

**SERVICE**  
**661-TYPE TELEPHONE SETS**

**1. GENERAL**

**1.01** This section provides connection information for the 661-type (MD) telephone sets. This information was formerly found in Section 502-661-101, which will be canceled.

**1.02** These sets are supplied factory-wired as 661A1 only. For conversion to 661A2 or

661A3 the appropriate key must be separately ordered and installed. For ordering and installing information, refer to appropriate Reference section in Division 502. Speakerphone connections are shown in Division 512.

**1.03** When replacing keys, remove and discard any P-10E865 wire clips found in place.

**TABLE A**  
**PICKUP-SIGNAL KEY CONVERSION, 661A1 TELEPHONE SET**

CONVERSION OPTIONS	657A OR 599A KEY LEADS				
	(S-W)	(G-R)	(BL-BK)	(BR-BK)	(BR-W)
H P P P P P	A2	A2	A2	A2	11
H P P P P S	A2	A2	A2	SG	11
H P P P S S	A2	A2	SG	SG	11
H P P S S S	A2	SG	SG	SG	11
H P P P P* S*	A2	A2	11	A2	11
H P P P* P* S*	A2	11	11	A2	11
H P P* P* P* S*	11	11	11	A2	11

**Note:** All line key positions as furnished are pickup keys. To convert from pickup (locking) to signal (nonlocking) remove the P-10E837 screw from the plunger at the key position being converted.

\* These arrangements are used on private or intercommunicating lines with a common signal key.

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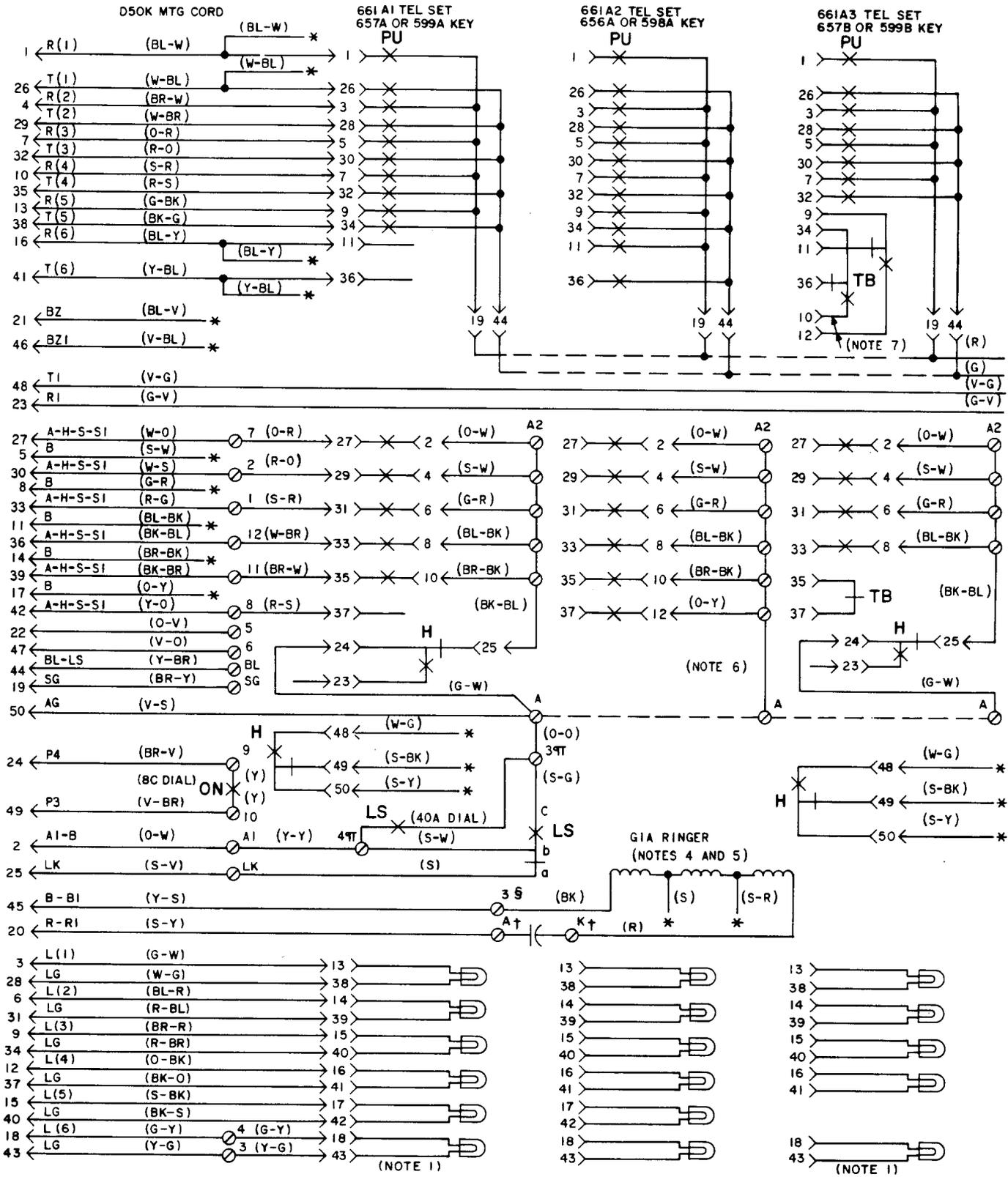
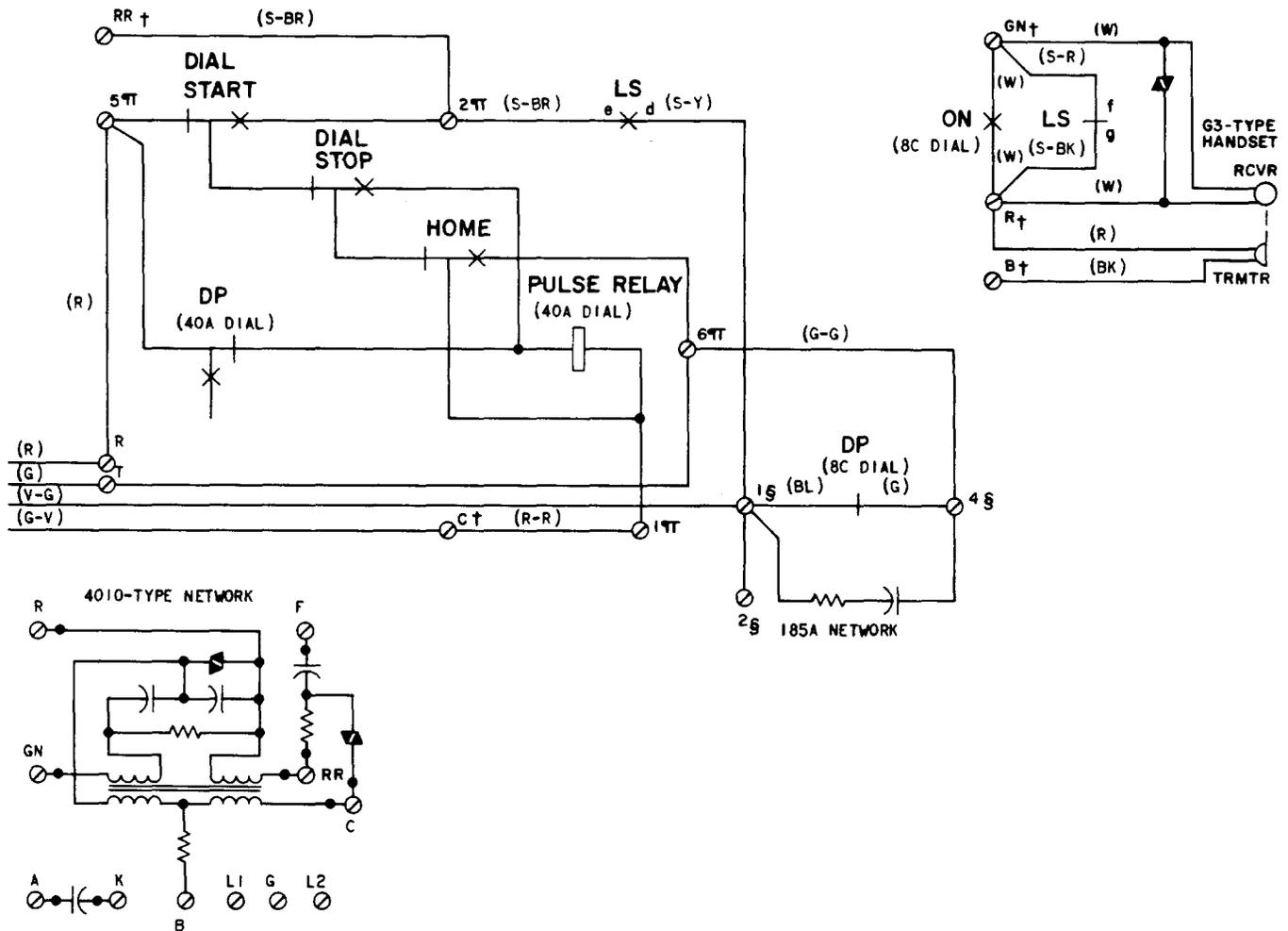


Fig. 1—661-Type (MD) Telephone Set, Connections (Sheet 1 of 2)



NOTES:

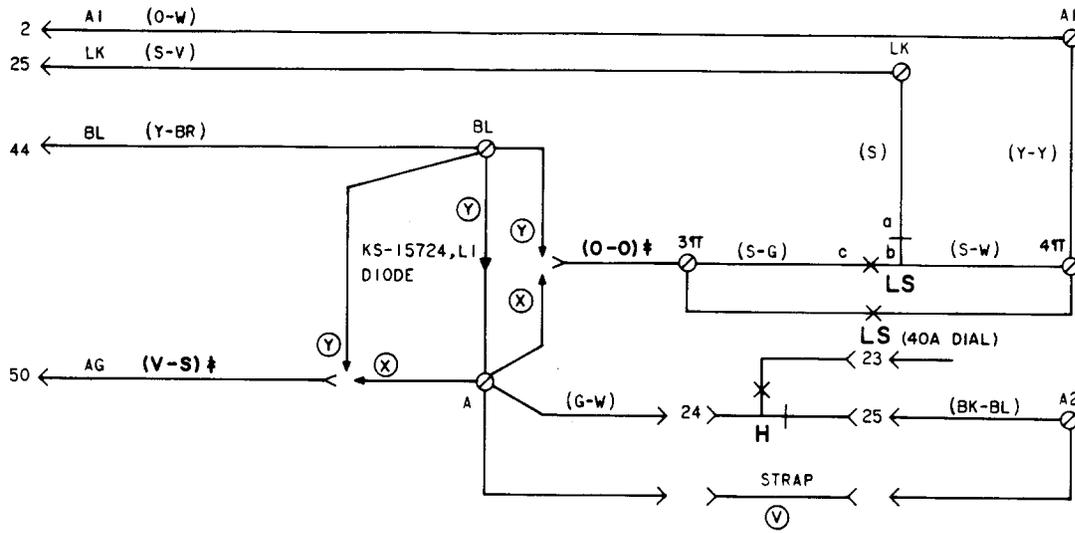
1. WHEN 6TH LAMP IS REQUIRED IN 661A1 OR 661A3 TELEPHONE SETS, TERMINATE (Y-G) ON TERMINAL 3 AND (G-Y) ON TERMINAL 4 OF TB2. THESE LEADS ARE TERMINATED IN THE 661A2 TELEPHONE SET. EQUIP KEY WITH PROPER LAMP AND CONNECT ASSOCIATED LEADS AT EQUIPMENT OR DISTRIBUTION TERMINAL AS REQUIRED.
2. SET IS SHOP WIRED FOR USE WITH 3-TYPE SPEAKERPHONE. A 149A ADAPTER MAY BE REQUIRED FOR CONNECTION TO SPEAKERPHONE CONTROL UNIT.
3. A KS-8109, L2 OR KS-20419, L1 BUZZER MAY BE INSTALLED. USE BZ AND BZ1 LEADS TO CONNECT TO EQUIPMENT.
4. IF CAPACITOR IS NOT REQUIRED IN RINGER CIRCUIT, MOVE (R) RINGER LEAD TO TERMINAL A OF NETWORK.
5. TO SILENCE RINGER PERMANENTLY CONNECT (BK) RINGER LEAD TO K OF NETWORK.
6. WHEN 656A OF 598A KEY IS PROVIDED ADD STRAP BETWEEN KEY TERMINALS A AND A2.
7. THESE LEADS CONNECT TO (BR-BK) AND (O-Y) LEADS TERMINATED ON A2.
8. LINE SWITCH SEQUENCE:

bc- MAKES  
de- MAKES  
ob- BREAKS  
fg- BREAKS

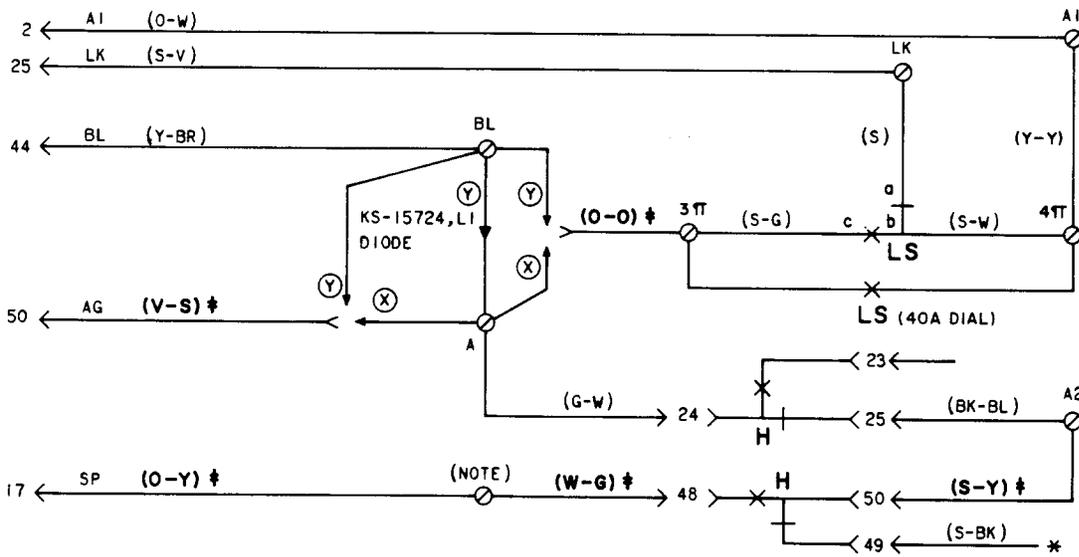
- \* - INSULATED AND STORED
- † - TERMINAL ON NETWORK, UNDESIGNATED TERMINALS ARE ON TB2
- § - TERMINAL ON TB1
- TT - TERMINAL ON 40A DIAL
- DP - DIAL PULSE CONTACTS
- H - HOLD KEY
- LS - LINE SWITCH
- ON - DIAL OFF-NORMAL CONTACTS
- PU - PICKUP
- TB - TURNBUTTON (CUTOFF)

Fig. 1—661-Type (MD) Telephone Set, Connections (Sheet 2 of 2)

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(A) WITHOUT I HOLD



(B) WITH I HOLD

NOTE:

USE D-161488 CONNECTOR

\* - INSULATED AND STORED

‡ - LEADS INVOLVED IN MODIFICATION

TT - TERMINALS ON 40A DIAL, UNDESIGNATED TERMINALS ARE ON TB2

(V) - ADD STRAP WHEN 656A OR 598A KEY IS FURNISHED

(X) - WITHOUT BUSY LAMP

(Y) - WITH BUSY LAMP

H - HOLD KEY

LS - LINE SWITCH

Fig. 2—1A1 or 1A2 KTS—I Hold and/or Station Busy Lamp Modification



**TABLE B**  
**PICKUP-SIGNAL KEY CONVERSION, 661A2 TELEPHONE SET**

CONVERSION OPTIONS	656A OR 598A KEY LEADS					
	(S-W)	(G-R)	(BL-BK)	(BR-BK)	(O-Y)	(R-S)
PPPPPP	A2	A2	A2	A2	A2	8
PPPPPS	A2	A2	A2	A2	SG	8
PPPPSS	A2	A2	A2	SG	SG	8
PPSSSS	A2	A2	SG	SG	SG	8
PPSSSS	A2	SG	SG	SG	SG	8
PPPPP* S*	A2	A2	A2	8	A2	8
PPPP* P* S*	A2	A2	8	8	A2	8
PPP* P* P* S*	A2	8	8	8	A2	8
PP* P* P* P* S*	8	8	8	8	A2	8

**Note:** All line key positions as furnished are pickup keys. To convert from pickup (locking) to signal (nonlocking) remove the P-10E837 screw from the plunger at the key position being converted.

\* These arrangements are used on private or intercommunicating lines with a common signal key.

**TABLE C**  
**PICKUP-SIGNAL KEY CONVERSION, 661A3 TELEPHONE SET**

CONVERSION OPTIONS	657B OR 599B KEY LEADS								
	(S-W)	(G-R)	(BL-BK)	(W-BR)	(Y-BL)	(BL-Y)	(BR-BK)	(O-Y)	(R-S)
H P P P P C	A2	A2	A2	12	†	†	A2	A2	†
H P P P S C	A2	A2	SG	12	†	†	A2	A2	†
H P P S S C	A2	SG	SG	12	†	†	A2	A2	†
H P P P * S * C	A2	12	A2	12	†	†	A2	A2	†
H P P * P * S * C	12	12	A2	12	†	†	A2	A2	†
H P P P P C (1)	A2	A2	A2	12	†	†	SG	SG	†
H P P P P C (2)	A2	A2	A2	12	TB2-S1	A of net. ‡	†	†	†
H P P P P C (3)	A2	A2	A2	12	Buzzer Terminals		†	†	†
H P P P P C (4)	A2	A2	A2	12	†	†	†	†	†

**Note:** All line key positions as furnished are pickup keys. To convert from pickup (locking) to signal (nonlocking) remove the P-10E837 screw from the plunger at the key position being converted.

\* These arrangements are used on private or intercommunicating lines with a common signal key.

† Insulate and store

‡ Remove mounting cord (S-Y) (Y-S) leads, insulate and store. Move BK ringer lead from TB1-3 to TB2-S1.

Turnbutton used to:

- (1) Operate auxiliary relay [through 5th R and T (G-BK) (BK-G) pair].
- (2) Cutoff ringer in set.
- (3) Cutoff buzzer in set.
- (4) Cutoff external audible signal [connect 5th R and T (G-BK) (BK-G) pair to signal circuit; connect 6th R and T (Y-BL) (BL-Y) pair to external signal].

**TABLE D**  
**CONNECTIONS TO 3-TYPE SPEAKERPHONE USING 148A ADAPTER**

TERMINALS IN SET	MTG CORD	148A ADAPTER CORD	LEAD DESIG	TERM. ON 55A CONTROL UNIT
A-BL	V-S	S-BK	AG	5
LK	S-V	S-Y	LK	*
2	V-BL	Y-BK	BZ1	6
1	BL-V	G-W	BZ	7
10	V-BR	S	P3	21
9	BR-V	BL-W	P4	30
1†	V-G	BK-W	T1	19
C‡	G-V	BK-BL	R-1	28
3†	Y-S	G-Y	B-B1	8
A‡	S-Y	R-W	R-R1	9
A1	O-W	G-BK	A1	12 (Note 2)
		O-W	A1	12 (Note 2)

**Notes 1:** For 3-type speakerphone component connections refer to section covering 3-type speakerphone system, connections, 660 telephone sets.

**2:** See Fig. 2 and 3.

\* Connect to **BK** or **BK-O** of 666-type transmitter.

† TB1.

‡ Terminals on network.

**TABLE E**  
**CONNECTIONS TO 3-TYPE SPEAKERPHONE USING 149A ADAPTER**

TERMINALS IN SET	MTG CORD	149A ADAPTER TERMINALS	LEAD DESIG	TERM. ON 55A CONTROL UNIT
A-BL	V-S	12A	AG	5
LK	S-V	11A	LK	*
10	V-BR	10A	P3	21
9	BR-V	9A	P4	30
1 †	V-G	8A	T1	19
C ‡	G-V	7A	R1	28
3 †	Y-S	2A	B-B1	8
A ‡	S-Y	1A	R-R1	9
A1	O-W	A1	A1	12 (Note 2)
SG	BR-Y	SG	SG	12 (Note 2)
1	V-BL	4B	BZ1	6
2	BL-V	3B	BZ	7

**Notes 1:** For 3-type speakerphone component connections refer to section covering 3-type speakerphone system, connections, 660 telephone sets.

**2:** See Fig. 2 and 3.

\* Connect to **BK** or **BK-O** of 666-type transmitter.

† TB1.

‡ Terminals on network.

TABLE F

## CONDUCTOR ASSIGNMENTS USING 66E-TYPE CONNECTOR BLOCK OR A25B CONNECTOR CABLE

LEAD DESIG	TEL SET TERM. (NOTE)	MTG CORD OR A25B CONN CABLE		PLUG OR CONN	66E-TYPE CONN BLOCK
		PAIR NO.	CONDUCTOR COLOR	PIN NO.	CLIP TERM. NO.
T	26	1	W-BL	26	1
R	1		BL-W	1	2
A, H, S, or S1	TB2-7	2	W-O	27	3
A1 or B	TB2-A1		O-W	2	4
LG	38	3	W-G	28	5
L1	13		G-W	3	6
T	28	4	W-BR	29	7
R	3		BR-W	4	8
A, H, S, or S1	TB2-2	5	W-S	30	9
Spare or B	*		S-W	5	10
LG	39	6	R-BL	31	11
L2	14		BL-R	6	12
T	30	7	R-O	32	13
R	5		O-R	7	14
A, H, S, or S1	TB2-1	8	R-G	33	15
Spare or B	*		G-R	8	16
LG	40	9	R-BR	34	17
L3	15		BR-R	9	18
T	32	10	R-S	35	19
R	7		S-R	10	20
A, H, S, or S1	TB2-12	11	BK-BL	36	21
Spare or B	*		BL-BK	11	22
LG	41	12	BK-O	37	23
L4	16		O-BK	12	24
T	34	13	BK-G	38	25
R	9		G-BK	13	26
A, H, S, or S1	TB2-11	14	BK-BR	39	27
Spare or B	*		BR-BK	14	28
LG	42	15	BK-S	40	29
L5	17		S-BK	15	30
T	36	16	Y-BL	41	31
R	11		BL-Y	16	32
A, H, S, or S1	TB2-8	17	Y-O	42	33
Spare or B	*		O-Y	17	34
LG	TB2-3	18	Y-G	43	35
L6	TB2-4		G-Y	18	36
BL or LS	TB2-BL	19	Y-BR	44	37
SG	TB2-SG		BR-Y	19	38
B or B1	TB1-3	20	Y-S	45	39
R or R1	A of net		S-Y	20	40
Spare or BZ1	*	21	V-BL	46	41
Spare or BZ	*		BL-V	21	42
	TB2-6	22	V-O	47	43
	TB2-5		O-V	22	44
T1	TB1-1	23	V-G	48	45
R1	C of net		G-V	23	46
P3	TB2-10	24	V-BR	49	47
P4	TB2-9		BR-V	24	48
AG	TB2-A	25	V-S	50	49
LK	TB2-LK		S-V	25	50

Note: Contacts of key plug unless otherwise noted.

\* Insulate and store.