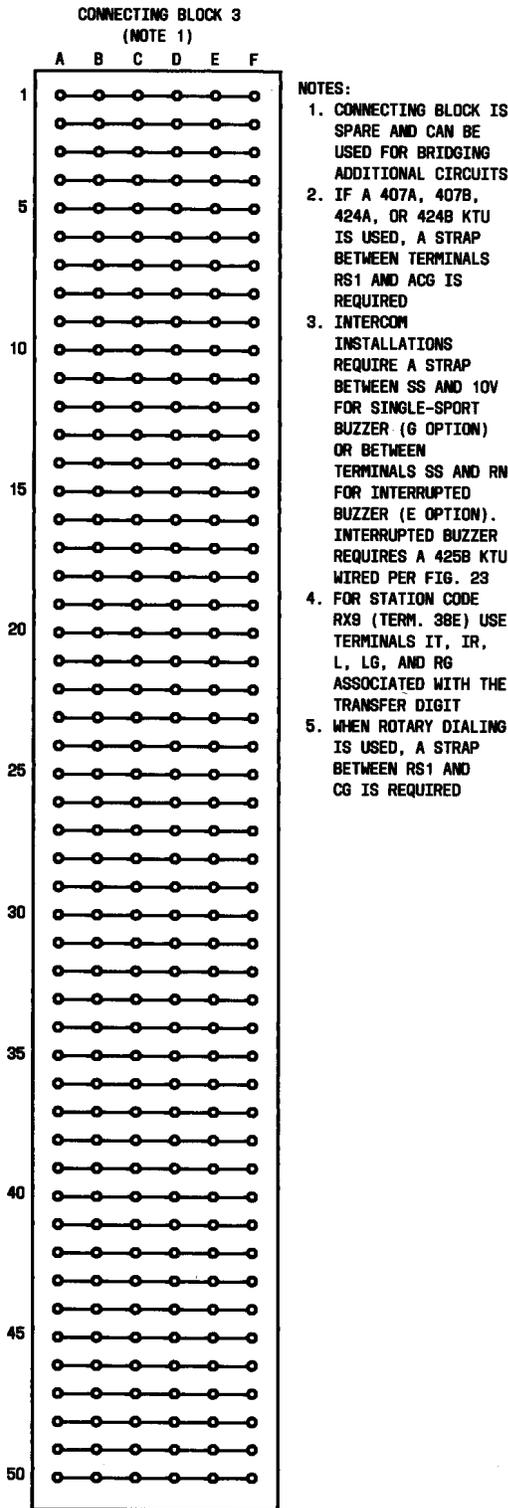


Fig. 7—113A1 (MD) Connecting Unit, Connecting Block Assignment (Sheet 2 of 2)

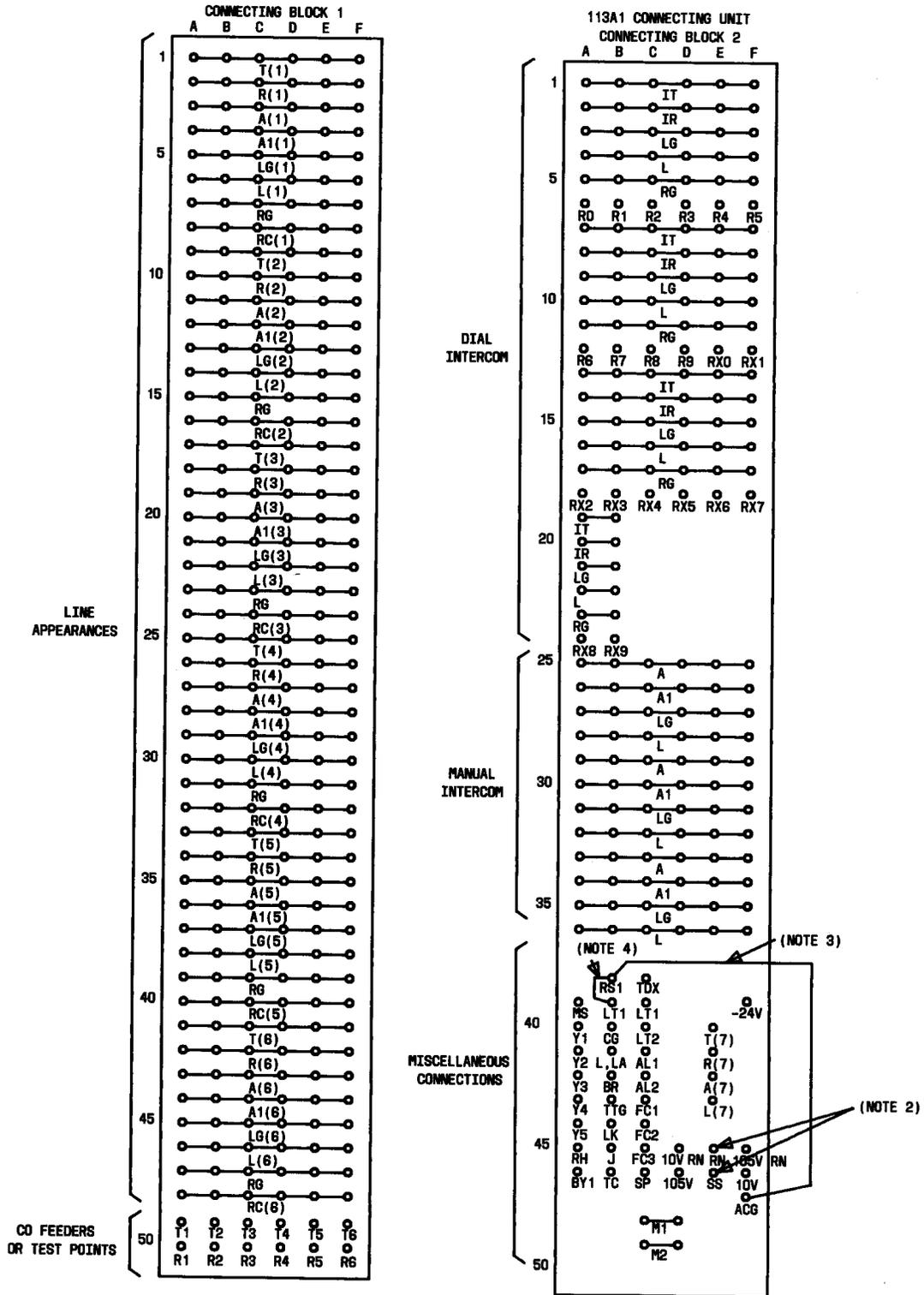


Fig. 8—113B1 Connecting Unit, Connecting Block Assignment (Sheet 1 of 2)

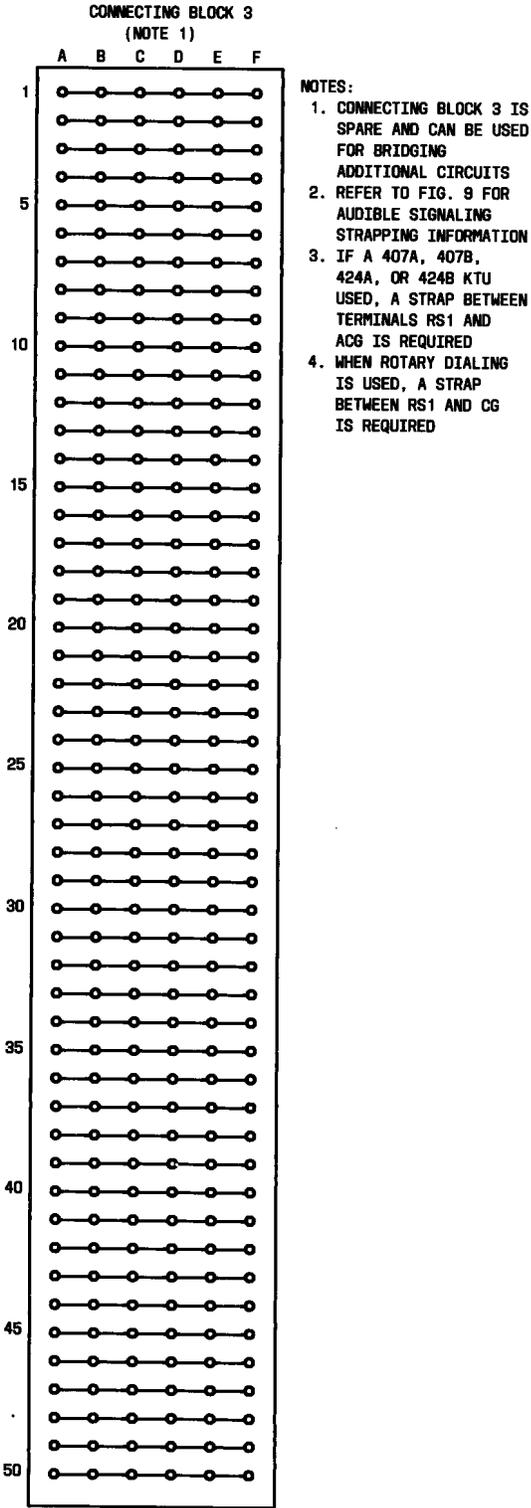
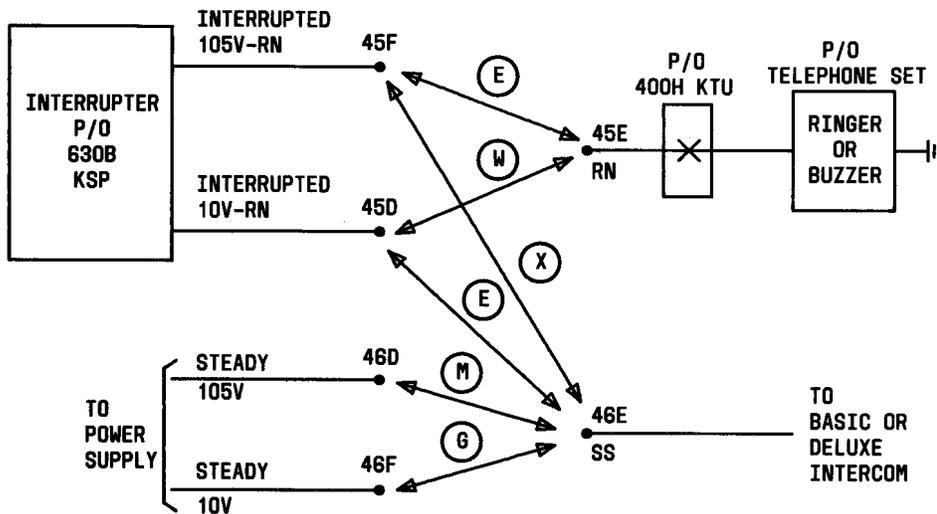


Fig. 8—113B1 Connecting Unit, Connecting Block Assignment (Sheet 2 of 2)



OPTIONS

CO LINES	
OPT	FEATURE
W	RINGER
E	10V BUZZER

INTERCOM		
OPT	FEATURE	
X	INTERRUPTED (DELUXE INTERCOM)	RINGER
E		10V BUZZER
M	SINGLE SPORT (BASIC INTERCOM)	RINGER
G		10V BUZZER

NOTE: IF 10V BUZZER IS USED FOR COMMON AUDIBLE ON CO LINES, THE AUDIBLE SIGNAL LEADS DEDICATED TO THE RINGER IN THE TELEPHONE SET MUST BE REWIRED TO THE BUZZER

Fig. 9—Audible Signaling Options for 630B Key Service Panel and 113B1 Connecting Unit

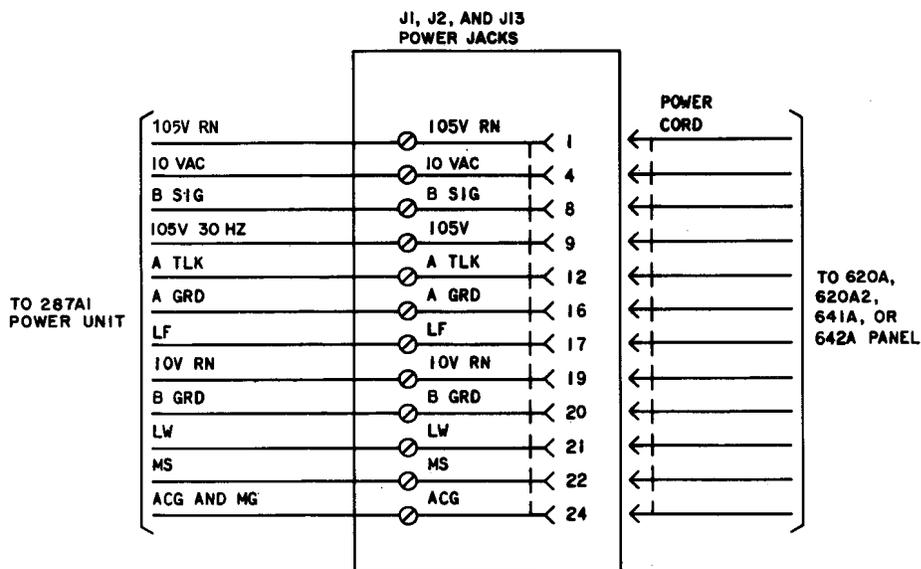


Fig. 10—287A1 Power Unit Connections for J1, J2, and J13 Power Jacks

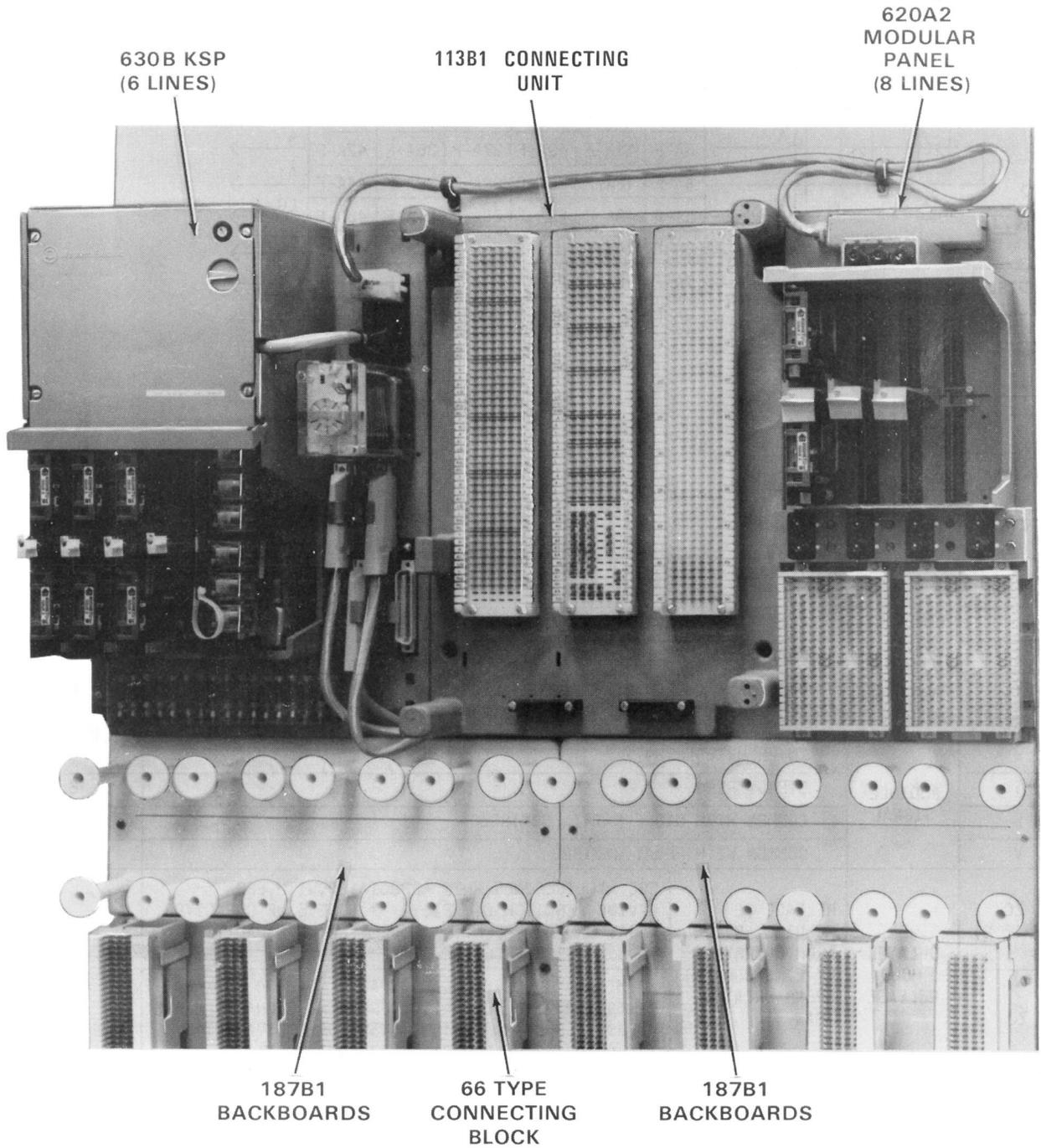
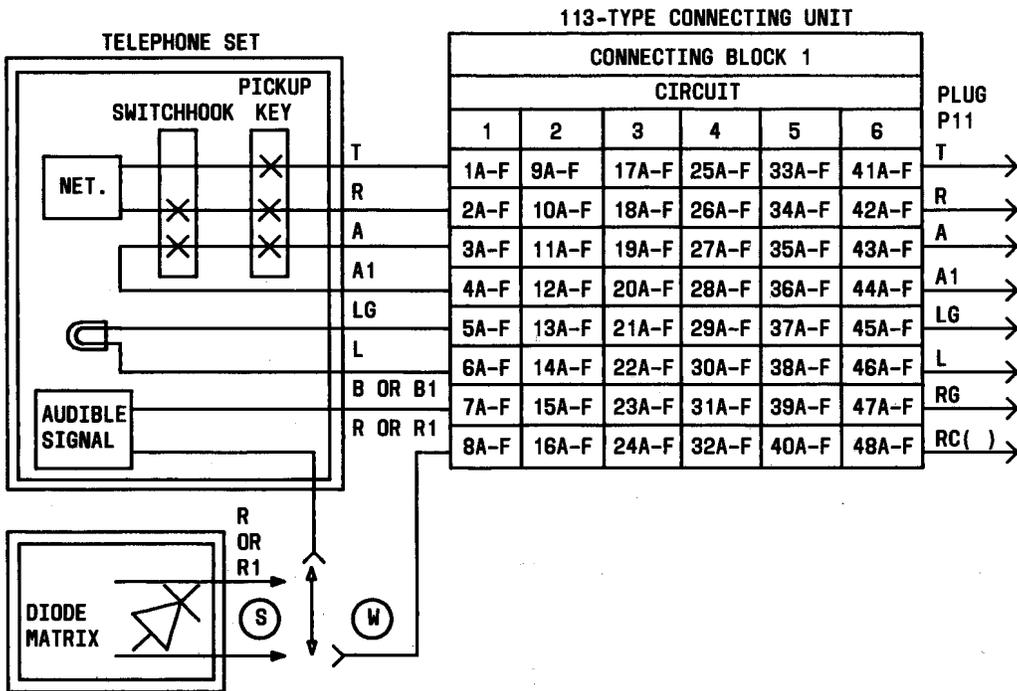


Fig. 11—Typical 630-Type Key Service Panel and 113-Type Connecting Unit With 620-Type Modular Panel for Large Key Telephone Installations



OPTION STRAPPING (SEE NOTE 1)

OPTION	FEATURES		OPTION BLOCK STRAPPING
			400D (MD)
—	TIME-OUT (NOTES 5 AND 6)	LONG TIME DELAY (APPROXIMATELY 30 SECONDS)	
Z		SHORT TIME DELAY (APPROXIMATELY 10 SECONDS)	1 TO 2
Y	VISUAL HOLD CKT	LAMP WINK	10 TO 7
X		LAMP STEADY	9 TO 7
W	AUDIBLE SIGNAL	INTERRUPTED RING	5 TO 8
T		STEADY RING	6 TO 8
S		COMMON WITH DIODE MATRIX CONTROL	5 TO 8
V		COMMON WITH RELAY CONTROL	4 TO 8
ZC (NOTE 2)	DELAYED HOLD RELEASE	RELEASE OF HOLDING BRIDGE FROM CO/PBX BY LINE CURRENT OPENS GREATER THAN	NOTE 6
ZJ		500 MILLISECONDS WHEN ASSOCIATED WITH ESS HAVING RESWITCH CAPABILITY * (USE 5 UF CAPACITOR, 601A, OR EQUIVALENT) †(USE 1.62 UF CAPACITOR, 701G, OR EQUIVALENT)	
		50 MILLISECONDS WHEN ASSOCIATED WITH NO. 5 X-BAR CENTREX HAVING AUTOMATIC PERMANENT SIGNAL RELEASE * (USE 0.5 UF CAPACITOR, 575B, OR EQUIVALENT) † (USE 0.162 UF CAPACITOR OR EQUIVALENT)	

* WHEN USED WITH Z OPTION

† WHEN USED WITH LONG TIME DELAY

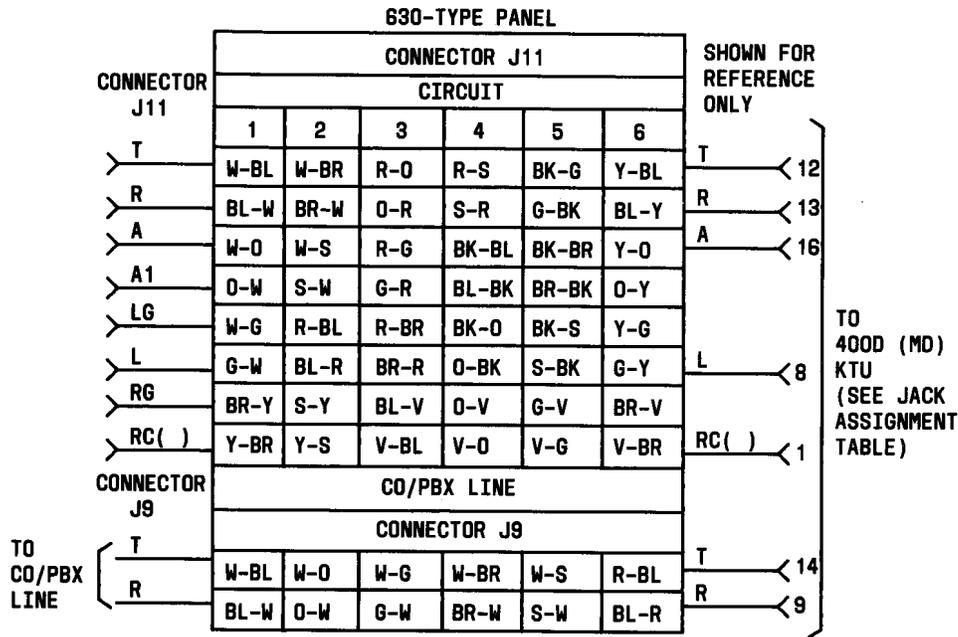
‡ ONLY BARE WIRE STRAPS SHOULD BE

USED ON KTUS MANUFACTURED PRIOR TO 1966

NOTES:

1. THE 400D (MD) KTU IS FACTORY WIRED FOR 10-SECOND TIME-OUT, PLUS WINKING-HOLD LAMP, AND W AND S WIRING OPTIONS
2. WHEN THE ZC OPTION IS USED DUE TO THE DELAYED RELEASE OF THE HOLDING BRIDGE, SOME TRANSMISSION LOSS IS ENCOUNTERED FOR APPROXIMATELY 1 SECOND WHEN A STATION REENTERS A HELD CALL
3. V OPTION MAY BE USED IN LOCALLY ENGINEERED ARRANGEMENTS OR RELAY COMMON AUDIBLE ARRANGEMENTS
4. ZD OPTION IS REPLACED BY ZJ OPTION. HOWEVER, IT IS NOT NECESSARY TO UPDATE CIRCUITS PREVIOUSLY MODIFIED WITH OPTION ZD

Fig. 12—400D KTU (MD) Connections (CO/PBX Line) in 630-Type Key Service Panel and 113-Type Connecting Unit (Sheet 1 of 2)



JACK ASSIGNMENT TABLE

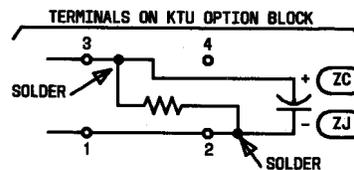
630-TYPE PANEL	
400D-TYPE KTU (MD) JACK LOCATION	
CIRCUIT	JACK
1	J3A
2	J3B
3	J4A
4	J4B
5	J5A
6	J5B

NOTES (CONTD):

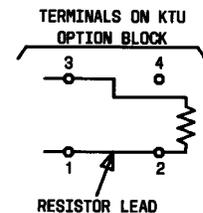
5. FOR 30 SECOND TIME-OUT CYCLE, REMOVE Z OPTION STRAP BETWEEN TERMINALS 1 AND 2
6. TO PROVIDE TIME-OUT CYCLES OF RING-UP CIRCUITS FROM 3.4 TO 7.5 SECONDS, REPLACE Z OPTION STRAP WITH A KS-13490, L1 OR EQUIVALENT (1/2 WATT) RESISTOR. USE ONE RESISTOR LEAD AS A STRAP BETWEEN TERMINALS 1 AND 2 AND CONNECT THE OTHER LEAD TO TERMINAL 3. USE TABLE BELOW FOR RESISTOR VALUE REQUIRED FOR DESIRED TIME-OUT INTERVAL

TIME IN SEC FROM 10 SEC TO:	RESISTOR MEGOHM	EFFECT ON DELAYED HOLD RELEASE OPTIONS	
		ZC	ZJ
7.5	1.2	NONE	NONE
6.7	.75	NOT RECOMMENDED (NOTE 5)	
5.0	.39		
3.4	.20		

IF THE TIME-OUT CYCLE IS REDUCED IN CONJUNCTION WITH ZC OR ZJ OPTION, CONNECT THE RESISTOR AND CAPACITOR AS SHOWN BELOW:

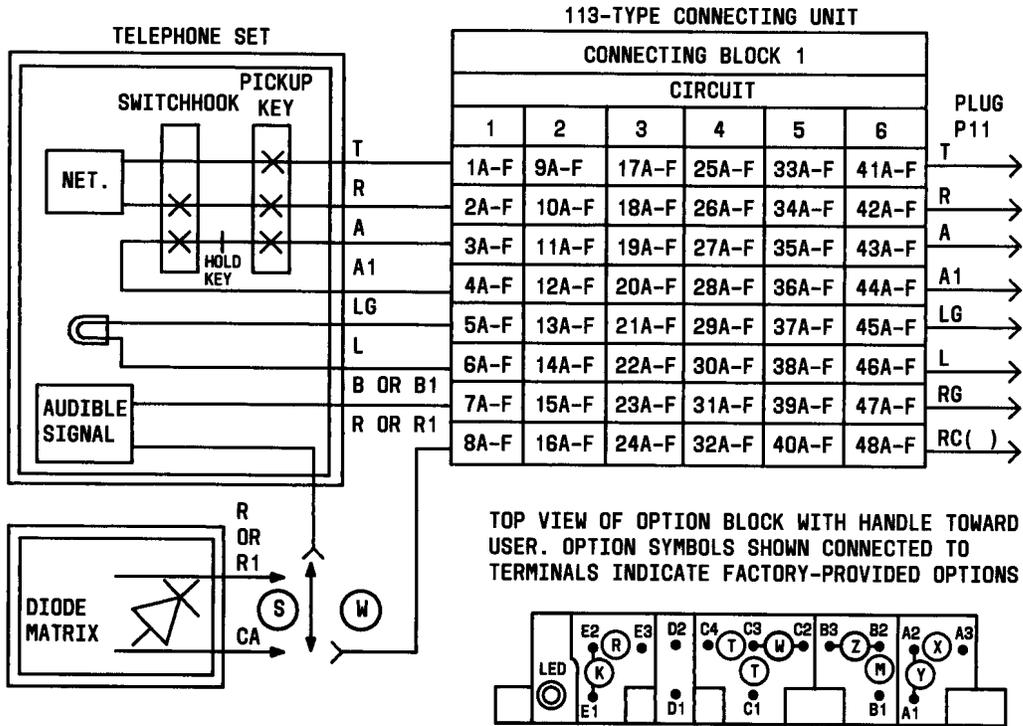


IF TIME-OUT CYCLE IS REDUCED, CONNECT RESISTOR AS SHOWN BELOW:



7. NO. 1 ESS SPECIAL LINE APPLIQUE CIRCUIT (SD-1A297) SHOULD BE USED IN APPLICATIONS WHERE ZC OPTION CANNOT BE APPLIED
8. WHEN Z OPTION IS PROVIDED WITH ZC OR ZJ OPTIONS, REMOVE THE Z STRAP AND USE THE CAPACITOR LEAD AS A STRAP BETWEEN TERMINALS 1 AND 2

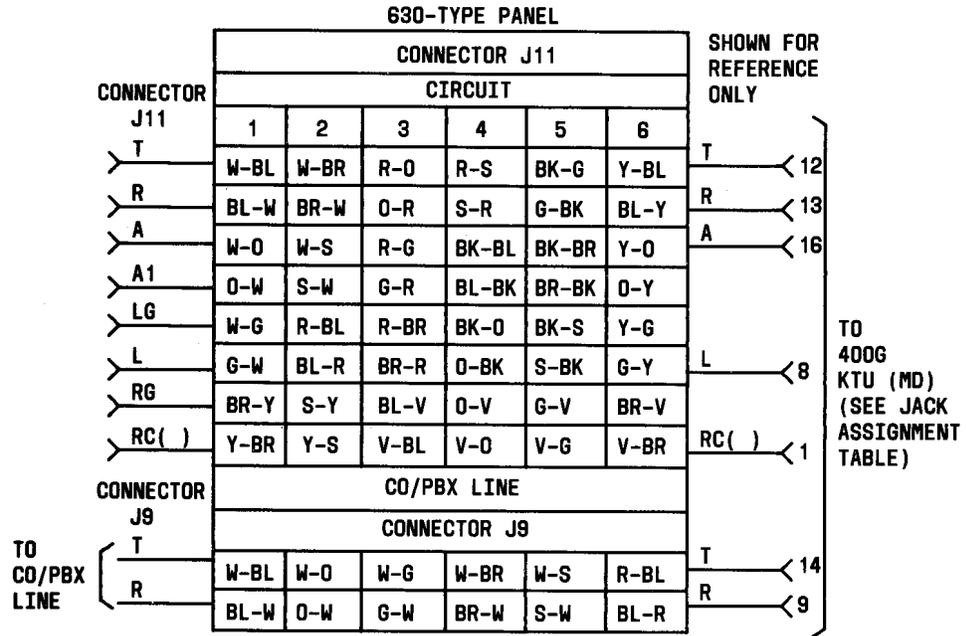
Fig. 12—400D KTU (MD) Connections (CO/PBX Line) in 630-Type Key Service Panel and 113-Type Connecting Unit (Sheet 2 of 2)



OPTION	FEATURE	CONNECT TERMINALS
M	RING TIME-OUT	LONG TIME DELAY (APPROXIMATELY 20 SECONDS)
Z		SHORT TIME DELAY (APPROXIMATELY 5.75 SECONDS)
Y	VISUAL HOLD CIRCUIT	LAMP WINK
X		LAMP STEADY
W	AUDIBLE SIGNAL	INTERRUPTED RING
T		STEADY RING
S	AUDIBLE SIGNAL	COMMON WITH DIODE MATRIX CONTROL
V		COMMON WITH RELAY CONTROL
R	DELAYED HOLD RELEASE	RELEASE OF HOLDING BRIDGE FROM CO/PBX BY LINE CURRENT OPENS
K		MINIMUM OF 25 MS
		600 MS

* DENOTES FACTORY-PROVIDED OPTIONS

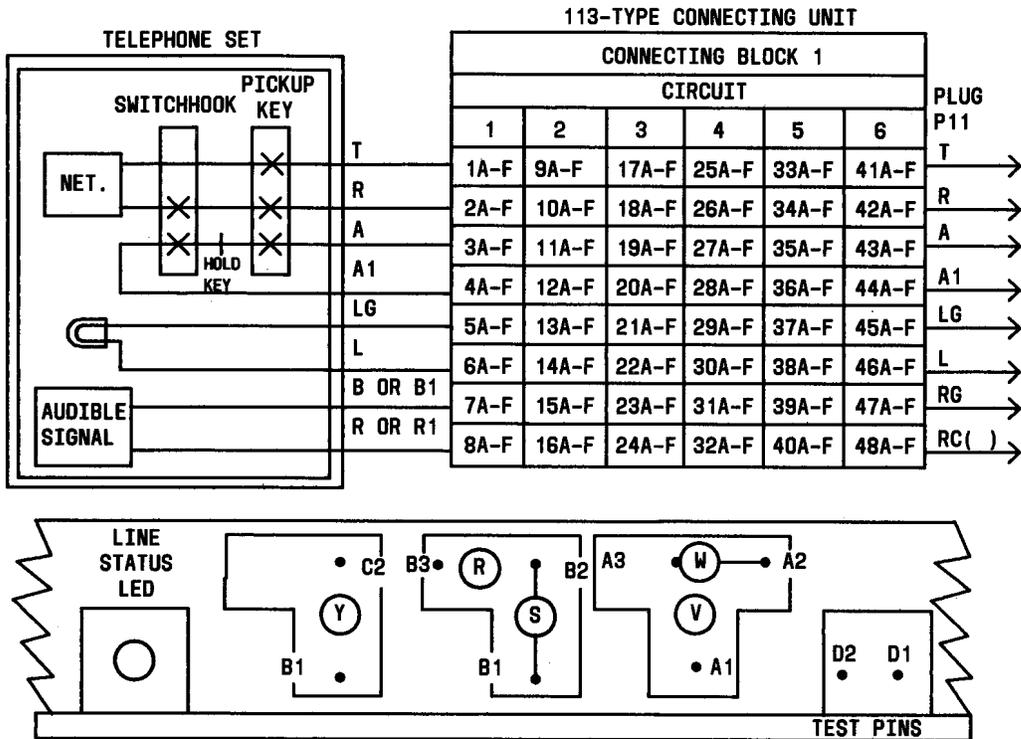
Fig. 13—400G KTU (MD) Connections (CO/PBX Line) in 630-Type Key Service Panel and 113-Type Connecting Unit (Sheet 1 of 2)



JACK ASSIGNMENT TABLE

630-TYPE PANEL	
400G KTU (MD) JACK LOCATION	
CIRCUIT	JACK
1	J3A
2	J3B
3	J4A
4	J4B
5	J5A
6	J5B

Fig. 13—400G KTU (MD) Connections (CO/PBX Line) in 630-Type Key Service Panel and 113-Type Connecting Unit (Sheet 2 of 2)



TOP VIEW OF OPTION BLOCK-HANDLE ASSEMBLY.
OPTION SYMBOLS SHOWN CONNECTED ARE IN
FACTORY-INSTALLED POSITIONS

OPTIONS

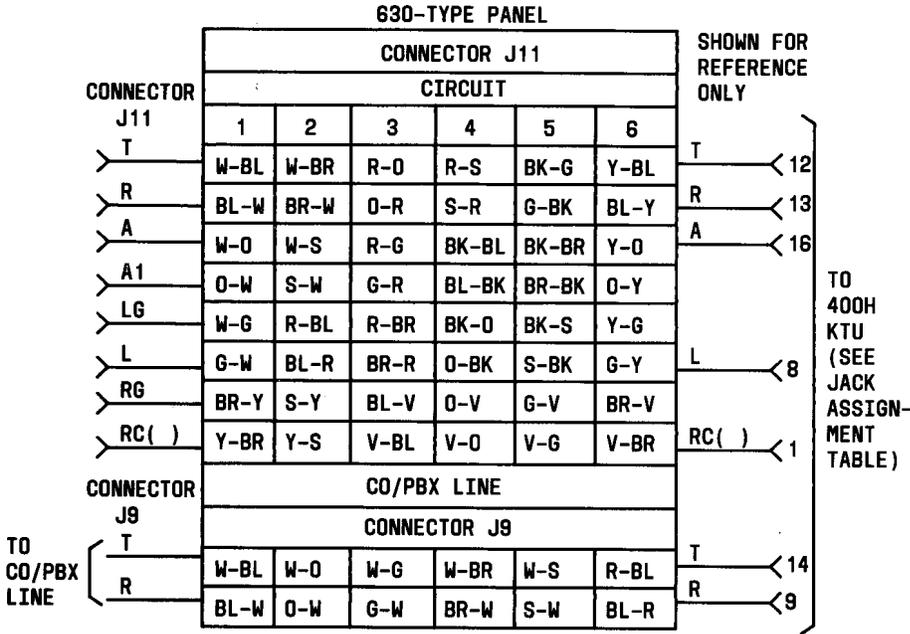
OPTION	FEATURES	
T*†	CO/PBX LINE CIRCUIT	
W*	AUDIBLE SIGNAL	INTERRUPTED RING
V		COMMON AUDIBLE WITH GROUND FOR RELAY CONTROL
S*	HOLD CIRCUIT RELEASE	LONG HOLD ABANDON TIMEOUT (FOR ESS #1, ESS #2, 812 PBX, 770 PBX, "DIMENSION" PBX)
R		SHORT HOLD ABANDON (FOR ALL OTHERS)
Y†	TIME-OUT	WITH 14 SECONDS
		WITHOUT 6 SECONDS

* FACTORY INSTALLED

† AN OPTION PLUG IS NOT PROVIDED. USE KS-21290, L7
OPTION PLUG COMCODE 841732613

‡ T OPTION ISSUE 1 ONLY

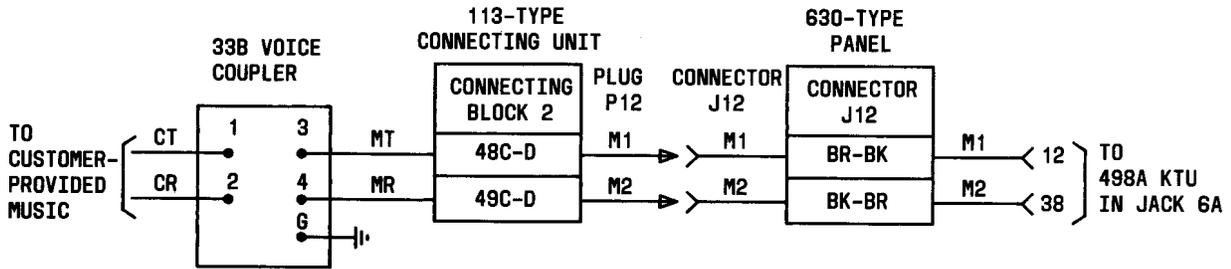
Fig. 14—400H KTU Connections (CO/PBX Line) in 630-Type Key Service Panel and 113-Type Connecting Unit (Sheet 1 of 2)



JACK ASSIGNMENT TABLE

630-TYPE PANEL	
400H KTU JACK LOCATION	
CIRCUIT	JACK
1	J3A
2	J3B
3	J4A
4	J4B
5	J5A
6	J5B

Fig. 14—400H KTU Connections (CO/PBX Line) in 630-Type Key Service Panel and 113-Type Connecting Unit (Sheet 2 of 2)



NOTE: 498A KTU CONTAINS FOUR CIRCUITS AND MUST BE EXPANDED TO SIX CIRCUITS WITH THE ADDITION OF AN 116A1 CIRCUIT MODULE TO THE 498A KTU WHEN MORE THAN FOUR CO/PBX LINES ARE TO BE EQUIPPED WITH MUSIC-ON-HOLD

Fig. 15—498A KTU Connections (Music-on-Hold) in 630-Type Key Service Panel and 113-Type Connecting Unit

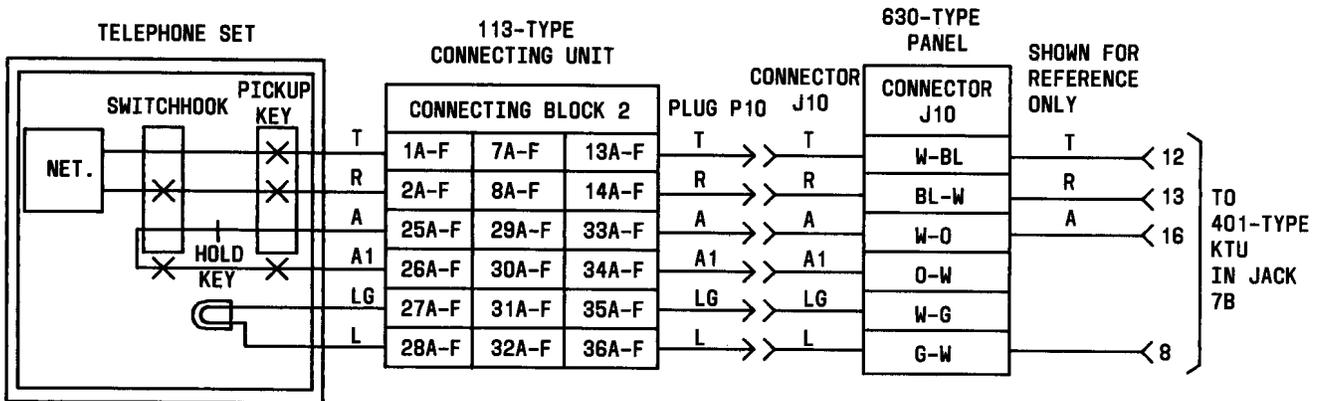


Fig. 16—401-Type KTU Connections (Manual Intercom) in 630-Type Key Service Panel and 113-Type Connecting Unit

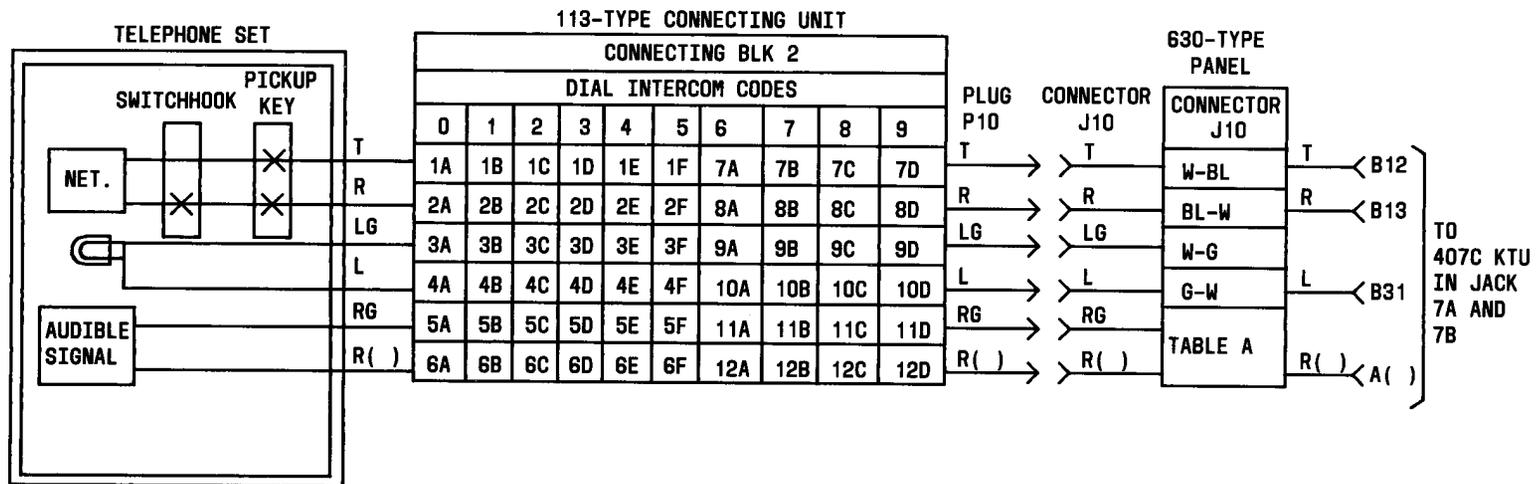


TABLE A

DIAL CODE	COLOR		TERMINAL
	R()	RG	R()
R0	W-BR	BR-W	A34
R1	W-S	S-W	A28
R2	R-BL	BL-R	A23
R3	R-O	O-R	A25
R4	R-G	G-R	A26
R5	R-BR	BR-R	A20
R6	R-S	S-R	A21
R7	BK-BL	BL-BK	A32
R8	BK-O	O-BK	A30
R9	BK-G	G-BK	A29

Fig. 17—407C KTU Connections (Dial Intercom, 10-Code Selector) in 630-Type Key Service Panel and 113-Type Connecting Unit

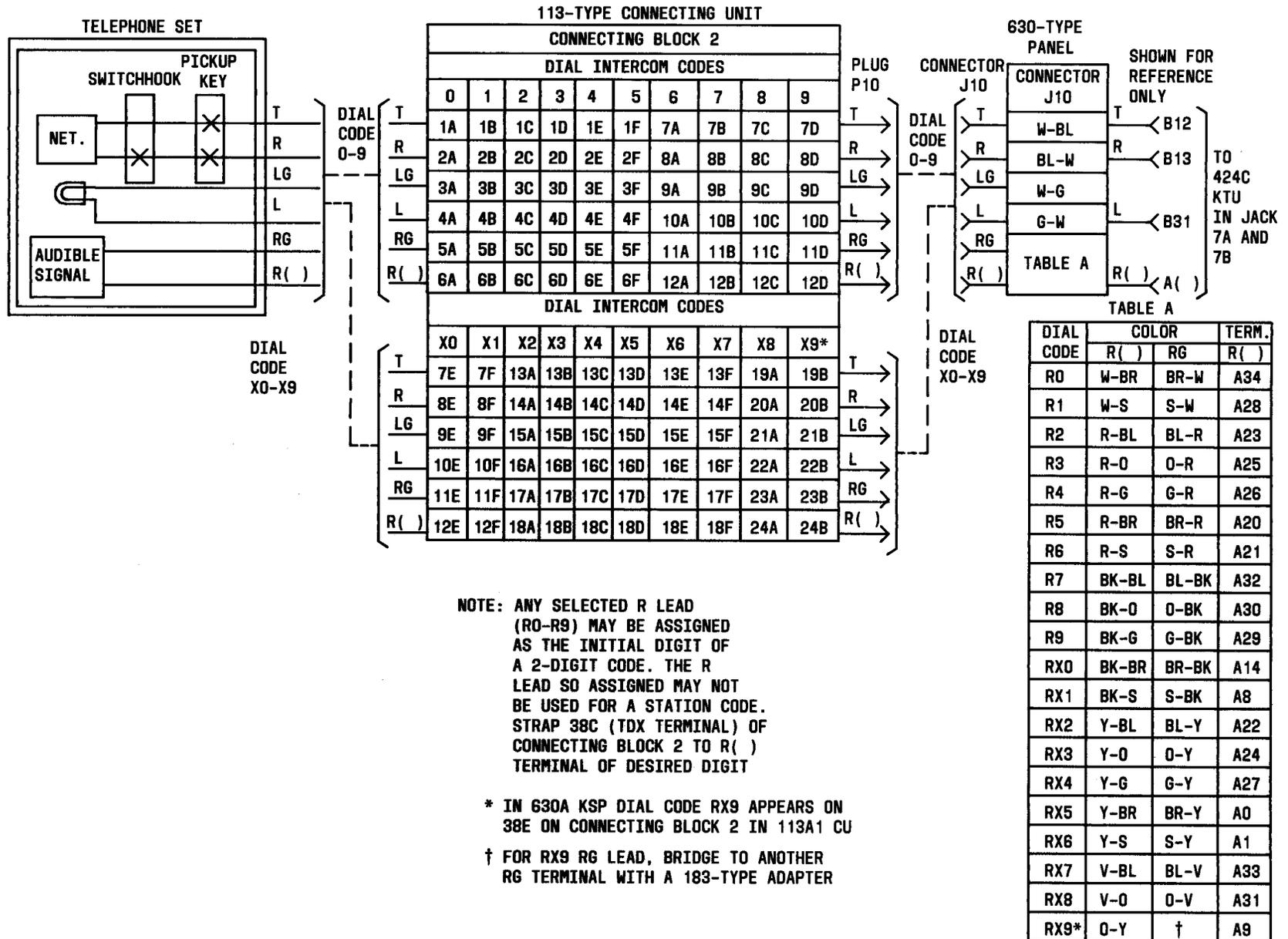


Fig. 18—424C KTU Connections (Dial Intercom, 19-Code Selector) in 630-Type Key Service Panel and 113-Type Connecting Unit

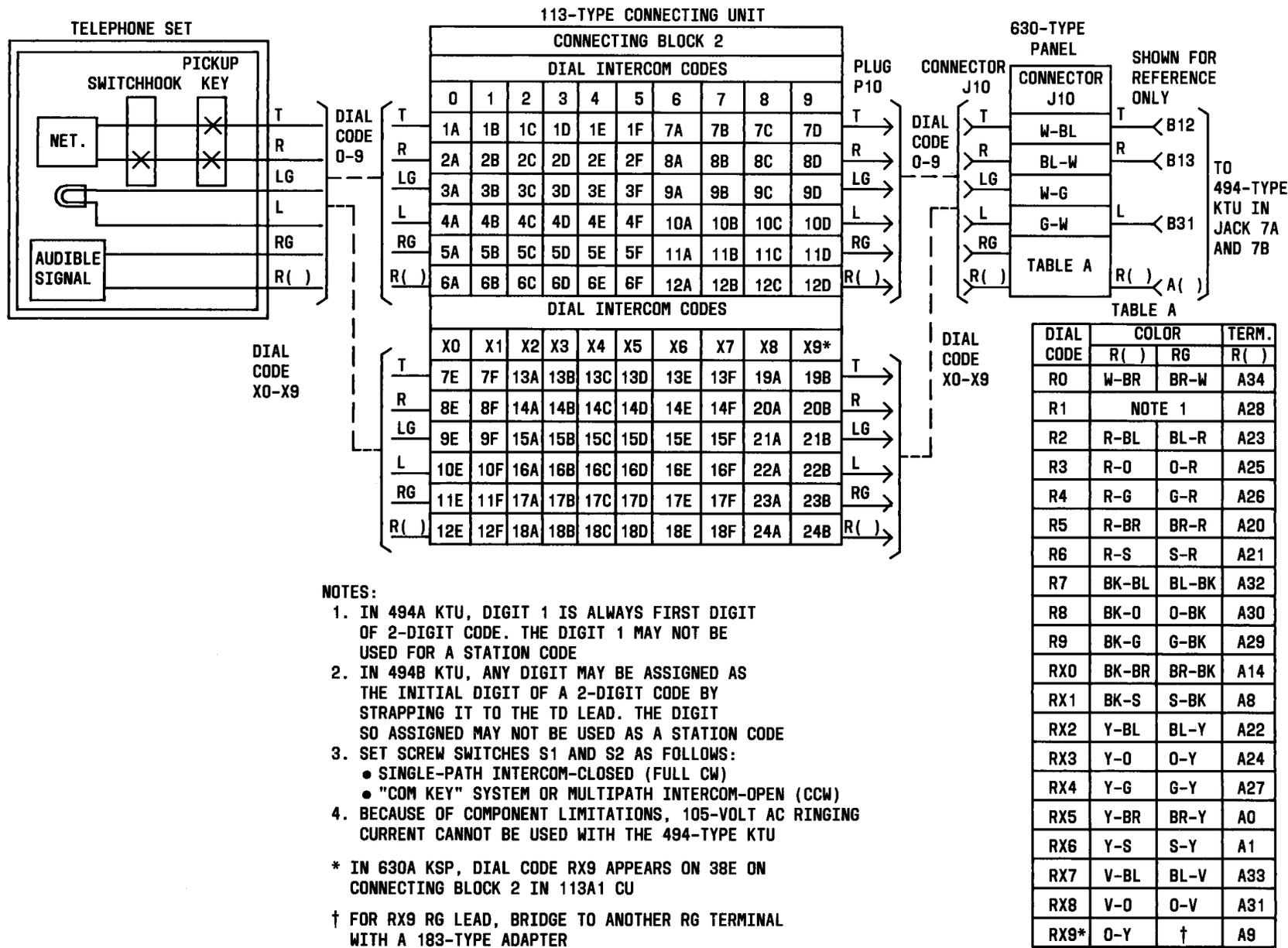


Fig. 19—494-Type KTU (TOUCH-TONE Service or Rotary and TOUCH-TONE Service, 19-Code Selector) Connections in 630-Type Key Service Panel and 113-Type Connecting Unit

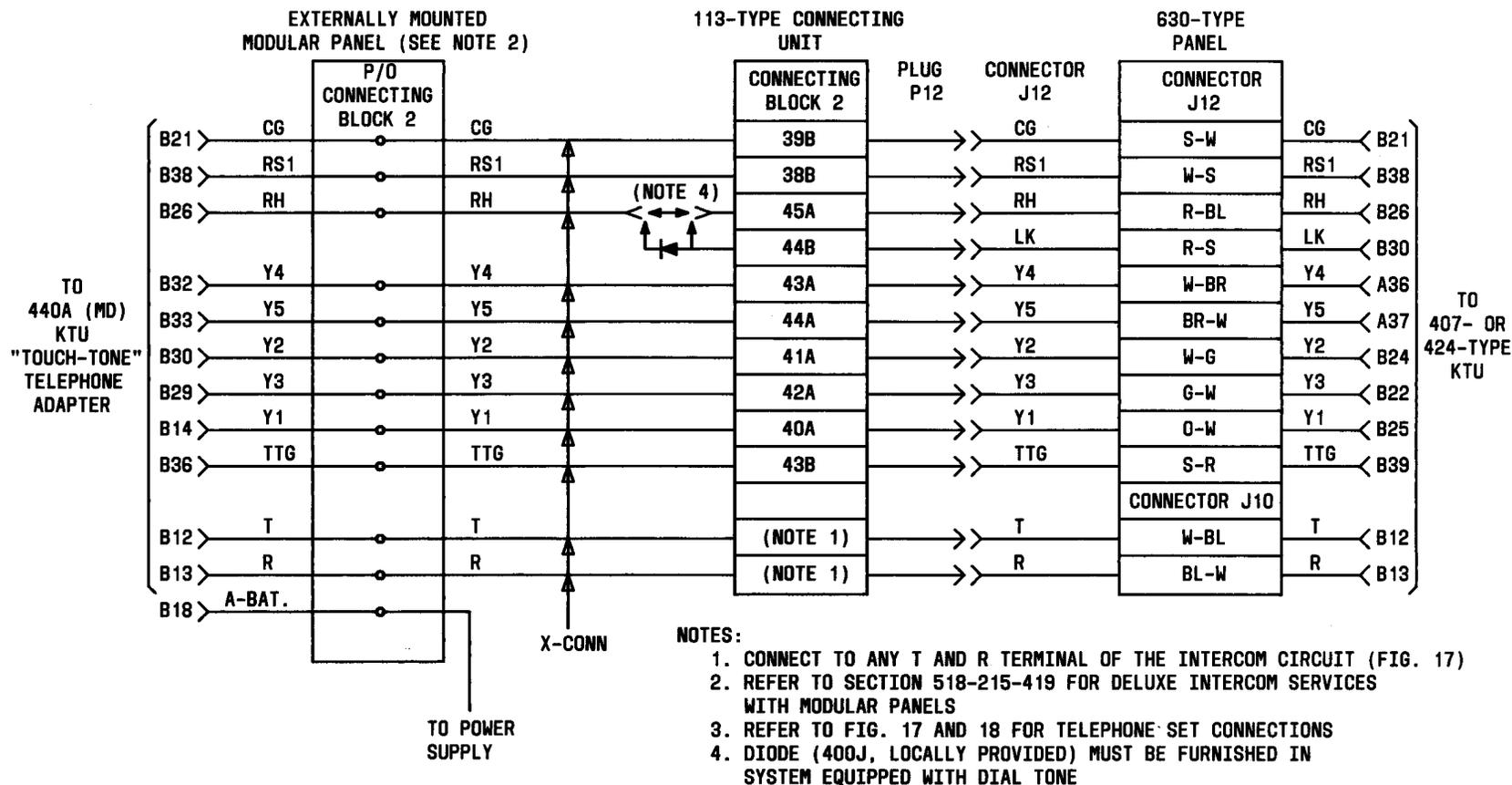


Fig. 20—407- or 424-Type KTU (Rotary Selector) Connections in 630-Type Key Service Panel and 113-Type Connecting Unit Wired to Externally Mounted 440A KTU (MD) (TOUCH-TONE Telephone Adapter)

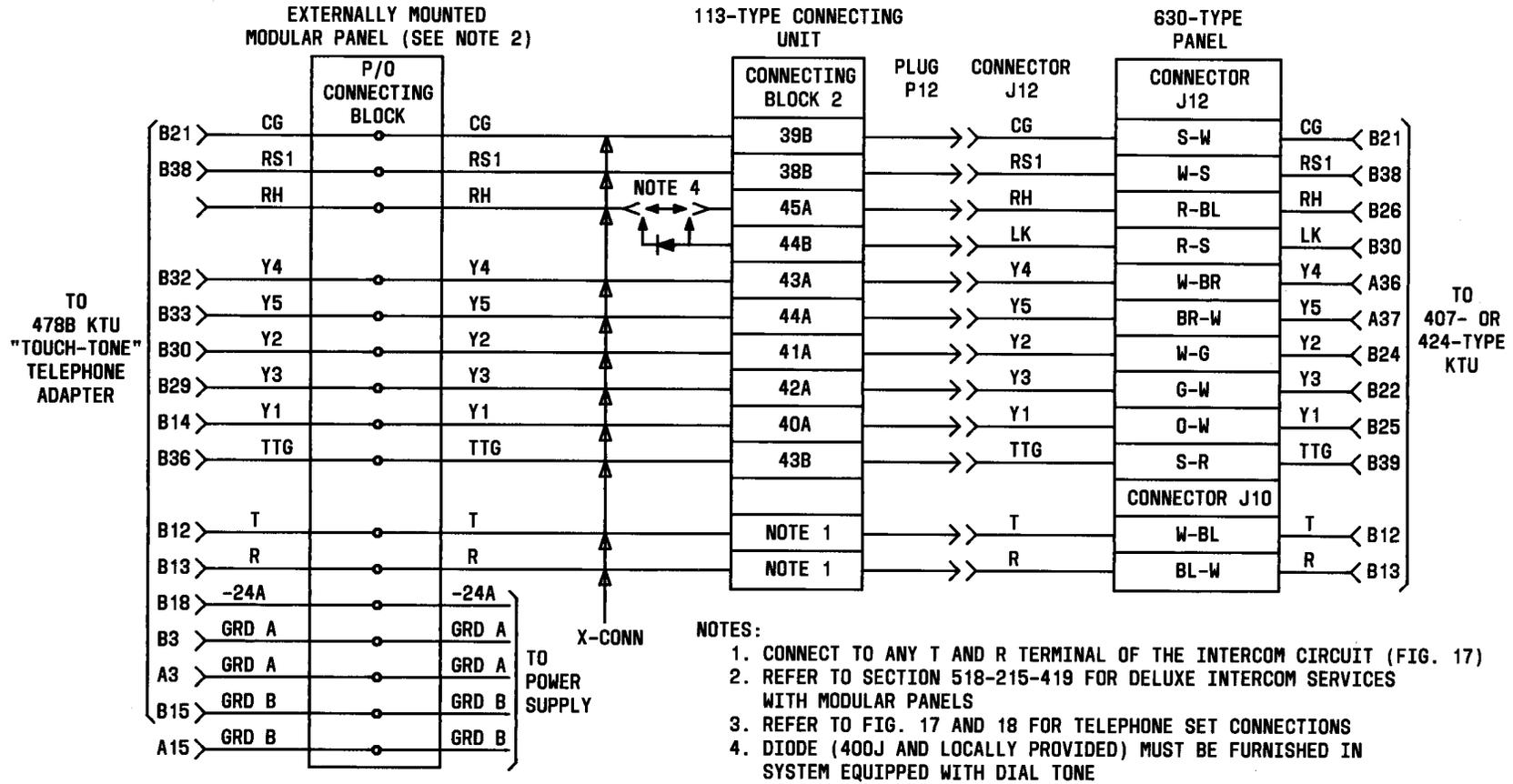
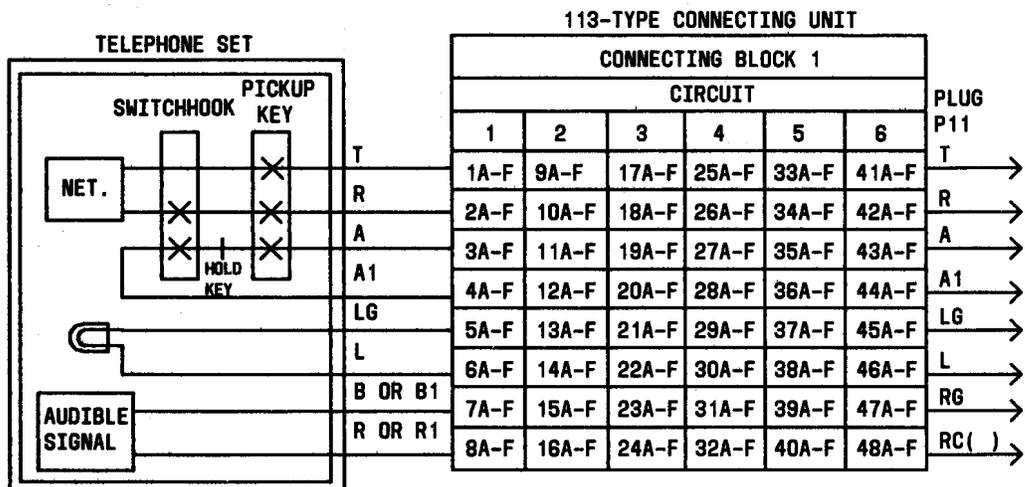


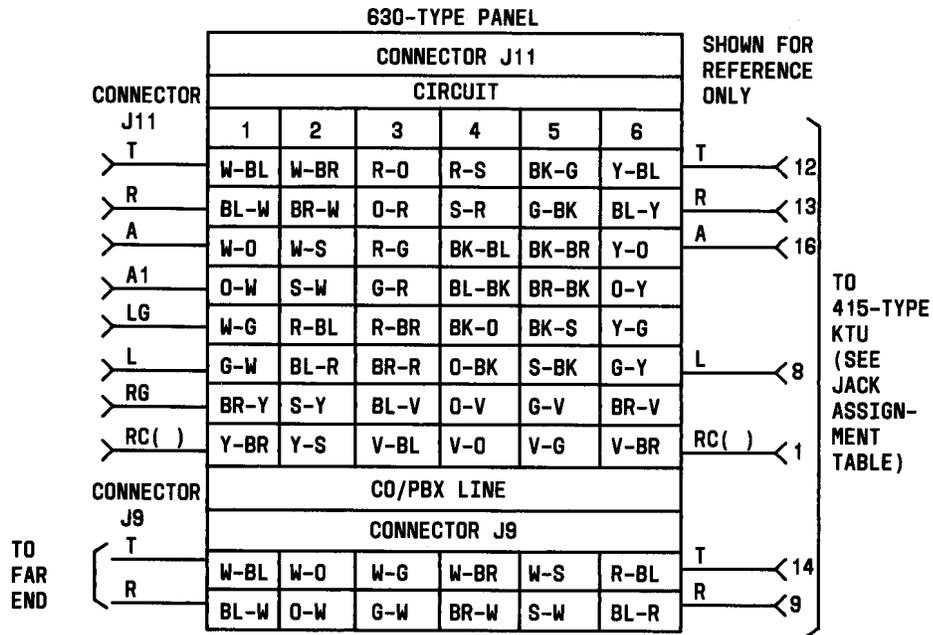
Fig. 21—407- or 424-Type ((Rotary Selector) Connections in 630-Type Key Service Panel and 113-Type Connecting Unit



NOTES:

1. REFER TO SECTION 518-215-400 FOR ADDITIONAL INFORMATION ON THE 415A KTU
2. SEE NOTE 1 IN TABLE A FOR RESTRICTIONS ON MUSIC-ON-HOLD FOR CO LINES WHEN THE 415A KTU IS USED

Fig. 22—415-Type KTU Connections (Automatic, DC Signaling, Private Line) in 630-Type Key Service Panel and 113-Type Connecting Unit (Sheet 1 of 2)



JACK ASSIGNMENT TABLE

630-TYPE PANEL	
415A KTU JACK LOCATION	
CIRCUIT	JACK
1	J3A
2	J3B
3	J4A
4	J4B
5	J5A
6	J5B

Fig. 22—415-Type KTU Connections (Automatic, DC Signaling, Private Line) in 630-Type Key Service Panel and 113-Type Connecting Unit (Sheet 2 of 2)

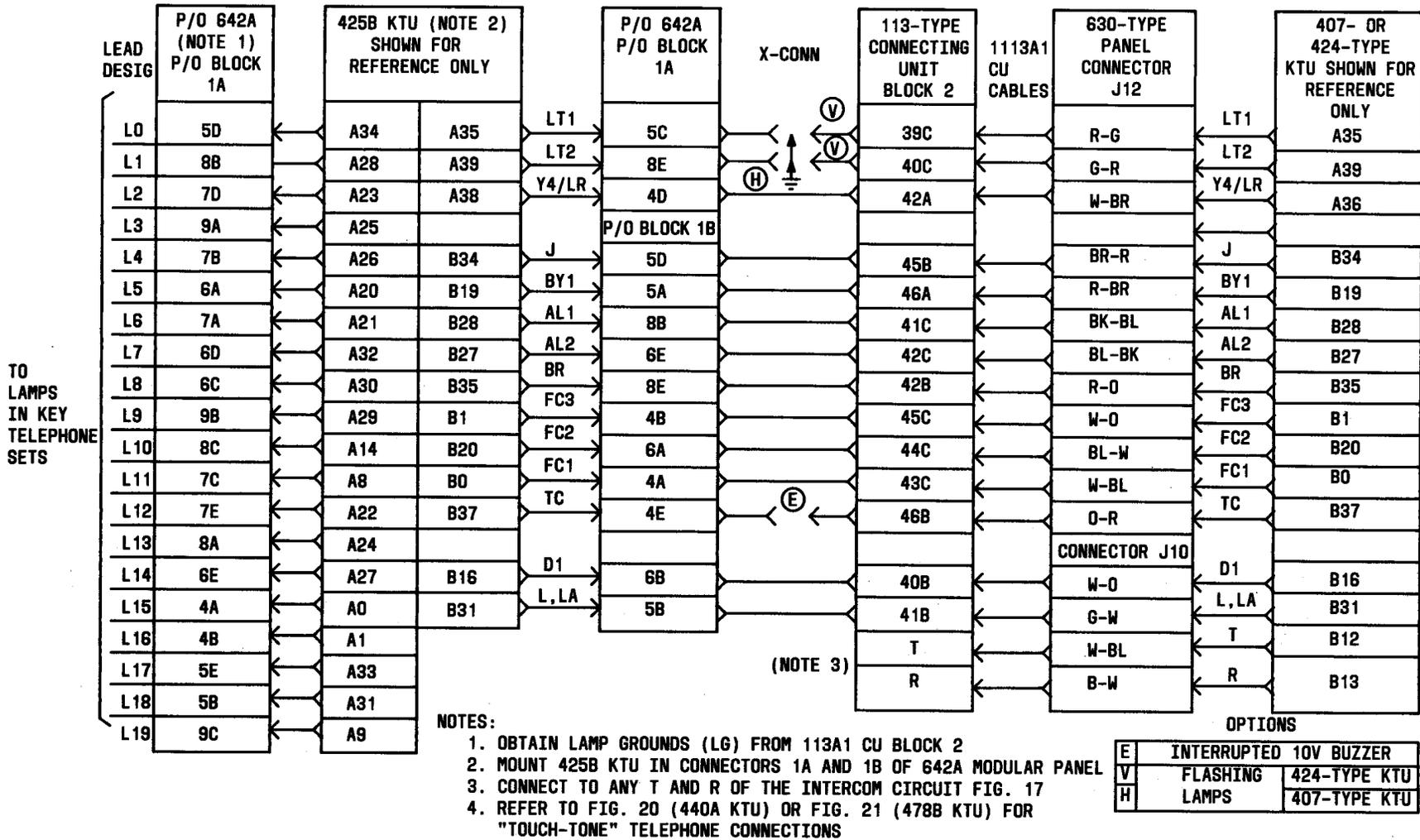


Fig. 23—425B KTU Connections (Flashing Intercom Lamps) in a 642A Modular Panel Interconnected to a 630-Type Key Service Panel and 113-Type Connecting Unit

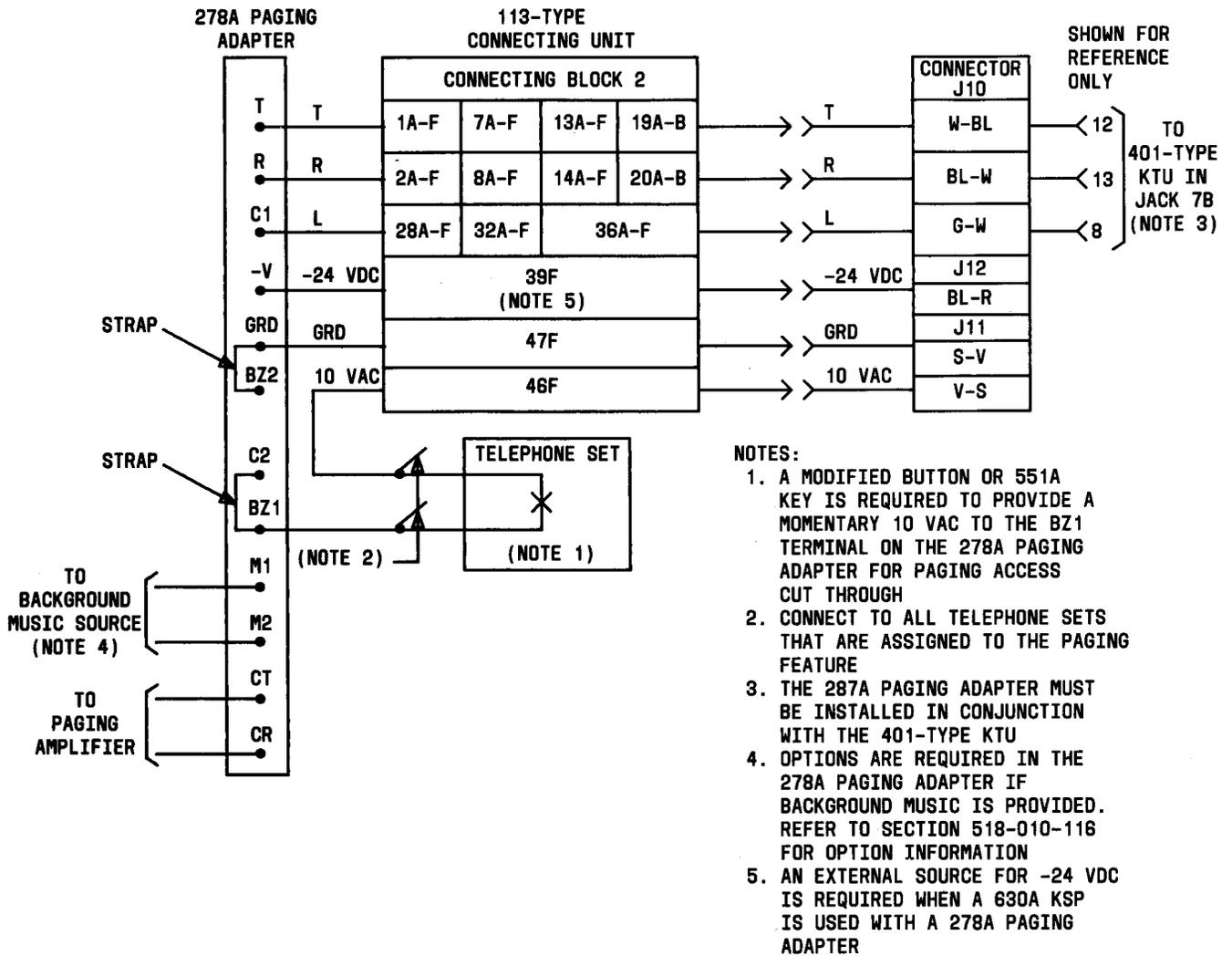


Fig. 24—278A Paging Adapter Connections for Manual Paging Access in 630-Type Key Service Panel and 113-Type Connecting Unit

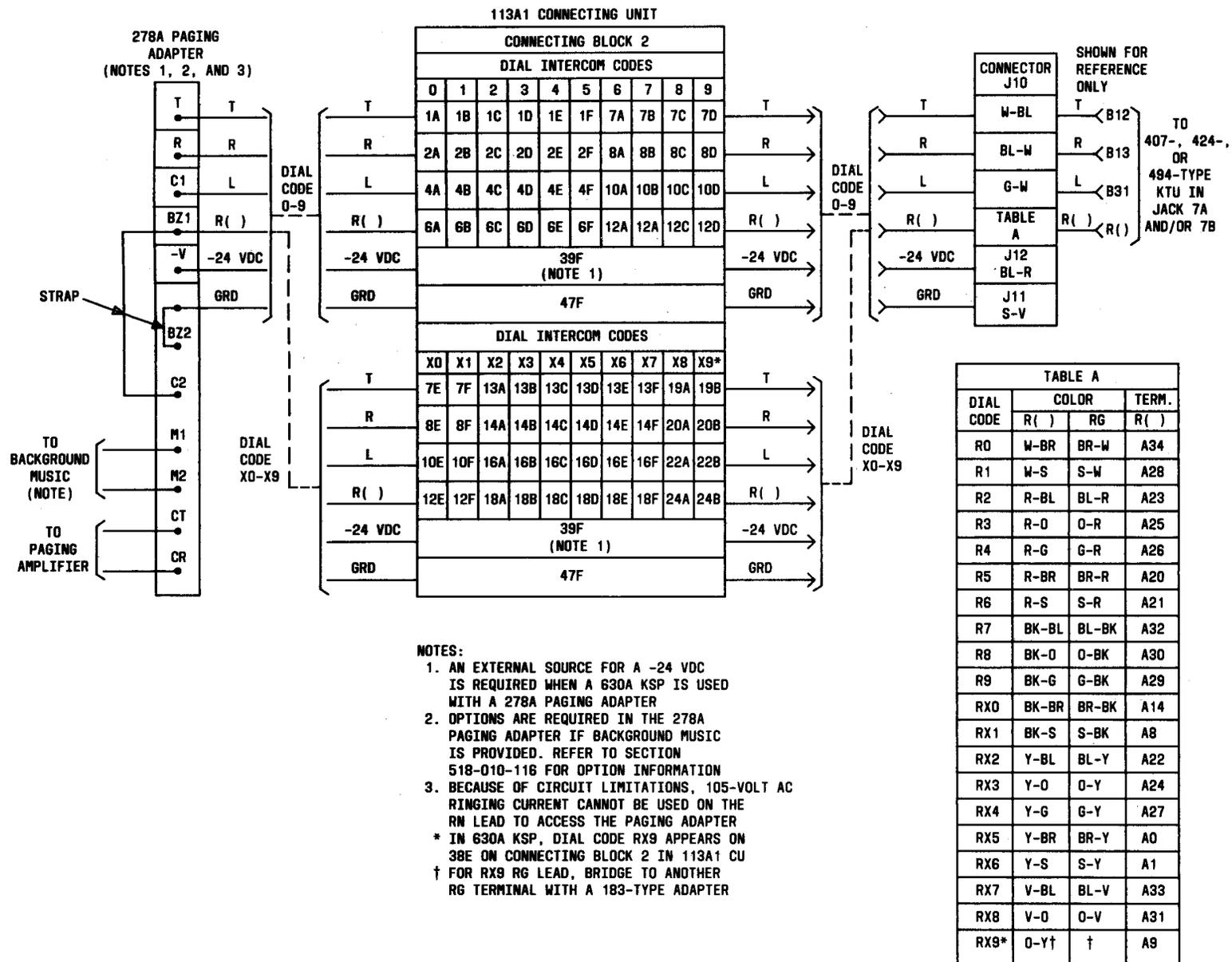


Fig. 25—278A Paging Adapter Connections for Dial Paging Access in 630-Type Key Service Panel and 113-Type Connecting Unit