

**SERVICE**  
**1A1 KEY TELEPHONE SYSTEM**  
**200H PACKAGED UNITS**

**1. GENERAL**

**1.001** This addendum supplements Section 518-114-431, Issue 3. The attached pages must be inserted in the section in accordance with the filing instructions above.

**1.002** This addendum is issued to:

- (a) Add the 232C KTU
- (b) Add caution concerning 207C KTU.

**2. CONNECTIONS**

The following changes apply to Part 2 of the section:

- (a) Table B—revised
- (b) Fig. 1—revised
- (c) Table F—revised.

**Attached:**

Page 3 dated August 1974, revised  
Page 4 dated August 1974, revised  
Page 5 dated August 1974, revised  
Page 6 dated August 1974, revised  
Page 15 dated August 1974, revised  
Page 16 dated August 1974, revised



## SERVICE

### 1A1 KEY TELEPHONE SYSTEM

### 200H PACKAGED UNITS

#### 1. GENERAL

1.01 This section is reissued to:

- Revise tables and figures
- Provide additional option information.

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

- SD-69286-01 Issue 8D
- SD-69354-01 Issue 6D
- SD-69447-01 Issue 6D
- SD-69529-01 Issue 6B

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 SDs and CDs to determine the extent of the changes and the manner in which the section may be affected.

1.03 Additional information regarding the 200H packaged KTU may be found in a reference section of the 518 Division Practices.

#### 2. CONNECTIONS

2.01 See Fig. 1 for strapping arrangements between KTUs, power connections, and key cable connections.

2.02 Fig. 2 and 3 provide connections for the 247A(MD) and 247B KTUs, respectively, when TOUCH-TONE® calling is required. Fig. 4 provides Y2 card options in 247B KTU.

2.03 Tables A, B, C, and D provide option information. Table E provides current drain information and Table F shows features, and connections for key cables at both the KTUs and

terminal strips E, F, G, H, and J on the 64B1-100 Cable Terminal.

2.04 This package is factory-wired for the digit 2 to be used as the initial digit of 2-digit codes. When required, any other digit except 1 may be used as the initial digit. The digit so assigned cannot be used as a single-digit station code. Connecting the SW2 lead to selected terminal 2A through 9A on 207C KTU determines the first digit. Example: SW lead connected to 2A terminal the first digit is 2, and if connected to 3A the first digit is 3, etc.

2.05 Station selection may be accomplished through the operation of a locally furnished signal key. Signaling keys 551A or 549-type may be provided by 1A, 1A1, or 1A2 Key Telephone Systems, or equivalent keys may be used. See Table A for signal key lead connections.

2.06 For all system arrangements where direct current is used to operate bells, buzzers, or lamps, assume a current drain of 0.056 amp for each 7A-type bell or buzzer and a current drain of 0.035 amp for each A3 lamp. The current drain for the 2-talking link is shown in Table E.

#### 2.07 Connection Index:

Table A—SD-69354-01 Options in 200H-Type KTU

Table B—SD-69286-01 (6A Key Telephone System) Options Used With 200H-Type KTU

Table C—SD-69447-01 (247A KTU) Options Used With 200H-Type KTU

Table D—SD-69529-01 (247B KTU) Options Used With 200H-Type KTU

Table E—Current Drain Requirements for 2-Talking Link Arrangements

\*\*Reprinted to comply with modified final judgment.

**SECTION 518-114-431**

Table F—Features and Connections at KTUs and Terminal Strips E, F, G, H, and J on the 64B1-100 Cable Terminal

Fig. 3—Addition of TOUCH-TONE® Adapter Circuit, 247B KTU with 222A and 223A KTUs

Fig. 1—Strapping and Connection of the 200H-Type KTU

Fig. 4—Y2 Card Options in 247B KTU

Fig. 2—Addition of TOUCH-TONE® Adapter Circuit, 247A KTU(MD) with 222A and 223A KTUs

→TABLE A←

SD-69354-01 OPTIONS IN 200H-TYPE KTU

FEATURES SEE TABLE F AND FIG. 1		OPTIONS
Station audible signal	Over T and R leads	Y
	Over separate signaling pair	Z
Flash, wink, ring, and time-out circuit	Provided in package	X
	Provided externally	W
Electro-mechanical flash, wink, ring and time-out circuit	KS-15900, List 1 interrupter, 10v ac	T
	KS-19384, List 2 interrupter, 24v dc	V

→TABLE B←

## SD-69286-01 (6A KEY TELEPHONE SYSTEM) OPTIONS USED WITH 200H-TYPE KTU

TYPE OPTION	FEATURES	OPTIONS
SYSTEM	Used with single- or 2-link arrangement	A
	Used with selector only arrangement	B
	With camp-on	G
	Without auxiliary relay busy lamp circuit	H
	Without preset conference	J
	Without auxiliary relay lamp flash circuit	S
	Two-talking link arrangement with camp-on	T
	Over nine codes	W
	Without add-on transfer circuit or auxiliary relay station circuit	AG
	Dial, busy, and audible tone*	AJ
	Interrupted ringing	AK
	Single spurt ringing	AL
	Busy signal and camp-on control circuit when used with 207B KTU	AQ
STATION	Is automatically cut off	E
	Is not automatically cut off	F
	Audible signal over T and R leads	Y
	Audible signal over separate signal pair	Z
	Signal key selection of local or off-premise station when interrupted ringing is provided	AE

\*Only busy tone is furnished.

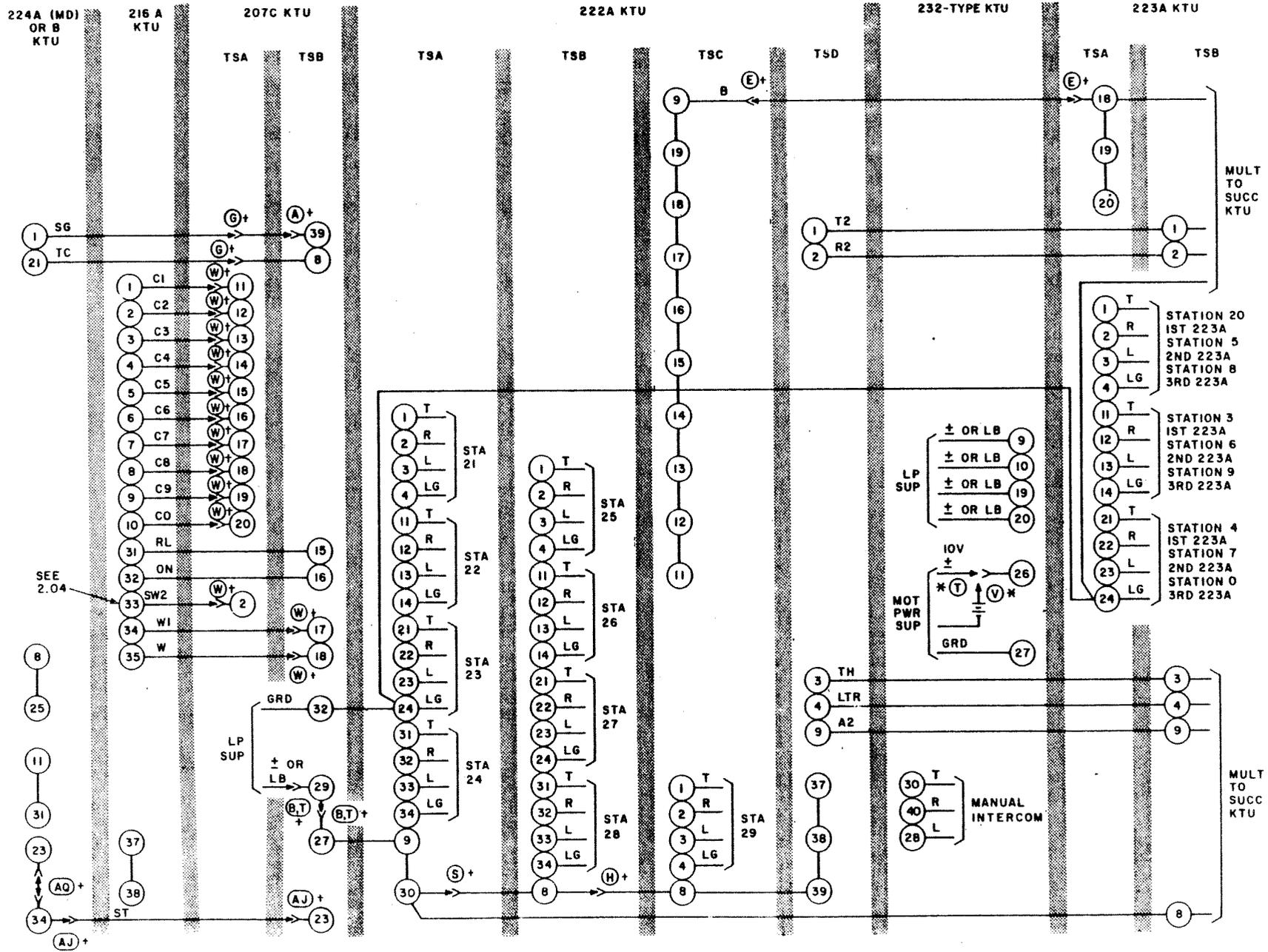
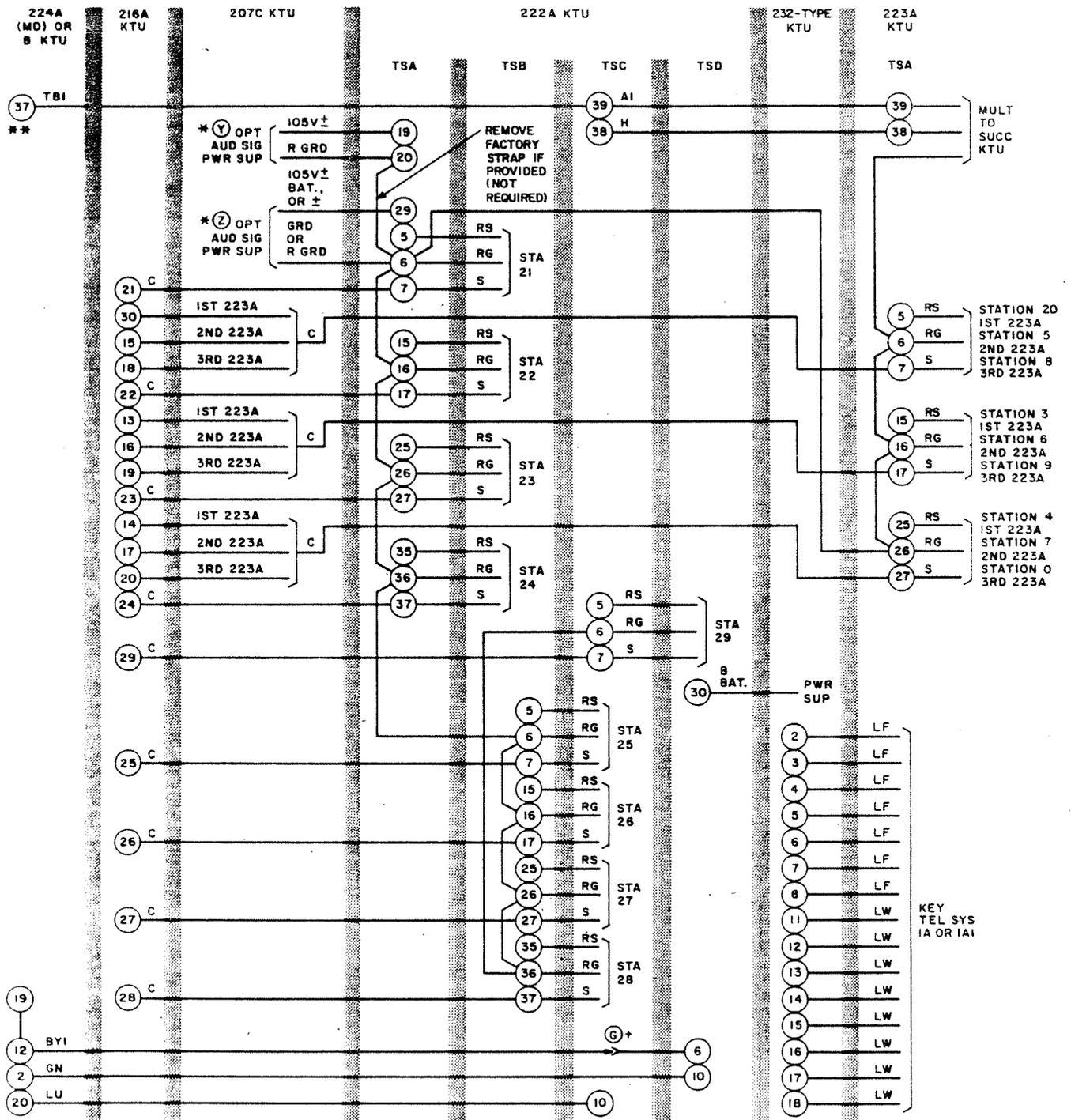


Fig. 1—Strapping and Connections of KTU (Sheet 1)

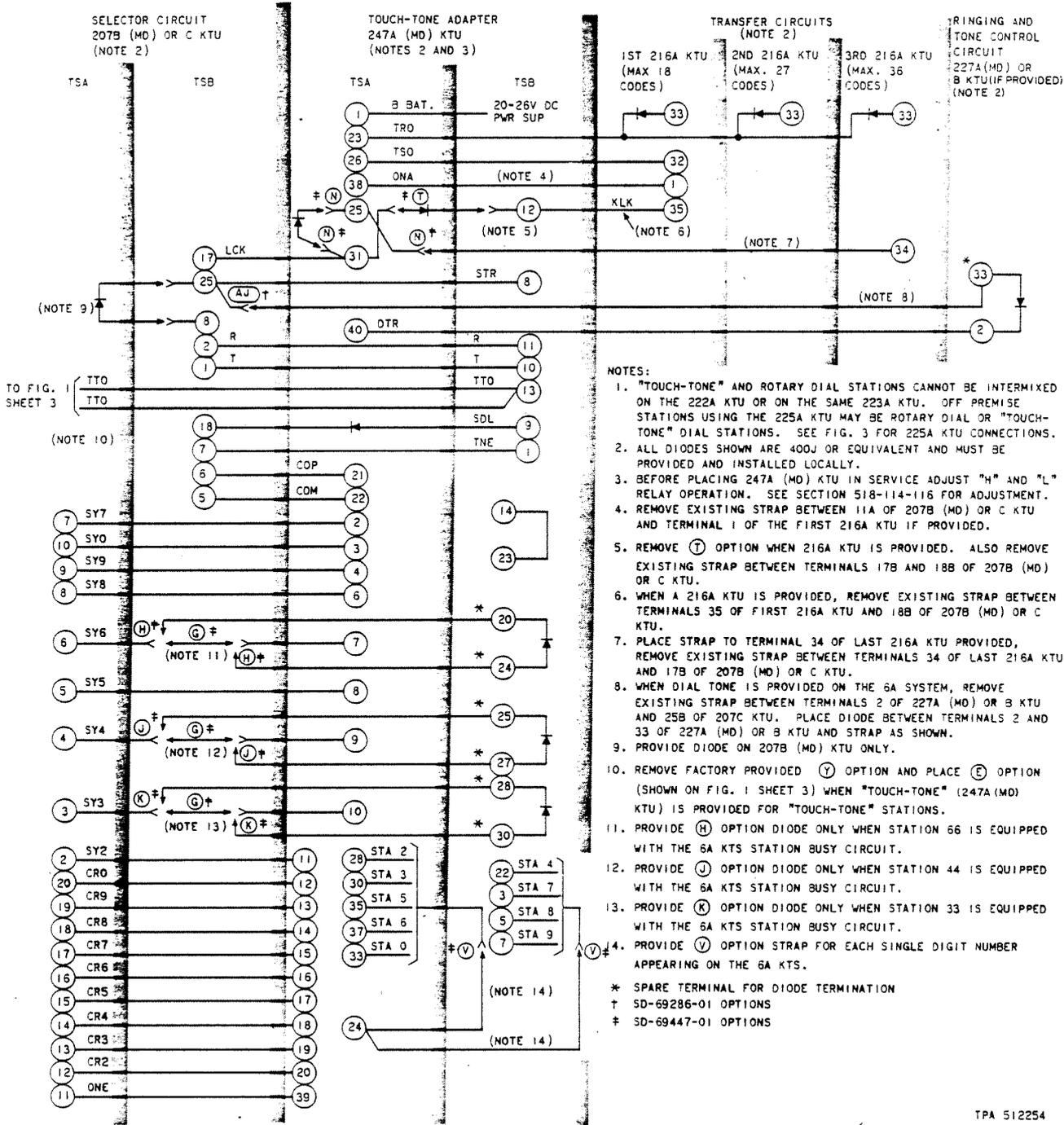


(SEE NOTE)

NOTE:  
 IF CAMP-ON CIRCUIT FAILS TO CUT THROUGH DURING LINK TRANSFER, DUE TO RELAY (LTR), IN THE 224A (MD) OR B KTU, OPERATING AND RELEASING BEFORE RELAY (BY) IN THE 224A (MD) OR B KTU RELEASES, DISCONNECT THE "LU" LEAD FROM TERMINAL 20 AND CONNECT A 3900 OHM KS-13490, LI RESISTOR ACROSS SCREW TERMINALS 20 AND 30 OF THE 224A (MD) OR B KTU. CONNECT THE "LU" LEAD TO TERMINAL 30.  
 \*\* 224B KTU ONLY.

Fig. 1—Strapping and Connections of KTU (Sheet 2)





TPA 512254

Fig. 2—Addition of TOUCH-TONE® Adapter Circuit, 247A KTU (MD) With 222A and 223A KTUs

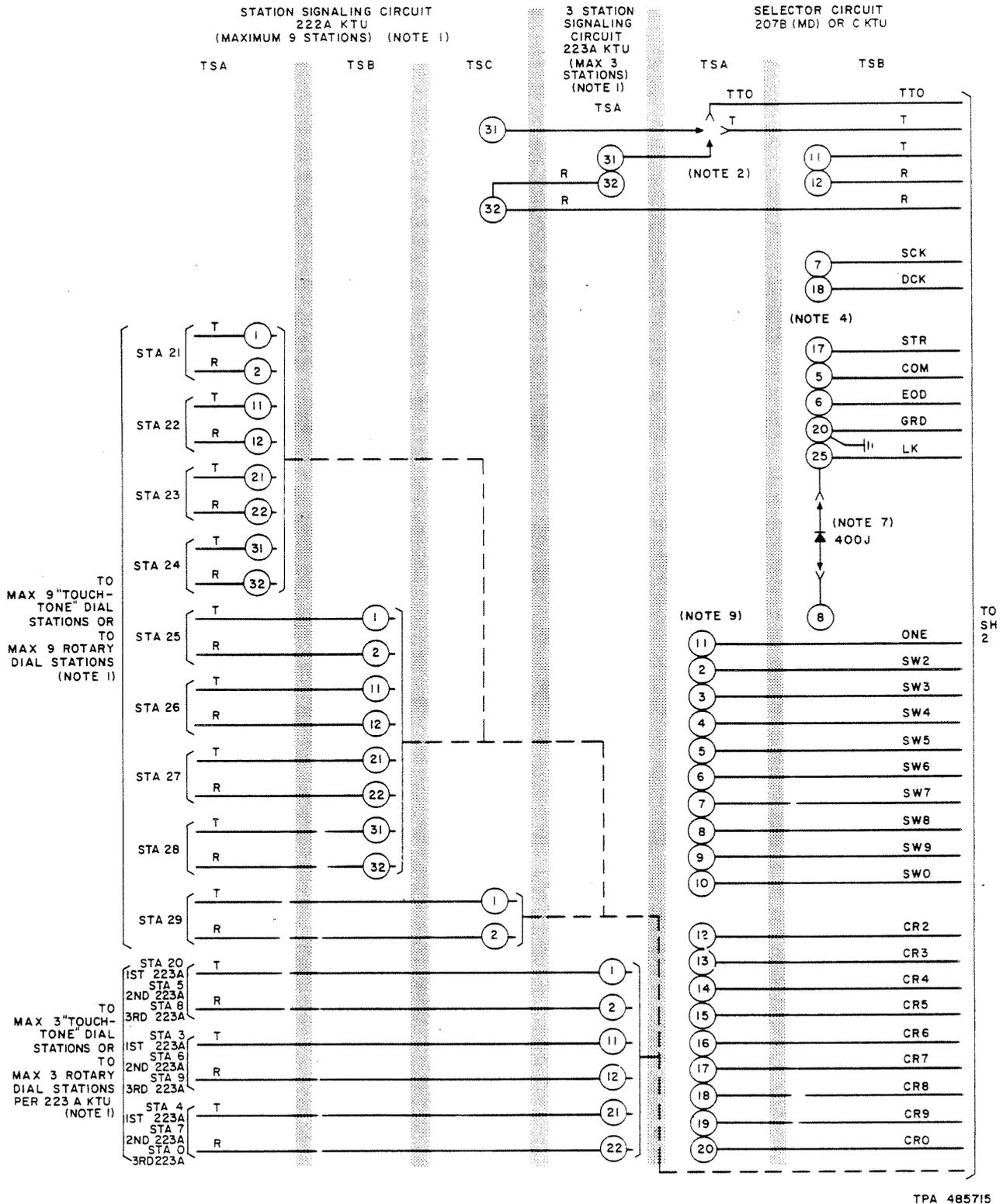
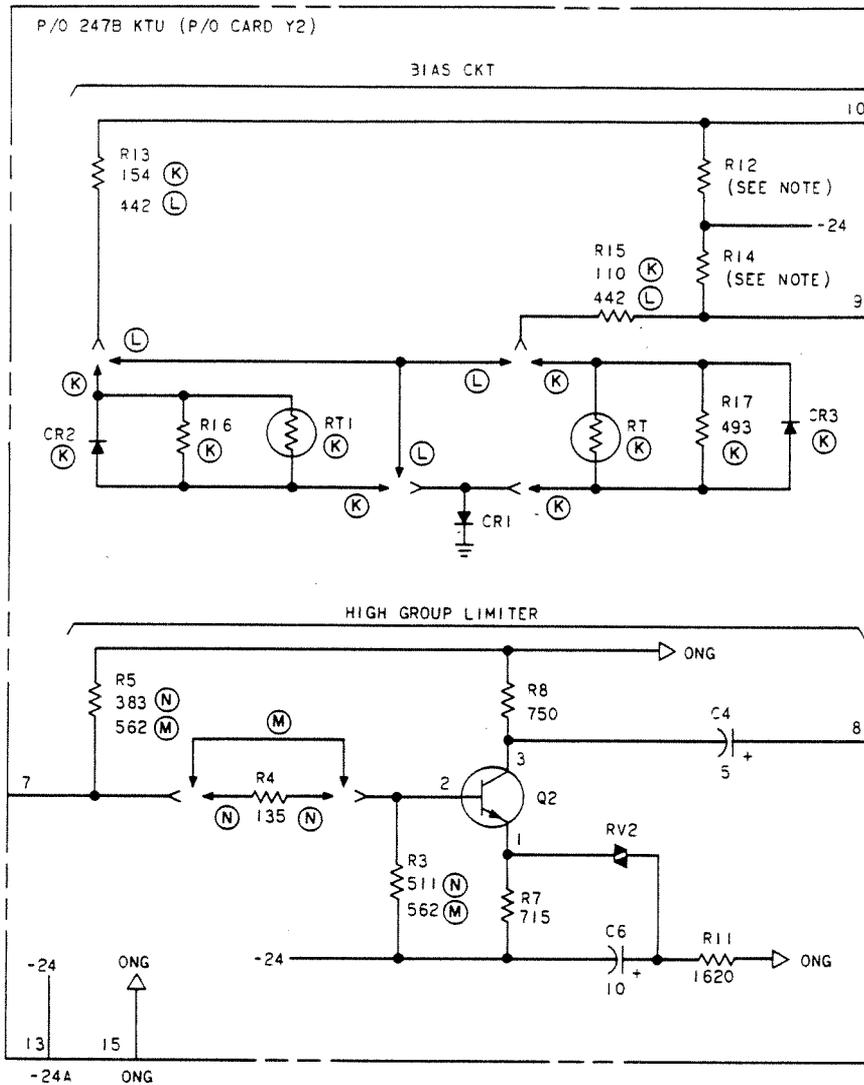


Fig. 3—Addition of TOUCH-TONE® Adapter Circuit, 247B KTU With 222A and 223A KTUs (Sheet 1)





NOTE:  
 THE VALUES OF RESISTORS R12 AND R14 SHOULD BE SELECTED FROM THE FOLLOWING LIST TO PROVIDE REQUIRED BIAS. VOLTAGE ACROSS RESISTANCE VALUE

CR1	R12		R14	
	(K)	(L)	(K)	(L)
5.8V TO 6.0V	3120	3320	4020	4270
6.1V TO 6.3V	3650	3920	4810	5230
6.4V TO 6.6V	4480	4750	6420	6810

OPTIONS:

(K) AND (M) ARE FACTORY FURNISHED.

TPA 568534

Fig. 4—Y2 Card Options in 247B KTU

→TABLE C←

## SD-69447-01 (247A KTU) OPTIONS USED WITH 200H-TYPE KTU

FEATURES		OPTIONS	
KTS No. 6A one-link and 2-link arrangements	When station busy circuits are not provided	G	
	When station busy circuit is provided with	STA 33	K
		STA 44	J
	STA 66	H	
When one or more 216A KTU are provided		N	
When 216A KTU is not provided		T	
Single-digit station code		V	
2-link arrangements 222A KTU with	Rotary dial station	Y	
	“TOUCH-TONE” <sup>®</sup> dial station	E	

→TABLE D←

## SD-69529-01 (247B KTU) OPTIONS USED WITH 200H-TYPE KTU

FEATURES	OPTIONS
When 216A KTU (with KTS No. 6A) is not provided	T
Strapping for single-digit code, single- or 2-link	V

→TABLE E←

## CURRENT DRAIN REQUIREMENTS FOR 2-TALKING LINK ARRANGEMENTS

2-TALKING LINK ARRANGEMENT	BATTERY SUPPLY AMPERES			
	MAX CURRENT DRAIN AT MIN VOLTAGE  (20 VOLTS)		CURRENT DRAIN DURING NORMAL TALKING CONDITION (24 VOLTS)	
	A BAT.	B BAT.	A BAT.	B BAT.
Installation over 9 codes and using transfer circuit	0.374	0.827	0.205	0.200
Installation with camp-on circuit	0.454	1.007	0.215	0.210

**TABLE F**  
**200H-TYPE KTU CONNECTIONS TERMINAL STRIP E**

FEATURE	STA	LEAD DESIG	64B1-100 CABLE TERMINAL		TERM. ON 207C KTU	TERM. ON 222A KTU	TERM. ON 223A KTU	TERM. ON 232A (MD) OR B KTU	TERM. ON 224A (MD) OR B KTU
			TS E	INSIDE WIRE CABLE					
Dial Intercom	21	T	1	(W-BL) [W]	BLUE BINDER		1A		
		R	2	(BL-W) [BL]			2A		
		LG	3	(W-O) [W]			4A		
		L	4	(O-W) [O]			3A		
	22	T	5	(W-G) [W]			11A		
		R	6	(G-W) [G]			12A		
		LG	7	(W-BR) [W]			14A		
		L	8	(BR-W) [BR]			13A		
	23	T	9	(W-S) [W]			21A		
		R	10	(S-W) [S]			22A		
		LG	11	(R-BL) [R]			24A		
		L	12	(BL-R) [BL]			23A		
	24	T	13	(R-O) [R]			31A		
		R	14	(O-R) [O]			32A		
		LG	15	(R-G) [R]			34A		
		L	16	(G-R) [G]			33A		
	25	T	17	(R-BR) [R]			1B		
		R	18	(BR-R) [BR]			2B		
		LG	19	(R-S) [R]			4B		
		L	20	(S-R) [S]			3B		
	26	T	21	(BK-BL) [BK]			11B		
		R	22	(BL-BK) [BL]			12B		
		LG	23	(BK-O) [BK]			14B		
		L	24	(O-BK) [O]			13B		
	27	T	25	(BK-G) [BK]			21B		
		R	26	(G-BK) [G]			22B		
		LG	27	(BK-BR) [BK]			24B		
		L	28	(BR-BK) [BR]			23B		
	28	T	29	(BK-S) [BK]			31B		
		R	30	(S-BK) [S]			32B		
		LG	31	(Y-BL) [Y]			34B		
		L	32	(BL-Y) [BL]			33B		
	29	T	33	(Y-O) [Y]			1C		
		R	34	(O-Y) [O]			2C		
		LG	35	(Y-G) [Y]			4C		
		L	36	(G-Y) [G]			3C		
	20	T	37	(Y-BR) [Y]				1A	
		R	38	(BR-Y) [BR]				2A	
		LG	39	(Y-S) [Y]				4A	
		L	40	(S-Y) [S]				3A	

( ) Current color code.  
[ ] MD color code.

**TABLE F (Cont)**  
**200H-TYPE KTU CONNECTIONS TERMINAL STRIP F**

FEATURE	STA	LEAD DESIG	64B1-100 CABLE TERMINAL		TERM. ON 207C KTU	TERM. ON 222A KTU	TERM. ON 223A KTU	TERM. ON 232A (MD) OR B KTU	TERM. ON 224A (MD) OR B KTU																																			
			TS F	INSIDE WIRE CABLE																																								
Dial Intercom	3	T	1	(V-BL) [V]	BLUE BINDER																																							
		R	2	(BL-V) [BL]																																								
		LG	3	(V-O) [V]																																								
		L	4	(O-V) [O]																																								
	4	T	5	(V-G) [V]						ORANGE BINDER																																		
		R	6	(G-V) [G]																																								
		LG	7	(V-BR) [V]																																								
		L	8	(BR-V) [BR]																																								
	5	T	9	(V-S) [V]																																								
		R	10	(S-V) [S]																																								
		LG	11	(W-BL) [W]																																								
		L	12	(BL-W) [BL]																																								
	6	T	13	(W-O) [W]																																								
		R	14	(O-W) [O]																																								
		LG	15	(W-G) [W]																																								
		L	16	(G-W) [G]																																								
	7	T	17	(W-BR) [W]																																								
		R	18	(BR-W) [BR]																																								
		LG	19	(W-S) [W]																																								
		L	20	(S-W) [S]																																								
	8	T	21	(R-BL) [R]																																								
		R	22	(BL-R) [BL]																																								
		LG	23	(R-O) [R]																																								
		L	24	(O-R) [O]																																								
	9	T	25	(R-G) [R]																																								
		R	26	(G-R) [G]																																								
		LG	27	(R-BR) [R]																																								
		L	28	(BR-R) [BR]																																								
	0	T	29	(R-S) [R]																																								
		R	30	(S-R) [S]																																								
		LG	31	(BK-BL) [BK]																																								
		L	32	(BL-BK) [BL]																																								
Signal Key Leads	21	S	33	(BK-O) [BK]																																								
	22	S	34	(O-BK) [O]																																								
	23	S	35	(BK-G) [BK]																																								
	24	S	36	(G-BK) [G]																																								
	25	S	37	(BK-BR) [BK]																																								
	26	S	38	(BR-BK) [BR]																																								
	27	S	39	(BK-S) [BK]																																								
	28	S	40	(S-BK) [S]																																								

( ) Current color code.

[ ] MD color code.

**TABLE F (Cont)**  
**200H-TYPE KTU CONNECTIONS TERMINAL STRIP G**

FEATURE	STA	LEAD DESIG	64B1-100 CABLE TERMINAL		TERM. ON 207C KTU	TERM. ON 222A KTU	TERM. ON 223A KTU	TERM. ON 232A (MD) OR B KTU	TERM. ON 224A (MD) OR B KTU
			TS G	INSIDE WIRE CABLE					
Signal Key Leads	29	S	1	(Y-BL) [Y]	ORANGE BINDER	7C	7A		
	20	S	2	(BL-Y) [BL]					
	3	S	3	(Y-O) [Y]					
	4	S	4	(O-Y) [O]					
	5	S	5	(Y-G) [Y]					
	6	S	6	(G-Y) [G]					
	7	S	7	(Y-BR) [Y]					
	8	S	8	(BR-Y) [BR]					
	9	S	9	(Y-S) [Y]					
	0	S	10	(S-Y) [S]					
Station Audible Signal — Z Option	21	RS	11	(V-BL) [V]	GREEN BINDER				
		RG	12	(BL-V) [BL]					
	22	RS	13	(V-O) [V]					
		RG	14	(O-V) [O]					
	23	RS	15	(V-G) [V]					
		RG	16	(G-V) [G]					
	24	RS	17	(V-BR) [V]					
		RG	18	(BR-V) [BR]					
	25	RS	19	(V-S) [V]					
		RG	20	(S-V) [S]					
	26	RS	21	(W-BL) [W]					
		RG	22	(BL-W) [BL]					
	27	RS	23	(W-O) [W]					
		RG	24	(O-W) [O]					
	28	RS	25	(W-G) [W]					
		RG	26	(G-W) [G]					
	29	RS	27	(W-BR) [W]					
		RG	28	(BR-W) [BR]					
	20	RS	29	(W-S) [W]					
		RG	30	(S-W) [S]					
3	RS	31	(R-BL) [R]						
	RG	32	(BL-R) [BL]						
4	RS	33	(R-O) [R]						
	RG	34	(O-R) [O]						
5	RS	35	(R-G) [R]						
	RG	36	(G-R) [G]						
6	RS	37	(R-BR) [R]						
	RG	38	(BR-R) [BR]						
7	RS	39	(R-S) [R]						
	RG	40	(S-R) [S]						

( ) Current color code.  
[ ] MD color code.

**TABLE F (Cont)**  
**200H-TYPE KTU CONNECTIONS TERMINAL STRIP H**

FEATURE	STA	LEAD DESIG	64B1-100 CABLE TERMINAL		TERM. ON 207C KTU **	TERM. ON 222A KTU	TERM. ON 223A KTU	TERM. ON 232A (MD) B or C KTU †	TERM. ON 224A (MD) OR B KTU
			TS H	INSIDE WIRE CABLE					
Sta Aud Sig — Z Option	8	RS	1	(BK-BL) [BK]			5A		
		RG	2	(BL-BK) [BL]			6A		
	9	RS	3	(BK-O) [BK]			15A	3rd	
		RG	4	(O-BK) [O]			16A		
0	RS	5	(BK-G) [BK]			25A			
	RG	6	(G-BK) [G]			26A			
To Power Supply		"B" GRD	7	(BK-BR) [BK]	20B				
		"B" BAT. (SIG)	8	(BR-BK) [BR]	19B				
To Lamp Supply		GRD	9	(BK-S) [BK]	32B				
		± or LB	10	(S-BK) [S]	29B				
To Power Supply		"A" GRD	11	(Y-BL) [Y]	10B				
		"A" BAT. (TALK)	12	(BL-Y) [BL]	9B				
Aud Sig Pwr Sup Options	Y	G GRD	13	(Y-O) [Y]		20A			
	Z	GRD or R GRD	*	*		6A			
X Option ‡ to Interrupter in Package	Y	105V±	14	(O-Y) [O]		19A			
	Z	BAT., ±, or 105V±	*	*		29A			
		CO§	15	(Y-G) [Y]				37	
		TO	16	(G-Y) [G]				36	
		BT1 or BZ1	17	(Y-BR) [Y]				32	
		BT or BZ	18	(BR-Y) [BR]				31	
		RO	19	(Y-S) [Y]				34	
		LF	20	(S-Y) [S]				1	
10-Volt ac Supply		GRD	21	(V-BL) [V]				27	
		10V AC	22	(BL-V) [BL]				26	
Lamp Supply		± or LB	23	(V-O) [V]				9	
		± or LB	24	(O-V) [O]				10	
W Option ‡ to External Interrupter		CO§	25	(V-G) [V]		18A			
		TO	26	(G-V) [G]				22	
		BT1 or BZ1	27	(V-BR) [V]				35	
		BT or BZ	28	(BR-V) [BR]				24	
		RO	29	(V-S) [V]		40A			
		LF	30	(S-V) [S]		9B			
Manual Intercom		T	31	(W-BL) [W]				30	
		R	32	(BL-W) [BL]				40	
		L	33	(W-O) [W]				28	
Lamp Supply		± or LB	34	(O-W) [O]				19	
		± or LB	35	(W-G) [W]				20	
Spare			36	(G-W) [G]					
			37	(W-BR) [W]					
			38	(BR-W) [BR]					
			39	(W-S) [W]					
			40	(S-W) [S]					

\*Select spare pair locally.

†When KTU is equipped with a 64B1-100 cable terminal, strap (X option) as follows: on terminal strip H strap terminal 15 to 25, 16 to 26, 17 to 27, 18 to 28, 20 to 30. Also make sure the following straps are not provided:

from terminal	to terminal
37 (232A [MD] or B)	31 (232A [MD] or B)
36 (232A [MD] or B)	1 (232A [MD] or B)
32 (232A [MD] or B)	18 (222A)
	24 (224A [MD] or B)
	22 (224A [MD] or B)
	9B (222A)
	35 (224A [MD] or B)

‡ For W option remove all straps mentioned above and connect terminals 25 through 30 on TSH to appropriate terminals on an external interrupter.

§ The CO lead connection is required when an associated No. 1A, 1A1, or 1A2 system flashing circuit is used as part of the No. 6A installation.

( ) Current color code.

[ ] MD color code.

† 232C KTU has factory-placed strap from 37 to 39.

\*\* Improper connection of battery and ground may result in damage to electrolytic capacitor.

**TABLE F (Cont)**  
**200H-TYPE KTU CONNECTIONS TERMINAL STRIP J**

FEATURE	LEAD DESIG	6481-100 CABLE TERMINAL		TERM. ON 207C KTU	TERM. ON 222A KTU	TERM. ON 223A KTU	TERM. ON 232A (MD) B OR C KTU	TERM. ON 224A (MD) OR B KTU
		TS J	INSIDE WIRE CABLE					
To No. 1A1 or 1A2 Key Tel Sys	LF	1	(R-BL) [R]				2	
	LF	2	(BL-R) [BL]				3	
	LF	3	(R-O) [R]				4	
	LF	4	(O-R) [O]				5	
	LF	5	(R-G) [R]				6	
	LF	6	(G-R) [G]				7	
	LF	7	(R-BR) [R]				8	
	LW	8	(BR-R) [BR]				11	
	LW	9	(R-S) [R]				12	
	LW	10	(S-R) [S]				13	
	LW	11	(BK-BL) [BK]				14	
	LW	12	(BL-BK) [BL]				15	
	LW	13	(BK-O) [BK]				16	
	LW	14	(O-BK) [O]				17	
	LW	15	(BK-G) [BK]				18	
Spare		16	(G-BK) [G]					
		17	(BK-BR) [BK]					
		18	(BR-BK) [BR]					
		19	(BK-S) [BK]					
		20	(S-BK) [S]					
		21	(Y-BL) [Y]					
		22	(BL-Y) [BL]					
		23	(Y-O) [Y]					
		24	(O-Y) [O]					
		25	(Y-G) [Y]					
		26	(G-Y) [G]					
		27	(Y-BR) [Y]					
		28	(BR-Y) [BR]					
		29	(Y-S) [Y]					
		30	(S-Y) [S]					
	31	(V-BL) [V]						
	32	(BL-V) [BL]						
	33	(V-O) [V]						
	34	(O-V) [O]						
	35	(V-G) [V]						
	36	(G-V) [G]						
	37	(V-BR) [V]						
	38	(BR-V) [BR]						
	39	(V-S) [V]						
	40	(S-V) [S]						

BROWN BINDER

( ) Current color code. [ ] MD color code.